CHAPTER 4: SOME ASPECTS OF MINOAN NEOPALATIAL ADMINISTRATION

The publication of primary archaeological material is not meant to discuss in detail or attempt to solve all matters that arise from its discovery. The Akrotiri sealings, however, which represent the most recent assemblage of Minoan Neopalatial administrative sealings uncovered, have provided new insights into the Minoan administrative system and revealed certain hitherto undetected aspects of it. In addition, the present study has made use of high-quality and uniformly presented comparative material, made available through the printed *CMS* volumes and the latter's updated online version. For these reasons this chapter aims to contribute to a broader discussion of Neopalatial administration in light of the new evidence. It does not pretend to solve all research problems and questions that arise from studying the material. But it presents an evaluation of the new finds; an attempt to integrate them with existing evidence; and a discussion of how they shed new light on Neopalatial administration.

HISTORY OF RESEARCH

Nodules from Neopalatial Cretan Sites

The first clay administrative sealings to be discovered in Crete were found in the palace of Knossos during the very first excavation season in 1900. Soon afterwards in 1901 the site of Zakros at the eastern tip of the island yielded an important sealing deposit. Agia Triada followed suit with a large number of sealings retrieved in 1902–03, and so did Gournia in 1901 and 1903–04 albeit with a significantly smaller number. Thus in the first decade of the 20th century a new category of archaeological finds had materialized in the Aegean. Since these humble and often poorly-preserved clay nodules bore seal impressions, they provided a rich source of evidence for iconography, which soon became the prime focus of their study. In 1922 the palace of Malia joined the findspots of administrative documents and Sklavokambos was put on the map through its investigation in the early 1930s. The excavation of the Zakros palace in the 1960s added more sealings to the Cretan map. The evidence from Chania came to light in 1973 and 1974, while the finds from Akrotiri from the mid-1990s are among the most recently discovered. The site of Gournia, which is currently being investigated once again, has produced the newest finds to date.[827]

knossos

Substantial numbers of seals and sealings are attested in the palace of Knossos and its surrounding area. Evans was the first to identify, document and discuss the clay nodules from

827 For a map of the findspots of the main Linear A documents and sealings, see Hallager 1996, 26, fig. 3; Thera was still unaccounted for at the time since it had only produced pottery inscriptions.

the palace in the early 20th century (*Fig. 96*).[828] But as with all Knossian objects, the dating and precise findspots of many sealings are debatable; some order has now been established thanks to the inclusion of all the available material in the *CMS*.[829]

It has been suggested that the flat-based nodules from the 'Hieroglyphic Deposit' are the earliest examples of this sealing type.[830] But since the date of this deposit is not certain,[831] we cannot be sure precisely when the flat-based nodule was invented and introduced in Minoan administration. The co-existence in the same deposit of a flat-based nodule impressed with a Hieroglyphic seal that also impressed a crescent-shaped nodule, i.e. a document clearly belonging to the Protopalatial Hieroglyphic administration, underscores the problems connected to the dating of the 'Hieroglyphic Deposit'.[832]

The most interesting deposit from the Knossos palace for the purposes of this study is, however, the mass of luxury objects, Linear A documents and sealings retrieved in the Eastern Temple Repository. Until recently, the *terminus ante quem* posited for the discard of this deposit has been the transition from MM III to the LM I period,[833] but the latest estimate suggests a firm LM I date.[834] It is in any case the most immediate predecessor to the Akrotiri sealings in terms of dating, as the sealing types and their iconography demonstrate. The sealings recovered amount to about 95, among which are 30 flat-based nodules, 45 *noduli*, six roundels, some 12 hanging nodules and one or two direct sealings.[835]

ZAKROS

In 1901 Hogarth uncovered a deposit containing numerous impressed clay nodules inside a building in the town of Kato Zakros, which he called House A.[836] The excavator counted some 500 nodules, while their most recent count enumerates 555 specimens. Among 548 identifiable nodules there are: one roundel, five *noduli*, six single-hole hanging nodules, 50 two-hole hanging nodules and 486 flat-based nodules.[837]

Hogarth interpreted his finds from the very beginning as '… seals attached to documents', but was at first hesitant as to whether their preservation was due to intentional

828 The discovery of the 'Hieroglyphic Deposit', which contained incised and stamped clay documents, was the very first instance (Evans 1899–1900, 55–63; 1909; Evans 1921a, 271–85).

829 *CMS* II,8 pp. 101–28, where the findspots of the sealings are catalogued by Gill.

830 Müller, in *CMS* II,6 p. 349. Some 'proto'-flat-based nodules are thought also to have been present in the Phaistos sealing deposit (Hallager 1996, 135), but their appearance is not convincing (for the types of direct sealings attested at Phaistos, see also Krzyszkowska 2005a, 104–08).

831 A discussion on the dating problems in Schoep 2001, with lengthy previous bibliography; now see *CMS* II,8 pp. 6–8.

832 Krzyszkowska 2005a, 115. The impression is *CMS* II,8 no. 79, attested on HMs 185 (crescent) and 195 (flat-based nodule), and comes from a hard stone Hieroglyphic prism. However, it is noteworthy that the unique flat-based nodule from the Malia palace deposit, which dates to the later part of MM III, also bears an impression from a hard stone Hieroglyphic prism, see below pp. 182–83.

833 Pini 1990.

834 *CMS* II,8 p. 8.

835 Krzyszkowska 2005a, 165.

836 Hogarth 1900–01.

837 In *CMS* II,7 (1998) 559 specimens are included, both from the palace and House A. The latest count comes from the on-going study of the Zakros material by M. Anastasiadou and includes 560 sealings (pers. comm.). Five among these 560 sealings are counted as originating from the palace, but see Chapter 2, n. 474, for a possible confusion in the provenance of one sealing.

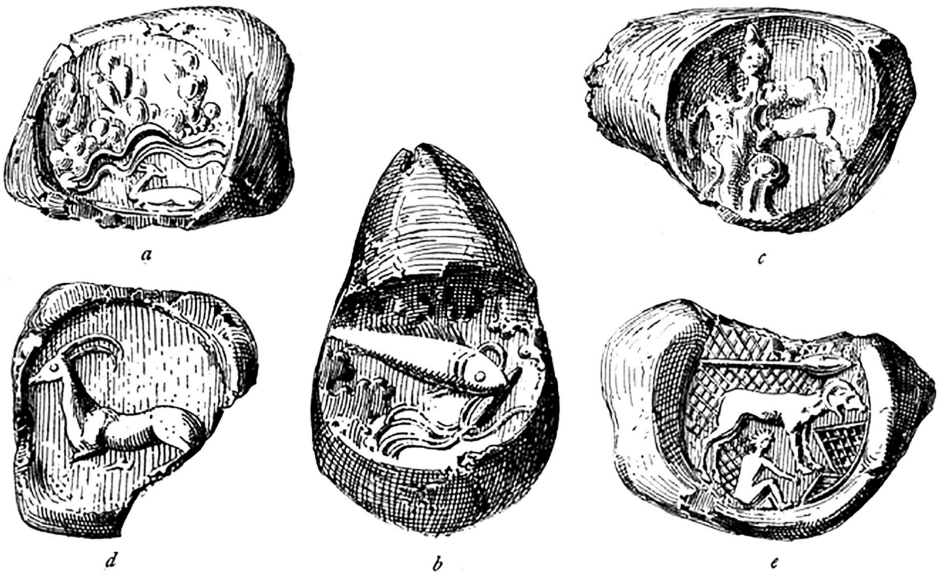


Fig. 96. Sealings from the Knossos 'Hieroglyphic Deposit': two flat-based nodules (with impressions of: a = *CMS* II,8 no. 376; d = II,8 no. 375); one one-hole hanging nodule (b, with impression of *CMS* II,8 no. 157); one two-hole hanging nodule (c, with impression of *CMS* II,8 no 286); one *nodulus* (e, with impression of *CMS* II,8 no. 33) (Evans 1921a, 273, fig. 202).

Fig. 97. Seal impressions with 'monstrous' iconography from Zakros House A (from left: *CMS* II,7 nos. 127, 124, 134) (Hogarth 1902, 79, figs. 8–10).

or unintentional firing.[838] He presented his material in a detailed article,[839] concentrating mainly on identifying the motifs of the impressions, which he put at 144. He first commented on the predominantly 'monstrous' iconography of the impressions, which he considered was of local derivation (*Fig. 97*). He noted that the nodules were of fine clay and observed the imprint of something cylindrical on the back, 'to which the nodule was pressed while still wet'. Excluding textile, he suggested reed or papyrus stalk, i.e. materials that are organic and thus combustible: he apparently failed to recognize this contradicted his statement that the nodules had been intentionally baked. The Zakros sealings were the

838 Hogarth 1900–01, 133.
839 Hogarth 1902.

object of extensive studies even in the 1920s. While studying the Agia Triada sealings, Levi made separate observations on the Zakros material and, still preoccupied with iconography, he identified a further 56 motifs.[840] The most recent count of the individual seals used to stamp these 555 nodules is 256.[841]

Hogarth also described the context in which these nodules were found.[842] They were located as a single deposit in Room VII of the building, together with a number of bronze implements (a knife, two mattocks, four round points), a steatite lamp/altar, and two clay strainers. At the time, the only other nodule types besides the flat-based ones were described as a clay 'wedge' and a roundel. The excavator noted that the sealings were retrieved 'over a restricted and roughly circular area [which] suggests that they had fallen all together from a height on the collapse of some receptacle in which they had been stored'. The circumstances in which the sealings and associated finds were recovered — 'at a height of 1ft. 6 inches from the floor', over 'carbonised matter mixed with potsherds and bits of painted plaster', and 'under a mass of disordered bricks of the largest type (24 inches × 16 × 4)' — made the excavator uncertain as to whether the nodules belonged to the ground or first storey. He suggested that they had been stored 'either among the rafters of the lower terrace, under a painted ceiling, or below the floor of the upper terrace, perhaps in a sunken receptacle made of bricks, like the stone κασέλλες let into the floors of Knossian galleries'. The room immediately to the NW of Room VII, Room VIII, was possibly a storeroom of food-stuffs, since five pithoi, nine amphorae, and 13 handless cups were retrieved there. The quality of finds in House A, namely fine pottery, a tablet and the sealings, prompted the excavator to think of the structure as 'the residence of the local chieftain, or governor'.

Further nodules were discovered at Kato Zakros when the palace was excavated by Platon in the 1960s. Several nodules were noted to have been found by the excavator but only five have been identified to date: two flat-based nodules, two *noduli*, and a two-hole hanging nodule.[843] The nodules were found in various findspots in the western wing of the palace where a number of Linear A tablets were also recovered.

AGIA TRIADA

An important site in the history of research into Minoan sealings is Agia Triada in the Mesara, where numerous sealings were retrieved in excavations carried out in 1902–03, but only published years later.[844] Especially notable at Agia Triada is the impressive number of single-hole hanging nodules, 936, the largest quantity in any Neopalatial deposit (*Fig. 98*); most examples bear an incised Linear A sign. In addition, the site has produced 11 two-hole hanging nodules, 22 roundels and 53 *noduli*.[845] Finally, there are 70 flat-based nodules, impressed by 62 different seals; while the number of the Zakros flat-based nodules is comparable to those found at Akrotiri, the latter were stamped by only 16 seals (see *Fig. 62*).

840 Levi 1925–26b.
841 *CMS* II,7.
842 Hogarth 1900–01, 129–34.
843 Platon 1971, 147, 151, 159; Platon – Brice 1975, 35. Again, see n. 474 for a possible mix-up of a sealing presumed to be from the palace.
844 Levi 1925–26a; *CMS* II,6 nos. 1–148.
845 The numbers are taken from Hallager 1996, 25, 41.

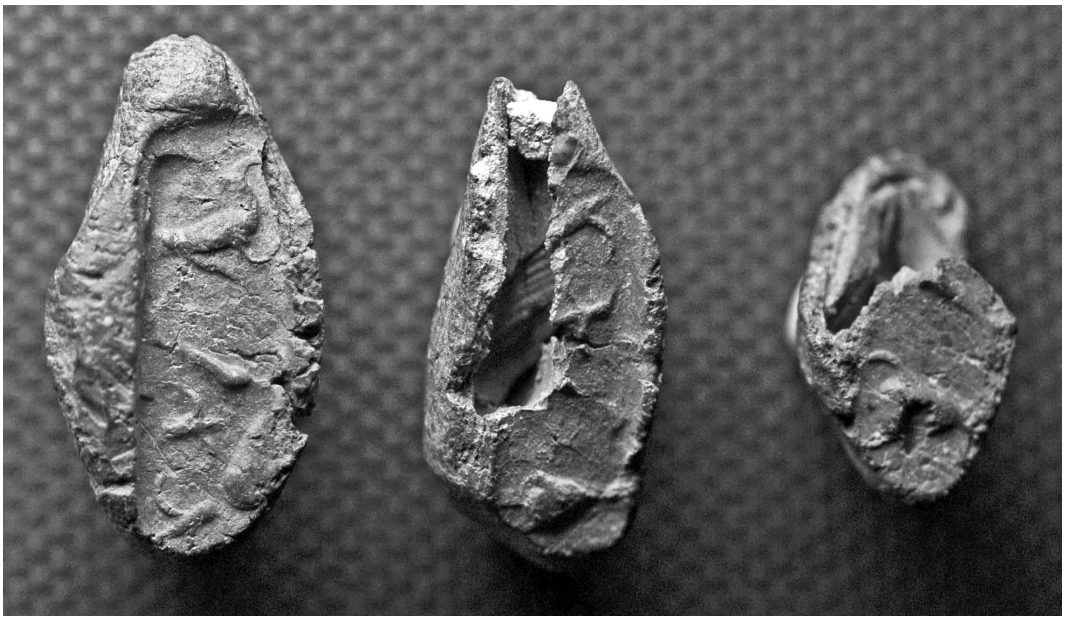


Fig. 98. Three single-hole hanging nodules from Agia Triada with the impression of the same seal; (HMs 556/1–3 = *CMS* II,6 no. 143; Archaeological Museum of Herakleion © Ministry of Culture and Sports/ Archaeological Receipts Fund, photos by A. Karnava).

The archaeological evidence regarding the findspots of stamped documents in Agia Triada is particularly problematic, because little archival evidence is available to clarify this matter. Nodules were found in the so-called Royal Villa and in another building, the *Casa del Lebete*, but their exact localization within these buildings has been a painstaking process.[846]

GOURNIA

From the investigations of Hawes at Gournia in 1901 and 1903–04 a number of stamped documents were collected,[847] including two flat-based nodules.[848] One bears the impression of a large gold ring with a bull-leaping scene,[849] while the second was impressed by a 'talismanic' seal[850] — a rarity, since only a few sealings stamped by 'talismanic' seals are known (*Fig. 99*).[851] A total of 16 sealings have been retrieved so far from the settlement and cemetery at Gournia: 13 *noduli*, two flat-based nodules, one roundel; these documents were

846 Militello 2002; 2012. The Agia Triada sealings are currently under study by B. Montecchi (University of Heidelberg).

847 *CMS* II,6 pp. 171–80.

848 Williams, in Hawes *et al.* 1908, 55, where a *nodulus* and a flat-based nodule bearing seal impressions of 'look-alike' seals are mistakenly taken to bear impressions from one and the same seal: p. 54, fig. 30-4: '… duplicate impressions, one of red, the other of black clay, that were found in the West Court of the palace …'. The mistake is already noted by Betts 1967, 16.

849 *CMS* II,6 no. 162.

850 *CMS* II,6 no. 157.

851 See Chapter 1, n. pp. 78–79, n. 331.

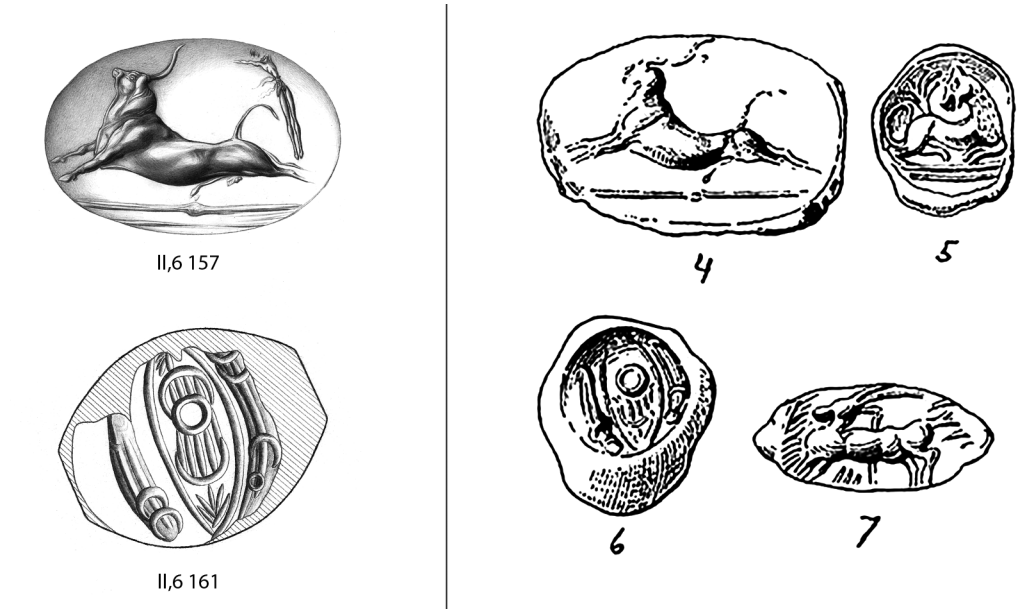


Fig. 99. Administrative documents from Gournia (with impressions of *CMS* II,6 nos. 161 (4), 160 (5), 157 (6), 158 (7); left: *CMS* Archive; right: Hawes *et al.* 1908, 54, fig. 30; courtesy of the University of Pennsylvania Museum of Archaeology and Anthropology).

stamped by only seven different seals. Fresh investigations at Gournia from 2010 onwards have revealed additional documents, which constitute the most recent administrative evidence from Crete: a Linear A tablet, a roundel, a *nodulus*, a flat-based nodule and a single-hole hanging nodule, raising the number of stamped documents from Gournia to 20.[852]

MALIA

An important deposit comprising many incised and stamped documents was retrieved in 1922 at the palace of Malia.[853] This Malia palace deposit remains unique to this day, on account of two factors: the co-existence of Cretan Hieroglyphic and Linear A documents within the same deposit; and its date, namely the later part of MM III,[854] illustrating a stage in the development of Minoan administration that is otherwise unattested.[855] The specific dating of this deposit evidently accounts for the co-existence of a crescent-shaped

852 Younger, in Watrous *et al.* 2015, 443–51.

853 Chapouthier – Charbonneaux 1928; Chapouthier 1930; *CMS* II,6 nos. 168–172.

854 The dating of the deposit, although not without problems, is universally accepted to be the later part of MM III: from the outset Chapouthier (1930, 6) dated the context to MM III; some years later he retracted the date based on further investigations that he conducted in other parts of the palace and suggested a date at the beginning of the MM period (Chapouthier 1947–48, 406). However, later investigations by Pelon verified the original dating (Pelon 1982, 189–90; 1983, 701–03). Some reservations have been expressed as to the unity of all objects/documents attributed to this deposit since one of the seals used was clearly later (*CMS* II,6 p. 189).

855 But see now Hallager 2012.

nodule,[856] two roundels,[857] and one flat-based nodule.[858] The Malia flat-based nodule is the earliest securely-dated example, supporting the view that this nodule-type belonged to an administrative system which had already been established by the later phase of MM III.

SKLAVOKAMBOS

A significant batch of sealings was found at the site of Sklavokambos in central Crete during excavations conducted by Marinatos in the early 1930s (probably between 1930 and 1932).[859] Marinatos excavated a building, which he called 'μέγαρον' ('villa'), situated at a distance of 21–22 km W of Herakleion. The building was not in fact isolated, but was surrounded by other buildings, making it part of at least a hamlet.[860] Sklavokambos is situated in a valley on the main route from Knossos and Tylissos to Gonies. The economic importance of Gonies, a hilly area, lies in the fact that it constitutes one of the two main sources of serpentine on the island, a soft stone frequently used for the manufacture of vases and seals in Minoan Crete.[861]

The building had two storeys and, to judge from different floor levels and movable finds, the ground level was organized in three distinct sectors (*Fig. 100*): the 'living quarters' (Rooms 1–10), the 'magazines' (Rooms 11–12) and the 'service' sector (Rooms 14–20), which included food preparation spaces. The 'living quarters' were deemed the most lavish sector, and were thought to include the equivalent of a palace's 'throne' room (4), custodial quarters (2–3), dormitories (9–10), a 'shrine' (8), a staircase leading to the first floor (6–7), and even a lavatory (Room 7, the *sottoscala*). Signs of intense conflagration lead to the conclusion that the building was destroyed by fire, thus preserving the impressed nodules.

The nodules — termed 'σήμαντρα' by Marinatos, who had a profound knowledge of ancient Greek authors[862] — were found in a single batch in the entrance corridor 1, at a height of 1 m from the floor. This led the excavator to suggest that they had been originally kept in a room on the first floor; the fact that one sealing was retrieved in the adjacent Room 2 was seen as corroborating this interpretation. The finds from the vicinity of the sealings included a stone hammer, a clay human foot,[863] and part of a cylindrical vase with reed decoration.

Marinatos recovered 39 sealings, all except one being flat-based nodules.[864] He detected three different clay qualities among the sealings, noting that the clay was fine and had no impurities, but that the colours differed: red/red-brown, pale ('almost white') and grey.

856 One specimen: HMs 1402, *CMS* II,6 nos. 171, 172 (*Hörnchenplombe*).

857 *CMS* II,6 nos. 169–170.

858 *CMS* II,6 no. 168; Chapouthier 1930, 10, 18. See also above, p. 178.

859 Marinatos 1939–41.

860 Fotou 1997, 47, figs. 7, 8.

861 Warren first noticed the serpentine outcrops in the area, subsequently included in later accounts (Warren 1969, 138–39; Becker 1976, 363–64, 368; Jones *et al.* 2007; more recently: Athanasaki 2014, 68 and 70).

862 Marinatos 1939–41, 87, n. 3. Marinatos cites from Hdt. 2.121B: '*τῶν τε σημάντρων ἐόντων σόων*' (the seals were unbroken); Hdt. 2.38: '*γῆν σημαντρίδα ἐπιπλάσας ἐπιβάλλει τὸν δακτύλιον*' (then smears it with sealing-earth and stamps it with his ring). The two passages refer to sealings used to secure doors and also testify to a specific clay prepared especially for sealings.

863 Marinatos 1939–41, 72–73, pls. 3.3, 3.4.

864 Marinatos 1939–41, 87–93, figs. 13–15, pls. 3.1, 4; *CMS* II,6 nos. 255–272.

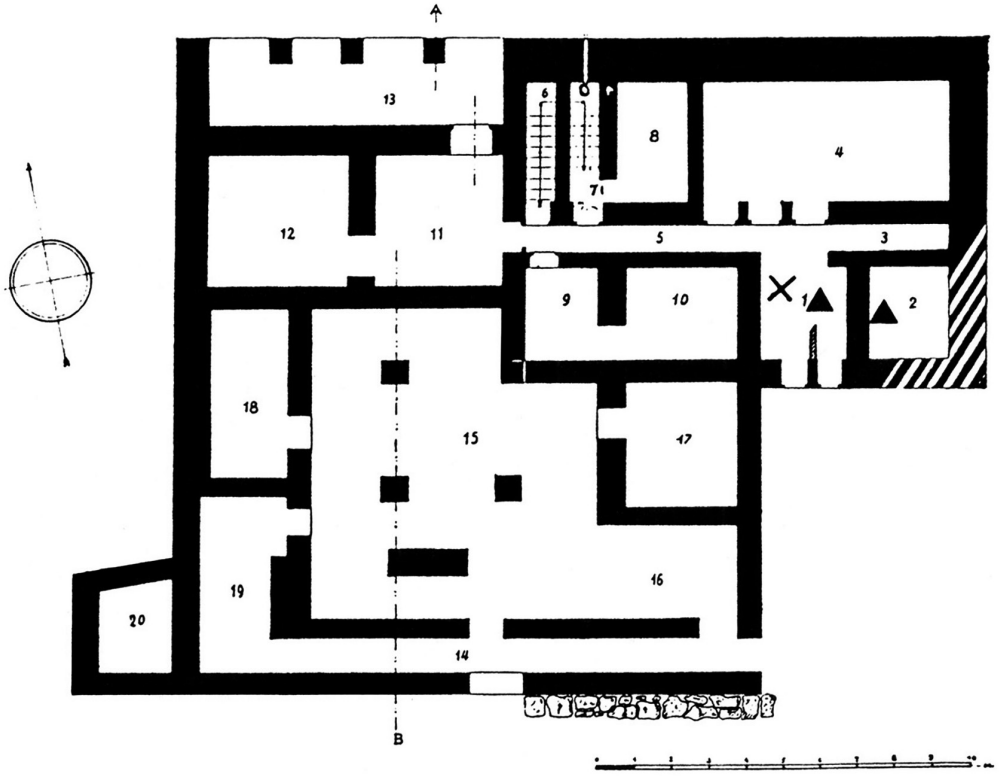


Fig. 100. The Sklavokambos 'villa'; the findspots of sealings are marked with triangles (flat-based nodules) and a cross (*noduli*) (Hallager 1996, 71, fig. 27; image courtesy of E. Hallager).

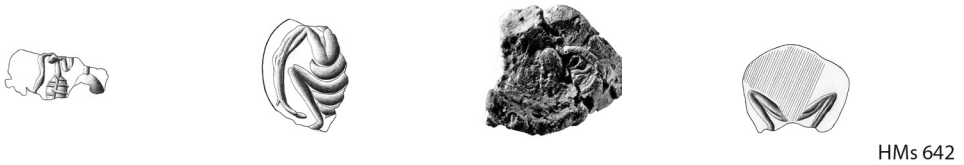


Fig. 101. A unique flat-based nodule from Sklavokambos with impressions of four different seals; scale: 3:2 (HMs 642 = *CMS* II,6 nos. 267, 268, 270, 269) (*CMS* Archive).

Since colour differences had been noted among sealings from other sites in Crete, Marinatos thought of different origins for the nodules. He divided the nodules on the basis of shape: the 'discoid', apparently flattish in appearance with one seal impression; the 'conical', including one with no cord impressions on the back, which he considered a trial piece;[865] and the 'prismatic', with up to four seal-impressions. The last evidently refers to a nodule bearing four different impressions, which is unique amongst flat-based nodules from all sites (*Fig. 101*).[866]

865 *CMS* II,6 no. 261: it is in fact a *nodulus*.
866 HMs 642 (*CMS* II,6 nos. 267–270).

Among the Sklavokambos sealings Marinatos also identified impressions from the same ring that had stamped nodules found at Gournia and Agia Triada.[867] This led him to suggest that the matching impressions pointed to the contemporaneity of the relevant deposits and, consequently, that the disasters responsible for burying them in debris were contemporaneous throughout Crete.[868] The fact that the same ring had produced impressions on nodules found in various parts of Crete was taken by Marinatos as proof that 'a central authority corresponded with all the local centres'. Whether the correspondence was commercial or administrative, directed from the centre to its dependencies, was left open.

In a further refinement of his observations, Marinatos suggested that the flat-based nodules sealed 'letters or other documents in papyrus'.[869] He based his assumption on 'the thin threads on the back of the seals', with which 'only letters could be fastened, not "commercial parcels" or other heavy objects'. Another argument he used was the suitability of the Minoan script for 'writing', i.e. painting with a brush, rather than 'printing', i.e. impressing with a stylus the clay surface, as in Mesopotamia. In his days, two cups with painted inscriptions from Knossos provided evidence that Minoan characters were also executed in ink.[870]

CHANIA

The sealing deposit in Katré Street, Chania, is the most recently discovered in Crete, since all the finds mentioned previously were pre-war discoveries. The deposit came to light in excavations conducted in 1973 and 1974 and was presented to the public relatively quickly.[871] A burned destruction layer contained impressed clay nodules and some roundels in close proximity to each other; further away a cluster of more roundels was detected, and Linear A tablets were recovered from throughout the layer. The finds were considered as the remains of a proper archival deposit, in the sense of a cluster of clay administrative documents originally kept together. Whether or not there had been a room reserved especially for this purpose was unclear, since the finds were not *in situ*, but were thought to have fallen from an upper floor of a poorly-preserved building nearby. The pottery associated to the archival deposit provided a dating at the end of the LM I period.

867 Recent research has corroborated two of his three suggestions that the same ring was used: impression *CMS* II,6 no. 259 = HMs 628/629 (flat-based nodules, Sklavokambos) comes from the same ring as *CMS* II,6 no. 11 = HMs 101 (*nodulus*, Gournia), as well as *CMS* II,6 no. 43 = HMs 497–499 (flat-based nodules, Agia Triada). Also: *CMS* II,6 no. 20 = HMs 632–635 (Sklavokambos) and *CMS* II,6 no. 19 = HMs 516/591 (Agia Triada). The comparison which is not valid is between *CMS* II,6 no. 258 = HMs 625 (Sklavokambos) and *CMS* II,7 no. 36 = HMs 12 (Zakros). For all these matches, see *Fig. 106*.

868 It was the excavations conducted by Marinatos at Amnisos which led him to formulate his theory on the simultaneous destructions of Neopalatial Crete caused by the volcanic eruption of Thera. The material from Sklavokambos and most particularly the nodules were used as supplementary evidence (Marinatos 1939, esp. 429–30).

869 Marinatos 1951, 40.

870 Marinatos 1951, 39–40. Nowadays more painted inscriptions are known, including a unique instance in Cretan Hieroglyphic (*CHIC* no. 322), some more in Linear A (*GORILA* IV pp. 117–27; also, Perna *et al.* 2005) and the Linear B examples found on numerous stirrup jars (Haskell *et al.* 2011).

871 Papapostolou 1977; *CMS* V Suppl. 1A nos. 151–183; an informative discussion in Hallager 1996, 50–51.

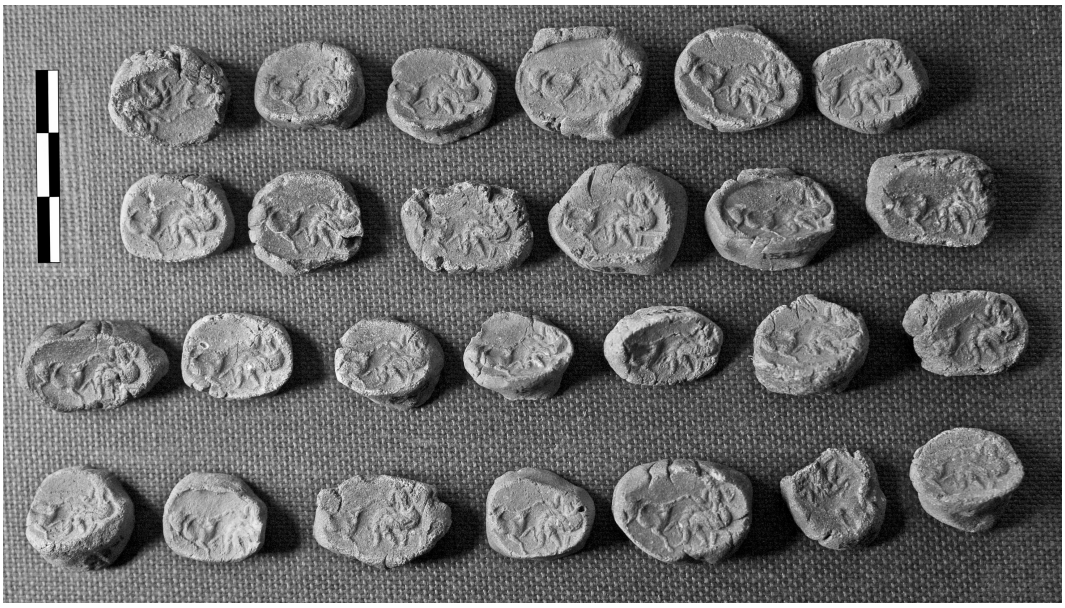


Fig. 102. Twenty-six flat-based nodules from the deposit in Katré Street, Chania, with a single impression each executed by the same seal (ChM 1501–1526 = *CMS* V Suppl. 1A no. 175; Archaeological Museum of Chania © Ministry of Culture and Sports/Archaeological Receipts Fund, photo by A. Karnava).

The Katré Street deposit[872] mostly comprises roundels amounting to 112 specimens.[873] In addition, it contained six two-hole hanging nodules, 20 single-hole hanging nodules,[874] 57 flat-based nodules and just one *nodulus* (*Fig. 102*).[875] Last but not least, 82 Linear A tablets accompanied the sealings.

Nodules in Publications and the 'Replica' Rings Theory

The most thorough presentations of Cretan Neopalatial sealings and their seal impressions are now to be found in the *CMS* volumes published in 1998,[876] 1999,[877] and 2002.[878] These volumes are also accompanied by fairly extensive commentaries and tables on sealing typology and classification, prepared chiefly by Müller.[879] The first attempt to present this kind of material in a *CMS* volume occurred in 1970, with the publication of the Protopalatial sealings from Phaistos, but there the focus was purely on the iconography of the impressions.[880] By contrast, the pioneering work by Fiandra in the late 1960s had concen-

872 More sealings were retrieved from the square of Agia Aikaterini: *CMS* V Suppl. 1A nos. 127–150.
873 Hallager 1996, 25, 50–51.
874 The excavator called them 'prismatic sealings', but the name has not been used since.
875 58 pieces were listed as 'simple sealings', yet one was later identified as a *nodulus* (Weingarten 1986a, 6 no. 10).
876 *CMS* II,7 (Zakros).
877 *CMS* II,6 (Agia Triada and other minor sites).
878 *CMS* II,8 (Knossos).
879 *CMS* II,6 pp. 339–99; II,7 pp. 271–77; II,8 pp. 24–93.
880 *CMS* II,5. No sealing typology was presented and all nodules were termed as 'Tonklumpen'.

trated on the key question of how the Phaistos sealings were used.[881] Weingarten offered valuable insights into Aegean administrative cycles mostly in the 1980s and 1990s. But Hallager's 1996 publication still remains the most comprehensive study of Minoan administration, although it ostensibly focused on a particular document type, the roundel.[882]

Over the years, a variety of theories have been formulated regarding the functions, nature and role of sealings in Neopalatial political and economic organization. Many tentative suggestions, however, have been considered as solid facts and have formed the basis for further interpretations regarding political economy, trade, and power structures in the prehistoric Aegean. The primary material itself is sometimes poorly published, containing errors and misinterpretations. Indeed the question is rarely posed as to what constitutes the adequate publication of administrative documents such as sealings. While inclusion in a corpus of seals and sealings is obviously a first step, the main emphasis of the *CMS* volumes remains iconography, and only limited information on contexts is provided; coverage of individual nodules *qua* nodules is minimal. Thus the *CMS* merely serves as a working tool for further detailed research into the role that sealings played in administration at site or regional level.

Given the popularity of iconographical studies for much of the 20th century, much discussion has centred on the seal motifs attested on the sealings. A key article by J. Betts on Neopalatial sealings and administration, however, set a new research agenda that still resonates today.[883] Betts built on Marinatos' observation that certain ring impressions recovered at Sklavokambos, mostly with a bull-leaping theme, matched impressions found at Gournia and Agia Triada, i.e. that sealings impressed by the same rings had been dispersed in different Cretan sites; he verified that this was the case in certain instances, but he also noticed that a number of different seals with similarly rendered themes had been involved. With this article he established firmly the term 'replica' for these rings, which had been first used by Evans for the impressions of rings with similar motifs;[884] he considered the rings as 'practically indistinguishable replicas of the same ring' (*Fig. 103*). He further suggested that the clay of sealings with 'replica' ring impressions seemed to indicate an origin local to the sites where they had been found, such as Agia Triada, Gournia, Knossos and Zakros. This led him to conclude that it was not the sealings with duplicate impressions that travelled from one site to another, but the ring itself in the hands of its owner, or, more probably, its replica in the hands of his representative. Betts spoke of official correspondence, but because he ultimately believed that it was the seal bearers and not the documents that travelled, he promoted Knossos to the status of the administrative centre that controlled the movement of administrators, and their replica seals as the insignia of their master(s).

In recent years other scholars have focused on the problem of the so-called replica rings. It has emerged that the term is confusing and has been used with a variety of meanings, which do not always coincide. It used to be widely believed, for instance, that the 'replica' signet rings were probably manufactured by use of a mould. More recent and detailed investigations have demonstrated that all Minoan rings with gold bezels were hand-made

881 Fiandra 1968. The first scholar who discussed the role of sealings in the Aegean was however Heath (1958).

882 Hallager 1996.

883 Betts 1967.

884 Evans 1928b, 832, n. 1, where Evans uses the expression 'almost exact replica'.

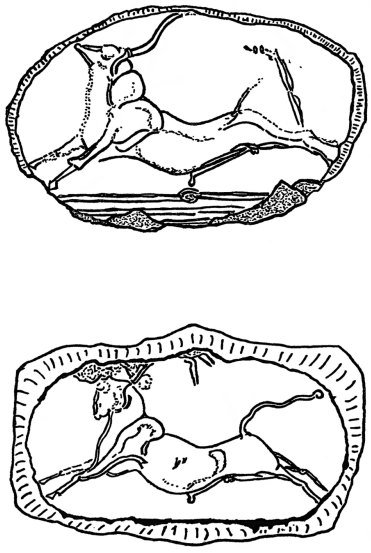


Fig. 103. Nodules from Gournia: HMs 101 (top), impressions from the same ring (now *CMS* II,6 nos. 43/161/259/II,7 no. 39) on sealings at Agia Triada, Sklavokambos, Zakros and Gournia; HMs 102 (bottom), impressions from the same ring (now *CMS* II,6 nos. 44/162/255) on sealings at Agia Triada, Sklavokambos and Gournia (Betts 1967, 29, fig. 1).

and were not produced in moulds.[885] Moreover, one of the problems of proving Knossian control in Neopalatial administration is the scarcity of sealings at Knossos dating to this period, and a complete absence for LM IB.[886]

Hallager took 'replica' rings to be 'large gold rings, presumably manufactured at Knossos, the impressions of which have been found at six different sites on LM IB Crete … 53 impressions have been identified from ten such rings'. The bezels of these rings, with a length of c. 3 cm, also displayed a limited number of seal motifs, namely bull-leaping, a chariot scene, running lions, and combat scenes.[887] Hallager further distinguished between 'Knossian' and 'local replica rings' of a maximum length of 2 cm, which he suggested had been manufactured locally with the same themes as the Knossian rings.[888] Additionally, based on stamping patterns and motifs attested at Knossos and, more importantly, Zakros, the term 'look-alikes' has been applied by Weingarten to seals with similar motifs that were used within the same site as 'stamping partners'.[889] The term is meant to refer to 'seals that must have been made intentionally similar, in order to assert similar authority within some closed group'. An additional premise was that these seals would have been 'used in a similar way and preferably in a way that is virtually interchangeable' (*Fig. 104*).[890]

885 Sakellarakis 1981; Krzyszkowska 2005a, 131.
886 Krzyszkowska 2005a, 121.
887 Hallager 1996, 207, fig. 77.
888 Hallager 1996, 209–13, fig. 78.
889 Weingarten 1986b; 1989; 1994, 183. See also: Pini 1983.
890 The latest treatment in Weingarten 2010a, 400, n. 12.

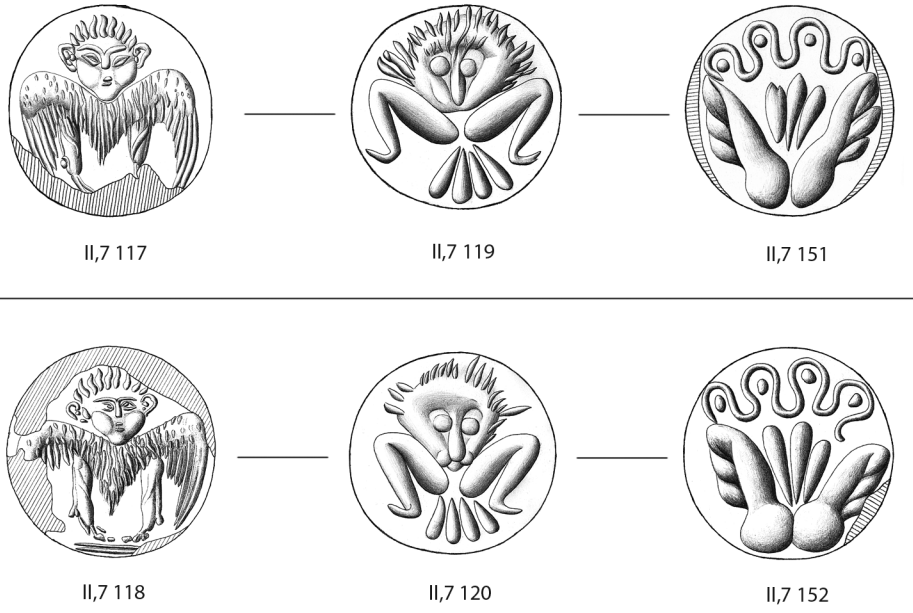


Fig. 104. Seal impressions *CMS* II7, nos. 117, 119 and 151, all attested together on fourteen flat-based nodules from Zakros (HMs 10/1, 3–6, 9–15, 17, OAM AE 1199m); and seal impressions *CMS* II7, nos. 118, 120 and 152 attested together on three flat-based nodules from Zakros (HMs 10/7, 16, OAM AE 1199w) (*CMS* Archive).

The non-specificity of these terms has, however, caused their misuse, with the result that the terms 'replica' and 'look-alike' are sometimes used indiscriminately and loosely.[891] Nevertheless, it seems that scholars subconsciously reserve the term 'replica' for large gold rings with their restricted range of themes, whereas the term 'look-alike' is applied to seals, including those of stone, with similar motifs, but where the thematic range is not so specific.

However one chooses to name or describe the situation, there is nonetheless a real research puzzle here, which goes to the very heart of Minoan glyptic and was even passed down to Mycenaean seal engraving. How significant was a seal motif? Did it stand for a notion, an idea, or a principle? And if so, to what extent was it recognizable, accepted, and respected through time and space? Minoan glyptic imagery drew inspiration from the natural — including the human — environment, but also created purely ornamental and fantasy motifs.[892] Almost from the outset the various kinds of motifs became a standardized form of artistic expression, one that was organized through 'workshops', obeyed certain traditions, but also followed and created trends.[893] Even for the very beginnings of Minoan glyptic in the mid-third millennium questions arise regarding seals with similar motifs, while the Minoan Protopalatial period appears to have presented the same vexing problem.[894]

891 For instance: Schoep 1999b, 213–17. For a review of the term, see Krzyszkowska 2005a, 182–84; also, the discussion in Pini 2006.

892 Crowley 2013, 349–52.

893 The most recent effort to trace 'masters' and 'workshops' among golden signet rings: Becker 2011–12.

894 Anderson 2013, 119–20, who calls similar motifs 'undifferentiated motifs'; more recently on the same topic, Anderson 2016, esp. 48–80; also Sbonias 1999; 2000; Relaki 2009, 357–58; 2012.

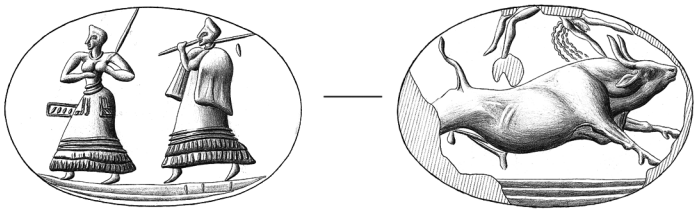
Some motifs evidently circulated widely in a particular period (see, for instance, *Fig. 66*) but to what extent were they distinguishable or meaningful? The problem of distinguishing between 'geometric' motifs, e.g. cross-hatching, on seals and their impressions is potentially as important as telling one 'naturalistic' scene from another on different seals and seal impressions apart, as in the case with the pluralism of the bull-leaping scenes.

As far as the Akrotiri sealings are concerned, they attest to the use of two seal rings that can be labelled 'replica' rings, as understood by Betts and Hallager. One bears the motif of a chariot scene[895] and the other a bull-leaping scene (*Figs. 63, 65*);[896] both had been used to stamp (different) flat-based nodules. The ring with the chariot scene had stamped three flat-based nodules on its own; the ring with the bull-leaping scene had stamped five flat-based nodules on its own, a further 28 together with another seal,[897] and two more together with yet another seal (*Figs. 72, 77*).[898] It is uncertain whether the impression of a third large-sized metal signet ring showing a building and two bovines should be taken as a 'replica' ring impression in the sense Hallager uses it, since its theme does not strictly fall among the topics prescribed by him.[899] Also, a ring of more modest dimensions with a bull-leaping/grappling scene had stamped nine flat-based nodules with one other seal;[900] this ring could probably qualify as Hallager's 'local replica ring' on the basis of its size and motif. More importantly, perhaps, among all the sealings retrieved at Akrotiri there are no impressions of 'look-alike' seals, as defined by Weingarten, which are so prominent among the Zakros material. No reproduction, intentional or unintentional, can therefore be observed among the seal impressions from Akrotiri.

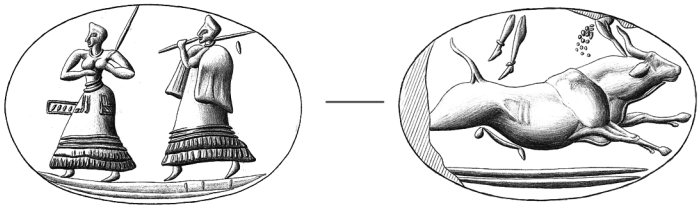
But, as a matter of fact, the by now customary perception of 'replica' rings needs to be seriously revised, since we understand today that the fundamentals of this narrative are somewhat different than previously thought. Firstly, it is important to stress that the whole discussion is being conducted on the basis of seal impressions and not seals, i.e. any question about the similarity of motifs relates to how they functioned within the administrative realm and does not necessily have broader repercussions. That said, there appear to be three different phenomena lurking behind the 'replicas' and 'look-alikes' of the Neopalatial period, the third of which also appears to be relevant in the case of Akrotiri:

First phenomenon: the production of seals for administrative purposes with similar themes. These seals seem to render a specific motif, but in all likelihood they did not replicate one another; this is the instance of the bull-leaping motif, as it has been explained and illustrated previously (*Fig. 66*).[901] If the exact replication of another seal had been the purpose, then an effort would probably be made to produce 'copies' as faithfully as possible; if such were the case, the leaper, for example, would not appear in distinctly different positions, or the engraver would make sure that the bull had its head turned to one specific direction, and so on. At this point, it seems that the term 'replica' is wholly inappropriate for such motifs; but there is no suitable replacement for it, since similarly themed seals do not necessarily

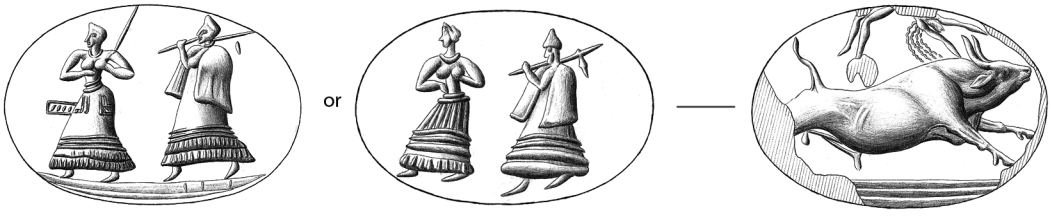
895 *CMS* V Suppl. 3 no. 391.
896 *CMS* V Suppl. 3 no. 392.
897 *CMS* V Suppl. 3 no. 393.
898 *CMS* V Suppl. 3 no. 394. For these pairs of seals/seal bearers, see further below, pp. 197–200, 203–10.
899 *CMS* V Suppl. 3 no. 404.
900 *CMS* V Suppl. 3 no. 395.
901 See Chapter 2, pp. 121–24, 152–53.



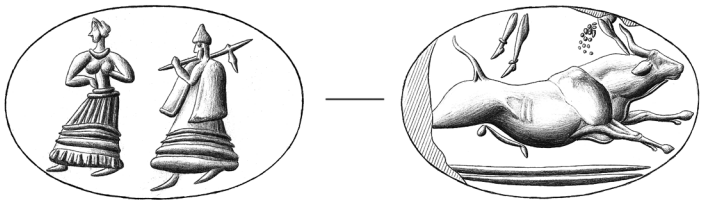
II,7 16 — II,7 37



II,7 16 — II,7 38



II,7 16 or II,7 17 — II,7 37



II,7 17 — II,7 38

Fig. 105. Seal impressions from Kato Zakros, House A: *CMS* II7, nos. 16 and 37 attested on eleven flat-based nodules (HMs 17/1, 4, 5, 12, 17/29, 18–20, 27, 31, 33); *CMS* II,7 nos. 16 and 38 attested on flat-based nodule HMs 17/15; *CMS* II,7 nos. 16 or 17 and 37 attested on flat-based nodule HMs 37/1; *CMS* II,7 nos. 17 and 38 attested on 18 flat-based nodules (HMs 17/2, 3, 8–11, 13, 14, 16, 17, 21, 22, 24–26, OAM AE 1199p, 1199z, without inv. no.), but also on three two-hole hanging nodules (HMs 17/6, 7, 34) (*CMS* Archive).

constitute a group or a category. For a category to be created, one would have to come up with more and potentially specific criteria other than the common theme. Among the Akrotiri sealings, bull-themed impressions abound (*Fig. 108*), while some fragmentary impressions coming from different seals could be mistaken for one another; yet, it is clear that none of the seals copied any of the others, that they all fell within close thematic relevance to one another, but under no circumstances can or should they be grouped together.

Second phenomenon: the intentional duplication of specific seals that, as Weingarten suggested, were meant to replace a seal of similar capacity or function within the administrative system. These seals would fall under her term 'look-alikes', but since there seems to have been intentional copying, they qualify as true replicas, i.e. copies of original seals. These 'look-alikes' can be discerned among the Zakros material, where the copies of three specific seals that had been jointly used were made to be used again all together (*Fig. 104*).[902] The degree of similarity or differentiation between motifs can admittedly be subjective, but the Zakros material leaves little room for subjectivity on the matter. What appears to have caused the mixing up of the seals formerly known as 'replicas' with 'look-alikes' is the fact that among similarly-themed seal impressions, such as those from seals sharing the bull-leaping theme (the first phenomenon, *Fig. 66*) we also encounter 'look-alikes' (the second phenomenon, *Fig. 104*) which seem to have filled in for one another (*Fig. 105*). The two phenomena therefore are different, the former being broader than the latter, but they also intersect. As stressed previously, this phenomenon is nowhere to be detected among the Akrotiri sealing material.

Third phenomenon: the one that is of paramount interest to the Akrotiri material. It consists of signet rings that stamped sealings which were subsequently found in different locations in Crete, as well as Akrotiri. The ring with the chariot scene attested at Akrotiri was also used to seal two flat-based nodules found at Agia Triada,[903] and four flat-based nodules found at Sklavokambos.[904] Further cases exist where the very same ring had been used to stamp sealings found at different locations, naturally giving rise to much scholarly interest (*Fig. 106*).[905] To date four matches have been established — two bull-leaping scenes, a chariot scene, and a combat scene — distributed on different sites: Agia Triada, Gournia, Sklavokambos, Zakros (palace), Knossos, and now, Akrotiri in Thera. Some consternation has arisen from the fact that the Akrotiri impressions are dated, along with the final volcanic destruction of the site, to a mature phase of LM IA, whereas the sealings found on Cretan sites come from LM IB destruction horizons.[906] This leaves a gap of some 80–120

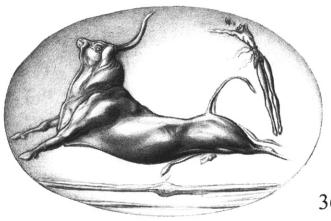
902 But they appear to have existed already among the Phaistos Protopalatial material (Weingarten 1992, 32; Relaki 2012, 308–13).

903 *CMS* II,6 no. 19: it was the sole impression on one nodule (HMs 591), and on a second nodule (HMs 516) it was paired with another ring (*CMS* II,6 no. 41).

904 *CMS* II,6 no. 260: the sole impression on HMs 632–635.

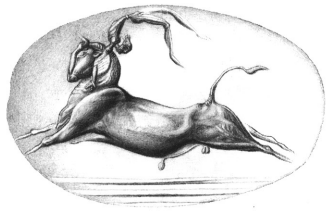
905 For all the basic facts, see Krzyszkowska 2005a, 188–92 and nos. 368–371 (reproduced here as *Fig. 106*, with adaptation).

906 Although the Akrotiri LM IA volcanic destruction and the widespread LM IB destructions in Crete are generally viewed as events distant in time, a recent study has proposed their (near) synchronization (Platon 2011).



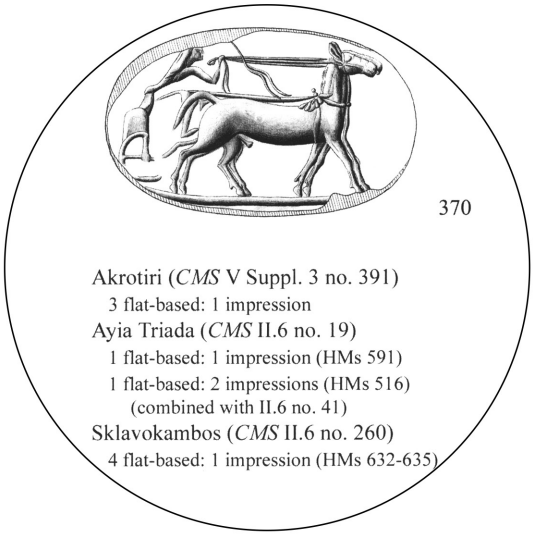
368

Ayia Triada (*CMS* II.6 no. 43)
3 flat-based: 1 impression (HMs 497-499)
Gournia (*CMS* II.6 no. 161)
1 nodulus (HMs 101)
Sklavokambos (*CMS* II.6 no. 259)
2 flat-based: 1 impression (HMs 628-629)
Zakros Palace (*CMS* II.7 no. 39)
1 *nodulus* (HMs 1051)



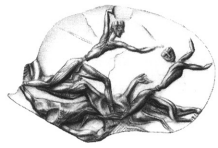
369

Ayia Triada (*CMS* II.6 no. 44)
1 flat-based: 1 impression (RMP 71974)
Gournia (*CMS* II.6 no. 162)
1 flat-based: 1 impression (HMs 102)
Sklavokambos (*CMS* II.6 no. 255)
1 flat-based: 1 impression (HMs 612)



370

Akrotiri (*CMS* V Suppl. 3 no. 391)
3 flat-based: 1 impression
Ayia Triada (*CMS* II.6 no. 19)
1 flat-based: 1 impression (HMs 591)
1 flat-based: 2 impressions (HMs 516)
(combined with II.6 no. 41)
Sklavokambos (*CMS* II.6 no. 260)
4 flat-based: 1 impression (HMs 632-635)



371

Ayia Triada (*CMS* II.6 no. 15)
3 flat-based: 1 impression (HMs 526/1-3)
2 flat-based: 2 impressions (HMs 595-596;
combined with II.6 no. 4, here **245**)
Knossos (*CMS* II.8 no. 279)
2 single-hole hanging (HMs 369, 1275)

Fig. 106. Impressions of four different rings, the multiple attestations of which were found in different sites in Crete and, now, Akrotiri (after Krzyszkowska 2005a, 190 nos. 368–371; image courtesy of O. Krzyszkowska).

years between the use of the chariot scene ring for the Akrotiri nodules and those recovered from Agia Triada, Gournia and Sklavokambos.[907]

907 The matter from the point of view of the Akrotiri sealings is discussed in Karnava 2011. The discrepancy between ^{14}C 'high' (most recently supported by Friedrich *et al.* 2006) and traditional 'low' chronologies offered for the volcanic demise of Akrotiri has been debated *ad nauseam*. An interesting discussion took place in *Radiocarbon* 54 (2012, especially articles by Höflmayer and Wiener). More recently, another round of papers dismissed the 'high' date (*Antiquity* 88.339 [2014]: 267–91), which was then further supported by Manning *et al.* 2014; now, see also Mühlenbruch 2017. The most vocal advocate of the 'low' chronology has been Warren (more recently: 2010) with emphasis on the archaeological evidence. So far it has been easier and less controversial to establish the time of the year during which the destructive eruption occurred (early summer: Panagiotakopulu *et al.* 2013) rather than the year itself.

Although the primary data for our inquiries is now documented to a high standard, the picture regarding Cretan Neopalatial administration is no clearer. Since Akrotiri is located outside Crete it offers another parameter to questions concerning the role and purpose of such sealings. Matters are complicated enough when dealing with the Cretan evidence; and there is certainly no consensus as to the political situation during the *floruit* of Minoan culture. The perennial question remains unchanged: are we seeing a single political authority based at Knossos, administering the whole island and even Akrotiri; or a decentralized model of political organization, where the dispersal of administrative documents in multiple sites points to a fragmented political landscape? Furthermore, this question can now be posed for both LM IA and LM IB, since our evidence spans the two periods.

STAMPING PATTERNS AMONG THE AKROTIRI FLAT-BASED NODULES

One of the primary questions that defined the present study is the following: are the 67+ flat-based nodules in D18b a single hoard, or do they present characteristics that hint at some sort of collection, comprising homogeneous and/or heterogeneous specimens of sealings? One possibility is that all the nodules were brought together in a single journey from Crete. Alternatively, they might have been imported in batches, or even singly, over an unknown period of time, yet ended up being stored together with previous shipments. Concerning their point of origin, it is also worth asking whether they all came from the same locality on Crete. Even if this could be resolved definitively, the problem still remains as to whether they represent a single event or were made at different points in time, collected and subsequently dispatched.

It is clear that these issues concern the potential existence and maintenance of archives in the Minoan world, and how these were formed. For instance, what are we to make of the 555 nodules found in a single hoard in Zakros' House A, and the 73 nodules from Akrotiri D18b? What time span do they represent, how long did it take for them to be accumulated, and how were the sealings distinguishable from one another, if at all, once they entered their archival resting place?

In attempting to answer some of these questions, this study has concentrated on how flat-based nodules, which constitute the majority at Akrotiri, behave, i.e. whether any repetitive phenomena in seal use are revealed. Repetition would betray stamping patterns and is thought to reveal information about administrative habits and practices.

Clay Paste Varieties among the Flat-Based Nodules

The Akrotiri nodules are unfired, since we have no evidence of any fire destruction that preceded the final volcanic destruction.[908] The ultimate proof for the absence of high temperatures, even during the precipitation of volcanic materials during the eruption, is the excellent preservation of organic materials — wooden beds and musical instruments;[909]

908 See also Chapter 2, p. 81.
909 Mikrakis 2007.

Clay Paste	Specimens	Clay Colour	Inclusions	Observations
A	**N1–N4, N8, N11–N44, N63, N66–N67, N72–N73**	reddish-brown	no (none visible)	black speckles on the surface (organic residues) on almost all specimens
B	**N5–N7**	yellowish-brown	no (or very few)	–
C	**N9, N45–N62, N65, N68**	reddish-yellow	sizeable	with pores/voids resulting to a sponge-like clay paste
D	**N69**	reddish-yellow	no (or very few)	black speckles on the surface (organic residues)
E	**N70**	reddish-brown	no (none visible)	black speckles on the surface (organic residues)
F	**N74**	brown-red	no (or very few)	–
G	**N75**	red-brown	one large-sized	–
uncertain	**N10, N71**	brown-red, reddish-brown	no (none visible)	–

Table 3. Clay pastes among the Akrotiri flat-based nodules.

straw baskets; ropes and strings made of plant fibres, etc. — in open spaces of the settlement as well as house interiors alike.[910] In our case this means that the clay sealings, as objects that were intentionally left unfired in the first place, preserve the original colour of the clay, which is unusual for clay material from archaeological sites.

At first glance the clay of all the nodules appears uniform and was invariably described as 'chocolate brown' or *rotbraun* in initial presentations.[911] Nonetheless, more meticulous examination of the Akrotiri sealings for this study by this author has lead to the observation that more than one clay paste is discernible macroscopically among the flat-based nodules retrieved in Room D18b. More specifically, at least three qualities of clay paste are clearly distinguishable, and even more are suspected (*Fig. 107*). The differences observed among clay qualities are not only based on dissimilarity in the coloration of the nodules, but also in their texture; the latter were visible on the surface of the nodules as well as their interior. As a general observation, the clay of the nodules is relatively pure in two of the three varieties (A, B) with few or no inclusions at all added. The clay colour and variations in inclusions could suggest multiple sources for the primary material that is clay, and/or diversified preparation of the clay paste. The clay pastes can be seen in *Table 3*.

910 Michailidis – Angelidis 2006.
911 Doumas 2000b, 59; *CMS* V Suppl. 3 nos. 391–405; Karnava 2008, 381: 'same clay'.

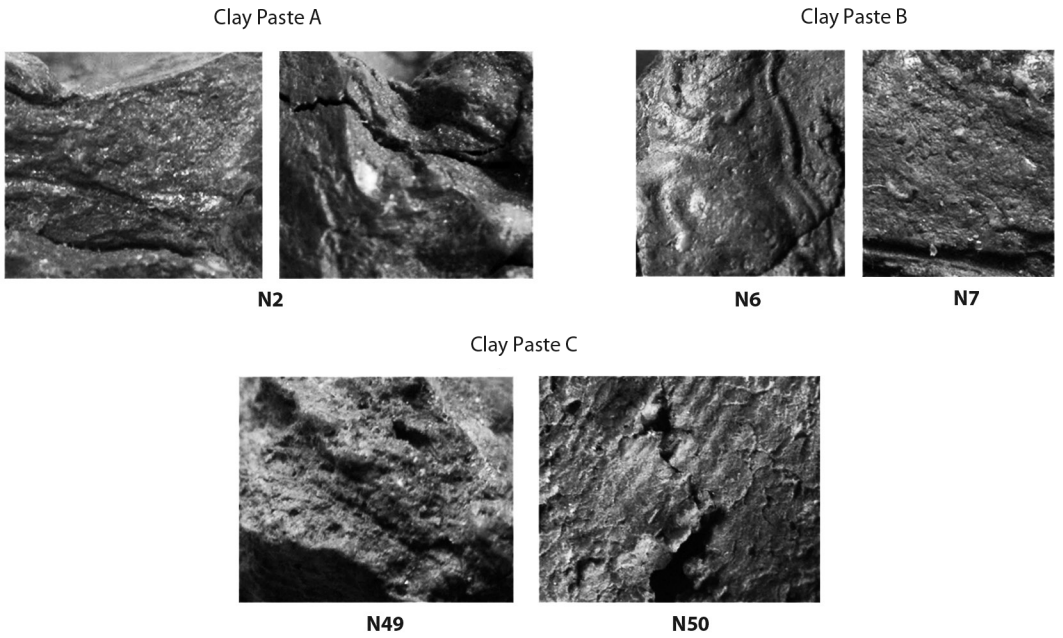


Fig. 107. Clay Pastes A–C attested in the Akrotiri nodules (Akrotiri Excavations Archives/*CMS* Archive, photos by A. Karnava).

Apart from the macroscopic investigation, non-destructive petrological and chemical analyses have been conducted on a number of nodules from Akrotiri and also from different Cretan findspots. The results of these investigations are still pending, but are expected to localize the manufacture of the sealings and hence of their specific origins(s) within Crete.[912]

The distinction in clay pastes, combined with the preliminary results from the petrological and chemical analyses on the Akrotiri nodules,[913] demonstrate that determining the specific provenance of the Akrotiri sealings within Crete is more complicated than previously thought. The fact that different clay pastes co-exist within the same archival deposit, as at Akrotiri, shows that the sealings represent different events in space and probably also in time.[914] The minimal differences between Clay Pastes A and B could point to a provenance within the same site or area in Crete, but might, alternatively, represent a different dispatch or a different point in time.

912 Panagiotopoulos – Goren 2008; Goren – Panagiotopoulos 2009; Tsangaraki 2010a, 319. Some of the information from the preliminary presentation of these studies has been taken up by Weingarten 2010a, 398, where the Akrotiri sealings are designated as 'not local'. In addition, however, Weingarten mistakenly adds that 'The clay of (all but one) of the sealings, according to preliminary analyses, has been traced to north-central Crete, that is to say, the Knossos area.' However, the analyses undertaken by Panagiotopoulos and Goren involved samples from a limited number of sealings from Akrotiri (less than 20) (Panagiotopoulos, pers. comm.). The precise methodology and results of this investigation remain unpublished.

913 Panagiotopoulos – Goren 2008; Goren – Panagiotopoulos 2009.

914 This suggestion finds further support in evidence from the sealings of House A in Kato Zakros (Anastasiadou, pers. comm.).

The clay pastes of the Akrotiri sealings are noted in the Catalogue and will also be discussed later in this chapter, in connection with observations on the stamping patterns found on these sealings.

Pairs of Administrative Seals: Multiple/Dual Stamping

Clay provenance apart, it was already apparent at the initial presentation of the Akrotiri nodules — before they had all been numbered and/or joined[915] — that the overwhelming majority had been stamped by multiple pairs of seals, notably six different pairs, which would normally involve the use of 12 different seals.[916] Closer inspection, however, revealed that three of the seals used actually participated in more than one pair: thus the total number of seals involved in stamping these sealings was, in fact, only nine (*Fig. 108*).[917]

An obvious question at this point is what each impression, i.e. the seal from which it came, represented. It is certain that the very establishment of an administrative system attests to a level of complex and impersonal handling of affairs, where a person's presence or 'word' would not suffice for the execution of an official transaction. Either it would have been impossible for the individuals responsible to be present at all times and at all occasions, or the sheer volume of transactions would have been too large to handle on the basis of oral communication.

The existence of organized administrative state systems is posited for Crete on the basis of the invention of writing, i.e. around the turn of the third to second millennia BC; the institution of writing for book-keeping purposes was concomitant with the appearance of the palaces, the monumental buildings that supposedly functioned, *inter alia*, as the seats of administrative power.[918] The existence of a simple, yet effective administrative system even before the introduction of writing has also been suggested, on the basis of stamped clay 'documents'.[919] By the time the Akrotiri sealings were produced, i.e. the 17th or 16th century BC, administrative procedures in Crete already had a lengthy, complicated but, most importantly, seemingly uninterrupted history. It is widely accepted that the seals used to stamp the sealings were representative of an administrative role, that they symbolized a specific aspect of adminstrative responsibility through the process of authentication. A matter of debate, however, concerns the precise way the system was organized, and also what this organization indicates regarding the political, economic and social structures of the time.

915 Doumas 2000b, 63–64, table 1.

916 The practice has, of course, been noticed before and was given different names: 'multiple stamping' (Weingarten 1994a, 180–81, where it is erroneously described as a practice limited to Knossos and Zakros); 'dual-stamping' (Krzyszkowska 2005a, 165–67).

917 A similar chart appears in Weingarten 2010a, 397, fig. 1, where these sealings are called 'combination sealings'. The drawings of seal impressions included in her illustration are not shown to scale.

918 There is a rich bibliography on this much-debated topic, since the question permeates Minoan studies. The discussion mostly concentrates on whether state formation preceded the construction of the palaces, as well as what the process of this state formation entailed: see numerous papers in the volume Schoep *et al.* 2012, while some counter-arguments to this volume are thoroughly presented in Cherry 2009 and 2012.

919 Pini 1990, 35–37; Vlasaki – Hallager 1995; Schoep 1999a; Hallager 2000; the most recent discussion: Relaki 2009.

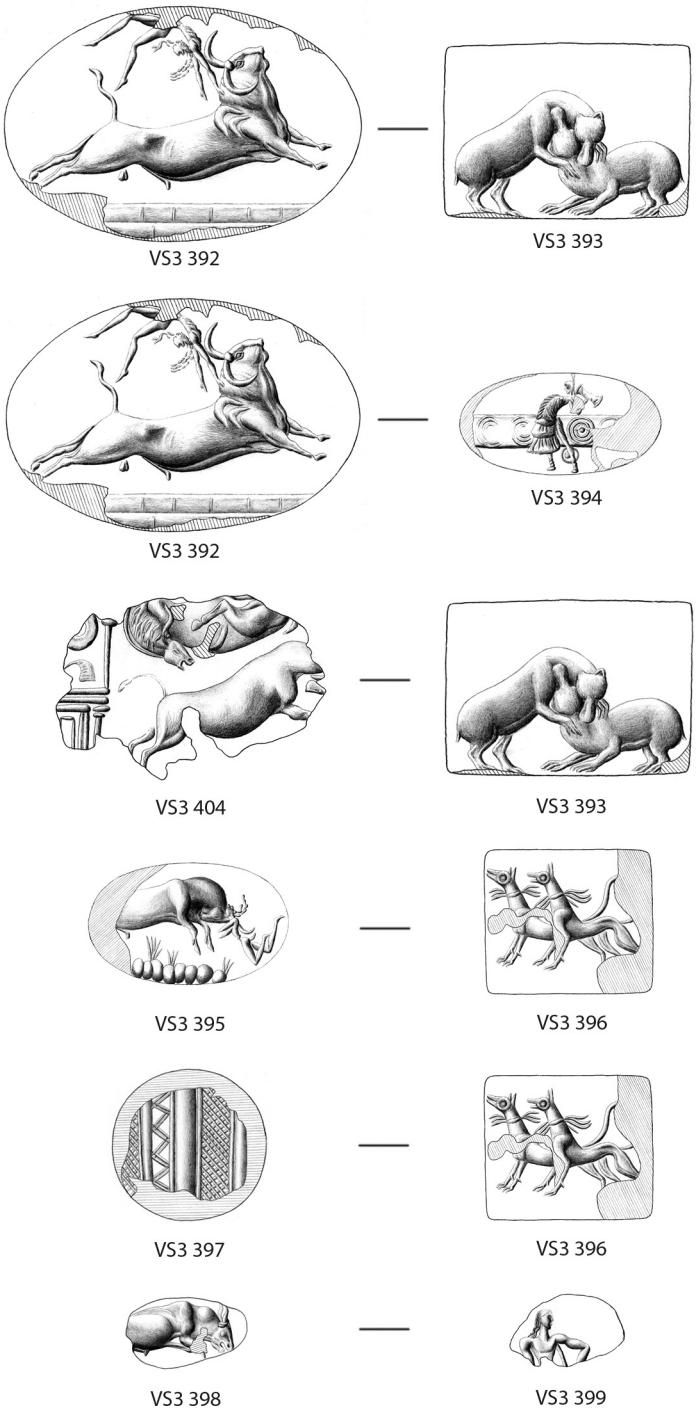


Fig. 108. The nine seals that had participated in six different pairs to stamp the majority of the Akrotiri flat-based nodules (*CMS* V Suppl. 3 no. 392 in two different pairs; V Suppl. 3 no. 393 in two different pairs; V Suppl. 3 nos. 394, 404, 395, 396 in two different pairs; V Suppl. 3 nos. 397, 398, 399); scale: 3:2 (*CMS* Archive).

A vital question in this respect remains whether seals used within the administrative realm functioned as tokens of personal guarantee or as a 'signature' of an impersonal administrative rank.[920] A case cannot be made for all Minoan seals at all times, but an instance stands apart: the Neopalatial seals and gold signet rings, some of which survived into the succeeding periods (LM/LH II–III) mostly as burial goods,[921] would appear to favour an interpretation of these seals at the time of their manufacture less as personal possessions and more as symbols of an impersonal authority of an apparently elevated status. To repeat an argument I have discussed elsewhere: the view that seals were personal possessions rests chiefly on the fact that they accompanied deceased individuals in graves, but this inference is not necessarily valid at all times and places in Minoan Crete. Suffice to say that in the few known graves of Neopalatial date, 'talismanic' seals are common; as previously noted such seals were hardly ever active in the administrative domain.[922] At the present state of affairs, although we can dispense with an *a priori* ownership claim for administrative seals, it is not easy to discern whether their use was personalized or had become impersonal; hence the person handling the seal is not referred to in this work as a seal owner.[923]

Furthermore, when we in modern scholarship constantly refer to seals, sealings and motifs, we try to make use of relatively neutral and thus objective terminology. But our desire for neutrality and objectivity causes us to lose track of the fact that seals were handled by actual people in an administrative capacity, not to mention that it places too much importance on seal motifs as the prime distinguishing factor among seals and their offshoots, seal impressions;[924] the case for this latter assumption remains to be made.

Behind each seal impression we will, therefore, postulate a seal bearer in an official capacity, an administrator.[925] But since the seal was an object that stamped, there is no way of excluding the possibility that more than one person handled the same seal; in such case, one would assume that the seal had become the vehicle of administrative responsibility regardless of the person/people behind it. This could be a second, more advanced level of the abstract symbolism of the authority for which the seal stood.

It has also been suggested that one person might have handled both seals that stamped a sealing, and that this was done simultaneously.[926] This suggestion was based on modern experiments, which showed that it was impossible for the nodule to maintain its shape if the seals were stamped consecutively.[927] The fact that the seals might have been impressed

920 In support of the latter explanation: Schoep 1999b, 213–14; Cain 2001, 28; Tsangaraki 2006, 293–94.

921 Krzyszkowska 2005a, 120. A worn gold signet ring with a bull-leaping motif recently found in a tomb at Pylos in Messenia of LH IIA date can be listed under this trend (Davis – Stocker 2016, 637–39, no. 1, fig. 9).

922 See Chapter 1, n. 331.

923 The seal 'owner' appears frequently in bibliography: Weingarten 1994a, 181; Drakaki 2005–06; Argyrou-Brand 2009, *passim*; Relaki 2012.

924 Krzyszkowska 2005a, 165–67.

925 The identification of clay tablet scribes with administrators who were concomitantly members of an elite body in Mycenaean society has been convincingly advocated (Bennet 2001). A corresponding combination has been attempted for seal owners and elite administrators again in the Mycenaean period (Flouda 2010).

926 Hallager 1996, 205.

927 Hallager 1996, 245–46.

simultaneously is, however, an entirely practical observation. It pertains to the materiality of the document sealing itself, but does not preclude the hypothesis that each seal was indicative of a different person's/official's authority, as Hallager himself recognizes. Furthermore, if simultaneous stamping was in fact a requirement, then it would have been impossible for one person to handle all three seals required for the three-seal flat-based nodules attested at Zakros.

Lastly, in view of how little we know and understand about Cretan Neopalatial administration, we cannot even assume that the nine seal bearers, who eventually paired up in multiple pairs to stamp documents, were active during the same period of time. Even, however, if they were not concomitantly active, it cannot be denied that they somehow belonged to the same administrative circle, since they intermingled and collaborated on more than one occasion.

Groups among the Akrotiri Flat-Based Nodules

The Akrotiri sealings provide still more clues which enhance our understanding of the material. It seems that the sealings produced by the nine seal bearers and, potentially, by two more seal bearers for reasons to be explained below, can be divided into two groups on the basis of three criteria: the direction in which the folded leather document was placed with regard to the nodule, the size of each nodule, and the differences in clay pastes:

Direction of the document with regard to the nodule: Careful examination of the two-seal flat-based nodules from Akrotiri revealed that there were two quite distinct ways of placing the clay on top of the leather document. In both cases a string was repeatedly wrapped around the folded document, on top of it was placed a moist clay lump, and then two seals were pressed against opposite sides of the lump. However, the seal impressions in the two groups of nodules were placed in different directions in relation to the orientation of the folded document (*Fig. 109*). In the first instance (left), the seal impressions were pressed perpendicularly to the direction of the string with which the document was tied, whereas on the second instance (right) they were stamped parallel to it. Whether this technical detail had some specific meaning, other than attesting to different ways of preparing the sealings, is impossible to say. The differences in the manufacture method, however, allow us to clearly distinguish one group of document sealings from another at Akrotiri. It should be added that the seals used on the sealings made by employing the first method are not attested on sealings made by the second method. This feature is combined with two other constant characteristics described immediately below.

Nodule size: The second criterion takes into consideration the measurements of the nodules and those of the sealed documents, which vary considerably (*Fig. 110*). In a number of cases the leather impression is entirely preserved, and often the clay also extended to cover the sides of the folded leather; hence, the dimensions of the original folded leather documents can also be measured with accuracy.

The nodules with perpendicular string are of significantly larger size and secured large- and medium-sized documents. They have an average length of 2.5 cm, average width of

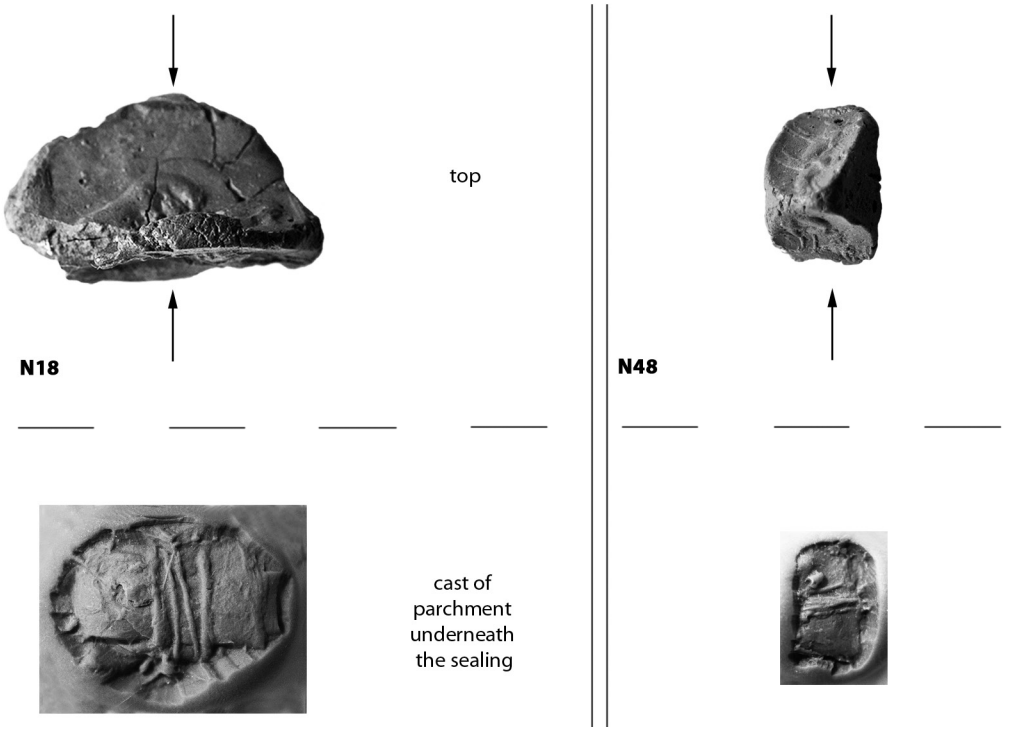


Fig. 109. Two different ways of flat-based nodule preparation: **N18**, seals stamped perpendicularly to the wrapped string; **N48**, seals stamped parallel to the wrapped string. Depicted are the tops of the nodules (top) and the the casts of the folded leather underneath the nodules (bottom); scale: 3:2 (Akrotiri Excavations Archives/*CMS* Archive, photos by A. Karnava).

Fig. 110. Complete flat-based nodules of two different sizes: large-sized **N18**, **N24**; small-sized **N48**, **N50**; scale: 3:2 (Akrotiri Excavations Archives/*CMS* Archive, photos by A. Karnava).

1.4 cm and an average height of 1.4 cm.[928] The folded documents had average dimensions of c. 2 × 1.1 cm.[929] The nodules with parallel string are of notably smaller size and secured equally small documents; they have an average length of 1.2 cm, average width of 1.5 cm and an average height of 1.2 cm. The folded documents measured c. 1 × 1.2 cm.[930]

The most remarkable difference is however that of the document dimensions. The first group of seals, those with the perpendicular string, sealed pieces of leather twice the length of those sealed by the second. This observation has direct repercussions regarding the size of the unfolded leather document itself, which was considerably larger in the former instance and smaller in the latter, and hence the amount of information it could carry would regularly vary.

One case stands apart among the small-sized sealings: sealing **N54** was stamped by a uniquely attested combination of two seals.[931] Although the nodule bears two seal impressions, it actually has a prismatic shape and could have accommodated three seal impressions. The shape of the nodule finds parallels among numerous Zakros specimens; it is described in *CMS* as *Vertikalscheibe, giebelförmig* and it is one of the cases when formal typology seems worth retaining.

As far as the dimensions of flat-based sealings found in Crete are concerned, Hallager calculated that the width of the folded leather imprint typically falls between 0.6 and 1.2 cm and its length between 1.0 and 1.5 cm. He observed that there existed also a small group with somewhat larger measurements, with a width between 1.2 and 1.8 cm and a length not less than 2 cm; these imprints are almost always found on one- and two-seal recumbent nodules with impressions from gold rings, quite often from the rings he designated as 'Knossian replica rings'.[932]

Different clay pastes: The division of the Akrotiri flat-based nodules into two distinct groups is further supported by the observations set out previously concerning the different clay pastes observed macroscopically. Clay Pastes A and B have a very similar appearance and are somehow connected through the fact that they were impressed by the same seal, the large ring with the bull-leaping scene.[933] Clay Paste B can be identified on one-seal nodules stamped by this ring, whereas Clay Paste A is attested among the two-seal specimens also stamped by the same ring.[934] It may be that the occasion when the ring administrator stamped single-handedly was altogether different, or took place at a different location from the one when this individual stamped documents jointly with any of the other seal bearers. The difference could be understood in that a variant source of clay paste had to be used.

928 The averages drawn from complete specimens: the lengths vary between 1.95 and 3 cm (23 specimens), the widths between 1 and 2 cm (21 specimens) and the heights vary between 0.95 and 1.8 cm (21 specimens).

929 The averages drawn from complete specimens: the lengths vary between 1.2 and 2.6 cm (18 specimens), and the widths between 0.85 and 1.9 cm (17 specimens).

930 The averages drawn from complete specimens: the lengths vary between 0.8 and 1.35 cm (8 specimens), and the widths between 0.9 and 1.4 cm (6 specimens).

931 *CMS* V Suppl. 3 nos. 396 and 397.

932 Hallager 1996, 143.

933 *CMS* V Suppl. 3 no. 392.

934 Two instances in which *CMS* V Suppl. 3 no. 392 is attested on nodules of Clay Paste A, which are listed under one-seal specimens, are too fragmentary to disprove the observation, since these could have been two-seal nodules.

But as far as Clay Pastes A/B *vs.* Clay Paste C are concerned, there are no seals attested in common. The conspicuous differences in clay qualities then (A/B *vs.* C), are accompanied by the exclusive use of certain seals.

The picture that emerges is that there were two distinct groups of nodules within the hoard retrieved in Room D18b, which, for the sake of convenience, will be dubbed 'Group 1' and 'Group 2' (*Fig. 111*). The groups are distinguished based on the following criteria in combination: the particular methods of manufacture that were employed regularly and consistently (*Fig. 109*); the size of the nodules, which accommodated seal impressions of different sizes and leather pieces of significantly different sizes (*Fig. 110*); and the different clay pastes used for the nodules (*Fig. 107*). Lastly, and more importantly, the two groups have no seal impressions in common. The numerous common characteristics of the nodules in each group separate them beyond any doubt. Nonetheless, it needs to be stressed that by no means do these groups represent 'types' or 'classes' of flat-based nodules: their interpretation is to be sought beyond typology. Furthermore, they do not represent provenance either, since more than one category of clay paste is accommodated under 'Group 1'.

The 'Group 1' seals stamped the large-sized sealings and reflect the activity of four different seals that produced 42 sealings. The small-sized sealings make up 'Group 2'; these were stamped by seven different seals, which produced 16 sealings. But the significance of this pattern is difficult to understand, if we include the fact that some seals from both groups were seemingly more 'active' and 'productive' than others. In an archival deposit we miss the temporal dimension in which the documents had been collected, an essential parameter for understanding this phenomenon.[935]

In both groups there is, however, a stamping pattern that is common: that of certain seals stamping sealings together with alternate 'seal-partners', therefore administrators collaborating with alternate administrators. Out of the 11 seals that are divided between the two groups, three seals had been active with more than one 'seal-partner': two of these seals had been active in 'Group 1'[936] and one in 'Group 2'[937]. Even though we do not yet understand what these 'groups' among the Akrotiri flat-based nodules represented, it seems certain that the stamping patterns observed were not random.

'First Rank'/'Dominant' *vs.* 'Second Rank'/'Subordinate' Administrators

The most interesting phenomenon among the Akrotiri document sealings does not, however, solely concern these different combinations of stamping partners. Rather it is the fact that one seal, specifically the large gold ring with the bull-leaping scene[938] — the constant partner in two different pairs of administrators — also stamped a series of

935 The notion of an 'intensive' seal use pattern introduced by Weingarten (1988, 11–14; 1990a, 107–12; Dionisio *et al.* 2014, 124), if valid, is impossible to relate to the present circumstances. The matter was also discussed in Chapter 2, p. 151.

936 *CMS* V Suppl. 3 nos. 392, 393.

937 *CMS* V Suppl. 3 no. 396.

938 *CMS* V Suppl. 3 no. 392.

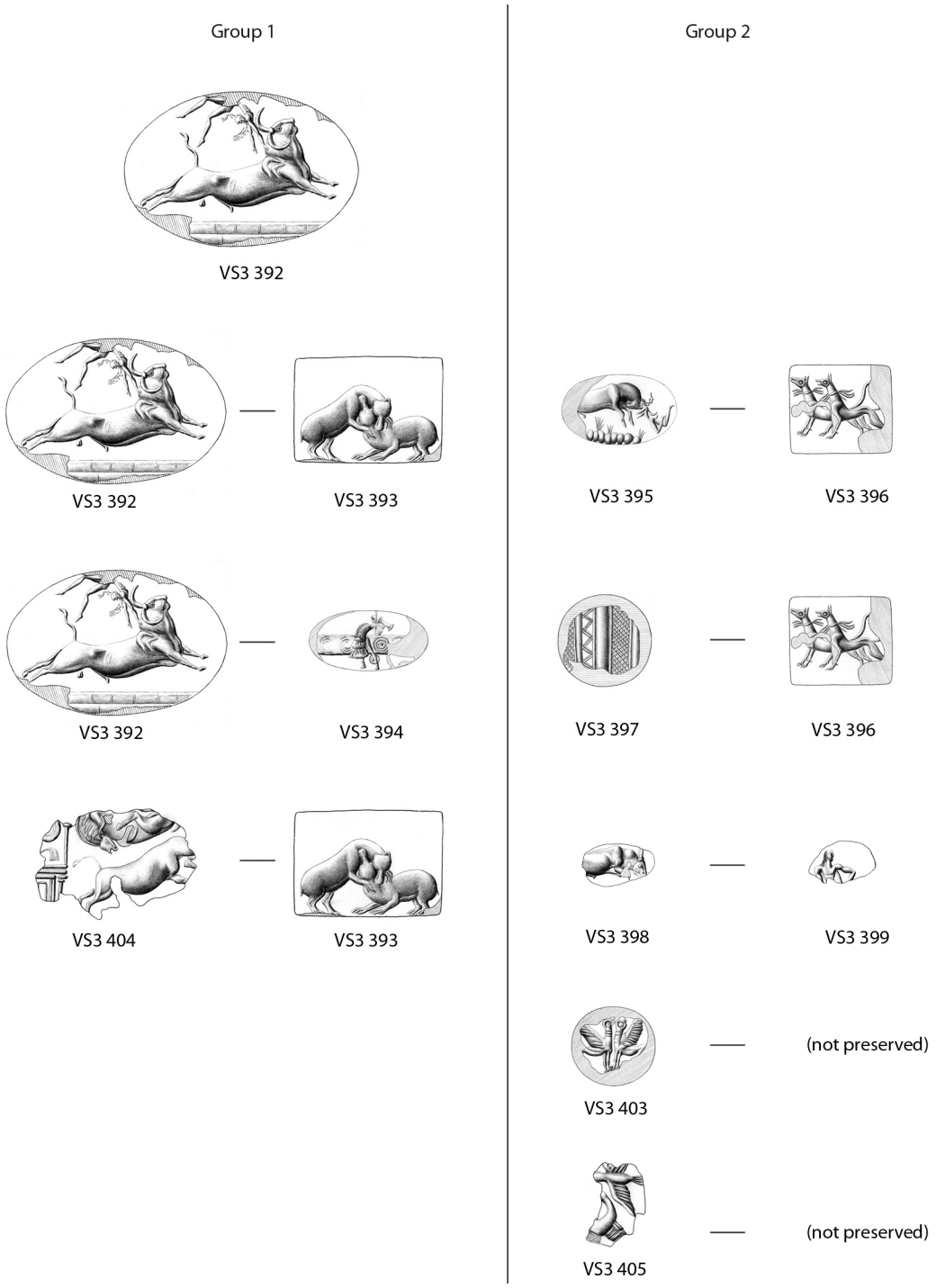


Fig. 111. Two groups of flat-based nodules and their respective seal impressions: 'Group 1' (*CMS* V Suppl. 3 no. 392 used single-handedly and in two different pairs; V Suppl. 3 no. 393 used in two different pairs; V Suppl. 3 nos. 394, 404); 'Group 2' (V Suppl. 3 no. 396 used in two different pairs; V Suppl. 3 nos. 395, 397, 398, 399, 403, 405); scale: 1:1 (*CMS* Archive).

documents without the collaboration of a second seal, i.e. the administrator with this ring also stamped single-handedly (*Figs. 108, 111*).

This undeniable fact is of major importance because it disproves a widely-held theory, namely, that two different systems existed within Neopalatial administration. In her attempt to define subtypes of flat-based nodules, Weingarten introduced the terms 'Single-Sealing-System' ('SSS') and 'Multiple-Sealing-System' ('MSS') to differentiate between one-seal and two-seal nodules (also three-seal nodules at Zakros, which are otherwise absent from the Theran material).[939] She suggested that the number of impressions on the nodules shows 'two quite different systems and, possibly, two different functions'. She also observed that no seal types overlapped in the two 'systems', which she considered to be a non-accidental fact.[940] Hallager, in turn, claimed that the types into which he divided the flat-based nodules were also real in the Minoan world.[941] He noted the exclusive use of certain seals on the different types he devised for flat-based nodules: rarely was a seal used for three-seal nodules found on two-seal or -seal nodules. In a similar line of thinking to Weingarten, he further suggested that the overlap of seal impressions between his 'standing' and 'recumbent' flat-based nodule categories was also rare and thus exceptional.[942]

The Akrotiri nodules, however, bear witness to the fact that overlaps do exist between one-seal and two-seal flat-based nodules: the 'bull-leaping' ring is found equally on one-seal and two-seal specimens. Moreover this is not an isolated exception; rather it can also be observed among flat-based nodules at Agia Triada[943] and Zakros (*Figs. 112, 113*).[944] Thus the occurrences cannot be considered accidental, but instead demonstrate that certain seals apparently had the administrative duty to stamp a sealing both on their own as well as together with another seal/administrator.[945] Now that all known Neopalatial sealings are presented in a uniform manner in the *CMS* volumes, we can see that certain seals were used in both Weingarten's sealing systems, the SSS and the MSS. Therefore, we can no longer speak of two separate systems.

The evidence from Akrotiri, supplemented by relevant evidence from Agia Triada and Zakros (and also Sklavokambos, see further below) demonstrates two vital facts. The first fact is that there existed an administrator who stamped on his/her own, and also jointly with other supplemental administrators. The second fact is that no evidence exists for these

939 Weingarten 1983b, 7–24; also described in Hallager 1996, 205.

940 Weingarten 1983b, 7, 103: 'the divide between MSS and SSS is all but absolute, implying that it is based on some absolute distinction'.

941 Hallager 1996, 150–51.

942 Doumas (2000b, 59) also follows Hallager in considering one-seal specimens as 'exceptional': he sees the Akrotiri sealings with two different seal impressions as a 'rule' and the ones with a single seal impression as an 'exception'.

943 *CMS* II,6 no. 15 stamps single-handedly, but also together with II,6 no. 4; II,6 no. 82 stamps single-handedly, but also together with II,6 no. 121; II,6 no. 19 stamps single-handedly, but also together with II,6 no. 41; II,6 no. 89 stamps single-handedly, but also together with II,6 no. 55.

944 *CMS* II,7 no. 7 stamps single-handedly, but also together with II,7 no. 11; II,7 no. 99 stamps single-handedly, but also together with II,7 no. 11, then together with II,7 no. 31 and then together with II,7 no. 81; II,7 no. 15 stamps single-handedly, but also together with II,7 no. 64; II,7 no. 33 stamps single-handedly, but also together with II,7 no. 41, then together with II,7 no. 51; II,7 no. 70 stamps single-handedly, but also together with II,7 no. 244; II,7 no. 110 stamps single-handedly, but also together with II,7 no. 116.

945 The phenomenon is further explored in Karnava – Blakolmer in preparation. A detailed account of all the relevant instances falls outside the scope of this monograph.

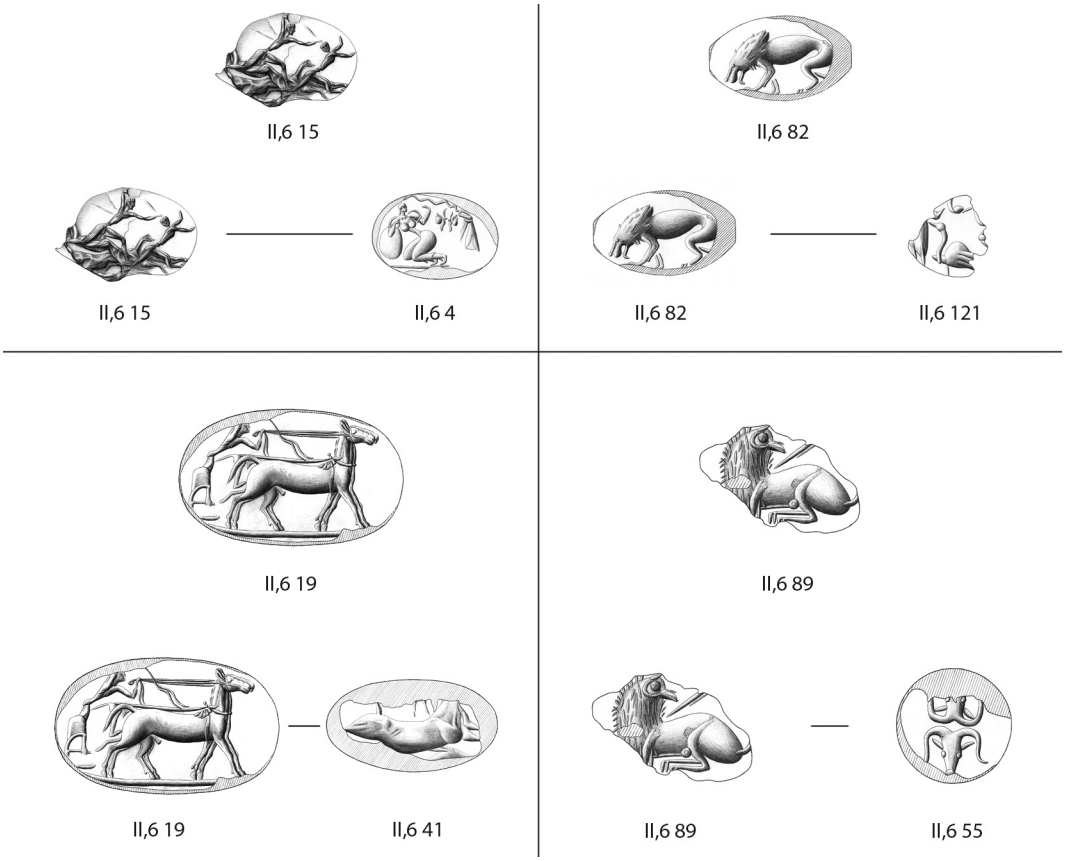


Fig. 112. Agia Triada pairs of administrators: 'first rank' administrators *CMS* II,6 nos. 15, 19, 82 and 89 stamped together with 'second rank' administrators II, 6 nos. 4, 41, 121 and 55 respectively); scale: 1:1 (*CMS* Archive).

supplemental administrators ever stamping anything single-handedly; instead they always stamp in conjunction with an administrator who could also stamp on his/her own. Both these phenomena can be observed without exception among the material from Akrotiri, Agia Triada and Zakros.

It seems, therefore, that there was at least one administrator, who had been active in preparing the Akrotiri flat-based nodules and had apparently possessed the authority to stamp sealings both on his/her own, as well as jointly with other, supplemental administrators. At present, the sole explanation that can be proposed for this phenomenon is that some administrators had greater authority than others, since they could act independently and without need for further verification from other administrators. If the stamping of a nodule served to verify or authenticate the transaction recorded on a leather document, it may be assumed that the administrator whose unassisted authentication was sufficient was a higher-ranking official than the one who never stamped alone but always functioned in a supplementary manner. If alternative explanations are to be sought, they would have to account for both these phenomena: the unassisted, single-handed stamping, as well as

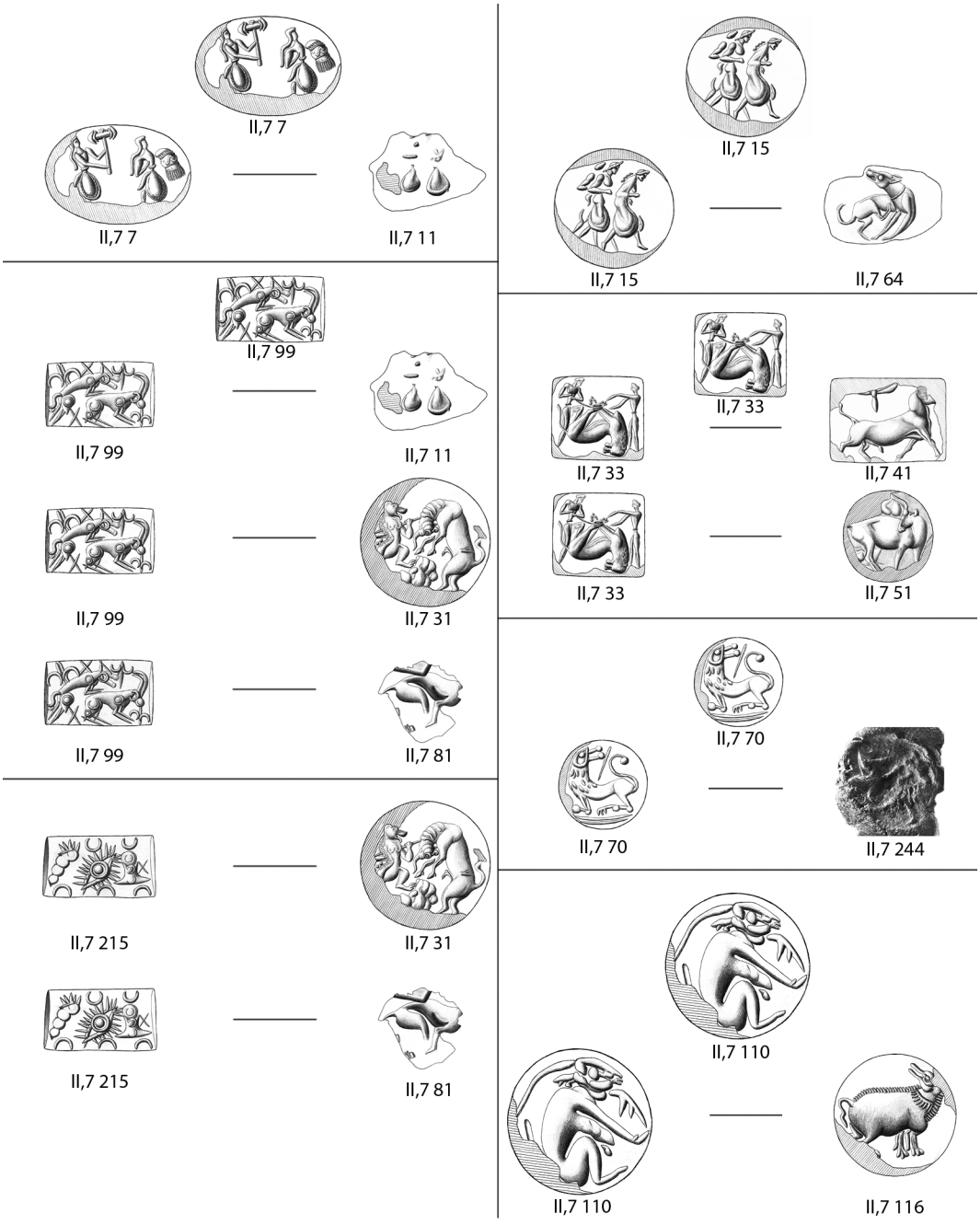


Fig. 113. Zakros pairs of administrators: 'first rank' administrators *CMS* II,7 nos. 7, 15, 70 and 110 stamped together with 'second rank' administrators II,7 nos. 11, 64, 244 and 116 respectively; 'first rank' *CMS* II,7 no. 33 stamped together with two 'second rank' administrators II,7 nos. 41 and 51; 'first rank' *CMS* II,7 no. 99 stamped together with three 'second rank' administrators II,7 nos. 11, 31 and 81. Since 'second rank' administrators *CMS* II,7 nos. 31 and 81 stamped also with II,7 no. 215, we assume that II,7 no. 215 is also a 'first rank' administrator, although no single-handed impressions of this seal are found; scale: 1:1 (*CMS* Archive).

the supplemented stamping, all attested among the Akrotiri, Agia Triada and Zakros flat-based nodules.

From the flat-based stamping patterns on these sites, the picture of a hierarchy of seals and therefore of administrators behind them emerges. We can call the administrator that apparently had a higher degree of responsibilities and authority a 'first rank' or 'dominant' administrator, and the ones that appear to have had less authority 'second rank' or 'subordinate' administrators (*Fig. 114*).[946] It could be that there were even more 'ranks' or degrees of administrative responsibilities lurking behind flat-based stamping patterns, but the 'ranks' currently attributed to these administrators refer to a hierarchical behaviour they exhibit in relation to one another.

It needs to be stressed that this hierarchy of administrative duties can only be detected among sealings of 'Group 1'. Although the phenomenon of alternate stamping partners exists among sealings of 'Group 2', no seal/administrator appears to have stamped anything on his/her own. If a hierarchy did prevail among the seals/administrators that produced the sealings of 'Group 2', it cannot be detected among the evidence to hand.

More 'Dominant' Administrators: An Emerging Model of Administrative Hierarchy

This hierarchy of administrative duties that emerges among the sealings of 'Group 1' has still more to it. So far it has been suggested that an administrator qualifies as 'first rank' if (s)he can stamp both single-handedly and in collaboration with those administrators defined as 'second rank' or 'subordinate' (*Fig. 114*). But this hierarchical arrangement can be taken a step further based on the observation that 'second rank'/'subordinate' administrators appear to stamp two-seal flat-based nodules only as supplemental forces to a 'first rank'/'dominant' administrator. In this respect, one of the previously-defined 'second rank'/'subordinate' administrators can be seen to join forces with yet another stamping partner, *CMS* V Suppl. 3 no. 404 (*Figs. 108, 111*). Although *CMS* V Suppl. 3 no. 404 did not stamp any of the Akrotiri sealings single-handedly, one can suggest that this seal/administrator also qualifies as a 'first rank'/'dominant' administrator, since (s)he collaborates with a 'second rank'/'subordinate' administrator. In a well-organized and strictly repetitive administrative system, such as the one we are seeing here, we have to assume that each administrator had specific and fixed duties, which would be repeatedly reflected in stamping patterns.

Through these intermingling stamping pairs we can isolate four seals, two of which qualify as 'first rank'/'dominant' administrators and two that qualify as 'second rank'/'subordinate' administrators (*Fig. 115*). One cannot fail to notice that both 'first rank'/'dominant' administrators had seals that were, in all probability, sizeable gold signet rings, a matter to be addressed further on.

And then comes the obvious question: can we place the administrator with the chariot ring inside this hierarchical system of administrative actions? The question is all the more important, since this ring is known to have stamped sealings found not only at Akrotiri,

946 Not to be confused with the characterization 'sealing leader', which defines 'those who used their seals most often' (Weingarten 2010b, 323).

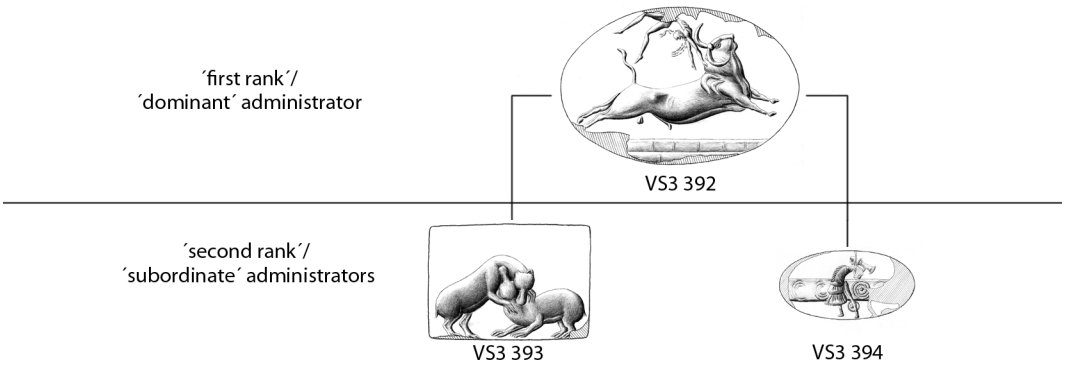


Fig. 114. A 'first rank'/'dominant' administrator *CMS* V Suppl. 3 no. 392, and his/her collaborators, 'second rank'/'subordinate' administrators V Suppl. 3 nos. 393, 394; scale: 1:1 (*CMS* Archive).

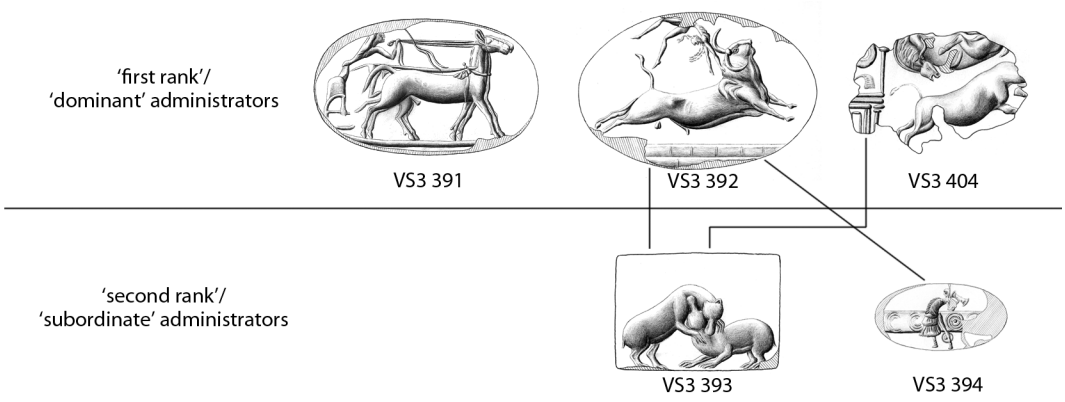


Fig. 115. Three 'first rank'/'dominant' administrators *CMS* V Suppl. 3 nos. 391, 392 and 404 and two 'second rank'/'subordinate' administrators V Suppl. 3 nos. 393, 394 among the Akrotiri flat-based nodules; scale: 1:1 (*CMS* Archive).

but also at Agia Triada, as well as Sklavokambos, after some generations had elapsed (*Fig. 106*). This unique instance in the Aegean of a seal having been used at distant time periods is inexplicable. The use of an older seal could point to matters of legitimacy of authority, which would be dealt with through the evocation of a recognized and respected symbol of a glorious past.[947] The ring with the chariot scene is attested on three specimens at Akrotiri, in each case being the only seal used, but the evidence from Agia Triada and Sklavokambos shows a more interesting picture. On five flat-based nodules, the chariot ring was used

947 Such interpretation has been offered for the use of older seals attested in the archives of Alalaḫ Level IV dating to the 15th and 14th centuries BC, whereby certain kings made use of seals of an ancestor or a predecessor (Postgate 2013, 385–86).

alone;[948] but in one unique instance at Agia Triada it is joined by a second seal and together they stamp a sealing (*Fig. 112*).[949]

Thus, while the ring with the chariot scene stamps single-handedly at Akrotiri, evidence from Agia Triada demonstrates that the individual using this ring behaves like a 'first rank'/'dominant' administrator. As previously described, the Akrotiri evidence points to the co-existence in the same archival deposit of two 'first rank'/'dominant' administrators, who collaborated with 'second rank'/'subordinate' administrators. This does not, of course, preclude the existence of a third 'first rank'/'dominant' administrator. But because the relevant evidence at Akrotiri and the Cretan sites comes from archival deposits separated by a considerable time span, differences could also be explained by developments in the adminstrative system over time. Neverthess, it is suggested here that the ring with the chariot scene should also be inserted in this hierarchical system of administrative actions (*Fig. 115*). The ring should probably join 'Group 1', since it is this group of sealings that exhibits a hierarchical structure.

THE POTENTIAL IMPORTANCE OF SEALS AS STAMPING AGENTS

In light of the previous discussion and the designation of certain seals as more important and higher ranking than others represented among the Akrotiri sealings, the question arises as to the nature of the seals used within the framework of this administrative hierarchy. How important, meaningful and/or distinctive were the size, the shape, the material, or even the motif of a particular seal?[950] Were the seals meaningful in their own right, i.e. does the choice of a seal or its attribution to a specific administrator reflect differences in socio-political status or administrative responsibilities?

The question can be tackled both with regard to the administrative scheme identified in the two groups of flat-based nodules, as well as with regard to the administrative hierarchy that emerged from the study of the Akrotiri flat-based nodules.

The Size of Seals and Seal Faces

Size seems to be a constant differentiating factor between the seal faces impressed in the two groups, but not always one among the seal faces of each group (*Fig. 111*). Thus the size of the large ring bezels of 'Group 1' appears imposing when compared to their more modest partners, but size among the pairs of seals in 'Group 2' does not vary significantly. It is probably no accident that differences in the size of seal faces are more evident in 'Group 1', where an administrative hierarchy between seal users has been suggested. It seems that the 'first rank'/'dominant' administrators made use of larger seals than the 'second rank'/'subordinate' administrators.

948 *CMS* II,6 no. 19 (HMs 591, Agia Triada); II,6 no. 260 (HMs 632–635, Sklavokambos).
949 On the two-seal flat-based nodule HMs 516, where *CMS* II,6 no. 19 stamped jointly with II,6 no. 41.
950 The relevant question posed for the Mycenaean period (Flouda 2010).

In 'Group 1' the 'first rank'/'dominant' administrators made use of metallic rings, which were probably gold, as are the majority of surviving Neopalatial rings.[951] These imposing rings stand in stark contrast to the hard stone cushion and the smaller-sized metal ring that were used by the 'second rank'/'subordinate' administrators. Notwithstanding doubts as to whether they ever served as true finger rings, owing to their small hoops,[952] they would certainly have made a more striking impression than those used/carried by the 'second rank'/'subordinate' administrators. These large gold rings could, therefore, have served a dual purpose: to demonstrate at a glance the status as 'first rank'/'dominant' administrator of their bearer; and to verify, through the large size of the impression, the administrative status of the person who had been involved in stamping, even when the seal or the seal bearer was no longer present.

Regarding the relationship between the two groups of sealings, we may observe that in 'Group 1' one of the 'second rank'/'subordinate' administrator seals corresponds exactly in size to a seal in one of the pairs of 'Group 2'.[953] This could be used to link the two groups in a further hierarchical chain, but there is simply no way of telling whether this had been the case.

The Shape of Seal Faces and the Seal Materials

At first glance, among the seals used in both groups, we see a predominance of oval-shaped metal faces,[954] and fewer round faces from hard stone seals.[955] The majority of oval-faced seals can be explained by the fact that most seals used for stamping the Akrotiri sealings were metal rings, probably of gold.

In at least three cases, some of these seals with oval and round faces are combined with hard stone cushions with rectangular faces; this applies in both groups.[956] If there is, however, a rule to be seen here, it is immediately disproven by a small-sized ring with oval face used by a 'second rank'/'subordinate' administrator, which accompanied an oval-faced seal of a 'first rank'/'dominant' administrator; this ring does come out in any case as a relative 'anomaly' in the neat and homogeneous pairs of seals and administrators of both groups on account of its theme (a cultic scene) and its manufacturing material (metal) (*Fig. 111*).[957] A note is reserved here with regard to the typology devised in the latest *CMS* volumes for subtypes of flat-based nodules:[958] the two-seal flat-based nodules stamped by gold rings with oval faces in combination with cushions all belong to Müller's *Vertikalscheibe, giebelförmige Variante* (gable-shaped/'standing' flat-based nodules), whereas the few flat-

951 Krzyszkowska 2005a, 127.

952 Krzyszkowska 2005a, 128–30. An interesting discussion also in Müller 2005a.

953 *CMS* V Suppl. 3 no. 394 of 'Group 1' and V Suppl. 3 no. 395 of 'Group 2', both of which measured 1.1 × 1.8 cm.

954 *CMS* V Suppl. 3 nos. 391, 392, 394, 395, 400, 404. The seal used on the unique one-hole hanging nodule also had an oval face (*CMS* V Suppl. 3 no. 401).

955 *CMS* V Suppl. 3 nos. 397, 403. The seal used for the unique direct sealing also had a round face (*CMS* V Suppl. 3 no. 402).

956 *CMS* V Suppl. 3 nos. 393 and 396, both used in two different pairs. The phenomenon is discussed in Dionisio *et al.* 2014, 124–25, where no hierarchical relationship is discerned between collaborating seals.

957 *CMS* V Suppl. 3 no. 394. See below, pp. 212–13, 218–19.

958 See Chapter 2, pp. 105–06; *CMS* II,7 pp. 272, 274, table 1; *CMS* II,6 pp. 349–60, 395, table 4.

based nodules stamped by the large gold ring in combination with the small gold ring, both with oval faces, belong to the subtype *Horizontalscheibe mit zweitem Abdruck* ('recumbent' flat-based nodule with two seal impressions).[959]

In any case, in most impressions neither the shape of the original seal face nor the material from which it was made are clearly discernible: consequently shapes and materials would hardly have made any difference once stamping had occurred. If any significance can be posited for the shape of seal or seal face, or even for the material from which it was made, this would only apply when the person carrying/using the seal was still present.

The Seal Motifs

The more vexing question is whether the motif, the theme of a seal's decoration and/or its complexity, was meaningful in some way. The question can work both ways, especially for the seals defined as belonging to 'first rank'/'dominant' administrators: were these administrators awarded motif-specific administrative insignia, or were they at liberty to use seals with motifs of their choosing? Were some motifs more important than others? Among the seal impressions termed here as 'first rank'/'dominant' administrators there is a chariot scene, a bull-leaping scene, and a fragmentary scene involving two bovines and a building (*Fig. 115*).

The importance of bull-related imagery and especially the efforts to connect it to Knossos and a presumed Knossian Neopalatial hegemony are almost commonplace in the literature.[960] There appears, however, to be a logical gap in the reasoning which claims that the bull symbolized the might of Knossos: what are we to make of the many other scenes depicted, in which no bulls at all appear? Assuming that the image of the bull represented the authority of Knossos, we are still left with the question what were other 'first rank'/'dominant' seal images supposed to stand for. Could they convey a message independently and regardless of their co-existence with bull-related images? Another problem with assigning a special importance to bull-related images is that a significant proportion of the seals attested on the Akrotiri sealings is bull-related anyway, to such an extent that it is not clear how the bull-related imagery stood out, if at all.

A common element among 'first rank'/'dominant' seal images appears to have been their narrative character. These motifs tell a story and represent an event which demonstrated a person's capacity to excel in an activity such as chariot-driving or bull-leaping,[961] or depict a scene combining standard narrative elements, for instance the theme of two bovines and that of a building. Yet this narrative character of 'first rank'/'dominant' seal motifs is not absent in the seals of 'second rank'/'subordinate' administrators either: the

959 A nodule of the same subtype is the two-seal flat-based nodule from Agia Triada HMs 516, stamped by the large golden ring with the chariot scene *CMS* II,6 no. 19 (the same as the one that stamped the Akrotiri specimens), jointly with II,6 no. 41 (a medium-sized gold ring, measuring 2.3 × 1.6 cm, with a bull-leaping scene). Whether there is some connection between the types of seals used by 'second rank'/'subordinate' administrators (whether cushions or metallic rings) and the subtypes of flat-based nodules defined and described in the *CMS* remains to be seen in future investigations.

960 Betts 1967, 25–27; Hallager 1996, 209; Hallager – Hallager 1995.

961 Doumas wondered whether any such specific motif was meant to stand as a symbol for some capacity of the owner (the case of bull-leaping, chariot racing, etc.), and pondered whether the sealing certified championship in any of these games (Doumas 2000b, 63–65).

cultic scene with the part of a procession appears no less narrative in character than the seals of 'first rank'/'dominant' administrators.[962]

Earlier discussions on the role of specific iconographic choices on seal faces include notions of the popularity of motifs, their possible religious significance, or being symbolic of 'the personal insignia of an individual ruler or lesser official, even of a dynasty or group of officials'.[963] Alternative explanations concern the establishment of a 'royal' iconographic vocabulary by LM IA in the Knossian palatial workshops, which was passed on in standardized versions to all categories of artistic expression, with relief wall paintings seen as being at the forefront of innovations that directed trends towards the small-scale figurative craftsmanship. This interconnected system functioned collectively as a visual mechanism for propaganda and small-scale representations, such as the ones attested in seal imagery, are thought to have served as long-distance carriers of the prototypes.[964]

Some preliminary, generic thoughts on the overall imagery found on the Akrotiri sealings stressed its insistence on the human environment and its activities, as opposed to abstract, natural and probably more 'neutral' themes.[965] The scenes chosen as themes for the seals that stamped the Akrotiri sealings conveyed messages of power, competitiveness and aggression; these messages were not aimed specifically at Akrotiri and/or Thera, but were nevertheless recurrent in Minoan Crete during the Neopalatial period.

962 See above, p. 211, and below, pp. 218–19.
963 Betts 1967, 22.
964 Blakolmer 2007, 42–43.
965 Georma *et al.* 2014. An interesting take also in Shapland 2010b.