

THE IMPORTANCE OF CLAY SEALINGS IN THE ANCIENT ADMINISTRATION

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The increase in the number of clay sealings and the studies arising from them have given us data for new perspectives of research and new working hypotheses¹. In spite of their insignificant physical appearance the clay sealings, if read carefully, reveal a great deal about the evolution of the administrative system and the conceptual mechanism that is associated with them.

Many clay sealings have been found in almost every ancient centre of Africa, Europe and, especially, Asia (*Fig. 1*). Until now scholars have concentrated on only one aspect of the clay sealings: the seal impressions. The historical and art-historical trend has prevailed: the seals impressed on the clay sealings are sometimes real masterpieces of composition and relief and the scenes represented are extremely interesting for the study of ancient iconography. They are often the product of qualified and cultured artists.

The result is that this trend has led to the study of seal impressions together with the seals: catalogues usually class the two categories of objects as the same and the clay sealings themselves are ignored to such an extent that published drawings and photographs refer only to the seal impression. Therefore, often the chance to exploit all the possibilities that the examination of the complete meaning of the clay sealing could offer, particularly as evidence of economic control and of synthesis of abstract concepts of very complex organization, has been missed.

Already during excavation one has to be extremely careful. Clay sealings are often in poor condition or found in debris or mixed with clay from dried bricks that have been dissolved and washed away by rain water. Sometimes they can even be mixed with lime. Therefore one must excavate very carefully in order not only to save very fragile objects which would otherwise be lost, but also to collect the highest quantity of data referring to the stratigraphical position of each object and to the elements associated with them. From the location of each clay sealing it is not only possible to get important information on the nature of the sealed objects, but also to reconstruct approximately the arrangements of the archives before their destructions. This situation is quite frequent especially if high quantities of sealings were accumulated and later thrown away as for example at Arslantepe² in Turkey, Phaistos³ in Crete, and Uronarti⁴ in Nubia, where

* Map, drawings and photographs by the authors.

In addition to the standard abbreviations the following is used:

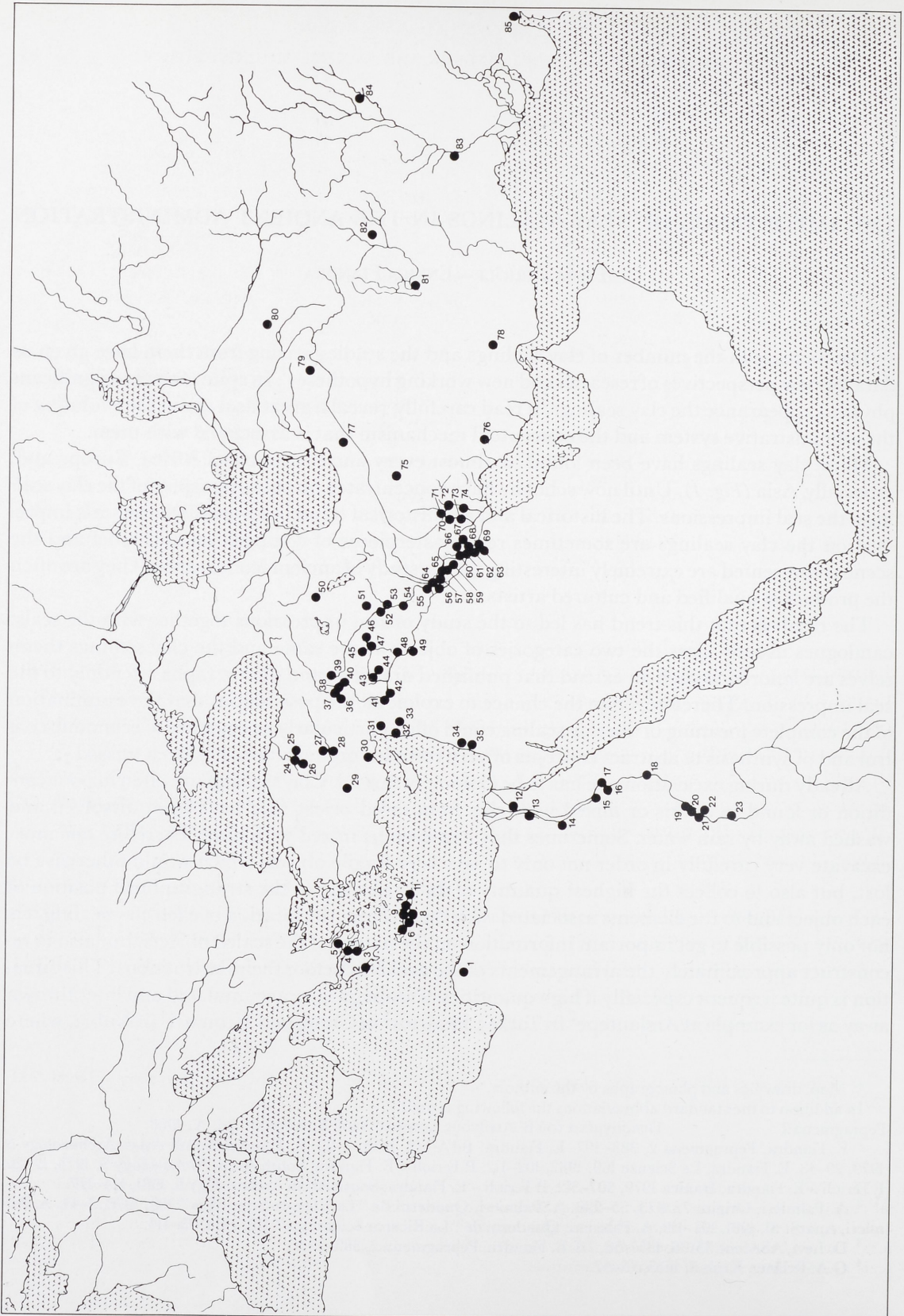
Pepragmena 2 Πεπραγμένα του Β' Διεθνούς Κρητολογικού Συνεδρίου, Bd. A', 1968.

¹ E. Fiandra, Pepragmena 2, 383–397. E. Fiandra, Bd'A 1/2, 1975, 1–25. E. Fiandra, South Asian Archaeology 5, 1979, 29–43. E. Fiandra, Le Scienze 169, 1982, 102–112. P. Ferioli – E. Fiandra, South Asian Archaeology 3, 1975, 12–26. P. Ferioli – E. Fiandra, Iranica 1979, 307–312. P. Ferioli – E. Fiandra, South Asian Archaeology 6, 1981, 124–127.

² A. Palmieri, Origini 7, 1973, 55–228. A. Palmieri, Quaderni de "La Ricerca Scientifica" 100, 1978, 3–44. A. Palmieri, AnatSt 31, 1981, 101–119. A. Palmieri, Quaderni de "La Ricerca Scientifica" 112, 1985, 75–114.

³ D. Levi, ASAtene 35/36, 1957/58, 7ff. E. Fiandra, Pepragmena 2, 383–397.

⁴ G.A. Reisner, Kush 3, 1955, 26–52.



LIST OF THE SITES

1 Cyrene	23 Kerma	45 Chagar Bazar	67 Lagash
2 Pylos	24 Alaca	46 Tell Barri	68 Larsa
3 Lerna	25 Mashat	47 Tell Brak	69 Ur
4 Mycenae	26 Boğazköy	48 Shek Hamad	70 Susa
5 Thebes	27 Alishar	49 Mari	71 Sharafabad
6 Monastiraki	28 Kültepe	50 Bastam	72 Tchoga Mish
7 Phaistos	29 Karahöyük	51 Tepe Gawra	73 Haft Tepe
8 Myrtos	30 Tarsus	52 Ninive	74 Tchoga Zanbil
9 Knossos	31 Alalah	53 Nimrud	75 Syalk
10 Mallia	32 Ugarit	54 Ashur	76 Malyun
11 Zakros	33 Ebla	55 Tell ed Der	77 Tepe Hissar
12 Giza	34 Megiddo	56 Babilonia	78 Tepe Yaya
13 El Lahun	35 Shechem	57 Kish	79 Namazga
14 Tell Amarna	36 Arslantepe	58 Abu Salabikh	80 Togolok
15 Abydos	37 Imamoğlu	59 Nippur	81 Shar-i Sokhta
16 Naqada	38 Değirmentepe	60 Fara	82 Mundigak
17 Deir el Medina	39 Norshun Tepe	61 Uruk	83 Mohenjo Daro
18 Elefantina	40 Pirot	62 Tell Obeid	84 Harappa
19 Bubon	41 Habuba Kabira	63 Eridu	85 Lothal
20 Uronarti	42 Tell Fray	64 Seleucia	
21 Semna	43 Tell Chuera	65 Jamdet Nasr	
22 Kumma	44 Tell Alaf	66 Umma	

thousands of clay sealings were found. These sites are among the most important and are fundamental for our research. The clay sealings from Phaistos are the best preserved and the most informative. Nevertheless, the clay sealings recently discovered at Arslantepe provide new information concerning the origins of administration because of their antiquity (they date from the 4th millennium B.C.) and their context. They represent a link between the Mesopotamian and the Mediterranean areas, even though they have their own cultural autonomy which is of economic interest owing to the presence of metal mines. This exceptional archaeological discovery will change the view of the supposed Mesopotamian origins of Western civilization.

The discovery in 1984 of the undamaged palatial storage-rooms with clay sealings still on the containers confirmed our hypothesis derived from the study of the administrative handling of the goods kept in the storage-rooms and controlled through the impression of seals. The other exceptional discovery of sealed storage-rooms found in 1942 by Ernst Kirsten at Monastiraki confirmed the same theory⁵.

⁵ E. Kirsten, Die Grabung auf der Charakeshöhe bei Monastiraki, in: F. Matz (ed.), Forschungen auf Kreta 1942 (1951), 27-61.

◀ *Fig. 1* The map, without chronological differentiation, shows sites from which clay sealings with seal impressions used for administrative functions have been found. Sites where the system of control through clay sealings was in use should have been evenly spread throughout the east and this will be verified as research goes on. Until now sites with clay sealings have not been found in the western area. Nevertheless, from the Neolithic Period on, the Balkan area has yielded seals supposedly used for administrative controls.

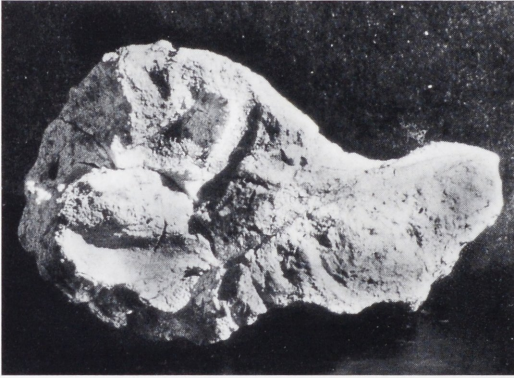


Fig. 2.3 Back of a clay sealing with the impression of the object it had sealed. It was placed at the top of a sack fastened with a cord. One can see that the cord was simply wound around the top of the sack without knots in order to make easier the frequent openings and closures of the containers. From Arslantepe (Turkey).

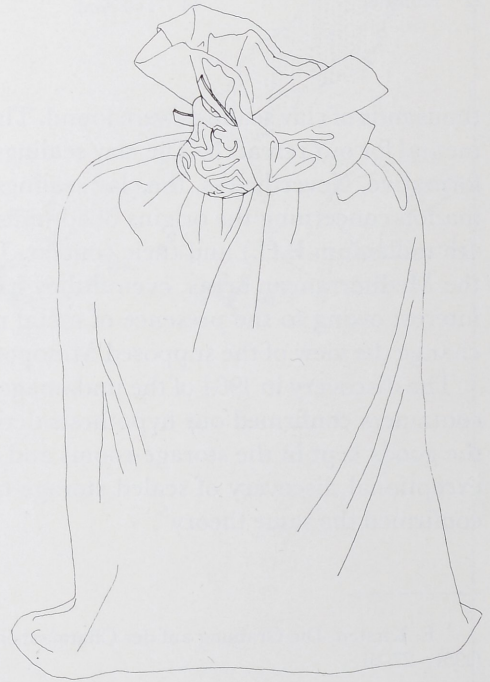


Fig. 4.5 Reconstruction of the closure of a sack obtained from the observed of the back of the clay sealing in Fig. 2.

Fig. 6 Clay sealing placed inside the neck of a vase (stopper), from Arslantepe. From the impression left on the back of the clay sealing a type of jar can be recognized that has a rim with a particular ridge. From Period VIA, the same period as that of the clay sealings.

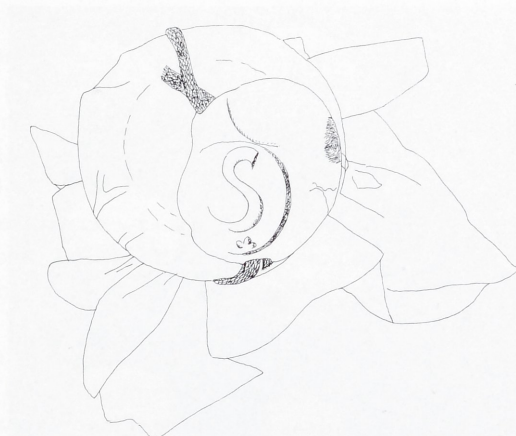
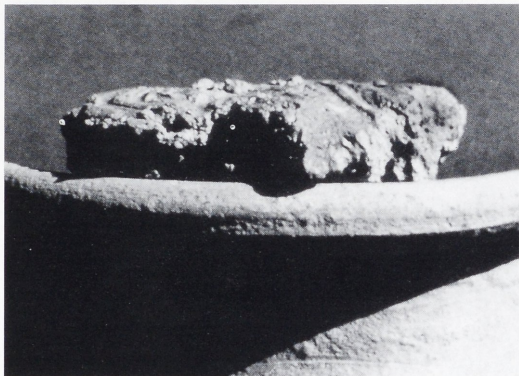


Fig. 7.8 Reconstruction of the closure of a vase with the clay sealing placed inside the top and covered by a cloth, as it results from the clay sealing in Fig. 6.

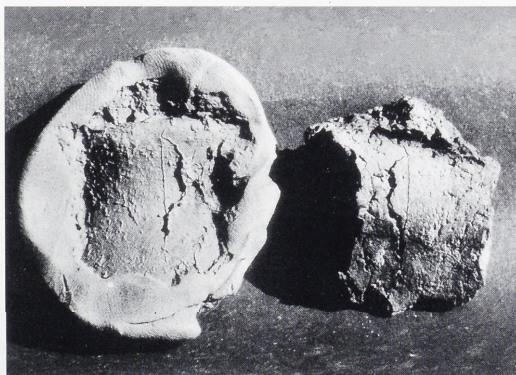


Fig. 9 Back of a clay sealing with impression of sealed object. It was placed around the upper edge of a vase. From Arslantepe.

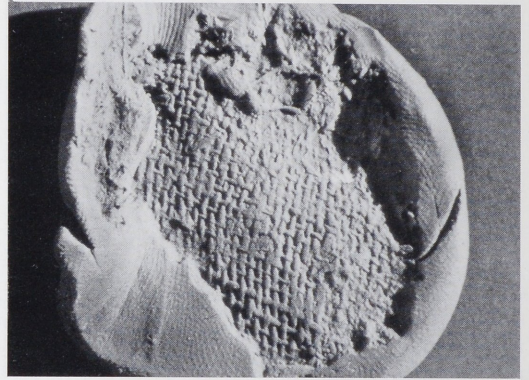


Fig. 10.11 Back of a clay sealing with impression of sealed object. It shows a very fine cloth used to close the vase. From Arslantepe.

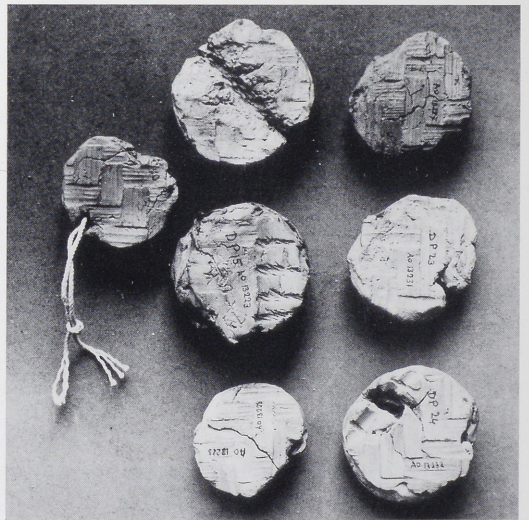


Fig. 12.13 Paris, Museum of Louvre, clay sealings from Nippur. They were all on a plaited straw lid.

Returning to the main subject, it was through the thorough examination of each physical element of the clay sealings – the impression of a portion of the sealed object preserved on the back, the impression of the seal, the dimension, the consistency, the colour, the aspect and the condition of the material – that we have been able to advance, as you will see, the interpretation of administration, bureaucracy, and book-keeping.

The data that the back of each sealing provides, i.e. the partial negative of the sealed object, is actually very limited and often enigmatic due to the fact that the surface covered by the clay sealing can be very small. However, the abundance of sealings and their repetition allow a number of factors to be considered which can be grouped and compared and which give a reliable starting-point for a study of the customs of administrative control.

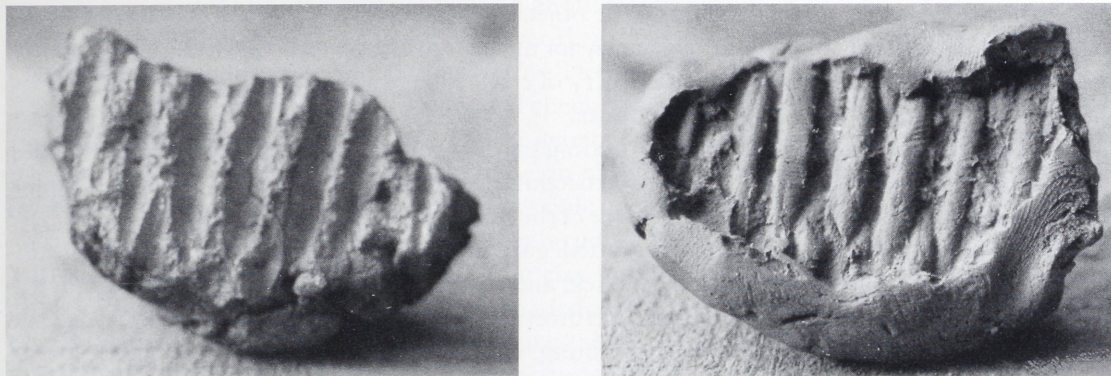


Fig. 14. 15 Back of a clay sealing placed on a wicker lid. From Arslantepe.

It is necessary to study the moulding on the back of the clay sealing to understand the object, since it reflects part of its shape. We thus realized that the objects usually sealed are mainly goods containers lying in the storage-rooms, such as baskets, canvas bags, and vases of different dimensions with different kinds of lids made of straw, wicker, plaited reed, cloth or leather (Figs. 2–17). Internal movement of stored goods is revealed by the presence of clay sealings used to close doors: clay sealings appear on knobs, latches or other kinds of locks (Figs. 18–20)⁶. When we collect the data and analyse the type of objects having the same seal impression and the quality and quantity of impressions that closed the same object, we can ascertain the duties and the bureaucratic authority of the seals' holders; the seals were considered as personal expressions of both public and private responsibility. In short, the research on clay sealings enables us to see that they are a link between economic thought, a basic element for the first social-political organization, and the consequent book-keeping and administrative thought, which is also basic for the accountancy, and the only implement used for the management of economic activity.

In order to have a better understanding of the several meanings of a clay sealing it is necessary to analyse the different stages of its use:

1. In the beginning we have a nucleus of shapeless clay, which already represents a pre-arrangement of an instrument used for administrative proceedings⁷ (Fig. 21).

⁶ Any kind of tying supposed by all the closure systems (with cords, strings, or leather ribbons) took place by simply winding the cord around the object to be fastened, without any use of knots which could have complicated the frequent openings and closures of containers in, especially, the storage rooms of distribution. In fact the clay nucleus, pressed on the coils of cord, prevented any loosening of the cord.

⁷ Other nuclei similar to that represented in Fig. 21 have been found in Arslantepe. They dried before their use, and therefore were disposed with the other administrative material. However, in other sites, as Susa (H. Gasche, *Mémoires* vol. XLVII, *Mission de Susiane, Ville Royale de Susa I, La Poterie Elamite du deuxième millenaire a.C.* (1973), 54, pl. 68, 3b), and Tell ed Der (H. Gasche, *Tell ed Der I* [1971], 34), small clay nuclei were found in jars inserted in the floor of some rooms. In this way they kept a certain degree of humidity that would allow their use at any time. From personal communication we know that similar discoveries have been made at Ebla and Terqa. Until recently these nuclei were thought to be preparatory material for tablets, but as they were also found at Arslantepe, where they were undoubtedly destined for clay sealings, we will also have to consider this use, at least as far as those sites are concerned in which clay sealings were found together with tablets.

2. When this clay nucleus is placed on the object that has to be controlled, it becomes a clay sealing. This is the first stage in the use of clay for an administrative process of control. We have direct evidence of this stage with the discovery of clay sealings which were never impressed by seals; in this case they only functioned as locks.

3. When the seal is impressed, the clay sealing gains a different value. First of all, it provides evidence for the relationship between the procedure of closure and the person responsible for that specific function. It involves the presence of the holder of the seal or one of his delegates (the people who are actually present bear witness to legal evidence). This means that an act with considerable legal-administrative value took place, and this represents or supports a change in the previous legal-administrative organisation. However, it proves that some administrative operations were simultaneous: withdrawing, depositing, verifying the quality and the quantity, etc. It also introduces a similar administrative procedure. Before it is taken off, the clay sealing impressed by a seal shows when the storage rooms, containers, etc. were closed and that there were no later operations. Therefore at this stage the clay sealing represents a chronological element in terms of inspection, which takes place at the end of movements of different goods and allows stocktaking, the periodical survey of quantity and quality of the data, at any time. So the clay sealing is a primary element in the process of inspection, in being the witness endowed with legal significance to justify the operations, as well as having the simple function of surveying. Its authenticity is protected by the impression of the seal.

4. When the clay sealing is taken off, it loses its function of guaranty of closure between one operation and another. The removal bears witness to a change in the quantity of the goods after an operation that was correct in the proceeding.

5. Then the clay sealing that has been taken off is kept in the same place in which it was affixed and/or collected in the archives for a long period whereby it becomes part of a complex of documents that can reveal a chronological order. We reckon to be able to define as archives any complex of clay sealings that numerically corresponds to the stored goods during the management of an administrative period or business. Up to now, besides the archives from Arslantepe whose results point to the accuracy of the excavation, those from Phaistos, Uronarti, Abydos⁸, and Ur⁹, all of later date, represent abandoned archives. They were found in their destruction context, after having functioned as original vouchers. All the cases mentioned above clearly reveal the intention of making the clay sealings that were thrown away or mixed with lime irretrievable, either buried in the foundation of a floor as at Phaistos and Abydos, or in the debris as at Uronarti, Ur, and Arslantepe. After their use, in fact, their presence could mislead the periodical book-keeping. For this reason, clay sealings thrown away after the last period of use of book-keeping are always numerous: their number is equivalent to the number of movements carried out in the administrative period corresponding to their temporary storage. This particular moment of storing could have lasted a very short period of time, even as little as a few days. At this time the clay sealings were taken off the sealed objects, kept near the place where they had been used and probably collected in a cloth or leather bag or some other perishable container. For example during the excavations in 1979 and 1980 at Mari a number of clay sealings were found by the en-

⁸ E.R. Ayton – C.T. Currely – A.E.P. Weigall, *Abydos III* (1904).

⁹ L. Legrain, *Ur Excavations III, Archaic Seal Impressions* (1936), 1–51.

trances to two of the rooms, and yet more in another room which may have been the archive or the recording office where the clay sealings were kept¹⁰. There is a similar arrangement at Shahr-i Sokhta in Iran, where the clay sealings were all found in small groups in different rooms¹¹.

After this short period and a first personal check of the book-keeping by the officer directly responsible, they must have been carried to the general office-archives of the storage-rooms where they were then kept for a longer period of time, from a few months to one year or more depending on the goods. At the end of this period all possible checks were accomplished and the clay sealings were thrown away so that they could not be used any longer.

Discoveries of such temporary archives for clay sealings is becoming more frequent. Interest on the subject in the last few years has persuaded archaeologists to give more detailed information on clay sealings, making it easier for us to establish with certainty the different stages of use of clay sealings, stages which could only be assumed in the past.

The same system applied to the writing of records, which took place in two periods of time and in two different ways.

At Ebla very brief notes on the operations of withdrawal were found. These had been taken during the transaction. Afterwards they were copied in more detail and on better and larger tablets with several transactions covering a certain period of time¹². This system was widespread and it is enough to state that notes similar to the Ebla ones were found at Lagash dating to the time of Ur III and at Deir el Medina, where a list of objects was quickly written by the scribe on a ceramic fragment¹³.

A similar system of recording at two different times could also have existed at Phaistos, where, together with the clay sealings, small tablets were found with inscriptions that could refer to the operations to which the clay sealings testify. Moreover, these short notes were probably copied on definitive documents that contained the record of several operations. Up till now these documents of perishable material have not been found in the MM period of the clay sealings from Phaistos. Nevertheless, it seems logical to suppose their existence because clay sealings on leather documents tightly fastened with cords were found at Haghia Triada and at Zakros in LM I contexts. This means that even perishable material was used for written documents to be filed, and thanks to the impression of the seal of 'guarantee', we know with certainty of their existence¹⁴.

Besides the use of clay sealings, transactions required some kind of complementary recording, since it was indispensable to conserve the evidence of the correct accomplishment of the operations and to provide the possibility of an inspection at any time. Also during earlier times, before the use of writing, there were different systems of book-keeping besides clay sealings, using calculi, numerical tablets, tokens, or counters.

¹⁰ D. Beyer, *Mari, Annales de Recherches Interdisciplinaires* 4, 1985, 173–189; 375–384.

¹¹ M. Tosi, *East West* 18, 1968, 9–66; 19, 1969, 283–386.

¹² M.G. Biga, *Studi Eblaiti* 4, 1981, 25–33.

¹³ B. Andre-Leicknam, *Naissance de L'Écriture Cunéiformes et Hiéroglyphes* (1982), No. 146–147. B. Lettelier, *Naissance de l'Écriture Cunéiformes et Hiéroglyphes* (1982), No. 236.

¹⁴ A careful analysis of the backs of some clay sealings from Zakros was carried out by J. Weingarten, *Kadmos* 22, 1983, 8–13, and it gave completely reliable results. On this subject see also I. Pini, *AA* 1983, 559–572. As for the perishable material used in the more recent archives we have the evidence of clay sealings from the archives in Seleucia which sealed leather documents (A. Invernizzi, *Mesopotamia* 3/4, 1968/69, 69–124) and those from the *Nomophylakion* in Cyrene (G. Maddoli, *ASAtene* 41/42, 1963/64, 39–145), which have impressions of papyrus documents on the backs.



Fig. 16.17 Paris, Museum of Louvre.

a, c Two clay sealings placed on the rims of vases covered by leather and fastened by several coils of cord. From Kish.

b, d Two clay sealings placed on the knob of a door. From Lagash.

For all four sealings the same seal was used of the merchant Ur-Emush, who had his storage-rooms in Lagash and sent his goods to Kish.



Fig. 18 Clay sealing with impression of a polygonal peg; the four coils of string wound around the peg are clearly visible. From Arslantepe.

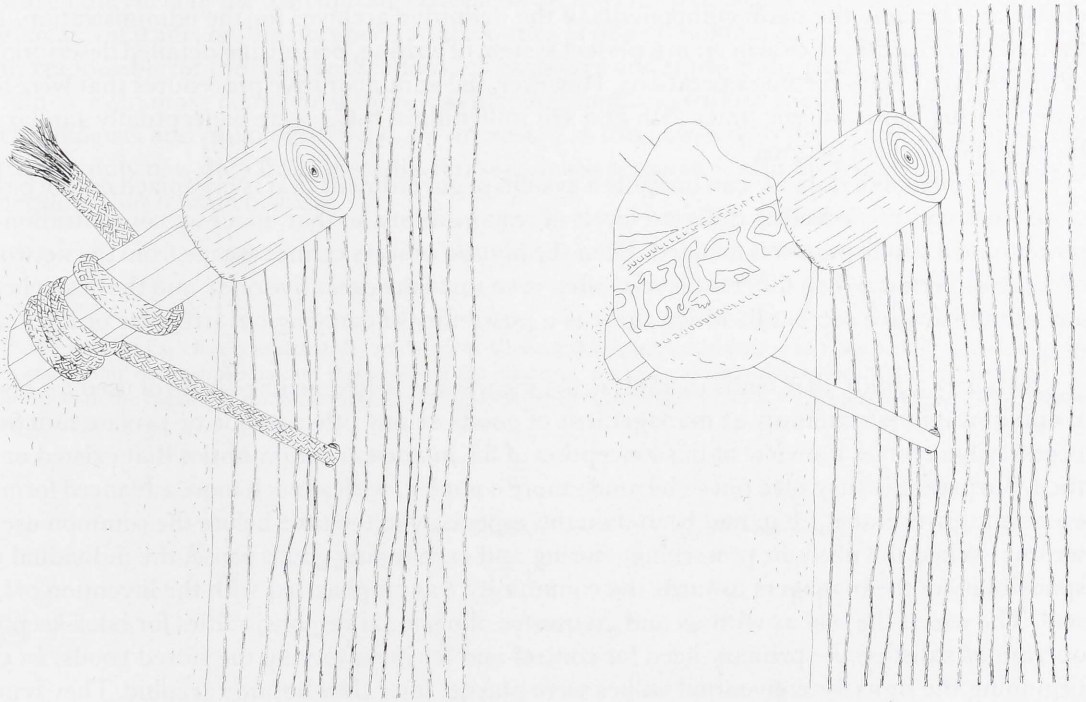


Fig. 19. 20 Closing of a door reconstructed on the basis of the analysis of the back of the clay sealing in Fig. 18 and of other clay sealings placed on the same peg.



Fig. 21 Clay nucleus ready to be placed on an object that dried before its use. From Arslantepe.

Later the system gets more complex as secondary documents summarizing the results increase and become the main components of the definitive archives for the administration. By then the documents are drawn up in a perfect system of writing, permitting detailed descriptions of the different book-keeping operations. However, the administrative procedures that were followed during more ancient times (5th and 4th millennium B.C.) were conceptually similar to those of more recent periods¹⁵.

From the existing data we can imagine a system of government that is organized on the basis of network controls covering different levels of responsibility, so that, in a way, concentration of power onto a single person is avoided. Even the highest officers cannot escape from the network of controls performed on different levels, often even up to the executive ones, and they can check any administrative section in which there is a possibility of carrying out irregular or illicit actions.

Obviously a study that tends to analyse the means and instruments of control used for book-keeping in its first attempts at management of goods or any other public or private function, necessarily involves a review of the conception of life in ancient communities that existed until then. Surprisingly they turn out to be much more complex, with a much more advanced form of economic government, than had been thought, especially in the time before the common use of writing. When the need for preserving, storing and exchanging goods arose, the individual responsibility of the managers towards the community was emphasized with the invention of the seal. The use of the seal as witness and guarantee of personal responsibilities for book-keeping operations satisfied the primary need for control and for inventorying the stored goods. In the beginning the signs for conventional values were plastic, later they became graphic. They represented the indispensable element involved in recording the different book-keeping operations. At this point, even before the 4th millennium B.C., the economic structure is already formed and complete in its functional branches. Or rather, its maturity allows the assumption that in the

¹⁵ See as example the administrative procedures examined at the site of Phaistos (E. Fiandra, *Pepragmena* 2, 383–397) and at Arslantepe (P. Ferioli – E. Fiandra, *Origini*, XII, [in press]).

preceding millennia a gradual process of improvement of the administrative techniques took place together with the use of plastic counters¹⁶.

Therefore the system of graphic representation was created through the need to record and number the goods to enable administrative control of their movements.

So it is not only the need to communicate or to express ourselves from a distance that stimulates the invention of graphic expression, but it is also the need to improve the economic organization, which must record the book-keeping operations that are to be compared and checked for correct business administration over time.

The wide geographical distribution and the long duration (so far from the 5th to the 1st millennium B.C.) of this strict system of book-keeping, control and guarantee, lead us to think that in all the countries included in the area of diffusion it could exist and adapt to every kind of centralized administration, regardless of the different local political organization.

The most striking, but certainly not the most important of the approaches to research that could originate from the thorough study of clay sealings is the fact that it would be possible to research the effect of the distributing criteria on architectural plans, its reflection on the producing areas, on trade, on the number and the duties of official holders of the seals and on the persons responsible for the different sections, on exchange and trade in the past. But our knowledge would be even more complete if there was a continuous and fruitful cooperation between those archaeologists and philologists who are interested in this subject. So the former could offer the latter not only new data from specialized research but sometimes also the way to understanding older data that remain obscure.

¹⁶ When Ufuk Esin has completed the study of the Chalcolithic commercial centre at Değirmentepe, new perspectives concerning the complexity and the means of the economic system will be available for even more ancient communities than the organized Anatolian settlements that preceded Arslantepe VIA (U. Esin, *Kazı Sonuçları Toplantısı* 6, 1984, 11–29).