# SEALINGS AS LINKS IN AN ADMINISTRATIVE CHAIN

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In medias res et ad fontem originemque. This exercise in finding and attempting to reconstruct the missing links in the Mycenaean administrative chain has many origins and debts which I can acknowledge here as an explanation for the purpose of this paper.

1. Oriolo Romano October 1991 a late night conversation with Emmett L. Bennett, Jr., partially reported in the discussion section of the publication, P. Ferioli, E. Fiandra, G.G. Fissore, M. Frangipane eds., *Archives Before Writing* (CIRAAS 1, Turin 1994), pp. 334-35.

We were attempting to explain the physical and informational peculiarities of the Sh series at Pylos, the administrative history of which I had reconstructed at the II Congresso Internazionale di Micenologia on the basis of contiguities. The completed set, which was shipped in a wicker basket to the central archives probably from the NE Workshop, consists of a label (written last), two heading tablets (probably written second last) and two groups of single-entry tablets. As can be seen below, Group A has six tablets with identical texts (except for Sh 737 which identifies the ideogram as *o-pa-wo-ta*), Group B has six tablets with identical texts, and the texts in Group A are differentiated from those in Group B only by the number of *o-pa-wo-ta* that make up the *to-ra-ka* of the ARM (an ideographic representation of body armor with helmet), cf. fig. 1.

### Label:

Wa 732	.1	]-ra-ke
	.2	] vacat

### Heading tablets:

Sh 736 to-ra-ke, a-me-ja-to, o-pa, me-za-na, wo-ke, ne-wo [ ]5

Sh 740

.a ko-ru-to O 4 PA 2 pa-ra-jo, ARM ZE 5 wi-so-wo-pa-to\_ Jo-pa-wo-ta, me-zo-a<sub>2</sub> O 20 me-u-jo-a<sub>2</sub> O 10

wi-so-wo-pa-to over erasure; read in PTT as wi-so-wo-pa-na with commentary that "wi-so-wo-pa-to" not entirely excluded".

### Group A:

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Sh 744 ARM 1 me-zo-a_2 O 20 me-u-jo-a_2 O 10 ko-ru-to , O 4 PA 2 Sh 741 ARM 1 me-zo-a_2, O 20 me-u-jo-a_2 O 10 ko-ru-to O 4 PA 2 Sh 742 ARM 1 me-zo-a_2 O 20 me-u-jo-a_2 O 10 ko-ru-to , O 4 PA 2
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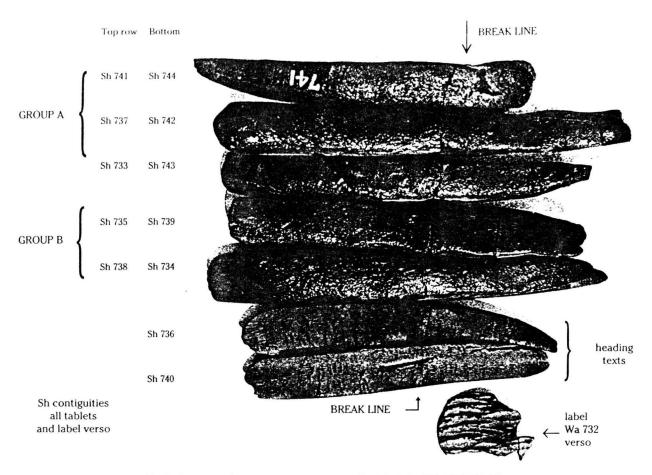


Fig. 1 - Sh series "Contiguities". Discovered 12-4-89: ELB, JLM, TGP: EM Athens.

Sh 743 ARM 1 me-zo-a<sub>2</sub>, O 20 me-u-jo-a<sub>2</sub> O 10 ko-ru-to O 4 PA 2

Sh 733 ARM 1 me-zo-a<sub>2</sub> O 20 me-u-jo-a<sub>2</sub> O 10 ko-ru-to O 4 PA 2

### Group B:

Sh 739 ARM 1 me-zo-a $_2$  O 22 me-u-jo-a $_2$  O 12 ko-ru-to O 4 PA 2

Sh 735 ARM 1 me-zo-a<sub>2</sub> O 22 me-u-jo-a<sub>2</sub> O 12 ko-ru-to O 4 PA 2

Sh 734 ARM 1 me-zo- $a_2$  O 22 me-u-jo- $a_2$  O 12 ko-ru-to O 4 PA 2

734 v. to jo me do mi [.] o wo to ra ro ARM 1

Sh 738 ARM 1 me-zo-a<sub>2</sub> O 22 me-u-jo-a<sub>2</sub> O 12 ko-ru-to O 4 PA 2

What is the purpose for such repetitive documentation of items in a palatial workshop, in this case individual sets of armor being brought up to a "finished state of repair" by an individual named *a-me-ja*? Part of the answer is that the individual tablets would serve as records of proof that the administrator who wrote them had inspected the ten suits of "renewed" armor one by one. Afterwards as the texts of these inspections and certifications are packaged in a plaited straw transport basket to be taken to the central archives, the scribe / administrator writes up two summary texts: one (Sh 736) which gives the essential information that the tablet basket contains records of 5 [pair] of sets of "renewed" armor as the *o-pa* work of an individual named *a-me-ja*. The other summary tablet (Sh 740) describes the original (*pa-ra-jo*) state of the armor, when all of the sets had an equal number (*wiswōn pantōn*) of bronze platelets (*o-pa-wo-ta*), as opposed to the end result when some have more.

But another part of the answer, thought Emmett and I, might lie in a peculiar physical characteristic of these leaf-shaped tablets, namely that they have transverse holes running through them lengthwise, which Emmett in his most recent transcription in progress<sup>2</sup> of the Pylos tablets designates as "string". The track or channel of this "string" may be seen breaking through the surface of fired tablet Sh 740 in figure 1. He defines "string" as "the empty channel remaining after the combustion of a twisted grass- or reed-like material around which the clay is rolled to form some long tablets, the trace of whose former presence is evident in broken sections, or at the ends where the strings protruded (small traces of ash have occasionally been seen); use of tablets with strings is characteristic of certain scribes, or of their tablet-makers, if they did not make them themselves, "3. We imagined a scenario whereby sealings of some sort could be attached to the string projecting from each tablet, and that these sealings, perhaps with the impression of the seal of the scribal administrator (S 733 Cii), could be taken away, perhaps by *a-me-ja* as receipts and proofs that he had completed the operation of finishing the pieces of armor and that the scribal administrator had indeed approved this work through inspection.

Our imagination even shifted to the Sa (Hand 26) and Eb series (Hand 41) at Pylos which likewise have tablets with "strings". The Sa series, also probably produced in the NE Workshop and eventually stored in the Archives Complex, contains leaf-shaped tablets of three kinds:

A. those dealing with the disposition of usually one, occasionally two, pairs of chariot wheels to individuals (in the genitive and linked with the important, and now problematical, term *wo-ka*);

B. those simply describing the state, condition, and/or type of larger numbers of pairs of chariot wheels (on Sa 790 designated by the plural term familiar from the KN So series: *a-mo-ta*);

and C. those concerned with totals of even larger numbers of pairs of chariot wheels described (where the texts are extant) as *ne-wa* ('new'), *pa-ra-ja* ('old'), and in one instance (Sa 787) as 'Zakynthian' (the same 32 pairs recorded on a text [Sa 751] of group B and then inserted as the final entry on a three-entry totaling text of group C).

The chariot wheels on group A tablets are designated by the term we-je-ke-e ("in good condition"  $vel\ sim$ .) which always accompanies the term wo-ka. Killen now argues that wo-ka may be parallel to o-pa (= hop/from the same verbal root as Greek  $\tilde{e}\pi\omega$ ) as an action noun from the verbal root (\*werg-)4, and this proposal has much to recommend it. we-je-ke-e seems to stand in opposition to the term no-pe-re- $a_2$  (-e) which is found on tablets of the B group and indicates that certain pairs of wheels recorded therein are "unserviceable, not fit for use",  $vel\ sim$ .5. None of the B or C group texts contains the critical term wo-ka which in the A group is linked with the individual personal names in the genitive, including that of a-me-ja (Sa 834) who, let us remember, is the party responsible for the "finishing" (o-pa) of the sets of armor in the Sh series. Tablets of the Sa series were made into complete records certainly by one (Wa 1148), perhaps two labels (also Wa 1271?), found in the central archives. Wa 1148 was found in Archives Room 8 and has a text that has elements paralleled in Sa 790 (Group B) and texts of Group A:

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Wa 1148 .1 a-]mo-ta , e-qe-si-ja
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.2 we-lie-ke-a

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Sa 790 a-mo-ta , e-qe-si-ja , no-pe-re-a<sub>2</sub> ROTA+TE ZE 6.
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Wa 1271 was found in the same grid of the Chasm along Room 7 as Sa 1264-67, all group A tablets with the *wo-ka*, *we-je-ke-e* formula. Wa 1271 is read both in *PTT* and in Bennett's transcription in progress:

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Wa 1271 supra mutila 
]ra-ke [.
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But my autopsy in 1980 revealed that the line of the tablet break would suit the oblique stroke of je. Given the contextual association, this reading is to be preferred<sup>6</sup>. What we might have here is a situation in which one set of e-qe-si-ja wheels in "serviceable" condition was duly recorded on tablets which were labeled (Wa 1148) and shipped to the Central Archives. Another set of tablets containing records of "unserviceable" e-qe-si-ja wheels (Sa 790) and other assorted wheels recorded in descriptive and totaling texts (Groups B and C) would also have been sent to the Central Archives. A third set (Group A) labeled by Wa 1271 was also eventually sent there. Although all tablets of the Sa series have "strings", it is primarily the records of Group A, relating to individuals whose wo-ka produces serviceable pairs of wheels, that would require something like the ancillary documentation for which the "strings" may have been intended. Tablets of group B provide indication of some design or work element of the wheels described: «Zakynthian» (Sa 751), «bound in silver» (Sa 287), «made of cypress wood» (Sa 488), «fully worked, finished» (Sa 682), «of the e-qe-ta [a high order palatial official]» (Sa 790), «provided with a termis [border, flange]» (Sa 791), «provided with a termis, of ivory» (Sa 793), and «bound in bronze» (Sa 794). This attention to characteristic features and state of repair might suggest a motive for having the ancillary "string" attachments. These wheels, some of which are not yet serviceable, would be handled in the same way as the individual pieces of armor in the Sh series, only we have the wheels grouped in larger numbers because they have not yet been made serviceable by the responsible parties.

What I would like to emphasize here is the element of personal responsibility within a system that defines such responsibility by technical vocabulary. In the Sh and Sa series the key terms are *o-pa* and, following Killen's proposal which makes very good sense from an archival-administrative perspective, *wo-ka*. Texts of the Eb series would conform to this picture of certain well-defined obligatory activities requiring special recording procedures. These tablets, by Hand 41, are fairly elaborate records of individual landholdings. They were later used by the master scribe at the site (Hand 1) to produce page-shaped compilations (series Ep). What is interesting is that the landholdings of these individuals (mainly religious personnel: *i-je-re-ja*, *te-o-jo do-e-ra*, *ka-ra-wi-po-ro*) are defined again in very precise terminology which stresses the special obligatory nature of the landholding status of each individual. Relatively from most frequent to least frequent in occurrence, these terms and conditions are:

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o-na-to ke-ke-me-na ko-to-na pa-ro da-mo, ka-ma (ka-ma-e-u), o-pe-ro te-re-ja-e, some form of wo-ze obligation, and qe-ja-me-no.
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The Eb set can be contrasted with the Ea set by Hand 43, which deals mainly with non-religious personnel, perhaps in an entirely different area within the Pylian palatial territory, and generally has much simpler provisions for landholdings:

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pa-ro PERSONAL NAME,
o-na-to PERSONAL NAMEgen. ko-to-na,
o-na-to pa-ro PERSONAL NAMEdat,
o-na-to pa-ro da-mo.
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In any case, the differences between the two series in types of landholding, in the status of the

individuals involved, in the nature of the regions where the landholdings are situated, and in the degree of interest taken to specify peculiarities all can be used to explain why the Ea set would lack the "string" feature while the Eb series would have, and need, it. There might even be a difference in the nature of the central administration's interest in these landholdings. The Eb set is closely linked with the district of *paki-ja-ne* and the *wanax* of the central palace. The obligations involved, one imagines, would also be closely reciprocal with the central palace and thereby need to be authenticated and verified between the central administration and the individuals who were obliged to perform services for the central palace (and its sanctuary in *pa-ki-ja-ne*) and derive benefits therefrom. The Ea set with its emphasis on personal *o-na-to* relationships (and the *ra-wa-ke-ta*) might have left the authentication of these relationships to the individual parties (and institutions) involved. Thus there would only be need to record and not to validate by sealing attachments.

The Eb set contains such entries as: «X has ka-ma land and is obliged to perform service (te-re-ja-e) on two, but does so on one» (Eb 495); «X paying a religious penalty<sup>8</sup> holds land» (Eb 294); «X is obliged to perform service (te-re-ja-e) and does not perform service» (Eb 149); and so on. These particulars seem to imply a greater need for certification of the nature of the landholding relationship and responsibilities attached thereto than do the Ea set. Their quasi-legalistic tone may also have to do with the religious status of the personnel involved. Complexities in the Eb set are such that on Eb 297 the priestess can claim to have a special kind of landholding (e-to-ni-jo) on behalf of the god, while in the final version on the compilation tablet Ep 704.5-.6 we read that «Eritha, the priestess, has and claims to have e-to-ni-jo land for the god, but the damos says that she has an o-na-to of the ke-ke-me-na ko-to-na land». This is exactly the kind of extraordinary circumstance that might require receipts by both parties.

The other conspicuous set of leaf-shaped tablets that have "strings" running through them is the Ug series at Thebes, which was found in a deposit context, i.e., in a workshop or storeroom rather than a central archives9. This set consists of 24 often very fragmentary tablets, but enough remains to be able to understand the formula used in entries on these records: PERSONAL NAMEgen. masc. / PERSONAL NAME nom. masc. / ideographic syllabogram O / record of number in whole units. The identification of the meaning of O is problematical. The sign is used ideographically in the taxation documents of the Pylos Ma series, but there the item it represents is measured in units of weight. We have seen that O can stand for o-pa-wo-ta in the Pylos Sh series, and the next room in the area from which the Ug tablets were excavated apparently contained pieces of bronze armor; but the appearance of to-so on the very fragmentary Ug 14 suggests that the ideogram is masculine, not neuter. This may be misleading since the quantity is not preserved on Ug 14, nor enough of the rest of the tablet to know that we are not dealing with a collective use of to-so. A final possibility is that O stands for the transactional term o-pe-ro ("owed") as it does often in Linear B accounting documents. But this abbreviated use is found mostly as an adjunct to a designated ideogram. We would have to posit that the ideogram was understood from the deposit context. O = o-pe-ro and O = opa-wo-ta seem the likeliest alternatives. In any case, we should note that the tablets record clearly a transactional relationship among two parties. One of these parties is listed in initial position (often on more than one tablet, e.g., pe-pi-te-me-no-jo on Ug 1, 2 and 3, a-ka-to-wa-o on Ug 4, 5, 6, 7, 8 and 20), and the name is usually written large-scale and in the genitive or possessive case. The other name is found written in second position (never more than once), often small-scale, occasionally with an added specifier. There is a clear power hierarchy here of the sort that might have required certification for the lesser party.

A final text from Pylos deserves discussion in this context. In his transcription of the Pylos texts in progress. Bennett notes with an exclamation point that the singular tablet Va 482 has a "string". Va 482 is not a member of a larger set. It is even unique within the work of the scribal hand (Hand 42) to whom it is assigned 10. Va 482 is also non-ideographic, i.e., it contains no identifiable ideograms. Therefore, the text is hard to interpret. It does, however, concern the important official *a-ko-so-ta*, a collector and "one of the chief stewards of the palace" who elsewhere performs the duties of inspecting fields (Eq 213) and dispensing perfume ingredients to an unguent boiler (Un 267). Va 482 concerns ivory, apparently in separate pieces, chiefly designated as *a-no-po*, for which the most acceptable interpretation is "un-*opa*ed", i.e., not yet brought up to a finished state of work. The syntax of the text is difficult because there is

no verbal form and the name *a-ko-so-ta* is ambiguous as to case (it can be nominative or dative, but not genitive). The most likely explanation is that *a-ko-so-ta* here, as elsewhere, plays a role as palatial official in some kind of monitoring, collecting, or distributing capacity. Perhaps the ivory pieces are here recorded as under his care, and thus require certification. It is certainly significant that this anomalous text also contains the kind of transactional vocabulary or terminology of conditions or responsibilities found (or possibly found) in all other series with "strings" at Pylos: *a-no-po. o-pa, wo-ka, O(-pe-ro)*, and *o-na-to, o-pe-ro te-re-ja-e*, some form of *wo-ze* obligation, and *qe-ja-me-no*.

### 2. Oriolo Romano and the paper of Gian Giacomo Fissore<sup>12</sup>.

Fissore demonstrated *inter alia* that the sealing system for a given palatial bureaucracy in the Aegean and Near East could function silently and in ways that would complement and supplement procedures involving written records. No reference would be made to the application and use of seals and sealings when these were standard and unexceptional operating procedure. This gives us some confidence in arguing from silence.

**3.** The Hittite document from the reign of Hattusilis III known as the *Deposition of Mr. GAL dingirU* and Mr. Ukkura (Keilschrift Urkunden aus Boghazköy XIII 35), as translated and explicated by Sara Kimball and Carol F. Justus<sup>13</sup>.

This document again deals with an extraordinary circumstance: Mr. GAL dingirU and his father Mr. Ukkura, Queen Puduhepa's "Commander of Ten," are under investigation for tampering with and appropriating possessions of the king. This unusual situation calls for testimony relating to the documentation for the delivery, receipt, and storage of the materials involved: chariots (and related artifacts such as mule halters, horse bridle ornaments for the New Year's festival, wheels, reins, bits, snaffles, axles and even mudguards), items of bronze, items of copper, wall hangings, garments, cloth, bows, arrows, shields, spears, human deportees, cattle, sheep, donkeys, mules. The testimony also involves other parties with whom the two "defendants" had transactions or who were witnesses to transactions. One paragraph contains the sworn statement of 20 different persons that they had stolen none of these items. Other paragraphs contain particular testimony of an individual who made a consignment to Mr. GAL dingirU and even of a Scribe-on-Wood who claims to have returned sealed items in good condition without breaking the seal and, by implication, to have been conscientious in overseeing Mr. GAL dingirU's handling of the entrusted materials<sup>14</sup>.

This text enables us to see the complexity of relationships among individuals at many levels within the reach of a palatial economic and bureaucratic system. There would be need for some form of convincing evidentiary proof of one's integrity when suspicions of misconduct arise. Thus, in this particular case, the Scribe-on-Wood can appeal to the integrity of the seals on particular items and he himself doubtless was involved in transactions in order to produce the requisite sealed wooden tablet, which Justus conjectures was «a wooden tablet with a seal[ing] affixed in some way, or impressed into the wax covering [of a wooden wax tablet]». Justus lists the dangers to property which existed: theft, substitution (of old or defective goods), destruction of goods. The present case involves also a transporter of goods and another intermediary. In order to verify responsibility in the transfer, distribution or administration of goods, the system used: a sealed (wooden) tablet and two other documents specified by Luwian loan-words: dušdumi and lalami. Mr. Ukkura made a round trip with goods from Hattuša to Babylon. In going to Babylon, he took a sealed tablet and a dušdumi. Returning he failed to bring a lalami. Justus speculates that the dušdumi would correspond to a sealed nodule on containers or materials, while the lalami would be a receipt (as its etymology from a verb meaning 'take' implies) that would somehow correspond to "roundels in their functions as receipts". This last suggestion uses an analogy from Minoan administration which might work in general terms and might even raise some possibilities for how to interpret the roundels within their present archival contexts at Minoan administrative sites. In any event, this single Hittite document makes clear why we might want to posit the need for the existence of something equivalent to a lalami in Mycenaean administration.

What we have done above is to hypothesize a missing link in the Mycenaean administrative chain that ascends within palatial environs in the following way:

- sealings attached to or associated with goods and materials that were delivered into the care of the palace and which are now found in deposit contexts at all sites (see full documentation in the Appendix below)
- single entry tablets from deposits
- archived sets of single entry tablets
- compilations and summaries stored within the central archives.

The missing link would be found outside the palace environs, because it would be a receipt (sealing) taken away in order to furnish a party under a particular obligation to the palace with proof in case questions arose as to his or her fulfilment of said obligation. Since we have no legalistic depositions or reports of the kinds discussed by Fissore and Justus and since no minor order or town sites of the Mycenaean palatial period have been excavated that would furnish us positive or negative evidence for the existence of such documents, we must appeal to reasonable analogy, to the evidence in the texts of terms specifying a wide array of complex obligatory arrangements, and to the tenuous evidence of "strings".

**4.** Recent work with the Thebes sealings, including the paper by John Killen at the II Congresso Internazionale di Micenologia in Naples in October 1991<sup>15</sup>.

Killen was able to demonstrate by a close examination of the Mycenaean archives how the collection of individual sealings at Thebes (see full documentation in the Appendix below) fits into the Mycenaean administrative chain. Animals are brought into the palace environs at Thebes accompanied by sealings which provided specific information as to the kind of animal (species, sex, even age [WE]), origin or location (place name, pa-ro PERSONAL NAME, a-ko-ra or a-ko-ra-jo), conditions of the delivery (qe-te-o, a-pu-do-ke, o-pa), and even the contribution of fodder. While Thebes has not produced enough texts to fill out the picture, other sites have. Texts from Pylos (Un 138 and Un 2) give us an idea of the final compilation texts for the commensual ceremonies for which such animals were being contributed. Other texts [PY Un 6, KN C 394, C(2) 912, C(1) 901 + 7661 + 8049] demonstrate how such contributions of single or group animals would be recorded at intermediate stages.

**5.** My own paper at Oriolo Romano and discussion with and by Judith Weingarten pertinent to the function of Minoan nodules, especially at Hagia Triada, and the meaning of countermarks upon them.

At Oriolo Romano<sup>16</sup> I proposed that the frequently recurring Linear A countermarks might best be interpreted as abbreviations of standard transactional vocabulary as paralleled in the Linear B documents. At the time it was not within the scope of my paper to document and analyze the Linear B evidence, so I contented myself with a list of terms that would readily occur to any serious student of Linear B. In the Appendix below (compiled by my assistant Kathleen Cox mainly from the computer data bases in PASP), we can now see the complete range of information that is attested on Mycenaean sealings. This is interesting both in terms of defining the economic spheres in which we now know sealings were used and also in making absolutely clear the verifiable transactional vocabulary used on these links in the Mycenaean administrative chain. I would like here to comment on some points of interest and surprise, especially in relation to the continuing discussion (§1-5) that has inspired this line of investigation.

Regarding purely transactional vocabulary (Appendix §IV) there are some surprises. We have *a-pu-do-si* (and the related verbal form *a-pu-do-ke* and the perhaps distinct *do-ke*). *o-pa*, *po-ro-e-ko-to*, and the *qe-te-o* complex. The one term conspicuously missing from this list is *ta-ra-si-ja*. Its absence (if not due purely to chance: see below) is perhaps due to the regular and highly controlled nature of production based on the *ta-ra-si-ja* system which is attested at Pylos, Knossos, and Mycenae in connection with cloth manufacture, bronze-working and chariot wheel production. Another transactional term the absence of which we may note and easily explain is *o-pe-ro* and its various forms. An item that is "missing/owed" cannot have a sealed sealing attached to it! In fact the forms relating to giving and contributing (*a-pu-do-*

si)<sup>17</sup> may reflect the neutral fulfilment of items due, although *o-pe-ro* seems to operate in cases where items are rather "passed due" than simply "due." A safeguard against rash assumptions based on our partial evidence is furnished by *po-ro-e-ko-to* and more crucially the various forms of *qe-te-o*. Neither term was documented on sealings until the discoveries at Thebes in 1982. We also have as yet no instance of the use of *wo-ka* on a sealing, but the term is specific to the Pylos Sa series and may be indicative of some special arrangement for chariot wheel manufacture at Pylos immediately preceding its destruction, thus reducing the odds of discovering an attestation.

We can, of course, expand this list to include informational items relating to the nature of goods and materials that could be used in isolation, if the subject of the transaction were understood: this is conspicuously the case with the countermarks on Minoan nodules that otherwise provide no information at all about the type of commodities involved. Such additions would include the following informational items: *a-ko-ra* or *a-ko-ra-jo* and *WE* (livestock), *te-pa*, *te*, *pu*, *o-nu-ke* (cloth), and now perhaps *do-ka-ma* and even *wa* (javelins: the latter term could be used more broadly, as it is in the Linear B tablets and on the stirrup jar from Eleusis). Since we now seem to have the king (or the king's interests) represented by a phonetic abbreviation on a Pylos sealing, it is perhaps to be hoped that lexical designation of other important officials might also one day appear: at least *ra-wa-ke-si-jo* and *e-qe-si-jo* (in the same way that *i-je-ro* is now attested in the Thebes sealings, designating the connection of livestock with the religious sphere). Thus we would arrive at a rather full list of possible parallels for our Minoan nodule countermarks.

It is worthwhile noting the full range of goods, materials, and artifacts inscribed on sealings. They include and exceed the items at issue in the *Deposition of Mr. GAL dingirU and Mr. Ukkura*: cloth (\*146) leather (\*152), animal fodder (\*171, \*190), vases of various shapes and materials, oil, livestock of all kinds, beds, javelins, wool, men and women, wine and grain. Metals are never listed as items by themselves, only as a description of material. This again may relate to the absence of *ta-ra-si-ja* references in the extant palatial sealings. Material distributed in raw form would be going *out from* the palace and therefore we would not find the term on sealings *in* the palace. The manufactured materials returned may have been controlled tightly enough by palatial systems of collection and monitoring to have required no individual receipts of delivery. In the decentralized bronze industry, the interface between palace administration and production may have taken place at second order centers, hence no *ta-ra-si-ja* sealings in the palaces proper. We must beware of the random nature of our discoveries. Also none of the terminology for land transactions is attested on palatial sealings, but again we would imagine sealings or documents of this sort going *out from* the palace to the individual land holders rather than into it.

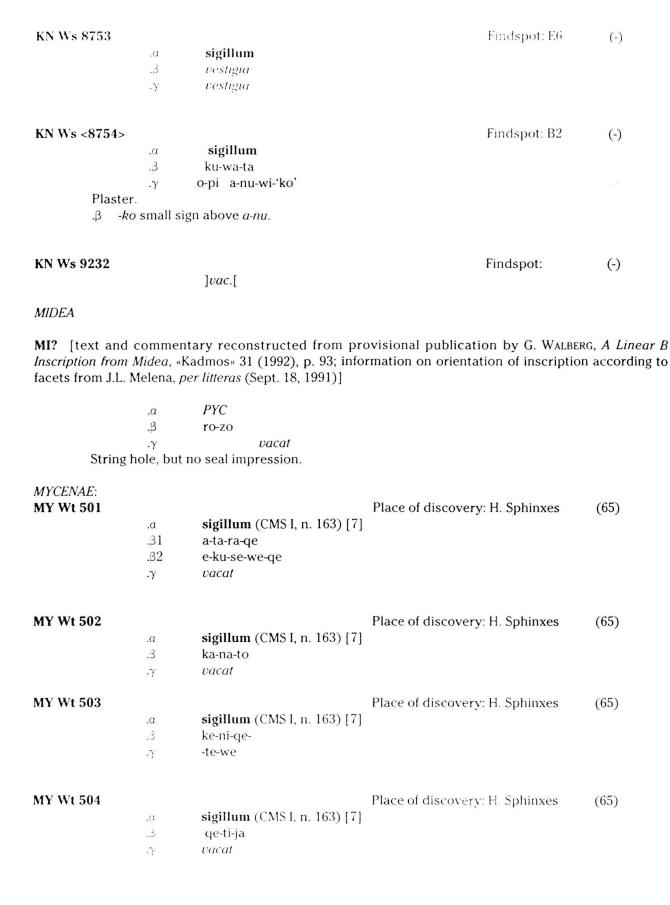
Still, this list enables us to see how busy the palace centers must have been and how much opportunity might have existed in the Mycenaean world for the kind of illicit appropriation of materials that was suspected even of high officials in the Hittite world. In the Mycenaean sphere, opportunity would have been limited by the narrower sphere of operation within the geographically well-defined and obsessively, if not excessively, administered palatial territories. The links in the chain of that administration are clearly visible in palatial documents that take us from individual transactions on sealings up to final compilations and recensions. This chain can be traced by following the textual parallels at each site listed in the Appendix §L.

# APPENDIX Linear B Sealings: Findspots, Hands, Texts

KNOSSOS: KN Wm 1707 .α .γ	.α1 .α2 .3 .γ Or ]ke-wo-re- (if ]a <sub>3</sub> -wo	]a <sub>3</sub> -wo-re-usi do-ke [.]-ja-wo-ne u-si, with probably only one sign lost at left o-re-u-si, text probably complete at left).	Findspot: I3	(-)
KN Wm 1714	.1 .2	me-sa-to ]*146 30	Findspot: J2bis	(-)
KN Wm 1816	.1 .2	me-sa-to *146[ inf. mut.	Findspot: J2bis	(-)
KN Wm 1817	.1 .2	sup. mut. ]vest.[ *146 30	Findspot: J2bis	(-)
KN Wm 5822	.1 .2	me-sa-to inf. mut.	Findspot: ?	(-)
KN Wm 5824		N	Findspot: ?	(-)
KN Wm 5860	.1 .2	]me-sa-to inf. mut. sup. mut. vac.[	Findspot: ?	(-)
KN Wm 8207	.2	*146  sup. mut. sa-ma-ja-so	Findspot: ?	(-)
KN Wm 8490	.1 .2	sup. mut. *146	Findspot: ?	(-)

KN Wm 8493				Findspot: C	("124"?)
	.01	se-to-i-ja	i.	a annual action of the contraction	, , ,
	.3a		ki-ri-ta-de		
	.3b	te LA	.NA do-ke		
KN Wm 8499				Findspot: F21	(103)
	.a	pi-mo-n			
	.3	na-ki-zo			
	.γ	pa-wo			¥i
KN Wn 8713				Findspot: E6?	(-)
	.a	VIR	supra <b>sigillum</b>		
	.β	vacat			
No hala	γ for a stri	vacat	201 22 2752		
No note	ior a stri	ing. Same	seal as 8752.		
KN Wn 8752				Findspot: E6?	(-)
	.a	MUL	supra <b>sigillum</b>		
	.3	vacat			
N. L.	.γ	vacat	0710		
No hole	for a stri	ng. Same :	seal as 8713.		
KN Ws 1701				Findspot: E6	(-)
	.a	*185	supra <b>sigillum</b>	•	
	.β	ma-se, v			
			ferent from the one on Ws 8494. $\gamma$ (=	= <b>*</b> 257).	
.β <i>wi-r</i> .	a₂wo pos	ssible.			
KN Ws 1703				Findspot: F7	(-)
	.a	P	supra sigillum	e a <b>p</b> a second n	
	.β	ta-to-mo			
	.γ	o-nu-ke			
KN Ws 1704				Findspot: L	(-)
	.a	JAC	supra <b>sigillum</b>		
	.3	o-pa pa-ta-ja			
	.γ	ра-та-ја			
KN Ws 1705				Findspot: L	(-)
	.a	sigillum			
	.3	pa-ta-ja			
	.}		vacat		
KN Ws <1708>				Findspot: J3	(-)
	VIR	supra <b>si</b> g		•	18-81
Missing.	Text from	m <i>Scripta I</i>	Minoa II, pl. 88.		

KN Ws 8152	.α .β .γ	LANA supra <b>sigillum</b> ne-ki- -ri-de		Findspot: F14	(103)
KN Ws 8153	.a .β .γ	TELA <sup>3</sup> + <i>TE</i> te-pa <i>vacat</i>	supra <b>sigillum</b>	Findspot: 14-15?	(-)
KN Ws 8494 .β	.a .β .γ Ideogram pro	sigillum vacat *257 bably different from the on	e on Ws 1701.a (= *	Findspot: E6	(-)
KN Ws 8495	.α .β1 .β2 .γ	JAC supra <b>sigillum</b> pa-ta-ja vacat o-pa		Findspot: L	(-)
KN Ws 8496	.α .β .γ	*134 supra <b>sigillum</b> vacat vacat		Findspot: C	(-)
KN Ws 8497	.α .β .γ	AES *246 supra sigillum ke-ni-qa a-sa-mi-to nder of face after it over [[	]].	Findspot: I4-I5	(-)
KN Ws 8498	.а .β	sigillum o-pa ko-we		Findspot: ?	(-)
KN Ws 8500	.γ .α .β .γ	GRA supra sigillum vacat vacat		Findspot: C	(-)
KN Ws 8712	.a .β .γ	e-po supra <b>sigillum</b> vacat vacat		Findspot: C	(-)



MY Wt 505	.α .β .γ	sigillum (CMS I, n. 163) [7 pa-ko-to vacat	Place of discovery: H. Sphinxes	(65)
MY Wt 506	.β .γ .α	ka-na-to pa-ke-te-ri- -ja <i>supra</i> <b>sigillum</b> (0	Place of discovery: H. Sphinxes	(65)
<b>MY Wt 507</b> .βγ	.α .β .γ Perhaps	sigillum (CMS I, n. 163) [7 ka-ra-se- ti-ri-jo s emend to ka-ra/-se/-ti-ri-jo		(65)
MY Wt 700	.α .β .γ	*190 supra <b>sigillum</b> (c vacat vacat	Place of discovery: Citadel House efr. <i>MT</i> III, p. 36) [1]	(-)
at right	is more li		Find-spot: Room 32 rinted. The apparent 1 or divider essibly more over erasure. Verso	(H34)
uninscri PY Wn 1247		a <sub>3</sub> -wo-di-jo-no 'erso is uninscribed, and the	Find-spot: Room 24 ere is no sealing.	(-)
PY Wr 1325	.α .β .γ	CAP <sup>m</sup> supra <b>sigillum</b> vacat o-pa	Find-spot: Room 98 (CMS I, no. 319)	(S1331-Ci)
PY Wr 1326	.α .β .γ	sigillum (CMS I, no. 312) ]jo de-mi-ni-jo	Find-spot: Room 98	(Ciii)
Extra bit	, also with	h traces of a sign, glued abo	ove fingerprinted surface.	
PY Wr 1327	.α .β .γ	sigillum (CMS I, no. 324) ]ŞUŞ <sup>†</sup> 350 pe-re-i-to	Find-spot: Room 98	(Ci)

 ${\it SUS}^t$  but EQU not entirely impossible, the stem below on the extra facet; the vertical strokes above the head are difficult to explain.

PY Wr 1328		s <b>igillum</b> pe-di-e- -wi	(CMS I, no. 318)	Find-spot: Room 98 (Ci)	
.βγ			e not clearly del gle surface.	limited; the text is arranged as if	a 8
<perhap< th=""><th>s a scribal <i>l</i></th><th>lapsus fo</th><th>r pe-di-e-wi-ja (cf</th><th>f. Va 1324)&gt;</th><th></th></perhap<>	s a scribal <i>l</i>	lapsus fo	r pe-di-e-wi-ja (cf	f. Va 1324)>	
PY Wr 1329	.β 20	sigillum 20 vacat	(CMS I, no. 317)	Find-spot: Room 98	(-)
PY Wr 1330	.β να	i <b>gillum</b> vacat -pa	(CMS I, no.312)	Find-spot: Room 99	(S1331-Ci)
PY Wr 1331	.β να	OVIS <sup>m</sup> pacat p-pa	supra <b>sigillum</b> ((	Find-spot: Room 99 CMS I, no. 329)	(S1331-Ci)
PY Wr 1332	.β о-	VI ⊢pa acat	supra <b>sigillum</b> (	Find-spot: Room 99 CMS I, no. 329)	(S1331-Ci)
PY Wr 1333	.β т	estigium nutila -pa	supra <b>sigillum</b>	Find-spot: Room 99 (CMS I, no. 329)	(S1331-Ci)
PY Wr 1334	.β υσ	AP <sup>m</sup> : acat acat	supra <b>sigillum</b> (	Find-spot: Room 99 (CMS I, no. 329)	(S1331-Ci)
PY Wr 1358	.β να	IN : acat acat	supra <b>sigillum</b> (	Find-spot: Room 105 CMS I, no. 363)	(-)

```
PY Wr 1359
                                                               Find-spot: Room 105 (S622-H13)
                                           supra sigillum (CMS I, no. 363)
                                VIN
                     n.
                     .β
                                e-ti-wa-i[
                                vacat
                     \cdot \gamma
               e-ti-wa-no less likely.
PY Wr 1360
                                                                                          (S628-Ciii)
                                                               Find-spot: Room 105
                                VIN
                                          supra sigillum (CMS I, no. 363)
                     a.
                               me-ri-ti-
                     .β
                     \cdot \gamma
                                   -jo
PY Wr 1361
                                                               Find-spot: Room 105
                                                                                                         (Ci)
                               VIN
                                          supra sigillum (CMS I, no. 361)
                     a.
                     .β
                               vacat
                                        P
                               vacat
                     \cdot \gamma
PY Wr 1374
                                                               Find-spot: SW Area 62Y
                                                                                                        (Ciii)
                               TELA+ PU supra sigillum (CMS I, no. 370)
                     a.
                     .β
                                          vacat
                               ]pu<sub>2</sub>-*35-[.
                     \cdot \gamma
               Poss. ]pu<sub>2</sub>-*35-za, but poss. the last sign is unknown, if it is not a variant
               of *19.
PY Wr 1415
                                                               Find-spot: SW Area 27
                                                                                                        (Ciii)
                               pa-ke-te-re supra sigillum (no. 179)
                     .a
                     .β
                               vacat
                     \cdot \gamma
                               vacat
PY Wr 1416
                                                               Find-spot: SW Area 37
                                                                                                        (-)
                                         supra sigillum (no. 180)
                     .a
                               CAP
                     .β
                               vacat
                               vacat
                    \cdot \gamma
               Reading very doubtful.
PY Wr 1437
                                                              Find-spot: Room 24
                                                                                                         (-)
                               AREPA[ supra sigillum (CMS I, no. 382)
                    .a
                    .3
                               vacat
                               deest
                    \cdot \gamma
PY Wr 1457
                                                                                                                (S90-
                                                              Find-spot: ?
H2)
                               *152 supra sigillum (CMS I, no. 308)
                    a.
                    .3
                               vacat
                               a-pu-do-si
                    \cdot \gamma
```

PY Wr 1458 Find-spot:? sup. mut. supra sigillum (CMS I, no. 308) lower case? 1E .(1 .3 vacat mutila .γ .a probably ideographic, but some poss. of animal<sup>m</sup> nb: PTT reading .a .]<sup>1</sup>[ PY Wr 1459 Find-spot:? sigillum (CMS I, no. 329) .a .β vacat e-ri[ .γ inf. mut. poss. trace in .B **nb**: PTT reading .g pi-ri[ NB: I have been given permission by Cynthia Shelmerdine and John Bennet of PRAP to mention the discovery of a sealing PY Wr 1480 with a text that refers to: wa (most likely as an abbreviation for wa-naka-te-ro and on facet .a) and two other words: pa-ta-jo (of 'javelins') and do-ka-ma. See now «Kadmos» 34 (1995), pp. 23-36. THEBES: TH Wu 44 Find-spot: Oidip. str. (-)CAPmsupra sigillum A [1] .a .β i-je-ra vacat **TH Wu 45** Find-spot: Oidip. str. (-)sigillum B [1] .a \*56-pu-so .β ro-we-wi-ja  $\cdot \gamma$ Nail-mark over -so and perhaps over -pu-. TH Wu 46 Find-spot: Oidip. str. (a) supra sigillum C [5] **CAP**<sup>f</sup> a. .B pa-ra-wo, o-pa \*171 30  $\cdot \gamma$ TH Wu 47 Find-spot: Oidip. str.  $(\gamma??)$ SUS<sup>m</sup>supra sigillum D [7] a. .3 pa-ro te-qa-jo ro-we-wi-ja  $\cdot \gamma$ 

No significant spacing between the two words (but cfr. Wu 59).

Right "ear" of -qa- redrawn higher than in a first step.

.3

TH Wu 48		Find-spot: Oidip. str.	(-)
111 Wu 40	D.	*190 supra sigillum D [7]	
	.В	vac.[ ]vac.	
	$\cdot \gamma$	vac.[ ]vac.	
.a S	omething l	ooking like a check-mark inside the ideogram.	
		Find anot: Oidin atr	<b>(β)</b>
TH Wu 49		Find-spot: Oidip. str.	(b)
	.a	OVIS <sup>m</sup> supra sigillum E <sub>[3]</sub>	
	.β	qe-te-o a-ko-ra	
	.γ	a-ku-i a	•
TH Wu 50		Find-spot: Oidip. str.	(B)
111 114 00	.a	CAPf supra sigillum E [3]	
	.β	qe-te-o	
	.γ	a-ko-ra	
TH Wu 51		Find-spot: Oidip. str.	$(\gamma)$
	.a	SUS <sup>m</sup> supra sigillum D [7]	
	.β	te-qa-de	
	$\cdot \gamma$	qe-te-a <sub>2</sub>	
TO		Find-spot: Oidip. str.	(δ)
TH Wu 52	~	SUS + SI supra sigillum F [5]	(0)
	.α .β	a-ko-ra-jo	
	.γ	vacat	
TH Wu 53	. 1	Find-spot: Oidip. str.	(-)
111 114 00	.α	BOS <sup>m</sup> supra sigillum F [5]	
	.β	qe-te-o	
	.γ	i-ri-ja	
.a B	OSm correc	cted from BOSf	
.α-γ Τ	wo nail-ma	rks on the edge.	
		Dia 1 0111 1	(-)
TH Wu 54		Find-spot: Oidip. str.	$(\epsilon)$
	.α	CAP <sup>m</sup> supra sigillum G [3]	
	.β	vacat	
	.γ	vac.[ ]vac.	
TH Wu 55		Find-spot: Oidip. str.	(-)
111 11 11 11 13 3	.a	SUS <sup>m</sup> supra sigillum H [2]	()
	.в	ka-ru-to	
	.γ	vacat	
	. 1		
TH Wu 56		Find-spot: Oidip. str.	(a)
	.a	CAP <sup>m</sup> supra sigillum C [5]	
		sup. mut.	
	.31	[o-]pe-re-ta	

\*171 30

```
.81 Trace at left not incompatible with ]o-pe-re-ta.
TH Wu 57
                                                                Find-spot: Oidip. str.
                                                                                                           (-)
                                OVIS<sup>x</sup>
                                           supra sigillum [1]
                     a.a
                                inf. mut.
                     .B
                                vacat
                                sup. mut.
                                deest
                     \cdot \gamma
TH Wu 58
                                                                Find-spot: Oidip. str.
                                                                                                           (a)
                                SUS
                                           supra sigillum C [5]
                     .a
                     .βa
                                o-pa
                     .βb
                                qe-ri-jo-jo
                                a-ma-ru-to
                     \cdot \gamma
          .βb Written (and thus read) before .βa.
TH Wu 59
                                                                Find-spot: Oidip. str.
                                                                                                           (\zeta)
                                *171 36 supra sigillum J [2]
                     .aa
                     .ab
                                [ ]SUSx
                     .β
                                pa-ro, sa-me-
                                       -we
                     .γa
                     .γb
                                ro-we-wi-ja[
          .ab Probably written (and thus read) before .aa.
TH Wu 60
                                                                Find-spot: Oidip. str.
                                                                                                           (\zeta)
                                SUS<sub>m</sub>
                                          supra sigillum J [2]
                     .a
                     .β
                                pa-ro, sa-me-we
                                vacat
                     ·Y
TH Wu 61
                                                                Find-spot: Oidip. str.
                                                                                                          (-)
                                OVISf
                                          supra sigillum K [2]
                     .a
                                deest
                     .β
                     \cdot \gamma
                                vacat
TH Wu 62
                                                                Find-spot: Oidip. str.
                                                                                                          (\epsilon)
                                CAP^{m}
                                          supra sigillum G [3]
                     .a
                     .β
                                vacat
                                vacat
                     \cdot \gamma
TH Wu 63
                                                                Find-spot: Oidip. str.
                                                                                                          (B)
                                SUS
                                          supra sigillum E [3]
                     .a
                     .B
                                qe-te-o
                                a-ko-ra
                     \cdot \gamma
TH Wu 64
```

supra sigillum M [1]

WE

a.

Find-spot: Oidip. str.

(-)

	.3 .γ	o-pa vacat		
TH Wu 65	.α .β .γ	OVIS <sup>f</sup> te-qa-de qe-te-a <sub>2</sub>	Find-spot: Oidip. str. supra sigillum D [7]	(γ)
TH Wu 66	.α .β .γ	SUS <sup>m</sup> [ [.]-[.]-e i-je-ro	Find-spot: Oidip. str. supra sigillum H [2]	(-)
TH Wu 67	.α .β .γ	OVIS <sup>m</sup> po-ro-e-l -to	Find-spot: Oidip. str. supra sigillum O [5]	(η)
TH Wu 68	.α .β .γ	SUS + SI a-ko-ra-jo vacat	Find-spot: Oidip. str. supra sigillum F [5]	(δ)
		CAP <sup>f</sup> vacat vacat hollow cro	Find-spot: Oidip. str.  supra sigillum P [1]  sss-mark, probably left by the ends of the "nexus" ule.	(-)
TH Wu 70	.α .β-γ .1	OVIS <sup>m</sup> a-e-ri-qo	Find-spot: Oidip. str. supra <b>sigillum</b> F [5]	(-)
TH Wu 71	.2 .α .β .γ	sigillum PYC+O vacat	Find-spot: Oidip. str. L [3]	(-)
TH Wu 72	.α .β .γ	OVIS <sup>m</sup> vacat vacat	Find-spot: Oidip. str. supra sigillum F [5]	(-)
TH Wu 73	.a	OVIȘ <sup>m</sup>	Find-spot: Oidip. str. supra sigillum Q [1]	(-)

	.3 .γ	vacat vacat		
	-4			
TH Wu 74	.α .β	we CAP <sup>m</sup> au-[.]-e inf. mut. vest.[	Find-spot: Oidip. str. supra sigillum O [5]	(-)
.a			orizontal bar (coming from a corrected CAP <sup>f</sup> ).	
TH Wu 75	.α .β .γ	SUS <sup>m</sup> e-qi-ti- -wo-e	Find-spot: Oidip. str.  supra sigillum G [3]	(-)
TH Wu 76	.α .β1 .β2 .γ	BOSf a-e-ri-qo vacat o-pa	Find-spot: Oidip. str.  supra sigillim C [5]  *171 30	(a)
TH Wu 77	.α .β .γ	sup. mut. [ ]m ; sup. mut. vest.[ -ta	Find-spot: Oidip. str.  supra sigillum O [5]	(-)
<b>TH Wu 78</b> .β	.α .β .γ WE could be	<i>WE</i> vacat	Find-spot: Oidip. str. supra sigillum K [2] et to OVIS <sup>m</sup> (cfr. Wu 74).	(-)
TH Wu 79	.α .β .γ	OVIS <sup>m</sup> s vacat vacat	Find-spot: Oidip. str. supra <b>sigillum</b> R [5]	(θ)
TH Wu 80	.α .β .γ	*190 s vacat vacat	Find-spot: Oidip. str. supra <b>sigillum</b> S [3]	(-)
TH Wu 81		sup. mut.	Find-spot: Oidip. str.	(-)

sigillum L [3]

D.

```
sup. mut.
                                 ]vest.[
                      .3
                                 vacat
                      \cdot \gamma
                Very probably the base of PYC + O (cf. Wu 71).
                                                                                                                 (-)
                                                                    Find-spot: Oidip. str.
TH Wu 82
                                 OVISm supra sigillum T [1]
                      .a
                                             vacat[
                      .β
                                             deest
                      \cdot \gamma
                                                                                                                 (<sub>0</sub>)
                                                                    Find-spot: Oidip. str.
TH Wu 83
                                 OVISm supra sigillum R [5]
                      .a
                      .β
                                 vacat
                                 vacat
                      \cdot \gamma
                                                                    Find-spot: Oidip. str.
                                                                                                                 (<sub>0</sub>)
TH Wu 84
                                 UVISm supra sigillum R [5]
                      .a
                      .β
                                 vacat
                                 vacat
                      \cdot \gamma
                                                                                                                 (b)
                                                                    Find-spot: Oidip. str.
TH Wu 85
                                 OVISm
                                             supra sigillum R [5]
                      .a
                      .β
                                 vacat
                                 vacat
                      \cdot \gamma
                                                                                                                 (ı)
                                                                   Find-spot: Oidip. str.
TH Wu 86
                                             supra sigillum U [2]
                                 OVIS<sup>m</sup>
                      .a
                                 i-je-ro
                      .β
                      \cdot \gamma
                                 vacat
                                                                                                                 (ı)
                                                                   Find-spot: Oidip. str.
TH Wu 87
                                             supra sigillum U [2]
                                 CAP^{m}
                      .a
                      .β
                                 i-je-ro
                                 vacat
                      \cdot \gamma
                                                                                                                 (\alpha?)
                                                                    Find-spot: Oidip. str.
TH Wu 88
                                             supra sigillum C [5]
                                 CAP^{x}
                      .a
                                 inf. mut.
                                 ra-mi-jo, o-pa
                      .3
                                 deest
                      \cdot \gamma
                                                                                                                 (-)
                                                                    Find-spot: Oidip. str.
TH Wu 89
                                  *190 supra sigillum D [7]
                      a.
                      .3
                                 a-pu-do-ke
                                 vacat
                      \cdot \gamma
```

TH Wu 90	Find-spot: Oidip. str.  .a CAP <sup>f</sup> supra <b>sigillum</b> V [2]  .β ]de  .γ vacat  Room for two signs before ]de.	(ĸ)
TH Wu 91	Find-spot: Oidip. str.  .a OVIS <sup>m</sup> supra <b>sigillum</b> R [5] .β vacat .γ vacat	(θ) .·
TH Wu 92	Find-spot: Oidip. str.  .a CAP <sup>m</sup> supra <b>sigillum</b> O [5] .β po-ro-e-ko-	(η)
TH Wu 93	-to Find-spot: Oidip. str.  .α OVIS <sup>m</sup> supra <b>sigillum</b> S [3] .β vacat	(-)
TH Wu 94	.γ vacat Find-spot: Oidip. stra CAP <sup>f</sup> supra <b>sigillum</b> D [7] .β a <sub>2</sub> -pa-a <sub>2</sub> -de	(y)
TH Wu 95	Find-spot: Oidip. str.  a *190[ supra sigillum S [3]  β vacat  γ ]vacat	(-)
TH Wu 96	Find-spot: Oidip. str. supra sigillum D [7] $te$ -qa-de $qe$ -te- $qe$	(γ)
<b>TH Wu 97</b>	Find-spot: Oidip. str.  .a CAPf supra sigillum W [1]  .3 vacat  .y vacat  Impression coming from a heavily worn seal or obliterated before it was	(-)
TH Wu 98	Find-spot: Oidip. str.  supra sigillum O [5]  deest vacat	(-)

```
TH Wu 99 Find-spot: Oidip. str. (\kappa)

.a CAP<sup>1</sup> supra sigillum V [2]

inf. mut.

.\beta a-dwe-\varphi

inf. mut.

.\gamma deest
```

The following list was compiled from the *Index Generaux* and *TITHEMY* and therefore may have some *lacunae* where there are new readings in *KT*5, *COMIK*, or the latest ms. of the transcription by Emmett L. Bennett, Jr., of the Pylos tablets.

I. Index of Linear B signs, sign groups and ideograms appearing on sealings (with parallel texts at each given site listed in square brackets):

*134	KN Ws 8496.a
134	[KN U 5592, 7063.2.3]
*146	KN Wm 1714.2, KN Wm 1817.2, KN Wm 5860.2, KN Wm 8490.2
140	[KN M 467, 559.2, 683.2, 719.2, 720.b, 724.1, 729.1, 1645.2]
*146	KN Wm 1816.2
*152	PY Wr 1457.a
132	[PY Mn 11.6.10]
*171	TH Wu 46.γ, TH Wu 56.γ, TH Wu 59.αa, TH Wu 76.γ
*185	
	KN Ws 1701.a
*190	MY Wt 700.a, TH Wu 48.a, TH Wu 80.a, TH Wu 89.a, TH Wu 95.a, TH Wu 98.a
	[MY Oi 701.3.4.5.6.7, 702.2.3.4.5, 703.2.3, 704.1.2, 706.2.3; Ue
*94C	661.1]
*246	KN Ws 8497.a
+057	[KN U 437, 5186.1]
*257	KN Ws 8494.γ
[ ]m	TH Wu 77.a
a-dwe-e	TH Wu 99,8
a-e-ri-qo	TH Wu 70.β-γ1, TH Wu 76.β1
a-ko-ra	TH Wu 49.γ, TH Wu 50.γ, TH Wu 63.γ
a-ko-ra-jo	TH Wu 52.β, TH Wu 68.β
a-ma-ru-to	TH Wu 58.γ
a-nu-wi-'ko'	KN Ws <8754>.γ
	[KN As 1516.2]
a-pu-do-ke	TH Wu 89.β
a-pu-do-si	PY Wr 1457.γ
	[PY Ma 123.2, 222.2, 346.2, 393.2]
a-sa-mi-to	KN Ws 8497.γ
a-ta-ra-qe	MY Wt 501.β1
$a_2$ -pa- $a_2$ -de	TH Wu 94.β
a <sub>3</sub> -wo-re-u-si	KN Wm 1707.α1-2
a <sub>3</sub> -wo-di-jo-no	PY Wn 1247
AES	KN Ws 8497.a
	[KN Gg 709.b, K 740.2.3, L 693.1.2, Oa 734, Og 8038 v. Sc
	223]
AREPA	PY Wr 1437.a
	[PY Fr 1198, Un 6.7, 718.8, 853.4]
au-[.]-e	TH Wu 74.β

BOS<sup>f</sup> TH Wu 76.a TH Wu 53.a

CAP<sup>f</sup> TH Wu 46.a, TH Wu 50.a, TH Wu 69.a, TH Wu 90.a, TH Wu 94.a, TH Wu 97.a, TH

Wu 99.a

CAP<sup>f</sup> PY Wr 1416.a

[PY An 35.6, Cc 1258, Cn passim, Un 2.5, 612.2, 853.4]

CAP<sup>m</sup> PY Wr 1325.a, PY Wr 1334.a, TH Wu 44.a, TH Wu 54.a, TH Wu 56.a, TH Wu 62.a,

TH Wu 87.a, TH Wu 92.a

[PY Cc 660, Cn passim, Ua 17.2, Un 2.5, 138.3]

 $\begin{array}{lll} \text{CAP}^{\text{m}} & \text{TH Wu } 74.\alpha \\ \text{CAP}^{\times} & \text{TH Wu } 88.\alpha \\ \text{Jde} & \text{TH Wu } 90.\beta \\ \text{de-mi-ni-jo} & \text{PY Wr } 1326.\gamma \\ \text{do-ka-ma} & \text{PY Wr } 1840 \\ \end{array}$ 

[PY An 1282.3]

do-ke KN Wm 1707.β, KN Wm 8493.βb

[KN Xe 7711]

[.]-[.]-e TH Wu 66.β
]E[ PY Wr 1458.α
e-ku-se-we-qe MY Wt 501.β2
e-po KN Ws 8712.α

[KN Ce 283]

e-qi-ti-wo-e TH Wu  $75.\beta-\gamma$ e-ri[ PY Wr  $1459.\gamma$ e-ti-wa-i[ PY Wr  $1359.\beta$ GRA KN Ws  $8500.\alpha$ 

[KN Ai 750, 751, 752, 5543.1.2.3, 7026, E passim, F passim]

i-je-ra TH Wu 44.β

i-je-ro TH Wu 66.γ, TH Wu 86.β, TH Wu 87.β

i-ri-ja TH Wu 53.γ [.]-ja-wo-ne KN Wm 1707.γ

JAC KN Ws 1704.a, KN Ws 8495.a

ljo PY Wr 1326.β

ka-na-to MY Wt 502.β, MY Wt 506.β

[MY Ue 611.3]

[KN X 8768]

ko-we KN Ws  $8498.\gamma$  ku-wa-ta KN Ws  $<8754>.\beta$ 

LANA KN Wm 8493.8b, KN Ws 8152.a

[KN Dk passim, Dp 43, 699.b, 937, 997[.b], 1061, 2004, 7135, 7280.1.2, D 7071, 7134.A, 7251.A.B, Ga 953.3b, 5672.2, Gg

7369.2, Lc passim, Ln 1568.6 lat.inf.b, Od passim]

ma-se KN Ws 1701.β me-ri-ti-jo PY Wr 1360.β-g

me-sa-to KN Wm 1816.1, KN Wm 5822.1 [KN Fh 360]

]me-sa-to KN Wm 5824.1

me-sa-to

KN Wm 1714.1

MUL

KN Wn 8752.a

[KN A-series passim]

na-ki-zo

KN Wm 8499.3

ne-ki-ri-de

KN Ws 8152.β-γ

[KN Ak 780.1, Ln 1568 lat inf.a]

o-nu-ke

KN Ws 1703.β

[KN Ln 1568 lat. inf.b, M 6831b, Od 682.1]

o-pa

KN Ws 1704.β, KN Ws 8495.γ, KN Ws 8498.β, PY Wr 1325.γ, PY Wr 1331.γ, PY Wr 1332.β, PY Wr 1333.γ, TH Wu 46.β, TH Wu 56.β2, TH Wu 58.βa, TH Wu 64.β, TH

Wu 76.γ, TH Wu 88.β

[KN Am 821.1.2, Ce 50v.1b, Dm 1184.b, E 971.b, L 695.1b, Sd

4403.1, 4422.1, Sf 4420.a, So 4430.a, PY Sh 736]

o-pa

PY Wr 1330.γ

[o-]pe-re-ta

TH Wu 56.β1

o-pi

KN Ws <8754>.y

[KN As 1517.11, Fh 368, Ld 584.1, Le 5646.1.2B, Ln 1568 lat. inf. b, L 567.1.2, 648.b, Mc 1528., Od 539, 570.b, 689.b, 690.1.2, Uf 983.a, V 1523[.4b].5b.6, Xe 537.2, 691.1.2, 692.1b, X 5334.1]

**OVISf OVIS**f TH Wu 65.a TH Wu 61.a

**OVISm** 

PY Wr 1331.a, TH Wu 49.a, TH Wu 67.a, TH Wu 70.a, TH Wu 72.a, TH Wu 78.a, TH

Wu 79.a, TH Wu 82.a, TH Wu 83.a, TH Wu 84.a, TH Wu 85.a, TH Wu 86.a, TH

Wu 91.a, TH Wu 93.a

**OVIS**<sup>m</sup> **OVIS**<sup>x</sup>

P

TH Wu 73.a TH Wu 57.a

KN Ws 1703.a

[KN L 590 lat. inf., 693.2, 695.4, 698.3, Np passim, Od 666 v., 667.1.2, Og 1804.b, 5019.1.2, 5095, 7432, 7443, 8466.2, Xe

7857.2, 8532.21

pa-ke-te-re

PY Wr 1415.a

[PY Vn 46.6, 879.4]

pa-ke-te-ri-ja

MY Wt 506.γ-a

[MY Ue 611.3 (pa-ke-te-re)]

pa-ko-to pa-ra-wo

MY Wt 505.β TH Wu 46.8

pa-ro

TH Wu 47.β, TH Wu 59.β

ра-го

TH Wu 60.β

pa-ta-ja

KN Ws 1704.γ, KN Ws 8495.β1,

[PY Jn 829 (pa-ta-jo-i-qe)]

pa-ta-ja

KN Ws 1705.β

pa-ta-jo

PY Wr 1480.β

[PY Jn 829 (pa-ta-jo-i-qe)]

pa-wo

KN Wm 8499.γ

pe-di-e-wi

PY Wr 1328.β-γ (cf. pe-di-je-wi-ja-on Va 1324 from Room 99)

pe-re-i-to pi-mo-no

PY Wr 1327.γ KN Wm 8499.a

[KN Xe 692.1b]

po-ro-e-ko-to

TH Wu 67.β-γ, TH Wu 92.β-γ

 $]pu_2-*35-[$ 

PY Wr 1374.γ

PYC

MI?.a

PYC+O

TH Wu 71.β, TH Wu 81.β

qe-ri-jo-jo

TH Wu 58.8b

qe-te-a<sub>2</sub> TH Wu 51.γ, TH Wu 65.γ, TH Wu 96.γ qe-te-o TH Wu 49.β, TH Wu 50.β, TH Wu 63.β

qe-te-o TH Wu 53.β qe-ti-ja MY Wt 504.β

[MY 611.3]

ra-mi-jo TH Wu 88.β

ro-we-wi-ja TH Wu 45.γ, TH Wu 47.γ

ro-we-wi-ja[ TH Wu 59.γb ro-zo Ml?.β

sa-ma-ja-so KN Wm 8207

[KN Dv 5054.B]

sa-me-we TH Wu 59.β-γa, TH Wu 60.β

se-to-i-ja KN Wm 8493.a

[KN Ak 634.B, Am 5755.1, As 40.6, 1516.20, Da 1392.B, Dc 5687.B, Do 1054.a, 7087[a], 7613[a], 7740.a, Dq 438.a, 686.a, Lc 525.b, Le 654.4, Mc 4464.B, Sd 4407.b, So 4442, X 660.B, 5040.b,

7094[.B]]

SUS TH Wu  $58.\alpha_{\bullet}$  SUS<sup>f</sup> TH Wu  $96.\alpha$  SUS<sup>f</sup> TH Wu  $63.\alpha$  SUS<sup>f</sup> PY Wr  $1327.\beta$ 

[PY Cn passim, Ua 17.2, Un 2.6, 6.1.3, 853.5]

SUS<sup>m</sup> TH Wu 47.a, TH Wu 51.a, TH Wu 55.a, TH Wu 66.a, TH Wu 75.a

 $\begin{array}{ccc} SUS^m & TH \ Wu \ 60.\alpha \\ SUS^x & TH \ Wu \ 59.\alpha b \end{array}$ 

SUS + *SI* TH Wu 52.a, TH Wu 68.a

-ta TH Wu 77.γ ta-to-mo KN Ws 1703.β te KN Wm 8493.βb

[KN As 5542.1, 594.1, Fh 360]

te-pa KN Ws 8153.β

te-qa-de TH Wu  $51.\beta$ , TH Wu  $65.\beta$ , TH Wu  $96.\beta$ 

te-qa-jo TH Wu  $47.\beta$ TELA+ PU PY Wr  $1374.\alpha$ TELA $^3+TE$  KN Ws  $8153.\alpha$ 

[KN Lc 525.a, L 5660.2, 8160.1]

VIN PY Wr 1358.a, PY Wr 1359.a, PY Wr 1360.a, PY Wr 1361.a

[PY An 35.6, Gn 428.3.4.5, 720.1.2, Ua 17.1, Un 2.6, 47.3, 138.3,

267.7.8, 612.1, 718.3.7.11.12, 853.6, 1321.2]

VIR KN Ws <1708>

[KN A-series passim]

VIR KN Wn 8713.a wa PY Wr 1480.a

[if as an abbreviation for wa-na-ka-te-ro vel sim., then there are occurrences of this adjectival form of wa-na-ka in the various PY E- series; wa-na-ka itself is found in PY Fr, La, Na

texts as well on Ta 711 and Un 21

WETH Wu  $64.\alpha$ WETH Wu  $78.\beta$ weTH Wu  $74.\alpha$ WIPY Wr  $1332.\alpha$ 

[PY Un 219.10]

wi-ra<sub>2</sub>-[.] KN Ws  $1701.\beta$ 

## Ia. Signs inscribed supra sigillum:

```
KN Ws 8496.a
*134
*152
                       PY Wr 1457.a
                       TH Wu 59.ab
*171
*185
                       KN Ws 1701.a
                       MY Wt 700.a, TH Wu 48.a, TH Wu 80.a, TH Wu 89.a, TH Wu 95.a, TH Wu 95.a, TH
*190
                           Wu 98.a
                       KN Ws 8497.a
*246
                       TH Wu 77.a
[ ]m
                       PY Wr 1458.a
]E[
                       KN Ws 8497.a
AES
                       PY Wr 1437.a
AREPA
                       TH Wu 76.a
BOSf
BOS<sup>m</sup>
                       TH Wu 53.a
                       TH Wu 46.a, TH Wu 50.a, TH Wu 69.a, TH Wu 90.a, TH Wu 94.a, TH Wu 97.a, TH
CAPf
                           Wu 99.a
CAPf
                       PY Wr 1416.a
                       PY Wr 1325.a, PY Wr 1334.a, TH Wu 44.a, TH Wu 54.a, TH Wu 56.a, TH Wu 62.a,
CAPm
                        TH Wu 87.a, TH Wu 92.a
                       TH Wu 74.a
CAPm
CAP<sup>x</sup>
                       TH Wu 88.a
                       KN Ws 8712.a
e-po
                       PY Wr 1359.β
e-ti-wa-i
GRA
                       KN Ws 8500.a
                       KN Ws 1704.a, KN Ws 8495.a
JAC
                       KN Ws 8152.a
LANA
                       KN Wn 8752.a
MUL
                       TH Wu 65.a
OVISf
OVISf
                       TH Wu 61.a
                       PY Wr 1331.a, TH Wu 49.a, TH Wu 67.a, TH Wu 70.a, TH Wu 72.a, TH Wu 78.a, TH
OVISm
                           Wu 79.a, TH Wu 82.a, TH Wu 83.a, TH Wu 84.a, TH Wu 85.a, TH Wu 86.a, TH
                           Wu 91.a, TH Wu 93.a
                       TH Wu 73.a
OVISm
                       TH Wu 57.a
OVIS<sup>x</sup>
                       KN Ws 1703.a
pa-ke-te-re
                       PY Wr 1415.a
                       TH Wu 58.a
SUS
                       TH Wu 96.α
SUSf
SUSf
                       TH Wu 63.a
                       TH Wu 47.a, TH Wu 51.a, TH Wu 55.a, TH Wu 66.a, TH Wu 75.a
SUS<sub>m</sub>
SUSx
                       TH Wu 59.ab
SUS + SI
                       TH Wu 52.a, TH Wu 68.a
                       PY Wr 1374.a
TELA+ PU
TELA3+TE
                       KN Ws 8153.a
                       PY Wr 1358.a, PY Wr 1359.a, PY Wr 1360.a, PY Wr 1361.a
VIN
VIR
                       KN Ws <1708>
                       KN Wn 8713.a
VIR
                       Wr 1480.a
wa
                       TH Wu 64.a
WE
we
                       TH Wu 74.a
WI
                       PY Wr 1332.a
                       TH Wu 45.β
*56-pu-so
```

Ib. Tablets where two or more of the signs/words found on sealings at their respective sites occur:

KN As 1516 (2) KN Fh 360 (2) KN L 695 (2)	Hand: 101 Hand: 141 Hand: 103	Find-spot: J2 Find-spot: E1 Find-spot: F19
KN Lc 525 (2)	Hand: 103	Find-spot: F10
*KN Ln 1568 (4)	Hand: 103	Find-spot: F14
KN Xe 692 (2)	Hand: 103	Find-spot: F18
*MY Ue 611.3 (3)	Hand: $r$ .: 60; $v$ .: -	Find-spot: H. Sphinxes
PY An 35 (2)	Hand: H3	Find-spot: <i>31</i> 34
*PY Ua 17 (3)	Hand: S138-H42	Find-spot: <i>32</i> 52
*PY Un 2 (4)	Hand: S2-H1	Find-spot: <i>31</i> 47-58
PY Un 6 (2)	Hand: S6-H6	Find-spot: 3168 4564X Ramp 59 SW Area 31
PY Un 138 (2)	Hand: S138-H42	Find-spot: 1141
PY Un 612 (2)	Hand: S2-H1	Findspot: 4461
PY Un 718 (2)	Hand: S132-H24	Find-spot: <i>83</i> 27
*PY Un 853 (4)	Hand: S6-H6	Find-spot: 2547X 2636

# II. Sealings with no signs inscribed over sigilla:

```
KN Ws 1705
KN Ws 8494
KN Ws 8498
KN Ws <8754>
MY Wt 0501
MY Wt 0502
MY Wt 0503
MY Wt 0504
MY Wt 0505
MY Wt 0507
PY Wr 1326
PY Wr 1327
PY Wr 1328
PY Wr 1329 ("20" only sign on nodule)
PY Wr 1330
PY Wr 1459
TH Wu 45
TH Wu 71
TH Wu 81
```

# III. "Sealings" with no sigilla:

```
KN Wm 1707
KN Wm 1714
KN Wm 1816
KN Wm 1817
KN Wm 5822
KN Wm 5824
KN Wm 5860
KN Wm 8207
KN Wm 8490
```

KN Wm 8493 KN Wm 8499 MI? PY Wn 1199 PY Wn 1247

IV. Transactional Vocabulary on Sealings found at Mycenaean centers (in square brackets, designation of texts from the same sites containing the same terms):

a-pu-do-ke

TH Wu 89.β

a-pu-do-si

PY Wr 1457.γ

do-ke

KN Wm 1707.β, KN Wm 8493.βb

[KN Xe 7711]

o-pa

KN Ws 1704. $\beta$ , KN Ws 8495. $\gamma$ , KN Ws 8498. $\beta$ , PY Wr 1325. $\gamma$ , PY Wr 1331. $\gamma$ , PY Wr

1332.β, PY Wr 1333.γ, TH Wu 46.β, TH Wu 56.β2, TH Wu 58.βa, TH Wu 64.β, TH

Wu 76.γ, TH Wu 88.β

[KN Am 821.1.2, Ce 50v.1b, Dm 1184.b, E 971.b, L 695.1b, Sd

4403.1, 4422.1, Sf 4420.a, So 4430.a, PY Sh 736]

o-pa

PY Wr 1330.γ

[PY Sh 736]

po-ro-e-ko-to

TH Wu 67.β-γ, TH Wu 92.β-γ

qe-te-a<sub>2</sub> qe-te-o TH Wu 51.γ, TH Wu 65.γ, TH Wu 96.γ TH Wu 49.β, TH Wu 50.β, TH Wu 63.β

qe-te-o TH Wu 53.β

- <sup>1</sup> See the forthcoming paper by Killen, J.T., in the acts of the 10th International Mycenological Colloquium, for a thorough and convincing interpretation of the textual occurrences of this word that distinguishes *o-pa* from *ta-ra-si-ja* in that the former refers to work on «a completed manufactured item or a unit of livestock», while the latter refers to «an issue of raw materials (or an object manufactured with the help of such an issue)».
- <sup>2</sup> P. 21 in commentary on Eb 149. See Palaima, T.G. 1988, p. 87, n. 124, for a brief discussion of the occurrences of this feature. Cf. also Va 482 by Hand 42.
- Notice that the string hole in Va 482 is the only tablet of Hand 42 which has a string hole. The tablet is a bit longer than the scribe's Ae tablets, but not appreciably so. Therefore, the use of the transverse "string" is not an habitual feature of this scribe's work. It is interesting that Va 482, as opposed to the scribe's Ae tablets, deals with manufacturing materials, here *e-re-pa* (ivory). This ivory is described as *a-no-po* (not subject to *o-pa*). See more on this below.
- KILLEN, J.T. This interpretation was previously entertained by Lejeune and Duhoux, among others. Cf. F. Aura Jorro, DMic. II, s.v.
- <sup>5</sup> Cf. F. Aura Jorro, *DMic.* II, s.v. esp. note 6: "useful, in good use" and comparable to later ἐπιεικήs. There are other proposed interpretations.
- 6 PALAIMA, T.G. 1988, p. 92.
- There are two texts from the A group and one from the B group for which Bennett's transcription in progress reports no "strings": Sa 487 and Sa 760 and Sa 751. However, records of my original autopsy in 1979-80 for *Scribes of Pylos* indicate the existence on all three tablets of what I then called "string holes" and the precise position where these were visible on the tablets.
- 8 See the cautious and comprehensive article by HUTTON, W.F. 1990-91 on qe-te-o and related economic vocabulary, The Meaning of qe-te-o, pp. 105-32.
- The nature of these tablets is still most fully discussed in the original publication by Chapwick, J. 1969, pp. 120-23.
- <sup>10</sup> PALAIMA, T.G. 1988, pp. 103-105. Hand 42 writes personnel texts with religious and herding associations (cf. especially Ae 303: 14 WOMEN listed at Pylos as *i-je-re-ja do-e-ra*, servants of the priestess, *e-ne-ka ku-ru-so-jo i-je-re-jo*, on account of sacred gold) and also the key text pertaining to a commensual banquet: Un 138 with its heading *pu-ro ge-te-a*<sub>2</sub> (to be paid, as a religious fine?) *pa-ro du-ni-jo*.

- 11 Docs2, 268.
- 12 FISSORE, G.G. 1994, pp. 339-54.
- 13 Sara Kimball and I taught a course on Hittite and Mycenaean Civilization from a textual perspective in Spring 1993 at University of Texas at Austin. She translated the deposition in her course booklet. Carole Justus's ideas are known to me in a draft paper which she gave to me on March 7, 1989: Ancient Artifacts, Economics and the Use of Hittite DUSDUMI's and LALAMI's. Justus will publish a full version of this paper in «Minos». See LAROCHE 1971, p. 293.
- 14 The Scribe-on-Wood stresses his own integrity by declaring: "[1]f Mr. GAL dingirU has taken something for himself and I have not reported it, then let me be cursed".
- 15 See also now PITEROS, C., OLIVIER, J.-P., MELENA, J.L. 1990, pp. 147-183.
- <sup>16</sup> Palaima, T.G. 1994, pp. 322-325. See just now Hallager 1996, pp. 233-234.
- 17 Related noun forms occur on Pylos labels and tablets. Cfr. Wa 730.2 (do-si-mi-jo-qe), Wa 731.A (do-so-mo) in connection with the Es series, Nn 831, Un 718.1.2 (do-so-mo) and Ma 126.1 (do-si-mi-ja).

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