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# Textile Terminologies in the Ancient Near East and Mediterranean from the Third to the First Millennia BC

Marie-Louise Bech Nosh

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# TEXTILE TERMINOLOGIES

IN THE ANCIENT NEAR EAST AND MEDITERRANEAN  
FROM THE THIRD TO THE FIRST MILLENNIA BC

edited by  
*C. Michel and M.-L. Nosch*

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# 17. The Terminology of Textiles in the Linear B Tablets, including Some Considerations on Linear A Logograms and Abbreviations

*Maurizio Del Freo, Marie-Louise Nosch and Françoise Rougemont*

Terminology can be defined as (1) the vocabulary specifically linked to a field of expertise, as (2) the academic discipline devoted to the study of this vocabulary, or as (3) the linguistic theory reflecting on these terminologies: their formation, evolution, functioning and use.<sup>1</sup>

As such, it is clear that terminology can only apply to deciphered scripts and languages that are identified and understood, so that its application to the non-deciphered Linear A documents is a bit far stretched. Nonetheless, the nature of this script, as well as the state of research on the phonetic value of some of its signs may allow a few observations on the logograms and adjuncts used to designate textiles. However, it is clearly not intended by the authors as terminology in the full sense of the concept.

Linear B tablets have been found on the island of Crete as well as on sites on the Greek mainland (See Fig. 17.1, map, below). They are dated between c.1450 and 1200 BC, according to the site on which they have been unearthed.<sup>2</sup>

How can one study the corpus of Linear B tablets recording textile matters from the point of view of the tools of terminology? In a lexicographical perspective, the words belonging to the Mycenaean textile vocabulary have already been gathered, recorded and classified especially by J. T. Killen, J. L. Melena, Y. Duhoux, A. Morpurgo Davies, E. Barber, M.-L. Nosch and E. Luján.<sup>3</sup> As it emerges from the contributions of these authors, in order to study the textile vocabulary, one can rely on different approaches. Basically one can try to understand the meaning of a Mycenaean word by studying its context or its etymology. It is clear that safe results can only be achieved when it is possible to combine these two methods. The elements of the textile vocabulary can then be grouped together and compared from both a historical and a structural perspective.

<sup>1</sup> See Dury & Lervad, this volume.

<sup>2</sup> At Knossos on Crete, the texts found in the so-called *Room of the Chariot Tablets* (RCT), which is the oldest deposit of Linear B texts known until now, are dated to the Late Minoan (=LM) II period (c.1450–1400 BC), whereas the bulk of the archives found in the same palace is dated to LM III A2 or III B (c.1375–1325 and 1325–1190 respectively); the Pylos and the Thebes tablets, as well as the Mycenaean tablets found in the citadel, are dated mainly to the end of the Late Helladic (=LH) III B2 period (LH III B2 = c.1225–1200 BC); the Mycenaean tablets found in the so-called House of the Oil Merchant are dated to the end of the LH III B1 period (LH III B1 = c.1300–1225 BC).

<sup>3</sup> Duhoux 1976; Morpurgo Davies 1979, 87–108, esp. 99–101 and Appendix; Luján 1996–1997; Luján 1999; J. T. Killen 1962; 1963; 1964; 1966; 1968; 1972; 1974; 1979; 1982; 1984; 1988; 2001; Nosch 2000; Barber 1991, 260–282; Rougemont (forthcoming).



Fig. 17.1. Map with the sites where the Linear A and Linear B inscriptions mentioned in the text have come to light. Courtesy of P. Darcque.

The aim of this chapter is to combine the approaches mentioned above in a new perspective. Firstly, the reader will find below a classification of the extant textile terminology according to the *chaîne opératoire*;<sup>4</sup> second, we present a reflection on the relationship between logographic notations and textile terminology, as can be grasped from the study of Linear B texts, but also going back to the elements provided by the Linear A documents, as far as they can be understood; then the focus is on the terminology of tools and weaving, and its relationship to technical characteristics; and finally a reflection on the use of words in textile terminology (antonyms, synonyms, and what can be inferred from it about the information that was particularly important to the Mycenaean scribes) is presented.

<sup>4</sup> This first section owes a great deal to the reflections already developed in the framework of a workshop on the processing of thread held in Nanterre, see Rougemont (forthcoming). See also Del Frego & Rougemont (forthcoming).

## 1. From raw fibres to finished textile products

### 1.1. *Fibres: wool and linen/flax*

Two main textile fibres have been identified in Linear B records: they are, unsurprisingly, wool and linen/flax.

#### 1.1.1. *Wool*

Wool is designated in Linear B by the logogram \*145, conventionally transcribed by the Latin word LANA.<sup>5</sup> The corresponding word is not directly attested, only known through other designations, such as the adjective *we-we-e-a*, meaning “woollen”, related to Gr. εἶπος.

The logogram is also used as metrogram, i.e. to indicate a quantity, the value of which is estimated to be 3 kg. It denotes, to the best of our knowledge, exclusively sheepswool.<sup>6</sup> However, it has been suggested by M. Perna that the logogram \*142 could represent goatshair, which would fit nicely into the wider range of textile fibres recorded in contemporary Near Eastern documents, for example those found at Nuzi.<sup>7</sup> Bronze Age goatshair textiles are also attested in the archaeological record.<sup>8</sup>

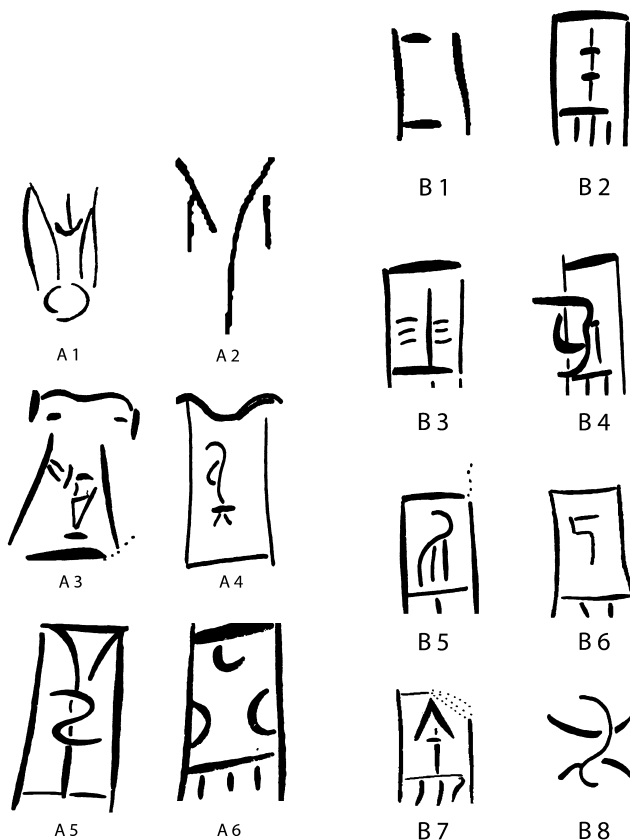
Fig. 17.2. Chart of Linear B wool/flax and textile logograms. Drawings by L. Godart.

Table A

1. LANA logogram. From KN Lc(1) 525 by scribe 103
2. SA, syllabogram and also logogram for flax. From KN Gs (1) 685 by scribe 135
3. TUN+KI logogram. From KN L 870 by scribe 114?
4. TUN+RI logogram. From KN L 178 by scribe “124”
5. \*146 logogram. From KN M 467 by unidentified scribe
6. \*164 logogram. From KN L 520 by unidentified scribe

Table B

1. TELA logogram. From KN Lc(1) 534 by scribe 103
2. TELA+PA logogram. From KN Ld(2) 787 by scribe 114
3. TELA+TE logogram. From KN Lc(1) 526 by scribe 103
4. TELA+KU logogram. From KN L(4) 516 by scribe 208
5. TELA+PU logogram. From KN L(4) 515 by scribe 208
6. TELA+PO logogram. From TH Lf 139 by unidentified scribe.
7. TELA+ZO logogram. From KN L 433 by unidentified scribe.
8. \*166+WE logogram. From KN Oa 745 by unidentified scribe.



<sup>5</sup> On this logogram, see Nosch 2007.

<sup>6</sup> Perna 2004, 278–280.

<sup>7</sup> Cf. Schneider-Ludorff 1998, 163–168.

<sup>8</sup> Spantidaki & Moulherat 2009; Frangipane *et al.* 2009.



J. T. Killen has demonstrated that the palatial sheep flocks which were the source of the wool used by palatial workshops were constituted of castrated wethers;<sup>9</sup> they contain in general 100 animals or a multiple of this number; the quantity of wool expected by the palace is 1 unit of wool (3 kg) from 4 adult sheep, meaning around 750 g per animal. Even when a flock is not a wether-only flock, but also contains ewes, old animals and yearlings, the production target for wool is identical. However, in flocks destined for reproduction, the composition of which include ewes and lambs, the wool target is only 10 animals : 1 unit of wool, i.e. c.300 g per animal.

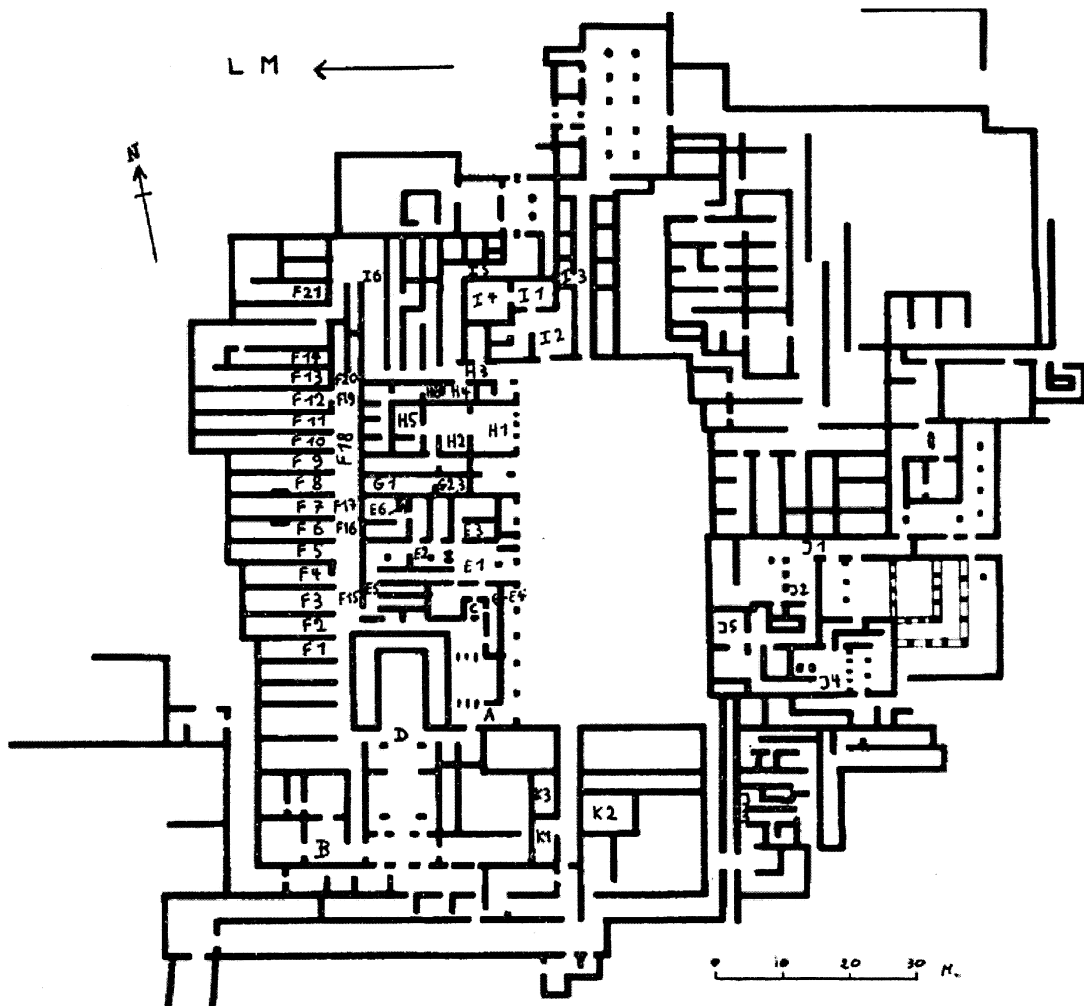


Fig. 17.3. Map of the Knossos palace

<sup>9</sup> Cf. Killen 1964.

The Knossos records include mentions of fleeces designated by the word *po-ka* /*pokai*/:

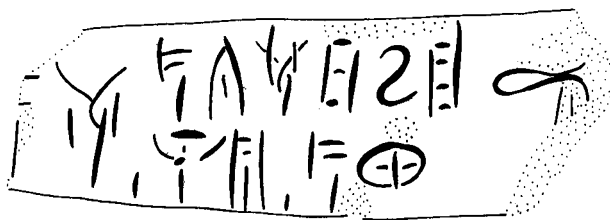


Fig. 17.4. Drawing of KN Dp 997. Drawing by L. Godart

KN Dp 997 + 7206 (I3/118)<sup>10</sup>

.a ] po-ti-ni-ja-we-ja [ ]  
 .b ]to-sa , / ne-wa , po-ka OVIS<sup>f</sup> [ ]

“so many new fleeces of/belonging to Potnia, EWES xx (numbers broken)”.

KN Dp 7742 (-)

.1 ?pe-ru-si-]nwa , po-ka [ ]  
 .2 ]po-ti-ni-ja-we-i-jo [ ]  
 line 1: “fleeces from last year (?)”.

There may be, at the same site, a mention of “tufts of wool”, *ti-ra* /*tilai*/:

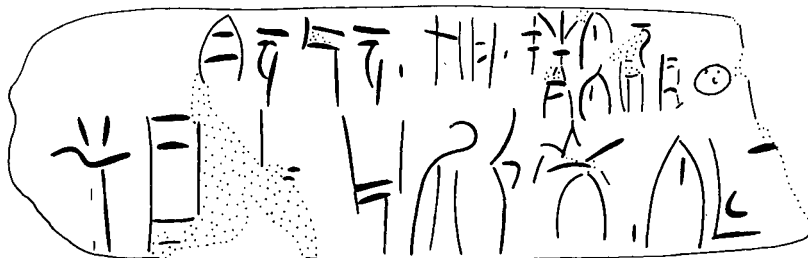


Fig. 17.5. Drawing of KN Od (1) 681. Drawing by L. Godart

KN Od (1) 681 (F18/103)

.a 'e-na-po-na , o-nu , pa-i-ti-jo' e-ti-wa-ja-qe ]ANAI [ ]  
 .b qo-ja-tē , a-pu-do-ke , ti-ra [ ]  
       qo-ja-tē over [ ] [ ]

line .b: “*qo-ja-te* (personal name) has delivered fleeces ...”.

<sup>10</sup> 118 is the indication of the scribe, I3 the findspot. For the findspots of Linear B tablets in the palace of Knossos, see Fig. 17.3.

There is no regular mention of lambswool as opposed to sheepswool, except in one Knossos tablet, Dk(2) 1066, where 200 lambs are recorded along with 19 units of wool, which have all been delivered to the administration (no deficit indication is attested):

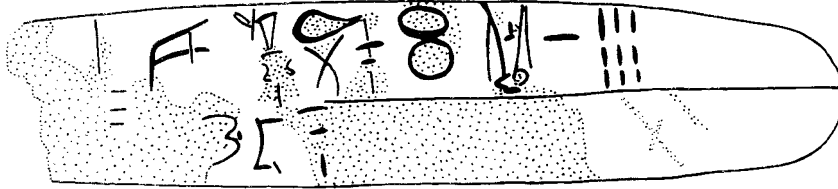


Fig. 17.6. Drawing of KN Dk (2) 1066. Drawing by L. Godart

KN Dk(2) 1066

(J1/119)

.A ] 'ki' ne X OVIS<sup>m</sup> 200 LANA 19

.B ]te-u / ku-ta-to[ ] vac.

"[te-u (shepherd's name) at ku-ta-to (place-name) new LAMBS 200, WOOL 19 units".

Since LANA 19 equals 57 kg, here there are ca. 285 g of wool per lamb, if the numbers are complete.

There is also one Mycenae record, MY Oe 111, which registers on lines 1 and 3 sheepswool, *o-u-ka / owika/* and on line 2 lambswool, *wo-ro-ne-ja / wronia/* (cf. ὄϊς and ὀρήν).

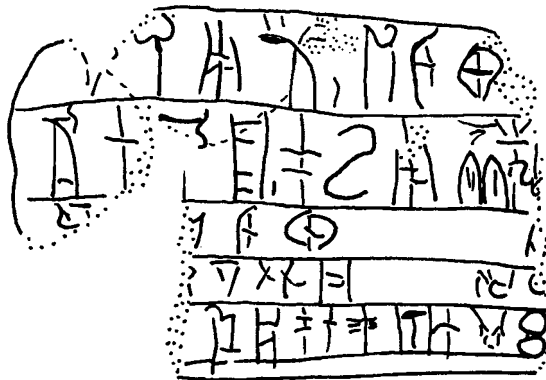


Fig. 17.7. Drawing of MY Oe 111+136. Drawing by L. Godart

MY Oe 111 + 136

NMA 52-111 + 136

(51)

.1 pe-ru-si-nwa , o-u-ka[

.2 wo-ro-ne-ja , pa-we-si / [•]-me-'jo-i' LANA[

.3 ne[-wa ]o-u-ka LANA[

.4 ]-ki-ni-\*56 LANA 100[

.5 ] o-ta-pa-ro-te-wa-ro LANA 200[

.6 ] vacat

Finally, textiles are described as *we-we-e-a* /*werwe<sup>h</sup>eha*/ “woollen” (cf. Gr. εἶρος) in two Knossos records: KN L 178 (cf. below *u-po-we/e-pi-ki-to-ni-ja?*, § 4.1.3) and L 870:

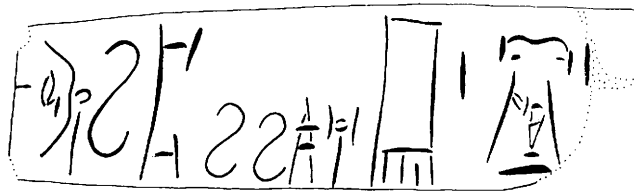


Fig. 17.8. Drawing of KN L 870. Drawing by L. Godart

KN L 870 + *fr.*

o-]ḏa-ku-we-ta / we-we-e-a

TELA<sup>3</sup> 1

TUN+KI 1

(I3/114?)

### 1.1.2. Flax/linen

Flax as a cultivated plant is designated by the syllabic sign \*31 used logographically, and transcribed SA. It is attested at Pylos and Knossos in records related to fiscal matters. Since SA cannot be related to any Greek word indicating flax or linen, it is in general assumed that this is the abbreviation of an unknown foreign word.

The Mycenaean palace administration received a tax in kind on plots of land which were cultivated with flax (certainly identified as a cultivated plant by PY Na 520, with the formula *pu<sub>2</sub>-te-re ki-ti-je-si*, “the planters cultivate”).<sup>11</sup>

The adjective *ri-ta*, “linen (clothes, items)”, or its abbreviation *RI* is applied to a variety of textile designations to indicate the fibre used for making them: \*146, \*166+WE, TUN+KI, TUN+RI as well as *ki-to* and *pa-we-a*. The adjective is attested at Knossos five or six times. Finally we have one attestation of *ri-no re-po-to* λίνον λεπτόν (KN L 693.1).

### 1.1.3. Designations for thread?

No obvious designations for thread have been identified in the Linear B records; the Classical Greek terms for warp (στήμων) and weft (πήνη) are not attested in the extant Linear B documentation. However, J. L. Melena has suggested<sup>12</sup> that the Mycenaean word *o-nu*, pl. *o-nu-ke*, might refer to the weft threads, whereas the mentions of *e-ne-ro* would correspond to the warp.<sup>13</sup> Lastly, he has hypothesized that another designation, *e-ta-wo-ne*, may be a kind of hyperonym (a word for any kind of thread).<sup>14</sup> Finally, there is one possible interpretation of the adjective *ko-ro-to* as /*klōston*/ “spun”, applied to wool at Mycenae. Yet, the word could also be understood as /*chrōston*/ “dyed” (cf. below, § 4.2.1, *ki-ri-ta/ko-ro-to*). To sum up, although some words have been tentatively interpreted as designations for thread, these suggestions remain very fragile.

However, when it comes to flax *versus* linen, two different syllabograms are used logographically

<sup>11</sup> On this formula, see Del Frego 2001, 27–44.

<sup>12</sup> Melena 1975, 112–113.

<sup>13</sup> Melena 1975, 90.

<sup>14</sup> Melena 1975, 88–91. It is interesting to note that, according to Luján 1999, 129, *e-ta-wo-ne* does not exist in 1st millennium Greek, except perhaps through a personal name in Homer.

in the tablets, and, as argued elsewhere,<sup>15</sup> the coexistence of two notations might reflect two different stages in the processing of flax: on the one hand, *SA*, in the land/fiscal records, which is certainly identified as flax by the use of the word *ri-no /linon/* in the heading of the Pylos text Nn 228:

PY Nn 228	(S106-H1/Archives Room)
.1	o-o-pe-ro-si , ri-no , o-pe-ro
.2	u-ka-jo , SA 20 ro-o-wa , SA 35
.3	pu <sub>2</sub> -ra <sub>2</sub> -a-ke-re-u , SA 10 ke-i-ja-ka-ra-na
.4	SA 5 di-wi-ja-ta , SA 60
.5	a-pi-no-e-wi-jo SA 28
.6	po-ra-pi , SA 10 e-na-po-ro , SA 33
.7	te-tu-ru-we SA 38
.8-15	<i>vacant</i>
	line 1: "they owe linen: still due...".

On the other hand, *RI*, attested in the Pylos Ma series as well as on PY Mm 11 and KN Nc 5100, which seems to be used in order to designate the processed flax fibre when ready to be spun, or even linen thread.

### 1.2. Textile production through professional designations

Various steps of the textile production are known in the Linear B documentation through nouns designating specialised workers.

#### 1.2.1. General professional designations, which can apply to any kind of fibre.

They include mentions of "combers" (*pe-ki-ti-ra<sub>2</sub> /pektriai/*)<sup>16</sup> listed twice in records of personnel at Pylos (PY Ab 578, Ad 694); then of "spinners" (*a-ra-ka-te-ja* attested at Thebes, Knossos, and Pylos); there is also a professional designation related to the textile item *e-ne-ra*, *e-ne-re-ja*, and of which it has been suggested that it might be related to warp threads (?);<sup>17</sup> the designation is attested twice at Knossos (KN Ak [1] 638, X 522). The interpretation is by no means certain.

*e-ta-wo-ne-we / e-ta-wo-ne-wo* appears twice at Knossos. The question is whether there is a relationship with *e-ta-wo-ne*. Different interpretations have been suggested, but the designation remains obscure; J. T. Killen<sup>18</sup> has suggested "a finisher of cloth (fuller *vel sim.*)" which would imply a meaning close to that of *ka-na-pe-u /knapheus/* "fuller"; but then what would be its relationship with *e-ta-wo-ne*, which might supposedly be a kind/part of textile item?

The tablets mention "weavers" (*i-te-ja-o*, *i-te-we* and *pe-re-ke-u / pe-re-ke-we*),<sup>19</sup> "seamstresses" and/or "tailor" (*ra-pi-ti-ra<sub>2</sub>* and *ra-pte*).

People called *o-nu-ke-ja/o-nu-ke-wi* are attested respectively at Pylos (PY Ab 194, Ad 675) and at Thebes (TH Oh 206.2). The word *o-nu-ke-ja* is a professional designation built on *o-nu-ke*, maybe "fringes", or "endings".<sup>20</sup>

<sup>15</sup> Rougemont 2007, 46–49. See also Perna 2004, 210.

<sup>16</sup> See also below, § 3. *Terminology and technical characteristics*, by M.-L. Nosch.

<sup>17</sup> Melena 1975, 91.

<sup>18</sup> Killen 1979, 159 ff.

<sup>19</sup> Cf. below, § 3.5. *Weaving terminology*, by M.-L. Nosch.

<sup>20</sup> Killen 1979. For an alternative interpretation, see Firth & Nosch 2002–2003.

Finally, the tablets also document specialists for the decoration or finishing (*a-ke-ti-ra*/*a-ke-ti-ri-ja*<sup>21</sup>/*a-ze-ti-ri-ja*); among the professional designations linked with textiles, Linear B texts also mention a more general designation: *a-pi-qo-ro*, “servants”, known at Pylos and Thebes (PY Aa 804, Ad 690, TH Of 34).

### 1.2.2. Professional designations strictly related to a specific fibre or technique

First comes the problem of the “linen workers”, *ri-ne-ja* /*lineiai*/: are they working only on the fabrication of linen textiles or do they also prepare the fibres? There is no way to decide, since among professional designations both possibilities are attested like *te-pe-ja*, “*te-pa* makers”, or *me-re-ti-ri-ja*/*-ti-ra*<sub>2</sub>, “corn grinders”, i.e. women processing the “raw material”.

At Pylos, a “linen collector”, *ri-na-ko-ro* /*linagoros*/ is recorded; this designation is unfortunately attested only outside the context of the professional activity of these people (PY An 129 is a record of personnel where people are counted and enumerated by name and sometimes also by professional designation). It is difficult to say more about the activity of the person designated by this word;<sup>22</sup> he could have been collecting the flax and/or linen (products) at various stages of the processing (from retting to the finished product). However, in the Linear B terminology, it seems that the closer one is to the 1st millennium Greek word for linen, the nearer one is to the finished product; if this observation is correct, it would make the idea of a collector of thread or finished textiles more plausible than a collector of retted flax fibres.

The word *ka-na-pe-u*, /*knapeus*/ “fuller”, is known at two sites, Pylos and Mycenae;<sup>23</sup> it is mentioned in this category since this technical process applies only to animal fibres, in Linear B texts sheepswool, and not vegetal fibres.

### 1.2.3. Professional designations related to a particular cloth item

*a-pu-ko-wo-ko*, meaning “headband makers”, is a word attested twice in Pylos lists of personnel (PY Ab 210, Ad 671); this item (*a-pu-ke*, “headbands”) may have existed in textile and in leather, as indicated, for the latter, by PY Ub 1315.

*ko-u-re-ja*, a word designating “(*pa-we-a*) *ko-u-ra* makers”, has five attestations at Knossos.

Lastly, the documentation includes the designation *te-pe-ja*, “*te-pa* makers”. It comes as no surprise that the word is attested at three sites (KN Le 641, TH Of 35, PY Ad 921), since it is built on one of the most common textile names.

Another designation in this category is more debated: *to-te-ja*, possibly “\**to-ta* makers”,<sup>24</sup> appears only once, at Knossos (KN Ak 611.1). The word *to-te-ja* has been interpreted by C. J. Ruijgh<sup>25</sup> as /*storteia*/, feminine of /*storteus*/, derived from \**storton*, “objet qui peut être étendu, couverture, tapis”. However, the case is considerably weaker than others, since it relies on a reconstructed garment/textile name (\**to-ta*) which is, in fact, not attested in the documentation.

<sup>21</sup> Cf. Morpurgo Davies 1979, 91, 99 and n. 44.

<sup>22</sup> Rougemont 2007.

<sup>23</sup> PY Cn 1287, En 74/Eo 267, Eo 269, MY Oe 129, Oi 701.

<sup>24</sup> See Melena 1975, 116 ff.

<sup>25</sup> Ruijgh 1967, 252–253.

### 1.3. Designations of textile items/garments

#### 1.3.1. Textile items recorded by means of logograms

The most frequent one, the TELA logogram, has the shape of a rectangle with small vertical strokes at the bottom. Numbers are conventionally added to the transcription of the logogram according to the number of strokes drawn by the scribe. The TELA logogram can be specified by a number of endograms /abbreviations, for example TELA+TE, for *te-pa*, a kind of cloth. However, there are also textile logograms with shapes which are less obviously similar to a textile, for example: \*146, its variation \*160, \*164 or the ligatures \*166+WE and \*168+SE.

#### 1.3.2. Textiles designated by words written syllabically

Some of these words, whose origin is either known or unknown, can be found in 1st millennium Greek:<sup>26</sup> for example *pe-ko-to* /pekton/ from the verb πέκω, “to comb”, *pa-we-a* /p<sup>h</sup>arweha/ (cf. φᾶρος, word of unknown origin), or *te-pa* (unknown origin, cf. perhaps Gr. τάπης?). The Linear B records also attest words which can be etymologized, but not in Greek, such as *ki-to* /k<sup>h</sup>itōn/ (cf. Gr. χιτών, a word which might be of Sumerian origin; it corresponds to Akk. kitû, Sum. GADA, “linen”),<sup>27</sup> but which have sometimes been integrated in words whose composition is Greek, like *e-pi-ki-to-ni-ja*, a designation for a piece of clothing worn “over the χιτών”. Lastly, there are words which cannot be etymologized in Greek nor, so far, in any other language, like *tu-na-no*.

#### 1.3.3. Names of garments

Linear B texts record a surprisingly small number of names of garments<sup>28</sup> (*e-pi-ki-to-ni-ja*, a garment worn “over the *khitōn*”; *e-pi-ro-pa-ja*, a garment worn “over the *lope*”; *ki-to*, *khitōn*; *u-po-we*, a garment “worn under”; and *we-a<sub>2</sub>-no*, /wehanos/ “garment”). In some cases, it is difficult to say if the nouns designated a garment or a piece of textile.<sup>29</sup> The same can be said also for *pa-we-a*, /p<sup>h</sup>arweha/, since in Homer φᾶρος is either a garment or a piece of textile, according to the context.<sup>30</sup>

Furthermore, in Linear B, some garments are designated both by a noun written syllabically and by a logogram (e.g. \*146,<sup>31</sup> which contains the endogram WE / *we-a<sub>2</sub>-no*).

#### 1.3.4. Coloured textiles

In the Linear B texts, designations related to colours are apparently always associated with finished textile products, and never with fibres, nor with woollen or linen thread. This, however, does not imply that dyes were not applied to thread or fibres, only that the colour of woollen or

<sup>26</sup> The classification of words into the three categories described below goes back to Morpurgo Davies 1979, 90–91, who distinguishes three main categories of words, i.e. “words which are formally preserved in Greek”, “words which are not attested as such in the Greek of the First Millennium but can be easily ‘etymologized’ from Greek material” and “words which have no definite equivalent in Greek and cannot be readily ‘etymologized’”.

<sup>27</sup> Cf. J. P. Vita, in this volume.

<sup>28</sup> For a linguistic analysis of names of garments, see Luján 1996–1997, 346–347.

<sup>29</sup> Luján 1996–1997, 346.

<sup>30</sup> On the attestations in Homer, see Luján 1996–1997, 337, with bibliography.

<sup>31</sup> On this logogram, see below § 2.1.

linen threads was not recorded by the Mycenaean scribes.<sup>32</sup> There seems to be a predominance of red hues.<sup>33</sup>

The colours attested are the following: *e-ru-ta-ra*, “red” (Gr. ἐρυθρός), *pa-ra-ku-ja*, perhaps “blue/green” (see also \*56-*ra-ku-ja*) (cf. Gr. σμάραγδος?), *po-ki-ro-nu-ka* “with multicoloured fringes/endings” (Gr. ποικίλος), *po-ni-ki-jo*, another shade of “red” (Gr. φοινίκιος), *po-pu-re-ja* / *po-pu-re-jo* / *po-pu-ro<sub>2</sub>*, “purple” (Gr. πορφύρεος), *po-ri-wo*, “grey” (Gr. πολίος), *pu-ru-wa*, maybe “red-brown” (Gr. πυρρός), *re-u-ko/ka*, “white” (Gr. λευκός; see also *re-u-ko-nu-ka*, “with white fringes/endings”).<sup>34</sup> Notations such as TELA+PO or *re* TELA/ ‘*re*’ TELA+TE might also be understood as including abbreviations of the colours of the textiles (PO, *re*, see above, *po-pu-re-ja* / *po-ni-ki-jo*, and *re-u-ko*, etc.).

The tablets also contain words perhaps referring to the dyeing process (*ko-ro-ta<sub>2</sub>* and *ki-ri-ta*);<sup>35</sup> on these two words, see below § 4.2.1 *True or false synonyms?*

## 2. Logographic notations and textile terminology: a complex relationship

### 2.1. Logograms in Linear B

In order to record the economic data that were of interest to the palatial administration, the Linear B scribes used a mixture of logographic and syllabic notations; some items can be designated exclusively by means of logograms, or by means of logograms and of words written syllabically. Last but not least, logograms can be combined with abbreviations (adjuncts, endograms, ligatures), some of which can be related to words written syllabically.

This sometimes complex relationship can be traced back to Linear A, which will be treated below.<sup>36</sup>

For textiles, scribes have mainly used logograms, for example TELA, \*146, \*158, \*160, \*166, \*189; additional information is often provided by means of endograms, i.e. syllabic signs written inside the logograms; the best example is TELA, which can be associated with the following endograms (see Fig. 17.2): TELA+KU, perhaps to be compared with *ku* LANA at Thebes (?); TELA+PA, with PA standing for *pa-we-a* (cloth name); TELA+PO, where PO might be *po-ni-ki-jo*, *po-ki-ro-nu-ka*, or *po-pu-re-jo*, which are designations for colours or coloured items (in the case of *po-ki-ro-nu-ka*, which qualifies cloth items “with multicoloured fringes or endings”); TELA+PU, with PU standing for *pu-ka-ta-ri-ja*; TELA+TE, with TE for *te-pa*; and lastly TELA+ZO, where ZO stands for a word so far unidentified.

### 2.2. Logograms in Linear A

#### 2.2.1. Reading the Linear A documents

Studying the “Minoan” textile terminology through the Linear A documents is beyond our present capabilities for more than one reason.

<sup>32</sup> Although the word *ko-ro-to*, which might be understood, among other possibilities, as “dyed”, is directly recorded with the LANA logogram on tablets of the Knossian Od series. See below § 4.2.1 *True or false synonyms*, and DMic s. v. *ko-ro-to*.

<sup>33</sup> On red coloured textiles, see Nosch 2004.

<sup>34</sup> For the linguistic analysis of these designations, see Luján 1996–1997, 347–352.

<sup>35</sup> From other texts (PY An 35, Un 443, maybe also TI X 6), we also know about *tu-ru-pte-ri-ja*, “alum”, see Perna 2005 and Firth 2007.

<sup>36</sup> See § 2.2, *Logograms in Linear A*, by M. Del Freo.



More than 70% of the Linear B syllabograms are clearly derived from Linear A, but it is by no means certain that all these syllabograms had the same phonetic values in both scripts. Therefore, the transcriptions of Linear A documents with the phonetic values of the Linear B homomorphic syllabograms have to be considered as purely conventional.

It is generally agreed that the homomorphic syllabograms belonging to identical groups of signs in both scripts had the same phonetic values. However, identical groups of signs in Linear A and Linear B are very rare and a rigorous application of this rule makes it possible to “read” only a dozen of the syllabograms.<sup>37</sup>

Given these circumstances, it is clear that at present, even when for contextual reasons a syllabic sequence can be interpreted as a textile term, it can neither be read nor analysed with absolute confidence.

For these reasons, the study of “Minoan” textile terminology relies nearly exclusively on the evidence which is directly or indirectly provided by the logograms.

### 2.2.2. LANA in Linear A (?)

The ligature A 559, formed by syllabograms AB 80+26, closely resembles the Linear B logogram \*145 LANA “wool”.<sup>38</sup> The Linear A logogram is attested on four tablets respectively from Phaistos (PH 3a.3), Hagia Triada (HT <12>.4, HT 24a.1.2.3.4.5) and Khania (KH 43.1).<sup>39</sup>

Ligature AB 80+26 is recorded alone on HT 24a and, along with other commodities, on HT <12> (A 608, A 304, A 510, AB 38, A 626, AB 30 e A 511),<sup>40</sup> PH 3a (A 556, A557, A 563)<sup>41</sup> and KH 43 (A 527).<sup>42</sup>

The interpretation of AB 80+26 as “wool” seems to be confirmed by HT 24. On the side *b* of this tablet three different ligatures are followed by the sign AB 118 “talent” and by the figures 1+J+E, 1+J+E and 1 (where J and E are conventional

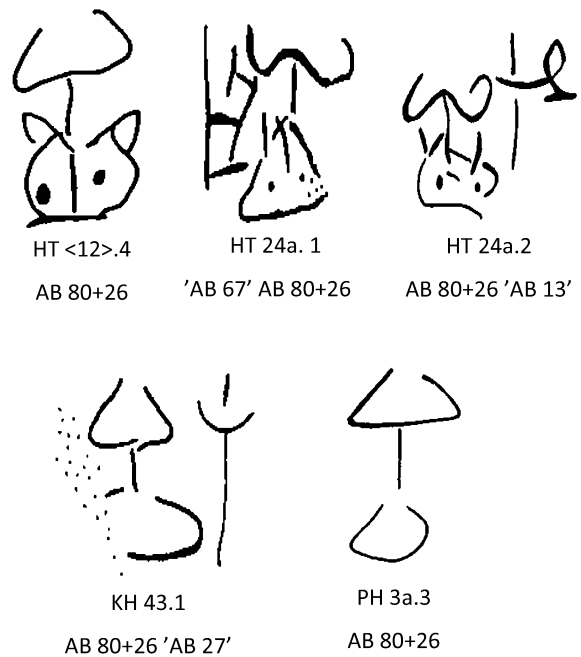


Fig. 17.9. Chart of possible Linear A logograms for wool.  
Drawing by L. Godart

<sup>37</sup> Cf. Olivier 1978; Godart 1984.

<sup>38</sup> Cf. Docs<sup>2</sup>, 36, 52, 314; Palaima 1994, 317; Schoep 2002, 131–132.

<sup>39</sup> PH 3 was found in Room XLIV/38 and dates back to Middle Minoan (=MM) III (Militello 2002a, 67–69); HT <12>, which was perhaps unearthed in the area of Room 59 (Militello 2002b, 116), and HT 24, which was certainly found on the threshold between Corridor 9 and Room 26 (Militello 1988, 235; Militello 2002b, 113), are assignable to LM IB; KH 43, finally, has been brought to light in the Odos Katre excavation and dates back to LM IB (Hallager 1996a, 50–51).

<sup>40</sup> Some of these commodities can be interpreted as olive oil (?) (A 608 = 'A 303' 'AB 07'), cyperus / grain (?) (A 626 = A 303 'A 704') and figs (AB 30).

<sup>41</sup> All these ligatures contain the syllabogram AB 80: A 556 (AB 80+[•]), A 557 (AB 80+08), A 563 (AB 80+80).

<sup>42</sup> The ligature A 527 is formed by AB 40+74[.

transcriptions of fraction signs). As it has been observed,<sup>43</sup> the sum of these figures, which probably amounts to 4.5 talents,<sup>44</sup> can be related to the 45 *noduli* found nearby.<sup>45</sup> Since the ratio 1: 10 between talents and *noduli* coincides with the ratio between the talent and the weight unit for wool in Linear B, it is likely that AB 80+26 was the Linear A sign for “wool”.<sup>46</sup> In theory, the records on the two sides of HT 24 could have been unrelated. Yet, as it has been observed,<sup>47</sup> if one admits that the two missing figures on HT 24a.4–5 were close to the average of those preserved on lines 2–3 (]6, 10, ]9 J, 6),<sup>48</sup> for side *a* of the tablet a total of 46–47 units of wool can be restored, i.e. a figure fully compatible with the 4.5 talents recorded on side *b*.<sup>49</sup> The relationship between AB 80+26 and AB 118 “talent”, furthermore, is confirmed by HT <12>.4, where the ligature is followed by five units of AB 118.<sup>50</sup>

In Linear B, the phonetic values of AB 80 and AB 26 are respectively *ma* and *ru/lu*. Therefore, it has been proposed to read AB 80+26 as MA+RU and to relate it to Gr. μάλλός “tuft of wool” (cf. also Hsch. μάλλυκες· τρίχες). However, it is by no means certain that AB 80 and AB 26 had the same phonetic values in both scripts.

In some cases, ligature AB 80+26 is preceded or followed by isolated syllabograms, the aim of which was likely to specify acrophonically the quality or the destination of the commodity.

On HT 24a.1, ligature AB 80+26 is preceded by a syllabogram of uncertain reading, perhaps AB 67, and immediately followed by a lacuna;<sup>51</sup> on lines 2–4, it is followed by the syllabogram AB 13;<sup>52</sup> on

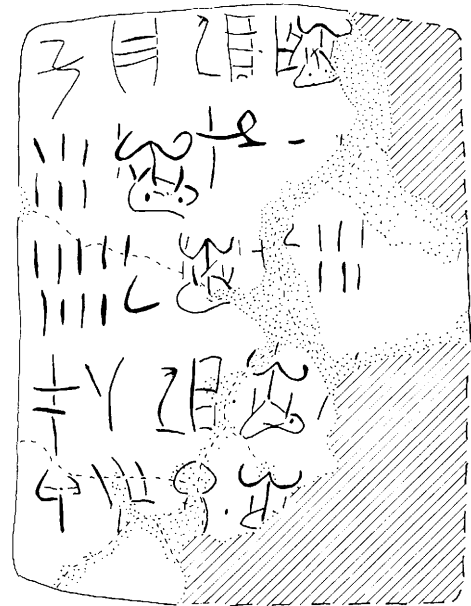


Fig. 17.10. HT 24. From GORILA I. Drawing by L. Godart

<sup>43</sup> Hallager 2002.

<sup>44</sup> For J = ½ and E = ¼, see Bennett 1950, 204–222.

<sup>45</sup> The *noduli*, all of the same type and stamped by the same seal, were found on the windowsill between Corridor 9 and Room 27 at less than one meter from HT 24 (Militello 1988, 235; Hallager 1996a, 41).

<sup>46</sup> According to this hypothesis, each *nodulus* would represent a wool unit.

<sup>47</sup> Palaima 1994, 317–318.

<sup>48</sup> For the lacunae of lines 1 and 2, the following supplements can be suggested: [‘AB 13’] and respectively [AB 80+26 ‘AB 13’] (see below).

<sup>49</sup> If this reconstruction is correct and each *nodulus* corresponded to one unit of wool, the fractional quantities on the tablet exclude that the figures were *directly* related to the 45 *noduli*. It is possible, therefore, that the *noduli* referred to a separate weighing of the wool recorded on HT 24. The uncertainty about the function of the *noduli* (Hallager 1996a, 130–133) makes it difficult to define the aim of such an operation (for a possible explanation, see Hallager 2002, 107–108).

<sup>50</sup> A quantity similar to that recorded on HT 24b. The quantities recorded on PH 3a and KH 43 are much lower: fraction A 717 (DD) (PH 3a) and two units (KH 43).

<sup>51</sup> In GORILA the juxtaposition ‘AB 67’ AB 80+26 is conventionally classified as A 546.

<sup>52</sup> In GORILA the juxtaposition AB 80+26 ‘AB 13’ is conventionally classified as A 561.

line 5, finally, it is immediately followed by a lacuna.<sup>53</sup> It can reasonably be assumed that AB 13 followed AB 80+26 also on lines 1 and 5.

In the Linear A tablets, AB 67-02 and its abbreviation AB 67, which may be read respectively as KI-RO and KI, convey the notion of “deficit” (like *o-pe-ro* and *o* in the Linear B documents, see above, § 1.1.3 *Designations for thread?*, with the tablet PY Nn 228). Thus it is possible that on HT 24a.1 a “deficit of wool” was recorded. AB 13 is not among the syllabograms which can be confidently read through the comparison with Linear B, so that the transcription ME remains hypothetical.

On KH 43.1 the ligature AB 80+26 is preceded by a lacuna and followed by the syllabogram AB 27.<sup>54</sup> Like AB 13, AB 27 cannot be read with confidence. Thus the transcription RE is purely conventional and has to be regarded as a mere hypothesis.

### 2.2.3. TELA in Linear A (?)

The Linear A sign AB 54, when used logographically, is directly comparable to the Linear B logogram \*159 TELA “cloth”.<sup>55</sup> The logographic use of AB 54 is attested on six different documents: one roundel and three tablets from Hagia Triada (HT Wc 3019, HT 16.2, HT 20.4 and HT 38.3), a fragment of tablet from Akrotiri (Thera) (THE 8.2), and, apparently, a graffito from the Palestinian site of Tel Haror (TEL Zb 1).<sup>56</sup>

The logogram AB 54 is written alone on Wc 3019. On the rim of this roundel, three seal imprints are visible, one of which is superscribed by the fraction sign A 704 (E). On HT 16 and HT 20, AB 54 is listed with other logograms

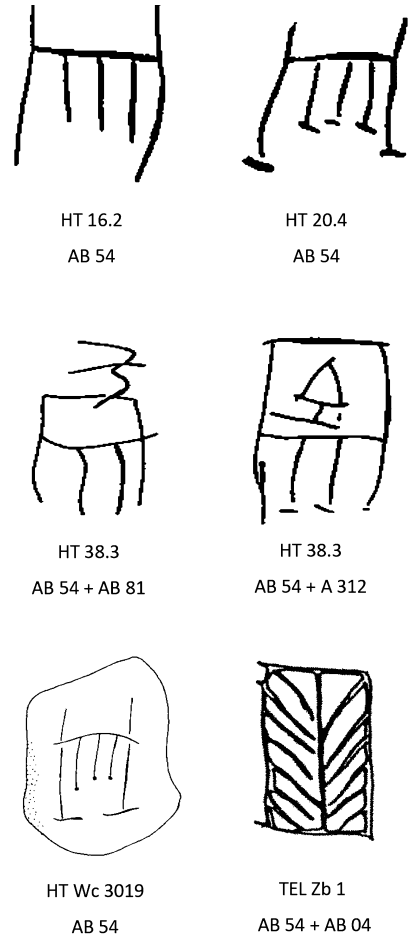


Fig. 17.11. Chart of possible Linear A logograms for cloth

<sup>53</sup> Since it could be followed by a syllabogram different from AB 13, AB 80+26[ is conventionally classified as A 560 in *GORILA*. For similar reasons, ]AB 80+26 of PH 3a.3 is conventionally classified as A 558.

<sup>54</sup> In *GORILA* the juxtaposition ]AB 80+26 '27' is conventionally classified as A 562.

<sup>55</sup> Cf. *Docs*<sup>2</sup>, 36, 49, 313; Palaima 1994, 317; Schoep 2002, 131. Apparently a logogram for “cloth” is attested also in Cretan Hieroglyphic: cf. the medallion *CHIC* #103 from the *Dépôt hiéroglyphique* at Malia and the observations on sign \*163 in Oren & Olivier 1996, 101–102. The medallion, like the other texts from the hieroglyphic deposit, can be dated to the final phase of MM III (*CHIC*, 28).

<sup>56</sup> All the Hagia Triada documents come from the Villa: HT 16, 20 and 38 perhaps from Room 59 (Militello 2002b, 116); Wc 3019 probably from the area corresponding to Rooms 3, 11 and 13 (Hallager 1996b, 13, 31) or perhaps from Room 59 (Montecchi 2007, 15); THE 8 comes from Room Δ18α (Boulotis 1998, 407; Boulotis 2008, 72, Figs. 11–13); TEL Zb 1 has been found in a cult area (Oren & Olivier 1996, 92). These documents are datable respectively to LM IA (THE 8), LM IB (HT 16, 20, 38 and Wc 3019) and the 17th–16th cent. BC (TEL Zb 1). Theoretically, the graffito from Tel Haror could also be ascribed to Cretan Hieroglyphic (Oren & Olivier 1996, 109). According to the *Chronique des fouilles en ligne*, one new roundel with the AB54 logogram has been brought to light in Chania by M. Andreadaki Vlazaki in 2007 (see <http://chronique.efa.gr/index.php/fiches/voir/273/>).

and in both cases precedes the ligature A 604, which remains unidentified. As on the roundel, the commodity is measured by fraction signs, A 702 (B) and A 704 (E).<sup>57</sup> On HT 38, the logogram appears twice with other logograms and is followed by whole figures (2 and 1 respectively). Finally, on THE 8, AB 54 is apparently followed by the figure 200[.<sup>58</sup>

On HT 38.3, the logogram is ligatured with two different syllabograms: AB 54+81 and AB 54+A 312;<sup>59</sup> a third ligature, AB 54+04, is attested on TEL Zb 1,<sup>60</sup> while a fourth one, AB 54+09, can be read on THE 8.<sup>61</sup> In the first case, the syllabogram is placed on top of AB 54, while in the other three cases, it is placed inside the logogram, similar to the position of endograms of TELA in Linear B (see above, § 2.1, *Linear B*).<sup>62</sup>

The convention of specifying the meaning of a logogram by a ligatured syllabogram is common both to Linear A and Linear B administrations. In Linear A, many ligatures of this type are known, e.g. for grain (AB 120), wine (AB 131) and other commodities. In Linear B, it is clear that the function of these syllabograms was acrophonic. In the case of cloth, as already mentioned (see above, § 2.1, *Linear B*), PA of TELA+PA was the abbreviation of *pa-wo* /*p<sup>h</sup>arwos*/, TE of TELA+TE was the abbreviation of *te-pa*, etc.

It is reasonable to think that in Linear A these syllabograms had the same function as in Linear B and that, consequently, AB 04, AB 09, AB 81 and A 312 were abbreviations of cloth names.

While the syllabograms AB 04 and AB 09 can be read as TE and SE, the phonetic value of the syllabogram AB 81 cannot be ascertained with confidence and consequently the transcription KU is simply a hypothesis.

It is interesting that ligatures AB 54+04 and AB 54+81 can be directly compared to ligatures TELA+TE and TELA+KU of Linear B. As it has been observed,<sup>63</sup> AB 54+A 312 might correspond to Linear B TELA+ZO. However, the endogram A 312 is slightly different from AB 20 ZO. For the ligature AB 54+09, finally, there are no direct parallels. However, it can be observed that in Linear

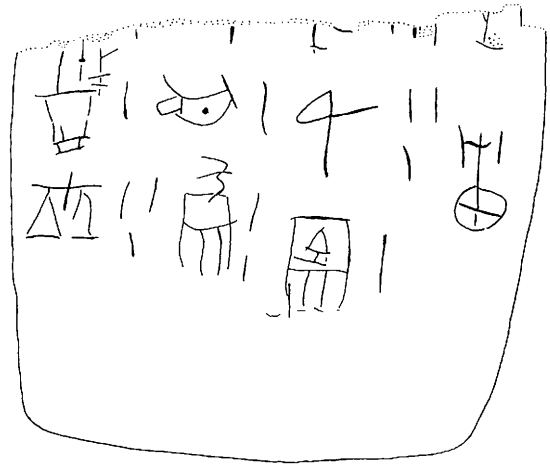


Fig. 17.12. HT 38. From GORILA I. Drawing by L. Godart

<sup>57</sup> It is likely that fractions referred to weight units as in the case of wool, but it cannot be excluded that cloths were fairly large and subdivided in fractional amounts (Palaima 1994, 317; Schoep 2002, 131). It is possible that the two other seal imprints on the roundel corresponded to one unit and that the roundel recorded a total of 2 E units (i.e. prob. 2¼ units: see above).

<sup>58</sup> On the Tel Haror graffito there are no figures.

<sup>59</sup> In GORILA, the two ligatures are conventionally classified as A 535 (AB 54+81) and A 536 (AB 54+A 312).

<sup>60</sup> See the discussion in Oren & Olivier 1996, 101–105.

<sup>61</sup> See the photograph in Boulotis 2008, 68, Fig. 2. The new ligature AB 54+09 should be classified as A 536bis.

<sup>62</sup> The logogram \*163 of Cretan Hieroglyphic (see above) contains one sign, which does not match any of the signs attested so far for this script. Therefore, it is difficult to say if it was an endogram (cf. Oren & Olivier 1996, 102 n. 6).

<sup>63</sup> Melena 1975, 110.

B the syllabogram *SE* is attested in ligature with the logogram \*168,<sup>64</sup> which could be a product of the textile industry.<sup>65</sup>

Another Linear A logogram possibly related to cloths is AB 164.<sup>66</sup> This hypothesis is based on the fact that in Linear B \*164 is attested in textile contexts (KN L 520, L 698). In Linear A, where it is also used as a syllabogram (HT 17.1 and 19.1), AB 164 is attested at Khania in four different variants (a, b, c, d) as an isolated logogram on eleven different roundels (KH Wc 2036–2045, Wc 2111).<sup>67</sup>

#### 2.2.4. Cloth names in Linear A

The Linear A evidence for cloth names is limited to the above mentioned acrophonic abbreviations. In other words, there is evidence for different types of cloth whose names began with *TE*, *SE*, AB 81 (KU?) and A 312.

Comparing this evidence with that provided by the Linear B documents is not of much help. The correspondence between AB 54+04 and *TELA+TE* suggests that, as in Linear B, *TE* could be an abbreviation of *te-pa*, a cloth name with no clear Greek etymology.<sup>68</sup> As for AB 54+81, the possible comparison with Linear B *TELA+KU* (if AB 81 = KU) is unhelpful, as in this case it is not known which word *KU* abbreviates. In the case of *SE*, similarly, no comparison is possible, as in the Linear B documents there are no cloth names beginning with *se*.

If, as it has been argued above, the commodity recorded on HT 24b was wool, it is possible that the ligatures A 531 (AB 41+13 '67') and A 539 (AB 57+77) referred to cloth produced (or still to be produced) with that wool.<sup>69</sup> Read with the phonetic values of Linear B, AB 41+13 '67' and AB 57+77 would be respectively *SI+NE 'KI'* (AB 41+13 '67') and *JA+KA* (AB 57+77). Yet only *JA* and *KI* can be read with some confidence.

In conclusion, a brief comment needs to be made on the ostracon THE Zg 5 from Akrotiri. In her edition, A. Michailidou has suggested that, among the isolated signs that precede the figures, AB 80 *MA* was the acrophonic abbreviation of *MA+RU* "wool", and that the other signs were the abbreviations of at least

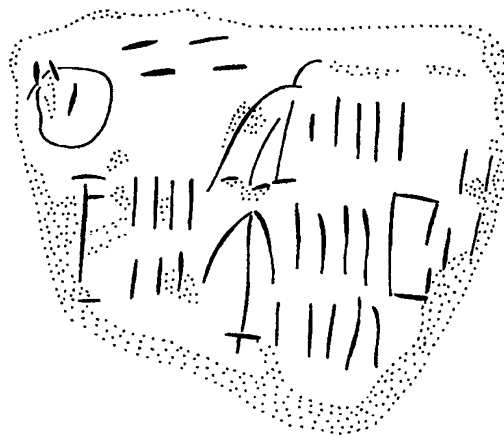


Fig. 17.13. THE Zg 5. From Michailidou 1992–1993. Drawing by L. Godart

<sup>64</sup> On all the Knossos Pp tablets, except on Pp 498.

<sup>65</sup> Cf. Melena 1975, 132.

<sup>66</sup> Cf. Schoep 2002, 132–133.

<sup>67</sup> The seal imprints on these roundels fluctuate from one to five.

<sup>68</sup> Cf. *DMic* s.v.

<sup>69</sup> The ligature AB 41+13 (A 530), followed by the figure 10, is attested on HT 23.5, a tablet with mixed commodities (wine, olive oil, cyperus, etc.).

three different cloth names.<sup>70</sup> In this particular case, one would have 40 units of AB 80 MÅ (wool), as well as five PU (AB 50), seven TË (AB 04) and nine ZO (AB 20) pieces of cloth.<sup>71</sup>

This hypothesis, which relies on the comparison with the Mycenaean words *pu-ka-ta-ri-ja*, *te-pa* and *zo-ta* as well as on the abundant archaeological evidence of textile activities in Akrotiri, is attractive, but regrettably still uncertain.

In fact, it can neither be proved that MÅ was a current abbreviation of MA+RU nor that TË is the correct reading for the third sign.<sup>72</sup> Moreover, it is not known if syllabograms AB 50 and AB 20 had the same phonetic values as in Linear B, i.e. PU and ZO. In any case, it is hardly conceivable that a Greek word like *pu-ka-ta-ri-ja* could have been attested in Minoan Akrotiri. Finally, as far as *zo-ta* is concerned, the contexts suggest that it was instead a personal name.

### 3. Terminology and technical characteristics

Textile tools are attested in the archaeological record, and iconography illustrates the Bronze Age loom. The types of textile tools used at the time of the Linear B records had already been in use for several millennia, and continued to be in use for a further two to three millennia.

The terminology for textile tools in Linear B is mainly attested indirectly through professional designations. We have thus far preserved evidence for four textile tools.

#### 3.1. Tools for spinning

There is a professional designation *a-ra-ka-te-ja* “spinner”, known from Thebes, Pylos and Knossos (TH Of 34, KN Ak 5009, Lc[1] 531, PY Aa 89, PY Aa 240). *a-ra-ka-te-ja* is built on the term for the spinning tool \**a-ra-ka-ta* which is the Mycenaean predecessor for the 1st millennium Greek ἡλακάτη.

PY Aa 89 (S60–H4/Archives room)  
 a-ra-ka-te-ja MUL 37 ko-wa 26 ko-wo 16 TA 1  
 “37 women spinners, 26 girls, 16 boys, one supervisor”

PY Aa 240 (S240–H1/Archives room)  
 a-ra-ka-te-ja MUL 21 ko-wa 25 ko-wo 4 TA 1[  
 “21 women spinners, 25 girls, 4 boys, one supervisor”

PY Ad 677 (S290–H23/Archives room)  
 pu-ro a-ra-ka-te-ja-o ko-wo VIR 30 ko-wo 9  
 “At Pylos, the spinners’ sons: 30 men, 9 boys”

<sup>70</sup> Michailidou 1992–1993 [1995], 18.

<sup>71</sup> The four TA (AB 59) are tentatively interpreted as oxhides, but a relationship with TA “supervisor” of textile workers in the Linear B texts cannot be excluded (Michailidou 1992–1993 [1995], 18).

<sup>72</sup> L. Godart (cited by Michailidou 1992–1993 [1995], 12–13) reads the sign as \*!71.

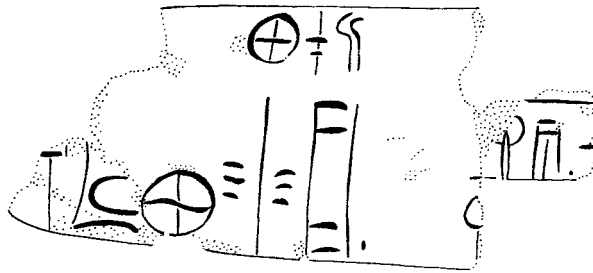


Fig. 17.14. Drawing of KN Ak(1) 5009. Drawing by L. Godart

KN Ak(1)	5009 + 6037 + 8588	(103/F14 <sup>73</sup> )
.A	] ka-pa-ra <sub>2</sub> [	
.B	] ko-wa , me[	
.C	a-ra-ka-te-ja , / ko[	
	.A Possibly ḂA[.	

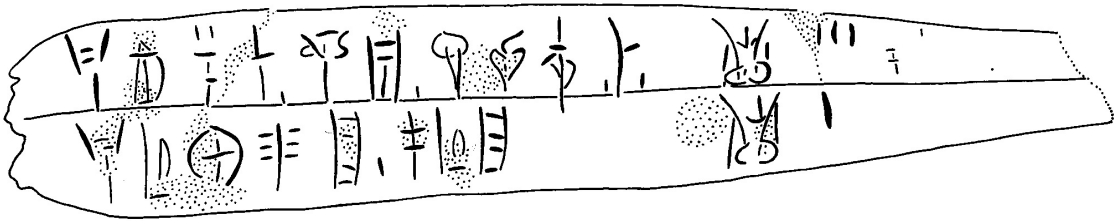


Fig. 17.15. Drawing of TH Of 34. Drawing by L. Godart

TH Of 34	(303/Epam. str.)
.1	a-pi-ḡo-ro , ne-wa , ko-tu-ro <sub>2</sub> , DA , LANA 3 [[ PA 1]] [
.2	a-ra-ka-te-ja , pa-ra-ja LANA 1 [

“Servants, young, the DA supervisor Κότυλος, 3 units of wool  
Spinners, old, 1 unit of wool”

The word ἡλακάτη designates the distaff, not the spindle, according to the *Greek-English Lexicon* by Liddell-Scott-Jones.<sup>74</sup> In the 1st millennium, the spindle is termed ἄτρακτος. The spindle is the turning rod, whereas the distaff is the stick onto which the prepared wool fibres are fixed. For efficient and conventional spinning, a spindle is necessary, but a distaff is not.

Elizabeth Barber has reviewed the attestations of the term ἡλακάτη in 1st millennium Greek, and she demonstrates how the term has systematically been mistranslated as distaff.<sup>75</sup> Plato<sup>76</sup>

<sup>73</sup> Firth & Melena forthcoming.

<sup>74</sup> DELG, s.v. translates it as “quenouille” but adds: “p.-ê. aussi fuseau”.

<sup>75</sup> Barber 1991, 263-264.

<sup>76</sup> Republic 616c-617b.

describes a spindle as a shaft (ήλακάτη) and a whorl (σφόνδυλος),<sup>77</sup> and it is reasonably clear that ήλακάτη is not a distaff but the spinning device, the spindle. An older piece of evidence, but less strong, is the *Odyssey*,<sup>78</sup> in which a servant brings Helen her equipment: a silver wool basket and a golden ήλακάτη. If ήλακάτη is a distaff, then there is not much for Helen to do;<sup>79</sup> but if ήλακάτη is instead a spindle, then she can immediately start to spin.<sup>80</sup>

The loss of this hand spinning technique in the medieval period has probably led to the present general confusion between spindles and distaffs, not only in dictionaries, but also in works on terminology and in archaeological classifications.<sup>81</sup> The mistranslation is especially prevalent in Anglo-Saxon scholarly literature but less in German publications, as demonstrated by W. P. Lehmann.<sup>82</sup>

Whatever the confusion between spindle and distaff, the translation of *a-ra-ka-te-ja* remains “female spinners”. It is significant to notice that the *a-ra-ka-te-ja* women recorded in the Linear B documentation could never have spun all the wool produced in the villages. The average amount of wool available to be spun was about 500 kg per village and according to the calculations made by Andersson Strand, this would have produced approximately 1500 km of thread and required about 30,000 hours of spinning.<sup>83</sup> This suggests that the *a-ra-ka-te-ja* specialised in some types of spinning, for example producing warp yarn, or yarn of very fine quality. However, it must be emphasised that the *a-ra-ka-te-ja* women recorded on Lc(1) 531 by scribe 103 produce *pa-we-a* cloth, not thread.<sup>84</sup>

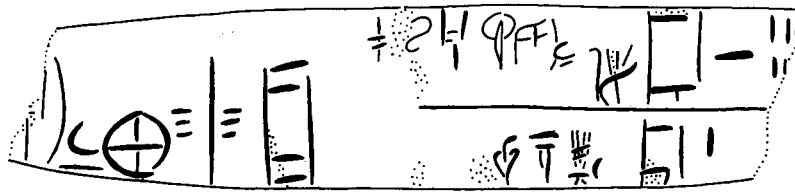


Fig. 17.16. drawing of KN Lc(1) 531 + 542. Drawing by L. Godart

KN Lc(1)	531 + 542		(103/F10)
.A	]	'pa-we-a ko-u-ra'	*161 TELA <sup>1</sup> 15[
.B	]a-ra-ka-te-ja /	tu-na-no	TELA <sup>1</sup> 1 [

“Spinners, 15 pieces of *pa-we-a ko-u-ra*, 1 piece of *tu-na-no*”

<sup>77</sup> No term is preserved for the spindle whorl in the Linear B records. Barber (1991, 263–264) notes that it is “curious that there is no common Indo-European word for the spindle whorl and that instead Greek and Latin (which uses *fusus*) seem to have picked up a loan word for this little utilitarian object.”

<sup>78</sup> 4.125–135.

<sup>79</sup> Pace Due 1965, 8, note 22.

<sup>80</sup> Artemis’ epithet χρυσηλάκατος is translated and understood as “with the golden spindle” by some scholars, “with the golden dart” by others. See discussion in Due 1965, 1–10.

<sup>81</sup> See also Gleba 2008.

<sup>82</sup> Lehmann 1995, 54.

<sup>83</sup> Andersson & Nosch 2003. For further data, see Andersson Strand, this volume.

<sup>84</sup> Nosch forthcoming B.



### 3.2. Tools for wool preparation: combs

Before spinning, the fibres need combing. The verb used in the 1st millennium is *πέκω*, “comb”.<sup>85</sup> This tool whose 1st millennium Greek name is *κτεῖς*<sup>86</sup> is built on the same root (<\**pkt-en-*) and related to Latin *pecten*. The verb is again attested indirectly, through the formation of the occupational designation *pe-ki-ti-ra<sub>2</sub>*, “female combers”.

PY Ab 578

(Archives room/S186-H21)

.A GRA 2 T 4 TA

.B pu-ro , pe-ki-ti-ra<sub>2</sub> MUL 7 ko-wa 4 ko-wo 4 NI 2 T 4

“At Pylos, 7 female combers, 4 girls, 4 boys, 1 TA supervisor, 230 litres of grain, 230 litres of figs”

Combing ensures that the fibres are free from foreign material and parallel. In several works, the term is translated as “carders”<sup>87</sup> but carding is an Iron Age technology in which the fibres are completely mixed and blended.

A second example of a term based on the same root for combing is the substantive or adjective *pe-ko-to/pektos* employed in connection with very heavy *te-pa* textiles (measured in terms of the 30 kilos of raw wool for one *te-pa pe-ko-to*). In this context, it may also be found in its abbreviated form *pe*. More technical knowledge and more documents are necessary to understand the meaning of the term in this context.

An example of *pe-ko-to* textiles is shown on tablet KN Lc(1) 526. It is written by the main textile scribe 103 at Knossos and comes from the same find-place as all other records of central Cretan production targets (F10 and F11). It registers a production target for the place *da-wo* located in southern Crete. The women at *da-wo* are commissioned to produce 10 *pe-ko-to* textiles, 14 *te-pa*, and 3 *tu-na-no*. After listing the three textile types, the scribe 103 calculated the necessary amount of wool for the production. The tablet is unfortunately broken, but John Killen has highlighted the ratios between wool and Mycenaean textiles.<sup>88</sup> Thus the production target can be calculated as follows:

10 *pe-ko-to* textiles = 100 units of wool = 300 kilos

14 *te-pa* textiles = 98 units = 294 kilos

3 *tu-na-no* = 9 units of wool = 27 kilos

The tablet records a total of 621 kilos of wool (= 207 units of wool) and this corresponds to wool from 828 sheep.<sup>89</sup> The production of the 10 *pe-ko-to* textiles alone consumes approx. half of the allocated wool. The *pe-ko-to* textiles are thus by far the heaviest textiles (30 kilos of wool per piece). How and whether this fact is technically related to combing is still an open issue.

<sup>85</sup> DELG, s.v.

<sup>86</sup> DELG, s.v.

<sup>87</sup> Docs<sup>2</sup>, 158, 570.

<sup>88</sup> Killen 1966; Killen 1974.

1 *pa-wo* = 1.67 units of wool = 5 kilos of raw wool

1 *tu-na-no* = 3 units of wool = 9 kilos of raw wool

1 *te-pa* = 7 units of wool = 21 kilos of raw wool

1 *te-pa pe-ko-to* = 10 units of wool = 30 kilos of raw wool

<sup>89</sup> The calculation is based on wool yields from castrated wethers. See Killen 1964.

From the same root of πέκω “to comb” is derived the Mycenaean nominal form *po-ka* “fleece”.<sup>90</sup> The meaning of πέκω in Mycenaean Greek therefore seems to cover both the treatment of wool and also a treatment of textiles.<sup>91</sup>

### 3.3. Tools for weaving

Textiles are made on a loom. There are several types of looms in prehistory, such as the horizontal loom, the back-strap loom, the two-beam-loom or the warp-weighted vertical loom. There is indirect evidence for the terminology for the vertical loom via the occupational designations for both male and female weavers:

- *i-te-ja-o*, feminine genitive plural form, “of the female weavers” (PY Ad 684)
- *i-te-we*, masculine dative singular (*histewei*) “for the male weaver”, or nominative-accusative plural form (*histewes*) “male weavers” (PY Un 1322).

PY Ad 684

(S290–H23/Archives room)

(*lat. sup.*) a-pu-ne-we e-re-ta-o ko-wo

pu-ro ti-nwa-ti-ja-o i-te-ja-o ko-wo VIR 5 ko-wo 2

“At Pylos, the women of Tinwato (toponym), the weavers’ sons, 5 men, 2 boys,  
The Apunewe (toponym) rowers’ sons.”

Although the term for loom is not attested in Linear B, it seems plausible that the professional designation is built on the term for loom, and we can thus infer the existence of *\*i-to- /histos* “loom”.<sup>92</sup>

A loom is a rather simple device with which a very complex technology is carried out and complex items result.<sup>93</sup> The loom in classical Greek is *histos*, from the verb *histamai*.<sup>94</sup> The root is related to the Indo-European root *\*sta-* for “standing”, “upright”. It indicates the upright concept of the vertical loom where both the weaver and the loom are placed in a vertical position. This idea of a standing device can also be found in the modern European languages, for example Ger. Webstuhl.<sup>95</sup> This contrasts to the horizontal loom in use in e.g. Mesopotamia.<sup>96</sup>

Most parts of the warp-weighted loom are not preserved archaeologically. The exception is the loom weights: the warp-weighted loom is attested through the thousands of loom weights found in Europe and in Anatolia. In 1st millennium Greek they are called ἄγνῶθεξ, a term without Indo-European etymology, or simply termed “stones”, λῶεξ.<sup>97</sup>

<sup>90</sup> Killen 1962.

<sup>91</sup> DELG, s.v.: “Cette famille de mots est surtout employée pour les brebis et pour la laine, d’une part au sens de ‘tondre’, de l’autre au sens de ‘carder’. D’où l’emploi pour ‘peigner’ ”.

<sup>92</sup> See also woman’s personal name *i-ta-ja* in the formula *o-pi i-ta-ja* on tablet KN Xe 537, which is written by scribe 103?? Her name is possibly built on the same root.

<sup>93</sup> Harlitzius-Klück 2004, 102: “Der Hauptanteil der Organisation liegt in der Hand und im Kopf der Weberin und ist nicht im Gerät externalisiert. Planung und Innovation beziehen sich eher aufs Gewebe und seine Bedeutungen, weniger auf die technischen Mittel. Der Webstuhl selbst besteht aus völlig unspezifischen Stangen, Stäben und Pfosten, die ihre Funktionalität und ihre Namen erst innerhalb des Webvorgangs erhalten.”

<sup>94</sup> DELG, s.v. and supplement.

<sup>95</sup> Harlitzius-Klück 2004.

<sup>96</sup> Breniquet 2008, and this volume.

<sup>97</sup> The term “stones” is attested in Linear B *ra-e-ja/ \*lahaeia* PY Ta 642, 713.



PY Ub 1315

(H31/Room 99)

.1 ]-wo-ja a-ni-ja , te-u-ke-pi , 5 di-pte-ra<sub>3</sub> e-ru-ta-ra 1 6[  
 .2 ro-u-si-je-wi-ja 6 ra-pte-ri-ja a-ni-ja 3

“5 sets of reins (fitted) with equipment; 16 red hides  
 6 (sets of reins) of Lousos type; 3 sets of reins with saddlers’ work”<sup>99</sup>

However, tablets from Pylos (La 626, 630) record *pa-we-a* cloth, which is qualified as *a-ro-ta*, which could be ἄλωστα, meaning “not-sewn”, and thus employing another root for the sewing technique. From the contextual analysis of the use of ῥάπτω in the Linear B inscriptions,<sup>100</sup> we learn that the same term for stitching or sewing is both used for textiles and for leather.<sup>101</sup> Barber notices that 1st millennium Greek preserves two terms for sewing: *kassuein*, a cognate of English “sew”, and *raptein* which has no known etymology<sup>102</sup> but is the main form used in Mycenaean Greek.

### 3.5. Weaving terminology

A rather rich semantic field exists for the process of weaving. Mycenaean Greek, like other Indo-European languages, distinguishes between weaving (on a loom) *hyphainein*, and plaiting, *plekein*. To this comes the root yielding the terms for loom *\*histos*, and weaver *\*histeus*.

1. *hist-*. From the root *\*sta-*, “to stand”, derives the terms *i-te-we*, “male weaver(s)” > *\*i-te-u/histeus*, here attested either in the dative singular *histewei*, or in the nominative-accusative plural *histewes* (PY Un 1322), and *i-te-ja-o/histeiaon*, genitive plural feminine form “of the (female) weavers” (PY Ad 684).

2. *hyph-*. Another Greek term for weaving is *hyphansis* “weaving” and the verb ὑφαίνω ‘weave’, and the weaver *hyphantès*. The root *\*webh-* is in use in other Indo-European languages as Engl. *weaving*, Toch. A. *wäp-*, German *weben*.<sup>103</sup> The Greek term *hyphainô* is a zero-vocalism verb (*\*ubh-*) with a specific suffix, which according to Pierre Chantraine<sup>104</sup> does not seem archaic.

In Linear B, this root is perhaps attested in the designation of a Goddess of Weaving (?), *u-po-jo po-ti-ni-ja* at Pylos (Fr 1225).

<sup>99</sup> Translation from *Docs*<sup>2</sup>, 520.

<sup>100</sup> On the etymology, see Chadwick & Baumbach 1963, 241–242.

<sup>101</sup> According to Ventris & Chadwick (*Docs*<sup>2</sup>, 578), the use of the same term for both leatherwork and textile-work suggests “that the masculine trade at least was concerned with sewing leather rather than cloth”. This conclusion, however, is not necessarily true. It rather seems that both the *ra-pte* and the *ra-pi-ti-ra*<sub>2</sub> are concerned with sewing, very much like the pair of *i-te-we* and *i-te-ja-o*, but that the term is also used to describe the technique of sewing in leather, and here there is no Linear B evidence for the gender of the person who stitched the leather.

<sup>102</sup> *DELG*, s.v.

<sup>103</sup> *DELG*, s.v.

<sup>104</sup> *DELG*, s.v.

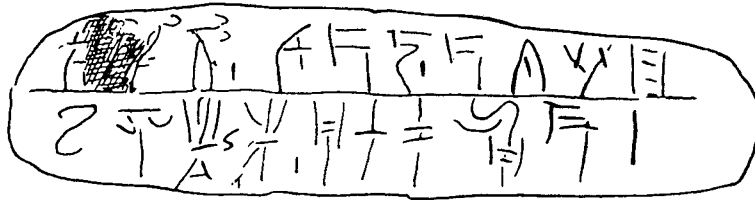


Fig. 17.19. Drawing of PY Fr 1225. Drawing by E. Bennett

PY Fr 1225

(Room 23/S1217-Cii)

- .1 e-ra<sub>3</sub>-wo , u-po-jo , po-ti-ni-ja  
 .2 we-a<sub>2</sub>-no-i , a-ro-pa OLE+A S 1

“Oil for the u-po-jo Potnia  
 Ointment, for the garments, 9.6 litres of oil”

The designation is composed of the word Potnia, the Mistress, and *u-po-jo*. Some scholars interpret the goddess' designation as *Hypoiôn* < *hypo*, being the Goddess from below, chthonian, under ground.<sup>105</sup> Other scholars, however, interpret the designation as the goddess of weaving < \**hyphoio* < ὑφαίνω.<sup>106</sup> Since the context on Fr 1225 concerns textiles, we would tend to prefer the interpretation as goddess of weaving.

3. *plek-*. Another term for weaving is related to the root of πλέκω found in the occupational designations *pe-re-ke-u* and *pe-re-ke-we/plekeus*. It is significant that this occupational designation occurs both at Mycenae (a record of wool MY Oe 130) and Pylos (a record of animals PY Cn 1287 and another record of men, PY Ae 574,) and has recently also been found at Thebes (TH Oh 208).<sup>107</sup> It is a designation for a male occupation related primarily to wool working.

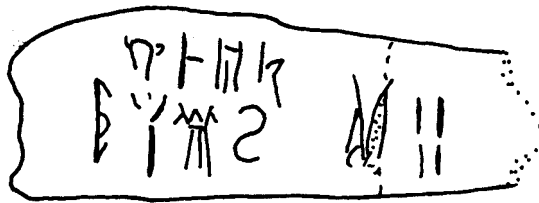


Fig. 17.20. Drawing of MY Oe 130. Drawing by L. Godart

MY Oe 130

(56/H. Oil Merch.)

qa-da-wa-so  
 pe-re-ke-we

LANA 4

PY Ae 574

(Cii/Archives room)

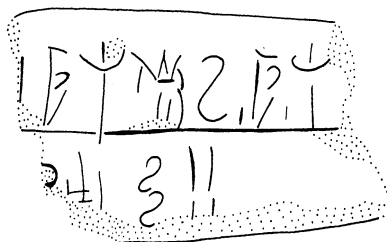
pe-re-ke-we VIR 13

<sup>105</sup> Van Leuven 1979.

<sup>106</sup> Boëlle 2004, 46 note 47. According to Boëlle, *hyphos* would be an unattested inverted thematic derivative from ὑφαίνω which is not attested. *Hyphos* is attested in Greek but it is a neutral sigmatic form (-es/-os) and its Mycenaean genitive form would thus be written \**u-pe-o/huph-eh-os*.

<sup>107</sup> Nosch forthcoming A.

TH Oh 208 (-)  
 .1 ]1 pe-re-ke-we , pe-re[  
 .2 ]-si M 4 [



On a tablet from Knossos, another term may be the verbal form of *plek-*, *pe-re-ke* (KN L 520).<sup>108</sup>

Fig. 17.21. Drawing of TH Oh 208. Drawing by L. Godart

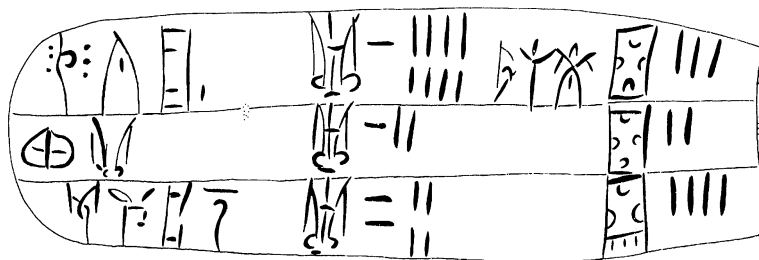


Fig. 17.22. Drawing of KN L 520. Drawing by L. Godart

KN L 520 (-/F8)  
 .1 do-ti-ja , LANA 18 pe-re-ke \*164 3  
 .2 ka-ma LANA 12 \*164 2  
 .3 sa-mu-ta-jo LANA 24 \*164 4  
 Cut at right.

The verb *πλέκω*<sup>109</sup> signifies braiding and is primarily used for basketry as well as for the braiding of hair and crowns, techniques which from a technological point of view are closely related to weaving. The term seems closely associated with wool and weaving in Mycenae and Thebes, and *pe-re-ke* is employed in connection with wool and textiles at Knossos. Thus, this term is strongly integrated within the textile manufacture and textile vocabulary at several palace sites, and seems to have a wide range of applications.

4. It is possible to see an e-vocalism in the development of *\*web-* in the form of the future participle *e-we-pe-so-me-na*, “to be woven”, as was suggested by Chantraine<sup>110</sup> and Perpillou.<sup>111</sup>

<sup>108</sup> According to *Docs*<sup>2</sup>, 488, *pe-re-ke* is rather not a verb but a man’s name.

<sup>109</sup> *DELG*, s.v. Chantraine does not mention any Mycenaean evidence in his analysis of *πλέκω*. Today, in modern Greek, the verb has the sense of knitting. It should be noticed that in Althochdeutsch the verb *flehtan* (flechten, “braid”) is related to *flahs* (Germ. Flachs, Eng. flax). Barber 2001.

<sup>110</sup> *DELG*, s.v. 1123: “Enfin, on pourrait retrouver le vocalisme *e* en grec même, si l’on interprète le mycén. *ewepesomena*, épithète de tissus, comme représentant un participe futur passif d’un verbe *\*φέφω*, avec prothèse *\*ἐφέφω*, cf. Beekes, *Laryngeals* 67.” Beekes (1969, 67) conjectures a verb *\*ἐφέφω* corresponding with prothetic *e-* to Old Hoch German *weban*, Eng. weave, later replaced by *ύφαίνω*.

<sup>111</sup> Perpillou 1996.

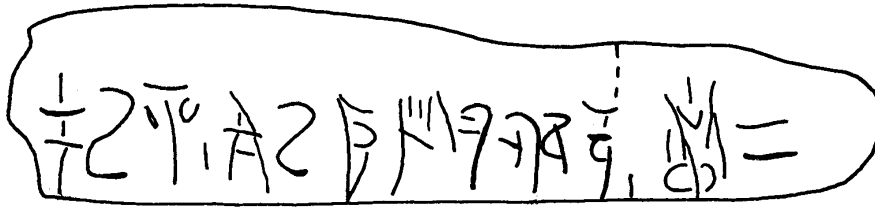


Fig. 17.23. Drawing of MY Oe 127. Drawing by L. Godart

MY Oe 127 (55/H. Oil Merch.)  
 pa-we-a<sub>2</sub> , e-we-pe-se-so-me-na , LANA 20

“Paweha cloth, to be woven, 20 units of wool (= 60 kilos)”

20 units of wool equals 60 kilos, and this is the necessary – and precise – quantity for weaving 12 pieces of *pa-we-a* cloth. If this etymology is followed, Oe 127 becomes equivalent to the Lc textile targets at Knossos in which the scribes allocate large quantities of wool to groups of workers for textile production.<sup>112</sup> However, the word *e-we-pe-se-so-me-na* is conventionally interpreted as future participle passive, “to be well boiled” < *hepsô*, “boil” (see below, § 4.2.1).

There are thus several terms available to express weaving in Mycenaean Greek.<sup>113</sup> The weavers and probably the loom take their name after the Indo-European root *\*sta-*, but the term for plaiting (*plekein*) is also well integrated in the textile vocabulary and does not reflect any clear technical differences from weaving.

#### 4. Reflections on the use of pairs and groups of words in Linear B textile terminology

In the vocabulary linked with textile fibres and textile production in the Linear B corpus, some words seem to express opposite meanings (antonyms), whereas others apparently have very close, if not identical significations (synonyms). It is assumed here that by gathering and studying the pairs or groups of words concerned, it might be possible to obtain a better idea of technical differences, or technological details, which were particularly important to the scribes, and in general to the palatial administration, since they were carefully recorded.

##### 4.1. Pairs of antonyms expressing important technical differences?

In the list of terms related to fibres, thread and textiles, some pairs of words functioning like antonyms can be identified; one hypothesis is that they correspond to the indication of (technical?) differences, which were particularly important to the scribes. One document, Knossos Ln 1568, seems to be especially revealing from that point of view, since it records repeated mentions of

<sup>112</sup> On the textile targets Lc(1) and Lc(2), see Killen 1966; Killen 1974.

<sup>113</sup> Finally, José Melena has suggested another term for weaving: he relates *ke-do-si-ja* with the Greek *gerdiós*, “weaver” (Melena 1975, 78–79). The term *ke-do-si-ja* is recorded after a list of male names on KN B 799, 804 and 8206. *Gerdiós* is only attested quite late, and according to Chantraine, Latin *gerdius* and Hebrew *girda’a* are loan words from Greek *gerdiós*. Chantraine, however, states that “de toute façon le mot grec risque fort d’être emprunté.” (DELG, s.v.). Hesychius equals *gerdiós* with *hyphantès*. Thus, according to Melena, *ke-do-si-ja* is *gerdonsia*, with the meaning “textile workshop” or “loom team” (Melena 1975, 79). This interpretation, however, seems less plausible.

two words and their abbreviations. Other examples can be found, where the relevant words are attested not only in more than one document, but also in more than one corpus of texts.

#### 4.1.1. *mi-ja-ro/pe-ko-to*: [made of] “rough” [wool] versus “combed”

The adjective *mi-ja-ro*<sup>114</sup> appears on KN Ln 1568,<sup>115</sup> once completely written, on line 1a; and in the form of the abbreviation *mi*, written just before the logogram TELA+TE (on lines 1b, 2b, and 6):

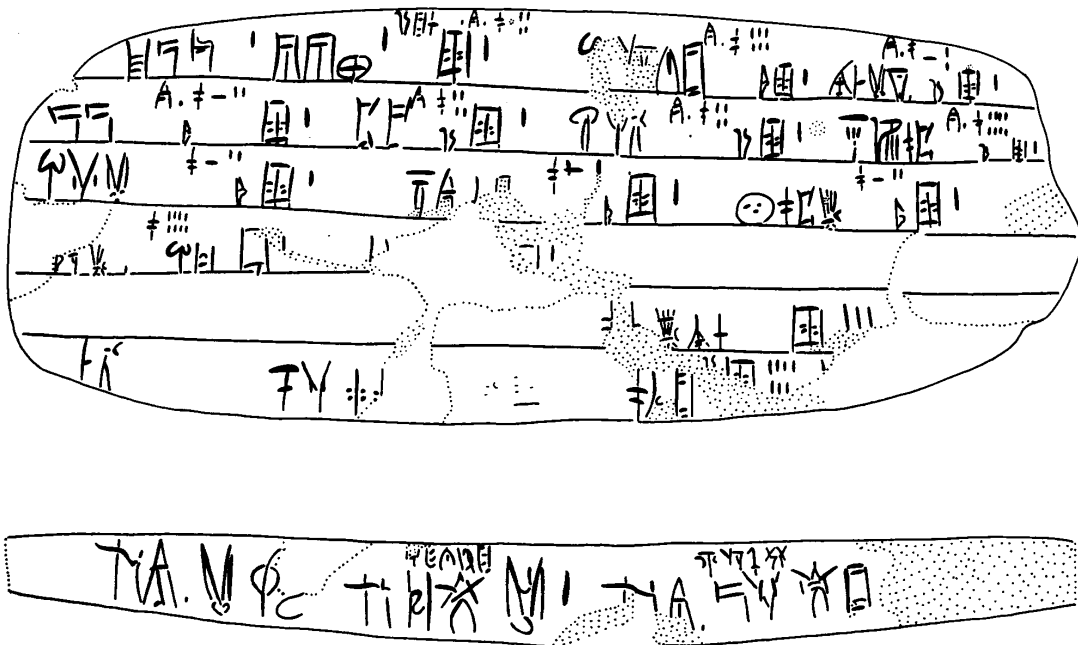


Fig. 17.24. Drawings of KN Ln 1568. Drawing by L. Godart

KN Ln 1568				(103/F14)
.1a		<i>mi-ja-ro</i> , <i>e</i> , <i>pa</i> 4	<i>e</i> , <i>pa</i> 6	<i>e</i> , <i>pa</i> 12
.1b	*56-po-so 1	wa-wa-ka 1 TELA <sup>1</sup> +TE 1	ru-ki-ti-ja <i>pe</i> TELA+TE 1	wi-da-ma-ta <sub>2</sub> , <i>mi</i> TELA <sup>1</sup> +TE 1
.2a	<i>e</i> , <i>pa</i> 12	<i>e</i> <i>pa</i> 4	<i>e</i> , <i>pa</i> 4	<i>e</i> , <i>pa</i> 8
.2b	po-po <i>pe</i> TELA <sup>1</sup> +TE 1	ta-su <i>mi</i> TELA+TE 1	ko-re-wo <i>mi</i> TELA+TE 1	di-*65-pa-ta <i>mi</i> TELA+TE 1
.3a	<i>pa</i> 12	<i>pa</i> 11	<i>pa</i> 12	
.3b	ru-sa-ma <i>pe</i> TELA <sup>1</sup> +TE 1	na-e-ṛq-ja <i>pe</i> TELA+TE 1	qe-pa-ta-no <i>pe</i> TELA <sup>1</sup> +TE 1	
.4a	<i>pa</i> 8			
.4b	]tu-na-no, ru-nu TELA <sup>1</sup> 1	[ ]TĒLA <sup>x</sup> 1		
.5			pa-ṛo no-si-ro TELA <sup>x</sup> +TE 3	
.6	da-wo	to-sa te-[ ]	[mi] TĒLA+TĒ] pa-ra-ja 'mi' TELA <sup>x</sup> +TE 7	[
lat. inf.	.a	a-ze-ti-ri-ja	ne-ki-ri-de	[
	.b	o-pi, ma-tu-ṛe o-nu-ke	LANA 1 o-pi, po-ni-ke-ja	[

<sup>114</sup> On this adjective, see mainly the study by Killen 1974, esp. note 10, with bibliography, alternative interpretations proposed by other scholars, as well as a detailed analysis of the opposition between *pe* and *mi* on Ln 1568, where the author suggests that the sense of *mi-ja-ro* might be rather “rough or the like” and wonders if it did not “serve to designate cloth made from uncombed wool, as opposed to cloth made from combed (*pe-ko-to*: cf. πέκω??) wool (or, alternatively, ‘rough’ cloth as opposed to ‘sheared’ cloth [velvet *vel sim.*])”

<sup>115</sup> On this document see also Varias Garcia 1992.



The same document contains four instances of the abbreviation *pe* just in front of the same logogram TELA+TE (on lines 1b, 3b); *pe* could theoretically be the abbreviation of *pe-ru-si-nu-wo*, “from last year”, or of *pe-ko-to*, “combed”.

On the same document, the scribe wrote both *pa-ra-ja* “old” (line 6) and the abbreviation *pa* (lines 1a, 2a, 3a, 4a), which is an argument against the interpretation of *pe* as *pe-ru-si-nu-wo*, since, as demonstrated by Killen,<sup>116</sup> normally a scribe either writes *pe-ru-si-nwa/pe* or *pa-ra-ja/pa*.

The term which is believed to be the opposite of *mi-ja-ro*, namely *pe-ko-to*, appears in eight tablets (KN Lc[1] 526, 527, 535, 536, Lc 646, L 698, 5090, 8105), and six of them<sup>117</sup> are records of production targets and of cloth by the same scribe, 103, as Ln 1568.

On these tablets, the precision *pe-ko-to* is also systematically applied to the kind of textiles described by TELA+TE, just as *mi* and *pe* here, which reinforces the hypothesis of a pair of words functioning as antonyms (not merely for the meaning, but also in the use of the designations). Thus, it can be concluded that *pe-ko-to* is almost certainly the word behind the abbreviation *pe* on Ln 1568.

#### 4.1.2. ]a-ro-ta / e-ra-pe-me-na “not sewn” versus “sewn”

These two designations, attested at two different sites, may form a pair of antonyms; *a-ro-ta* (alph. Gr. ἄλωστα) is written on PY La 626 and La 630, whereas the second appears on a Knossos tablet (KN L[2] 647). These terms are both quite rare; *a-ro-ta*, at Pylos, is applied to the textile item designated by TELA+PA, where PA is an abbreviation of *pa-we-a*.

PY La 626 (S626–H13/Room 6, SW sector)

*supra mutila*  
 .a ]\*166 2 a-\*35-t̄o 3[  
 .b ]a-ro-ta TELA+PA 1 [  
*verso*  
 ]ku x 1 o 1 [

PY La 630 (S626–H13/Room 6, SE sector)

.a ko-]u-ra  
 ]a-ro-ta TELA+PA 1[  
*verso*  
 ]do P 7 PE 4[

<sup>116</sup> Killen 1972, 425–440.

<sup>117</sup> KN Lc(1) 526, 527, 535, 536, Lc 646; L 698.

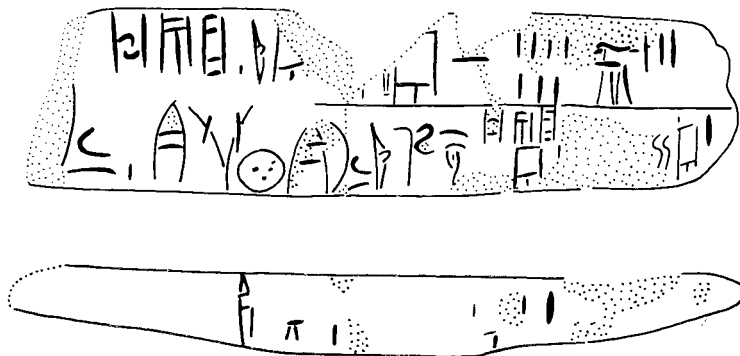


Fig. 17.25. Drawing of KN L (2) 647. Drawing by L. Godart

KN L (2) 647 + 2012 +5943+ 5974 (103/F14)  
 .A ] 'nu-wa-ja , pe TELA<sup>1</sup>[ ] TELA<sup>1</sup> 17 TUN+KI 3  
 .B ]ra , / e-ni-qe e-ra-pe-me-na 'nu-wa-ja' TELA<sup>1</sup> [ ]-ra<sub>2</sub> TELA<sup>1</sup>  
*lat. inf.* ] [[e-ri[ ] TELA 1 ]]

The references being exceptional, were the *pa-we-a* cloths normally sewn, but in some cases not? E. Luján,<sup>118</sup> referring to S. Marinatos,<sup>119</sup> has argued that *pa-we-a* were generally *not* sewn, which would confirm the interpretation of *a-ro-ta* as “not sewn”. Yet, as a matter of fact, a number of different suggestions can be made: *pa-we-a* may have been given or stored without sewing at all, or before sewing; or it may in some cases have been sewn and then restored in its primary state.

The word *e-ra-pe-me-na*, at Knossos, is applied to plain TELA<sup>1</sup>.

If the two words are indeed antonyms, it might be interesting to note that they are built on different roots, and that sewing thus must have been expressed by two terms, one which has yielded the occupational designations *ra-pte* and *ra-pi-ti-ra*, and another (less productive?) root for sewing (cf. Hesychius ἄλωστοι ἄρραφοί?).<sup>120</sup>

#### 4.1.3. *u-po-we/e-pi-ki-to-ni-ja*?

The word *u-po-we* is attested once on KN L 178; *e-pi-ki-to-ni-ja* also appears at Knossos (KN L 693 and probably also on L 7514).

The mention *u-po-we* /*hypowes*/ is interpreted as something “worn under”, whereas *e-pi-ki-to-ni-ja* /*epik<sup>h</sup>itōnia*/ is probably a piece of clothing worn “over the χιτών”; a parallel may be suggested with *e-pi-ro-pa-ja* /*epilōraia*/ attested on KN Od 696, which might designate something worn “over the λώπη”.

<sup>118</sup> Luján 1996–1997, 336.

<sup>119</sup> Marinatos 1967, A6.

<sup>120</sup> Cf. *DMic* s.v. *a-ro-ta*. For the origin of the root, cf. *DELG* s.v. λῶμα.



Fig. 17.26. Drawing of KN L 178. Drawing by L. Godart

KN L 178 + 281

we-we-e-a '\*161' TELA<sup>3</sup>+PA 6 / u-po-we TUN+RI 2

("124"/RCT)

On L 178, the scribe has recorded first a woollen cloth and then a linen one. The fibre used is coherent with the idea of something worn under (other clothes). The word *e-pi-ki-to-ni-ja* appears on the following Knossos tablet:



Fig. 17.27. Drawing of KN L 693. Drawing by L. Godart

KN L 693

.1 ri-no , / re-po-to , 'qe-te-o' ki-to , AES M 1 [

.2 sa-pa P 2 Q 1 e-pi-ki-to-ni-ja AES M 1 [

(103/F19)

“.1 fine linen, to be paid, χιτών, 1 kg of BRONZE [

.2 sa-pa (ca.) 68 g e-pi-ki-to-ni-ja 1 kg of BRONZE[”

This document, which mentions quantities of bronze after textiles, has been interpreted by specialists as a possible indication of the value or “price” of these textiles.<sup>121</sup>

#### 4.2. True or false synonyms?

It has been suggested that some words/designations could be defined as antonyms. On the other hand, the scribes have used words the etymology of which points towards a very close meaning. The question is whether they were simply synonyms, or if they were used to indicate something different, and, if so, how different?

<sup>121</sup> Cf. Killen 1988, esp. 183: “The tablet may simply be a record of bronze which is due to be affixed to linen garments (...). On the other hand, it is perhaps a point in favour of the view that the tablet records the ‘price’ of linen expressed in terms of BRONZE that we find the phrase *ri-no re-po-to* written large as the heading of the tablet”.

4.2.1. *ki-ri-ta / ko-ro-to*

E. Luján has argued<sup>122</sup> that the word *ki-ri-ta /k<sup>h</sup>rista /*(cf. χρίω, “to rub”, “to anoint”) attested on KN Ld 785.1, may have designated a technical process in which the colour was applied onto the cloth, as opposed to *ko-ro-to /khrōston/* (cf. χρώζω, “to dye”) (KN Od 485, 486, 487, MY Oe 106), which would have implied the immersion of wool/cloth into a dye bath. However, he also indicates that it cannot be entirely excluded that the difference might be explained by a personal preference of the scribe, thus not necessarily corresponding to a technical difference.

It might be interesting to add to this pair of designations the participle form *e-we-pe-se-so-me-na*, which has been interpreted, *inter alia*, as “to be well boiled”, since the meaning of the word could be related to dyeing techniques (by heating in a colour bath). It must be stressed that many other interpretations of this form have been suggested, and that P. Chantraine mentions the form under ἔπω “to take care of”,<sup>123</sup> ἔψω, “to boil, to cook”<sup>124</sup> and ὑφαίνω “to weave”.<sup>125</sup> It means that the possible interpretations range from “requiring attention, finishing”<sup>126</sup> to “to be well boiled”<sup>127</sup> and to “to be woven”. In any case, the future form indicates a process *to be applied* to the wool (or to the *pa-we-a*, grammatically both solutions seem possible) recorded in the Mycenae tablet:



Fig. 17. 28. Drawing of MY Oe 127. Drawing by L. Godart

MY Oe 127

(55/House of Oil Merchant)

*pa-we-a*<sub>2</sub> , *e-we-pe-se-so-me-na* , LANA 20

The quantity is quite important (20 units = 60 kg of wool). With 60 kg of wool, it is possible to make 12 *pa-we-a* (3 *pa-we-a* = 5 units of wool).

4.2.2. *i-te-we/pe-re-ke-we*

Among textile related professional designations, two words seem to have described two types of activities related to weaving: *i-te-we /histēwes/* and *pe-re-ke-we /plekēwes/*.

On this subject, see above, § 3.5. *Weaving terminology*.

\* \* \*

<sup>122</sup> Luján 1996–1997, 351.

<sup>123</sup> DELG s.v. ἔπω, Chantraine writes: “Doute également pour l’interprétation de *ewepesomena* suggérée par Palmer, voir Chadwick-Baumbach 193”.

<sup>124</sup> DELG s.v. ἔψω, Chantraine indicates: “Le mycénien a peut-être le futur passif *ewepesomena* = εἶ ἔψησόμενα, dit d’étoffes, mais voir aussi sous ἔπω”.

<sup>125</sup> DELG s.v. ὑφαίνω.

<sup>126</sup> See also Palmer 1963, 421, who explicitly rejects the interpretation “to be well boiled”.

<sup>127</sup> DELG s.v. and Documents, 394.

One of the aims of this paper is to provide the reader with an overview, as complete as possible, of the variety of terms directly or indirectly related to textile fibres and fabrication in the Mycenaean Greek vocabulary, as attested by the extant documentation. The principle of this overview is the (attested) steps of the *chaîne opératoire* (§ 1. *From raw fibres to finished products*).

For the purpose of recording textile fibres and textile products, Mycenaean scribes used not only words, but also logographic notations; this practice has been inherited from the Linear A administration, as shown by the examples from Haghia Triada, Khania and Thera (§ 2.2 *Logograms in Linear A*). In particular, it is probable that Linear B logograms for LANA and TELA had their origin in Linear A, even if some doubts remain on the equation AB 80+26 = LANA. An interesting but sometimes problematic aspect of the notations used by the Linear B scribes is the joint use of endograms and adjuncts (syllabic signs abbreviating words, and placed inside or beside the logograms) on one hand, and of complete words written syllabically, on the other hand, to designate the same type of textile items. In the majority of cases, it has been possible to identify more or less securely the word referred to by the abbreviation, but some terms remain unclear. As this also is a practice inherited from Linear A, it has been attempted to study in parallel the same phenomenon in the Linear A documents (see § 2.2.4 *Cloth names in Linear A*), but the very limited number of preserved inscriptions, as well as the undeciphered state of the script prevents the drawing of any kind of definitive conclusion from this comparison. In any case, it seems reasonable to conclude that the Linear A signs AB 04, AB 09, AB 81 and A 312 (the first two readable as TE and SE) were abbreviations of Minoan cloth names, and that the ligatures AB 54+04 and AB 54+81 are comparable to the Linear B ligatures TELA+TE and TELA+KU.

When it comes to the use of words written syllabically, the working hypothesis has been to suggest that the vocabulary used by the Mycenaean scribes may reflect technical characteristics which were important and thus carefully recorded. The study of these words has shown that some of them had opposite meanings (e.g. *mi-ja-ro/pe-ko-to*, *]a-ro-ta / e-ra-pe-me-na*, *u-po-we / e-pi-ki-to-ni-ja*, see § 4.1. *Pairs of antonyms expressing important technical differences?*) whereas others seem to convey closely related concepts (e.g. *ki-ri-ta/ko-ro-to*, *i-te-we/pe-re-ke-we*, see § 4.2. *True or false synonyms?*); in the last case, the question is whether these words were indeed synonyms, or if the simple fact that the scribes chose different words implies that they signified different technical characteristics, and how different? This last question is far from being definitively answered. However it is suggested that an in-depth study of such lexical items might lead to a better understanding of some technical realities.

Within the long and continuous history of textile production, it is not surprising to find some similarities in the ways of recording wool and textiles from the Minoan to the Mycenaean administration.

E. Barber<sup>128</sup> notes as “interesting and highly significant the distribution in particular of the terms for looms and weaving” within the field of Greek textile terminology. She places these terms within the historical frame of the arrival of the Greek speaking populations in Greece, and the blend with other pre-Greek languages such as Minoan.

An important conclusion to be drawn is that Greek employs some terms for the action of weaving, such as the possible interpretation *u-po-jo*, which might be related to *huphainein*, while they construct the term for the upright loom, *histos*, from yet another root. Finally, plaiting has

<sup>128</sup> Barber 1991, 279–280; 2001.

its own distinct terminology, although plaiting seems to have been integrated in the Late Bronze Age textile production and terminology. This suggests that plaiting, weaving and the loom could have come independently and perhaps at different periods into the Greek vocabulary.

It must be taken into consideration that the archaeology of Bronze Age Greece represents a particular situation regarding textile tools: spindle whorls are extremely abundant at Bronze Age sites in Mainland Greece and clay loom weights near to absent; in Crete, the archaeological excavations display a wealth of clay loom weights but only few spindle whorls are found. We know that thread was spun in abundance in the Bronze Age, and we know that the warp-weighted loom was in use. The use of the term *λίθος* “stone” in the 1st millennium could thus be explained by a traditional use of stones instead of clay loom weights, in particular in the Bronze Age Mainland weaving tradition.

It is very important to integrate the research on terminology within the research of the development of textile technology. Plant fibres were processed some 4000 to 6000 years before animal fibres were introduced. This innovation must have enriched the vocabulary as well, because it required the appropriation of new techniques. Barber<sup>129</sup> points out that the textile terminology for wool fibre processing has partly been taken from non-Indo-European languages. Woollen textiles needed fulling (*ka-na-pe-u*), and woollen textile opened up for dye opportunities with a mordant (*tu-ru-pte-ri-ja*), two technical terms, which seem to have come from outside the Greek and Indo-European vocabulary.

## Note

The authors of this chapter have divided the study of the various topics and categories of documents as follows below: section 2.2 *Logograms in Linear A* is the work of M. Del Freo; section 1 *From raw fibres to finished products*, as well as sections 2.1 *Logograms in Linear B* and 4 *Reflections on the use of words in textile terminology* are the work of Fr. Rougemont; section 3 *Terminology and technical characteristics* is the work of M.-L. Nosch.

## Abbreviations

- CHIC Olivier, J.-P. & L. Godart (eds.) (1996) *Corpus Hieroglyphicarum Inscriptionum Cretae*, Études crétoises 31, Paris.
- CoMIK Chadwick, J. et al. (eds.) (1986–1998) *Corpus of Mycenaean Inscriptions from Knossos*, 4 vols. Rome & Cambridge.
- DELG Chantraine, P. (2009) *Dictionnaire étymologique de la langue grecque: histoire des mots*, supplemented by A. Blanc, C. de Lamberterie, J.-L. Perpillou, Paris.
- DMic. Aura Jorro, F. (1985–1993) *Diccionario micénico*, 2 vols. *Anejos I y II del Diccionario Griego-Español*. Madrid.
- Docs<sup>2</sup> Ventris, M. & J. Chadwick (1973) *Documents in Mycenaean Greek*, 2nd ed., Cambridge.
- GORILA Godart, L. & J.-P. Olivier (eds.) (1976–1985), *Recueil des inscriptions en linéaire A*, Études crétoises XXI-1/5, Paris.
- KT<sup>5</sup> Killen, J. T. & Olivier, J.-P. (eds.) (1989) *The Knossos Tablets. 5th Edition. Suplementos a Minos* 11. Salamanca.

<sup>129</sup> Barber 1991, 227.

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