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TWO NOTES ON THE KNOSSOS Ak TABLETS

I

As we are now aware, the records of women and children in the Ak series at Knossos fall into three separate sets: the tablets in hand 102, the tablets in hand 103, and the tablets in hand 108¹. The first question that I should like to consider here is whether it is possible to detect any regular pattern in the way that these tablets have been distributed among their writers.

In spite of their varied authorship, these tablets are, as a whole, remarkably alike. Whatever its scribal hand, each tablet in the series contains a similar range of information, which is set out on the tablet in a more or less standard fashion, though there are occasional variations. Scribe no. 103, for example, regularly writes the description of the women that he is recording in majuscule signs in an unruled space at the beginning of the tablet; and the same pattern of beginning is occasionally also to be found on tablets in hand 108. Scribe no. 102, by contrast, invariably writes this description in ordinary-sized signs at the beginning of the first line of the tablet, which in his particular instance is invariably fully ruled. Further variations occur in the descriptions applied both to women, in the subsidiary entries normally to be found on the first line of the tablet following the principal entry of women, and also to children. However, despite these variations, all three sets contain the following features: *a*) records of what appear to be supervisors (*TA* and *DA*) (which are invariably to be found before the principal entry of women); *b*) records of children, invariably to be found following the entries of women; and *c*) the regular division of the children, first into males and females, and then into 'older' and 'younger'. How consistent the

¹ See J.-P. Olivier, *Scribes*.

pattern of entry keeps, regardless of scribal hand, may be seen from the examples set out below. Each of the tablets quoted is the work of a different scribe:

Ak 611 (Hand 103)

.1 *to-te-ja* , *TA* 2 'DA 1' MUL 10[] *de-di-ku-ja* MUL 1[
 .2 *ko-wa* , | *me-zo-e* 4 [] *ko-wo* , | *me-wi-jo* 1[
 .3 vacat [

Ak 613 (Hand 108)

.1 *qa-mi-ja* , | *TA* 1 'DA 1' MUL[
 .2 *ko-wa* , | *me-u-jo-e* 9 *ko-wo*[

Ak 828 (Hand 102)

.1 *pa-i-ti-ja*, *DA* 1 *TA*[
 .2 *ko-wa* | *me-zo-e* , *di-da-ka*[
 .3 *ko-wo* | *me-zo-e* , *di-da*[

What differences in scribal hand commonly reflect on the tablets is differences in the function of the tablets concerned. Functional differences, however, seem unlikely to be involved here. If these three sets had had different purposes, this would surely have been reflected in a much more positive manner, in widespread differences both in the content of the tablets and in their general appearance. Is there then some other factor at work here? Is it perhaps that there is some feature which is shared in common by all the tablets in a given set, to the exclusion of all the remaining tablets?

If there is such a feature in common between the tablets either in hand 103 or in hand 108, it is certainly difficult to detect. One striking feature of the tablets written by scribe no. 108 is that they contain a remarkably high proportion of collectors' names: see Ak 615 (*]a-no-qa-ta*); Ak 621 (*]jo* / *da-wo*); Ak 622 (*we-we-si-jo-jo*); Ak 627 (*da-*22-to* / *a-no-zo-jo*) and (a less certain example) Ak 7022 (*[.]ki*: perhaps *sa-ki* or *do-ki*). Yet this feature is neither shared by the entire group nor confined to it. One group of women at least which is recorded in this set is described in terms of an

ethnic (see Ak 613: *qa-mi-ja*); and at least one other collector's name is to be found elsewhere in the series (see Ak 5918:]*si-jo-jo*[; perhaps to be restored as *e-me-si-jo-jo*, since *we-we-si-jo* is already accounted for by Ak 622).

It is however possible to suggest at least a tentative explanation for the creation of the third set. The tablets in this hand (no. 102), which are not particularly numerous, and were found in a different part of the palace from the remaining tablets in the series, contain in all only two clear references to place. Ak 780 is concerned with a group of *da-wi-ja*, women of *da-wo*, who, it is further stated on the tablet, are *ne-ki-ri-de* (an occupational description applied to women); and Ak 828 is concerned with a group of *pa-i-ti-ja*: |*Phaistiai*|, women of Phaistos:

Ak 780

- .1 *da-wi-ja* , *ne-ki-ri-de* MUL 2 *pe* *103 2
 .2 *ko-wa me-wi-jo*[]1
 .3 *ko-wo me-wi[-jo-]e* 3

Ak 828

- .1 *pa-i-ti-ja*, DA 1 TA[
 .2 *ko-wa* | *me-zo-e* , *di-da-ka[-re*
 .3 *ko-wo* | *me-zo-e* , *di-da[-ka-re*

There are also, however, at least possible indications as to the whereabouts of a third of the groups of women which this particular writer recorded.

One of the largest of all the tablets at Knossos is the CLOTH record L 1568. Its writer is scribe no. 103, who, as we have seen earlier, was also responsible for many of the Ak tablets. Its apparent purpose is to provide a detailed description of the production of cloth at *da-wo*. The entries it contains all follow a regular pattern: first a personal name (which in some instances at least appears to be that of a woman), and then a cloth entry (which in all instances but one consists of a single unit). Since we have evidence elsewhere that the amount of cloth which an individual weaver was expected to produce at Knossos in whatever period

it is that is covered by the tablets was a single unit, it is tempting to suppose that the function of the personal names is to indicate the weavers responsible for the cloth. And that *da-wo* is the location of this production is suggested by the entry on the last line of the tablet. This begins by referring to *da-wo*; and although certain details remain obscure, it seems certain, given that it also contains the term *to-sa*, and that it is on the final register of the tablet, that it is concerned to record some kind of total, and that this total relates to the whole tablet. Confirmation of all this is apparently provided by Lc 526. This text, as we can be certain from the ethnic shown at the beginning, is concerned with weavers at *da-wo*; and the cloth that it records is of precisely the same varieties as the cloth recorded on 1568: TELA+TE (of which there are two varieties, *pe-ko-to* and 'ordinary') and *tu-na-no*. Indeed there must be a reasonable chance that both these tablets, written by the same scribe (presumably) in the same year, are at least partially concerned with the *same* cloth.

All that I have so far mentioned is to be found on the recto of the tablet. There is also, however, an entry on the edge:

.a	<i>a-ze-ti-ri-ja</i>	<i>ne-ki-ri-de</i>	[
.b	<i>o-pi</i> , <i>ma-tu-we</i>	<i>o-nu-ke</i> LANA 1	<i>o-pi</i> , <i>po-ni-ke-ja</i> [

This entry consists of two separate sections. Each section begins with the term *o-pi*, which in each instance is followed by what seems likely to be a personal name: *ma-tu-we* in the first instance, *po-ni-ke-ja* (which is almost certainly complete) in the second. As I have suggested elsewhere², it is perhaps the function of entries of this pattern to indicate that the commodities being recorded are to be found at workshops supervised by the individuals named: 'chez' *ma-tu*, in other words, in the present instance; 'chez' *po-ni-ke-ja*. Written directly above this in the second of the two entries, and above and to the right of it in the first, is a feminine trade-name: *a-ze-ti-ri-ja* (as it is almost certainly to be read) in the first instance, *ne-ki-ri-de* in the second. As I have also suggested elsewhere³, these terms are perhaps glosses, serving to in-

² J. T. Killen, «The Knossos *o-pi* Tablets», *Atti Roma*, pp. 636 ff.

³ *Ibidem*, p. 641.

dicating what kind of worker is to be found in the two workshops. Last comes the subject of the entry (at least in the first section: nothing has survived in the second entry to the right of *po-ni-ke-ja*): one unit of wool described as *o-nu-ke*.

Since all the tablets that we possess at Knossos almost certainly relate to the same year, it is difficult to believe that the *ne-ki-ri-de* that are here referred to on the edge of 1568 are not one and the same as the two women of the same description who are to be found recorded on Ak 780, on which tablet they are explicitly stated to be women of *da-wo*:

Ak 780

.1 *da-wi-ja* , *ne-ki-ri-de* MUL 2 *pe* *103 2

And if details of the *ne-ki-ri-de* at *da-wo* were to be found recorded on an Ak tablet, it is difficult to suppose that the same series did not also contain some reference to the *a-ze-ti-ri-ja*, who are recorded in what appears to be a similar situation as the *ne-ki-ri-de* on L 1568, and who, like them, are presumably to be found at *da-wo*. Is it merely a coincidence, therefore, that the only apparent reference in the series as it is at present preserved to women of this description is to be found on Ak 7001: another of the few tablets written by the scribe responsible for the record of the *ne-ki-ri-de*? As it is at present preserved, the first register of 7001 (in hand 102) begins with the term]*ke-ti-ri-ja*, for which, the analogy of the Pylos tablets at once suggests a probable restoration: as *a-ke-ti-ri-ja*, a term widely attested at Pylos as a description of working women, and, in all probability, a variant spelling of *a-ze-ti-ri-ja*.

It would seem therefore that of the few tablets which were written by scribe no. 102, one certainly and another is possibly concerned with recording women at *da-wo*; whilst a third is certainly concerned with recording women at Phaistos⁴. This is

⁴ The other headings attested in the set are]*we-ra-ti-ja* (Ak 784) and]*du-wi-ja po-si*[(Ak 830).]*we-ra-ti-ja* is probably a variant spelling (or by-form) of *we-ra-te-ja* (a trade-name?), for which see Ap 618.2 (hand 103).]*du-wi-ja po-si*[remains opaque, though it seems unlikely that more than one sign can have preceded the *du* in the first term, which suggests (as a bare possibility) a restoration *o-]du-wi-*

perhaps a significant fact: for there is at least something to suggest that the two places that are concerned here were connected with one another. This evidence may be briefly stated:

a) Each of the Dn records of area totals of sheep at Knossos relate, normally at least, to two places. Though there can be no proof, it is obviously tempting to suppose that the two places in question were somehow connected. On Dn 1094, *da-wo* and *pa-i-to* are the two places which are thus associated.

b) The Og tablet 180 (in hand '124') is concerned with an unspecified commodity measured by weight. Two ethnics, *pa-i-ti-ja* and *da-wi-ja*, are to be found together (and alone) on the recto of the tablet; further entries, however, are also to be found on the reverse of the tablet.

c) The CLOTH tablet L 641 records what we can be certain is the receipt of cloth from various groups of weavers (see the term *de-ka-sa-to*, */deksato/*, in the heading). Among the weavers recorded on the tablet as contributing cloth are the *pa-i-ti-ja*, the women of Phaistos, and the *da-wi-ja*, the women of *da-wo*. The entries that concern these work-groups appear together (and, as far as one can tell, unaccompanied by references to other groups) on the second line of the tablet.

d) Further evidence that may perhaps point in the same direction, but which is very much less reliable in view of the uncertainty of one of the readings which is involved, is provided by V 655. This tablet records men, who are described in the heading of the tablet as *e-re-dwo-e*. Each man's name is followed by a place-name written in somewhat smaller signs. Of the place-names recorded on the tablet there can be no question whatever about two. On the second line of the tablet, *da-wo* is clearly to be read immediately to the right of the man's name *pe-ri-to-wo*; and on line 4, there is almost equally little doubt of the reading *ja-po* for the term written in small-sized signs to the right of the name *ta-de-so*. It is, however, possible that traces of a further

ja : cf. *o-du-we* Od 696.1b. Even if *o-du-wi-ja* is correctly restored, however, and is an ethnic, we have no evidence as to the location of the place from which it is derived.

toponym are to be found on the first line of the tablet immediately to the left of the term]*sa-ma-ru*], which in view of the size of the signs in which it is written is presumably again to be taken as a personal name. All of the term in question that it would be safe to print is]*i-*]; but there is at least something to suggest that the sign which immediately followed the *i* was *to* (though it is also possible that it is *pa*). If *to* is the correct reading, the obvious restoration of the word is of course *pa-i-to*, which, since *da-wo* is to be read on the line immediately beneath, would provide another example of the juxtaposition of the two place-names that we are at present discussing.

The suggestion, then, is that a significant common factor between the tablets written by scribe no. 102 is that they concern the same area of the island: an area which included *da-wo* and Phaistos. It might be objected to this that the place-name *da-wo* is also found elsewhere in the series, on Ak 621, written by scribe no. 108. In this instance, however, *da-wo* is preceded by what is presumably a 'collector's' name ending in]*jo*; and since the activities of 'collectors' tend to be recorded separately on the tablets (cf. for example the failure of 'collectors' animals to be recorded in the area totals of sheep on the Dn tablets) this is perhaps not as serious an objection as it might appear⁵ at first sight.

If it is in fact the case that considerations of geography played at least some part in determining which of the Ak tablets should be written by a particular scribe, this will, I believe, not be for the first time at Knossos. Evidence is beginning to accumulate that geography, if not always perhaps the major deciding factor, was certainly in some instances one of the factors involved in determining a tablet's authorship. I conclude this section with a brief résumé of the evidence concerned:

a) The Co records of mixed livestock in hand 107 are each concerned with recording animals in a different locality. The follow-

⁵ Nothing more is to be learnt from the place-names and ethnics that occur on tablets written by scribe 102 (or probably by him) that belong to series other than the Ak records. These include neither *da-wo* nor *pa-i-to*, nor any of the places referred to in either of the other two sets. The list is as follows: *tu-ri[-si-jo* (807), *u-ta-ni-jo* (807);]*qa-sa-ro-we*[(848); *ko-no-si-jo* (1055).

ing place-names are referred to in the series: *wa-to* (903); *ku-do-ni-ja* (904); *ka-ta-ra-i* (906); *si-ra-ro* (907); *a-pa-ta-wa* (909); *o-]du-ru-wo* (910). Of these places, two, *ku-do-ni-ja* and *a-pa-ta-wa*, are certainly to be placed in the far west of the island; and there is now evidence that suggests that a further two, *wa-to* and *o-du-ru-wo* are to be placed in the far east⁶. This same list conspicuously fails to include any of the place-names that are known to us from elsewhere on the tablets and which we can confidently place in the centre of the island: *ko-no-so*, *pa-i-to*, *tu-ri-so*, etc. It is tempting to suppose therefore that the responsibility of the scribe of the Co tablets extended over some kind of outer administrative area of the island, which was to be distinguished from an inner area that included amongst other places Knossos and Phaistos⁷. However, a warning against supposing that this administrative division (if such division there in fact was) was anything of a hard and fast nature is provided by tablets like Ce 902 and C 59, both of which contain references to places to be found in both of the supposed divisions.

b) Further evidence in support of the hypothesis that there was both an inner and an outer administrative division of the island is provided by the Lc tablets. These tablets, which, as it is now possible to be certain, record production requirements in cloth, are divided into two 'sets': one the work of scribe no. 103, the other (a rather smaller group) the work of scribe no. 113. There are two place-names certainly referred to in the smaller of the two sets, *ku-do-ni-ja* (mentioned twice) and *a-pa-ta-wa*; and it is probably not a coincidence that both these are places which are also referred to on the Co tablets. Moreover, a number of the places which are mentioned in the larger of the two sets can be confidently placed in the centre of the island. These include both Knossos and Phaistos.

c) All the sheep records written by scribe no. 106 contain either the place-name *se-to-i-ja*, or no place-name and the ab-

⁶ H. W. Catling and A. Millett, «A Study of the Inscribed Stirrup-Jars from Thebes», *Archaeometry* 8, 1965, pp. 3 f.

⁷ I owe this suggestion to Dr. Chadwick. It is further discussed in Dr. Chadwick's own contribution to this Colloquium.

breiviation *se*. There would thus seem to be little question (as I have suggested elsewhere)⁸ that *se* represents *se-to-i-ja*, and that the particular scribe who is concerned here exclusively dealt with this locality. Similarly, all the tablets written by scribe no. 216 relate to the *ti-ri-to* area, and all sheep tablets written by scribe no. 119 refer to *ku-ta-to*⁹.

d) Although in this instance no *change* of writer is involved, there is certain evidence that suggests that the great archive of records at Knossos relating to sheep was compiled an area at a time. As Dr. Olivier has observed (and I myself can confirm this observation) there are marked differences to be observed between the tablets relating to one locality and those relating to another. All the tablets, for example, that relate to *pa-i-to* have evidently been written with a much sharper stylus than those that concern *ku-ta-to*.

II

In the first part of this paper, I have tried to emphasize how alike the Ak tablets all are, irrespective of what scribal hand they happen to be in. There is, however, one respect in which the practices of the three scribes responsible for the series appear to diverge sharply.

It is a regular feature of these tablets for the principal entry of women on the first line of the text to be followed by subsidiary entries: one, or more normally, two. These entries appear to be concerned with apprentices. The women to which they relate are normally described in one or other of two ways: either as *di-da-ka-re* (which is frequently abbreviated to *di*) or else as *de-di-ku-ja* (which is normally abbreviated to *de*). Though neither term is completely transparent, they are both perhaps best explained as derivatives of the same root: *di-da-ka-re* as an old locative of διδάσκαλος, parallel in type to οἶκει : *|didaskalei|*, 'under instruc-

⁸ J. T. Killen, «Some Adjuncts to the SHEEP Ideogram on Knossos Tablets», *Eranos* 61, 1963, pp. 89 ff.

⁹ J.-P. Olivier, *op. cit.* (n. 1 above), p. 133, n. 51.

tion'; *de-di-ku-ja* as a shortened spelling of the perfect participle of διδάσκω, presumably used here in the sense of 'having *recently* completed (her) apprenticeship', since the women recorded in the main entry have presumably also undergone instruction.

Of these two descriptions, *de-di-ku-ja* is invariably attested alone. *di-da-ka-re* however, though it is occasionally found alone, is much more normally to be found in company with a further syllabic sign, which is presumably an abbreviation. Altogether in the series (and in tablets closely related to it) there are four signs which are thus used: *ne*, *pa*, *pe* and *za*. Not all these however are to be found in every set. How they are distributed may be seen from the following table. The hand of each tablet quoted in the table is shown after the reference to it in round brackets:

ne di : Ap 629 (103) (2 examples); Ak 630 (103); Ak 5926 (103)*; Ak 5940 (103)

pa di : Ak 614 (103); Ak 619 (103); Ak 626 (103) (2 examples); Ak 5907 (103); Ak 5948 (103)

pe di : Ak 616 (108); Ak 621 (108); Ak 627 (108); Ak 783 (102) (*di-da-ka-re pe*)

di za : Ak 616 (108)

*A probable restoration.

Although the evidence presented here could hardly be described as extensive, it nevertheless does seem sufficient to enable us to draw certain conclusions from it. Of the four adjuncts to *di* which are to be found in the series, two only are found on tablets in hand 103: *ne* and *pa*. Two only again, and it will be particularly noted that these are a different two, *pe* and *za*, are found on the tablets in hand 108. The situation as regards the third writer (no. 102) is more difficult to determine; since, however, on one tablet he writes *di-da-ka-re pe*, which appears to be the equivalent of *pe di*, his closest affinities seem to be with scribe no. 108, rather than with scribe no. 103.

It seems unlikely that all that is reflected by this distribution is that scribe no. 103 (to take one example) was in the habit of recording different details about the particular workgroups for which he was responsible than either of his two colleagues habitually

recorded about their groups. It is true that 103 appears to be alone of the three writers in distinguishing recently graduated apprentices: it is only on tablets in this set that we find references to *de(-di-ku-ja)*. (It is just possible, however, that the sign *85, which is found on one tablet in hand 108, is the functional equivalent of *de*). In all other respects, the range of information which is recorded on the tablets stays remarkably consistent, whatever the hand of the text; and it would be surprising if there were a major discrepancy to be detected in this one. Nor again, given that the distribution of the adjuncts coincides exactly with that of the scribal hands, is it at all easy to suppose that what is reflected by the latter is merely differences in the composition of the groups. In other words, what seems likeliest to be reflected by the distribution is not the recording of different information, but the recording of the same information, but in a different fashion.

To put it another way again, then, some of the adjuncts which are used by scribe no. 103 appear likely to have the same functional values as some of the adjuncts which are to be found elsewhere in the series. The problem, however, is to decide which adjuncts precisely are the equivalents of which.

In an article which appeared some years ago¹⁰, I offered the suggestion that the abbreviations *pe* and *za*, which are regularly to be found opposed to one another on the Knossos Do series of sheep records, were perhaps abbreviations of the terms *pe-ru-si-nu-wo* 'last year's' and **za-we-te-jo* (or the like) 'this year's'. The adjective 'this year's' is nowhere certainly attested on the tablets¹¹;

¹⁰ J. T. Killen, *op. cit.* (n. 8 above), pp. 69 ff.

¹¹ It is, however, perhaps worth mentioning that in my view the likeliest reading of the first word on Ga 518.a at Knossos is]*za-we-te-ra*, rather than]*ma-we-te-ra*, the reading in *KT*³ (Dr. Olivier agrees). Since the word below]*za-we-te-ra* is *a-]pu-do-si*, which is at once reminiscent of the *a-pu-do-si* below *za-we-te*, 'this year', on Fh 5451 (see below; cf. also the]*te-ra* above *a-pu-]do-si* on G 461.a), it is tempting to wonder whether]*za-we-te-ra* is not the adjective corresponding to *za-we-te*. If it is, however, the form is extremely puzzling: haplology, perhaps, for **za-we-te-te-ro*? (It is also to be noted that *za-we-te-ro* is one, but only one, of the possible readings of the term immediately preceding the ideogram AMPH on G 5637+8243.2.).

but the adverb *za-we-te* (< **kiāwetes*) is attested twice: once at Knossos on the OIL record Fh 5451, and once also at Pylos on Ma 225.2 (where *pe-ru-si-nu-wa* is actually the word contrasted with it). As is the normal situation in such matters, it is impossible either to confirm the suggestion or to show that it has no basis. It is nevertheless remarkable, given that there are so few words on the tablets that begin with the sign, that we should find *za* regularly contrasted with *pe* in a context, as this is, where the identifications suggested for the signs are certainly not inappropriate. The purpose of the Do tablets is to record ewes (which are invariably recorded first on the tablet) and what would appear to be their progeny: male animals (or rather animals characterized by the male ideogram) described as *ki*. It is only the latter animals to which the two signs in question are applied; and it requires little emphasis that it is in the lamb section of sheep records that we should particularly expect to find 'last year's' animals regularly contrasted with 'this year's'.

It seems likely that there is a further example of an opposition between *pe* and *za* to be detected on the Ak tablets. On Ak 616, two subsidiary entries of women are found recorded after the main entry. The first records two women who are described as *pe di*, the second two further women characterized as *di za*. It seems certain that in both these instances *di* represents *di-da-ka-re*, despite the fact that in the first entry the sign is found following the preceding adjunct, but that it precedes it in the second. Are these entries perhaps therefore records of 'this year's' and 'last year's' apprentices: either in the sense that the women to which they relate have begun their instruction in either the current year or the year immediately preceding; or in the sense that these women are current apprentices who have become members of the group in either of the two years stated?

As we have seen earlier, *pe* and *za* confine their appearances in the Ak tablets to texts in hand 108. On tablets in hand 103, two other adjuncts are associated with *di*: *ne* and *pa*. Are perhaps therefore these two signs the functional equivalents of *pe* and *za*; and if so, which of them is the equivalent of which?

As we have seen above, on Ak 616 an entry of *pe di* women takes precedence on the tablet over an entry of *di za* women. This fact is perhaps significant; for it appears to be the invaria-

ble practice on the tablets for both women and children to be recorded in strict order of seniority. All women, for example, are regularly recorded before children; and older children are regularly recorded before younger. In attempting therefore to determine which (if either) of *ne* and *pa* is the functional equivalent of *za*, for example, it would probably be of considerable assistance to be able to decide which of the two signs normally took precedence. Unfortunately, however, there is no conclusive evidence on this point. There are, however, certain pointers. Of the two sign-combinations concerned, *pa di* is invariably to be found on the first line of the tablet; and it is found twice immediately following the principal entry of women (see Ak 614, Ak 619). *ne di*, by contrast, is twice found on the second register of the tablet, immediately before the first of the children entries (see Ak 624, Ak 630)¹². No other minor entry of women is ever found as low on the tablet. Moreover, on the one occasion when it is apparently to be found on the first line of the tablet immediately after the main entry of women, it is almost certainly the only subsidiary entry which the tablet records (see Ak 5926)¹³. Thus such evidence as is available suggests rather that when *pa di* and *ne di* were to be found on the same tablet the entry to take precedence over the other was *pa di*. It follows therefore, that of the two adjuncts regularly associated with *di* on tablets in hand 103, *ne* is somewhat the likelier of the two to be the functional equivalent of *za*, given that it is *za* on at least one tablet in hand 108, viz. Ak 616, that certainly yields precedence to *pe*¹⁴.

In the light of this, is it perhaps merely coincidence that it appears to be possible on the tablets for the concept 'this year's' to be expressed in either of two ways: either by means of

¹² See also the fragment Ak 8341. Here again *ne di* is certainly one line down on the tablet; what came after it, however, is uncertain.

¹³ I say 'almost certainly', since the surface of the tablet between the MUL ideogram and the *ne di* is broken away, and it is just possible that there was a further subsidiary entry in the break. On the whole, however, the size of the break makes this unlikely. (A further example of *ne di* on the top line of the tablet is provided by Ak 5940: here, however, it is uncertain what preceded it).

¹⁴ Note also *pe di* immediately following the main MUL entry on Ak 621, Ak 627.

the adjective corresponding to *za-we-te* (as is presumably possible) or by means of the term *ne-wo* [*newos*], which would of course appear in abbreviated form as *ne*. At Mycenae, for example, a contrast seems clearly to be intended between the entry of last year's wool, *pe-ru-si-nwa o-u-ka*, which is found on the first line of Oe 111 and the entry on the third line of the tablet that concerns 'new' wool: *ne[-wa] o-u-ka*. Similarly at Knossos, the entry of *ne-wa po-ka*, 'new fleeces', again presumably this year's, which is found on the wool totalling record Dp 997 is evidently to be contrasted with what is almost certainly the reference to 'last year's' fleeces, *pe-ru-si-]nwa po-ka*, that is found on the almost identical Dp 7742.

At this point it should perhaps be recalled that what is perhaps a further example of an alternation between *ne* and *za* (which again apparently corresponds to a change in the scribal hand of the tablets concerned) may be found on the Knossos sheep tablets. As we have seen earlier, the scribe of the Do tablets (no. 106) regularly qualifies *ki* animals as *pe* and *za*. Neither of these two combinations of signs is found elsewhere. What there is, however, to be found, on texts written by scribes nos. 117 and 120, is *ne ki* (or *ki ne*). It is thus obviously tempting, as Dr. Olivier has suggested¹⁵, to regard *ne ki* as the functional equivalent of *ki za*, particularly since on one of the tablets concerned, Dh 1240, an entry of *ne ki* animals on the first line of the tablet is evidently intended to be contrasted with an entry of *pe* animals on the same line.

But if *di za* on tablets in hand 108 is the functional equivalent of *ne di* on tablets in hand 103, it would appear to follow (simply by a process of elimination) that *pe*, the remaining adjunct associated with *di* on tablets in hand 108, is likely to be the functional equivalent of *pa*, the remaining adjunct associated with *di* on tablets in hand 103. Does this seem at all likely?

The appearances of *pa* at Knossos as an abbreviation are not confined to the Ak tablets. The sign also appears as a qualification of sheep; and since both in the sheep records in question and in the Ak tablets *ne* is also found as an abbreviation, it is ob-

¹⁵ J.-P. Olivier, «La série Dn de Cnossos», *SMEA* 2, 1967, p. 81 n. 18.

viously tempting to interpret *pa* as *pa-ra-jo*, 'old', as against *ne*, /*newos*/. This suggestion was first offered by Furumark¹⁶. As usual, however, it is impossible to confirm. Nevertheless, it is perhaps worth considering whether it is at all likely that what one scribe in the Ak series apparently describes as *pe-ru-si-nwa* should be referred to by another writer in the same series as *pa-ra-ja*.

Given that the tablets are administrative records compiled on a year-to-year basis, there seems to be no reason why an alternation of this kind might not have occurred. *pa-ra-jo* presumably would be used in this case, not in its literal sense, but relatively. It is certainly possible to point to comparable usages in similar records from other societies. In ancient Mesopotamian sources, for example, references are to be found to 'old' weavers. (See particularly M. Lambert, «Recherches sur la vie ouvrière: Les ateliers de tissage de Lagash au temps de Lugalanda et d'Urukagina» *AO*, 1961, especially p. 435, a propos of VAT 4012). As the context in which these references appear makes clear, these women are not old in the literal sense: they are merely the existing members of the palace's workforce, here being contrasted with the additions that have been made to the groups that they belong to in the year since they were last recorded. These additions to the group are described as 'bought'.

But is there the slightest evidence that *pa-ra-ja* was used in the Mycenaean records with this kind of significance: as the functional equivalent, in other words, of *pe-ru-si-nwa*?

Some years ago¹⁷ M. Lejeune pointed out that one of the differences to be observed between the records of chariot wheels at Knossos and the corresponding documents at Pylos is that whereas at Knossos wheels may be referred to either as *ne-wa* or *pe-ru-si-nwa*¹⁸, the descriptions applied to the same objects at Pylos are *ne-wa* and *pa-ra-ja*. With KN So 4449 and So 4442, for example, we may compare PY Sa 787.A and Sa 843:

¹⁶ A. Furumark, «Ägäische Texte in griechischer Sprache», *Eranos* 52, 1954, p. 24.

¹⁷ *Mémoires*, pp. 118 ff.

¹⁸ Or perhaps more precisely as *pe-ru-si-nwa ta-ra-si-ja*. It is not certain whether the *ta-ra-si-ja* immediately following *pe-ru-si-nwa* on So 4442 (but in smaller signs than it) is to be taken independently or as agreeing with *pe-ru-si-nwa*. The latter seems on the whole likelier.

- So 4449 *pte-re-wa* ,/ *te-mi-dwe-ta*, *ne-wa* ROTA ζE 3
 So 4442 .a] *o-pe-ro*,
 .b] *ja* ,/ *a-mo-te*, *pe-ru-si-nwa* ,/ *ta-ra-si-ja* ROTA ζE 1 [
 Sa 787 .A *to-sa* , *pa-ra-ja* , *we-je-ke-a₂* , ROTA ζE 31 MO 1
 Sa 843 *to-sa* , *we-je-ke-a₂* , *ne-wa* ROTA+TE ζE 20

All this is of course far from proving that *pa-ra-ja* at Pylos is the functional equivalent of *pe-ru-si-nwa*. The absence both of *pa-ra-ja* wheels at Knossos and of *pe-ru-si-nwa* wheels from the Pylos archives might be simply the result of an accident. Lejeune himself, in fact, goes on to interpret *pa-ra-ja* at Knossos, not as the functional equivalent of *pe-ru-si-nwa*, but, literally, as 'old', pointing in so doing to the considerable numbers of wheels that are described at Pylos as unfit for service (*no-pe-re-a₂*).

Nevertheless, there are at least two pieces of evidence elsewhere on the tablets that encourage us at least to keep an open mind on the matter. Again at Pylos, for example, no less than 421 men are described on An 298 v. as *pa-ra-jo*. It is difficult to believe that all these individuals can be literally aged: are they perhaps old merely in the relative sense that the Lagash weavers are old: the existing workers, perhaps, in the palace's workshops, as opposed to the new recruits?

At Knossos, finally, one of the principal problems posed by the final totalling entry on the cloth record L 1568 (which we have discussed earlier) is the appearance of the term *pa-ra-ja*. In the register in question the term is applied to a consignment of seven units of cloth. Yet as a whole the tablet appears to be concerned with the production of new cloth. How then is the reference to 'old' cloth in the total to be explained? There are obviously difficulties about interpreting the term literally as 'aged'. Is it perhaps, then, rather an accounting reference to 'last year's' cloth? It will be observed that the scribe responsible for L 1568 is no. 103: the writer who in the Ak tablets regularly uses *pa di* as a description of women, in circumstances, apparently, where his two colleagues in the series regularly use *pe di*.