

NOTES ON MYCENAEAN LAND-DIVISION AND LIVESTOCK-GRAZING*

§ 1. In a previous study¹ I was led to hold that the tablets PY Sn64 and An218, in spite of their classificatory prefixes, are the parts of a single document dealing with an allotment of land to military men. as it was apparent both from the interpretation of the ideograms *ZE* and *171 as units of area and the identification of the largest part of the individuals. Before proceeding further, it will be useful to restate the interpretation I proposed, with several further precisions².

The document as a whole appears to consist of five sections:

I. PY 64.1-8. Under the damaged heading *pa₂sirewijote* (=βασιλεύοντες «in their quality of βασιλῆες³», but the meaning of this verb was probably «to be chief» in a wide sense) seven men of importance are credited with various amounts of land.

* Following a suggestion from Professor Tovar, which has proved already useful, I put an asterisk after a word (e. g. *qogota**) to denote that this word is attested but not the inflectional form in question (what our documents show is *qogotao*).

¹ *Minos* IV, 1956, p. 146-164. I follow Bennett (above p. 113-116) in giving up the classificatory prefixes of these two tablets.

² M. Ventris and J. Chadwick, *Documents in Mycenaean Greek*, Cambridge 1956 [= *Docs.*], p. 175, following a suggestion of Prof. Webster, assume, independently of me, that both tablets «belong to a single set», and hesitantly suggest that they deal with tributes (*anakee* «to bring, contribute»; but *-akerese* seems to point rather to the contrary). L. R. Palmer, *Eranos* LIV, 1956, p. 11 s., translates the heading of 218.1 «The following are due to go on active service», and takes *ZE* = ζεύγος as «a chariot team» which each man is bound to contribute (but the absence of the ideogram EQUUS and the presence of *-akerese* would be rather difficult to justify). H. Mühlestein, *Die oka-Tafeln von Pylos*, Basel 1956, p. 37 s., interprets *anakee* as «aufbrechen [den Schiff] zur See», but is willing to admit that section IV is concerned with land-division.

³ The reading *]sirewijote* was confirmed to me by Bennett himself. G. Pugliese-Carratelli, *Atti e Memorie dell' Accademia Toscana di Scienze e Lettere*, N. S. VII, 1956 (1957), p. 15-16, would prefer *ije]rewijote*.

II. PY 64.12-16. Under the heading *odaa₂ kotona ekote* (=ō[ς] δ'ᾱρ[?]) *κτοίνανς ἔχοντες* «and thus those who are land-owners») there are four entries under the name of four individuals. Obviously, it would be wrong to translate «...those who receive land in ownership»), for we should then expect the participle to be in the (ingressive) aorist (*σχόντες* would be spelt **kote*). *kotona ekote* proves thus to be a social qualification of the men whose names follow (synonymous to *kotonooko eo* = *κτοινόχορ ἐών* on the Pylos E-sets), in a pair with *pa₂]sirewijote* of section I.

III. PY 218.1-6. Under the heading *odaa₂ anakee operote* (=ō[ς] δ'ᾱρ[?]) *ἀνάγειν ὀφείλοντες* «and the following are due to draw the boundary furrows») five men are recorded: a priest whose qualification has probably been lost, another priest and land-divider (*daijakereu* = *δαΐαγρεύς*¹), and three counts (*eqeta*) who are no doubt acting on behalf of the wanax.

IV. PY 218.9-16. Under the heading *odaa₂ ekejoto akotono* (=ō[ς] δ'ᾱρ[?]) *ἐγκείοντο ἄκτοινοι* «and those will be settled² on the *kekemena* without land-ownership», probably as holders of an *onato paro damo*), the names of seven men of plainly lower class are found.

¹ On PY 218.3 the analogy of *Metapa* (.4) and *Owitono* (.5), which might be locatives, would lead to search for a place-name. But it would be rash to look on *daijakereu* as such a place-name in the nominative, in view of its syntactical position (the place-name *Oremoakereu*, on PY Jn320.1, is the first word in the entry, in the nominative of rubric). In fact, if a place-name must be found, *Neworkito* (.3) and *Risowa* (.2) are more suitable candidates (see H. Mühlestein, *op. cit.*, p. 4, 7 s., 37; for *Risowa*, cp. *Risoweja*, place-name on PY Na1040, and, as to its form, *Rosowa*). The compound *δαΐαγρεύς* «land-divider» (from *δαΐ-ζω* and *ἀγρός*) is of the type *Ekedamo* PY Cn285.11 = *Ἐχέδαμος*, *Akerawo* PY Cn599.3, KN Vc316 = *Ἀγέλαφος*, *ἐχέπωλος*, but with vowel-elision, like *αἰθοφ ἀγῆνωρ*, and addition of the suffix *-εύς* (like Hom. *πατροφονεύς*, *ἡνιοχεύς*, whose «artificial» character is perhaps to be questioned: «dichterische Bildungen», according to E. Risch, *Wortbildung der hom. Sprache*, 1937, p. 173 s.); *tatiqowewo* on PY An654.11 = *Στατι-γ^wοφ-ῆφ-ος*, a personal name in the genitive is a further example of a compound enlarged with *-εύς* (see L. R. Palmer, *Eranos* LIV, 1956, p. 6, who compares *Στάσιππος* from Tegea).

² As for future *ἐγκείοντο*, see *Minos* IV, 1956, p. 150, 154. I assume that the meaning of Myc. *κεῖ-μαι* is «to be established on the common land», «to establish oneself etc.». The existence of the perfect *kekemena* (unknown in later Greek) should persuade us of the necessity of assuming such a medium-transitive meaning.

V. PY 218 reverse. The reading *diwe sipō[?]* *timitoqo[* is distinctly shown by the photograph. I accepted Meriggi's restoration *timitoqo[ro* which must be the later Greek θεμιστοπόλος. The top stroke of *ro* seems visible on the photograph¹. Since there are in this line no word-dividers, whether the two first groups of signs are or are not a single word, must remain an open question. In any case, there may be little doubt that *diwe* is a form of the name of Zeus, protector of the boundaries². The sense of this line is dealt with on § 3.

§ 2. Ventris-Chadwick³, who, following a suggestion from Professor Webster, assumed, independently of me, that the two tablets in question belong to the same set, were able to add further evidence unknown to me: these two tablets are similar in size and are in the same hand.

Bennett⁴ in turn, after close examination of the photographs, favors the view that «PY 64 and 218 formed the parts of a complete record». Moreover, «218 was inscribed on the back, and the direction of the writing was probably determined by the writing on the face. The writing is shallow, so that the tablet may have been dry or partly dry when it was done». «The two tablets, tied together, were placed on a shelf, with 64 on the bottom and 218 on the top, with the bottom of 218 nearest the edge of the shelf, so that the index on the back of 218 could be read without picking them up.» That the En tablets were very likely on the same shelf and near 64 and 218, can hardly be irrelevant, as they are all dealing with land-holding.

§ 3. Bennett's authoritative reconstruction leads us to reconsider our previous interpretation of section V, for it is now plain that the reverse of 218 is a sort of title to the whole document, and must therefore refer either to the general contents or to a relevant part of it. Now θεμιστοπόλος, that means «judge» in its classical continuation⁵, and thus denotes a function, can hardly refer to any one else

¹ See above plate VIII.

² *Minos* IV, 1956, p. 148, with further references.

³ *Docs.*, p. 175.

⁴ «Notes on Two Broken Tablets from Pylos», above p. 113-116.

⁵ θεμιστόπολος *hymn. hom Dem.* 103, 215, 473. Its equivalent in the *Iliad* and the *Odyssey* is δικασπός.

but the five men forming the «royal committee» of section III, entrusted with the allotment, so that *timitogo[ro* is almost certainly a plural.

On this assumption, the function of the *timitogo[ro* must be the one which is described in the heading of that section by means of ἀναγέειν, a verb that we have independently translated «to draw the (boundary) furrows»¹, in accordance with the meaning suggested by the presence in the committee of a «priest and land-divider». If so, the sense of the verbal element in the compound -κῶλος (-πόλος) must be something like «to plough», which we actually find confirmed by πολεῖν in Hesiod, *Op.* 462 («to turn up»), and that is implied, by another (passive) compound, namely τρίπολος «thrice turned up» (Σ 542, ε 127). We are thus, for the first element *timito-* (from θέμις) left with the meaning of «boundary furrow», or perhaps «boundary» simply, which is precisely a constituent of the semantic pattern of several IE words having the sense of «justice» (Greek δίκη, etc.), as established by L. R. Palmer a few years ago².

§ 4. The interpretation of the ideogram *ZE* on PY 64 and 218 as a measure of land (IUGERUM), of which *I71 would indicate fractional units (ACTUS), receives further support from the fact that it allows us to produce an acrophonic explanation of *ZE* as an abbreviation of ζεῦγος with the sense of acreage unit. Such a sense, it is true, occurs for the first time in Greek as late as the VIth century A. D., and that as a semantic borrowing from Latin *iugerum*. However, if we keep in mind that both ζεῦγος and ζυγόν belong to the same root, and that their meanings are analogous³, the occurrence of ζυγόν on an inscription from Amorgos (Dittenberger, *Sylloge*³ 963.13, IVth century B. C.) as a measure of land, will make it plausible that ζεῦγος

¹ *Minos* IV, 1956, p. 152.

² *Trans. Philol. Soc.* 1950, p. 149-168. The etymology of θέμις (related to θεμελία, θεμεθλα «foundation stones»), which would take us beyond the limits of this inquiry, is the subject of a separate study.

³ A nice example, from the technical vocabulary, is provided by ζευγίτης, the Athenian foot-soldier in the hoplitic phalanx, a word plainly derived from ζεῦγος in the sense of «rank or line of soldiers», but this sense is only attested for ζυγόν. See LSJ s. uu., and H. Bengtson, *Griech. Geschichte*, München 1950, p. 100, n. 3.

did really exist somewhere and sometime in Greek with that precise meaning. As to the ideogram *171 see § 29¹.

§ 5. A problem which deserves special study (§§ 5-7) arises from the use in Mycenaean book-keeping, alongside of *ZE* and *171 (let us call them set A), of, it would seem, two further sets of acreage units:

Set B is found on the Pylos E- tablets, where *pemo/pema* is admittedly *σπερμο(ν)/σπέρμα* «seed», and is followed by the ideogram *120 (very probably *FRUMENTUM*, the staple cereal) serving to indicate at the same time both the thing itself and the largest unit by which it is measured. *FRUMENTUM* is occasionally accompanied by the fractions \top and \mathfrak{d} . The amounts of wheat refer throughout these tablets to the land area that can be sown with them².

Set C is used on the Knossos Uf tablets obviously dealing with landholdings³. The formula *toso pemo* is absent, but we do find (in contrast to the Pylos E- tablets) the ideogram *DA* (as a rule with number 1; but 5 is read on Uf 79 and Uf 7492, and 7 on Uf 7488) occasionally followed by another ideogram, *PA* (Uf432.2, 3, 4; 835b; 836b; 837b; 5973) with numbers ranging from 1 to 3. Ventris-Chadwick assume that *PA* is a fractional unit of *DA*. In fact, such a use of *DA* referring to land cannot be set apart from the preface of the Pylos En tablets (En609.1 *Pakijaniija tosa damate DA* 40) nor from the damaged text of PY An830 (.6 *Aterewija eso koreterijo kekemeno DA* 30[or more, .9 *kekeme*]no *DA* 50)⁴. Now, interpretations differ as to the precise meaning of *DA*. Ventris-Chadwick⁵ suggest that it might be a unit of area. On the contrary, Bennett⁶ assumes

¹ The evidence from Knossos is discussed under § 6 foot-note 3.

² It is not probable that the Knossos E- tablets are dealing with land (absence of the land-holding technical vocabulary). Cp. *Docs.*, p. 213 ss.

³ As ascertained by the presence of characteristic terms of the Pylos E- tablets (*kekemena*, *kotoina*, *tereta*, *eke*), cp. *Docs.*, p. 270 ss.

⁴ Such an interpretation of *DA* is highly probable on PY Un1193, whose syllabic context is unfortunately not sufficient. On the Pylos Aa and Ab and on the Knossos Ak tablets, the meaning of *DA* is obscure: «the same abbreviation may have different meanings in different contexts» (*Docs.*, p. 157; cp. Bennett, *Et. Myc.*, p. 127). PY Xn1114]*DA* 1[is without any context.

⁵ *Docs.*, p. 242, 270.

⁶ *Amer. Journal Archaeol.*, LX, 1956, p. 120.

DA to be the family unit of land, the homestead, since the forty *DA* reported on PY En609.1 very likely correspond to the forty individuals recorded as land-holders, whether owners or tenants, at *Pakija-* on the En/Eo group.

§ 6. Whereas measurement of land by the amount of seed it requires (set B) occurs almost everywhere as a normal procedure (such a system was actually in use in some countries of classical Greece, as exemplified by the Sicilian and Cyrenaic μέδιμνος¹; cp. the Castilian *fanega*, etc.) along with measures of land itself, the coexistence of two systems relying upon the same principle of land measurement seems rather striking.

It should be noted, however, that on purely external criteria there is nothing to preclude the possibility of looking on *DA* (if it is actually a unit of area), *ZE*, *PA* and *171 as units belonging to a single system, for *ZE* (only at Pylos in that sense²) and *PA* (only at Knossos) show what we might call complementary distribution, so that they may be acrophonic abbreviations of two different local names for the same unit. If Ventriss and Chadwick are justified in their interpretation of *DA*, it would be the largest unit in the system (*DA* larger than 3 *PA* since KN Uf836 records *DA* 1 *PA* 3). On the other hand, *171 (attested both at Pylos and Knossos³) is to be considered as the smallest unit (*ZE* comprises at least twelve *171 units, judging by the entry PY 64.7).

§ 7. Thus far the identity of *ZE* and *PA* is a mere possibility. But it is worth stating that this very conclusion can be reached by a totally different line of approach. The high probability of an acrophonic explanation of *DA* (whether from Δαμάτηρ⁴, or from δάμαρ⁵

¹ See, e. g., *Oxford Class. Dict.*, p. 547.

² At Knossos, the ideogram *ZE* is only attested on the S- sets, where its meaning is obviously «pair», and, moreover, on K 740.4 *pirije* · *ZE* 1; since the tablet contains an inventory of vessels (*Docs.*, p. 329), *ZE* cannot possibly have here anything to do with land-measurement.

³ The Knossos examples of *171 appear either in barley context (G 464.1, 2) or following *kuparo*, a herb or spice (G 519.1a). It would seem that some kind of relation is implied between lands and their yield.

⁴ T. B. L. Webster, *Bull. Inst. Class. St. London* I, 1954, p. 13; A. Furumark, *Eranos* LII, 1954, p. 38-40.

⁵ G. Pugliese Carratelli, *La Parola del Passato* XXXVI, 1954, p. 225; L. R. Palmer, *Trans. Philol. Soc.* 1954, p. 24.

«family unit», or from δάσμα¹), and of *ZE* (see § 4), adds weight to that of *PA* as an abbreviation too of σπάδιον (σπάδιον), which has been suggested by Ventris-Chadwick².

Now, G. Thomson³ has shown the acreage σπάδιον had 600 feet in length (like the linear one) and 100 feet in breadth, and was equivalent, as it happens with the basical unit in many other systems, to «the amount of land that could be ploughed by a pair of oxen in a day». Then the Amorgos ζυγόν (originally «yoke», «team of oxen»), according to Thomson⁴, must have been just this natural unit, and, we may add, the Pylian ζεῦγος as well.

So there seems to be good reasons for believing that the Knossos *PA* and the Pylos *ZE* were the same unit of area, whereby the Mycenaean systems of units of area could be reduced to only two.

§ 8. We may now concentrate upon the amount of land allotted to each individual on PY 64 and 218. In the lowest class (section IV) each man is stated to receive just one *ZE*, and in the two other classes the quantities entered range very closely around that area. Then, if for the sake of brevity, we take 0,30 ms. as conversion factor for the ancient foot, the area of one *ZE* is (180 ms. \times 30 ms.) equal to 0,54 Ha.

It is no doubt significant for the subject of the present study that such an area is in agreement with that of the Roman *heredium*, that is to say, the amount of land assigned per man in primitive Rome (Varro, *Metrolog. script. reliquiae*, ed. Hülsch, II p. 52.15: *bina iugera, quot a Romulo primum diuisa dicebantur uiritim, quae heredium sequerentur, heredium appellarunt*). As the area of the Roman *iugerum* was the equivalent of 240 feet \times 120 feet = 0,26 Ha.⁵, we

¹ M. Lejeune, *Minos* V, 1957, p. 138 (as a mere hypothesis).

² *Docs.*, p. 270. The form σπάδιον is attested on an inscription from Argos (IG IV 561.5-6). The etymology of both forms and the problem of their relation to each other need not to detain us here. The form of the ideogram *171 might derive from that of *PA* with a further stroke on the top and another on the bottom (?).

³ *Studies in Ancient Greek Society* I, London 1949, p. 318.

⁴ *Op. cit.*, p. 318, foot-note 77.

⁵ The Roman *iugerum* was so called *quod quadratos duos actus habeat* (Varro, *ibidem*; cp. Frontinus, *ibidem*, p. 56 *hi duo fundi [sc. actus] iuncti iugerum definiunt*).

obtain 0,52 Ha. for the *heredium*, which is thus practically equated to the Pylos *ZE* of 0,54 Ha.

§ 9. In terms of seed, at the rate of 150/200 litres of wheat per Ha.¹, the area of one *ZE* would be equivalent to an amount ranging from 81 to 108 litres, that is, from 6,7 to 9 $\bar{\tau}$ units (conversion factor $\bar{\tau} 1 = 12$ litres²).

Now, in Bennett's statistics³, the average area of the homesteads in the *kitimena* land, and of those in the *kekemena* at *Pakija*- taken separately, is $\bar{\tau} 8$, which is very much the average seed required for one *ZE*.

It would thus seem that one *ZE* was just the amount of land allotted to each man when the first settlement was made, and that, while the number of holders (whether owners or tenants) remained unchanged, transactions were made which might account for the varying sizes of the homesteads as actually found in *Pakija*- cadastral lists.

§ 10. Let us now turn to the *timitogo*[ro issue and trace the occurrences of the word θέμις in Mycenaean. The evidence is as follows (§§ 10-12):

— *temi* on KN V 280 (being probably a ritual calendar)⁴, written as a single word together with the proclitic negative particle οὐ and οὐχι: *outemi* (.11, 12, 13, 14), *oukitemi* (.5). The stereotyped formula οὐ θέμις ἐστὶ (Homer, etc.) rules out the possibility of any other interpretation. This text makes it plain that θέμις had already evolved the sense of «justice» as early as the XVth century B. C.

§ 11. — *timito*, genitive (both singular and plural are a priori possible), as the first element in the Pylian place-name, only attested in the dative-locative, *Timito akee* (Cn600.7, 8, 11, 12, 13, 14, 15; Jn829.13, Ma123.1, Na361), *Timito akei* (An661.10⁵). It is the first

¹ *Docs.*, p. 237.

² *Docs.*, p. 60.

³ *Amer. Journal Archaeol.* LX, 1956, p. 114, columns En⁴ and Ep.

⁴ P. Meriggi, *Glotta* XXXIII, 1954, p. 24; *Docs.*, p. 311. Other words on the tablet are discussed by P. Chantraine, *Et. Myc.*, p. 102; C. Gallavotti, *Documenti e struttura del greco nell'età micenea*, Roma 1956, p. 91-92; M. Lejeune, *Bull. Soc. Ling.* LII, 1956, p. 199.

⁵ On *PT II* this tablet shows *pi[82] akei*. But the reading *timito akei* of *Docs.*, p. 193, is now supported by Bennett, *Amer. Journal Archaeol.* LX, 1956, p. 293.

township in the list of the «seven», which follow, on Jn829, that of the «nine» and most likely constitute the *Pera₃koraija* province¹. An alternative designation of the same township is the derivative *Timitija*² (genitive on PY Jo438.24, Sn64.6, locative on Vn493.2) of which On300.10 shows, in the genitive, the variant spelling *Temitija*. In either form the preservation of *-ti-* seems to recommend the interpretation Θεμιστία (*Θεμιτία would have been shifted to *Θεμισία), whence accordingly θέμις/θέμιστος³ for *timi-to*, and, on the other hand, *Timitija*/*Temitija* offer in their vocalism an exact parallel to *-temi*/*timito*. Palmer⁴ has ingeniously suggested interpreting Θέμιστος ἄγει «on the holy ground of Themis» (cp. ἄγεα · τεμένη Hesychius). But it seems that this is not too plausible a place-name for a district, and moreover it would imply that θέμις had already developed into a goddess by Mycenaean times, an assumption which is by no means certain. In fact, ἄγχει⁵, from ἄγχος «mountain glen» (Homer, etc.), is a priori far more plausible as a place-name (cp. the frequent *-tal*, *Val*, *Valle*, *Valley* in European toponymy). That this interpretation is correct, seems to be guaranteed by the analysis of PY Cn600, where *Timito akee* is paralleled by the place-names *Oreewo wowo* (.1, 2, 3, 4, 5) and *Repa₂sewo wowo* (.6, 9, 10). Whatever may be the correct interpretation of *wowo*⁶, in the locative on this tablet, the preceding words are obviously nouns in *-εύς* (in the genitive) that may be acting here either as ethnics (if plural, cp. *Ereeu*, *Okomeneu*?), or as place-names (if singular, cp. the type *Eraterewe*, in the locative). Now *Oreeu** by its form must be, like those ending in *-eeu*, a derivative from an **-es/-os* stem (*opiteukeeu**, *Ereeu* from τεῦχος, ἔλος), so that *Oreeu** can hardly come from anything else but ὄρος «mountain». For *Repa₂seu**, in turn, Λεπασεύς, a derivative from λέπας «rock»⁷, suggests it-

¹ Palmer, *Minos* IV, 1956, p. 139-143; *Docs.*, p. 144; Lejeune, *Et. Myc.*, p. 147.

² *Et. Myc.*, p. 119; *Docs.*, p. 144.

³ *Docs.*, p. 144.

⁴ *Trans. Philol. Soc.* 1954, p. 48; *Minos* IV, 1956, p. 141.

⁵ The possibility of this interpretation is reckoned with also by H. Mühlstein, *op. cit.*, p. 7, and M. Lejeune, *Rev. Et. Anc.*, LVIII, 1956, p. 10 n. 30, *Et. Myc.*, p. 153 n. 56.

⁶ See E. Risch, *Minos* V, 1957, p. 29-30, with further references.

⁷ It is a neuter *s*-stem only attested in the nominative and accusative. The preservation of intervocalic *-s-* might be accounted for by the recent date of such a formation. Cp. too the frequent Myc. nouns in *-σεύς* (*Onaseu*, *Qetaseu*, *Qeteseu*, *Teseu*, *Kariseu*, etc.).

self as the almost only possible interpretation¹. The *wowo* of the «highlander» and the «inhabitants of the rocks», along with the «*timito* mountain glen» form a most coherent geographic context for the region where the cattle referred to on Cn600 are turned out, which can be of some help in the task of locating *Timito akee* (see below). As for the genitive *timito*, once *akee* has proved to be «mountain glen», the name of the goddess does not impose itself. If the standard order in which the nine districts occur on several tablets (PY Jn829, Cn608, Vn20) and the seven ones on Jn829 (following the nine) does actually reflect their geographic location², then *Timito akee*, being the first in the list of the seven, must have been situated on the very border of the kingdom of Pylos, so that assigning to *timito* the sense of «frontier» offers a most satisfactory interpretation and corresponds again to the sense of «boundary»³ we independently reached starting from *timitogo*[ro]. Since, on the other hand, PY An661.10, a tablet being a part of the *oka*-group, informs us that naval troops are stationed at *Timito akei*, it must be a coastal town and thus we get four points of reference for its location on the map: 1) It was a part of the *Pera₃koraija* province, and was therefore likely to be situated in the East of the Pylos kingdom; 2) It was on its border; 3) It was on the coast; 4) It was in a mountainous region. These conditions seem to be best fulfilled if we assume *Timito akee* was situated somewhere on the coast of the Messenian gulf, on the slope of the Taygetos.

§ 12. Finally, *timito* (in the genitive, plural or singular) is found in the syntagm *eneka timito* on KN As821.14. The tablet reads:

(I)	.1]RAJO egetae eneka timito	VIR 2
(II)		KITANETO surimo eneka opa	VIR I
(III)	.2]REWE era ije[re]u pome eneka opa	VIR I
(IV)		KOPEREU egeta ekisijo	VIR I
	.3	(vacat)	

¹ According to E. Risch, *Mus. Helv.* XIV, 1957, p. 72, *pedijewe* (PY An 654.14) = πεδιῆνες «Leute von der Ebene» is the only ethnic name in -εύς to be found in Mycenaean, a fact which is accounted for by the very meaning of the basic noun πεδίον. The Ὀρεῆνες and the Λεπασῆνες of PY Cn600 offer thus a welcomed illustration to Risch's statements.

² So Palmer, *Minos* IV, 1956, p. 132; cp. *Docs.*, p. 144.

³ For the semantics of θέμις «boundary furrow or stone» and «frontier» cp. Lat. *limes*.

⁴ See *Docs.*, p. 168 s., where *eneka timito* and *eneka opa* are translated as «on account of tribute» and «on account of dues», respectively.

On line 2, *REWE* is Ventris' reading, whereas Chadwick reads *NEWE* and Bennett *DUWE*.

Damaged as this palm-leaf tablet is at its left end, the arrangement of the text appears to be clear enough to provide a firm basis for the interpretation.

In entry IV *Kopereu eqeta ekisijo* is plainly in the nominative. The personal name *Kopereu* is found elsewhere in the Mycenaean texts: *-eu* PY Es646.1, 650.1; *-ewo* (gen.) PY Es644.1, *-ewe* (dat.) KN X 5486 without any context; cp. Homeric Κοπρεύς O 639.—*ekisijo* is the ethnic of the well-known Cnossian place-name *Ekoso*. The entry must be understood. «K., the count of E., one man».

In entry III *ije[re]u pome* is obviously in the nominative singular, too, in accord with number 1 that follows the VIR ideogram. As in the first entry *eqetae* combines with VIR 2, we are justified in expecting it to be a dual form in the nominative¹, as well as *Kitaneto*, another personal name (see below), must be a nominative and not a dative.

In entry IV the formula *eqeta ekisijo* reminds us of the *konosijo eqeta* of KN B 1055.1 (that must be a plural since it is the preface to a list). The same word order ethnic + *eqeta* is shown in entry I by *]rajo eqetae*; as *eqetae* is a dual, *]rajo* cannot contain the two personal names (in contrast to *Kopereu*) and must be the end of an ethnic in the nominative dual, e. g. *erajo* (actually attested at Knossos, along with the feminine *eraja* and the place-name itself *Era*, *Erade*), or *pa₂rajo* (also attested along with the place-name *Pa₂ra*). In the same way as KN B 1055 informs us of the existence of several counts at Knossos², the first entry of As821 shows that there were two at the unknown locality referred to by the ethnic *]rajo*.

¹ Out of the four further words ending in *-ae* (see M. Lejeune, *Et. Myc.*, p. 41), only *wekatae* (KN X 1044.a) might be a candidate for a dual form from a masculine *ā*-stem (*wekata* KN C 50 edge, C 59, B 802.4, X 1012.2), but the damaged context does not permit any conclusion. Myc. *-ae* is very likely at the origin of Hom. *-ā* in Ἀτρεΐδᾱ (H. Mühlestein, *op. cit.*, p. 33 n.; cp. P. Chantraine, *Gramm. homérique* I, p. 203).

² Each line (.2-8) is likely to have contained the mention of an *eqeta* (personal name still legible on .2, 3, 8), with the VIR^B ideogram (still visible on .2, 3, 6, 7, 8), followed by the record of his retinue. The total (.9) of 200 (or 213?) men must refer to the troops as a whole.

In entry II the location is given by *Surimo*, a repeatedly attested Cnossian place-name. As to the man *Kitaneto*, he appears on KN Da1108.B, precisely at *Surimo*, in a sheep entry of ARIES 200: that both records deal with the same individual cannot be reasonably doubted. In passing, it should be noted that, on the analogy of the other ethnics on the tablet under discussion, *Surimo* is to be understood as an adnominal locative: «K. that at S.».

In entry III, *era*, if the reading is correct, could be a priori either *a*) the Mycenaean name of Hera (thus far only known from PY Tn316.r9; probably on Un219.8), in the genitive, governed by *ije[re]u* «priest of Hera» (but this goddess in connection with sheep, as suggested by *pome* = ποιμήν,¹ would be unexpected), or *b*) the Cnossian place-name in the locative. In either hypothesis, the incomplete *]rewe* must be a personal name in the nominative on account of its large size characters (like those of entries II and IV) and of the occurrence of such a name in the other entries: the many personal names in -κλέφης suggest themselves, e. g. *Erikerewe* known from KN Uf981b, etc. As for *Era*, the choice between the two hypotheses is by no means arbitrary. Since *]rewe* must conceal the personal name, interpreting *Era* as a place-name is the only way to get the location which the other entries make it almost inevitable to expect. «-κλέφης that at *Era*» is furthermore exactly paralleled by *Kitaneto Surimo*.

We have purposely postponed the interpretation of the syntagm *eneka opa* appearing in entries II and III beside *Kitaneto* at *Surimo* and *]rewe* at *Era* respectively, and paralleled by *eneka timito* in entry I. Since *Kitaneto* at *Surimo* is credited on KN Da1108.B, as stated above, with a number of sheep, *]rewe* at *Era*, on the other hand, is described on As821.2 as a «shepherd», and finally *opa* is found on several cattle tablets (see §§ 14-15), it is a fair guess that *eneka opa* should refer to something connected with the breeding or the watching of stock². What is relevant for the present inquiry on

¹ See S. Eitrem, *RE* VIII, c. 382-385.

² According to Chadwick, *Docs.*, p. 169, 401, «it may be a feudal term and like *timito* mean some feudal form of service or goods due to the lord», which would account for ὀπάων, ὀπηδός. On *eneka timito*, see the text. T. B. L. Webster, *Class. et Mediaevalia* XVII, 1956, p. 155 s., and *Antiquity* XXXI, 1957, p. 7, follows Chadwick's suggestion and takes *opa* as a term for «due».

θέμις is that the commission *eneka opa* «for *opa* purposes», as just interpreted, fits best in a context where, in the preceding entry, two counts are entrusted with (the drawing of) boundaries (ἐνεκα θεμίστων), in other words with land-division.¹

From the available evidence above discussed (§§ 10-12) the conclusion seems to impose itself that in Mycenaean θέμις (-στος) meant «boundary» and, as a secondary development, «justice».

§ 13. Let us now concern ourselves with the word *opa* we have just met on KN As821.1, 2.

From the appearance of *eneka opa* in the same context as *eneka timito*, that undoubtedly refers to land-division, we may infer that the *opa* commission probably consisted of assigning either livestock or pasture land. But before trying to check such a meaning against the remaining examples of *opa*, it will be useful to attempt to discover the Greek word concealed under the Mycenaean spelling *opa* (obviously an *ā*-stem), a task that has become, of course, much easier and methodologically sounder, once we have previously narrowed its semantic field. In fact, out of the several Greek interpretations that are possible from a formal standpoint, the only word relating to livestock is, as far as I can determine, the one provided by Hesychius' gloss ὀπαίας· Λοκροί. τοὺς τόπους ἐν οἷς συναλαμβάνοντες ἀριθμοῦσι τὰ πρόβατα καὶ τὰ βοσκήματα, provided we are prepared to allow for a minor emendation, for what the gloss actually reads is ὀπλίας. However, as it is defined, such a word can hardly have anything to do neither with ὄπλον, τὰ ὄπλα, «weapons, utensils», nor with ὀπλή «horse hoof», so that, if we keep in mind both that confusions between Α and Λ are extremely frequent in the ancient capital script (they are actually found many times in Hesychius' *Lexicon* itself²), and that by that period ὀπαίας must have been quite an obsolete word, it is easy to visualize how ὀπαίας became a *lectio facilior* ὀπλίας. Now, by its form, ὀπαίας (an accusative plural, cp. τοὺς τόπους in the glossem) is apparently the feminine of an adjective ὀπαῖος, drawn from ὀπά on the pattern ἀγορά : ἀγοραῖος, etc.

¹ The meaning «tribute» (cp. Homer I 156 λιπαρὰς τελέουσι θέμιστας, the only Homeric instance to exhibit it) is suggested as merely possible in *Docs.*, p. 168, and adopted by Webster, *l.c.* Cp. also H. Mühlestein, *Die oka-Tafeln von Pylos*, 1957, p. 33.

² See Kurt Latte's edition, I, 1953, p. xxvii.

The substantive implied by that adjective form can hardly have been any other than ἀβλάς (ἀβλή «stockyard»), whether or not actually used together with the adjective (cp. ἡ δεξιά, sc. χεῖρ, ἡ φιλία, sc. γῆ, etc.¹)

If we are justified in our Greek interpretation of *opa*, the Locrian ὀπαῖαι ἀβλαί, where the cattle are counted, look like communal stockyards or, more likely, «the cattlemen's stockyards», since we may suppose they were not private property, ὀπά being thus possibly the «town-council» or the «community or guild of stock-breeders». Another possible alternative would be to think of ὀπά as a word for «counting», but its possible etymological connections, while adding weight to the former, lead us rather to disregard the latter possibility. For no IE word-family having by its meaning anything to do with «counting», and exhibiting a phonemic form suitable to Greek ὀπά seems to be available. On the contrary, the sense «community or guild of the stock-breeders» can be satisfactorily accounted for if we assume ὀπά to be a nominal formation (like τροφή), in a specialized meaning, from IE *sekʷ-, whence Greek ἔπομαι, Latin *socius*, etc.,² provided we are prepared to admit that Myc. *pa* can conceal an IE labiovelar. To relate ὀπά to ἔπω «to take care of» (hapax on Z 321; also Hom. ἀμφ- «idem», δι-έπω «manage») would be a third possibility (IE *sep-), but these verbs are never said in Greek of livestock, and, on the other hand, the Latin and Indian correlates have obvious religious connotations.³

§ 14. On the strong assumption that Greek ὀπά (attested both in Mycenaean and in Locrian) means, in a narrow sense, «the guild or community of cattle-breeders», we may now proceed to

¹ Schwyzler-Debrunner, *Griech. Gramm.* II, p. 175.

² It should be noted that such an etymology might well account both for the sense «Arbeitsgruppe» (A. Furumark, *Eranos* LII, 1954, p. 57-58), «équipe» (M. Lejeune, *Rev. de Philol.* XXIX, 1955, p. 167-68), «some kind of group» (*Docs.*, p. 401), that *opa* obviously shows in several occurrences (see § 14 a-c), and for its possible derivatives ὀπάων, ὀπηδός (with psilosis). On the possible relationship of *opa* to these words see the remarks of Webster, *Class. et Mediaevalia* XVII, 1956, p. 155 s. Yet, the facts would be better accounted for, if the sense of *opa* is not «feudal due», but «group» or «guild».

³ See J. B. Hofmann, *Griech. Etym. Wb.*, s. u.; H. Grassmann, *Wb. zum Rig-Veda*³, c. 1472; Ernout-Meillet³, s.u. *sepelio*.

examine the other instances of *opa* (twelve at Knossos, one at Pylos¹). The following categories seem to be pertinent on purely external criteria (§§ 14-15):

a) On several tablets dealing with chariots (*Kokida opa* KN Sd0403a and So0430; *Arekisitojo opa* Sfo420a,]*opa* Sd0422a), and with corselets (*Amejato opa* PY Sh636); in all these contexts, *opa* is preceded by a personal name². While acknowledging that «guild» (sc. of armourers) would provide a likely translation, however, in view of the context, different from that of KN As821, there is no need to see in these instances of *opa* the same Greek word: it might indeed be merely a homograph or a homophone.

b) On the sealings KN Ws1702 and Ws1704. The word *pataja* occurring in both these texts («arrows»³) and the ideogram SAGITTA on 1704 strongly suggest that *opa* is the same word as in a).

c) KN L695.1 *opa Etawonewo* CLOTH 6, the latter word being a personal name (cp. *-eu* on PY 64) in the genitive, would invite to look on *opa* as the same word dealt with in a) and b).

d) KN E 971 (so in *KT* = X 971 in Bennett's *Index*) reads]*toija opa* FRUMENTUM[. The restoration *se]toija* is practically certain (genitive or locative of the well-known Cnossian place-name). It may be wondered whether this cannot be translated «the guild (of the cattlemen?, of the farmers?, or of both?) at *Setoija*», since FRUMENTUM might refer to agriculture in the same way as *eneka timito* on KN As821.1 does to land-holdings.

e) On KN Dm1184b and C 50r.1. Both tablets are dealing with livestock (as shown by the ideograms ARIES on the former, ARIES, OVIS, TAURUS on the latter) so that they contain almost certainly the same word *opa* of As821. As on Dm1184b]*weto opa* corresponds, in the text arrangement, to the place-names on the other tablets of this set, we may confidently regard]*weto* as the end of a place-name, too, in the genitive (cp. *Se]toija opa* of section d), e. g. *Pa₂saro]-weto* (cp. KN Db1329). From KN Dm1184b and E 971 it would

¹ In view of these numerical facts it may be pertinent to note with Webster, *ibidem*, that «five of the six Homeric occurrences of ὀπάων, the personal noun derived from *opa*, refer to Cretans».

² On this group of occurrences, see M. Lejeune, *Rev. de Phil.* XXIX, 1955, p. 167 s.

³ See *Docs.*, p. 361.

appear that there was one *opa* in each town, as can be readily imagined.

§ 15. The opisthographic tablet KN C 50 deserves a separate study. The text reads:

- | | | |
|---------|----|---|
| | .1 | <i>AQIRU tepara pereqota</i> ARIES 134, <i>pa₂ra₂wo</i> OVIS 43 |
| | .2 | <i>anuko</i> OVIS 51 <i>roru</i> OVIS 32. |
| reverse | .1 | <i>AQIRU opa</i> ARIES 190 <i>pa₂ra₂wo</i> OVIS 144 |
| | .2 | <i>anuko</i> OVIS 133 <i>roru</i> OVIS 150 |
| edge | | <i>wekata</i> TAURUS 4 |

Anuko is attested as a personal name on KN Dc1122.B (at *Kutato*). *Roru* is another personal name on KN Db1185 (at *Rato*) and De1234 (at *Tirito*). From the arrangement of the tablet we must infer that *pa₂ra₂wo* is a third personal name. *Aqiru* (a hapax, too) can hardly be anything else but a place-name, since it is written large, it occurs at the very beginning of the tablet in both faces, and it is not followed by any ideogram.

On the evident assumption that the text of the obverse and that of the reverse closely correspond to each other (only numbers must be set apart), we are bound to conclude that *tepara pereqota* (.1) must be somewhat equivalent to *opa* (r.1). Such a correspondence actually forces us to confirm our interpretation of *opa* as the «guild or community of the cattle-breeders», and to look in *tepara pereqota* for the name of, say, the *opa* head who may occasionally act as their representative.

Two further considerations add weight to the proposed interpretation. First, the *φεργάται* TAURUS 4 (that is, four working bulls) on the edge, are recorded without any personal name and are thus likely to belong to the community. This reminds us again of the tablet KN C 59 where a certain number of working bulls are recorded in six entries (ranging from 6 to 50?) as belonging to six different towns: that they belong to some community should be clear from the explicate statement *damo* in the *Τολισσός* entry (.3a). Secondly, the Berrocal system (see § 30), where the breeding rams are owned by the community, whereas the private cattlemen have only the productive ewes, offers a striking analogy to the text of KN C 50, which is likely to confirm the interpretation just produced.

As to *tepara* (a hapax) the possibility should be considered that it is the name of a minor locality at *Aqiru* (a hapax, too),

so that the tablet as a whole might record the complete census of cattle at that rather insignificant town: the ewes of each individual add up to 187 for *Pa₂ra₂wo*, 184 (or more) for *Anuko*, and 182 for *Roru*. Then *peregota* should be either the personal name of the head of the *opa*, or just the word for this occupation. But if *Tepara* be no place-name, the group *tepara peregota* is liable a priori to several interpretations: *a*) ethnic personal name *Tepar-áv?*, plural *-ávες* (but why should the head of the *opa* at *Aqiru* come from elsewhere?); *b*) a twofold personal name (like *Sikewa Damokoro* on PY Ta711.1 according to Palmer?¹); *c*) personal name + occupational name with the meaning «head of the *opa*» (the *-gota* element actually recalls *sugota* «swineherd» and *qogota** «cowherd»). Whereas the interpretation of the hapax *tepara* must remain an open question, the Pylos evidence we are going to discuss seems to provide a basis for a decision regarding *peregota* (§ 26).

Let us now sum up provisionally the results so far arrived at with reasonable probability concerning the Knossos *opa*²:

There was in every town a community or guild of cattle-breeders. Since working bulls (or oxen?) can hardly have served any other purpose than the tilling of land, the cattle-breeders were probably farmers at the same time. They were presided over by a man who was possibly appointed by the wanax of Knossos himself (cp. *Kitaneto* on As821.1). Such a community appears to have owned some kind of cattle (breeding? rams and working bulls and/or oxen³) independently of the private livestock of each member.

§ 16. In order to complete the picture which emerges from the

¹ *Minos* V, 1957, p. 83.

² Webster, *ll. cc.*, takes *anopa₂sija* (a hapax occurring on PY Ea805 *opetereu eneka anopa₂sija* FRUMENTUM 2) as a relative of *opa*, and translates «because he is free of *opa*» («tribute»). If such a relationship be sure, PY Ea805 might record the leasing of a plot of land (from the damos?) as a compensation for *Opetereu* having no livestock to be grazed by the *opa*. As for the word-formation, **ἀνοπασία* would presuppose **ἀνόπᾱτος* (on the pattern *ἀμβροσίη* : *ἄμβροτος*) and this again would be justified by such pairs as *ἀγήραστος* : *γήρας*, *ἀτίμητος* : *τιμή*, Lat. *barbātus* : *barba*). Yet, the relationship of *opa* and *anopa₂sija* is far from being certain.

³ *Docs.*, p. 213: «The use of the male form of the ox ideogram ... does not of course imply that the beasts were not castrated». However, working bulls are not quite unknown (see *RE* XIX, c. 1470).

opa texts as discussed above, it may be pertinent to examine the Mycenaean words for «herdsman» (§§ 16-20).

goukoro, obviously γ^wουκόλος, later Greek βουκόλος. The evidence from Knossos is dubious and irrelevant: As6067.2 *ʔqo*]ukoro VIR [nn] (cp. .3 *po*]me VIR 1); on X 5610]ukoro [probably conceals the word under discussion. At Pylos, Ea781 shows a *goukorojo* (in the genitive sing.) as the owner of a *kotona kitimena*; the fact that no personal name appears may suggest that there was only one at the unknown locality referred to on the Ea tablets (see § 21). On An18.9 *goukoro tino* VIR 90 (a list whose totalizing formula reads τόσσοι τέκτονες []no VIR 254 [or more), *goukoro* must be a dative sing., and not a nominative plur., since the ninety men are carpenters. An852, whose first line reads] *goukoro* [, is obviously a tablet similar to An18 on account of several recurring groups: .3 *teko*[to]-na[pe : An18.2, 7; .4 *ase*[e : An18.4; .2 *terenewija* : *terenewe* An18.6. As to *goukoro* on Nn831.5, plainly a nominative (like the nouns in the other entries), it may be a singular (like .4 *ereeu*, .6 *arojeu*, .8 *epomeneu*, .9 *korete*, .11 *kakeu*; but .10 *pomene* is probably a dual, cp. §§ 21, 23). Rather more puzzling is An830, a tablet dealing with cultivated land (cp. .6 and 9 the ideogram *DA*, .2 *kekeme*[no, .6 *koreterijo kekemeno*); the text of lines 11-13 reads:

<i>go</i>]ukoro rawaratija	VIR 66
<i>opidamijo pisa₂ go</i>]uko]ro	VIR 60
<i>a₂kija goukoro</i>	VIR 60[or more?

On the analogy of the carpenters of An18, it is tempting to regard these men as workers (the numbers are obviously too high to be actually cowherds); *goukoro* seems thus to be, in these three entries, in the dative sing. Then *goukoro* accompanied by a place-name in the genitive or in the locative (*Rawaratija* and *Pisa₂* are well attested¹; *A₂kija* is a hapax, but the parallelism to the two other entries suggest that it is a place-name) might be understood as «the cowherd of X».

¹ The value *sa₂* for 82 (whereby we find Pisa in Mycenaean times) has been independently proposed by G. Pugliese Carratelli, *Atti e Memorie dell'Accademia Toscana di Scienze e Lettere*, N. S. VII, 1956, p. 4-6, by M. Lejeune in a forthcoming book, and by myself in an article «Mykenisch *Peresa₂* = Persephone», to appear in the *Sundwall Festschrift*, Berlin 1957.

§ 17. *qoqota**, closely paralleled by *sugota* on the Pylos Ea set, certainly covers the Mycenaean word for classical βουβότας (only known from Pindarus). The Knossos fragment X 480, lacking any useful context, shows *qouqota* (obviously γ^wου-γ^wότας, or -γ^wώτας). The Pylian form *qoqota** may be only an alternative spelling, but might well conceal a phonetic variant γ^wω- (cp. *qoo* on PY Cn3.2 to be interpreted as γ^wῶς, accusative plur.). At Pylos we do find, in the genitive sing., *qoqotao peregonojo* leasing *onata* from his own *kotona kekemena* on Ea 270 (and 305, 802 where *qoqotao* is found alone).

§ 18. *pome* = ποιμήν. The evidence from Knossos is reduced to As821.2 (see § 12) and *po]me* VIR I on As6067.3 (see § 16)¹. The Pylos Ea set shows two shepherds as owners of *kotona kitimena* at the unknown Ea set locality. They are a) *Kodojo pome<no>*, in the genitive, on Ea 71, leasing *onata* (754 *onato Kodojo kotona*, and 825 *paro Kodo pomene*), but holding also an *onato* from the damos (Ea 824), and b) *Moroqorojo pome<no>*, in the genitive too on Ea 817, leasing *onata* (782 *onato paro Moroqorojo kotona pomeno*; 439; 800 *paro Moroqoro pomene*). Outside the Ea set, Eo278 (~En467.1) records *Tipa₂jo pome* as an owner of *kitimena* land (see § 23). The remaining examples from Pylos are: Ae134 *Kerowo pome Asiatija opi Tarama<ta>o qetoropogi oromeno* VIR I «K. the shepherd at A. watching over the cattle of T.» An101.1 *pome*, lacking any useful context; Nn831.10 *pomene*, a nominative dual or plural, contribute, like the *qoukoro*, a certain amount of flax.

§ 19. *sugota* = συ-γ^wότας (-βότης Aristot., Hesych., -βώτης Homer, etc.) occurs only at Pylos, on the Ea tablets (comprising Ec481 and Eq59, too). On Ea480 and Eq59.3 there is question of a *kekemena kotona sugotao*, from which *onata* are leased (cp. also Ea109, 132, 776, Ec481.2 *sugotao kotona*, 822 *paro sugota*, that must be a singular).

§ 20. *aikipata* = αἰγίπα(σ)τας (later Greek knows only αἰπόλος) «goatherd». The only Knossos example on Fh346 (an assignment of oil) offers no useful context for our purpose. No goatherd appears on the Pylos Ea tablets either as owner or as tenant of any holding. Goatherds only occur on PY Ae108, 264 and 489, but these texts yield nothing for the subject of our inquiry.

¹ On KN Dd 1376.B, *po-me* as an owner of sheep might have some bearing on our arguments (§ 21), but the reading is not sure (see *KT*).

§ 21. In this inquiry on Mycenaean herdsmen, while the yield of the Knossos documents is worthless, the Pylos Ea tablets afford most valuable information since they allow us to ascertain the existence of one *goukoro*, one *qogota**, two shepherds and one swineherd at the Ea locality. That there were *only* these herdsmen, and none more of each kind, may be almost certainly deduced from several facts. First, the *goukoro* and the *sugota* (plainly singular whenever the grammatical number can be determined) are never cited by their personal names, and this is scarcely conceivable if there were two or more herdsmen of each kind. Next, the *qogota** is, of course, followed by his personal name on Ea270, but the occupational name being alone on Ea305 and 802 does bear out the evidence about *goukoro* and *sugota*¹. Finally, the shepherds, as they are two, are *always* cited by their personal names, in sharp contrast with the above remarks about the other herdsmen. That the shepherds were two and not one must depend on the far larger number of sheep as shown by our documents.²

On the other hand, if we are prepared to look on the ownership of a *kotona kitimena* («private plot») as a sign for superior social rank than that of a *kotona kekemena* («communal plot held as property»), we get a two-step hierarchy of herdsmen: 1. *goukoro* and shepherds, 2. *qogota** and swineherd. To a third rank would belong the goatherd, as it would be rash to conclude that there was none at all from his absence in the cadastral Ea lists: on the contrary, he probably lacked any holding of land whatever, because of his lowest rank. That the holdings assigned to the herdsmen are to be understood as a compensation for their grazing work, is a most likely assumption³ that leads us again to regard them as the herdsmen who watch over the common and private stock in the parish.

¹ Cp., on the Ea tablets, the *kekemena kotona* of «Klynos the beekeeper» (Ea801 *kurunojo meritewo*), and that of the «charioteer of the army commander» (Ea809 *rawakesijo amotewo*). On *amoteu** «charioteer» see L. R. Palmer, *Minos* V, 1957, p. 91. Cp. W. E. Brown, *Historia* V, 1956, p. 389, who rightly concludes that «the community recognizes only *one* possessor of each such name» («swineherd», «cowherd» and «beekeeper»).

² See *Docs.*, p. 198.

³ In view of parallels from elsewhere (§ 30), it is rather unlikely that these plots were pasture-land, as W. E. Brown, *art. cit.*, p. 400, suggests.

§ 22. A problem is raised by the co-existence in the same locality of a *goukoro* and a *qogota** as two different persons and occupations. Etymological analysis does not help us here, and only informs us that, by the time each word was formed, it meant an occupation concerned with cows and/or oxen. Since no further evidence is available, we are reduced for the time being to mere hypotheses. We might imagine, e. g., that the *qogota** (who holds a *kekemena kotona*) was only concerned with the watching of the damos' working oxen. Another hypothesis is suggested by combining the fact that the *opa* had a head (see § 15) with the higher rank of the *goukoro* as an owner of *kitimena* land; in other words, we might conceive of the *goukoro* as the headherdsman. This hypothesis seems to be in some way supported by the semantics of the family of the words under discussion as they can be grasped in the Ist millennium Greek. For, whereas βουβότης, συβότης, and ποιμήν appear to be used as «cowherd», «swineherd» and «shepherd»¹ respectively, βουκόλος and its relatives exhibit a rather loose connection with oxen and are actually used also when there is question of other kinds of stock: e. g. Υ 221 ἔλος κατά βουκολέοντο (sc. the mares), Eupolis fr. 18 Kock βουκολεῖσθαι αἰγας «she-goats»; cp. Euripides, *Phoen.* 28 ἵπποβουκόλοι.

§ 23. It is now proposed to check the results drawn from the Ea set against the other cadastral lists ready to hand, namely those of *Pakija*-, where a priori the existence of a strong religious community (living in the main at the expense of the *kekemena* land²) is likely to disturb what we may suppose to have been the standard land distribution of a Pylian town.

As a matter of fact, on the Ep tablets (and in the corresponding Eb tablets) dealing with *kekemena* land, there is no mention at all either of *qogota** or *sugota*. On the contrary, the *kitimena* records, as contained on the two redactions En ~ Eo, show on Eo278

Tipa₂jo pome ekeqe wowo kotono FRUMENTUM [8 or more corresponding to the entry En467.1

Tipa₂jojo kotona kitimena toside pemo FRUMENTUM 8 ὧ 3.

¹ The passage x 82-85 does not impose for ποιμήν the general sense of «herdsman», which, on the other hand, would be unique in Ist millenium Greek. Likewise, ποιμαίνω only applies to sheep (see LJS s.u.).

² See E. L. Bennett, *Amer. Journal Archaeol.* LX, 1956, p. 130 ss.; F. R. Adrados, *Emerita* XXIV, 1956 [1957], p. 353 ss.

Now, E. Rišch¹ has brilliantly demonstrated that wherever the syllabic signs of the sequence *wo-wo* are written facing each other, as they actually are on Eo278, they are a conventional spelling for *dwo/duwo*. From this we may confidently conclude that the shepherd Θισβαῖος, who on En467.1 occurs as a «normal» owner of a single *kotona*, is holding, when Eo278 was inscribed, *dwo kotono*, i. e. two private lands (-ω dual ending of *ā*- stems), and on the analogy of the Ea tablets, where we met precisely two shepherds, the explanation imposes itself that he holds his own *kotona* and, in addition, the one corresponding to the second shepherd absent from the Eo set.

§ 24. It should be noted, in passing, that such an interpretation, which seems to be unassailable, affords at the same time quite a satisfactory solution for the problem of the 14th *tereta*, who has been stated to be lacking in both redactions, for in spite of the fourteen ones announced by the heading on En609.2, there are only thirteen *kotona* owners in the En / Eo lists. In order to fill out this gap, several solutions have been proposed, but none of them is really satisfactory.²

Now, since fourteen τελεσταί must involve the existence of so many ποῖναι, this number of τελεσταί appears to be complete on the Eo redaction because of the two *kotona*'s held by Thisbaïos the shepherd. As far as the En redaction is concerned (copied from Eo according to Bennett³), since Thisbaïos occurs on En467.1 as the owner of a single *kotona*, the record of the lacking *kotona* must have

Minos V, 1957, p. 28-34.

² Bennett, *art. cit.*, p. 108-109, 117, takes *Pa]rako* from Eo173/Ep617.11 as the missing *tereta*, and *Poso]reja* as his tenant. But it is rather unlikely «that in sorting the tablets for copying... Eo173 was mislaid, or incorrectly sorted, among the Eb's while the Eo's were copied»: the Ep tablets are dealing with *kekemena*, and, moreover, the word *kama* and the formula *kotonooko eo* would be unique in the En/Eo context. Since Eo173 is, like the Eb tablets, a two line palm-leaf tablet and is in the same hand as they are (Bennett, p. 104), there is nothing to prevent this tablet from being classified with the Eb prefix.—Palmer, *Trans. Philol. Soc.* 1954, p. 25, *Gnomon* XXIX, 1957, p. 114, and Ventris-Chadwick, *Docs.*, p. 242, have suggested that the *peregotao kotona* of En659.1-6/Eo444 (where there is question of *peregota* and *pegota*) includes two *tereta*'s (see below).—According to F. R. Adrados, *art. cit.*, p. 361, the missing *tereta* had no tenant.

³ *Loc. cit.*, p. 107.

been lost, but we are justified in believing that its *tereta* must have been inscribed at the bottom of En467 (in the same tablet where the Thisbaïos' entry occurs), because this tablet is the one of the set (En 609, 74, 659 and 467) to be completely broken in its lower part (see the facsimiles in Bennett's *PT II*), and to exhibit, accordingly, a disproportionately small number of lines (only 6 as against 19 on both En609 and 659, and 24 on En74)¹. Therefore, on the assumption of the En set priority, in the time that elapsed between the two redactions, Thisbaïos the shepherd entered (nominally?) the possession of the *kotona* of the second shepherd, who e. g. may have died or absented himself from *Pakija*:- in either case the situation as reflected on Eo278 is likely to have been a provisional one. We hardly need to say that if the chronological relation between En and Eo be inverse, our interpretation would remain substantially the same.

§ 25. But the problem we have just discussed cannot be set apart from a curious dissymmetry we can see between the En and Eo redactions. On En659.1-6, namely, the *qeregotao* <*kotona*> *kitimena* must correspond, as Bennett rightly assumes, to the]*tona kitimena* of Eo444.1 since the *wetereu iereu* on En659.4 can only be the]*reu* on Eo444.3 (cp. also *pegota* on En659.5 and Eo444.4, 6). This notwithstanding, the size of the *kotona* is stated, on Eo444.1, to be of FRUMENTUM 4², whereas on En659.1 it is only of FRUMENTUM 2 [3, and, moreover, Eo444.6 records an extra tenant besides the four of En659.3-6, holding an *onato* of [4[or more. From all this, it would appear that, when the second shepherd died or went away, a part, or the whole, of his *kotona* added up to that of *qeregota*, together with a tenant, and that the record lost at the bottom of En 467 included the entry of the *kotona* itself and the leasing of one *onato* at least.³ The unfortunate damage of Eo278 in the area

¹ F. R. Adrados, *art. cit.*, p. 360-1, shares this opinion, but on different grounds (the missing *tereta*, having no tenant [?] «could only occur on the tablet En467, that records three *tereta*'s without *onateres*»).

² So on the facsimile, *PT II*, p. 50. On the copy (p. 155) the number of FRUMENTUM 2 [3 was possibly taken from En659.1.

³ See the interesting remarks of Mrs. Molly Miller in the «Notes and Tablets» (previously circulated), p. 4-5, to her paper on *Problems of the Economic Study of Bronze Greece*, read at the London Linear B Seminar in May 29th,

where the size of Thisbaios' two lands was stated, prevents us from knowing whether or not some amount of land of the second shepherd's *kotona* added up to his own; but judging by the vertical stroke still visible on the facsimile, the amount of FRUMENTUM must have been 8 or 9, so that, if Thisbaios did actually take any advantage of his colleague's absence, it must have been equal or inferior to FRUMENTUM I $\overline{\text{T}}$ 6 (that is, 9 $\overline{\text{T}}$ 9, the highest possible number, less 8 $\overline{\text{T}}$ 3, actually recorded on En467.1).

§ 26. Encouraged by the finding of the two shepherds, we may now look for the *kitimena* owner at *Pakija*-corresponding to the *qoukoro* (probably «headherdsman») at the unknown Ea set locality. Such a man can hardly be any other but the one who took so considerable an advantage of the absence of the second shepherd, as shown § 25, that is, *peregota* (alternatively spelt *qeregota*, *pegota*¹). Now it should be remembered that the man who on KN C 59.1 appears to act as the representative of the *opa* is called precisely *peregota* (whether or not *Tepara* is a place name, see § 15), so that, as the probabilities of a haphazard coincidence of the personal names are practically negligible, we may conclude that *peregota* was the occupational name for the head of the *opa*, an institution which is thus indirectly attested for Pylos. In fact, the analogy of *qoukoro* and *sugota* recorded alone on the Ea tablets, makes it unnecessary to seek a personal name in *peregota*.

A Greek interpretation of this word should take into account, besides *a*) the semantic definition just arrived at, *b*) its relatives

1957. She concludes that «both the *ktoina* and the *onater* left or entered Telephontas' possession and authority in the interval between En659 and Eo444».

¹ The genitive *qeregotao* only occurs on En659.1, 2; from line 5 *paro peregota* it becomes clear that *qe-* and *pe-* are the same man. On Eo444, the text *paro padajewe* (.2, 3, 5) and *paro padajewe pegota* (.4, 6) would lead to restore, on the first line, something like *padajewo pegotao kotona kitimena*. The same scribe of Eo444 wrote, on Eb159.1, *peregota padajeu ije*], corresponding to Ep617.10 *]gota padeweu* (cp. PY An192.12 *peregota padaje[u]*). As the restoration *ije[reu* seems to impose itself on Eb159.1, it appears that this man was a priest, whose description is given by *padajeu/padeweu* (cp. H. Mühlestein, *Minos* IV, 1956, p. 81 ss.; *padajeu* is said also of a man *Koturo*, on Eb892.1, and applies to *mikata* = $\mu\lambda\tau\alpha\varsigma$, a religious official, on Eb839.1). It should be reminded that, on KN As821.2, too, the man *]rewu* is at the same time priest and shepherd (on *peregota* «headherdsman», see the text).

qogota and *sugota* (since they are all three concerned with the watching of cattle), and, finally, *c*) the variant spelling *pegota* too frequent to be irrelevant¹. On account of *b*), the element *-gota* may be almost certainly interpreted as - γ^wότας, a nomen agentis from the word-family βοτόν, βοτήρ, βώτωρ, βοτάνη, βόσκω «to graze». On this very analogy we may expect *pere-/qere-/pe-* to be a noun with the general sense of «livestock», but no Greek word seems to be available to fit such a semantic and syllabic pattern. Since, on the other hand, the possibility of a verbal first element (e. g. κ^wελε-: πέλομαι, lat. *colo*, cp. βουκόλος, αἰπόλος; cp. also ἀρχέ-κακος, which would explain *qere-*) is ruled out by the final one, we are left with the only remaining possibility, namely, to see in the first element a preverb (cp. *metakitita* = μετακίττας PY An610.5,14; Hom. περικίτης, etc.), that cannot be but περι-. But, if on account of *c*), the interpretation should apply to the variant *pegota* as well, *pere-/pe-* must certainly cover the form περ (attested, as preposition and/or as preverb, in Thessalian, literary Lesbian, Phocian, Locrian, Laconian and Messenian²), *pe-* being the «normal», and *pere-* the «full» spelling (like *worokijonejo* = φοργ- etc.). But *periqotao* (in the genitive), occurring on the Knossos sheep D tablets (and its derivative *periqotejo* in the same contexts), being almost certainly the same word, would lead us to postulate a form περι-γ^wότας and to regard, first, *pere-* as a case of *i/e* confusion, and secondly *pe-* as a scribal error. At any rate, a doublet περιγ^wότας, περιγ^wότας is by no means unthinkable³. As to its precise meaning, if the proposed interpretation is not wrong, περι- could be used here to denote superiority (see LJS s. u., § E II), so that the compound as a whole would mean «headherdsman», which would actually satisfy the

¹ On En659.5 *paro peregota pegota* can be readily accounted for as a dittography: on Bennett's assumption that En was copied from Eo, we may imagine that the scribe, after writing *peregota*, emended it by repeating *pegota* from the model Eo444. A similar procedure of emendation can be seen on PY 64.7 *akerese... oakerese* where the second sign group is the correct one.

² See Schwyzer-Debrunner, *Griech. Gramm.* II, p. 499.

³ The form περ is possibly shown by KN L 520.1 *pereke*, if it is actually περέχει (*Docs.*, p. 321). See A. Heubeck, *Beiträge zur Namenforschung* VIII, 1957, p. 33 n. 22, who writes: «Für *pegota* an ein Περ-*gota*, Περ-*gota* zu denken, wird durch lak. Πέρκαλος, Περφίλα, nahegelegt».

semantics of the word as above defined. The existence of the patronym Περιβωτάδας (*IG* VII 2813, from Hyettos, Boeotia)¹ would in turn presuppose a noun περιβώτας in the same way as homeric Βουκολίδης (*O* 338, Aeolian Βουκολίων *Z* 23), and Ποιμενίδαι (Hesychius) come, respectively, from βουκόλος and ποιμήν.

§ 27. In summary, the Pylos evidence above discussed (§ 16-25) confirms and completes the picture of the Knossos system of livestock-grazing. It seems now to be reasonably certain, in addition to the reconstruction outlined in § 15 end, that the *opa* organization of each town was presided over by the περιβώτας and made use of the services of two shepherds, one cowherd, one swineherd and, probably, one goatherd, obviously intended to watch over the various kinds of livestock of all its members.

§ 28. It is plain that such a communitarian system for stock-breeding would be almost unthinkable without a parallel organization for land-farming. In this connection, it should be remembered that, as we have accidentally noticed, the working bulls or oxen owned by the damos might well be regarded as evidence for tillage in common (§ 15), and, on the other hand, that the assignment of land to the *opa* herdsmen as compensation for their grazing work, would be best conceived of if the owners of the cattle were at the same time farmers (§ 15 end). Several further facts may be taken as evidence for a communitarian farming system. (§§ 29-31).

§ 29. To begin with, while we have to reckon with the possibility that the land division which PY 64 and 218 refer to, was concerned, since the awardees seem to be all military men², with new land, whether untilled or won from the enemy, the drawing of the boundaries is no more an isolated fact, for it occurs again on KN As821.1 (*eneka timito*) and that along with what would seem to be counting of cattle (.1 and 2 *eneka opa*), which is likely, by its own nature, to have been periodical.

In this connection, attention should be drawn to the mention *toto weto* = τῷ(υ)το ῥέτος «this year»³, occurring in several entries of

¹ Pointed out by Vl. Georgiev, *Lexique*, 1955, p. 57.

² *Minos* IV, 1956, p. 162. Cp. *Docs.*, p. 175; L. R. Palmer, *Eranos* LIV, 1957, p. 10.

³ Myc. *toto* is very probably nothing but a variant spelling for **touto* (cp. *qogota/qouqota*). The reading τῷτο on an early Attic inscription offers no firm basis for the interpretation (Schwyzer, *Griech. Gramm.* I, p. 611).

the document PY 64 and 218, which could be taken as evidence for annual re-allotment of land. Against expectation, it is true, *toto weto* is only found together with the formula *o-akerese* = ὁ ἀγρήσει «what he (the man in question) will choose»¹ (so much land), so that it does not appear wherever that formula is absent (64.8 and 218.10-16) or is denied (64.3 and 4 *ouge akerese* = οὐκ ἔσται. «and he will not choose»). This would lead to regard *toto weto* as a complement governed by the verb *-akerese*: «he will choose this year», and that would again imply that a re-allotment is to be made next year.

Another relevant fact we can observe on PY 64 and 218 is that the amount of land in those entries where the individual is not allowed to choose, is just 1 ZE, whereas the quantity recorded is always over or below 1 ZE where the entry contains the mention *toto weto o-akerese* (if, as it is plausible, the ideogram *171 is to be restored on 64.14-16, cp. line 13). As the individuals receiving equal plots (and it can hardly be a haphazard coincidence that they belong, for the largest part, to the lowest rank of ἀκτινοί) are denied the right of choosing, it seems to be a sound assumption that the allotment was made by raffling².

§ 30. If our reconstruction is well founded, it would appear that, by the IInd millennium B. C., the Greeks were practising a farming system similar to the one attested for the Germans by Caesar's and Tacitus' times, and for other Indo-European peoples as well: Caesar *BG VI 22.1-2 neque quisquam agri modum certum aut finis habet proprios; sed magistratus ac principes in annos singulos gentibus cognationibusque hominum qui una coierunt, quantum et quo loco uisum est agri attribuunt atque anno post alio transire cogunt*. Tacitus *Germ. 26 agri pro numero cultorum ab uniuersis occupantur, quos mox inter se secundum dignationem partiuntur... arua per annos mutant, et superest ager*.³ Diodorus Siculus V 34.3 οὗτοι γὰρ (sc. the Celtic Vaccaeans of Spain) καθ' ἑκάστον ἔτος διαιρούμενοι τὴν χώραν γεωργοῦσι, καὶ τοὺς καρποὺς κοινοποιούμενοι μεταδιδόασιν ἑκάστῳ τὸ

¹ See *Minos* IV, 1956, p. 153 s.

² Cp. the Ist millennium κληροί.

³ On such a type of Indo-European settlement, see L. R. Palmer, *Trans. Phil. Soc.*, 1954, p. 33.

μέρος.¹ Cp. also Strabo VII 5. 5 p. 315: ἴδιον δὲ τῶν Δαλματέων τὸ διὰ ὀκταετηρίδος χώρας ἀναδασμὸν ποιεῖσθαι.²

Among the sedentary Mycenaean, we may fairly suppose life conditions were not the same as among nomadic tribes. First of all, neither at Pylos nor at Knossos was there, to be sure, by Mycenaean times, the possibility of much land to be won from the waste, so that annual land-division must have implied that the land was allotted in strips to each man in rotation combined with the two-fold system (corn and fallow) as known from 1st millennium Greece, perhaps in order to secure equality and/or as a survival from migration times. On the other hand, private property had already developed to some extent, as evidenced by the Pylos En ~ Eo tablets. That such a rotation system is actually compatible both with sedentary life and with private property is shown beyond any doubt by the open-field system at Berrocal de Huebra, near Salamanca³ (going back very probably to German or even Celtic occupation, but the point here is merely an ethnological one of general analogy). Plots are re-allotted by raffling to each holder (owner or tenant) every nine years, which is obviously a transitional phasis from yearly rotation to sedentary settlement.⁴ The village land is owned *pro indiviso* but the sizes of the various private properties range between very wide limits. Furrows, occasionally marked off by little stones, serve as boundaries.

By way of analogy (ethnological parallels do not prove anything, they only illustrate), it should be added that in the open-field system at Laxton, England, the grazing was stinted, that is to say, the number of animals which might be turned out was restricted, and all those who occupied land had the right to graze a specified number of stock on the natural herbage of those parts of the parish which were not under the plough (i. e. the woodlands, the wastes,

¹ See J. Caro-Baroja, *Los pueblos de España*, 1946, p. 186 s., who rightly rejects any communist interpretation of the Vaccaeans' system.

² On the Getae, Horace, *Carm.* III 26 *nec cultura placet longior annua*. On the whole question, cp. Caro-Baroja, *loc. cit.*

³ I am deeply indebted to my informant, don Venancio Bejarano, school-master at Berrocal.

⁴ This is the best factual refutation of Orwin's distrust as to the possibility of such a rotation (C. S. Orwin and C. S. Orwin, *The Open Fields*², 1954, p. 38).

the meadow land, and also the fallow field)¹. At Berrocal, the number of livestock that can be grazed by each farmer is proportionate to the size of the holdings he cultivates, whether as owner or as tenant: the farming of a yugada (the parish includes thirteen) enables an average of 16 cows, 40 sheeps, 36 pigs, 8 she-goats and 1 he-goat to be grazed. The farmers' community (*concejo*, from Latin *concilium*) breeds, for the common use, 1 bull and 20 rams for reproduction purposes (cp. § 15). The number of livestock is, of course, periodically controlled by the *concejo*, e. g. the sheep are counted twice a year by driving them into the stockyard of the community (*corral del concejo*), an institution which strongly recalls the Locrian (and probably Mycenaean) ὀπαῖαι ἀλλαί (§ 13). The *concejo*, presided over by the *yerbajero* (a derivative from *yerba/hierba*, Latin *herba*), who is yearly elected, makes use of the services of a cowherd, a shepherd, a swineherd, a goatherd and an assherd for the common guard of all the stock in the parish.

§ 31. Let us now try to find more evidence for a farming system as outlined.

The Greek word for «rotation» can scarcely have been any other but τροπή. The Knossos occurrences of *torogo* (in wool contexts) and *toropa₂* (in oil contexts) yield nothing for our present purpose. But the participle *toroqejomeno*, that is admittedly τροκ^wεγόμενο- (>τροπ-), occurs precisely in connection with ploughlands on PY Eq213:

1. <i>owide akosota toroqejomeno aroura a₂risa</i>	
<i>akerewa orojo tosode pemo</i>	FRUMENTUM 8
<i>odaa₂ erinowoto orojo tosode pemo</i>	FRUMENTUM 10
<i>odaa₂ kotuwò orojo tosode pemo</i>	FRUMENTUM 20
5. <i>odaa₂ potinijawejojo otepejo orojo tosode pemo</i>	FRUMENTUM 6
<i>odaa₂ kono orojo toso pemo</i>	FRUMENTUM 40

Several facts that are clear on this tablet may be used as starting point for the interpretation². First, *owide* is ὥς εἶδε «thus he saw»;

¹ Orwin, *op. cit.*, p. 55 ss., 132 ss.

² For this tablet, where *toroqejomeno* is precisely the key-word, several interpretations have been already proposed. According to L. R. Palmer, *Trans. Philol. Soc.* 1954, p. 21, 29, *Minos* V, 1957, p. 80, the text «seems to record the inspection of grain stocks [*orojo* «of millet»?] by the prominent personage *Akosota*, when the ἀροῦρα was ploughed up» [*toroqejo-* = «*terram uertere*»].

the grammatical subject must be *Akosota*, a man of importance from the palace administrative staff judging by his frequent presence in various kinds of transactions (e. g. Pn30.1, Un267.1, Va482, Cn40; the label Wa917 *odasa[to] akoso / ta egeta ereutere[* might be taken as evidence for his being a count, if *egeta* is in the nominative).—*aroura* (a hapax) is plainly an accusative, and is likely to be a plural since it obviously refers to the five following entries: ἀρούρανς «the (following) ploughlands».—*a₂risa* might seem to be an adjective connected with *aroura*, but I have been unable to find one of this form; an aorist participle ἀρίσας, from a verb *ἀρίω «to count», as suggested by Ventris-Chadwick¹, seems far more preferable, since the inspection carried by *Akosota* is likely to have implied land-measurement or plot-counting. Now, such a verb as «to see» requires in Greek syntax, as a rule, a participle and this must be *toroqejomeno*, in the accusative (τροχῶν ἐγόμενονς). I propose then to translate the heading: «Thus A. saw (people) rotate their ploughlands and counted them». As the semantics of *ἀρί- implies the counting of discrete units, it would seem that the ἀρούραι were individual plots of the same extent. Finally, it should be noted that, if *Akosota* was an *egeta*, he is, in view of the presence of several counts on PY 64 and 218, and on KN As821, obviously qualified for inspecting the rotation of the ploughlands and, if necessary, the drawing of the new boundaries.

As to the entries themselves, the variant *toso pemo* on .6, as opposed to *tosode pemo* on .2-5, is scarcely relevant: the last entry is, as well as the four preceding ones, introduced by the connective *odaa₂*, and FRUMENTUM 40 is not the aggregate of the other amounts.—*orojo* is preceded, on .2-5, by place-names in the genitive

J. Puhvel, *Eranos* LIV, 1956, p. 14 ss., p. 15, translates the heading «la partie labourée du champ d'Arisa qu'a inspectée A.». *Docs.*, p. 268 ss.: «Thus A. has observed on his tour of inspection, counting the corn-lands of *Akerewa*». Yet, a glance at LJS may persuade the reader that τρέπω and its cognates are never said of ploughing and never used absolutely in the sense of betaking oneself. For the meaning «to turn, to change», there is plenty of attestations from early times onwards.

¹ *Loc. cit.* Cp. ἀριθμός «number», Hom. ν-ῆριτος «innumerable». The sense of *a₂rie* on PY An724.5, and *arijato*, *ibidem* .9, is unfortunately by no means clear. Interpreting *a₂risa* as an (elsewhere unknown) place-name (Puhvel, *art. cit.*, p. 16 s.) is rather unlikely in view of the text arrangement.

(see below); from this it follows that *orojo* is the nuclear mention in each entry and is presumably either in the nominative or in the locative; that it is no genitive, is shown by *kono orojo* on .6. Since, on the other hand, the subject of the five entries is announced by *aroura* on the heading, we may infer that both *aroura* and *orojo* refer to the same thing: if *aroura* means the individual plots (cp. Homer Λ 68, ζ 10), *orojo*, if it is a singular, may be understood as referring to each field, that is to say, to each ensemble of neighbouring plots. It is thus tempting to interpret *orojo* as a derivative from the root of ἀρώ «to plough» (like ἄρουρα), exhibiting initial ablauting vowel: ὀροῖον, cp. πλοῖον from πλέω, and, as for ἄ-/ὀ-, ὄγμος from the root of ἄγω.¹

Akerewa (.2), in the genitive, like the three following place-names, is the well-known Pyliaian township², occurring underneath *Apu₂we* (loc.) in the standard lists of the «nine». As to *Erinowoto* (.3), in the genitive, it may be relevant to note that it occurs on PY An427.1 (a list of personnel) in a sequence of place-names (*Apu₂we*, *Erinowo*[te, *Pako*? a hapax, *Akerewa*) that, in view of the presence of *Apu₂we*... *Akerewa*, is likely to reflect their geographical situation, so that, if we take also into account Eq213, *Erinowo* seems to be a village situated between *Apu₂** and *Akerewa*. — *Kotuwo*, in the genitive (Γόρυς, -υος) is also known as a place-name, but it only occurs on tablets that are very damaged (PY An615.16, 943.3) or lack any context at all (Na108).—As to *potinijawejo otepejo*, plainly in the genitive singular, as the latter word is a hapax, we must limit ourselves to the adjective *potinijawejo*, obviously a derivative from *potinija* = πότνια. Now, *potinijawejo* refers on PY Jn310.14 to a fraction of the inhabitants of *Akerewa* (Jn310.1 *Akerewa kakewe* is followed, in the heading of the second record of smiths at that township, by .14 *potinijawejo kakewe*; the same is observed for *Apekee* on Jn431.1, 16). From all these facts we may confidently conclude that the place-names under *Akerewa* on Eq213 are all villages or minor localities belonging to this township. If thus, the introductive *odaa₂* is performing there the same function as in some

¹ Puhvel, *art. cit.*, p. 17-19, connects *orojo* with Hom. ὄρος and n. pl. ὄρα «limite, frontière», and suggests «un sens métonymique 'terrain'».

² See Bennett's statistics, *Amer. Journal Archaeol.* LX, 1956, p. 114.

Pylos Ma tablets, e. g. Ma393 where under the mention of the township (.1 *Zamaewija*) *odaa*₂ introduces the mention of the inhabitants of a village. If we are right in our interpretation, the plough-lands of *Akerewa* consisted of five fields (including the «common» field of .6), and their total area amounted to 84 FRUMENTUM units, very close to the total area of *Pakija*- (FRUMENTUM 32 T 4 d 2 of *kitimena* land on the En tablets + FRUMENTUM 46 T 4 d 2 of *kekemena* on the still incomplete Ep set = FRUMENTUM 78 T 6 d 5).¹

The tablet PY Eq213 seems thus to attest directly land-rotation in Mycenaean Greece.

§ 32. In outlining the Mycenaean land-division and livestock-grazing system I have purposely avoided both using some dubious Mycenaean evidence, and relying upon Homeric passages in a pair with Pylos and Knossos documents².

E. g., if the *kitita* = *κίται* of PY An610.2, 4?, and 724.3, 10, are to be understood as holders of *kitimena* land (cp. *Docs.*, p. 186; yet, the verb *kitijesi* on PY Na520 and *akitito* of Na926 seem to refer to some agricultural operation, according to M. Lejeune, *Et. Myc.*, p. 144 s.), then the *metakitita* of PY An610.5, 14 might be those settlers (*-kitita*) whose plots are bound to change (*meta-*), that is, to rotation. Since, on the other hand, one hundred twenty six *konijo* men (= *κοῖνιοι* «settlers on the common land», cp. PY Eq213.6, see § 31) occur in the same line in a pair with twenty six *metakitita*, it would be tempting to think the annual rotation was concerned (only?) with the common land (*kono*, *kekemena*; cp. *Minos* IV, 1956, p. 162-164; it should be borne in mind that *κτοῖνα*, being from the same root as *κτιμένα*, applies also to the *kekemena*). M. I. Finley, *Historia* VI, 1957, p. 155, correctly stresses that «an open-field system can co-exist with enclosures and with individual homesteads»; the Berrocal system (§ 30) proves also that land-rotation and private property do not rule out each other.

§ 33. If our conclusions relating to an open-fields system in Mycenaean Greece have been rightly drawn, a great deal of light is thrown on some Homeric passages, which, to say the truth, are not

¹ I have suggested interpreting *Akerewa* as *Ἀχιλλήγυα* (perhaps *Ἀχίλλειον*, a Messenian town in Stephanus of Byzance), this form being a metathesis from *-ηγ-γα*. Accordingly I have proposed to look on it and on other *-ewa* place-names, as derivatives from *-εός* nouns by means of the suffix *-γα* (*Et. Myc.*, p. 118 s.; cp. M. Lejeune, *ibidem* p. 152 n. 52).

² M. I. Finley, *Historia* VI, 1957, p. 133 ss., has correctly warned against such a procedure.

by themselves conclusive as to the existence of open fields in early Greece¹.

But, once the Mycenaean facts have been independently established, it becomes much more probable that the «common land» (ἐπιξύνω ἐν ἀρούρη), where two men are quarrelling over boundaries and contend in a small space of land for equal plots (περὶ ἴσης, Φ 421 ss.) is a reminiscence of the Mycenaean open-fields system, as above outlined. Likewise, the πολλοὶ ἀροτῆρες ploughing, on Σ 541 ss., a πείραν ἄρουραν, εὐρεῖαν, τρίπολον, may be taken as a further reminiscence of Mycenaean times, since coaration or, at least, simultaneous tillage, is one of the most outstanding features of the open fields². As G. Thomson points out, «it is quite possible that, at the time when the *Iliad* and *Odyssey* were put into their final shape, the custom of periodical redistribution [land-rotation] was becoming obsolete»³.

ADDENDUM (September 5th, 1957).—The study of E. Will, «Aux origines du régime foncier grec: Homère, Hésiode et l'arrière plan mycénien», *Rev. Et. Anc.* LIX, 1957, p. 5-50, just published, contains, on p. 24 ss., a fresh attempt at recovering an open-fields system from the Pylos E-tablets relying mainly on Palmer's interpretation of *kekemena* as «common land». On p. 35 s., Will writes: «La tenure normale du *damos*, ce qui sera connu plus tard sous le nom de *klèros*, ne figure pas dans les tablettes.» «Si l'appropriation collective de la terre *kekemena* par le *damos* semble pouvoir être admise à Pylos, il faut y admettre aussi une exploitation soumise à des règles collectives, du type open-field, à laquelle participaient tous les membres du *damos*, éventuellement avec redistribution périodique des tenures. Le système de l'open-field a fonctionné dans des pays divers et pendant des millénaires sans la moindre comptabilité écrite, en vertu de règles traditionnelles connues et admises de tous». What the tablets record «ce sont des aliénations diverses opérées aux dépens du domaine communal.»

Universidad de Salamanca

MARTÍN S. RUIPÉREZ

¹ See the recent attempt made by G. Thomson, *op. cit.*, p. 313 ss., and *Studies Presented to D. M. Robinson* II, 1953, p. 840 ss. M. I. Finley, *art. cit.*, p. 155 n. 1, quoting from Pöhlmann, stresses that the main passage (Σ 541-549) «may, but need not, reflect open-fields».

² Cp. Orwin, *op. cit.*, p. 38, 41. It is to be wondered whether the verbal *woze* etc., on the E-sets is not referring to the ploughing of open fields with communal teams. Cp. the *damos*' working bulls above §§ 15, 28.

³ *Op. cit.*, p. 319.