BIBLIOTHÈQUE DES CAHIERS DE L'INSTITUT
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A Companion to Linear B

Mycenaean Greek Texts and their World

VOLUME 2

edited by

Yves DUHOUX
and
Anna MORPURGO DAVIES

PEETERS
LOUVAIN-LA-NEUVE – WALPOLE, MA
2011

CONTENTS

CHAPTER 12

SCRIBES, SCRIBAL HANDS AND PALAEOGRAPHY*

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SUMMARY

* The editors received the first version of this chapter in March, 2007. The author wishes to thank Yves Duhoux, Dygo Tosa, Andrew Zawislanski and Kevin Pluta for their advice and assistance, and both editors for their patience and encouragement. He dedicates this chapter to Emmett L. Bennett, Jr., his mentor and friend, and the truest gentleman he has met in his own now long life. Photographs of Linear B tablets from Pylos are taken from the archives of the Program in Aegean Scripts and Prehistory at the University of Texas at Austin, courtesy of the Department of Classics, University of Cincinnati. Kevin Pluta helped a lot with the annotation of illustrations.

This chapter concentrates on scribes, i.e. on those who actually wrote the Linear B texts that we have. The first section (§12.1) discusses the many ways modern scholars have used to identify and then study the work of scribes (or, as we shall also call them, 'tablet-writers') and how an accurate palaeographic study of Mycenaean texts has led us to a much improved understanding of the meaning of the texts and their purpose within the administrative systems organized around and by Mycenaean palatial centres. The second section (§12.2) turns to the world of the scribes and to the important conclusions and theories that the technical palaeographic study of Linear B inscriptions has yielded, and current questions such study has posed, about who the scribes were, how they were trained, how they worked, what their professional 'personalities' were, and how they compare, as technical specialists, with other skilled workers in the Mycenaean regional economic systems.

§12.1. Mycenaean scribes and their work: how and why the study of handwriting became a key tool of research in Mycenaean studies

An important aspect of the study of Linear B inscriptions,[1] particularly if compared with the study of cuneiform archives of the Ancient Near East,[2] is

[1] For the history of scholarship in this field, see Palaima 2003a, 45-64; Ruipérez – Melena 1990, 23-49.

[2] Brosius 2003 and Palaima 2003b. For a global assessment of Aegean literacy in light of comparative evidence from the ancient Near and Middle East and modern theories of literacy and the uses of writing in societies through time, see Pluta forthcoming.

the attention paid to palaeography (viz. the study of handwriting styles) and to the distinctive features of writing on clay documents that can be attributed to individual scribes or tablet-writers. The Mycenaean texts are difficult for us to read and understand, but, as we shall see, their correct interpretation has been facilitated (or even made possible) by the discovery that we can attribute them to specific scribes and consequently group them in ways which otherwise would not have been justifiable or even imaginable. At the same time these detailed studies have a direct impact on our understanding of the workings of Mycenaean administration and of the nature and extent of Mycenaean literacy. Why Mycenaean scholars have adopted this line of approach will become clear if we first look at some of their early work both before and after the decipherment of Linear B.

§12.1.1. *Palaeographical studies before the decipherment*

There are several reasons why palaeography has come to play such a key role in Linear B studies.

First, when inscriptions first began to be noticed, purchased and finally discovered in excavation by Sir Arthur Evans[3] — and then by other excavators —,[4] it was soon observed that they fell into three main categories of writing. These Evans called Cretan Pictographic or Hieroglyphic, Linear A and Linear B.[5] Right from the beginning, it was noticed that these three scripts used a good many signs or characters in common.

However, it was not easy to figure out with certainty what the similarities and differences among these writing systems meant. The inscriptions came from different sites and periods.[6] They were written on different materials; we find writing on clay tablets, labels, sealings and roundels; stone dedicatory vessels and stone seals; gold and silver artifacts; walls; and ceramic vases, mainly large storage vessels called pithoi and the vessels used for transporting oil known as stirrup jars.[7] And they were inscribed using different techniques: (1) carving or incising into hard material; (2) literally drawing signs into wet and thus soft clay; (3) painting with a brush. The shapes of the signs were affected by these different ways of writing and the different media used.

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[3] McDonald – Thomas 1990, 113-169.

[4] Beginning in 1894 and continuing through Evans' excavations at the major Cretan site of Knossos.

[5] Bennett 1996; Chadwick 1987; Duhoux 1985, 8-23; McDonald – Thomas 1990, 160-161; Olivier 1989, 237-252 and figs. 20-24; *SM I*.

[6] See Palaima 1990b for an overview.

[7] Bennett 1986; *CHIC*; *GORILA*; Hallager 1996; Raison 1968; Sacconi 1974.

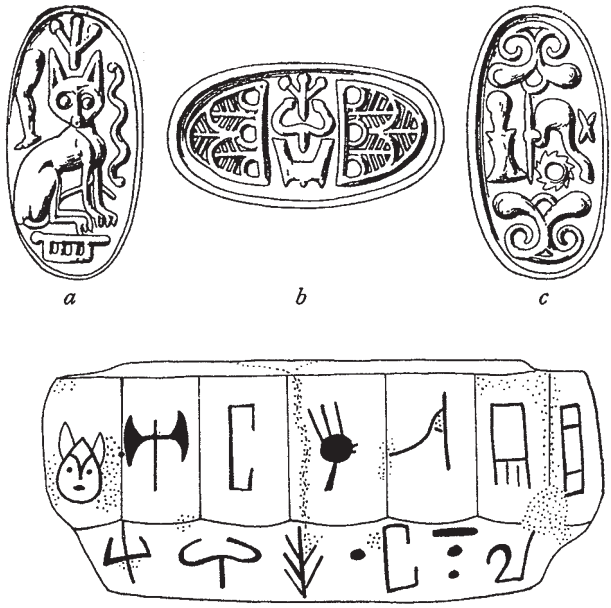

Fig. 12.1. Hieroglyphic signs carved into stone seal (*SM I*, 153) and Linear A signs carved into stone libation table Iouktas Za 2 section a (after *GORILA*, vol. 5, 18)

On the stone seals, which are so small (1.0-1.5 cm. in diameter or 1.5 × 0.5 cm. in their rectangular faces) that even to handle the entire whole seals in the process of studying their images challenges the dexterity of modern scholars,[8] the Cretan Hieroglyphic signs are executed precisely by superbly trained artists. Many such signs have lifelike three-dimensional naturalistic forms (Fig. 12.1). Some of the signs carved into the surfaces of stone libation vessels in the Linear A script dedicated at peak sanctuaries have the same artistic appearance and for the same reason: the signs were carved into the stone surfaces by true artists and were meant to have a pleasing, decorative appearance (Fig. 12.1). When the signs are drawn instead of carved, whether into soft metal or into moist clay, they lose their three-dimensional representational aspects. Nonetheless the forms of signs done on clay tablets as line-drawings vary in what we might call aesthetic quality from elaborate and 'artistic' to simplified and functional.

The last main category is signs painted, for the most part very large in size (8-15 centimetres high), on the surfaces of clay vases. These painted signs

[8] KRZYSZKOWSKA 2005, 81-99.

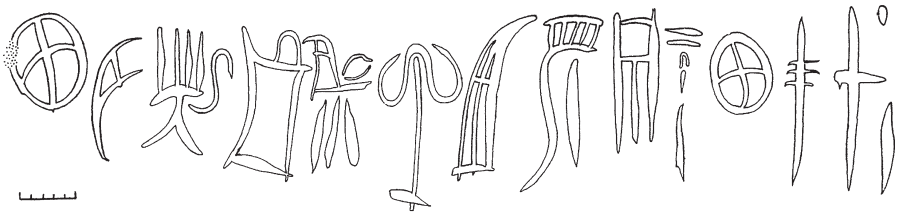

Fig. 12.2. Signs painted on stirrup jar Z 839 from Thebes (after RAISON 1968, 108-109)

(Fig. 12.2) as a whole have much more elaborated forms than the signs that are drawn by scribes on the clay tablets. The curves of the signs painted on vases are fluid and component elements that are not absolutely essential to the recognition of particular signs are often preserved — as they are often not in the more mechanical, utilitarian and repetitive writing on clay tablets — or perhaps even reintroduced, as a reflection of the artistic instincts of the individuals doing writing of this kind.

This remarkable diversity in the manner of writing explains why it was necessary in the early stages of studying the Aegean scripts to devote considerable time and attention to analyzing the sign systems and to comparing the forms of their signs.[9]

The fact that inscriptions in all three classes of writing, but especially in Linear B, were written into soft clay with a stylus[10] facilitated the process of studying the sign forms. In most cases, it was possible, after careful examination, to reconstruct the order in which elements of simple or complex signs were written (more on this kind of study §12.1.1.2 below).

This procedure naturally raised questions, within each of these three scripts, about whether individual examples of signs of similar shape were (a) variant forms of the same sign, executed by different persons (or even by the same person at different times under different conditions); (b) completely different signs with different values; or (c) intentional modifications of basic forms that had some kind of phonetic or semantic significance, e.g., *ü* vs. *u* in German, or *ñ* vs. *n* in Spanish. Thus aspects of what we might call *uniscriptual* writing stylistics (or script-internal palaeography, e.g., Fig. 12.3) came into play.

Furthermore, since the three scripts were clearly somehow related to one another and spanned nearly nine centuries total in their use (*ca* 2100 BC to *ca*

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[9] For a history of the study of sign forms and an analysis of the different forms of signs produced by different media, see PALAIMA 1988.

[10] RUIPÉREZ – MELENA 1990, 70.

1200 BC), comparisons were made of their sign repertories in two ways. First, in order to see how the signs of the different scripts related to one another (comparative palaeography), and, second, in order to see how the shapes of the signs evolved through time (diachronic palaeography).

A further question was whether observable differences in the shapes of the basic signs provided any evidence for how the scripts may have changed their structures and their operating principles over time.[11]

§12.1.1.1. Sir Arthur Evans

Fortunately for the field of Mycenology, Sir Arthur Evans was acutely near-sighted from birth and had naturally gravitated in his younger days to the study, first, of coins, and, then, of small stone seals bearing Cretan Hieroglyphic symbols.[12] Much of Evans' time was taken up by his serious responsibilities as main excavator of the major Cretan site of Knossos and his task of literally defining the characteristic features and chronology of Minoan civilization.[13] But he did publish in his lifetime the ground-breaking study of Linear A and Cretan Pictographic writing known as *Scripta Minoa I*.[14] He also undertook a major study of the Linear B inscriptions. However, this was not advanced very far when Evans died on July 11, 1941. At the time of his death not many more than one hundred tablets were available for study in published photographs or drawings.[15]

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[11] Comparisons between Linear A and Linear B (Fig. 12.4; and later Fig. 12.5) were particularly important for linguistic analysis of the languages represented in the inscriptions (DUHOUX 1989, 66-76 and esp. 115-119; *GORILA*; RAISON – POPE 1978 and 1994). This even involved, in the early days, looking at extra-Aegean offshoots of 'Minoan' writing (Figs. 12.6 and 7). For example, the different phases of the Cypro-Minoan and Cypriote Syllabic scripts (Fig. 12.8) (PALAIMA 1989 and 2005) on the island of Cyprus have been examined in connection with Linear A and Linear B.

[12] MACGILLIVRAY 2000, 5-6, 18, 27, 41; PALAIMA 2000a.

[13] PALAIMA 2003a, 45-50.

[14] *SM I* appeared in 1909 after Evans had published a half dozen major preliminary reports on his excavation work in progress.

[15] Of the Knossos tablets, there were about forty-five published photos, one hundred and three drawings, and one hundred and twenty transcriptions (by the great Finnish scholar Johannes Sundwall); of the Pylos tablets, seven photographs from the publications of the 1939 excavations. There were also illustrations of a few painted stirrup-jar inscriptions from Thebes and Eleusis, and of a few other inscriptions confusingly, because wrongly, ascribed to Minoan Linear script B. The bulk of the material is found in the *Annual of the British School at Athens* (1899-1900) — the report of the first season of excavation at Knossos; in Evans' monumental *PoM* (mainly in volume 4 of 1935 where he devoted much attention to the Linear B finds); in *AJA* 43 (1939) 557-576 (the report by Blegen and Kourouniotes of the first season of excavation at Pylos); the *Illustrated London News* (1939) 858 (a general story on Blegen's finds), and, according to KOBER 1948, 99 n. 48, 'a pamphlet on the work of the American School of Classical Studies at Athens' (*non vidi*).

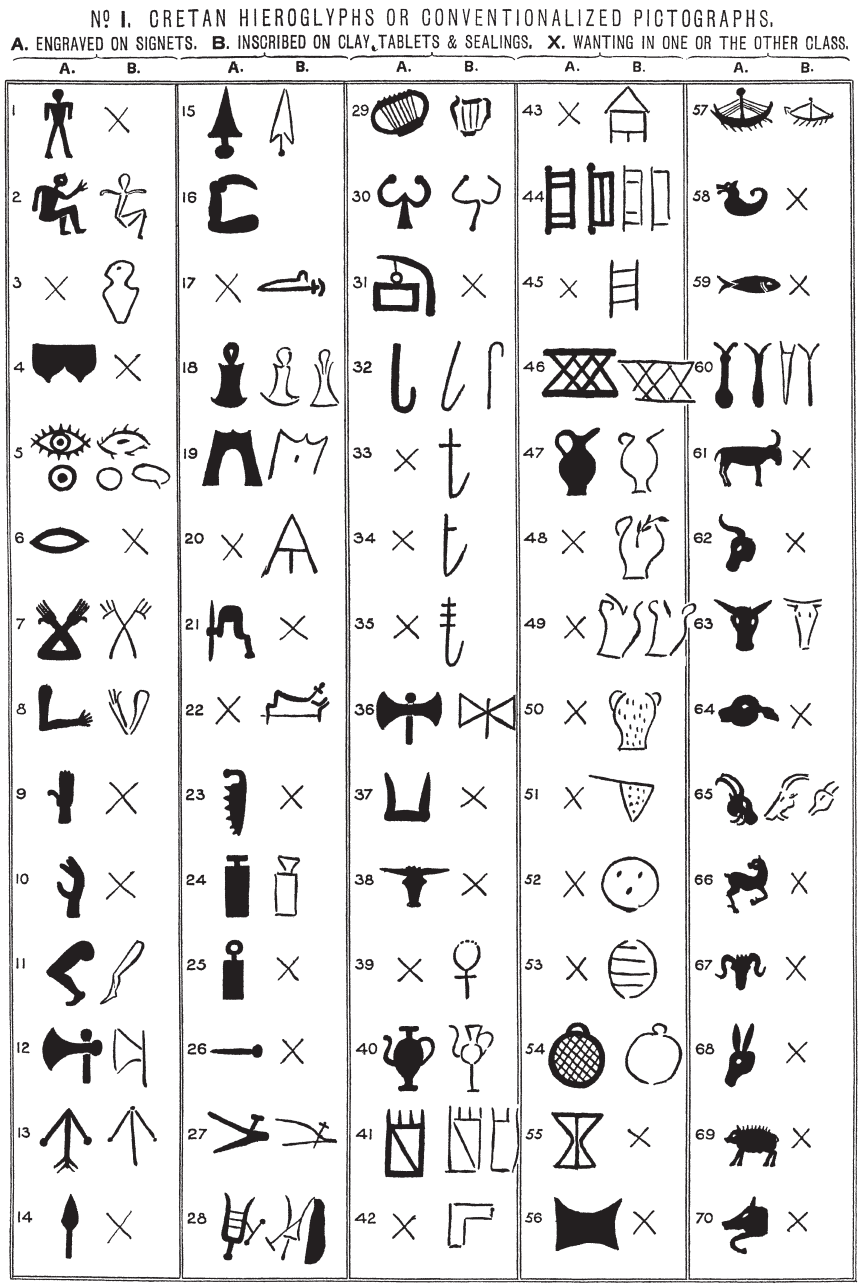

Fig. 12.3. Evans' table of selected Cretan Hieroglyphic signs as executed on different media (after *SM I*, 232, fig. 102)

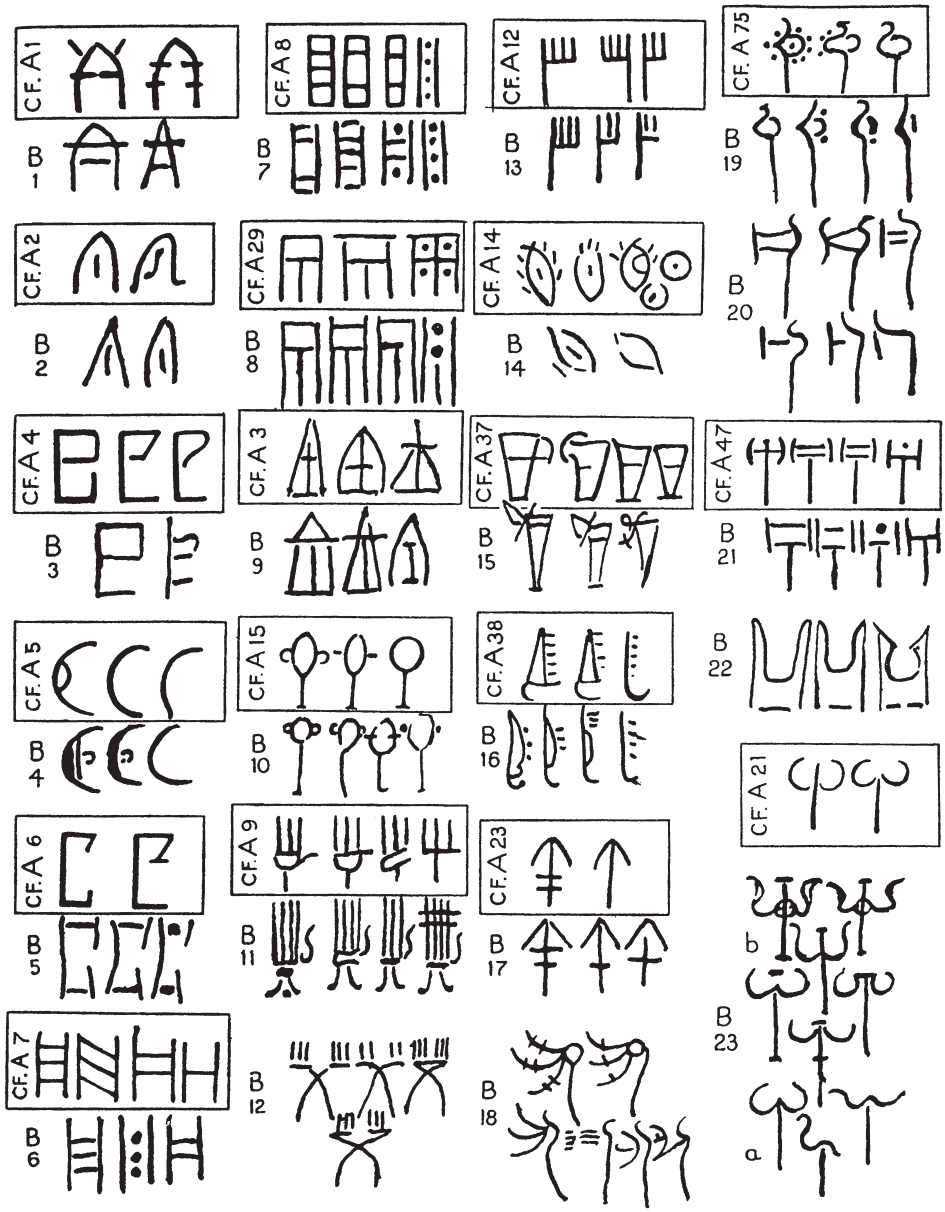

Fig. 12.4. Evans' synopsis of selected signs in Linear A and Linear B script (after *PoM* IV, 684, fig. 666[B])

LA		LB		LA		LB	
01		**56*		*61*		*ne*	
02		*pa*		*62*		*qa*	
06		*tu*		*64*		*pu*	
21		*po*		*69*		**34*	
22		*ro*		*72*		*ri*	
23		*za*		*74*		*ta*	
24		*ke*		*75a*		*wa*	
25		*nu*		*76*		*mi*	
26		*na*		*77*		*se*	
27		*mu*		*78*		*ti*	
28		*wi*		*80*		*o*	
29		*ka*		*81a*		*je*	
30		*da*		*84a*		*me*	
31		*sa*		*84b*		*mu*	
32		*ja*		*85*		**118*	
34		*pu$_2$*		*86*		*ta$_2$*	
35		**86*		*91*		*qe*	
39		*to*		*92*		*te*	
44		*e*		*93*		*du*	
45		*ko*		*95*		*ma*	
48b		*qi*		*96*		**65*	
51		*di*		*97*		*u*	
52		*a*		*98*		*ku*	
53		*ra*		*100a*		*i*	
54		*re*		*101*		**79*	
55		*ru*		*102a*		*de*	
56a		*pi*		*102b*		**47*	
57		*si*		*103*		*ki*	
58		*ra$_2$*		*113*		*au*	
59		*su*		*120*		**49*	
60		*ni*		*208*		**82*	

Fig. 12.5. Formal correspondences between Linear A and Linear B phonograms (after DUHOUX 1989, 123, fig. 7)

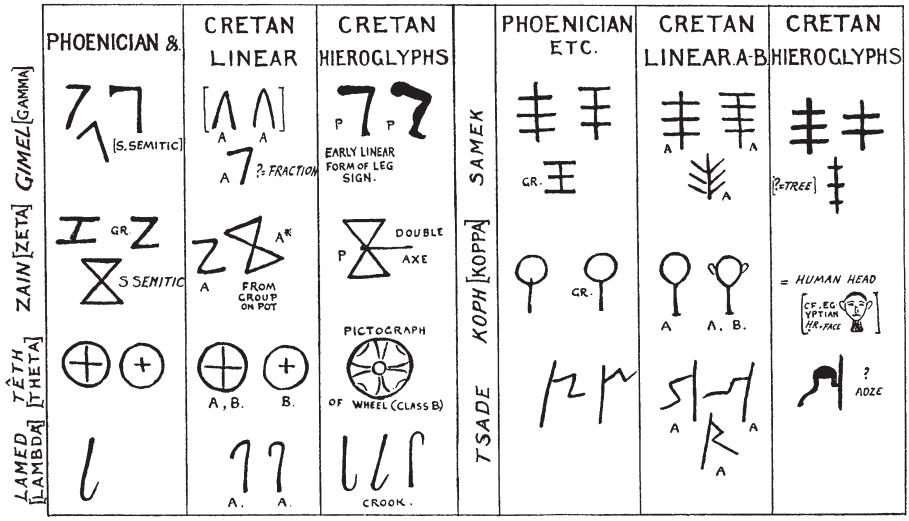

Fig. 12.6. Evans' comparison of signs in Cretan and Phoenician scripts (after *SM I*, 87)

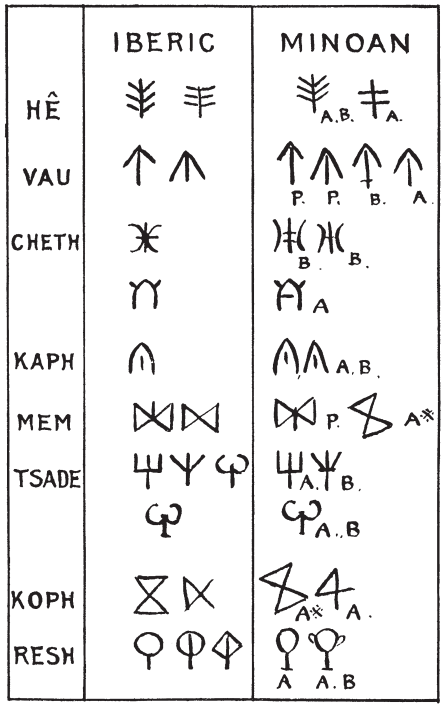

Fig. 12.7. Evans' comparison of Cretan and Iberic signs (after *SM I*, 99)

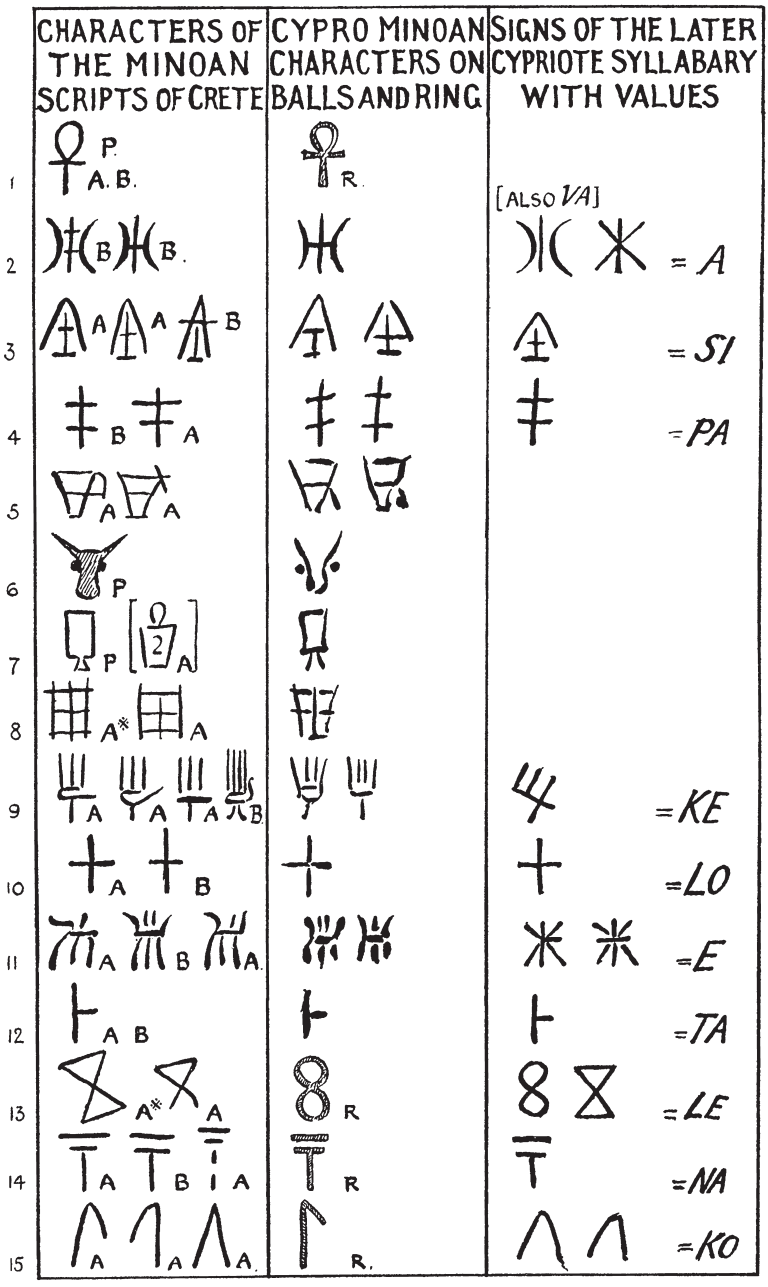

Fig. 12.8. Evans' comparison of signs in Cretan and Cypriote scripts (after *SM I*, 71, fig. 39)

§12.1.1.2. Alice E. Kober and Emmett L. Bennett, Jr.

Some of the results of Evans' unfinished work on Linear B are found in the pages of his monumental *Palace of Minos* and in the manuscript for a separate monograph on the Linear B script, a companion volume to *Scripta Minoa I*, that was edited and published after his death with the title *Scripta Minoa II*. The incomplete manuscript for this masterwork was left at Evans' death in 1941 to the care of his life-long friend Sir John L. Myres. Myres, however, was not a scripts expert. He was then seventy-two years old and suffering from failing eyesight. So he sought the help of an American scholar named Alice E. Kober. In the late 1930's and throughout the 1940's until her premature death on September 16, 1950, Kober was arguably the leading researcher working on what were then called the Minoan writing systems.[16]

By spring 1940, when the eventual decipherer of Linear B, Michael Ventris (born July 12, 1922), not yet 18 years of age, submitted his first precocious article on the language(s) that might be represented in the Minoan scripts,[17] Evans had classified, and even assigned conventional consecutive numbers to, as many of the fundamental signs of the two scripts (Linear A and Linear B) as he could (Fig. 12.4). Ventris in fact used Evans' 'sign list' as a starting point (Fig. 12.9) for his first naïve and undisciplined attack on the Minoan scripts.

Alice E. Kober and Emmett L. Bennett, Jr. did the essential work on the palaeography (and analysis) of the Linear B inscriptions. Bennett was entrusted in 1940 with the publication of the newly discovered Pylos tablets (excavated in 1939),[18] while Kober worked systematically on her own from *ca* 1935 until 1947. Then she joined Sir John Myres in his work on the publication of the Knossos tablets for what would become *Scripta Minoa II* (*SM II*).

It should be noted that Kober did this work selflessly, abandoning, for the most part, her own well-advanced work at analyzing the Minoan and Mycenaean scripts, because she felt, quite justifiably, that poorly published texts had caused, and would continue to cause, many problems for the serious research work that needed to be done. This explains Kober's blunt reply to the questionnaire that Ventris sent out in December 1949 to about twenty-two scholars all of whom were known to Ventris to have strong interest in work on these writing systems.[19] She wrote on February 20, 1950,[20] 'I have no intention of answering the questionnaire. In my opinion it represents a step in the wrong

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16 Palaima 2003a, 50-57; Palaima – Pope – Reilly 2000, 10-14.
17 Palaima 1993; Robinson 2002; Ventris 1940.
18 McDonald – Thomas 1990, 229-243.
19 Ventris 1988, 32-35.
20 Ventris 1988, 67.

Numeration (Evans')	*Linear Script A*	*Linear Script B*	*Phonetic Value*
B 11			ce C
B 7			e
A 67			fu
B 49b			la C ?
B 54			li C
B 25			lo C
B 41			na C
B 40			ne
B 44a			pa C
B 60			pe C
B 47			pu C
B 30			ra C ?
B 46			re
B 13			se C
B 21			še
B 9			ši C
B 58			ta C
B 2			ti C
B 59			to C
B 26			θe
B 36			va C
B 5			ve C
B 1			vi

Fig. 12.9. Ventris' use of Evans' numeration of signs for comparison between Linear A and Linear B and conjectured Etruscan/Pelasgic values (after VENTRIS 1940, 510)

direction and is a complete waste of time.' At this point, nearly a half century of scholarly work aimed at unlocking the secrets of these scripts had been thwarted by lack of the kind of thorough and proper palaeographical analysis that would form the basis for trustworthy editions of the inscriptions. Even though she was then terminally ill, Kober had her priorities straight. She abandoned work on decipherment *per se* in order to set down firm foundations for future palaeographical and related work with Aegean scripts.

From 1945 until 1950, Bennett and Kober were in close contact (meeting often because of geographical proximity — he was at Yale University in New Haven, Connecticut and she was at Brooklyn College — and through correspondence). They both had done their own independent and painstaking analyses of the bodies of Linear B material available to them (Bennett primarily with the Pylos tablets; and Kober with the Knossos tablets). They eventually swapped full information about the Pylos and Knossos Linear B material, after first obtaining the approval of Carl W. Blegen and Sir John L. Myres respectively in late November 1948.

§12.1.1.3. The roots of the Mycenaean palaeography

The Program in Aegean Scripts and Prehistory (PASP) at the University of Texas at Austin has preserved the scholarly papers of Bennett and Kober. Besides work notes, drafts, proofs, notebooks and note cards, grant applications, and photographs and drawings of texts, there are also letters between them and Myres, Ventris, Johannes Sundwall, and other leading figures interested in the Linear scripts before and after the Ventris decipherment in 1952.[21] These help us to see the process of decipherment more clearly. But they also reveal for the first time the very roots of the field of Mycenaean palaeography.

It is almost fashionable now to criticize Evans for all the things that he did not do.[22] It is a good antidote to some of the poison that has been administered to the ghost of Evans to read what Kober writes to Bennett on April 8, 1948: 'Evans' transcriptions are about 99% reliable, which is pretty good, but not perfect.' She also writes on June 3, 1948: 'Evans' drawings are almost always absolutely accurate. He occasionally omits a sign in a word, but the signs he draws are practically always what is visible in an inscription, and reproduce the idiosyncrasies of the 'hands' — at least for those where photographs are available.'

Evans was also sensitive to the details of handwriting that fascinate and inform palaeographers. In discussing the Linear B texts from Knossos, Evans remarks on both general aesthetics and particular, i.e., personal, styles of writing.[23] In his

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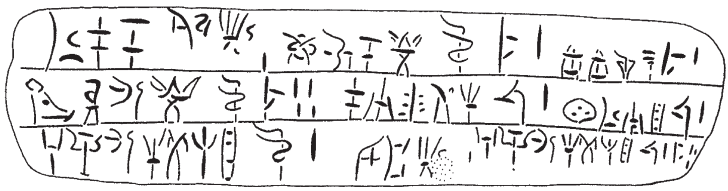
[21] See: http://www.utexas.edu/research/pasp/; and for the archives of early researchers: http://www.utexas.edu/research/pasp/venkoba.html (Ventris and Kober) and http://www.utexas.edu/research/pasp/bennetta.html (Bennett).

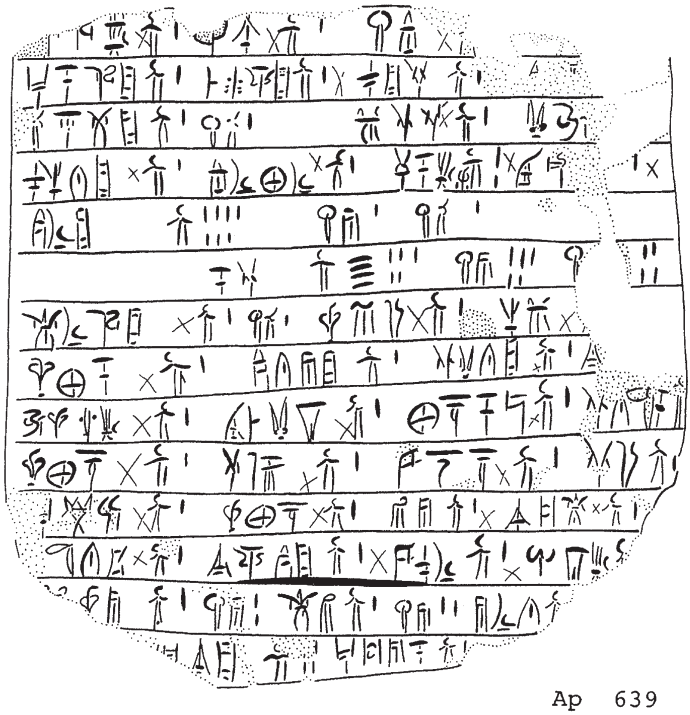
[22] See PALAIMA 2000a.

[23] *SM II*, 2, as noted in *Scribes Cnossos*, 36. Evans also remarks (*SM II*, 3) that '[o]n the moist clay, erasures and corrections were possible, and where the *stylus* was allowed to graze the tablet between strokes, it has left valuable elucidations of ill-written signs or personal variants.'

judgment, the scribes used a 'graceful and convenient script, which admitted considerable variety of personal "handwriting", from the heavy, plunging strokes of [Fp] 13, [Fp] 48, [V] 684 to the needle-pointed "court-hand" of [Ap] 639, [As] 1516. Several such individual scribes can be recognized, and the personal sign-variants due to their ingenuity or carelessness.' See Fig. 12.10. As with so many other topics in Minoan archaeology, Evans here points the way toward the future scientific study of scribal 'hands'.



Fp(1) 13



Ap 639

Fig. 12.10. Knossos tablets Fp 13 and Ap 639
(after *CoMIK* I, 9 and 236)

The word 'hand' here refers to a unique individual identified primarily by his (or, in the Mycenaean period less likely, her) distinctive writing style. This most distinctive aspect of Mycenaean palaeography was defined by Bennett in his 1947 doctoral dissertation.[24]

Bennett explains:[25]

> '[T]he observant reader comes to know not only the many forms of each character [of the Linear B script], but also what forms of one [sign] are to be found with particular forms of other signs. He eventually learns to recognize the intention of the scribe despite careless drawing of the signs, or bad preservation of the tablets, and to identify accurately in context characters which if written separately would be completely illegible. That is to say, he learns to identify the hands of the several scribes, and, in his interpretation of what is written on the tablet, is able to make allowances for their peculiarities….
> It has proved possible to assign a large number of the tablets from Pylos to various hands, and to discover the specific forms and habits by which these hands may be most readily distinguished. The essential criteria for the separation of hands are of course the particular shapes and proportion of the characters, but other factors assist in the identification. Principal among these is the order of making the strokes which compose the sign, for each scribe must have persisted throughout his life in the habits in which he was trained. There is generally no difficulty in discovering the order of strokes since the line first drawn in the clay is broken and distorted by that which crosses it. The methods of ruling, and of spacing, the arrangement of the text on the tablet, and even the size and shape of the tablet chosen or molded by the scribe, may frequently be no less significant.'

Identification of the handwriting styles of the individuals responsible for Linear B inscriptions constitutes an almost unique forensic tool for Mycenologists.[26] It has enabled Mycenaean specialists to extract from their limited number of texts information at a level of sophistication that, as we mentioned at the outset, surpasses the work done on texts from the Near and Middle East. The scholar who saw the need to investigate the texts at this level was in fact the 'father of Mycenaean epigraphy', Emmett L. Bennett, Jr.

As we have also mentioned, in 1940 Bennett (born on July 12, 1918) was entrusted by Carl W. Blegen with publishing the new Linear B inscriptions that had been discovered at Pylos in 1939. Bennett's work on the material and the completion of his Ph.D. degree were delayed by World War II. During the war, Bennett contributed to the American war effort by analyzing Japanese encoded messages with the team of military cryptologists who were the predecessors of

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[24] BENNETT 1947, 19-24.
[25] BENNETT 1947, 22-23.
[26] See PALAIMA 1985a for a comparison with the lesser use of 'hands' in classical Greek epigraphy.

the National Security Agency.[27] He took away from his decoding work a keen appreciation for paying attention carefully to each individual character in a message and to the patterns of their occurrence within running text(s).

After the war, on June 8, 1946, Bennett wrote to 'Mr. Blegen' outlining what he had accomplished so far with the Pylos material and explaining his approach to the problem of working on a decipherment of the Linear B script.[28] Both Bennett and Kober (and, of course, eventually Ventris, who had spent the war as a bomber navigator and the immediate post-war as a German-language interpreter interviewing captured German soldiers) were working on this material with the ultimate aim of being able to decipher the texts and read their contents. Kober and Bennett saw from the start that identifying securely the characters of the Linear B script was a *sine qua non*. They knew that, in order to achieve a decipherment, they had to know what the repertory of phonetic signs — and of other signs that stood for objects (animate and inanimate), numbers, and units of measurement — for the Linear B script was and they had to edit the texts themselves with great care.

§12.1.1.4. The major tasks of Mycenaean palaeography

Of central importance, then, were four tasks:

(1) Identifying and composing a table of 'normal forms', i.e., determining with close to absolute certainty the standard repertory of signs for the Linear B script.

The goal was to establish what Bennett and Kober would come to call, conventionally, the 'alphabetic order' for the Linear B signary.[29]

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[27] See http://www.nsa.gov/about/cryptologic_heritage/index.shtml and CLARK 1977.

[28] Did Bennett at this stage have any hopes of decipherment or any hunches about what languages lay behind the Linear A and Linear B scripts, or whether they were used to write the same language or different languages? In Bennett's 1947 dissertation, he simply cites Evans' opinion (*PoM* IV, 648) that '[i]t seems probable also that the languages of Linear A and B are identical, since word-groups are found common to both, and the methods of accounting, and the principal subjects of the tablets, are much the same.'
In private conversations, Bennett told me that he felt that both Kober and Ventris had an advantage over him in knowing ancient Greek and other languages better than he did — Kober was way ahead of both of them in her mastery of ancient languages, Indo-European and non-Indo-European. Still, much like Ventris, Bennett was always fascinated by the puzzle aspect of decipherment. Reinforced by his wartime work on Japanese encoded methods, this strong interest in puzzle-solving would have always kept active his hopes of achieving a decipherment.

[29] Both Bennett and Kober understood that no real progress could be made in analyzing the inscriptions with the aim of determining the frequency of use of the signs and potential relationships among their phonetic values unless they knew with near certainty the repertory of phonetic signs in Linear B. They spoke in their correspondence about 'sound values' and

Fig. 12.11. Bennett's Linear B signary of phonograms arranged by shape (after BENNETT 1947, 20)

No Linear B text gives us the equivalent of a full *abecedarium* for the Linear B syllabary, i.e., the standard order in which the signs were learned, what we would call, using the parallel of the Roman alphabet as it is learned in English-speaking cultures, the Mycenaean ABC's.[30] Evans had made a list of

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'reading' the signs. It is natural to wonder what Bennett and Kober meant by 'sound values'. How could they hope to 'read' the signs?

Both Kober and Bennett by 1947 knew the approximate number of unique signs, about ninety, that occurred in the sign groups that clearly functioned as words within the sentences and phrases in the Linear B texts. Study of the patterns of use of these signs showed, even without decipherment, that they functioned as phonograms and not, say, as what are called 'categorizing signs' or determinatives.

This number of phonograms (fewer than ninety) meant that Linear B was likely a syllabic script of an 'open-syllabic' kind, e.g., the Classical Cypriote Syllabary and the Japanese *kana* systems (*hiragana* and *katakana*). Consequently Bennett and Kober (and eventually Ventris) knew that most signs represented combinations of consonants (C) and vowels (V); some signs represented pure vowels (V); and some other signs might represent modifications of the basic C+V type of signs. In Linear B, we now know that signs of this third type include signs in which the consonants are palatalized (C*y*+V) and labialized (C*w*+V), signs in which the vowel *a* is aspirated or the first element in a diphthong, and a sign for *l*/*r*+*ai* (*ra*$_3$).

In such a script, the pure vowel signs will show a high frequency of occurrence at the beginning of words. Likewise, if the language represented by the script is 'inflected', i.e., if the forms of words vary in regular ways in order to denote such things as gender, or noun cases, or tenses and moods and voices of verbs, there should be detectable instances of sign variation where signs with the same consonants, but different vowels can be identified in the abstract (see POPE 2008, 4). Thus, over time, with enough texts of the right kind, a grid, of the kind that Kober was first to construct, can be developed. Eventually test values based on assumptions about the 'meaning' of individual words can then be applied.

In the case of Linear B, Ventris 'guessed' in spring 1952 that the word-units at Knossos displaying such alternations in groups of three were place names that had fortunately survived into the historical period in their noun forms and in the masculine and feminine (or neuter plural) forms of their corresponding adjectives. For example: *ko-no-so* = Knos(s)os masculine nominative singular (other cases, singular and plural, are possible); *ko-no-si-jo* = *Knos(s)iyos* or *Knos(s)iyoi* masculine nominative singular or plural (other cases, singular and plural, are possible); *ko-no-si-ja* = *Knos(s)iyā* or *Knos(s)iyai* (other cases, singular and plural, and neuter nominative and accusative plural, are possible).

Already in the mid-1940's, Bennett (BENNETT 1947, 109-143) used the relative frequency of sign occurrence in different word positions and comparisons with consonantal frequencies in modern languages and with syllabic sign frequencies in the Cypriote Syllabic Script to hypothesize that the groups of signs that we now know as (1) *to* and *ti*, (2) *so* and *si*, (3) *yo* and *ya*, and (4) *wo*, *we*, *wi*, and *u* (vocalic *w*) shared within each group a common consonant, which, as we see now, they do. Likewise an undated notebook of Kober's shows that she had over twenty signs already located correctly in her 'grid' of consonantal and vocalic values sometime before her death in September 1950.

[30] On the bottom right of the *recto* or front surface of tablet Tn 316 (see Fig. 12.17) occurs a sequence of signs written large and clearly as a kind of graffiti. These read: *di-we si-pọ-ṛọ ti-ṃị-ṭọ*. On the *verso* or back surface of tablet Aq 218 occurs the sequence, written after the clay had dried: *di-we si-pọ-ṛọ-ti-mi-to-qọ-ṛẹ*. On Xa 412 *verso* occurs *di-we ṣị-po-ro ti-ṃị-to-qo*. On the versos of Aq 218 and Xa 412, these signs are all that is written.

The three tablets seem to have been written by different persons. It is thus possible that these sequences are rather rote phrases written rather automatically when testing clay surfaces. Perhaps

signs and given them a conventional numbering. But the work of Kober and Bennett was undertaken with the knowledge that even small mistakes could be serious impediments to decipherment.

Bennett and Kober proposed to provide a modern conventional equivalent for the 'Minoan' ABC's. Evans' system was arbitrary. Kober and Bennett debated whether the order of standard signs should be based on sign frequency within the corpus of inscriptions (Kober's preference, because it would be helpful in the decipherment process), or on groupings of signs according to their shapes (Bennett's preference because it is likely the way that at least some of the signs were generated in the first place). Eventually, the order based on shapes, simple and straight linear to more complex and curvilinear, was adopted (Fig. 12.11). This order is still used today.

(2) Identifying the handwriting styles of individual tablet-writers as a preliminary (and necessary) step for the identification of the signs.

As a means to this end, Bennett undertook a wholesale study of all available Pylos and Knossos material. All the Linear B tablets are anonymous,[31] thus this kind of work required exacting attention to the way in which the signs of the script were written, both the *ca* 90 signs for phonetic values (phonograms) and the greater number of signs for things or the words that identified things (ideograms or logograms).[32]

Kober and Bennett both understood that it was a *sine qua non* to get this correct. Otherwise 'noise' (i.e., false elements) would be introduced into the fundamental data. Scientific use of these data depended on the correct identification of different scribal versions of the standard signs of the syllabary. The identification of the basic signs of the syllabary was further complicated by the appearance, on transport pottery (called stirrup jars), of painted signs in

(RUIPÉREZ – MELENA 1990, 110, who compare the *iroha* of Japanese *kana* writing) they are a mnemonic for the first signs of the syllabary, memorized by users of the Linear B script in learning how to write. See here DUHOUX 2008.

We may compare the modern acrophonic mnemonics used to represent the standard sequence of letters of the alphabet. For purposes of telephonic communication NATO, the International Civil Aviation Organization and the Federal Aviation Administration use the following: Alfa, Bravo, Charlie, Delta, Echo = a, b, c, d, e. Likewise, see the mnemonic sequence used for the early Cyrillic alphabet: Az, Buki, Vedi, Glagol, Dobro, Est = /a, b, v, g, d, e/.

[31] BENNETT 1960b.

[32] The bookkeeping structure of the Linear B records clearly separates the ideograms/logograms from the syntax of the phonetically represented words (see DUHOUX 1985, 16-17; PALAIMA 2004b). Thus it was not difficult for Evans, Kober and Bennett to identify the chief ideograms (cf. BENNETT 1947, 21).

Fig. 12.12. Bennett's comparisons of phonetic signs from Knossos, Pylos and Mycenae (after *PT II*, 201)

the Linear B script.[33] These signs looked in many cases very different from the forms incised into clay on the tablets.

One stage in attaining a decipherment required that signs be analyzed statistically according to their frequencies and positions within words (initial, final, medial, penultimate, doubled). These statistics would be thrown off if any of the signs within the texts were incorrectly identified.

Letters between Bennett and Kober contain many discussions of frustrating sign variants that are clear now only because of their painstaking work. Signs **43*, **44* and **45* and signs **55*, **56* and **57* (Fig. 12.12) were particularly hard to distinguish from one another, especially before the decipherment of the script.

(3) Comparisons of stylistic classes (see below) of hands and variant forms of individual characters.

These would provide possible clues to understanding the reasons for variations in word spelling.[34] They would also furnish explicit evidence that would enable other scholars to check that Bennett, and eventually Kober, too, had gotten the basic data correct. Following Evans' lead, these signs (both phonograms and ideograms or logograms) were eventually assigned numbers for ease in transcription (Fig. 12.12).

(4) Comparisons of fundamental sign forms (if securely determined) with signs in other related scripts (Linear A and Cypriote Syllabic).

This kind of comparison, if applied to writing systems that have a reasonable chance of being related, provides invaluable information on the sign values and the history and prehistory of the scripts, but it may also lead to important conclusions about the development of the individual scripts.

In looking at Cypriote Syllabic, which was used in Cyprus certainly from about 750 BC to 225 BC, Bennett made stunning observations about the unique manner in which the Cypriote syllabary was designed or evolved:[35] 'A careful consideration of the characters discloses that they are constructed, whether by an original design or by a thorough adaptation, on the principle of making various minor modifications of a few basic forms, somewhat in the manner of an artificial cipher, and quite unlike anything observable in the Minoan scripts.' Bennett continues (Fig. 12.13):

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[33] KERAMOPOULLOS 1922-23, 30-31; WACE 1921, 272-273.

[34] For example, we now see that the spelling of the word for 'seed grain' as *pe-ma, sperma* instead of normal Mycenaean *pe-mo, spermo* is limited at Pylos to a single scribal hand, Hand 24 (see PALAIMA 2002).

[35] BENNETT 1947, 98-99.

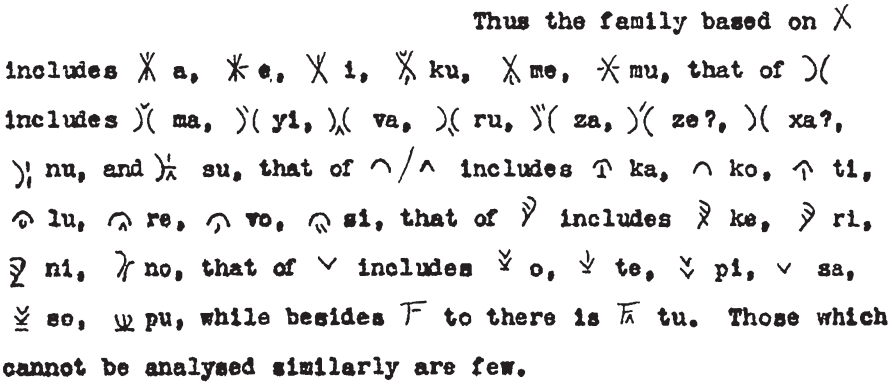

Fig. 12.13. Bennett's discussion of the mechanical generation of Cypriote Syllabic signs according to shape (after BENNETT 1947, 99)

§12.1.1.5. Bennett's results

In his 1947 doctoral dissertation, Bennett was able to analyze the writing of the Pylos texts (the *ca* 636 tablets and fragments discovered in 1939) into three general stylistic classes[36] and fourteen 'hands', i.e., palaeographically distinctive individuals.[37] After more Pylos records were discovered in yearly excavations beginning in 1952, Bennett expanded his analysis in two stages.[38] He eventually identified twenty-six definite 'hands' (or 'scribes', or now 'tablet-writers'[39]).

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[36] BENNETT 1947, 30-46. Scribes are grouped by the similarity of their handwriting styles into what we call 'classes'. The three main classes of writing are defined still at Pylos according to the clearly distinctive handwriting of three major scribes: Hand 1, Hand 21, and Hand 41. These are thought to represent three general stylistic traditions. Class i includes Hands 1-6 and 11-15. The styles of the writers of all the tablets ascribed to these Hands resemble the style of Hand 1. The closer the number of a scribe is to '1', the more the style of that particular hand resembles the style of Hand 1. Likewise hands in Class i will have more elements of resemblance with Hand 21 as their numbers approach 21. Likewise Class ii includes Hands 21-26 and Hands 31-34. These Hands resemble Hand 21 and the higher numbers have some elements resembling the style of Hand 41. Hands 41-45 resemble Hand 41. Finally there is a palaeographically and archaeologically special class, Class iv, and a chief hand, Hand 91, within it. See *Scribes Pylos*, 33, 35-134; and for Bennett's early discussion BENNETT 1947, 24-47.

[37] For more on identifying hands, see DRIESSEN 2000, 31-69.

[38] BENNETT 1958 and *PTT II*.

[39] PALAIMA 2003b. The neutral term tablet-writers, derived from Near Eastern scribal nomenclature (see below), helps us to avoid importing notions about the roles of 'scribes' and 'officials' from other cultures into our interpretation of Linear B record-keeping. But the word 'scribe' is so widely used that I continue to use it interchangeably with 'tablet-writer' for reasons of convenience.

Bennett also developed categories for distinguishing coherent 'sets' of tablets. These sets (he called them 'stylus groups') are generally tablets of the same shape and format and contain information on the same subject(s). They also often share the same fixed categories of formulaic information and have a coherent overall style of handwriting and textual presentation.[40] With his characteristically 'Koberian' rigor and his appreciation for differentiating degrees of probability, Bennett also set up principles for attaching these 'stylus groups' to individual hands with greater or lesser certainty.[41] Thus, if we assign a particular 'stylus group' of tablets to a particular hand, and it is later proved that it does *not* belong to that hand, we can reassign that particular stylus group without having to redo all the other assignments of tablets we have made to that particular hand.

Bennett also took the lead in demonstrating what could be gained by using the identifications of scribal hands to study further how and why the Linear B documents were written as they were and how tablets, or various groups of tablets, related to one another. The Pylos series Aa, Ab and Ad written by the Hands 1, 4, 21 and 23 were used by Bennett as his first major illustration of this point. After Bennett, the evidence derived from palaeographical analyses has been used widely within Mycenaean studies to help us understand the meaning of the texts that have survived.

§12.1.2. *Palaeographical studies after the decipherment: Emmett L. Bennett, Jr. and others*

§12.1.2.1. Emmett L. Bennett, Jr. and the scribes of Pylos and other sites

Here are some examples of the results reached by the work of Emmett L. Bennett, Jr. on the tablets of Pylos and other Mycenaean sites.

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[40] This definition of set differs from that of John Chadwick: 'a group of several tablets intended to be read as a single document." It emphasizes that tablets belong together as the work of a single scribe and within a single record-keeping task. It is used as a safeguard and tool, enabling tablets that clearly belong together to be separated out from other tablets by a single scribe, if future palaeographical study so warrants. In many cases sets as defined by Bennett will satisfy the definition of Chadwick and *vice versa*. So the difference between the two definitions is mainly one of perspective. Bennett's is palaeographical and epigraphical, focused on the physical records and their handwriting. Chadwick's is focused on the messages of the texts and their purpose as documents, or, as he conceives of it, several texts taken together as a unified document.

[41] *PTT II*, 7-9; *Scribes Pylos*, 30-31 and n. 37; and most recently DRIESSEN 2000, 31-32.

§12.1.2.1.1. *The problem of the series PY Aa, Ab and Ad*

Let us put ourselves back in the time when the Linear B tablets were first being read and interpreted. Imagine trying to make sense of texts like the following.

Aa 792 ki-ni-di-ja MUL 21 ko-ṿạ 12 ko-wo 10 *DA* 1 *TA* 1
'Women of Knidos WOMEN 21 girls 12 boys 10 supervisor^{m} 1 supervisor^{f} 1'

GRA 6 T 7 *TA DA*
Ab 189 pu-ro , ki-ni-di-ja MUL 20 ko-wa 10 ko-wo 10
NI 6 T 7
BARLEY 643.2 liters supervisor^{f} supervisor^{m}
'At Pylos women of Knidos WOMEN 20 girls 10 boys 10
FIGS 643.2 liters'

Ad 683 pu-ro ki-ni-di-ja-o ko-wo VIR 5 ko-wo 4
'At Pylos of the women of Knidos older boys 5 boys 4'

Wa 114 me-ni-jo MUL
pe-ra$_3$-ko-ra-i-ja , ḳọ[
'Monthly ration WOMEN
Further Province, *ḳọ*['

Wa 1008 MUL [
o-si-to-ẹ[-ko-si
'WOMEN [
Thus (?) food ṭḥ[ey have'

Although we can translate these texts, as shown, it is clear that their full meaning might well be inscrutable without an understanding of their separate archival and administrative purposes.

In his paper at the first Mycenological Colloquium, held at Gif-sur-Yvette near Paris in 1956,[42] Bennett was able to show that these tablets belong to sets written by four different scribes (now known as Pylos Hands 1, 4, 21 and 23) dealing with work groups of women and children.[43] These four sets are classified into three series (Aa, Ab and Ad) based on their contents.

Some tablets (series Aa) give first and foremost numbers of women and their 'places of origin', their particular work specialisation, and their assigned locations in the Mycenaean kingdom of Pylos. They also list any girls and boys that

[42] BENNETT 1956.

[43] Linguists at Gif-sur-Yvette were also amazed to learn from Bennett that the different 'dialect' treatments (spellings) of the word for 'seed grain' (*pe-ma*, *sperma* vs. *pe-mo*, *spermo*) were written by different scribes.

are associated with these women[44] and what look like phonetically abbreviated entries (*TA* and *DA*). Here Bennett had identified tablets like Aa 792 as the work of Hand 1.

Other tablets (series Ab) list the location of the women, their place of origin and/or work specialisation, numbers of boys and girls, and then quantities of grain and figs, and the abbreviations *TA* and *DA*. Ab 189 and all other Ab tablets are the work of Hand 21.

Still other tablets (series Ad) differentiate between older and younger pre-adult males among the children associated with the different women work groups. They specify that these pre-adult males are 'of' the women designated on the tablets. Ad 683 and all other Ad tablets are the work of Hand 23.

Finally two clay labels by Hand 1 (Wa 114 and Wa 1008) refer explicitly to one of the two major provinces of the territory of which the Palace of Nestor at Pylos is the principal palatial centre. The labels also specify that the food-stuffs allotted in the Ab texts are 'monthly rations' (*me-ni-jo, mēnion*) and that the women somehow here are receiving, or have received, *si-to, sitos*, i.e., 'food' or 'grain'.

In Figure 12.14, we may observe drawings of these tablets[45] of series Aa (Aa 792 Hand 1), Ad (Ad 683 Hand 23), and Ab (Ab 189 Hand 21) and the two transport or filing labels associated with this series (Wa 1008 and Wa 114 Hand 1). Tablet Aa 792 serves as a kind of census. It does not designate the location of the women and children being counted and recorded. The scribe here (Hand 1) assumes and knows that these women are 'at Pylos' (as they are designated here on the texts of Hands 23 and 21).

On all three tablets the women are identified by what we might call 'place-name adjectives'. These adjectives are tricky to work with because we do not know for this period whether in fact the women themselves would claim that they were *ki-ni-di-ja* 'women of Knidos' in ethnicity, or whether the word *ki-ni-di-ja* simply identifies for the palatial administrators at Pylos the area (in Anatolia) from which the women came to Pylos. This would not imply that they were residents or inhabitants of Knidos and the territory of Knidos. They could, for example, have been gathered, forcibly or willingly, from elsewhere in Anatolia, near to or far from Knidos.

Tablet Ad 683 differentiates between male children of two different age groups, one called *ko-wo, korwoi* 'boys' and the other, older group, called

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[44] We do *not* know that all or any of these non-adult males and females are the biological *children* of these women.

[45] CHADWICK 1988, 50, Group 9.

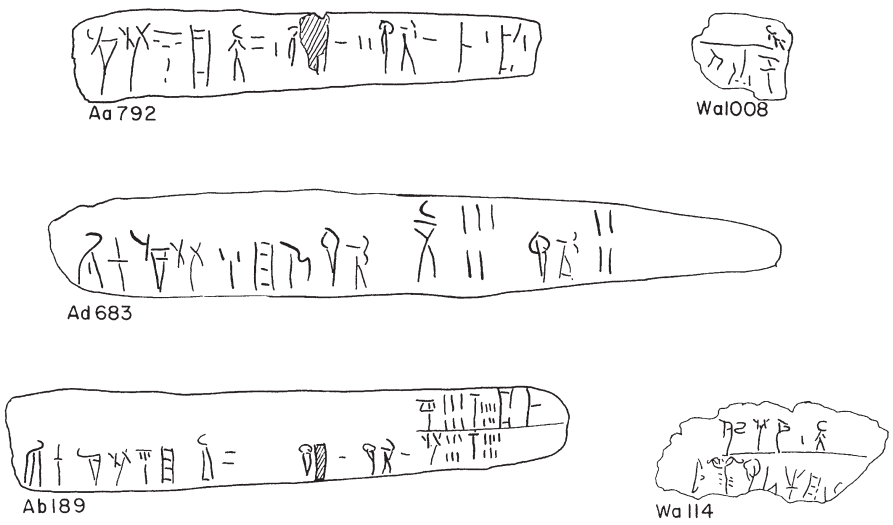

Fig. 12.14. Pylos tablets Aa 792, Ad 683, Ab 189 and labels Wa 114, Wa 1008 (after *PT II*, 15, 20, 76, 93, 109)

ko-wo VIR 'boys MAN'. Tablet Ab 189 records the allotments of monthly rations of GRA[46] and *NI* (the phonetic ideogram for 'figs') given to this group.

The abbreviations *TA* and *DA* here have been shown to be references to a female supervisor (*TA*, perhaps *tamiā*, a woman who is already counted within the group) and a separate male supervisor (*DA*, perhaps **da-ma, *damar* a variant spelling of *du-ma*).[47]

What is gained here by our understanding which scribes wrote which tablets? If we did not know this, we could classify the tablets according to contents, but the two 'hands' and 'sets' of the Aa series (by Hand 4 and Hand 1) would not be distinguished from each other and we would not see that Hand 1 is responsible for writing the label that identifies the tablets of Hand 4 (texts dealing with localities in the so-called Further Province, whereas Hand 1's own texts of the Aa class deal with toponyms in the Hither Province, e.g., *ro-u-so* and *me-ta-pa*).

We might well have assigned a significance to the absence of the toponym *pu-ro* in Aa 792 (by Hand 1) that it really does not have, except as a scribal

[46] It is now debated whether this is 'barley' or 'wheat': KILLEN 2004; PALMER 1992 and 2008a.
[47] CHADWICK 1988, 71-73.

idiosyncrasy (namely that no designation of a location in a text by Hand 1 indicates that the women involved are 'at Pylos' by default). Also here we see just a few indications of the supervisory 'status' of Hand 1. We shall see below that Hand 1 elsewhere, too, interacts with tablets of Hand 21 (who here writes the Ab series), even directly modifying a tablet of this other scribe.

Scholars have continued studying the historical, social and economic implications of these 'women worker' tablets from Pylos.[48] All their interpretations of the texts begin with their classification according to scribal hands and sets.

§12.1.2.1.2. *The language situation in Mycenaean Pylos*

The identification of scribal hands, i.e., of the individual tablet-writers, is also crucial in understanding the language situation in the Mycenaean period. It is sometimes possible to link specific spellings to certain hands. This may point to tablet writers who spoke different language varieties and perhaps themselves had different origins or circulated in different environments. The matter is still controversial since the evidence is limited. Particularly surprising is how uniform the language in the texts is, relatively speaking, at all sites and time periods that have so far yielded Linear B evidence.

But on the basis of analyzing language differences according to scribal attributions, it was *suggested* by Ernst Risch (1966) that in the Pylos tablets we may identify two different dialects (the so called 'normal' and 'special' Mycenaean[49]). Because of the startling overall uniformity of language that we have just mentioned, Risch was able to isolate only three features where scribes seem to vary in their treatment of the sounds in words (although other scholars have tried to expand this list slightly). These differences have been pursued and debated at the level of individual scribes by several scholars.[50] If some form of agreement is reached, this can have consequences that are not purely linguistic, but would affect our understanding of the ethnic and social diversity of the Mycenaean scribes and of the population groups with whom they interact.

§12.1.2.1.3. *The link between hands and find-spots*

Another major principle was worked out by Bennett. In addition to studying the texts according to their classes, series, sets and hands, he pointed out that

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[48] CHADWICK 1988; NOSCH 2001 and 2003; RUTTER 2003.
[49] RISCH 1966.
[50] DUHOUX 1986 and 1987, PALAIMA 2002, RISCH 1966 and 1979, THOMPSON 1997 and 2002-2003, and WOODARD 1986, among others.

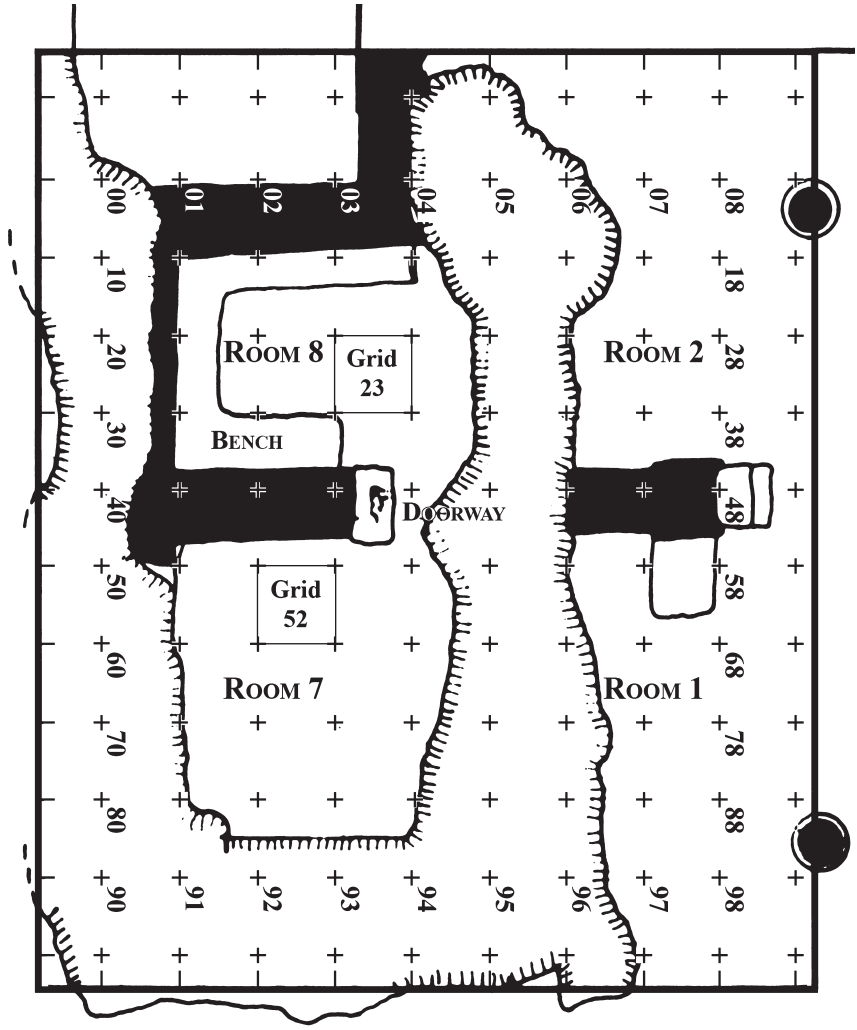

Fig. 12.15. Grid of Pylos Archives Complex (after PLUTA 1997, 238, fig. 6)

it was also necessary to study them according to their original spatial groupings within workrooms, storerooms and archives. The 'hands' of the Linear B tablets, beginning with those from Pylos, were interpreted with serious attention paid to their 'find-spots'.[51]

[51] BENNETT 1964.

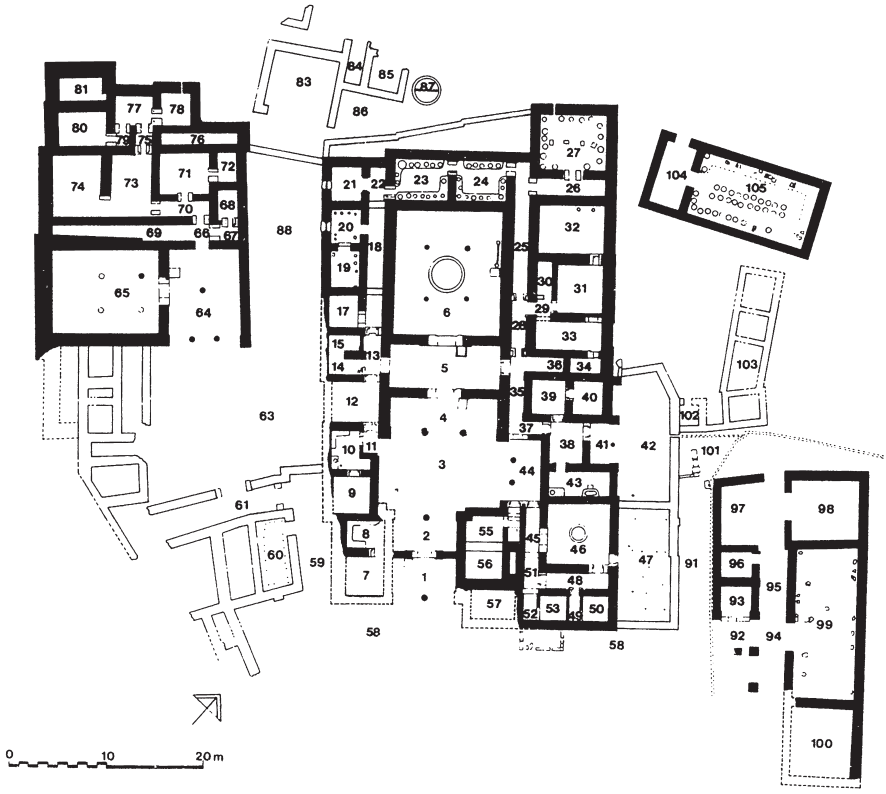

Fig. 12.16. Unrestored master plan (by J.C. Wright) of the Palace of Nestor (after PALAIMA 1988, 136 fig. 12)

This principle of research has been key in figuring out how the texts are related to one another. By knowing find-spots, we can see whether tablets written by the same hand, or palaeographically related hands, were stored together. It also helps us to see how typologically different tablets (leaf-shaped, page-shaped, labels, inscribed sealings) by the same or related hands were processed and archived. It has helped us in some cases figure out the probable order in which texts were written.

Bennett's work with the two-room Archives Complex at Pylos was fundamental. He superimposed on the Archives Complex (Rooms 7 and 8 in Fig. 12.16) a grid system of 1-meter-by-1-meter squares within each of which a like grid system in centimetres can be imagined. The black areas in Fig. 12.15 are surviving walls. There is a horseshoe-shaped bench in grid squares 11, 12,

13, 21, 31, 32. Bennett's plan has now been improved and corrected by Kevin Pluta[52] (Figs. 12.15 and 16). Attention has been paid to find-spots, where possible, at every site.[53] We shall discuss below some examples of the importance of knowing the locations where tablets were found, but interested readers can still profit by reading Palaima and Wright (1985), *Scribes Pylos*, 171-189, and Pluta (1997).

§12.1.2.1.4. *The way in which the scribes monitored the Pylian economy*

In conjunction with the study of 'hands', the find-spots of the Pylos tablets have enabled us to see how the tablet records were used within the operation of the palatial centre at Pylos.[54] We have developed a sense of how the tablet-writers used written records in monitoring what were fundamentally economic activities. The tablets track the who, what, when, where and how of many different items: raw materials, manufactured products, and objects — animate (including livestock and human beings) and inanimate — of many kinds that were of concern to the palatial centres and the regions over which they exerted different levels of administrative, political, social, religious and even military control.

We now find it possible to theorize with some fair degree of probability that particular sets of tablets were written elsewhere and then delivered to the central archives (Rooms 7 and 8).[55] In some instances we know where the delivery baskets in which tablets were transported were placed when they arrived in the central archives. This was grid 52 (Fig. 12.15), where were found a surprising number of clay transport-basket labels. One of these, Wa 1271, was directly related to tablets of the Sh series that were the one set of tablets also found in this location. It seems that, when the Palace of Nestor and the archives complex was destroyed by fire, the Sh tablets were still in their basket to which Wa 1271 had been affixed. The appearance of the Sh tablets indicates that they were very moist, to the point of drooping from the force of gravity when handled during writing and placement in their basket. Like other arriving sets of tablets, they had been temporarily set in grid 52, an ideal location to allow the scribes who worked in grids 51, 61 and 62 to access them conveniently.[56] Other tablet sets

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[52] PLUTA 1997.

[53] The Knossos tablets present many challenges precisely because clear and accurate records of find spots and strata for our different groups of tablets are not available to us (DRIESSEN 2000; FIRTH 1997 and 2000-2001; LANDENIUS-ENEGREN 2008; *Scribes Cnossos*; SKELTON 2008).

[54] *Scribes Pylos*, 171-189.

[55] Rooms 7 and 8 in Fig. 12.16. See PALAIMA – WRIGHT 1985; *Scribes Pylos*, 182-187.

[56] PALAIMA 1996a.

had already been dealt with by the scribal workers in Room 7 and had either been taken and filed in Room 8 or had been discarded.

It seems likely that the Pylos Sh tablets were written in the Northeast Workshop (Rooms 92-100). The Northeast Workshop and Wine Magazine both contain records and physical remains that have helped us to identify what kinds of work and storage facilities these architectural units were.[57]

We are also able to link texts which would otherwise be viewed as entirely unrelated in subject matter. A good case in point is tablet PY Un 718. It records foodstuffs for a feasting ceremony in honor of Poseidon. It seems to be related to an inventory of banqueting equipment, including tables, thrones, stools, ceremonial vessels (including heirloom bronze tripods), cooking equipment and sacrificial implements (a special 'stunning axe' and a cultic knife for slitting the throats of animals being sacrificed) (Ta series).[58] All this would have been impossible to deduce without our knowledge of Mycenaean palaeography and find-spots.

§12.1.2.1.5. *The internal chronology of the tablets: the example of the tablet PY Tn 316 and the PY Ta tablets*

We can establish, again with a fair degree of certainty, the internal chronology of some tablets and groups of tablets, i.e. the order in which they were written and filed,[59] based on our knowledge of 'hands', 'sets', 'stylus groups' and find-spots. This gives us important information about the circumstances in which the texts were composed. In some instances, with this palaeographical knowledge, we may be able to weigh the probability as to whether a tablet or set of tablets recorded normal activities or responded to exceptional events.

A good example is Pylos tablet Tn 316 which has been frequently interpreted as the record of special and desperate measures, including human sacrifices, taken in the very last moments preceding the destruction of the palace at Pylos.[60] This interpretation was based partly on the nature of the offerings (far more valuable or important than in the texts on other tablets), partly on modern presuppositions about the appearance of 'important' texts (i.e., that they should look like modern 'fair copy' texts), and partly on deductions derived from what

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[57] For an understanding of the archaeological remains and the Linear B inscriptions from the Northeast Workshop and Wine Magazine, see BENDALL 2003 and PALMER 1994; and generally SHELMERDINE 1984 and 1987.

[58] PALAIMA 2000c, 2002 and 2004a.

[59] PALAIMA 1995a.

[60] See a full discussion of the history of interpretation of this tablet, beginning with Michael Ventris before the decipherment of Linear B, in PALAIMA 1999. Text and comments of PY Tn 316 in *Companion* 1, 321-335.

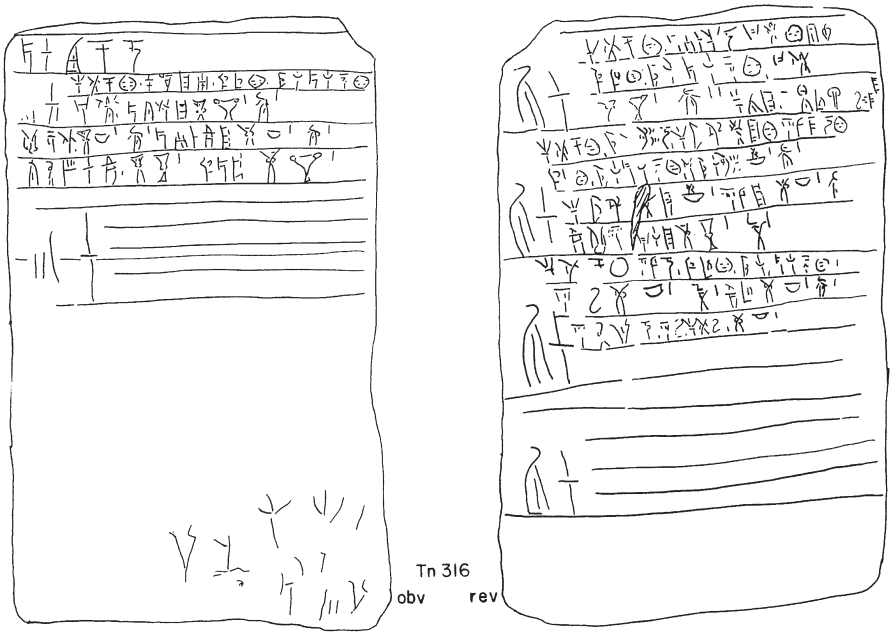

Fig. 12.17. PY tablet Tn 316 drawing of recto and verso (after *PT II*, 36)

was thought to be a correct interpretation of the internal textual history of the tablet (Fig. 12.17).[61]

It is clear why scholars were led to think this way. The tablet on its front side (the tablet face on the left, marked obv, in Fig. 12.17) breaks off and leaves a large section of ruled lines un-inscribed, *after* the scribe wrote the name of the site where the Palace of Nestor is located, Pylos = *PU-RO*, in very large signs at the left side of the section as a header or rubric. On the back side of the tablet, too, a last section is left without any further text entered after the *PU-RO* rubric was written. Moreover, the front side of the tablet at the lower right has abrasions. These abrasions were caused by the blunt end of a stylus being drawn slantwise across the tablet's surface, as we nowadays use the eraser end of our simple wooden pencils on sheets of paper. And in the very lower right corner there is clear graffiti, written after the text had dried. All in all then, this kind of text, viewed with modern sensibilities, looks like a preliminary rough draft.

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[61] CHADWICK 1976, 89-92.

Besides listing three different shape of golden vessels (a bowl, a Mycenaean-style stemmed cup or 'kylix', and a Minoan-formed stemmed cup or 'chalice') the tablet also clearly records human beings. The phonetic texts make clear that the vases are conceived of as *do-ra*, unambiguously interpreted as *dōra*, 'gifts'. These vases are being 'brought' (*pe-re* = *pherei*) to various sanctuaries in which specific deities, major and minor, are targeted as recipients. The human beings are listed in each case after the entries for the golden vases. They are listed by the ideograms for 'man' and 'woman' and also by the lexeme *po-re-na*. Some scholars[62] have interpreted these men and women as human sacrificial victims. This was further thought to be the kind of extreme ritual measure that only a state of emergency within early Greek culture could have produced. Likewise, then, the state of writing itself on Tn 316 was viewed as caused by the haste and panic with which this tablet was written in a time of crisis.

It has, however, now been shown that tablet Tn 316 could not have been written as the palatial centre at Pylos was about to be destroyed. It was filed in quadrant 23 of the tablet-filing room in the archives complex, Room 8 (Fig. 12.15), well before other tablets were brought to the central archives.[63] Strangest of all, no one proposing this type of hasty state-of-emergency hypothesis asked a key follow-up question. If tablet Tn 316 was written in extreme haste as the Palace of Nestor was burning down, how could it, under such dire circumstances, be left to dry to a degree where the tablet-writer would come back later and test its surface by making abrasions and writing graffiti to see whether it could still be written on?!!!

Furthermore we know that after Tn 316 was filed away in Room 8, tablets of the Ta series, dealing with ritual vessels, furniture and sacrificial implements, and tablet Un 718, dealing with food provisions for a feast in honor of Poseidon, were among the last tablets brought to the archives. They were found in a unique location, to the left of the entrance door in Archives Room 7.

The fact that tablet Tn 316 was placed in systematic storage by whatever tablet-writer took care of filing completed records also implies that the scribal administrators who were responsible for 'data and record storage' in the central archives accepted the document as suitable and usable, i.e., as containing information in a legible and accurately retrievable form. This fact *de ipso* calls into question opinions that the text of Tn 316 was written hastily and carelessly and that, in its current state, the information it contained would have been problematical for a Mycenaean scribal administrator to use.

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[62] BAUMBACH 1983, 33-34 *et passim*, for Pylos Tn 316, human sacrifice and the 'state of emergency' hypothesis. SACCONI 1987 is one of the few relatively early scholars to argue against this view.

[63] PALAIMA 1995a, 628-632.

Why would Linear B scribes, especially their 'archivists' and chief record-keeping administrators, tolerate the state of writing on Tn 316 when it appears bad or 'sloppy' according to modern tastes and standards? There are two reasons.

Reason number one is that the Mycenaeans who wrote records within the orbit of the palaces had the freedom to improvise in search of a suitable format that they could use efficiently to register the often nearly intractable information contained in their texts. In longer series, and sometimes, as here, within individual texts, they used a process of trial and error until they got things right. This aspect of the Linear B documents is known among Mycenologists as 'tentativeness of formulae or formatting'.[64] Tn 316 deals with very complicated information. In some ways it is, syntactically and as a complete record, among the most complicated writing assignments to come down to us from the Mycenaean palatial period, or, for that matter, in all surviving forms of Aegean writing. The scribe was hunting for the best way to put information down on this tablet clearly and precisely and using as little tablet space as possible. Also, once he had started, he understandably did not want to waste the work he had already done, if he did not have to.

We see in Fig. 12.18 his experimentation with ruling and layout, as analyzed by Bennett. In administrative record-keeping from clay tokens of the 4th millennium BC[65] to modern computers, economical and efficient storage of data is one high priority. The other is not to waste time spent working.

To some scholars, this tablet may appear 'rougher' and 'less finished' than other documents. Here we have a case where 'beauty is in the eye of the beholder'. Others, attuned to scribal practices, see it as a fine example of an ingenious and effective solution to a difficult record-keeping challenge. Our interpretation should be guided by palaeographical studies and those who have studied the work of the tablet-writers and know their working conditions.

Palaeographers are thoroughly familiar with the tablets of the Mycenaean scribes. They understand that even very accomplished scribes are uncertain at times about how to enter information, and that they make corrections or *ad hoc* responses to the challenge of recording information. Simply put, the Linear B clay tablet records, no matter how important or how elegantly written, are not fair copies for public viewing nor do they seem to have been permanent archival

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[64] For example (HILLER – PANAGL 2001-2002), in the heading on Pylos tablet Jn 829, the scribe erases his first attempt at listing the officials involved in the future recycling of bronze. He does this so that he can pair them up on the tablet at their appropriate levels of power and responsibility: the *ko-re-te-re* with the *du-ma-te*, and the *po-ro-ko-re-te-re* with the *ka-ra-wi-po-ro* and the *o-pi-su-ko* and *o-pi-ka-pe-e-we*. He also later adds, as an emendation, the fact that the recycled 'temple bronze' will be used 'for spear points'.

[65] SCHMANDT-BESSERAT 1992.

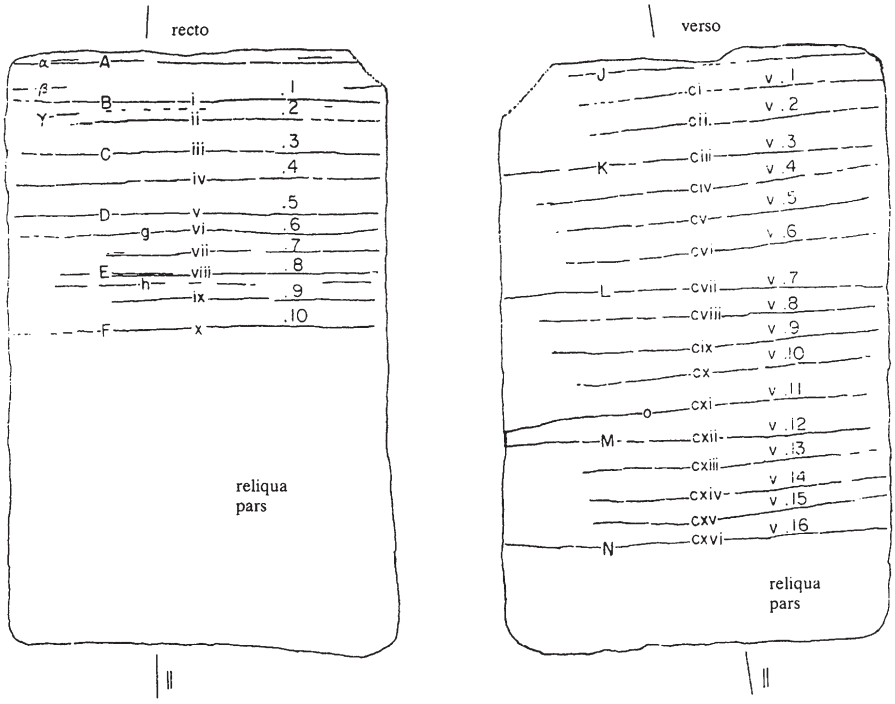

Fig. 12.18. Pylos Tn 316 analysis drawing of sectioning and ruling by Emmett L. Bennett, Jr. (after PALAIMA 1999, 459)

records that had to meet certain standards that we associate nowadays with official records.

Even so, the interpretation of PY Tn 316 advanced here may seem like 'special pleading', a case of a palaeographical specialist saying, 'Just trust the palaeographers.'

Examples that support what we have just said about the process of writing Tn 316 are found in the work of Hand 2 at Pylos.[66] This scribe wrote, among other important records, the tablets of the Ta series. These tablets record information from an eyewitness inventory.[67] They have many erasures, corrections, textual changes, changes of formatting, and even 'mistakes', because the scribe had to figure out, just as on Tn 316, how best to lay out in written form the

[66] The same scribe who wrote Jn 829 — see note 64 — and many other important tablets and series: *Scribes Pylos*, 59-68.

[67] PALAIMA 2000c.

information required of this particular assignment. In the Ta tablets, the administrators involved had to identify and describe unequivocally individual items among the precious and exquisite implements, furniture and vessels that were to be used in a ceremonial and ritually important banqueting ceremony.

Quite literally throughout these tablets, words and ideograms are omitted, or erased and replaced or otherwise modified. In some cases, information is squeezed in on the upper part of a line or on the upper edge of a tablet. On tablet Ta 707.1a, (Fig. 12.19) the word *ku-te-ta-jo* is written above the rest of the first entry in line .1 and even continues onto the *latus superius*. The first two lines of Ta 707 contain five instances of erasure and rewriting. Tablet Ta 708 (Fig. 12.20) was originally intended as a two-line tablet for two entries. But Hand 2 irregularly divided line .2 after entering two words of the second entry. Likewise he erased a five-word entry in line .1; and in line .2B, he erased the word *a-di-ri-ja-pi* (*andriamphi*, 'with male figures') and rewrote it after writing the word he had forgotten (*e-re-pa-te-jo elephanteiois*, 'of ivory') over the erasure. There are two erasures on the three lines of Ta 709, an erasure on each of the three lines of Ta 711, two probable erasures on Ta 713, three probable erasures (one sizable, of three words) on the three lines of Ta 714, and the ideogram for *qe-ra-na* may well be omitted from line Ta 711.3. There are three significant erasures in the first two lines of Ta 641. And Ta 642 line .3 contains three erasures in a single line.

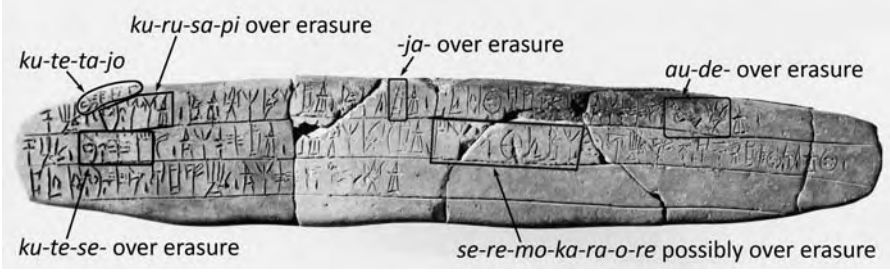

Fig. 12.19. Pylos tablet Ta 707 (photo from PASP archives, annotation by K. Pluta)

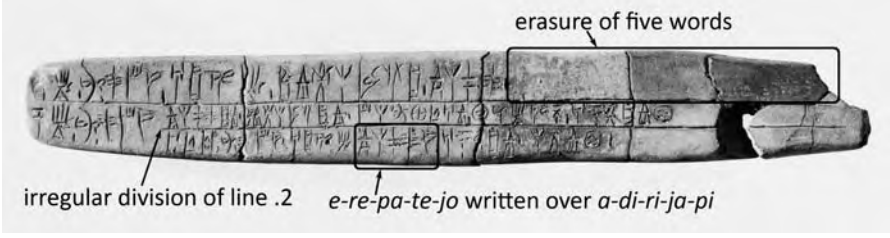

Fig. 12.20. Pylos tablet Ta 708 (photo from PASP archives, annotation by K. Pluta)

These hesitations, corrections and *ad hoc* ways of presenting information (amply paralleled at Knossos[68]) are not as 'famous' as those on Tn 316. They are spread out over a set of thirteen different tablets, and the items being recorded are varying. The Ta set constitutes a full record of an inventory of sacrificial and ceremonial paraphernalia, including ritual knives, stunning axes and exquisitely inlaid furniture, taken at the time of an important public occasion involving the *wa-na-ka*, *wanaks* or king of Pylos. But the contents of the records are not sensational.

Consequently the changes and mistakes on the Ta tablets have almost never been noted (except by the editors of the texts); and, of course, their implications have never been magnified, as on Tn 316, by dramatic scenarios about crisis situations, 'human sacrifice' and the like. But these features on the Ta tablets by an important tablet-writer (Hand 2, who is arguably the close associate of the 'master scribe' at the site, Hand 1) certainly are more extreme in their cumulative total than the reformatting and the few omissions of signs in Tn 316. Hand 2 writes some of the most important texts from Pylos.[69] His work in the Ta series thus demonstrates that even skilled scribes hesitate, experiment and make mistakes, but that it did not matter, so long as the end result was useful to the scribes and administrators of the Mycenaean centres.

The most important lesson is this. Mycenaean scribes not only make mistakes, but they also often leave them. Why? Because they can. What they are concerned with is getting the information clear, accurate and retrievable. No mistakes of consequence would be let stand, except by oversight.

The tablet-writer of Tn 316,[70] Hand 44, writes his signs (phonograms and ideograms) very carefully and elegantly. At the beginning, he does experiment with how to format the complicated information he has to record. Eventually he devises a way to write down the information about offerings of golden vessels to deities at different sanctuaries in the district near Pylos known as *Sphagiānes*.

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[68] DRIESSEN 2000, 59, provides statistics for Knossos. In the Room of the Chariot Tablets, out of 608 tablets, 30 are palimpsests (4.93%), i.e., their original texts were completely erased and written over, and 95 show traces of erasure (15.6%). These statistics for scribal hesitation and confusion may seem even more remarkable when we consider that 417 of these tablets (64%) contain fewer than 3.67 signs (DRIESSEN 2000, 26). I.e., these corrections are being made on tablets with very simple entries. Elsewhere at Knossos, there are 508 tablets with erasures and 47 palimpsests. When we analyze the percentages, we see that 15.3% of the total number of non-RCT tablets have erasures — a percentage almost exactly identical to the RCT percentage. But only 1.42% of non-RCT tablets are palimpsests (vs. 4.93% for the RCT tablets).

[69] *Scribes Pylos*, 59-68. Hand 2 clearly was trained under or alongside Hand 1, whose hand-writing style his (Hand 2's) closely resembles.

[70] PALAIMA 1999.

He then enters this information in three of the four main individual sections on the *verso* or reverse surface of the tablet.[71] Once he had hit upon this format, the scribe chose not to transfer the information from the very beginning of the tablet on the front side to the last, now forever vacant, section on the reverse side.

In writing out seventeen lines of complex texts and in experimenting with how best to lay out its information, Hand 44 only made four small erasures (contrast the numbers of erasures on the comparatively short texts of the Ta series, as analyzed just above). He clearly omits the sign for the second syllable of the verb *a-ke* in the repeated formula on line .5 of the *verso*. On line .3 of the *verso* he also, in my opinion, omits the final syllable of the sanctuary of the deity *Iphemedeia*: the sign sequence *i-pe-me-de-ja-qe* should be read as *i-pe-me-de-ja<-jo>-qe*.[72] These are really trivial and predictable mistakes, easily paralleled in the work of other major tablet-writers at the site of Pylos. More significantly, they are easily corrected mentally in reading the text, even by modern scholars who are not privy to all the information that the scribes who wrote and read these texts knew. In all other respects, the writing of the signs and the laying out of information on Tn 316 are clear and precise.

There was another reason Hand 44 was able to make his decision to let tablet Tn 316 be in the state in which we found it. Mycenaean scribes seem to have been writing for themselves or their close associates within the administrative system at Pylos and at other sites. The contents of tablets served as mnemonic records, i.e., they would literally 'call back to heart' (re-cord, from Latin *cor*, *cordis* for 'heart') information that the scribes who wrote the texts needed to check on later. Mycenaean culture remained primarily oral.[73] A limited number of tablet-writers at each site knew how to use writing to assist in monitoring economic information.[74]

Recall that on the tablets dealing with working women discussed in §12.1.2.1.1, Hand 1 saw no reason to specify that the women he was documenting

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[71] BENNETT 1979; PALAIMA 1999.

[72] He is writing a sequence of three sanctuaries of minor female deities, whose names he repeats as recipients of offering just below in this section of the text: *pe-rẹ-*82-jo, i-pe-me-de-ja<-jo>-qe di-u-ja-jo-qe* in *verso* line .4 vs. *pe-re-*82*, *i-pe-me-ḍẹ-ja* and *di-u-ja* written separately before the ideographic entries on *verso* lines .5 and .6. It is an easy and predictable mistake to leave off the last syllable, especially if the scribe was anticipating writing the name of the deity.

[73] DRIESSEN 2000, 230-232; PALAIMA 1987b and 2003b, 153-154, 156-157, 176-177, 185, 187-188.

[74] There are between 25 and 33 hands at Pylos; possibly as many as 22 hands at Thebes (10 on the inscribed sealings and 12 on the tablets); 14 hands at Mycenae (VARIAS GARCÍA 1993); and *ca* 50 certain hands and 27 secondary hands from Knossos (PALAIMA 2003b, 174-176; *Scribes Cnossos*, 101 and 39-96).

were ‘at Pylos’. He knew that information and would have had no need to be reminded of it later, tablet by tablet (in the set of tablets beginning with tablet Aa 240). On the other hand, he wrote the number ‘1’ after each of the phonetic ideograms for male and female supervisors, because he is very careful with numbers. Hand 21 on the other hand, in his barley and fig distribution records (set Ab), sees no need to write ‘1’ after the phonetic abbreviations *TA* and *DA* respectively for the female and male supervisors within these work groups. Writing the phonetic logograms *TA* and *DA* with no number ‘1’ following them is his way of designating ‘one’ supervisor of each type. He, and his contemporaries at work at the Palace of Nestor, would not mistake this usage for an entry where the slots for numbers were left blank for later.

This compressed or tachygraphic manner of writing down data only creates problems for us as scholars three thousand two hundred years later because we are not familiar with the natural assumptions that the individual scribes would make and we do not know all the information about the topics of their texts that they knew. This process of reconstructing what the contexts are for individual texts and how the messages of the tablets are to be interpreted is another valuable offshoot of the palaeographical study of hands. It falls under the general heading of ‘text pragmatics’, a tool used by Mycenologists now with very good results.[75]

§12.1.2.1.6. *Emmett L. Bennett, Jr. and the palaeography of Knossos, Pylos and Mycenae*

Bennett not only studied the palaeography of the Pylos tablets. In the 1950’s and into the 1960’s, he identified the different scribes who wrote the inscribed tablets discovered in ‘houses’ at the site of Mycenae.[76] In producing charts of characteristic sign shapes for the first group of tablets discovered at Mycenae, he took care to compare those shapes with the styles of signs inscribed on tablets at Knossos and Pylos and painted on stirrup jars (Fig. 12.21). His astute observations about palaeographical traditions that could be discerned among the texts from Knossos, Pylos and Mycenae led to his attempt to relate these data to chronological developments within the script.[77]

In Fig. 12.22, we see how Bennett tried to trace the evolution of the ideogram for man over time as part of a general concern for the historical

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[75] HILLER – PANAGL 2001-2002; PALAIMA 2004b; PANAGL 1979.
[76] *MT I*, 440-445; *MT II*, 89-95; *MT III*, 68-70.
[77] BENNETT 1960a, 80 and 1966a.

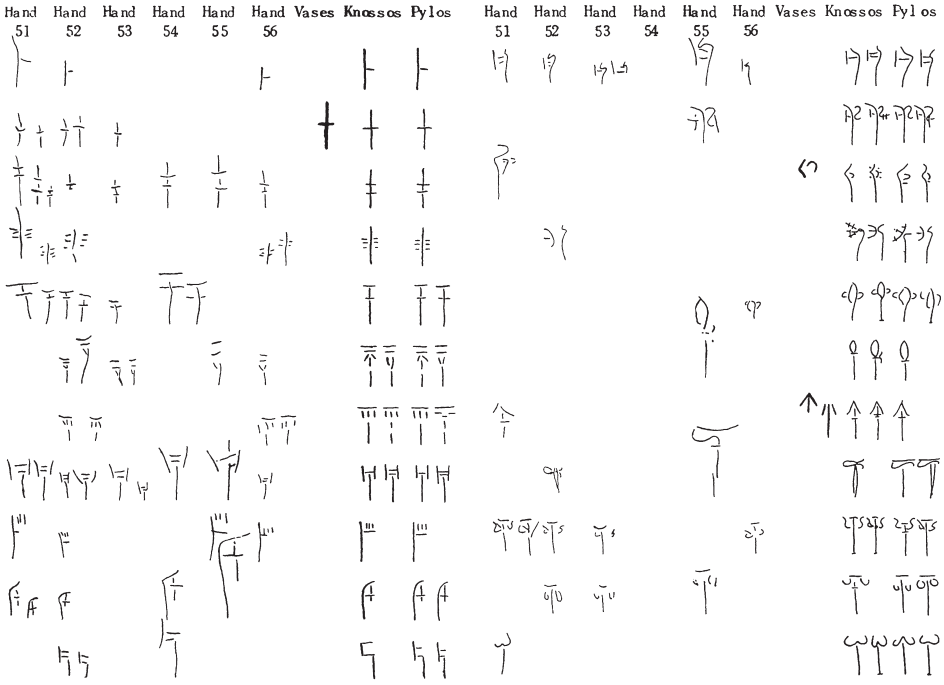

Fig. 12.21. Bennett's comparison of signs from Mycenae with those from Knossos, Pylos and the painted-inscribed stirrup jars (after *MT I*, 443)

evolution of the styles of writing Linear B.[78] Fig. 12.23 shows how later on Driessen traced the evolution of the man ideogram following Bennett and Palaima,[79] while Fig. 12.24 reflects Driessen's account of the evolution over time of the phonetic sign **80 ma* from Linear A into Linear B, also considering the forms painted on stirrup jars (Class Z).[80] This kind of global diachronic palaeographical study of sign forms is very difficult, but can yield notable results. Thus the detailed work by Bennett made it possible for Palaima to identify at Pylos an early Knossian form of the man ideogram. This variant was eventually linked to tablets from an earlier context than most of the tablets at Pylos.[81]

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78 BENNETT 1966b *passim*.
79 PALAIMA 1983.
80 DRIESSEN 2000, 126-129, 383.
81 *Scribes Pylos*, 113; SKELTON 2008, 163, 166, 171-172.

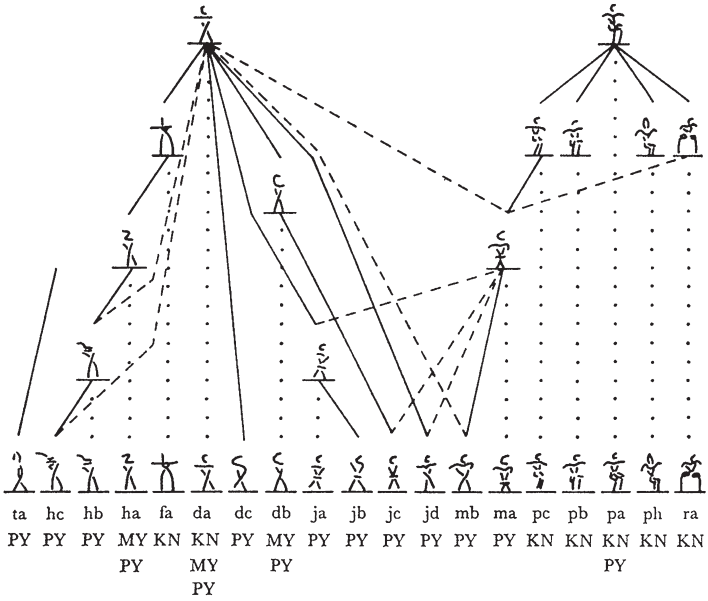

Fig. 12.22. Bennett's chart of development of shape of ideogram VIR (after BENNETT 1966b, 22)

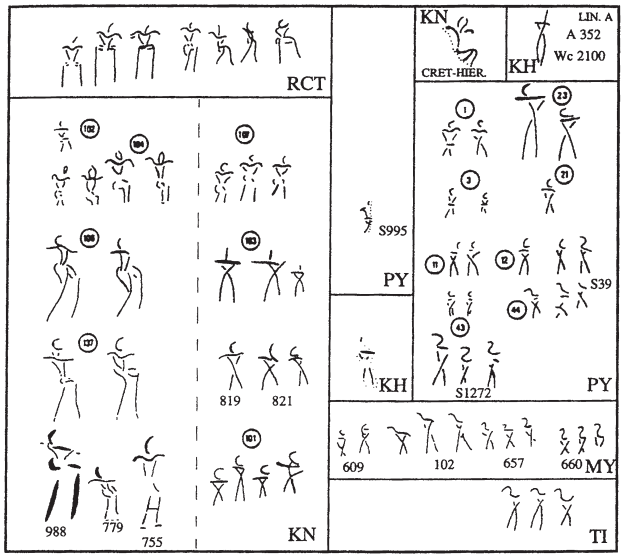

Fig. 12.23. Driessen's chart of development of shape of ideogram VIR (after DRIESSEN 2000, 127, fig. 3.7)

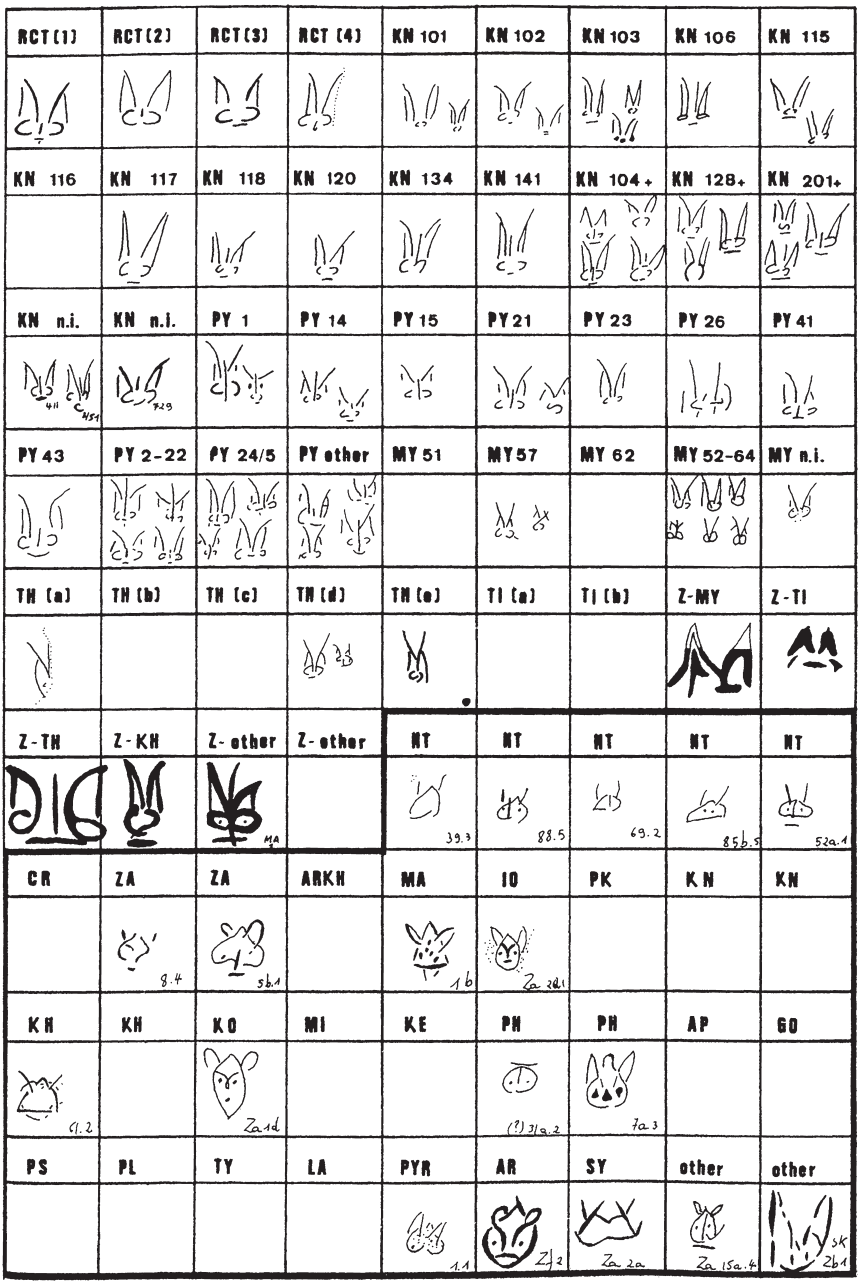

Fig. 12.24. Palaeographic chart of sign *ma* in Linear A and Linear B (on tablets and stirrup jars) (after DRIESSEN 2000, 383, plate 94)

§12.1.2.2. Jean-Pierre Olivier

The next major step forward in the use of palaeography for understanding the Linear B tablets was made by the scholar who has been the supreme editor of Aegean inscriptions for the last forty years, Jean-Pierre Olivier. In the mid-1960's Olivier went to Cambridge to study with John Chadwick. He then undertook to study all the tablets from the site of Knossos according to their hands. The title of his completed work clearly emphasizes his ultimate aim of beginning to reveal how the main Cretan palatial site functioned administratively and bureaucratically during the period of Mycenaean occupation and control: *Les scribes de Cnossos. Essai de classement des archives d'un palais mycénien* (*Scribes Cnossos*). Thus, it is fair to say that Olivier laid down the model for the study of what we conventionally call scribal administration at major palatial centres.

Olivier's task was complicated by several factors. During the early days of excavation, even Evans' 'scientific' (for the period) kind of excavation left many important facts unrecorded. Consequently the specific find-spots of texts were most often unknown, and it was difficult to reconstruct the stratigraphy and archaeological contexts of the tablets. In fact, Olivier's work was undertaken in the atmosphere of a heated controversy about the dates of destruction of the Palace of Minos at Knossos and the levels to which to assign the Linear B tablets.[82]

Secondly, some tablets were lost and were available only in Evans' drawings. This was not so great a loss given, we may recall (§12.1.1.2), Alice Kober's fortunately positive appraisal of the accuracy of Evans' readings and drawings. But it meant that other features of those particular records as three-dimensional archaeological artefacts, e.g., shape, texture and color of the tablet itself, *ductus* of the stylus incisions into the clay surface, peculiarities regarding the edges and back sides of the tablets, were lost to Olivier and to us. Finally, the Knossos material was much more fragmentary than the Pylos material. Olivier calculated that the number of tablets then known added up to *ca* 6169 fragments, among which about 3433 different tablets could be distinguished.[83]

Scribes Cnossos was a pioneering work, the first complete analysis of scribal activity at a major Mycenaean palatial centre. It might be asked why Bennett had not undertaken such a complete study of the Pylos tablets. The answer is that the Pylos excavations were continuing into the mid-1960's[84] and

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[82] Driessen 1990, 5-6; McDonald – Thomas 1990, 320-322, 438-442; Palmer – Boardman 1963.
[83] *Scribes Cnossos*, 19.
[84] McDonald – Thomas 1990, 328-337.

the full publication of the buildings at the site appeared only in 1966 (*PoN I*). After that, Bennett and Olivier collaborated on a complete transcription of the Linear B tablets from Pylos (*PTT* I and II), the second thin volume of which (*PTT II*) gave the basic information for all the tablets and/or their component fragments: series, scribal hands, classes, stylus groups and find spots.[85] It did not give lists of sign forms or discussions of the work of individual scribes, administrative procedures or record-keeping systems.

§12.1.2.3. Thomas G. Palaima

The Pylos material, therefore, needed a complete palaeographical study in the manner of *Scribes Cnossos*. This was done, *tabula rasa*, by Palaima.[86] As hard as it is to imagine in this age of readily available online information, electronic image files, and conveniently accessible museum materials, Palaima did his work *de novo* without ever looking at Bennett's dissertation or any of its hand charts. This was done so that his look at the material could be as uncontaminated as possible by other scholarly opinions, a truly independent check.

Scribes Pylos was able to go further than *Scribes Cnossos* because of the fuller accurate information that was available in almost every necessary category. Among the new concepts Palaima developed were a clear definition of the distinction between a '*central archives*' and tablets that come from work *deposits*.[87] A '*central archives* unit' within a Mycenaean palatial site is the main location where written records are collected, processed, and stored (via some kind of systematic filing) with an eye toward future retrieval and use of their information. A Mycenaean '*central archives* unit' is therefore characterized by many of the following features: work by many different hands; work upon different subjects or different administrative aspects (or levels) of the same subject; evidence for systematic processing and storage of tablets; evidence for scribal interaction; coherent sets of records; longer records, such as summaries, compilations and final recensions. Also the variety of document formats is greater, since archives will have everything from single entries of inventory items, payouts, or receipts to thorough compilations and summaries of such records. *Deposits*, by contrast, are generally composed of a much more restricted variety of document formats: either leaf-shaped tablets, inscribed nodules, or even shorter or otherwise modified page-shaped tablets. These

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[85] Remember again that PLUTA 1997 corrected a slight misalignment of the original grid.
[86] PALAIMA 1980 and *Scribes Pylos*.
[87] *Scribes Pylos*, 172-182. PALAIMA 2003b, 156-159 and note 8.

kinds of clay documents mainly record individual items or groups of items and single to a few transactions. Their range of subjects is restricted. They can be found in direct associations with work materials or stored paraphernalia.

In working on the Pylos material, an emphasis was also given to using a full array of secondary criteria *both* to confirm (or cast doubt upon) the purely palaeographical identification of individual hands *and* to help to define the personalities of individual scribes, i.e., their habits of spelling, formatting, linguistic peculiarities (idiolect), and tablet construction (size, shape, clay composition, color, other alterations to the physical carriers of the texts) and use.[88]

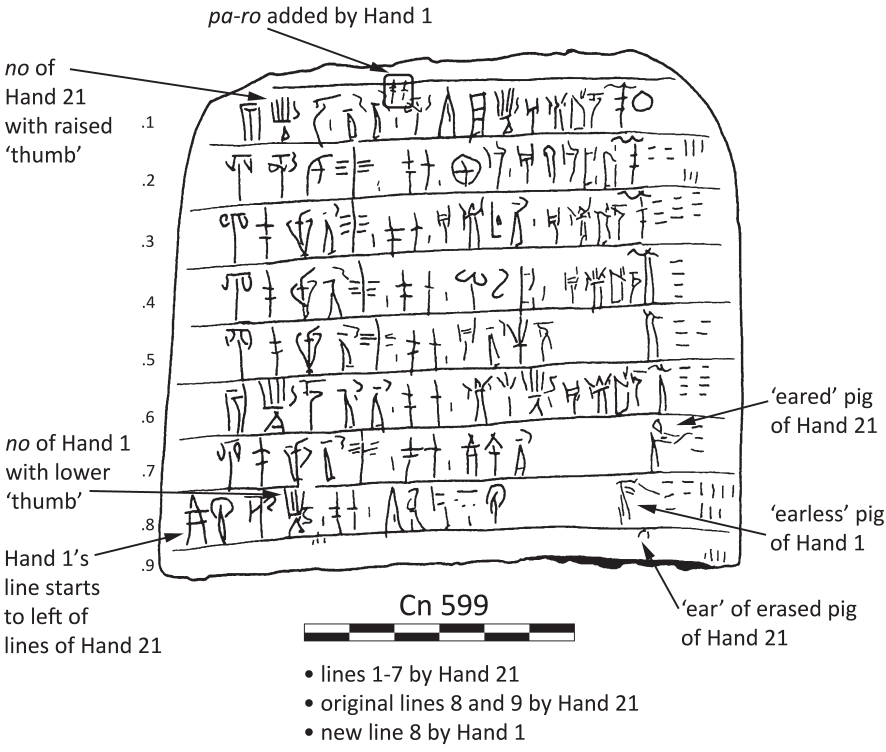

Fig. 12.25. Pylos tablet Cn 599
(after *Scribes Pylos*, 54, fig. 7, annotation by K. Pluta)

[88] *Scribes Pylos*, 27-31.

For example, Hand 1, the master scribe at the site,[89] is almost obsessive about not using any more clay than is necessary for given records. He even trims excess clay away from his tablets (see below). This is done for two reasons of economy. First, not to waste any of the finely levigated clay from which the tablets are generally made. Second, to make sure the records are not bigger than they need to be and therefore can be efficiently and compactly filed away, generally in Room 8 of the Archives Complex (see Figures 12.15 and 12.16).

It was also possible at Pylos to trace how scribes interacted with one another, directly within tablets and in regard to the information that they recorded. Besides the 'women-worker' tablets (series Aa, Ab, and Ad, discussed in §12.1.2.1.1), scribes interacted prominently in the sheep tablets (series Cn), the tablets that deal with allocation of bronze to bronze workers (series Jn) and the records of landholdings (E-series).

Figure 12.25 shows the interaction between two scribes (Hand 21, the main scribe of palaeographical class ii,[90] and Hand 1, the chief scribe of the entire site) on a single tablet (Cn 599) of the Cn livestock series. Figs. 12.26 and 27 show how Hand 1 and Hand 21 respectively write the standard signs of the Linear B syllabary (arranged according to the template in Fig. 12.29). Note especially the very different shapes of sign **07* (*di*) and the placement of the 's'-shaped thumb on the right side of sign **52* (*no*). On Cn 599 ideograms in lines .1-.3 are male goats, .4-.6 female goats, and .7-.8 female pigs. On the tablet, Hand 21 wrote what is still there on lines .1-.7. He also originally wrote line .8 and the partially preserved line .9. Hand 1, whose ideogram for female pig is radically different from Hand 21's, erased the original text of lines .8 and .9. He then wrote a new entry in line .8 and trimmed the tablet above line .1 and through the original line .9. He characteristically begins his line of text flush with the left hand side of the tablet. Hand 1 also added the missing preposition *pa-ro, paro* between and slightly above the fifth and sixth characters in line .1. The ear of Hand 21's pig-ideogram is still visible at the right of what had been line .9. There are also traces there of the vertical strokes signifying 'one'.

Palaima also went back, and with Bennett's help, reread all the excavation notebooks from Pylos for clues as to tablet locations.[91] This became the basis for the renewed concern shown now for more than two decades with the tablets as archaeological artifacts and with understanding texts in their archaeological contexts.[92]

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[89] *Scribes Pylos*, 35-58.
[90] *Scribes Pylos*, 80-86; on the definition of palaeographical classes, see note 36.
[91] *Scribes Pylos*, 135-169.
[92] Bennet, D.J.L. 1983; Bennet, J. 1984; Driessen 2000; Firth 2000-2001; Palaima – Shelmerdine 1984; Palaima – Wright 1985; *Pylos Comes Alive*.

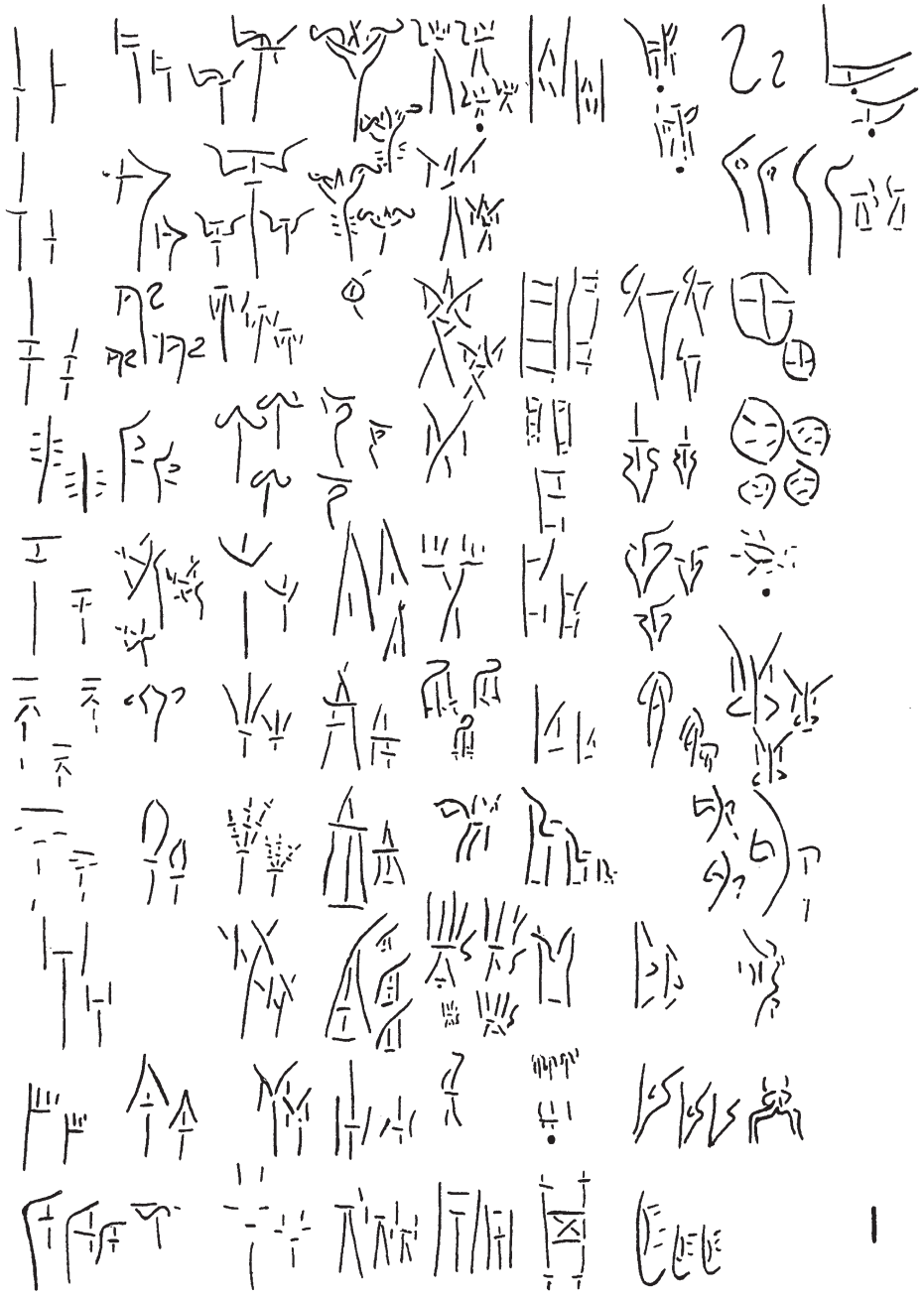

Fig. 12.26. Handwriting style of Hand 1 (after *Scribes Pylos*, 229)

Fig. 12.27. Handwriting style of Hand 21 (after *Scribes Pylos*, 242)

01 DA	11 PO	23 MU	33 RA_3	43 A_3	55 NU	65 —	75 WE	86 —
02 RO	12 SO	24 NE	34 —	44 KE	56 —	66 TA_2	76 RA_2	90 DWO
03 PA	13 ME	25 A_2	35 —	45 DE	57 JA	67 KI	77 KA	91 TWO
04 TE	14 DO	26 RU	36 JO	46 JE	58 SU	68 RO_2	78 QE	?
05 TO	15 MO	27 RE	37 TI	48 NWA	59 TA	69 TU	79 —	IDEOGRAMS
06 NA	16 QA	28 I	38 E	50 PU	60 RA	70 KO	80 MA	
07 DI	17 ZA	29 PU_2	39 PI	51 DU	61 O	71 DWE	81 KU	
08 A	19 –	30 NI	40 WI	52 NO	62 PTE	72 PE	82 —	
09 SE	20 ZO	31 SA	41 SI	53 RI	63 —	73 MI	83 —	
10 U	21 QI	32 QO	42 WO	54 WA	64 —	74 ZE	85 AU	Scribe

Fig. 12.28. Template of phonetic sign forms at Pylos (after *Scribes Pylos*, 227)

It also confirmed that a few tablets that had seemed by their handwriting styles to be palaeographically earlier[93] than the rest of the tablets from the destruction level at the site of Pylos were most likely stratigraphically earlier, too.[94]

§12.1.2.4. Finger- and palm-prints on the tablets

In the 1980's and 90's, a peculiar side development of palaeographical research on the Linear B tablets took place. It had long been apparent that scribes in handling the moist clay tablets had occasionally left their finger impressions in the clay. Swedish forensic specialist Karl-Erik Sjöquist (a professional finger-print expert) and scholar Paul Åström (an archaeologist) (in collaboration with Mycenaean palaeographers Jean-Pierre Olivier and Tom Palaima) undertook to examine the tablets for such traces. In the end, it was determined that the main diagnostic marks came from papillary line traces, i.e., impressions of palm-prints that occurred when the tablets were being manufactured. At Pylos from among the then 1,112 tablets and fragments, 47 tablets with impressions were assigned to 10 different 'palms'.[95] At Knossos 113 tablets with impressions that could be analyzed were assigned to 46 different palms.[96] We see here palm-prints on the surface of inscribed clay label PY Wa 730 that was pressed onto the surface of a 'wicker' basket used to transport clay tablets (Fig. 12.29).

Based on the fact that certain palm-prints are found on tablets by different scribal hands and on the ability of Sjöquist to determine the approximate age

Fig. 12.29. Papillary line traces on Pylos clay tablet-basket label (after SJÖQUIST – ÅSTRÖM 1985, 38, fig. 12a)

[93] PALAIMA 1983.
[94] *Scribes Pylos*, 111-133, 133-134, 137-139, 169.
[95] PALAIMA 1985b; SJÖQUIST – ÅSTRÖM 1985.
[96] OLIVIER 1991, 122-123, 127-128 on their archivistic implications.

range of the individuals who left their palm-prints in the clay, it has been hypothesized that these prints belong to young apprentices or old 'retirees' to whom was given the task of forming tablets to the specifications of particular scribal administrative assignments. In certain cases where more than one diagnostic palm-print occurs on tablets by a single scribe, the work of that scribe can be placed within a bureau where work by many tablet-writers (and tablet-makers?) was taking place. This might explain why a scribe would resort to more than one tablet-maker. Also puzzling at first was the preponderance of diagnostic impressions made by the left hand. By doing modern simulation experiments, Sjöquist discovered that right-handed tablet-makers naturally came to use their left hands as a kind of flattening tool and their right hands to provide control and power.[97]

Still, it is not altogether clear that the hypothesized assignment of tablet manufacture to persons other than the scribes who wrote the tablets that we have can be proved. First, we have noted that a skilled scribe like Hand 1 at Pylos is very adept at suiting his texts to the tablets he writes and cutting away whatever small parts of clay are not used for his records. If Hand 1 did *not* make his own tablets, this would mean that Hand 1, and other scribes, were able to explain to their tablet-making assistants with almost incredible precision the sizes and shapes of tablets that they needed, or else to adjust their writing to tablets they had at their disposal. This is not impossible, but it is not, in my opinion, the most economical hypothesis to explain the features of the extant tablets.

Generally at Pylos the tablets for each scribe, especially the leaf-shaped tablets, have very distinctive features in dimensions, shape, taper, edges, and how each individual tablet was finished. Each set of tablets, in most cases, is consistent in these characteristics, having been devised to be appropriate to the specific record-keeping task the tablet-writer was about to undertake or was already performing. Some adjustments in tablet size and shape and layout would be made as information requirements varied during the course of writing the set of records. This consistency of characteristic features could result from tablet-makers assigned to each scribe, or a group of scribes, or to a location where scribes could come to get tablets and write on them. Or it could be that the scribes made their own tablets very well suited to the information they anticipated needing. It is certainly possible that at times when lots of work was required, prominent tablet-writers had tablet-making assistants who helped them by manufacturing raw tablets that they themselves could then shape to

[97] SJÖQUIST – ÅSTRÖM 1991, 25-33.

their record-keeping needs. In other words, there is no need really to pose these possibilities as an either-or.

Until we have more secure evidence of palm-prints and can study them closely in conjunction with the 'sets' with which they are associated, the question will remain open.

Minimally, however, it is true that making tablets is a *sine qua non* for writing them. It is plausible that young apprentices who were learning this profession would be assigned the 'dirty work' of making tablets. This work would give them skills that they could use throughout their later careers or whenever they were forced to work on their own without any assistants.

§12.1.2.5. Tablets of Knossos and Khania: the same scribe?

In the early- to mid-1990's, controversy arose over the possible identity of the hand of a few new and securely archaeologically dated Linear B texts discovered at Khania in western Crete and the relationship of this hand from Khania with a scribe from Knossos,[98] where, as we have observed (§12.1.2.1.3), the dating of individual groups of tablets is still problematical. The styles of the writer of the Khania tablets and of Hand 115 at Knossos are very close. Olivier[99] in fact proposed that the tablets at the two sites were written by the same hand. If this had been demonstrably correct, this would have had important consequences for the date of the Knossos tablets.

Palaima,[100] however, using the techniques developed over about fifty years of working with the palaeography of the texts, was able to clearly demonstrate that there were *ten* good reasons to be less than sure about this identification. In Fig. 12.30, we can see how hard it is to reconcile habitual aspects of sign formation from the Khania tablets (signs in the first column from tablets Gq 5 and Ar 4 at Khania) with features on the same or parallel signs found on tablets of the V and Od series by the Knossos Hand 115. Note especially the incurving at the bottom of the outside strokes of signs *ti* and *e* (Fig. 12.30 see 1.3 and 1.4) as executed by KN 115 and the lack of this habitual feature on Khania tablet Ar 4. Likewise, note (Fig. 12.30 see 1.5) the relative positioning of the internal curved strokes on sign *nu* as written on Khania Gq 5 as opposed to its form on tablets of KN 115.

Olivier rethought his position and issued a retraction.[101] Nonetheless, the texts from these two sites are so remarkably similar in their palaeographical

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[98] DRIESSEN 2000, 151-152.
[99] OLIVIER 1993.
[100] PALAIMA 1992-93 (= 1995b).
[101] OLIVIER 1996.

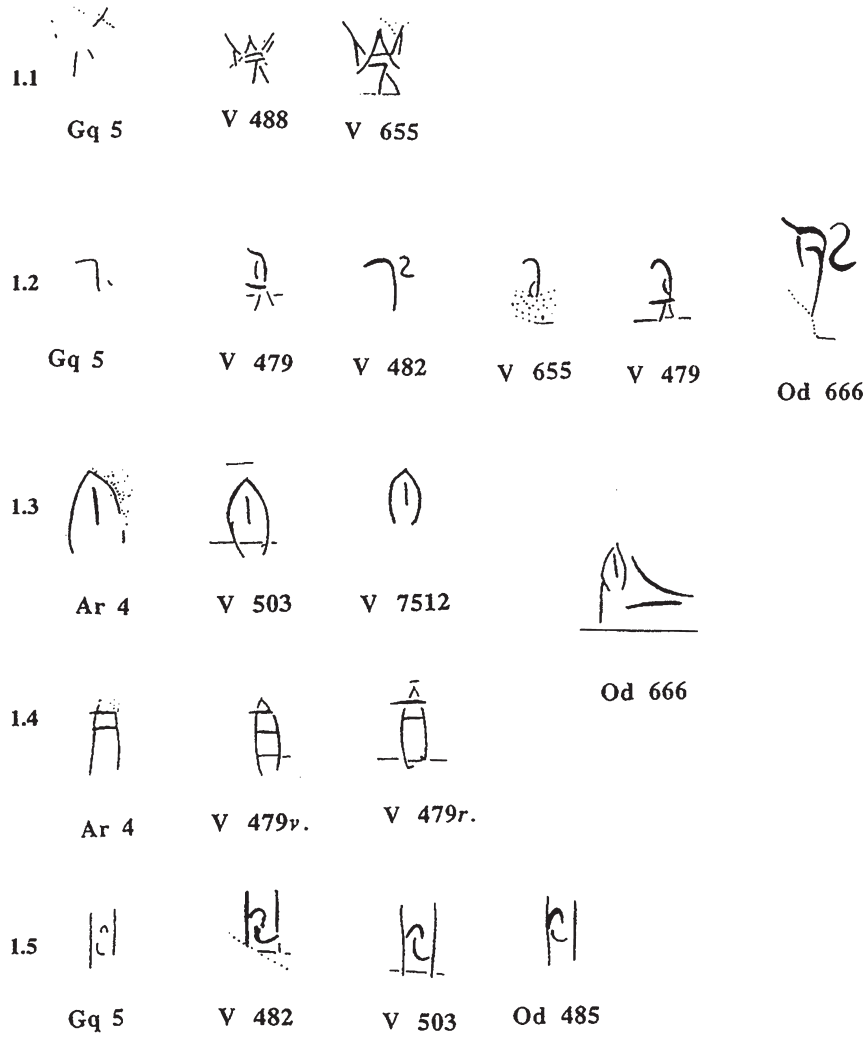

Fig. 12.30. Comparison of sign forms of Hands KH 115 and KN 115 (after PALAIMA 1992-93, 279 Table 1)

features that there must have been a close connection in scribal training and practice at this period between the two sites. One might even hypothesize a close relationship between a master and a pupil, in the manner of Hand 1 and Hand 2 at Pylos.

§12.1.2.6. Jan Driessen and the 'Room of the Chariot Tablets' at Knossos

The last major development in the study of scribal hands was the full-scale interdisciplinary analysis of tablets of the so-called 'Room of the Chariot Tablets' (hereafter RCT) at Knossos by Jan Driessen.[102] The RCT gets its name from the many tablets found in it relating to the allotment of chariots and armour to named individuals. These tablets were long a conundrum.

The RCT tablets are brief and are done in a consistent writing style that varies minimally from tablet to tablet. In fact, the palaeographical 'unity' of these tablets was so conspicuous that John Chadwick, in the early days of Mycenology, proposed that the texts here were school texts, exercises set by a master to train pupils in the art of writing.[103] Some scholars now think that these are real records, not school texts, and that the chariots, horses and sets of armour recorded on these tablets from the RCT are real and were assigned to a force of predominantly Greek-named warriors.[104] It is also possible that some combination of these two theories is true, i.e., in this early stage of Linear B record-keeping, scribal apprentices were busy at doing real work with very simple records as part of their training.[105] Within bureaucratic systems individuals often begin as assistants and apprentices, doing simple tasks in order to gain experience and learn work routines and methods.

There were, however, detectable differences in the sign forms on the tablets. These differences were so conspicuous that Jean-Pierre Olivier assigned seven basic texts (Ce 61, Ce 144, C 50, V 10, V 118, V 147, V 151) to a scribe whom he called 124.[106] He then listed groups of tablets with signs that are stylistic variants of this generic hand as "124" a – s. Some of these groups consist of only one or two tablets (e.g., "124" c consists entirely of the single tablet that is now known as Ce 59; "124" h consists of two tablets, Sc 238 and Sc 257). Olivier did not, however, present any individual charts for the handwriting styles of these nineteen potentially distinct tablet-writers. We give here his undifferentiated chart for Hand 124 (Fig. 12.31). Notice the four different versions of sign *36 *jo* (the sign in the fifth row of the fourth column).

This in some ways was an equivalent to Bennett's system of 'stylus groups'. It was based on sound principles that are now *de rigueur*. One principle is that it is highly desirable to have at least thirty different signs attested in order to be able to identify the work of an individual scribe. This obviously poses problems

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[102] Driessen 2000.
[103] Chadwick 1967a and 1968, esp. 20-21.
[104] Driessen 1996 and 2000, 189-193.
[105] See Duhoux 2008, §2.3.4.
[106] *Scribes Cnossos*, 68-76.

Fig. 12.31. Olivier's sign chart for Hand 124 (after *Scribes Cnossos*, table XXV)

for tablets with very brief texts, such as many of those from the RCT, and the very brief inscriptions on the facets of seal-impressed clay nodules.[107] It also poses problems for palaeographical groupings like "124" c whose one tablet (now prefixed Ce 59) has only 17 diagnostic signs, and "124" h whose two tablets have just 11 diagnostic signs (Fig. 12.32). Especially noteworthy is that sign *nu* on Sc 238 and sign *to* on Sc 257 are clearly at variance with the standard ways that Hand 124 makes these signs (Fig. 12.33 and compare Fig. 12.31, where versions of *nu* are seen as the signs in the fourth row sixth column).

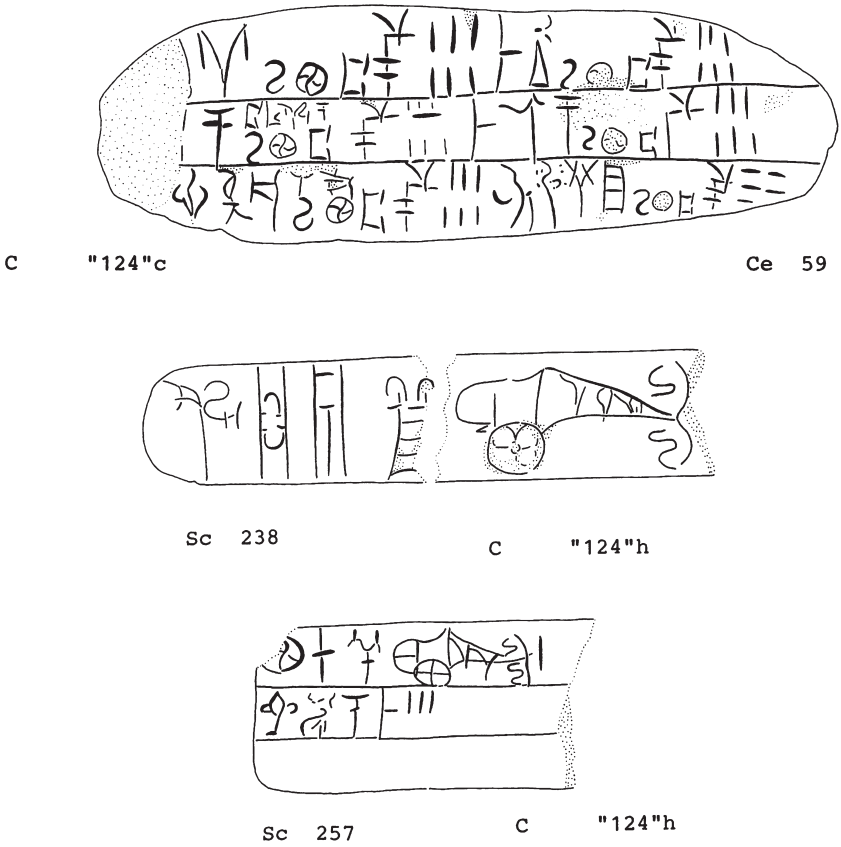

Fig. 12.32. Tablets of 'hands' "124" c and "124" h from the Room of the Chariot Tablets at Knossos (after *CoMIK* 1, 34, 103, 109)

[107] PITEROS – OLIVIER – MELENA 1990. We may also remark that the brevity of individual texts in Linear A and Cretan Hieroglyphic makes the assignment of these texts to scribal hands difficult.

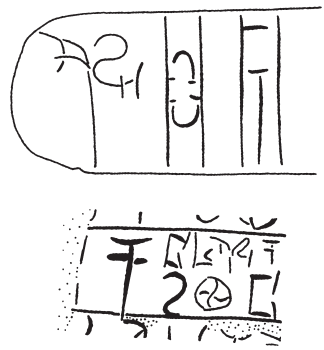

Fig. 12.33. Signs *nu* (second sign on Sc 238: top) and *to* (first large sign on Ce 59: bottom) on tablets of "124" h (after *CoMIK* 1, 103, 54)

Driessen's work represents so far the culmination of work on the palaeography of tablets from any single Mycenaean site. Focusing on a discrete massing of texts from a single location (we might hesitate to call it a *deposit*, but it also is not comparable to the Pylos *archives*), he made what can best be described as an all-out assault on the texts. He studied all aspects of tablet manufacture and handling: texture, color,[108] shape, palm and fingerprints, size and dimensions, procedures for text entering and formatting, even the use, or not, of such elements as word-dividers and majuscule and minuscule signs. Driessen's diachronic analyses of sign forms (beginning with Linear A, examining the RCT and other Knossos tablets, and proceeding to mainland traditions) are laudably thorough, and are now the starting point for critical discussions of diachronic and comparative palaeography. See Fig. 12.34 for Driessen's diachronic analysis of sign **36 jo* (and compare Fig. 12.31 for Hand 124).

Driessen also examined linguistic variations among the 'scribes' of the RCT[109] and looked for other elements that might be used to help fix the chronology, e.g., the greater 'Greekness' of the names on tablets from the RCT.[110] He concluded with observations on literacy[111] and how the scribal administrative system(s) of the RCT and other deposits at Knossos,[112] from clearly dif-

[108] Driessen did not, however, use the universally accepted system of absolute references used by PALAIMA 1988, i.e., *Munsell Soil Color Charts* readings. He considered them (DRIESSEN 2000, 38 n. 51) 'a time-consuming and not rewarding enterprise."
[109] DRIESSEN 2000, 159-186.
[110] DRIESSEN 2000, 188-194.
[111] DRIESSEN 2000, 186-187.
[112] DRIESSEN 2000, 217-232.

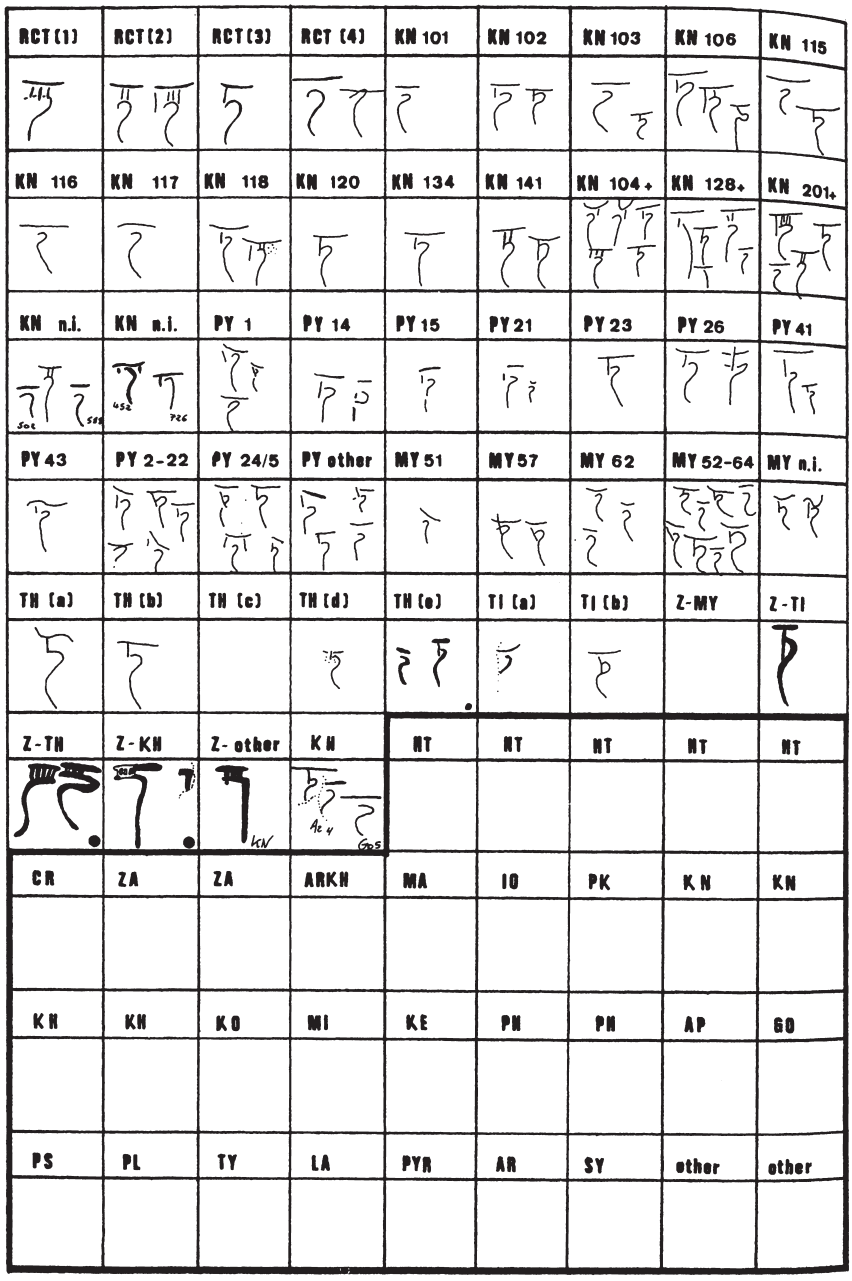

Fig. 12.34. Diachronic comparative chart of Linear B sign *jo*
(after DRIESSEN 2000, 346 pl. 57)

ferent stratigraphical levels (i.e., different destruction dates), relate to the complex history of, and major problems associated with, the 'Mycenaeanization' of Crete. In Driessen's opinion, the tablets of the RCT are our earliest coherent group of Linear B records, a view that seems to be confirmed by the phylogenetic statistical study performed recently by Skelton (2008) with the possible exception of the few tablets from Pylos classified as Hand 91.[113]

§12.1.2.7. Further work

Work on Mycenaean palaeography, and its implications, has not stopped there. Palaima has studied the palaeography of the inscribed clay nodules from Thebes and Pylos in order to see how the handwriting styles of these devices that accompanied goods and materials (animate and inanimate) coming often from outside the immediate environs of the palatial complexes related to the traditions discovered within the palaces.[114]

Palaima also has tentatively identified palaeographically a likely Linear sign incised on a bronze cauldron from the Shaft Graves at Mycenae and argued that it is an acrophonic abbreviation (commonly used in Linear A and Linear B to identify or qualify goods and materials) for the artist who could be named as manufacturer of Cretan bronze heirloom tripods in the Pylos Ta series.[115]

Varias García has used archaeological-context-focused palaeography as the basis for a 'global' study of the Linear B texts from Mycenae and a description of how record-keeping was used in what he argues are palatially dependent 'houses' at Mycenae in the second half of the 13th century BC.[116]

Likewise, the edition of the newly discovered tablets from Thebes[117] has raised many questions that are being addressed making use of Louis Godart's palaeographical identifications of the scribes at Thebes as a primary tool of research.[118] This work builds upon the identifications of hands in previously discovered Thebes tablets.[119]

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[113] Skelton 2008, 172. Driessen 2008, 70-73, 75-76. The one point of disagreement is impossible now to resolve. Driessen wishes to put the RCT in LM III A:1 and the few early tablets from Pylos in LH III A:2. Skelton proposes that 'Pylos Hand 91 diverged earlier than the RCT.'

[114] Palaima 2000b.

[115] Palaima 2003c.

[116] Varias García 1993 and 1999.

[117] *TOP*. Interpretations of the texts in this volume have to be used with great caution; but, as always, Louis Godart's drawings of signs are of good quality. See Palaima 2003e.

[118] *Neuen Linear B-Texte*; Palaima 2000-2001 and 2003d.

[119] *TT II*.

46	AB30 NI a	0	No circle where Y branches	1	Scribe uses both	2	Circle where Y branches
47	AB30 NI b	0	One stroke crossing each arm of the Y	1	Two strokes cross each arm of the Y		
48	AB30 NI c	0	Two branches meet at the bottom of the sign (ie, there is no stalk)	1	Scribe uses both	2	Two branches meet midway up the stalk
49	AB30 NI d	0	Y drawn in two strokes	1	Scribe uses both	2	Y drawn in three strokes
50	AB31 SA a	0	No circle where Y branches	1	Scribe uses both	2	Circle where Y branches
51	AB31 SA b	0	No side ticks	1	Has side ticks		
52	AB31 SA c	0	Without extra side ticks	1	With extra side ticks		
53	AB31 SA d	0	Y drawn in two strokes	1	Scribe uses both	2	Y drawn in three strokes
54	B32 QO a	0	No crossbar	1	Scribe uses both	2	Crossbar
55	B32 QO b	0	One continuous straight line	1	One continuous wavy line	2	Two separate lines
		3	Scribe uses both 0 and 1	4	Scribe uses both 0 and 2	5	Scribe uses both 1 and 2

Fig. 12.35. Skelton's analysis of variant elements in writing sign *ni* or *NI* (after SKELTON 2008, 168, fig. 3)

The study of diachronic or 'evolutionary' palaeography has also now become more scientific. Skelton (2008) has applied to the palaeography of all the Linear B tablets the statistical method known as phylogenetic systematics. Phylogenetic systematics is a way of tracing the evolution of characteristics within plant and animal species; and, as Skelton explains, it has been applied to language families and to relationships among manuscripts.[120] Her statistical application to the data of Linear B sign shapes through time sheds light on such questions as the relative dating of tablets in different hands and from different sites, and on the relationships of the handwriting styles of scribes to one another at particular sites. Skelton's analysis also takes into account the relationship of styles of Linear B sign forms to their Linear A ancestors.

[120] SKELTON 2008.

Skelton's work brings a statistical tool to bear upon what previously was a matter of the developed experience, judgment and reasoning of Mycenaean palaeographers. This procedure does not replace, or even necessarily take precedence over, traditional palaeographical work, because it, too, requires human judgments and choices in determining what data to select and how to interpret the results. But it provides another way of working with a large body of unwieldy material, and the choices made in analyzing data are transparent.[121] Fig. 12.35 shows the details that Skelton used in studying stylistic variation of one sign, *ni* (the phonogram) or *NI* (the logogram for 'figs') in Linear B.

In the end, however, all palaeographical study of the Linear B script relies upon the sign forms on the clay tablets. This brings us back to the pioneering observations of Bennett:[122]

> 'The first and most important criterion is provided by the forms of the signs. Many signs have a fairly large range of variation in shape and construction. The number of strokes used in drawing the sign is not invariable; lines crossed by other lines may be drawn either in one stroke or in two separate strokes, and sometimes single strokes may be replaced by two parallel lines in the same position. Non-essential lines may be added as if they were serifs. In place of straight lines, curves may be drawn, and simple curves may be elaborated. The proportions of the signs are not constant; lines may be relatively longer or shorter, and the angles at which lines meet may increase or decrease. Finally the clay in which the signs are incised frequently preserved the record of the order and direction in which strokes are drawn; a line crossing another breaks and distorts it and the end of a line can be distinguished by the clay raised up by the stylus.'

Mycenaean palaeography then is based upon strokes in malleable clay and upon Bennett's principles of study that fortunately rest on a very firm foundation.

Readers desiring general information about archives *per se* with some additional perspectives on the functions and status of scribes, the administrative working of the sites that have produced Linear B records, the training and schooling of scribes, and the nature of archives and work deposits in the archaeological and epigraphical record, all in the context of texts, archives and scribes in other ancient cultures, should read the second part of this chapter.[123]

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[121] See Skelton's discussion of the forms of the ideogram VIR in comparison with the studies made by Bennett, Driessen and Palaima discussed above (SKELTON 2008, 165-166). And note her conclusions concerning classes of scribal styles at Pylos and the relative chronology of the mainland *koiné* style (SKELTON 2008, 173-174).

[122] *MT II*, 90.

[123] Also see BROSIUS 2003 and PALAIMA 2003b.

§12.2. The world of the Mycenaean scribes

In Part 1 (§12.1), we have discussed in detail how palaeographical research on the Linear B tablets developed from 1900 to the present. We have seen how paying attention to the handwriting on the Linear B tablets, nodules, labels and stirrup jars and to everything connected with the use of inscribed materials helps us to understand better the historical meaning of the texts written in Linear B. In so doing, we have looked at how scribes are identified and what we know about their individual peculiarities as users of writing within Mycenaean palatial culture *ca* 1400-1200 BC.[124]

In this part, I shall briefly reconstruct some aspects of what we might call the world of the scribes. I shall try to use informed imagination.

John Chadwick, in discussing the genius of Michael Ventris, said this of him:[125] 'He had a keen appreciation of the realities of a situation; the Mycenaeans were to him no vague abstractions, but living people whose thoughts he could penetrate.' We need to consider the 'realities of the situation' for tablet-writers in the Mycenaean palatial period in the same way.

Here we should imagine what it was like in the 14th and 13th centuries BC to have the skill of writing. How would someone acquire such a skill? Why would he want to learn the Linear B script? What use did he anticipate making of writing? If he was going to devote considerable time and energy to learning how to write and to use the art of writing, what status, benefits and responsibilities did he think he would derive as a literate person? If and when he worked within a literate bureaucratic system in a palatial territory, what kinds of work would he be doing on a daily basis, and how might that work change over time, as he became more experienced and trustworthy as a tablet-writer and record-keeper?

Was *he* ever a *she*, as is the case occasionally in the ancient Near and Middle East?[126] How did the individuals and organizations who held the greatest power in the palatial territories (e.g., the king or *wanaks*;[127] the military leader

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[124] For the dates of different groups of tablets at sites on Crete and the Greek mainland, see Driessen 2008, especially 75-77.

[125] Chadwick 1967b, 4.

[126] Pearce 1995, 2266, discusses a few notable exceptions to the prevailing pattern in the ancient Near and Middle East that the profession of 'tablet-writers' was a male profession. These exceptions include a daughter of Sargon of Akkad, who, *inter alia*, wrote a lengthy poem praising the goddess Inanna. Women scribes, some of whom were themselves the daughters of scribes, are attested during the Old Babylonian period at Mari and Sippar. At Mari, nine of ten women scribes are recorded as receiving rations, and their portions are 'small enough to suggest that, although literate, they were held in low regard and were slaves of the harem.'

[127] Palaima 2006.

or *lāwagetās*,[128] who possibly also saw to the integration of immigrants into the society; the local landholding council or *dāmos*; the local 'big man' or *g*^{w}*asileus*; and the officials who oversaw palatial interests in the different districts into which palatial territories were divided, the *ko-re-te-re* and *po-ro-ko-re-te-re*[129]) view written records and the tablet-writers, *viz.* scribes, who made and kept them?

§12.2.1. *How can we individualize the Mycenaean scribal hands?*

No writer of a Mycenaean document ever signed his work. In contrast to the Near and Middle East, we do not even know the Mycenaean word for 'scribe' or, as they were called in Akkadian and Sumerian, 'tablet-writer' (Akkadian *ṭupšarru*, Sumerian DUB.SAR), a term that we have used in referring to our Linear B scribes. This is remarkable, given that the Linear B texts and other tools of administration prove that Mycenaean palatial society depended on personal and group agency and responsibility in order to operate successfully.[130] One clear way of marking identity and responsibility was via seals and sealings. In the Near and Middle East tablets often bore the impressions of seals identifying the individual who authorized and safeguarded the contents of the tablets as documents. In noteworthy contrast, in the Mycenaean and earlier Minoan cultures, seals are never impressed onto written records as marks of authentication or safeguarding. But rather writing is sometimes used in a secondary way to supplement information provided by seal impressions on sealing devices such as nodules (and earlier Minoan roundels), which are primarily instruments of authorization, authentication and security that can function without writing.[131]

We individualize what we call scribes in Mycenaean society by identifying the work of those who wrote our extant Linear B texts. We do this, as we have seen, entirely through palaeographical and related methods, by what we call identifying their 'hands'. In Fig. 12.36, we can see examples of significant variations in signs,

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[128] NIKOLOUDIS 2006.

[129] On these officials and arguments that they are appointed by the central administration, see now NAKASSIS 2006, 65-75.

[130] Personal agency is stressed in NAKASSIS 2006.

[131] See HALLAGER 1996 for the definition and Minoan origins of different security and authentication devices bearing seal impressions. PALAIMA 1987a discusses the full picture of the uses of seals and both inscribed and uninscribed sealings in the Linear B period. For how sealings work within written administration, see PALAIMA 1996b. It is important to stress that sealings have an independent history that predates the advent of writing on clay in the Middle and Near East and the Aegean. They are primary transactional devices that can even be used by illiterates. For a comprehensive overview of seal and sealing use *per se*, see KRZYSZKOWSKA 2005, 155-192 (during the Minoan palatial period) and 279-300 (during the Mycenaean palatial period).

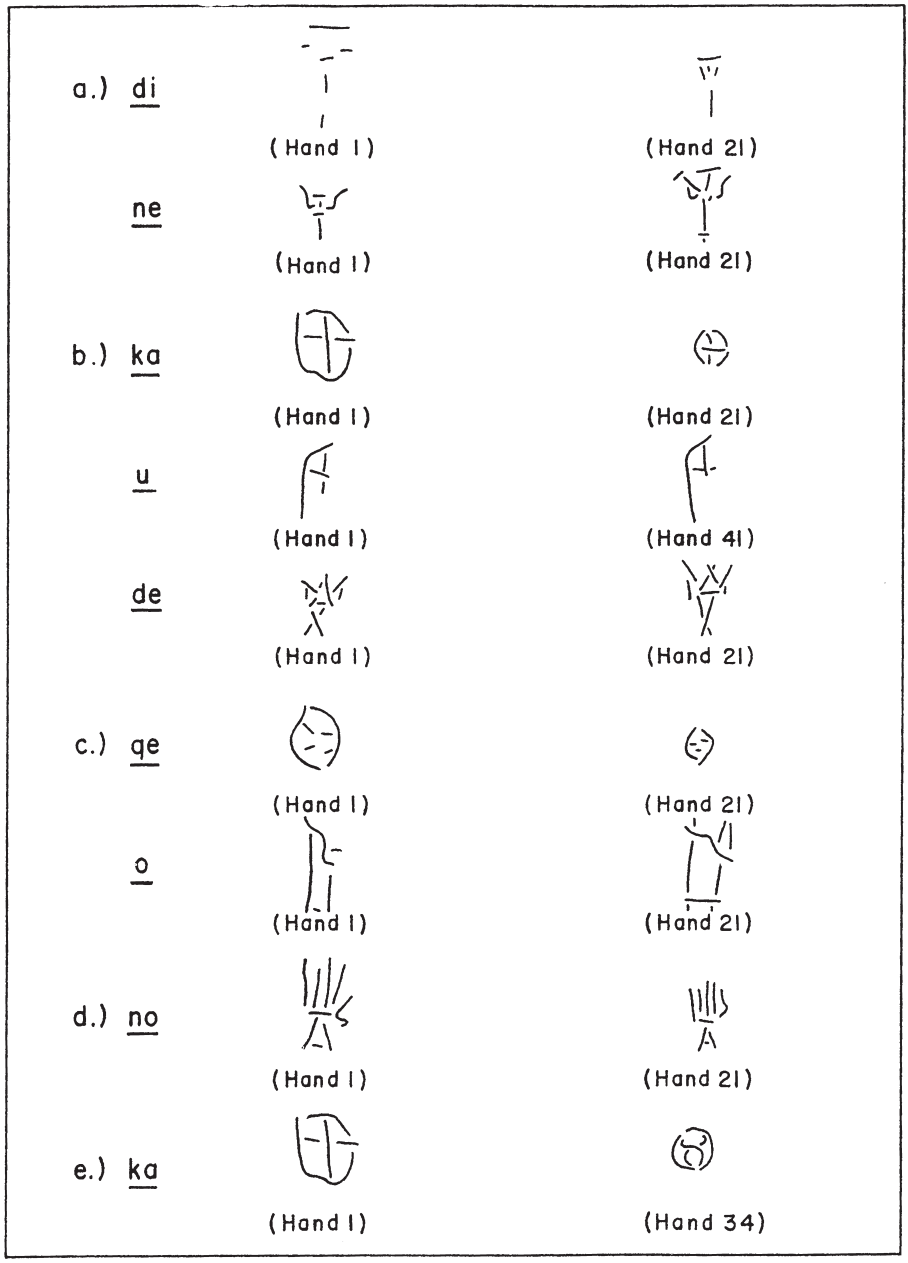


Fig. 12.36. Diagnostic variations in sign forms of Hands 1 and 21 (after *Scribes Pylos*, 24 fig. 3)

i.e., cases where the execution of the signs, whether in the conception of its overall form and component parts or in the manner of drawing the particular instance, is diagnostic of distinct individual tablet-writers. In case a.) we can see how sign *di* is drawn with a rather extreme and unusual variation in the disposition of strokes by Hand 1 at the site of Pylos as opposed to the widely shared way of drawing the sign by Hand 21. In case b.) scribes differ in the unvarying order in which they draw strokes that cross one another. In case c.) the number of strokes making up a standard variant of a sign differ, again habitually within different hands. In cases d.) and e.) the position or the shape of constituent elements of individual signs differ. In all cases such differences are habitual and are not dictated by other factors related to the physical aspects or contents of the records.

Fig. 12.37, by contrast, gives examples within single hands where signs differ slightly from one another in ways that are not habitual or indicative of a change in scribal hand or in the diagnostic writing style of a scribe. Elements of signs may be left out or put back in because of the desire to simplify or to formalize signs in particular instances. The scale at which a sign is drawn is sometimes a factor, e.g., cases a.) (sign *wi* written large-scale as a component of a sign-group on Ma 335 and written very small on Ma 221 as an element inside the ideogram for hide, where it stands as an abbreviation for *wi-ri-no vel sim.* = 'oxhide') and b.) (signs *qo* and *o*). In the latter case, Hand 43 in the Ea series is writing many records of landholdings. He writes the names of the main landholder for each record in the equivalent of 'capital letters', that is to say, in very large signs. Otherwise on these tablets he has to write repeatedly, and, we are sure, rather monotonously, the formulaic phrases and vocabulary relating to landholdings. He has to write the sign *o* again and again in the word for a 'beneficial plot of land' (*o-na-to*); and he also is writing about animal herdsmen who are designated by words containing the sign *qo* (e.g., *qo-qo-ta-o* and *su-qo-ta-o*). It is therefore understandable that he writes simplified versions of these signs when he has to write them over and over many times. The examples in d.) are similarly related to repetition, which causes Hand 41 to omit a simple element of a sign. In the same way in writing the Roman alphabetic characters 'i' and 't', we sometimes forget to dot the 'i' and cross the 't'. In g.) the shape of an important element of a sign (in this case the main vertical stroke of the sign *ta*) is distorted when it has to be written in an awkward place on a tablet. In all these cases, we are dealing with large, coherent sets of tablets, where there is no question that one and the same scribe in each set has written the particular variants under the effects of the circumstances just described.

Scribes will also vary from one another in how their tablets are finished off. Leaf-shaped tablets particularly have a range of features. In Fig. 12.38, notice the symmetrical and full-bodied shape of Ta 713 by Hand 2, a tablet of very

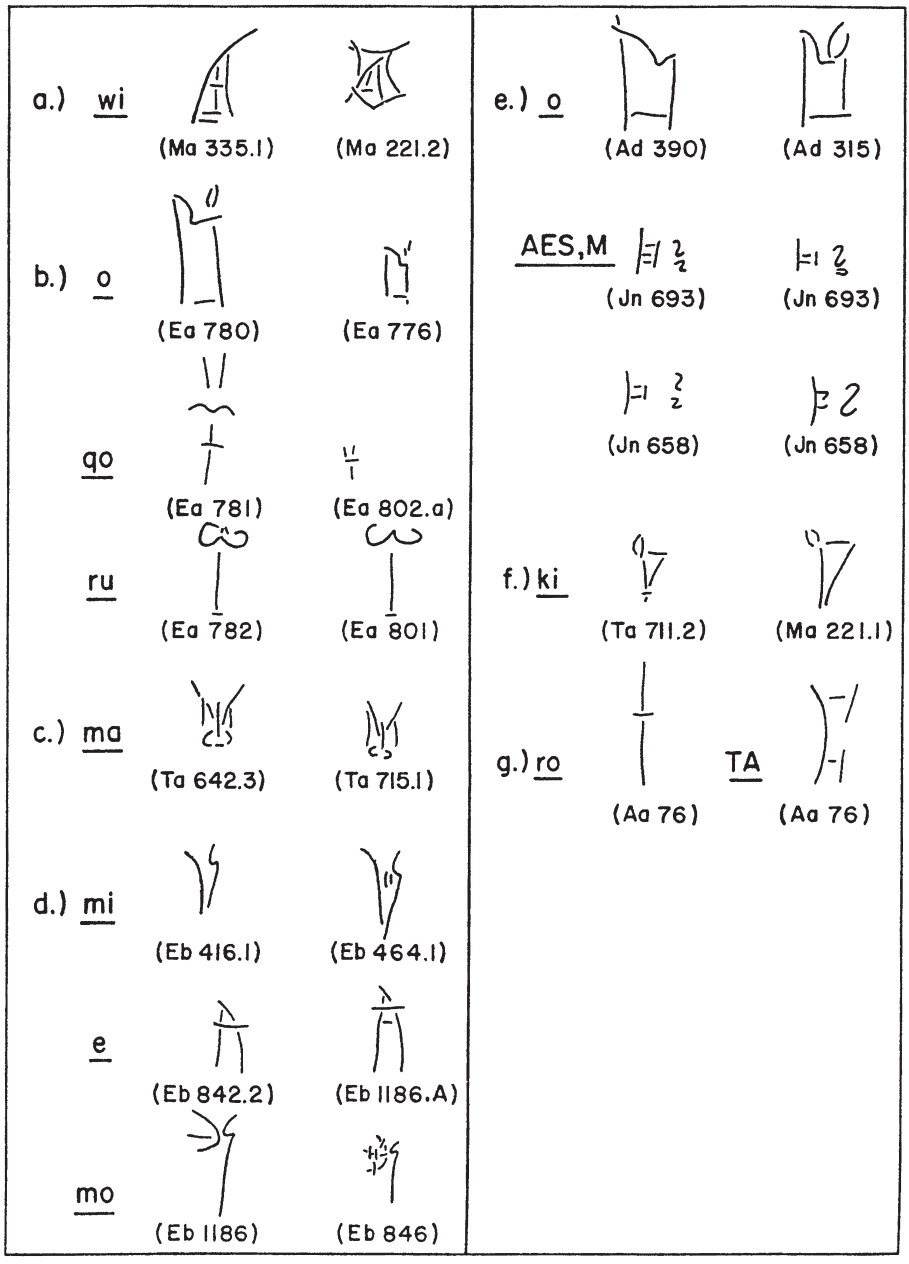


Fig. 12.37. Undiagnostic variations in sign forms
(after *Scribes Pylos*, 25 fig. 4)

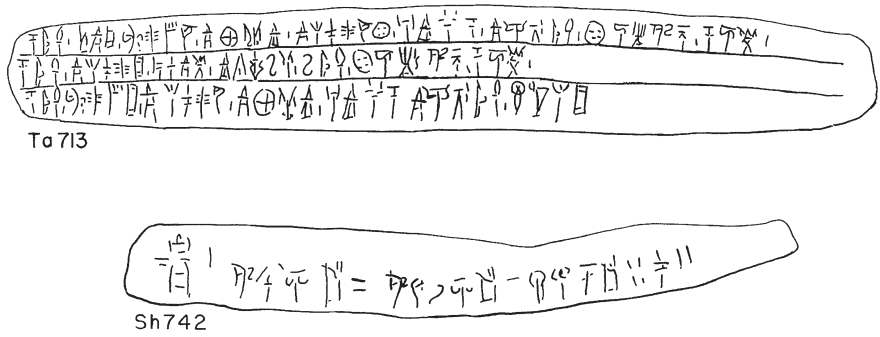


Fig. 12.38. Pylos tablets Ta 713 and Sh 742 drawings (after *PT II*, 66, 82)

finely levigated clay with carefully smoothed edges. Contrast its shape and appearance with the drawn-out, uneven, and tapering shape of tablet Sh 742.

It is perhaps no accident that the tablet with the better appearance (Ta 713) is part of the series that lists important communal banqueting paraphernalia, including here tables made with stone, ivory and special woods, and inlays and figural decorations. This inventory was very difficult to compile and lay out in recorded form. It was entrusted, therefore, to Hand 2, who writes other major sets.

Sh 742 by Stylus 733-Cii, on the other hand, is one tablet from a series of twelve tablets with repetitive texts that document sets of refurbished armour that were checked one by one to make sure they had reached a state of readiness. There are six tablets with identical texts pertaining each to an individual set of defensive armour of one style, and four tablets with identical texts pertaining to defensive armour of a slightly different kind of construction.[132] Although we should not underestimate the importance that armour had for the elite Mycenaean military class, it seems legitimate to conclude that these inspection texts are a less difficult and less prestigious scribal assignment.

§12.2.2. *How were the Linear B tablets made, shaped, written and organized?*

§12.2.2.1. Tablets

Linear B tablets can be cut or reshaped to special sizes to fit specific record-keeping tasks. In Fig. 12.39, the scribe uses a rectangular tablet (Cn 608),

[132] On the Sh series, see PALAIMA 1996a. On the Ta series and tablet Ta 713, see *Documents*^{2}, 332-348, 496-502.

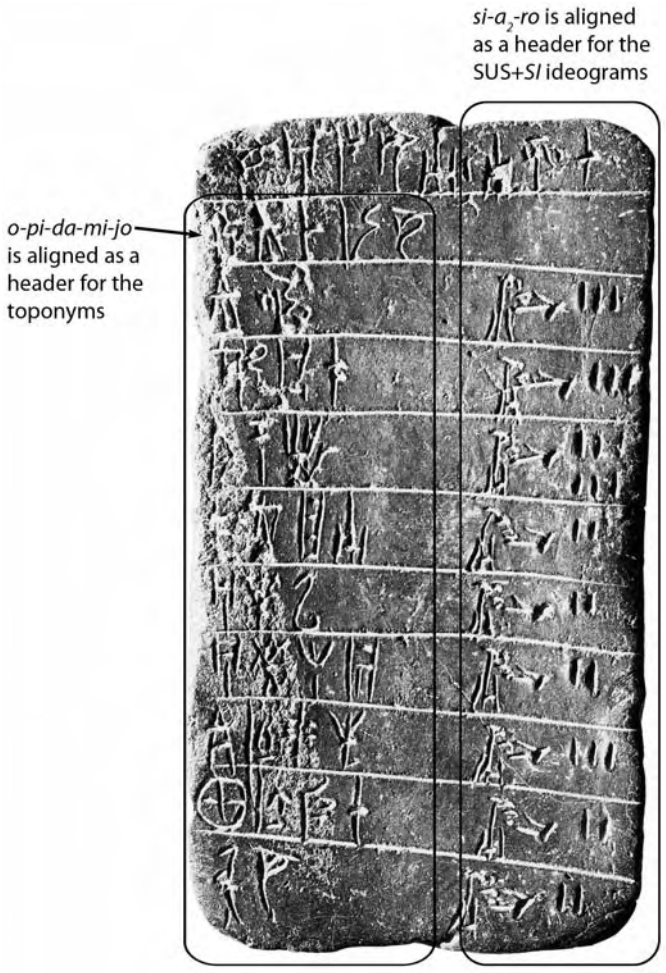
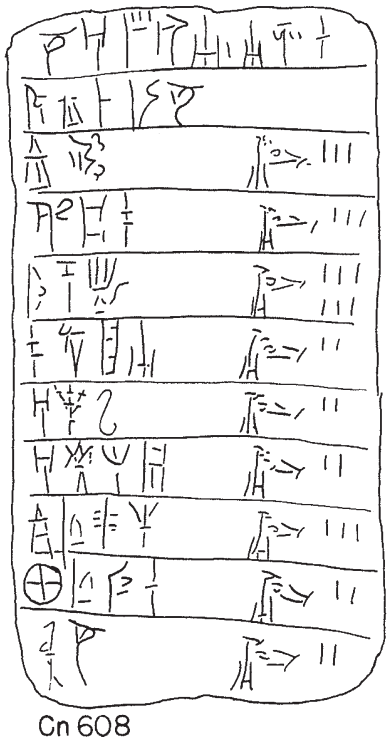


Fig. 12.39. Pylos tablet Cn 608 (photo from PASP archives, annotation by K. Pluta)

drawing rule lines on it so that the eleven lines run across the narrow width of the tablet and down its length. The tablet is perfectly sized and expertly laid out to receive this text, without any trace of hesitation or crowding of information. The scribe (Hand 1) writes a two-line header that says:

> 'Thus the *o-pi-da-mi-jo* (subject) will fatten fatted pigs (object)'.

The *o-pi-da-mi-jo, opidāmioi* here seem to be individuals who work on the lands of the *dāmos* and for the profit of the *dāmos*.



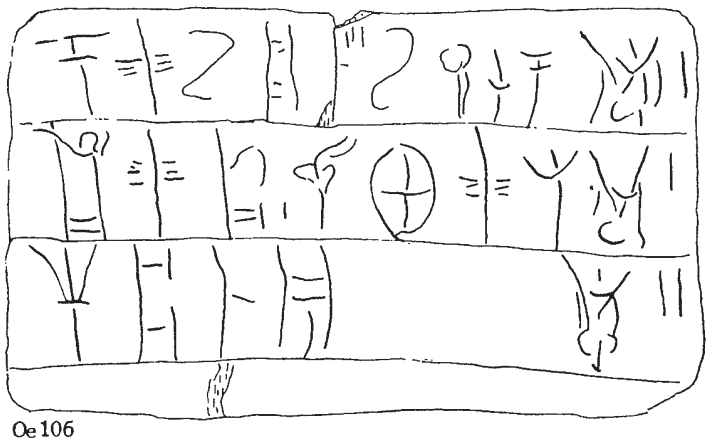


Fig. 12.40. Pylos tablet Cn 608 and Mycenae tablet Oe 106 (after *PT II*, 61 and *MT I*, 430)

Note how in the layout of the text on the tablet (Figs. 12.39 and 40), the word for 'fatted animals' (*si-a$_2$-ro, sihalons*) is placed at the right end of the first line and directly over the entries of SUS+*SI* (*SI* is an abbreviation for *si-a$_2$-ro*) in the following nine lines (lines .3-.11) which give on the left side each of the nine major districts of the Hither Province of the palatial territory of Pylos. Meanwhile *o-pi-da-mi-jo* sits above the toponyms for each of the nine districts where these individuals operate. Thus the two columns of textual data have their own headers.

On Mycenae tablet Oe 106 (Fig. 12.40), a tablet from the so-called House of the Oil Merchant, the layout of the text is oriented in the other direction on the tablet. It accommodates a shorter text that has three entries pertaining to allocations of small quantities of wool that is designated as *ko-ro-to* 'to be coloured' (?) to a man and two women. The verso of Oe 106 bears one of a handful of generally well-executed scribal doodles (Fig. 12.41) that are found on the Linear B tablets.[133]

Fig. 12.41. Scribal doodle of a man from the reverse of Mycenae tablet Oe 106 (after *MT I*, 430)

[133] See PALAIMA 1992, for what the doodles and figural logograms tell us about the artistic skills of scribes and their relationship to higher forms of art.

My favorite example of the resourcefulness of tablet-writers when it comes to accommodating their physical tablets to the texts they have to write is the now reclassified tablet PY Na 1357 (Fig. 12.42). This tablet is one of a large set of texts from Pylos dealing with contributions, holdings and exemptions of flax among various professional groups. Na 1357 is a small piece of a leaf-shaped tablet that has been reconfigured to function very much like a miniature page-shaped document (cf. tablet Ta 721 in the Ta series as discussed above).[134] The preserved portion of the tablet is 2.7 cm. high, 3.8 cm. in its extant length and 0.9 cm. thick at its maximum. The text reads:

.1 to-]sa-de , e-ma-a_2 , e-re[-u-te-ra *SA*
.2 to-]sa-de , e-po-me-ne-we, [e-re-u-te-ra *SA*
.3 to-]sa-de , ka-ke-we , e-re-u-te[-ra *SA*
.4]ṭọ-sa-de , ko-re-te-re , e-re-u[-te-ra *SA*

‘.1 so] much for Hermes is ex[empt FLAX
.2 so] much for *Epomeneus* [is exempt FLAX
.3 so] much for the bronzesmith is exem[pt FLAX
.4 so much for the **korētēr* (or **korestēr*) is exe[mpt FLAX.’

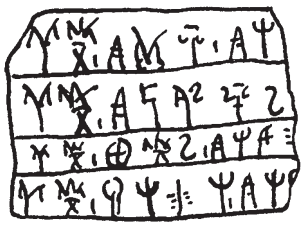


Fig. 12.42. Pylos tablet Na 1357 (formerly Nn 1357 and Xn 1357) (after *AJA* 61, 1959, plate 31)

You can see in the drawing that the line height varies. Each of the first two lines is approximately 0.8 cm high. It looks as if Hand 1 here originally intended for this tablet to have three lines of that same height (so 2.4 cm. total). At some point, however, he realized that it would be expedient or necessary to put a fourth entry on the tablet, the one dealing with the **korētēr* (dative singular) (or **korestēr*), in parallel with the first three lines that refer respectively to the

[134] This document is a good example of the difficulty of categorizing the tablets and their texts by contents and by shape. The scribes did not have to make their texts conform strictly to any standard shape or size. So the categories leaf-shaped and page-shaped are sometimes blurred. Na 1357 was first published in 1959 as Nn 1357 (the prefix marked it as a page-shaped tablet of the flax series). It then was officially published as Xn 1357 (a page-shaped tablet of indeterminate series — because the logogram for flax was not preserved). It is now categorized as Na 1357, making clear that it is a kind of leaf-shaped tablet, although its text is very different, as a kind of mini-compilation, from the texts of other Na tablets by Hand 1.

god Hermes, an individual known as *Epomeneus* and a bronzesmith. All these individuals are receiving exemptions of flax in now unpreserved quantities.

It is plausible that these four entries referred to the same locality, so that Hand 1 decided to group them together on a single text in this way.[135] In order to accommodate this extra line, Hand 1 squeezes the moist clay along the bottom edge of the tablet. This action extends the clay about 0.4 cm, which makes it possible to write two narrower lines of about 0.5 cm. in height. This is ingenious. In connection with our discussion in Part 1 about whether the palm-prints on the tablets belong to special tablet-flatteners (who were young or old men of assistant status) or to the tablet-writers themselves, tablet Na 1357 at least shows that the scribes were themselves adept at manipulating the freshly made clay documents at their disposal, and were not reluctant to do so.

Clay, as we have just seen, is a very good material for record-keeping. It is readily available wherever a bed of clay has been located by potters for use in vase production. As long as the clay is stored moist in a closed container, it can be kept, ready to use, indefinitely. In fact, there was a large pithos in archives room 7 at Pylos (Fig. 12.15, grid squares 71 and 81) that we hypothesize was there to supply the scribes with water that they could use in their record-keeping activities. And it is easy to recycle clay from a non-baked tablet whose record has become obsolete, simply by immersing the tablet into water. In general, tablets by the principal tablet-writers at Pylos are made from finely processed clay. A few page-shaped tablets are composed of coarser clay at their centres and a veneer of smooth clay on the outside. In some cases, this caused the tablet surfaces to flake and peel, when the tablets were exposed to intense heat from the fire that destroyed the palace.

The Mycenaean leaf-shaped documents were made by flattening clay out into a kind of thick sheet, much like the dough that bakers roll out for pies (Fig. 12.43). These sheets would then be rolled up at top and bottom creating a thicker, long tablet with a closure seam along the back side. The back side could then be smoothed with the finger. In certain cases a piece of twisted plant-like material, perhaps even something like a fibrous cord, was laid lengthwise across the sheets of clay before they were 'rolled up'. In other cases, what runs through the centre is a stalk or straw that functions as the backbone or spine of the tablet. When the tablets were done, the 'string' or stalk running through the middle of the tablet and out at least one of its ends could have been used to move the tablets around while they were very moist. They also served

[135] Hand 2 uses a similar technique at the end of the Ta inventory of banqueting and sacrifice paraphernalia. He groups what are known as *thrānuwes* (footstools or small personal 'benches' for sitting) on two tablets (Ta 721 and Ta 722).

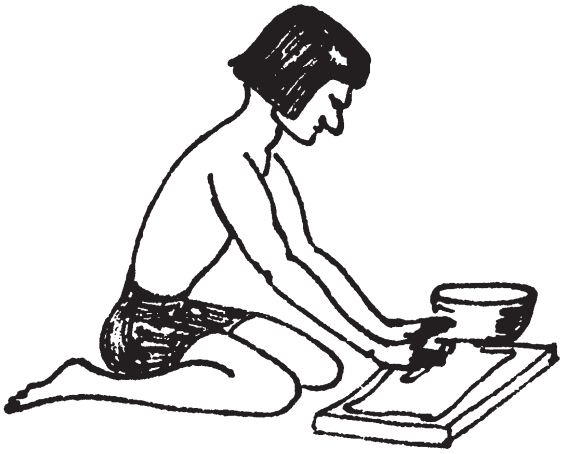


Fig. 12.43. Drawing of an apprentice rolling out clay (after SJÖQUIST – ÅSTRÖM 1985, frontispiece)

to reinforce the stability of the tablets. When the tablets were accidentally baked in the intense fires that preserved them, much of the fibrous material was itself burned away. In a few cases, however, study of fragments of leaf-shaped tablets at Pylos revealed that some of the fibrous material was still preserved in what would have been the interior of the tablets when they were intact.

§12.2.2.2. Sealings and labels

A 'sealing' in the Mycenaean palatial period is a small lump of clay that can be wedged into the space created by the tips of the thumb, index finger and middle finger, when they are brought together, or, as Melena has demonstrated, it can be pressed into the space between the index and middle finger where they join the palm of the hand (Fig. 12.44). The lumps of clay are formed around the knot in a string that is thereby 'secured' from being tampered with without anyone noticing. The string comes out of the sealing (also called a *nodule* from the Latin word for the 'knot' that is literally encased in the clay that surrounds it) at each of its ends. These sealings or nodules thus guarantee the integrity of whatever objects they were attached to. They bear seal impressions that specify who the responsible party or entity was for whatever transaction is being conducted by means of these devices. There are many uninscribed sealings.[136]

[136] See PALAIMA 1987a for an overview of inscribed and uninscribed sealings and their purposes. The largest group of inscribed sealings are those from Thebes that are connected with sacrificial animals. Even in this set of sixty-one sealings, five were uninscribed. See PITEROS – OLIVIER – MELENA 1990.

A label (Figs. 12.44a and 44b) is a thin hunk of clay that is pressed flat against the surface of what we conventionally call a wicker basket, made from natural reeds that can be woven or plaited together to form a container. The clay label adhering to the basket surface is then inscribed with brief texts that identify the tablets stored inside the basket.

Moist clay is malleable. The fronts (Fig. 12.44a) and backs (Fig. 12.44b) of clay labels show clearly how they were literally impressed onto the surfaces of tablet-transport baskets. The fronts preserve the fingerprints and /or palmprints of the tablet-writers and the indentations these make. The backs of labels show the grooves of the reed, stalks, twigs or other plant materials that were woven together to form baskets. Likewise the inscribed clay nodules display ingenuity of shaping (Fig. 12.45). The clay is wrapped around a knotted string and then at the moment when the seal is impressed into the surface, the fingers holding

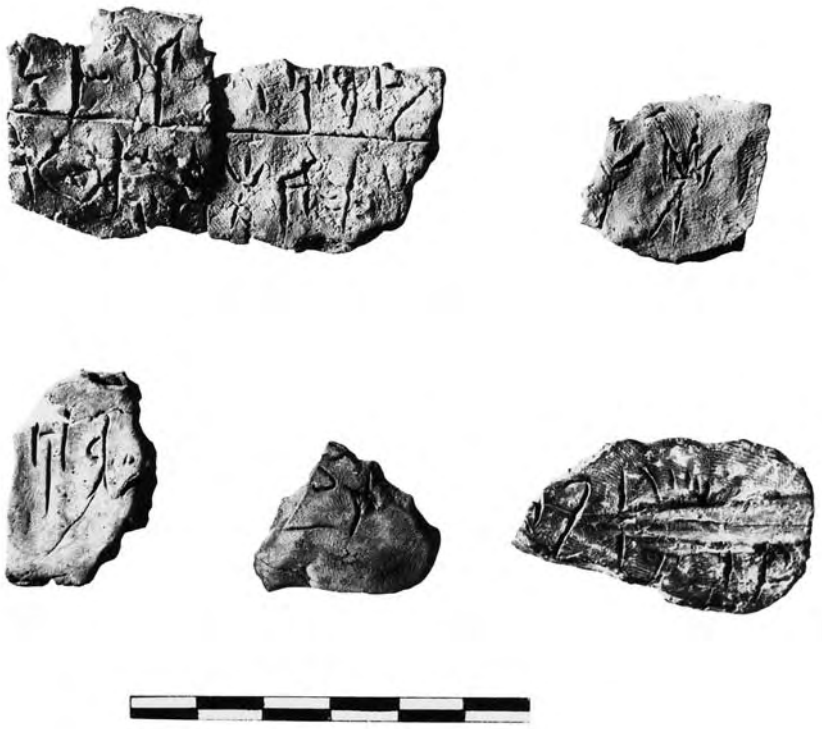


Fig. 12.44a. Fronts of inscribed clay labels from Pylos (photo from PASP archives)
Top row from left: Wa 917, Wa 930
Bottom row from left: Wa 931, Wa 947, Wa 948

Fig. 12.44b. Backs of inscribed clay labels from Pylos (photo from PASP archives)
Top row from left: Wa 917, Wa 930
Bottom row from left: Wa 931, Wa 947, Wa 948

the piece of moist clay from behind naturally create two other small surfaces that, along with the seal-impressed front surface, *can* be used to record small bits of information that the scribes thought relevant and necessary. These surfaces are conventionally numbered α, β and γ.

Both the sealings and the labels are connected with the movement of information through space. It is likely, however, in my opinion, that in the Palace of Nestor at Pylos the inscriptions on the labels were made when the transport baskets in which they were brought to the central archives (Rooms 7 and 8 at the main entrance to the Palace of Nestor) had arrived at Archives Room 7. Ten of the labels, in fact, were found in grid square 52 (Fig. 12.15) in Room 7 directly to the left of the doorway between the outer room (Room 7), which was used mainly for the receipt, temporary storage and preliminary processing of clay documents, and the inner room (Room 8), which was used mainly for tablet filing and storage. Room 8 also had a clay bench that was used in the

process of filing and later retrieving filed sets of tablets. The labels that have enough information preserved so that we can understand them relate to:

(1) the census or head count of women and children workers that is the basis for the lists of monthly rations for the working women from the Further Province of Pylos (the ration tablets are the Aa 60-98 set by Hand 4, but Hand 1 wrote the label Wa 114, which was found in Grid 13 along with the Aa tablets of Hand 4);
(2) the census or head count of women and children workers pertaining to women in the Hither province (Aa 240-1182 and Wa 1008, all by Hand 1);
(3) the expected taxation of six commodities from provincial centres and specifically the site of *sa-ma-ra*, the third of the seven main centres in the

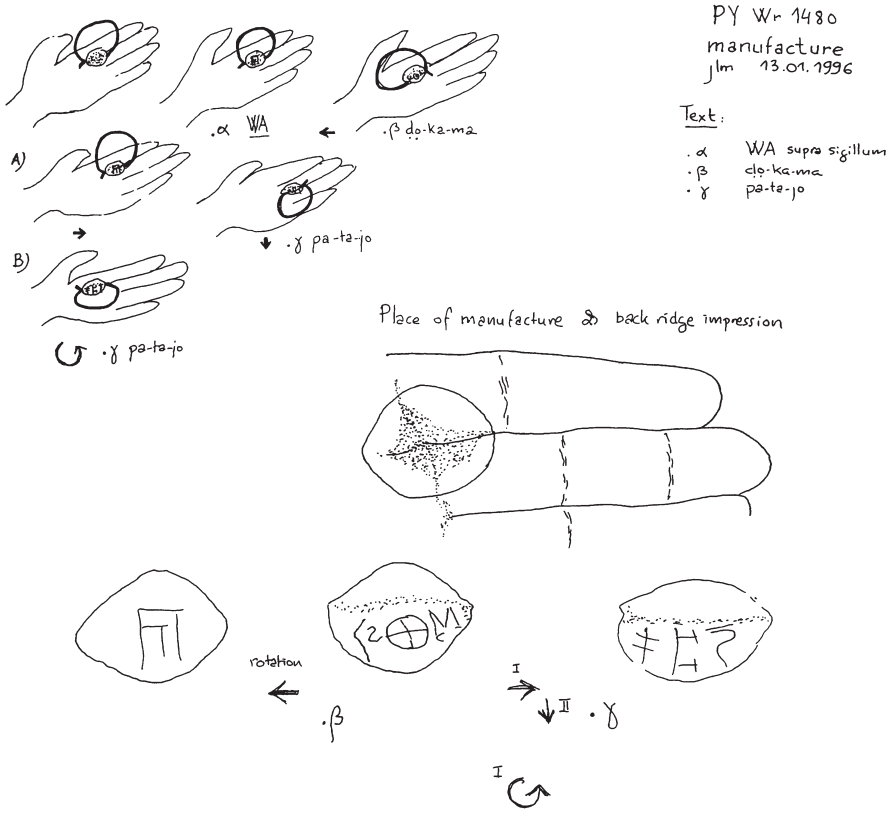


Fig. 12.45. Method of making an inscribed sealed nodule (courtesy of J.L. Melena, January 13, 1996)

Further Province of Pylos (series Ma: Hand 2 wrote both the tablets and the label);

(4) records of flax connected with communities in both provinces that have skilled work groups, individuals and even a deity associated with them (series Na and Ng: Hand 1 wrote most of the Na texts, the two Ng summary/totaling texts and the labels[137] that are tentatively connected with the Na series);

(5) records of landholding in the district of *pa-ki-ja-ne* (series Eb and Eo: Hand 41 wrote the tablets and the label);[138]

(6) the inspection inventories of armour refurbishing (series Sh and label Wa 732: both by the tablet-writer of stylus group 733 of stylistic class ii and found in grid square 52);[139]

(7) records of repair work with wheels (Hand 26 wrote both the label Wa 1148 and the tablets of series Sa).

We do not know how the information in tablets like Aa 60, Aa 240, or the tablets of the Ma or Na sets was obtained. It is clear that reporting had to come into the palace centre or that administrative agents of the palace had to go out and gather information. It is unlikely, however, that these texts were written down very far from the central archives in which the tablets were stored. This makes it possible that the labeling of the transport-baskets occurred when the tablets reached the proximity of the central archives. The records of the inspection inventory for the five pairs of armour may have been written down in the Northeast Workshop (Fig. 12.16, Rooms 92-100).

§12.2.2.3. Styluses

We have seen that Sir Arthur Evans spoke of the *ductus* (or manner of drawing the lines of signs through the clay) on certain Knossos tablets as possessing a needle-like precision. This may have planted the idea that the Mycenaean scribes wrote with a writing implement that was sharpened to a point, much

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[137] Wa 917 refers, it seems, to the prominent person *a-ko-so-ta* whom we discuss below (§12.2.5) as having completed a distribution (*o-da-sa-to, hōs* [?] *das*[*s*]*ato*) in his status as an *e-qe-ta, ek*^{w}*etās* and somehow involving an official known as the *e-re-u-te*, 'inspector'. Fragmentary tablet Na 1356 makes the attribution of the label to the Na series plausible because it refers to the *wanaks* and seemingly the same official (the *e-re-u-te*). As an *e-qe-ta*, *a-ko-so-ta* would have had a close relationship with the *wanaks*. Wa 948 simply refers to the Hither Province.

[138] The label preserves two vocabulary items that are important for the landholding records written by the same hand: *onātēres* 'landholders who derive a benefit from the land through *usufruct*', and *ktoināhōn* the genitive plural of the term for the basic plots of land.

[139] The text of label Wa 732 can be restored as *ṭḥṓ*[*rākes*.

Fig. 12.46a. Stylus from Thebes (after RUIPÉREZ – MELENA 1990,70)

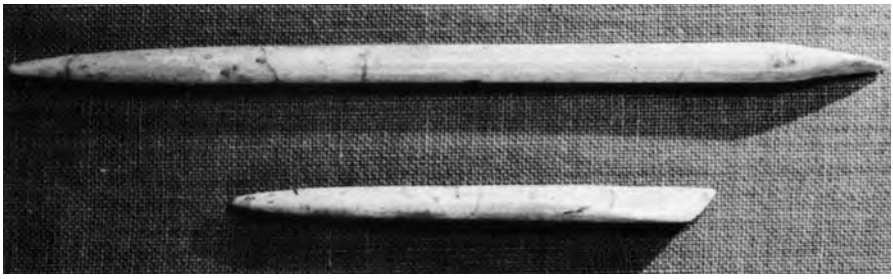

Fig. 12.46b. Photograph of styluses from Tiryns (after GODART 1990, 123)

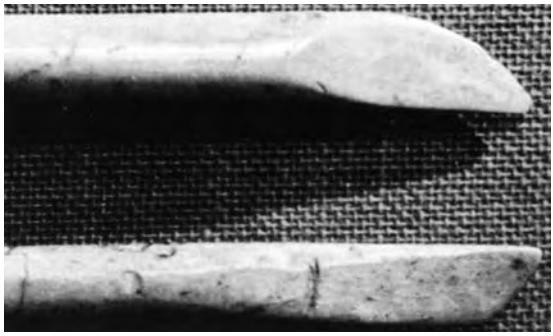

Fig. 12.46c. Photograph of blade points of styluses from Tiryns (after GODART 1990, 123)

like a modern pencil, only finer. Fortunately, we now have Mycenean styluses from the site of Thebes (Fig. 12.46a and 12.46b). They taper slightly on one end to a blunt surface not too large in diameter. This end might be used for the kind of abrading that we saw on the recto of tablet Tn 316. But the main writing end of the stylus is trimmed to a curved blade-like edge that tapers to a point (Fig. 12.46c). The blade point laid flat can be used to make erasures.

When I was first shown these instruments and told they were styluses for writing, I could not believe it. However, making styluses of this shape from wood and then using them showed me that I was foolish to be sceptical. I also yearly have school children in a class at an Open House at the University of

Texas at Austin. They make their own clay tablets and use styluses of this kind during a session that I call 'They Wrote on Clay, and You Can, Too.' And the title always proves true. Even five-year-old children can use the blade-stylus with ease and very accurately. This is because the finely pointed tapering blade moves easily through moist clay.

The shape of the blade allows for maximum control when drawing curved strokes into the clay surface of a tablet. It even allows the scribe to change the direction of his next stroke to any point in a 360-degree rotation by easily rolling the stylus between the two fingers that hold and control it. In my case, using was believing. Mycenaean styluses could have been made readily from any sturdy reed-like plant or straight twig or pencil-form pre-shaped piece of wood (or even bone and ivory).

§12.2.3. What did the Mycenaean scribes deal with?

Once the work of specific individuals is identified, we can then discuss what areas of social, political, economic or religious life they dealt with in their writing, what the distinctive qualities — we might use the term 'peculiarities' in the most literal sense — of their work were, and how they interacted with one another.

Besides the basic word for 'tablet-writer' in Akkadian and Sumerian, there are other terms that specify the kind of 'writer' that a cuneiform 'tablet-writer' is:[140] deaf writer,[141] field scribe (land-registrar, land-measurer), inscriber of stone, judge's scribe, mathematician, military scribe, scribe for labor groups, scribe of the property of the temple, scribe of the *nadītu* (i.e., cloistered) women, scribe of (the omen series) *Enūma Anu Enlil*. In Hittite records, some scribes were known as 'wood-tablet scribe'. Generally, other cuneiform scribes were known as 'leather scribe' and 'papyrus scribe'. We can see that the method of differentiation here sorted scribes into classes according to: (1) the range of materials used, i.e., the media for writing: clay, papyrus, wax, leather (parchment), stone; and (2) the main duties or spheres of record-keeping activity: legal records and records pertaining to land plots and distribution of land, military affairs, work groups, temple and sanctuary administration, religious matters. It was also not unknown for scribes to hold titles that designated their professional responsibilities, but did not explicitly refer to their skill as 'tablet-writer', e.g. *kaḷu* 'lamentation priest'.

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[140] For this discussion, see PEARCE 1995, 2272.

[141] This term probably refers to a copyist who works directly from another text and, therefore, does not receive the information for the tablet he is writing through dictation.

In the Near and Middle East, in what we shall hereafter call cuneiform cultures, tablet-writers had an important presence in almost all spheres of social activity, public and private, religious and secular, palatial and domestic. It is estimated that 70 percent of scribal work was devoted to palatial administrative activities, 20 percent to private matters (business dealings, contracts, merchant records, private inventories, notarized and witnessed transactions, and the like), and 10 percent to what conventionally are called scholarly or scientific activities.[142] Our Linear B records, by contrast, seem to be very much focused on the interests of the palatial centres. They are entirely concentrated on economic matters, albeit the goods, materials and transactions can be situated in the same spheres of life where cuneiform tablet-writers were active.[143]

We are severely limited in our knowledge of what most Mycenaean scribes do during their careers, i.e., whether some of them would be specialized in certain spheres, because all of our texts date from the period of days, weeks, or at most months preceding the fire destructions that preserved the texts.[144] We thus are unable to follow individual scribes through their careers, as can be done in the Near and Middle East.[145] Even when scribes appear to be operating in different subject areas based on the preserved texts assigned to them, we may not be seeing some overall unifying principle to their work which would be known to them or to higher officials in the central administration.

§12.2.4. How were the Mycenaean scribes taught?

An area where we have a huge *lacuna* in Linear B studies is the education of scribes.[146] By contrast, in cuneiform cultures, there is ample documentation over long periods for what is known in Old Babylonian as the *eduba* (Sumerian *é-dub-ba-a*, Akkadian *bīt tuppi*), literally 'the tablet house'.[147] In such institutions, new tablet-writers received specialized educations, not just in the art of writing, but in subject areas for which written records were essential: the different languages in which traditional and contemporary texts were written (Sumerian, Akkadian, Aramaic); legal proceedings; letter-writing; public

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[142] PEARCE 1995, 2273.

[143] The tablets from the 'houses' at Mycenae are the main candidates for 'extra-palatial' use of writing. See VARIAS GARCÍA 1993, and detailed discussion in SHELMERDINE 1999, 569-573.

[144] See PALAIMA 1995a, 629-631.

[145] PEARCE 1995, 2276. Some cuneiform scribes have careers as long as thirty years or more.

[146] See DUHOUX 2008.

[147] SJÖBERG, 1976, 159-161 *et passim*, for much of the information that follows, with bibliography. See also PEARCE 1995, 2270-2272.

inscriptions on stone; economic transactions; the 'tongues' or 'the technical jargon, words and expressions'[148] of specialized occupations (e.g., priests, silversmiths, jewellers, shepherds, master shippers); and highly technical areas like mathematics and surveying, music (categories of songs, individual hymns and their structures, versification) and literature.

What the evidence from cuneiform cultures gives us is not simply cause for lamenting the paucity of Linear B evidence, but a template or model for what we should be thinking about when we try to imagine how the technology of writing was acquired and used within Mycenaean palatial societies. For example, it is generally, though not universally,[149] admitted that we do not have school texts (as we mentioned in discussing the Room of the Chariot Tablets inscriptions, §12.1.2.6). But we might wonder whether it is not reasonable for Linear B scribes to have learned the character sets (phonetic signs, logograms, metrograms, numbers) in some way equivalent to the running 'philological study lists' that the students of cuneiform writing had to master: sign lists, vocabularies (grouped by semantic fields), syllabaries and grammatical lists. The tablet-writers in cuneiform cultures always had to negotiate the complexities of both the Sumerian and Akkadian languages. They had to master technical vocabulary and terminology in both languages. And they also had to master inherited Sumerograms in Akkadian texts and inherited Sumerograms and Akkadograms in Hittite texts.

For students attempting to master Linear B, the same challenge would have been present to some degree. Scribes were using logograms that originated in the Linear A script and undoubtedly at some point were associated with non-Greek words for those signs. The most famous example is the sign for figs. It is rendered logographically in Linear A and Linear B by the same sign that has the phonetic value *ni* in Linear B. This is the first syllable of the word *nikuleon*, which is attested in a gloss attributed to Hermonax in Athenaeus, *Deipnosophistae*, 76e, as meaning 'figs' in Crete.[150] When this ideogram was used in Linear B, was it pronounced as the other loan word that the Greek-speakers used for this fruit and that is attested, indirectly, in the Linear B texts: *sūkon*? Or did some of the scribes retain at least the knowledge, if not the constant use, of the word used on Crete, *nikuleon*? And did, e.g., scribes in Pylos or Knossos or Thebes differ in their reading of the logogram for figs?

Such traces of lasting Minoan influence help to reinforce the idea that most likely, in my opinion, the Mycenaeans took up the art of writing at some point

[148] SJÖBERG, 1976, 166-167.
[149] See DUHOUX 2008, §2.3.
[150] NEUMANN 1962.

in the history of Mycenaean society and culture when there was a critical need for records, i.e., when existing pre-literate systems of control and management of resources, work and exchange were no longer sufficient.[151]

We say that the Mycenaeans adopted writing from the Minoans by adapting Linear A so that the new script, Linear B, could represent Greek efficiently. But that is just a manner of speaking. It is difficult to imagine how recent illiterates in the first generation of the use of script could adjust it to the peculiar features of their language. Much more likely, in my opinion, is that tablet-writers who had used the Linear A script, who were what we conventionally call ethnic Minoans and who spoke the language or languages that were privileged within Minoan palatial culture,[152] adapted the Linear A sign repertories to fit the language that would be thenceforth the main language of written communication in the Mycenaean states. The earliest records that we possess, the tablets from the Room of the Chariot Tablets at Knossos, we must remember, come from the destruction phase of the period when the records were written. This leaves open the possibility that even within the LM II into LM III A:1 phase, the features that we now know as typical of Linear B were worked out and eventually fixed over a period of years, even decades.

I have dealt elsewhere[153] with some of the differences in formatting and text arrangement that in my opinion are not significant markers of the transition from Minoan Linear A writing to Mycenaean Linear B writing. Features like the fuller use of rule lines in Linear B and the clear separation of logograms from the fuller syntactical groups of words represented by phonograms are developments that could have taken place within Linear A, had the Minoan culture ever seen the need to write on clay tablets the kinds of economic records the Mycenaeans eventually wrote.[154]

Tablet-writers in Linear B then would have had a reasonably long period before the destruction that preserved our earliest tablets, those from the Room of the Chariot Tablets, to arrive at what appears to be the set repertory of document shapes: page-shaped tablets, clay labels, nodules and leaf-shaped

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[151] PALAIMA 1987b, 508. PALAIMA 1988, 273-278, offers a complete survey of alternative theories as to when, where and why the Linear B script was created. See also PALAIMA 1990b for an overview of writing and administration in the Aegean sphere.

[152] DUHOUX 1998 and RENFREW 1998 address the language situation in Minoan Crete.

[153] PALAIMA 1988.

[154] For the features of Linear A tablets in their administrative contexts, see SCHOEP 2002. Schoep discusses Linear A tablets with rule-lines on pp. 76-77. So far as we can tell, as in Linear B, nowhere in Linear A are ideograms imbedded in the syntax of phonographically represented word-groups. The reduced context of Linear A records tends to obscure this fact.

tablets.[155] We have already seen, however, that there is considerable variation within the categories of palm- and leaf-shaped records in size and in particular details of shape. To some extent the categories blur and merge.

Once the Mycenaean script was developed — and the Linear B writing system is remarkably stable in its sign repertories and principles of use throughout its attested history — it then had to be taught to the number of people required to keep the records deemed necessary by the individuals and power groups who controlled, or at least heavily influenced, how Mycenaean society itself developed and operated within different palatial territories.

Whoever the individuals were who wrote our extant tablets and whatever status they had, it was necessary for them to acquire knowledge of the art of writing. How was this accomplished? Here palaeography and hand identification offer clues.

The instances wherein the styles of different scribal hands clearly fall into groups or classes (the clustering of the hands of the Room of the Chariot Tablets at Knossos; the close similarity of Khania Hand 115 and Knossos Hand 115; the very close resemblance of Pylos Hands 1 and 2; the three distinctive palaeographical classes of writing style from tablets dated to the destruction level at Pylos) offer our best evidence for how scribes of this period would have been trained. Such similarities clearly argue for training underneath senior masters who would transmit thereby a consistent and fairly traditional style to apprentices who were learning how to use the Linear B script.

Finally, how many persons besides the generously estimated 150 hands or potential hands identifiable in all our extant tablets might have known, during any generation, how to read and write in Linear B?

Any speculations here are complicated by the evidence that Linear B writing could be used on ephemeral documents. The strongest argument for this is the fact that the signs of the Linear B script maintain a curvilinear and complex style throughout 200 years of use, instead of developing simple forms that would have been easier to write, as they often are, repeatedly into moist clay surfaces. This raises the possibility that the Linear B records, as we have them, served in some ways as preliminary archives with information of longer term importance being transferred to records done in ink upon parchment or papyrus.

That there has been some simplification in sign forms over time is clear if we compare, as Driessen has conveniently done, the signs painted on inscribed stirrup jars with their earlier RCT forms and then with the developed Pylos and other mainland forms (see Figs. 12.47-49). Enough signs retain some of the

[155] See PALMER 2008b, 61, fig. 2.1.

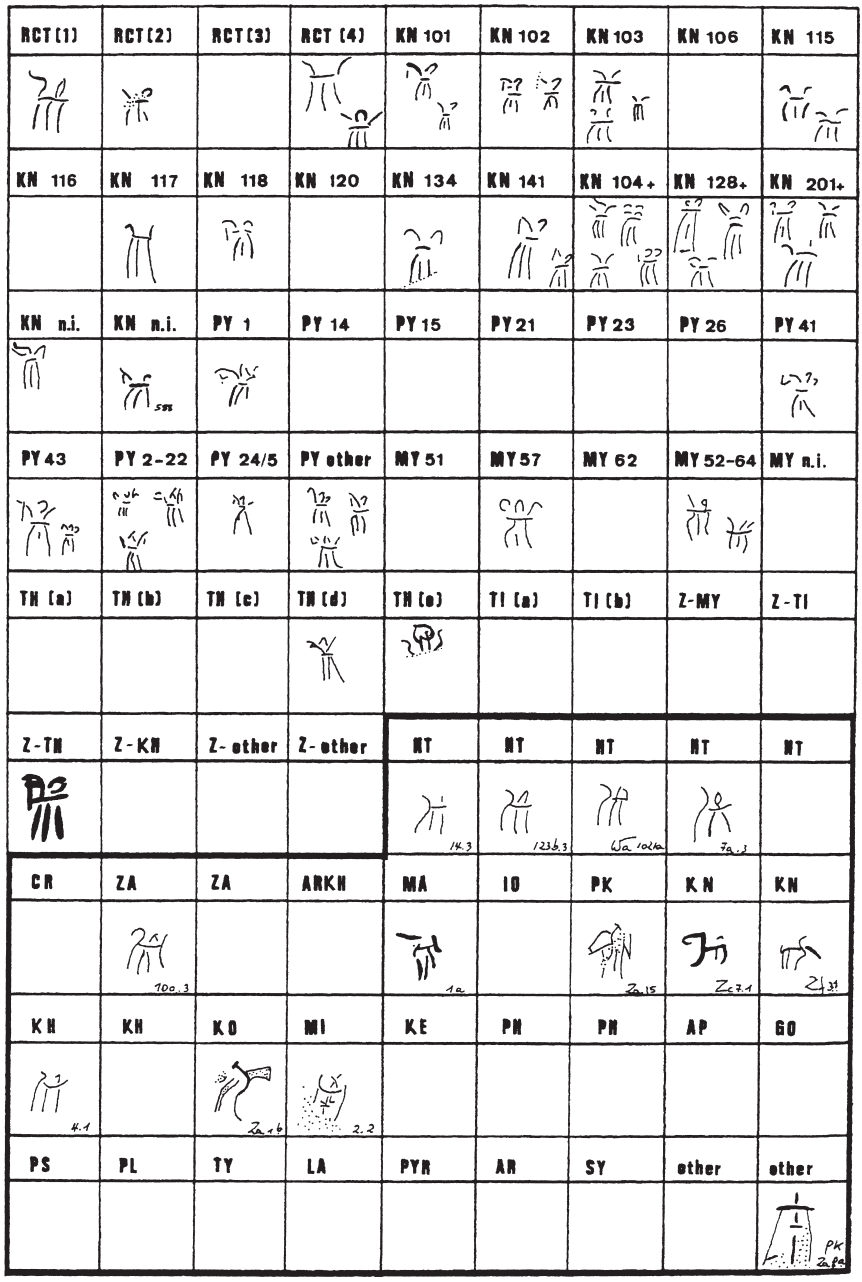

Fig. 12.47. Palaeographic chart for Linear B sign *du* (after DRIESSEN 2000, 360 pl. 71)

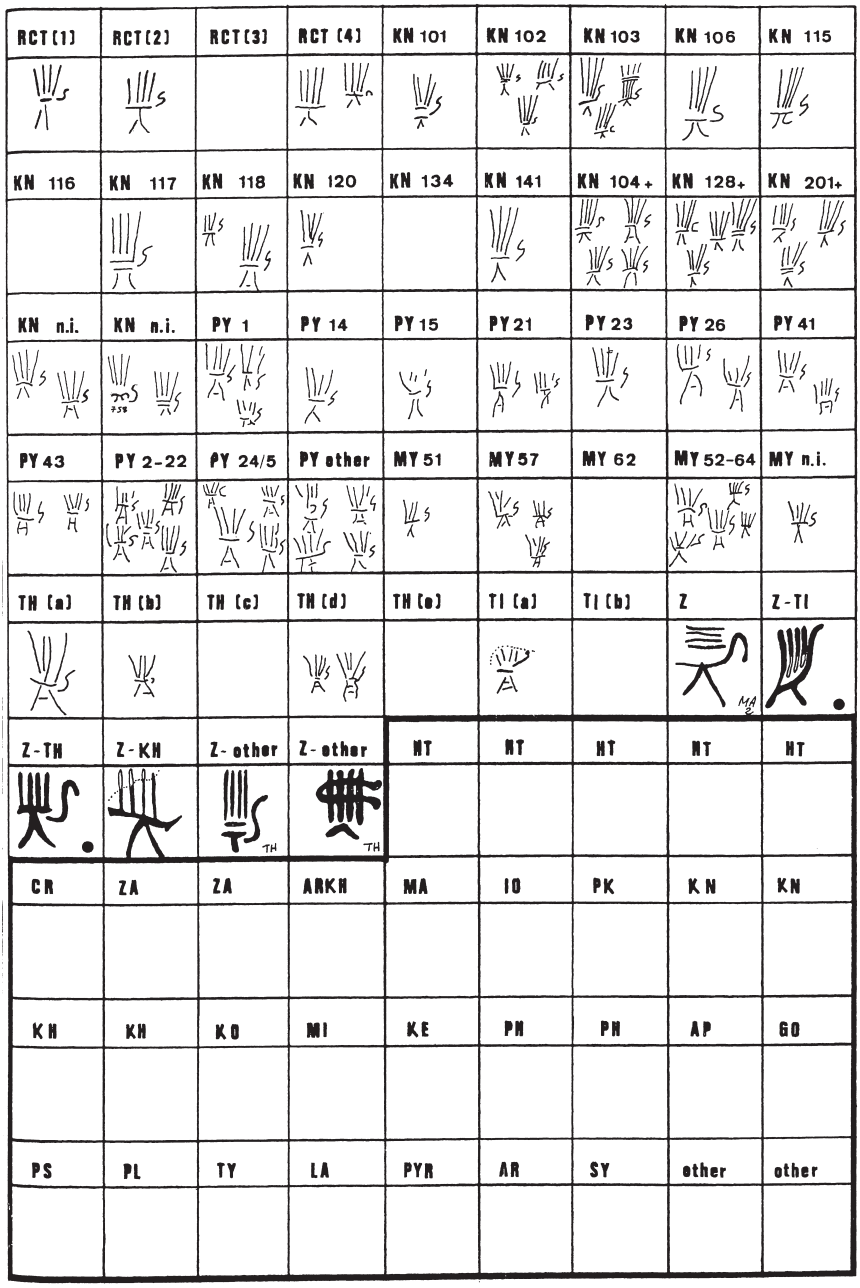

Fig. 12.48. Palaeographic chart for Linear B sign *no*
(after DRIESSEN 2000, 361 pl. 72)

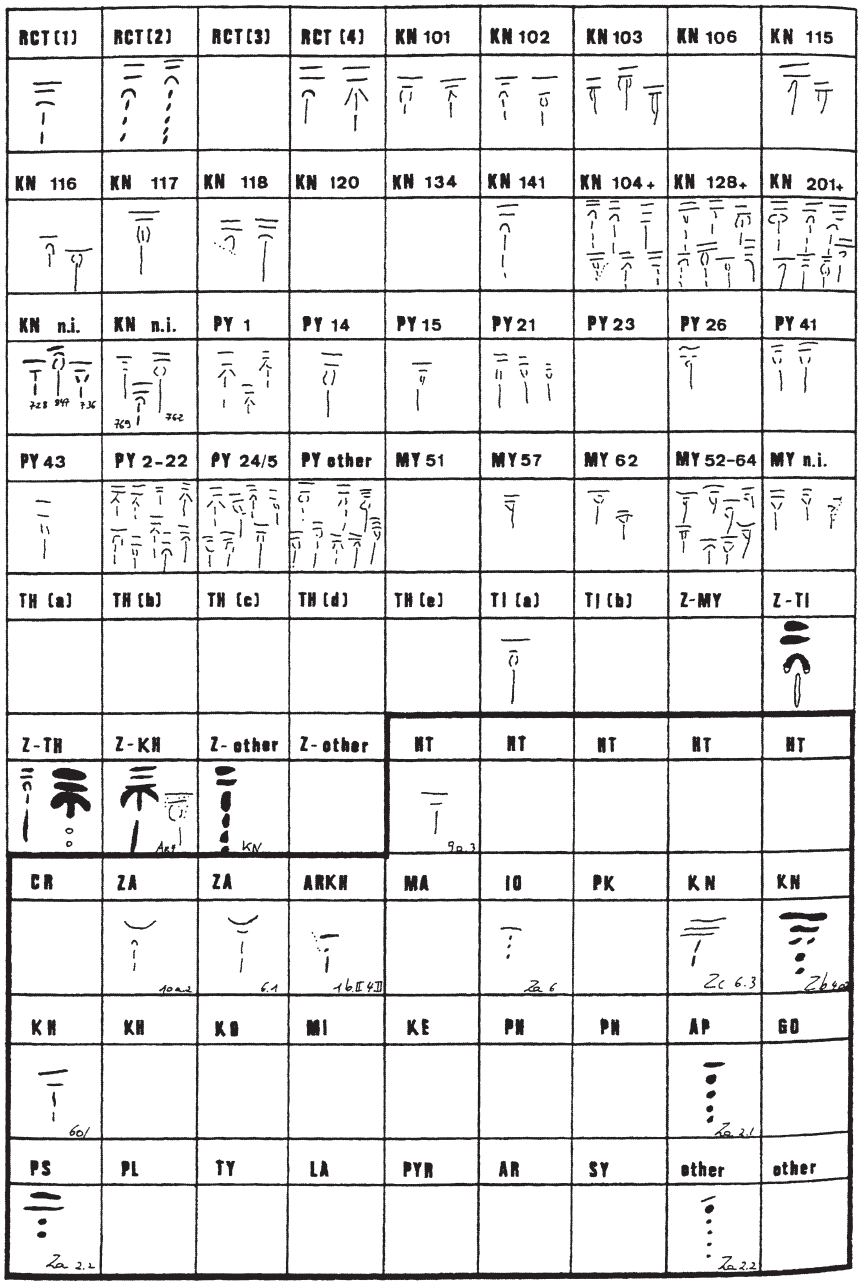

Fig. 12.49. Palaeographic chart for Linear B sign *na*
(after DRIESSEN 2000, 320 pl. 31)

added elements or embellishments that are found in the painted forms to prove that a traditional sense of writing was transmitted.[156] But in general, as we move from the earlier Knossos material to the later mainland material, and as we move from the painted texts on stirrup jars to the incised texts on clay tablets, reasonable, though not extreme, simplification occurs.

Clay tablet writing in the Mycenaean period, insofar as it is preserved, was used within a narrow orbit of society and was focused on economic *realia*. Likewise, even the stirrup jar inscriptions were executed for economic purposes having to do with the control of the process of production (in a system comparable to the 'collector' system used with sheep, wool and other livestock).[157] Contrary to the *communis opinio*, the seeming 'illegibility' of some of the signs painted on the stirrup jars (Fig. 12.50) should not be attributed to

Fig. 12.50. Stirrup jar inscription Thebes Z 847 with illegible signs (after RAISON 1968, 82)

lack of familiarity with the writing system or compared with the 'nonsense writing' found on some Attic vase inscriptions of the historical period. Instead it is, in my opinion, explained by the internal needs of a closed system wherein batches of vases had to be identified for individuals who 'knew' the kind of

[156] On embellishments and simplifications within the work of individual scribal hands, and the reasons that these occur, see *Scribes Pylos*, 21-26 and figure 4. See also the 'embellished style' of signs on the tablets of Hand 91 and Class iv that are probably earlier in date than the rest of the Pylos Linear B material: *Scribes Pylos*, 111-113; 133-134. From this group the minuscule fragment Xn 1449 should be removed. It has been joined (MELENA 1996-97, 165) to tablet Vn 1339, which comes from the Northeast Workshop. The find-spot of Xn 1449 was unknown. It was included with these tablets solely on the basis of the seemingly unusual palaeography of its two partial signs. This is now seen to have been inadvisable.

[157] VAN ALFEN 1996-97; VAN ALFEN 2008.

information that was likely to occur in these inscriptions. In such environments, very similar to the illegible (to an outsider) scrawl written by physicians to pharmacists, signs and words can be written in haste in full confidence that their messages can be understood, or divined, by the parties who need to read them. We might recall here our observations (with regard to Tn 316 above) about the self-mnemonic aspects of many of our records.

The Linear B tablets in other regards offer evidence that work specialisation was passed down from fathers and mothers to their sons and daughters.[158] Texts of the Ak and Ap series at Knossos record women workers. These texts use the abbreviation *di* and the word *di-da-ka-re* (*didaskalei*) to indicate that children who are designated as *daughters* (abbreviation *tu* for *tu-ka-te, thugatēr*) are 'under instruction'. It is then not difficult to imagine also that the actual children of scribes (like the young tablet-makers who left their palm-prints on the clay tablets) would be taught the art of writing as a skill for their eventual expected service within the palatial system. They would thereby be acquiring a firsthand knowledge of Linear B palaeography that we now acquire in our own attempts to understand how the tablets were written and by whom.

§12.2.5. *The social status of the Mycenaean scribes*

Since the Linear B tablets do not give us the word for 'scribe' or any related word connected with administration or record-keeping, *and* since no tablet has a signature or an identifying seal-impression upon it, it has been debated, most recently by John Bennet and Jan Driessen, what the status of the persons who wrote the tablets was.[159]

Given how important the recording of individual and collective responsibility is in the Linear B records, this glaring absence of explicit references to those who were responsible for making and keeping the written records is striking and puzzling.

If the 'scribes' did not have prestige or high status as a group, we might expect for them to be listed collectively or individually among groups or persons who receive foodstuffs:

1. as 'wage payments' (like the 'sawyers', 'wall-builders', and 'chief-carpenter' on Pylos tablet Fn 7);
2. as basic survival-level rations (like the cloth and other women workers of the Pylos Aa, Ab and Ad series);

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[158] Hiller 1988.
[159] Bennet 2001; Driessen 1994-95; cf. Palaima 2003b, 188.

3. as earned or due allotments of food, like those given out to a group of women, two shepherds, and most likely six fullers and two 'lyre-players' recorded among other parties in the Av tablets of Hand 304 at Thebes (Av 100, 101 and 106);[160]

or **4.** as distributions of foods during festivals or other religious occasions (like the officials with 'religious' associations on Pylos tablet Fn 50).

The absence of 'scribes' from these kinds of documents might be used to argue minimally that the tablet-writers were not conceived of, or paid or 'rewarded', as a class within the Linear B records, but acquired a knowledge of writing in regards to whatever duties (political, social, religious, military or economic) they had within the palatial system and received recorded rewards from the palatial centres in such other capacities and not as 'tablet-writers' *per se*.

One possibility, therefore, is that the scribes are relatively high-ranking officials or persons of importance in various spheres of regional palatial culture. If the activities of such persons were of enough regular interest to the palatial centres, they might have been expected to learn the art of writing and record-keeping so that they could write down, report and preserve data needed to manage their affairs. However, given the low number of identifiable tablet-writers in the preserved records from the palatial centre at Pylos (about 33) and the broad range of specific interests that the extant texts document, there are no easy match ups of tablet-writers with official positions, with the exception of the *ko-re-te-re* and *po-ro-ko-re-te-re*, officials appointed by the palatial centre at Pylos to attend to its interests in the 16 districts into which the two main provinces are divided. These officials are 32 in number.

The other possibility, which I think is on balance more likely, is that the identified hands would be practical 'record-makers' who accompanied palatial and/or regional officials, like the *wanaks* ('king'), *lāwagetās* ('leader of the *lāwos*'), *ko-re-te-re* and *po-ro-ko-re-te-re* (palatially appointed regional officials, as we have just now explained, who are literally 'agents of satiety'[161]), *e-qe-ta* (*hek^{w}etās*, traditionally translated as the 'followers', who appear mainly in contexts of mobilization of persons for military service) and various kinds of inspectors, inventory-makers, or overseers. In this scenario the 'tablet-writers' would essentially 'take dictation' from other personages or officials and would organize and keep track of complicated data by writing them down on the tablets.

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[160] *TOP* I, 26-27, 32-32, 176-178.
[161] Palaima 2008, 385.

The extant tablets from Pylos, in cases where their contents and contexts are best understood, suggest that there was a hierarchy of tablet-writers according to their proficiency at recording information accurately and effectively. The main scribes of each of the three palaeographical classes cover diverse topics and were entrusted with the more important administrative assignments. Of course, we must always remember that our view is limited to the period of at most 5 months[162] from which our surviving tablets come. A scribe like Hand 21 writes 72 tablets in at least six different spheres of activity. Hand 25, by contrast, has written a single tablet (Vn 20) dealing with wine allocation to the principal districts of the Hither Province.

Before we consider an example, we should say a few words of caution. New finds (or even joins) of tablets have often brought new revelations that have overturned old theories. Two conspicuous examples are: (1) the clear attestation of the god Dionysus in the texts from Khania (Gq 5) and in a new join from Pylos (Ea 102)[163] that overturned theories that this god entered the Greek pantheon in post-Mycenaean times; (2) the discovery in the Thebes tablets (Av 106) of our first clear reference to lyre players, long known to exist from wall and vase paintings and the finds of the remains of the instruments themselves.[164]

A prominent individual at Pylos known as *a-ko-so-ta* is recorded as performing an inspection of fields (Eq 213), as having received at least sixty-two of an item that might be something like 'beds' (Pn 30), as having distributed to an unguent-boiler aromatics that will be used as scents in perfumed oil (Un 267), as an owner ('collector') of livestock, and finally in connection with a label referring to distribution (most likely of flax) at Pylos (Wa 917, cf. also Wa 948).[165] All these tablets are written by the same hand, Hand 1, who is the 'master scribe' of the site, i.e., the tablet-writer who writes what are among the most important texts and who, in a singular fashion, edits, and otherwise interacts with, the work of other scribes. Wa 917, as we have seen (§12.2.2.2), seems to refer to a set of records wherein *a-ko-so-ta* has the status of an *e-qe-ta* and operates in relationship to an 'inspector' (*e-re-u-te-re*[). But it is impossible to prove[166] whether (a) *a-ko-so-ta* is in fact Hand 1, keeping track of his own administrative activities, or (b) the scribe known as Hand 1 was responsible for writing down information about the important activities of *a-ko-so-ta* because of his own high degree of competence as a record-maker.

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[162] PALAIMA 1995a, 629-630 and n. 26.
[163] MELENA 2001, 36-37, 48.
[164] MELENA 2001, 30-31; YOUNGER 1998.
[165] *Scribes Pylos*, 40-41.
[166] See KYRIAKIDIS 1996-97, 220-224.

§12.2.6. *Some pending questions*

Many problems related to the Mycenaean scribes and their texts are still unsolved and await new perspectives or fresh minds concentrating on 'the realities of the situation.' For example, we might ask, did the Linear B scribes use soft, perishable writing materials (papyri, parchment, waxed tablets) and to what extent? Remember that the fluid, criss-crossing and curving lines of some of the more elaborate signs suggest that writing with ink on ephemeral materials was practiced, as it clearly was in the Minoan period on 'packet' sealings, or, as Hallager calls them, 'flat-based nodules' (Fig. 12.51).

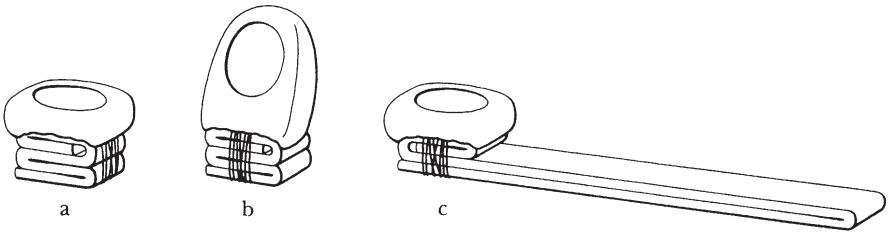

Fig. 51. Drawing of flat-based nodules with different windings.
a. around folded ends; b. around edges; c. around edges of large parchment.

Fig. 12.51. Flat-based nodules used to secure the integrity of messages written on folded parchment (after HALLAGER 1996, 140, fig. 51)

We have hypothesized that Minoan scribes most likely invented and first taught the art of writing. Who were their pupils? Could we imagine that Minoan scribes were in charge at the beginning of the Mycenaean administration in Crete and that the knowledge and use of script was transmitted from fathers to sons or nephews within their family lines? That is, was there a tendency toward the hereditary transmission of the scribal function, parallel to how craft skills in other areas like pottery production and cloth manufacture are passed to sons and daughters? Might this mean that the professional skill of writing always stayed within extended families who were of Minoan 'ethnicity' in origin?[167]

[167] This might be useful in explaining why the language of the Linear B tablets is so uniform, despite being attested over a period of almost two centuries and in regions where, in the alphabetic period, remarkably different dialects prevailed. Essentially the language of the tablets would be a somewhat fossilized Greek that was used to record basic information. It might also explain the willingness of the tablet-writers to perpetuate old ideograms that derive seemingly from the initial syllables of Minoan words.

How long was the apprenticeship period? What was the curriculum for education in the art of writing?

We might even ask how many scribes had to be trained at any one time.

Kevin Pluta in his dissertation in progress[168] calculates that the Palace of Nestor would have had to train just three scribes per year to maintain a stable 'scribal workforce'. He supposes that the *floruit* of a tablet-writer at Pylos, i.e., the period of his most active and accomplished use of writing for administrative purposes, was only ten years (surely a conservative estimate), and that the number of tablet-writers active at any one time did not far exceed the approximately 30 scribes that we have identified in the tablets preserved by the late LH III B destruction.

Let us, in order to be very conservative in our hypothesizing, double the number of tablet-writers needed by the palatial centre at any one time and use a moderate estimate for the average working career of a scribe of fifteen years. Then in any given year, in order to maintain the number of skilled tablet-writers the palace administration needed, a mere four scribes would have to 'get their diplomas'. This may explain why we find little evidence for scribal schools. Scribal education might have been a matter of apprenticeship of sons within the families of current scribes, or the younger males within their extended clans or village-level communities. This kind of hypothesizing raises still more questions.

How was the knowledge of script transmitted outward from the site where it was invented to the other centres? By the end of the Mycenaean III B period, we have clear evidence that writing was used for wide-ranging purposes, for example,

1. daily distributions of barley to individuals and work groups (e.g., the Thebes Fq tablets);
2. inventories of vases (Mycenae Ue 611; Pylos Tn 996 and the Ta series);
3. making sure that military equipment, vital for the defense of territories or expansion of power, was ready (Pylos Sa and Sh tablets;[169] Tiryns Si tablets; Thebes Ug tablets; Khania Sq 1; the many KN S- series);
4. offerings or the consignment of goods, materials and artefacts to sanctuary localities (KN Fp series; PY Fr series; PY Tn 316; KH Gq 5);
5. the highest matters of religious ceremony (Pylos Un 718, Tn 316 and the Ta series; Khania Gq 5).

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[168] PLUTA forthcoming.
[169] See also the joins of tablet fragments that indicate other military equipment manufacture at Pylos: MELENA 1996-97, 165-170.

Was clay-tablet writing used far outside the orbits of the main palatial centres which until now give us all of our documentation? If not, how was the information from provincial districts and second-order centres gathered and eventually processed in summary documents at the palatial centres?[170]

How was the information in the central archives organized? How many tablet-writers or officials had access to the records once they were stored? What happened to the records from prior administrative periods? Who decided whether and when texts could be destroyed? It is noteworthy that with a few, probably accidental, exceptions, we do not possess any tablets from administrative years prior to the ones that were underway when the buildings in which they were kept were destroyed.

Lastly, we would like to know something more about the social standing of Mycenaean tablet-writers.

Was a masterful scribe like Pylos Hand 1 an aristocrat who used writing to discharge his responsibilities in overseeing so many areas that were important for maintaining the power and prestige of the palatial centre and its authority figures? Or was he simply a very skilled technical expert, well enough appreciated by those in power, but never invited to sit at banquets with them as an equal?

Were there 'temple' scribes specializing in religious matters that are so prominent in the tablets;[171] and, if so, how would they have interacted with palatial scribes?

The *wanaks* at Pylos has his own potter, fuller, and *e-te-do-mo*, *entesdomos*; and the *lāwagetās*, too, has a wheelwright and other personnel designated as his. Would such high personages have their own scribes, too?[172]

For all these questions there are relevant data in the corpus of inscriptions and the specialized editions and studies of the texts that we now have or that are now in preparation. Palaeography has opened up for us a world where we can come into contact with human beings from the second millennium BC and know them at what we can call, without exaggeration, an intimate level. We have their fingerprints, their palmprints, and their 'hands'. We can see in the physical shapes of the tablets their handiwork, whether as full-fledged scribes or as apprentices. We can see in their finished texts how cleverly they used the art of writing and what solutions they devised to nearly intractable problems of how to record certain kinds of information. In some cases, we have

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[170] PALAIMA 2000b; and PALAIMA 2001, especially for discussion of macro- and microeconomic levels of administrative organization.

[171] WEILHARTNER 2005.

[172] See PALAIMA 2002.

their doodles and perhaps even the ABC's that they learned when they were young. We know lots about their workplace identities; and they invite us to get to know them better.

A Sumerian proverb says, 'The scribal art is the mother of speakers, the father of scholars.'[173] For students of Mycenology, study of the scribal art from the late Mycenaean Bronze Age is the mother of modern scholars, too.

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