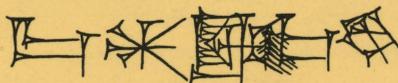


# ARCHAEOLOGICAL REVIEW FROM CAMBRIDGE VOLUME 3:2

## 美麻紀伊理昆古

यदिन्द्राग्नी यक्षुषु त्रुर्वशेषु यद्वुह्युष्वरुषु पूरुषु स्यः।  
अतः परि वृषणावा हि यातमद्या सोमस्य पिबतं सुतस्य॥

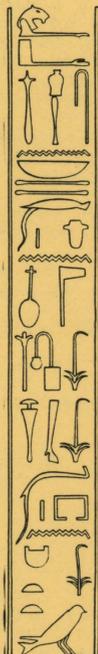


Ἡροδότου Ἀλικαρνησέως ἱστορίας ἀπόδειξις ἥδε,  
ὡς μῆτε τὰ γενόμενα ἐξ ἀνθρώπων τῷ χρόνῳ ἐξίτηλα  
γένηται, μῆτε ἔργα μεγάλα τε καὶ θωμαστά, τὰ μὲν

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ARCHAEOLOGICAL REVIEW FROM CAMBRIDGE

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## MYCENAEAN ARCHAEOLOGY AND THE PYLOS TEXTS

T.G. Palaima and C.W. Shelmerdine

### Introduction

The Mycenaean Greek Bronze Age is a relatively new field of study, if one takes the long view of historical enquiry, but it has managed to capture the imaginations of scholars and amateurs more than any other field of Classical studies. Mycenae was always known to the ancient world; nearly 25 centuries ago an exiled Athenian general turned historian, Thucydides, speculated about its size and the nature of its power. But not until a mere century ago did a German entrepreneur turned archaeologist, Heinrich Schliemann, begin recovering the material remains of Mycenae, Tiryns and other fortified citadels that dominated mainland Greece in the late second millennium BC (Schliemann 1878; 1886; Schuchhardt 1891; Bennet, Figure 2). As a result of his discoveries, the term 'Mycenaeans' has been applied by archaeologists to all the Late Bronze Age inhabitants of Greece. Since Schliemann's time exploration has continued, and the material remains recovered suggest a sophisticated, cosmopolitan culture, which reached its *floruit* in the 14th-13th centuries BC (summaries in: Vermeule 1972; Mylonas 1966; Stubbings 1973; 1975a; 1975b; Hooker 1977). Monumental building complexes -- the term 'palaces' is convenient, so long as we resist its modern political and social connotations -- have been excavated in different parts of Greece, and surveys have located sites of various sizes in the regions around the palaces. Mycenae is the focal point of one such grouping, or 'kingdom'; others exist at Pylos and at Thebes (Bennet, Figure 2).

A Mycenaean palace served many different purposes as economic, political and administrative centre of the district under its control. The one at Pylos is typical in its layout, which illustrates how the Mycenaean planned the architecture of the palace to suit its several functions. It contained large public rooms (esp. rooms 6, 46, 65: Figure 1), storage areas (e.g. 18-24, 27, 32, 105), workshops (55, 96-100), private apartments (chiefly above 29-34), a separate secondary structure (64-81), and a system of courts and corridors that controlled and facilitated movement around and through the complex. Among the artefacts from the palace were not only many hundreds of plain pots and other objects of everyday use, but also luxury items in imported materials such as gold, ivory, faience and bronze. The imported items reveal another important fact about the Mycenaean: their international connections. The wide distribution of Mycenaean pottery and the clear evidence of incoming luxury goods testify to an extensive trading network, ranging from Italy and Sardinia in the west to Egypt, Syria and Palestine, Cyprus and Asia Minor in the east (e.g. Stubbings 1951; Taylour 1958). Indirect contacts reached even further.



Figure 2: The Aegean Region, showing sites mentioned in Bennet and Palaima and Shelmerdine.

Such is the picture of a prehistoric civilisation that archaeology, strictly defined, can compose. Fortunately Mycenaean sites have also produced inscriptions on clay tablets (Dow 1973; Hooker 1980, 45-47). The tablets are written in a syllabic and ideographic script called Linear B, the Mycenaean adaptation of the earlier Minoan Linear A, which had been in use on the island of Crete in the preceding period of the Aegean Bronze Age. In 1952 another amateur scholar, Michael Ventris, showed to an astonished scholarly world that the language of the Linear B tablets was Greek (Chadwick 1967; Pope and Raison 1977, 6-9).

Ventris' decipherment greatly increased the possibilities for learning about Mycenaean culture. Epigraphists, linguists, social historians, economists and students of religion have joined archaeologists in contributing to a rapidly expanding body of knowledge. The clay tablets are simple records of the daily interests of the palace and its administrators. There are no legal documents, literary texts, official decrees, copies of royal or diplomatic correspondence; in fact nothing important enough to be kept, in tablet form at least, beyond a very restricted period of time. The tablets themselves were preserved by accident; their clay baked in the conflagrations that destroyed the Mycenaean palaces. Still, even with such unpromising source material, the kinds of questions that could be raised and answered were much more varied than before (Palmer 1963; Ventris and Chadwick 1973; Hiller and Panagl 1976). For example, in the field of cult, one could recognise the names of gods and goddesses; identify the cult centres where they were worshipped; establish the hierarchy of religious offices involved in their worship; and even theorise about their relative status by studying the kinds and amounts of offerings each received (Gérard-Rousseau 1968). In regard to society and economy, the tablets produced hundreds of names of people (and even cattle!); terms defining their occupations or official duties (Lindgren 1973); and the names of the places where they lived and worked (McArthur 1981; Bintliff 1977). Such information had to be cleverly extracted from records of deliveries and disbursements, lists of ration payments, inventories of vessels and furniture, records of taxes and allocations, land tenure documents, and accounts of commodities ranging from broken chariot wheels to perfumed oil.

At first, specialisation was a problem. Traditional archaeologists continued their work of excavation, but were unfamiliar with the newly deciphered tablets. Linguistic specialists did not, for the most part, have a close acquaintance with excavation material. The nature of the tablets, as *in situ* records of activities in specific archaeological contexts, was often ignored in forming textual interpretations. Moreover, the evidence of the documents was used selectively, often to support particular theories of archaeologists, who quite frankly had good reason to be puzzled by the many rival interpretations of individual tablets proposed by purely textual scholars.<sup>1</sup> Only recently have the two groups begun to work together, and to study documentary and archaeological evidence in close conjunction (e.g. Vandenabeele and Olivier 1979). This encouraging trend allows us to address meaningfully

some important questions about Mycenaean civilisation, for which documentary and archaeological data are inextricably linked, such as regional organisation (McDonald and Rapp 1972) and palatial economy and administration (Shelmerdine and Palaima 1984).

In this article we shall explain the principles of research that have been developed in Mycenaean studies in order to make effective and proper use of texts and excavation material. We offer some examples from our own work which, in different ways, has been concerned with understanding the purpose and functions of the palace at Pylos. We concentrate here on questions of economy and administration. How were various industries organised and operated in the palace? How, where and why were records kept? Valid answers to such questions can only be reached by combining documentary and archaeological investigations and allowing them to interact.

### Problems of Interpretation

The Pylos tablets deal with the internal and external concerns of the palace and its administrators. Information is recorded in a brief, shorthand style by scribes who remain anonymous. Their longer texts (on 'page-shaped' tablets) tends to be repetitively formulaic, while the other, shorter texts (on 'leaf-shaped' tablets) usually consist of one or two brief entries, without larger context. Consequently, the meanings of many technical terms remain obscure to would-be interpreters, some 3000 years later, for lack of a variety of contexts that might offer different perspectives for interpretation. There is no doubt, however, that a Mycenaean scribe could make sense of his own brief notes, and expected his fellow scribes to understand extremely specialised notations and even ad hoc coinages. They knew what they were writing about. We, on the other hand, are trying to reconstruct the features of an unfamiliar society from allusive documents and a fragmentary collection of material remains. Finally, the tablets pose one additional problem. At Pylos, as elsewhere, they are almost all confined to a single, limited period of time. They owe their preservation to the fire that consumed the palace about 1200 BC. Therefore we have only a chance assortment of tablets: those that happened to be in various rooms and areas of the palace at the moment of its destruction. How then does one begin to deal with anonymous, randomly preserved documents and their spare, allusive contents?

### Approaches to the Problem

The most important principle is to treat the tablets not only as texts, but also as archaeological artefacts.<sup>2</sup> The Pylos tablets may have been preserved at a random chronological point, but their places of discovery ('find-spots') and their spatial distribution throughout the palace are highly significant, precisely because they are known to date to one fixed period. John Bennet and Bruce Redford suggested to us the term 'freeze-frame' for the view the tablets thus afford of activities in the palace at a single moment. Treating the tablets as artefacts, we

focus on the contexts in which they were discovered. The architecture, relative placement, and contents of the rooms or areas where tablets were found can help us to interpret their texts, and to discover why certain records were written and how they relate to records found elsewhere. Conversely, the texts may shed light on the use of given rooms or areas and on how they fit into the overall architectural and functional organisation of the palace.

This is how 'contextualisation' of the tablets proves useful in a broad framework. Narrowing the scope slightly, 'contextualisation' helps to identify the relative importance of tablets within the record-keeping system of the entire palace. Most of the documents fall neatly into sets ('series') by subject, but a serious mistake to which purely textual scholars are prone is to treat alike the information on all tablets, or even all tablets within a series. For example, the Pylos tablets dealing with olive oil have been treated as a unified dossier in proposing interpretations of their contents and overall purpose. This approach actually limits the amount of information that can be gleaned from these tablets, because it disregards three important factors: they were found in various archaeological contexts, were written by different scribes, and undoubtedly served several purposes. By focussing on context, we can distinguish the relative value and purpose of different tablets, and we can also identify groupings of tablets within specific areas as meaningful sets for interpretation.

#### 'Archives' and 'Deposits'

It is thereby possible to define two typologically distinct groups of tablets: 'archives' and 'deposits' (see Palaima 1980a). The distribution of tablets throughout the palace plays a key role in making this distinction. Inscribed documents were found in the following locations and quantities (Figure 1; we exclude here very fragmentary tablets):

rooms 7-8 (767); SE of rm 8 (1); rm 6 (13); rm 20 (1); rm 23 (32); rm 24 (2); rm 32 (4); rms 38 and 41 (11); court 47 (2); ct 63 (1); rms 71-72 (1); rm 92 (2); rm 94 (1); rm 97 (1); rm 98 (6); rm 99 (56); area 103 (2); rm 105 (4); SW area (37); other (4).

Only 19% of all documents were found scattered throughout the palace; the remaining 81% come from a single complex, rooms 7-8. What can we make of this startling statistic? Treating the tablets as artefacts, we can determine which ones should be interpreted together in sets, and gain a preliminary view of their purpose. When we then look at the tablets as texts, we discover the subjects treated and the general categories of records. By studying the palaeography of the tablets we identify the scribes who wrote the texts, and so determine scribal assignments and responsibilities. By pooling the two approaches, we can observe traces of interaction among scribes: shared subjects and locations; instances of editing, revision, recension, compilation; movement of texts from one location to another (Palaima 1980b). We thus

arrive at a clear view of how scribes worked separately and together.

Rooms 7 and 8 contain many tablets relating to important subjects: military arrangements, landholding systems, bronze working, taxation etc. Related tablets in these rooms form series which are generally longer and more coherent than sets found elsewhere in the palace. Some sets even combine to form fuller dossiers. There are also long individual texts that are obviously summaries of information extracted from sets of shorter documents. Tablets from other areas of the palace tend to form smaller sets, when they belong to sets at all, and to deal with matters of less general significance: usually the storage, shipment, handling or manufacture of various materials and items. From study of contexts and palaeographical identification, we know that only six of the 25 securely identified scribes write tablets found exclusively outside rooms 7 and 8. Most scribes have the large majority of their texts in rooms 7 and 8, even when some of their work is found elsewhere in the palace (e.g. Hand 2, discussed below). The only instances where one scribe edits another's texts occur in this complex. All these observations on the tablets, as texts, suggest that the documents in rooms 7 and 8 have a higher archival status than those found in other areas of the palace.

This impression is reinforced when we view the tablets as artefacts. Here we take account of the physical appearance of texts and their exact find-spots within rooms. Clear patterns emerge when these observations are combined with study of the architecture of the rooms and the other artefacts found there. The physical shapes of the tablets often correspond to their groupings into sets by subject. Tablets from outside rooms 7 and 8 have almost exclusively the leaf-shaped form that is well suited to recording single transactions and making brief notes of matters at hand. Conversely, the summaries and compilations from rooms 7 and 8 are most often written on the larger page-shaped tablets. One final remark about physical features: the 19 clay labels<sup>3</sup> of known provenance in the palace all come from rooms 7 and 8. These labels imply that some tablets were eventually stored in the two rooms.

Additional evidence for storage is provided by find-spots, which are known to within a few centimetres for tablets and fragments from rooms 7 and 8 (Bennett and Olivier 1976, revised by Palaima n.d.). We can therefore observe that some labels were found in the same spots as the sets of tablets to which, judging by similarity of contents, they belong. Others were clustered to the left of the interior door from room 7 into room 8. These undoubtedly had served as tags for baskets used to transport tablets from other areas of the palace to this complex (Palaima and Wright n.d.). In room 8 are clay benches, suitable for scribal work. By studying tablet distribution and physical remains, such as traces of charred wood, fragments of bronze hinges and clay sealings, we can determine that tablets were stored here by subject, in wooden containers or in their original transport baskets, on shelves above the benches. In this way rooms 7 and 8 have been identified not only as a central storage archives (Archives Complex), but also as an

active archives, where records important to the main palace administration were brought and processed. We have direct evidence for deliveries to the central archives in several series of tablets found partly in the Archives Complex and partly in the workshops and storerooms where their contents, combined with their archaeological context, prove they were written.

In contrast to these 'archives', the groups of predominantly leaf-shaped tablets found in other parts of the palace have been termed 'deposits'. These tablets deal almost exclusively with specific aspects of work and storage that went on in these locations. These areas offer no evidence of systematic, long-term filing, although tablets may have been roughly grouped and set aside as they were produced. Unlike tablets from the Archives Complex, the contents of tablets in 'deposits' can often be related directly to material remains in the rooms where they were found.<sup>4</sup>

The above results form the basis for reaching answers to critical questions about the palace at Pylos. How were work and record-keeping related throughout the palace? When industrial activities spread over several locations, what relationship do work and workers in one room have to those in others? What role do scribes and scribal records play in individual industries, and how do they fit into the entire scheme of palatial organisation? How much control over industries is exercised by the authority behind the central archives? We offer two illustrations of the use of texts and archaeology in formulating answers to such questions.

#### Perfumed Oil at Pylos

The perfumed oil industry at Pylos offers a clear demonstration of the principle that the contents of tablets alone can tell only part of the story. The tablets were originally published by Bennett (1958) and a comprehensive study will appear shortly (Shelmerdine n.d.). The scenting of olive oil, both for local uses and probably for export, was an industry organised by the palace itself. Named perfumers receive allocations of raw materials from the palace; some of them are also listed elsewhere as owning land, or receiving ration payments of figs and barley. What proportion of their work was done for the palace, we cannot know; but it is clear that to some extent they were commissioned, and supported, by the central administration. Their workshop too may have been located at the palace (see Shelmerdine in Shelmerdine and Palaima 1984, 84-88; Shelmerdine n.d., ch. 3).

All this information comes from tablets found in the Archives Complex. The records of finished products, on the other hand, are from other parts of the palace. The majority (32) comes from room 23, one of two oil storerooms behind the Throne Room 6 (Figure 1). A second group of 11 tablets fell from an upper storeroom into room 38, and three more were found in room 32 (Blegen and Rawson 1966, 134-139; 156-160; 170-173).<sup>5</sup> These documents were written by several scribes, and they record

inventories, departmental memos and allocations of several different types of perfumed oil, each designated by a variant of the oil ideogram. The variety of information on the allocation tablets is great: some record only an address, others a recipient as well; some mention a date, or the use to which the oil will be put; some include adjectives such as 'sage-scented' or 'rose-scented' to describe the oil, while others do not. No pattern was recognised at first; not even the order of information was consistent. However, when the tablets are grouped by scribal hand and find-spot, the reason for this diversity emerges. Within each room, every scribe works with only one type of perfume, and each has a regular and distinctive habit of selecting and setting out information. The following pair of tablets (Fr 1226: Hand 2; Fr 1217: hand of Stylus 1217 Class ii) shows how different these habits can be:

- 1226.1 ro-u-si-jo a-ko-ro te-o-i pa-ko-we OLE+PA v 3  
to the Lousian field, for the gods, sage-scented oil
- 1217.1 e-ra<sub>3</sub>-wo pa-ko-we we-ja-re-pe[  
.2 re-ke-e-to-ro-te-ri-jo  
.3 pa-ki-ja-na-de OLE+A v 1  
sage-scented oil, for anointing[  
for the [festival] lekhestroterion  
to Pakijana

Hand 2 consistently includes both recipient and address; these he puts first, and his description of the oil last, in each entry. The scribe of Stylus 1217 does the reverse, and he includes the actual word for oil (e-ra<sub>3</sub>-wo/elaiwon); after describing the oil he adds the name of the festival for which it is allocated. This grouping of tablets by find-spot and scribal hand leads to several other important observations. Chief among them is that there is a great degree of organisation, and a division of labour in the monitoring of this industry. Not only is each scribe assigned (as far as the extant tablets go) to a single type of oil, but each works either in room 23 or in the room above 38, never in both. The exception on both counts is Hand 2, who is identified for these and other reasons as the principal scribe of the series, if not actually the supervisor of this scribal 'department'. Two of the tablets from room 32 are by scribes who work in the nearby upper storeroom; the hand of the third cannot be identified.

The archaeological contexts of the rooms where these oil tablets were found both confirm and refine the information on the documents. Large storage jars are set into benches along all four walls of room 23; residue in the jars and signs of fierce burning during the destruction of the palace show that the jars had contained oil. Twists of clay from which tablets could be made were also found here, but little else apart from the tablets. Thus the room was used primarily to store oil of various kinds, and it also became the centre for scribal monitoring of this commodity.

Room 32 is a different case. It was not a scribal centre, since it contained only three tablets, and the two identifiable scribes also worked elsewhere. Nor is it an ordinary storeroom; the setting appears more elegant than normal. Both walls and floor are stuccoed; the jars found here are smaller than most storage jars, and are decorated with marine creatures and other designs. Noting the special character of the room and its contents, the excavator inferred that the jars might have held a "specially refined type" of oil (Blegen and Rawson 1966, 340). Indeed, of the 16 vessel shapes identified here, ten are either unique or rare at Pylos. It is particularly noteworthy that among them are the only imported pots found at the palace: two small perfumed-oil jars, probably (judging from clay and decoration) from the vicinity of Mycenae (Nos 411 and 412: Blegen and Rawson 1966, 407-408, figs 391-392). Given the character of the room, it is no surprise that of the three tablets found here one refers to a special unguent, and one at least is an inventory. Even though scribal activity was not normal here, the contents of the jars were sufficiently valuable to be noted down and the records kept with the jars.

With room 38 we face yet another situation. Eleven tablets were found high up in the fill of the room; they had fallen from an upstairs storeroom with a character rather similar to that of room 32. The tablets fall into four sets, each by a different scribe, and all but one rather different from the sets found in room 23. One refers to a type of oil not encountered there, and consists of inventory records, which are absent from room 23. Quantities are generally larger, and one disbursement is to palace attendants, whereas other allocations from both rooms seem to be for religious purposes. Again, the location of the storeroom perhaps explains these differences: it is near the private apartments of the palace (above 29-34), cut off from the normal circulation routes of goods and tablets downstairs, so the internal disbursement and the small number of external allocations may be understood.

Study of the perfumed oil tablets in context, with careful attention to scribal hands and associated finds, thus makes it possible to reconstruct, in some measure, the workings of this scribal department, and of the industry it monitored. Scribes had very specific duties, relating to particular types of oil in particular rooms; this sort of accountability can be traced in other series of tablets as well. The storerooms themselves contained several types of oil, but one was set aside for specially valuable goods. The central administration not only controlled the making of perfume, but kept close track both of quantities in storage and of quantities disbursed. The incentive for this interest was no doubt economic; perfumed oil was itself a luxury good, used sparingly in the palace and also in ritual contexts. We know that the Mycenaean traded oil extensively abroad. If Pylos sent its perfumes outside Messenia to participate in this international exchange, this would account for the care with which the palace monitored the industry at various stages, and would perhaps explain as exchange goods the ivory, gold, and other luxury items which the excavators uncovered

here in some quantity. Such conclusions and speculations follow naturally from a consideration of all the evidence for perfumed oil at Pylos. Yet none of them would be possible on the basis of either textual or archaeological material alone.

### The Northeast Workshop

A different illustration of the interplay between tablets and archaeology comes from the Northeast Workshop (Figure 1: 96-100), where we can observe various industrial activities in progress. The evidence in this case is more straightforward, and may be more briefly stated (cf. also Tegzey in Shelmerdine and Palaima 1984, 65-79 with references). The structure is a free-standing complex of rooms just outside the main palace complex, and closely associated with it. The largest room (99) is fitted out for both work and storage. There is evidence for shelving along both long walls, and the find-spots of 54 tablets indicate that they were grouped by subject and stored on the southwestern shelves, west of the doorway. These tablets fall into various sets, and deal with a variety of different subjects. There are records of work forces, some assigned to halters and wheels; one tablet lists 4.23 kg of bronze, probably as an allotment; goats and rams are counted on other texts. Their immediate connection to the workshop is not clear, but another set of documents confirms the need for animals in such a context. This set concerns hides and leather, and the products for which they are earmarked. Among these are reins, halters and bridles, saddlebags, bindings and sandals. Finally there are two tablets which may refer either to weapons or to parts of chariots, or both; one seems to list both spears and axles.

What then were the industrial concerns of this palace workshop? The texts offer some interesting answers, and these are both confirmed and augmented by the other artefacts found in the complex. Both leather and bronze craftsmen worked here; and there are many indications on the tablets that the making and repair of chariots and horses' tackle was a major focus of activity at the time the palace was destroyed. Though the great majority of workshop tablets were found in room 99, a single tablet from room 98 supports this view of workshop activity. It is one of a series of tablets dealing with chariot wheels (Sa 1313). The other members of the set were found in the Archives Complex, but their leaf shape and their contents mark them as tablets probably written in a workroom and thence transferred to rooms 7-8 (Palaima n.d., Hand 26 Stylus 287). The presence of Sa 1313 in the workshop is welcome confirmation. Another text from rooms 7-8 notes woodcutters contributing axles to the "chariot workshop" (text Vn 10). The accumulation of textual data makes a strong case for thus identifying rooms 96-100, even though other work went on there as well.

As so often, the documentary picture is incomplete without adding to it the evidence of material remains. The contents of room 99 in particular clearly identify it as a workroom. There are blades and flakes of stone, a bronze knife and chisel, and lead clamps such as were

sometimes used to mend pottery. Bronze was found in large quantity; there are a great many arrowheads, and still more in the adjacent room 100, which show a dimension of workshop activity not apparent from the tablets. More curious is a long flat strip of bronze which came to light just inside the doorway of room 99. It is broken into several segments, but was originally continuous, and is pierced by rivet holes at regular intervals. The total length preserved is about 1 m.; the strip was bent in a long curve, and decorated with spirals. On its own it would be puzzling; in the light of the textual data, however, it is possible to suggest that it once decorated and reinforced the rim of a chariot frame, or perhaps a wheel.

Finds in rooms 97 and 98 include a flint blade, a whetstone and a celt (97), a large amount of bronze (98), and more curiously some patches of bright yellow and red earth in both rooms. 98 also contained two jars full of "an extraordinary variety of colored earths" and possibly ground stone (Blegen and Rawson 1966, 315). The excavators thought of dyeing to explain these patches of colour, and again the tablets provide confirmation. For two of the texts list "red hides", one in the context of horses' tackle. Chadwick (Ventris and Chadwick 1973, 519-520) suggests these hides may have been for the frame of a chariot body and red is a colour associated with Aegean chariots (Crouwel 1981, 69).

Our combined approach creates a detailed image of this palatial workshop and its activities. Workers in bronze, leather and wood engaged in various tasks, including work on chariot equipment. Incoming supplies were recorded in the Archives Complex, but records kept in the workshop itself noted the arrival of specific materials and the products for which they were earmarked. In due course, some workshop records were transferred to the central archives, to be tallied, collated or simply stored. As with the perfume industry, work seems to be centrally organised and monitored; the palace could command craftsmen and could effectively organise the traffic of raw materials and finished products.

### Summary

If we look more generally at the relationship between tablets as texts and as artefacts, several methodological points emerge:

1. the contents of tablets can identify in part the contents of the rooms where they were found -- though they are not exhaustive, and objects may also appear which are not mentioned on the tablets.
2. textual information can also illuminate the functions of such rooms: inventories help identify storerooms; workshop records, the types of work carried out. Here again, the full archaeological context of a room is a necessary check on the documents.
3. the find-spots of tablets allow us to trace the movement of craftsmen and supplies, as well as texts.

Content and context also help to establish the central administration's interest in an industry at a given stage of activity. Our two examples suggest that a central authority was responsible for organising and supporting artisans, and for supplying them with raw materials. The palace also demanded a close accounting of the finished products for which it initiated the work. The accounting was carried out in areas where the oil was kept -- in the case of perfumes -- and accountability seems to have been maintained by assigning specific responsibilities to specific scribes. At the intervening stage, when production was in progress, the central authority was further removed. Men and supplies assigned to specific tasks were recorded, but those tablets are found inside the workshop proper, not in the central archives.

The interplay between tablets and other archaeological remains of Bronze Age Pylos is intricate. Here we have tried to illustrate both the scope and the limitations of each kind of data, and to show how a combination of the two makes possible discussion of how a Bronze Age palace operated on a practical level. Any conclusions thus reached are bound to raise broader questions about the economic importance of industries like those under discussion, and about the status they give a place like Pylos in the wider Aegean area. Considering the relative youth of this field of study, and the limited evidence available, it is encouraging that objects of bronze and stone and tablets of clay can be made to 'speak', and speak informatively about the lives of those who made and used them.

#### Notes

1. Chadwick (1973, 612-617) reviews problems and methods of interpretation. Ambiguities in the orthographic system of the Linear B syllabary and the frequent lack of any convincing linguistic and archaeological evidence to support scholarly conjectures led to a wide range of textual interpretations. Palmer (1963, 27-36) introduced a measure of control by arguing for the use of a strict structural method, which would limit purely etymological interpretations by paying attention to the textual context in which individual lexical items appeared. Chadwick is typically understated in asserting that "some wild conjectures have been published" (1973, 614).
2. We were pleased to discover that Ellis (1983, 502) had formulated a similar principle of research for Mesopotamian inscriptions.
3. Clay labels, small pieces of clay with short inscriptions on one side and the impression of basketwork on the other, were probably used to label baskets of tablets by subject (Chadwick 1958).
4. The two categories, 'archives' and 'deposits', should not be rigidly imposed upon the tablets. Some tablets originally from 'deposits' were found in the Archives Complex, where they had apparently been

brought because their contents were of interest to the central administration. The 'freeze-frame' nature of our evidence makes it impossible to know whether any of the tablets now found in 'deposits' would have been taken eventually to the central archives.

5. Three more isolated and fragmentary oil tablets are left out of account here.

### References

- Bennett, E.L., Jr. 1958. The Olive Oil Tablets of Pylos. Texts of Inscriptions Found 1955. Minos Supplement 2. Salamanca, Universidad de Salamanca.
- Bennett, E.L., Jr. and Olivier, J.-P. 1976. The Pylos Tablets Transcribed II Incunabula Graeca 59. Rome, Edizioni del Ateneo.
- Bintliff, J.L. (ed.) 1977. Mycenaean Geography. Proceedings of the Cambridge Colloquium September 1976. Cambridge, British Association for Mycenaean Studies.
- Blegen, C.W. and Rawson, M. 1966. The Palace of Nestor at Pylos in Western Messenia I. 2 vols: Text and Illustrations. Princeton, University Press.
- Chadwick, J. 1958. The Mycenaean filing system. Bulletin Institute Classical Studies (London) 5, 1-5.
- Chadwick, J. 1967. The Decipherment of Linear B. Cambridge, University Press. 2nd edition.
- Chadwick, J. 1973. The linear scripts and the tablets as historical documents: (b) the linear tablets as historical documents. In Cambridge Ancient History II, 1. Cambridge, University Press. 3rd edition, 609-626.
- Crouwel, J.H. 1981. Chariots and Other Means of Land Transport in Bronze Age Greece. Amsterdam, Allard Pierson.
- Dow, S. 1973. The linear scripts and the tablets as historical documents: (a) literacy in Minoan and Mycenaean lands. In Cambridge Ancient History II, 1. Cambridge, University Press. 3rd edition, 582-608.
- Ellis, M. de J. 1983. Correlation of archaeological and written evidence for the study of Mesopotamian institutions and chronology. American Journal of Archaeology 87, 497-507.
- Gérard-Rousseau, M. 1968. Les mentions religieuses dans les tablettes mycéniennes. Incunabula Graeca 29. Rome, Edizioni del Ateneo.
- Hiller, S. and Panagl, O. 1976. Die frühgriechischen Texte aus mykenischer Zeit. Erträge der Forschung 49. Darmstadt, Wissenschaftliche Buchgesellschaft.
- Hooker, J.T. 1977. Mycenaean Greece. London, RKP.
- Hooker, J.T. 1980. Linear B. An Introduction. Bristol, Classical Press.
- Lindgren, M. 1973. The People of Pylos. Prosopographical and Methodological Studies in the Pylos Archives. 2 vols. Uppsala, Acta Universitatis Upsaliensis.
- McArthur, J.K. 1981. Textual evidence for place-names in the Knossos tablets. Minos 17, 147-210.

- McDonald, W.A. and Rapp, G.R., Jr. 1972. The Minnesota Messenia Expedition. Minneapolis, University of Minnesota Press.
- Mylonas, G.E. 1966. Mycenae and the Mycenaean Age. Princeton, University Press.
- Palaima, T.G. 1980a. Archives, deposits and the movement of texts at Pylos. In Acts of the First International Mycenaean Congress: Pre-Mycenaean and Mycenaean Pylos, Athens, December 1980. Forthcoming.
- Palaima, T.G. 1980b. Evidence for the identification of a master scribe at Pylos [AIA Abstract]. American Journal of Archaeology 84, 226.
- Palaima, T.G. n.d. The Scribes of Pylos. (MS submitted for publication).
- Palaima, T.G. and Wright, J.C. n.d. Ins and outs of the archives room at Pylos: form and function in a Mycenaean palace. American Journal of Archaeology 89. Forthcoming.
- Palmer, L.R. 1963. The Interpretation of Mycenaean Greek Texts. Oxford, University Press.
- Pope, M. and Raison, J. 1977. Linear A: changing perspectives. In Études Minoennes I. Bibliothèque des Cahiers de l'Institut de Linguistique de Louvain 14. Louvain, Le Cabay, 5-64.
- Schliemann, H. 1878. Mycenae: A Narrative of Researches. London, John Murray.
- Schliemann, H. 1886. Tiryns: The Prehistoric Palace of the Kings of Tiryns. London, John Murray.
- Schuchhardt, C. 1891. Schliemann's Excavations: An Archaeological and Historical Study. London, Macmillan.
- Shelmerdine, C.W. n.d. The Perfume Industry of Mycenaean Pylos. Stockholm, Paul Åströms Förlag. Forthcoming.
- Shelmerdine, C.W. and Palaima, T.G. (eds) 1984. Pylos Comes Alive: Industry and Administration in a Mycenaean Palace. New York, Fordham University, NEH/AIA.
- Stubbings, F.H. 1951. Mycenaean Pottery from the Levant. Cambridge, University Press.
- Stubbings, F.H. 1973. The rise of Mycenaean civilization. In Cambridge Ancient History II, 1. Cambridge, University Press. 3rd edition, 627-658.
- Stubbings, F.H. 1975a. The expansion of Mycenaean civilization. In Cambridge Ancient History II, 2. Cambridge, University Press. 3rd edition, 165-187.
- Stubbings, F.H. 1975b. The recession of Mycenaean civilization. In Cambridge Ancient History II, 2. Cambridge, University Press. 3rd edition, 338-358.
- Taylor, Lord W. 1958. Mycenaean Pottery in Italy and Adjacent Areas. Cambridge, University Press.
- Vandenabeele, F. and Olivier, J.-P. 1979. Les idéogrammes archéologiques de Linéaire B. Études Crétoises 24. Paris, Paul Geuthner.
- Ventris, M.G.F. and Chadwick, J. 1973. Documents in Mycenaean Greek, edited by J. Chadwick. Cambridge, University Press. 2nd edition.
- Vermeule, E.T. 1972. Greece in the Bronze Age. Chicago, University Press. 2nd edition.

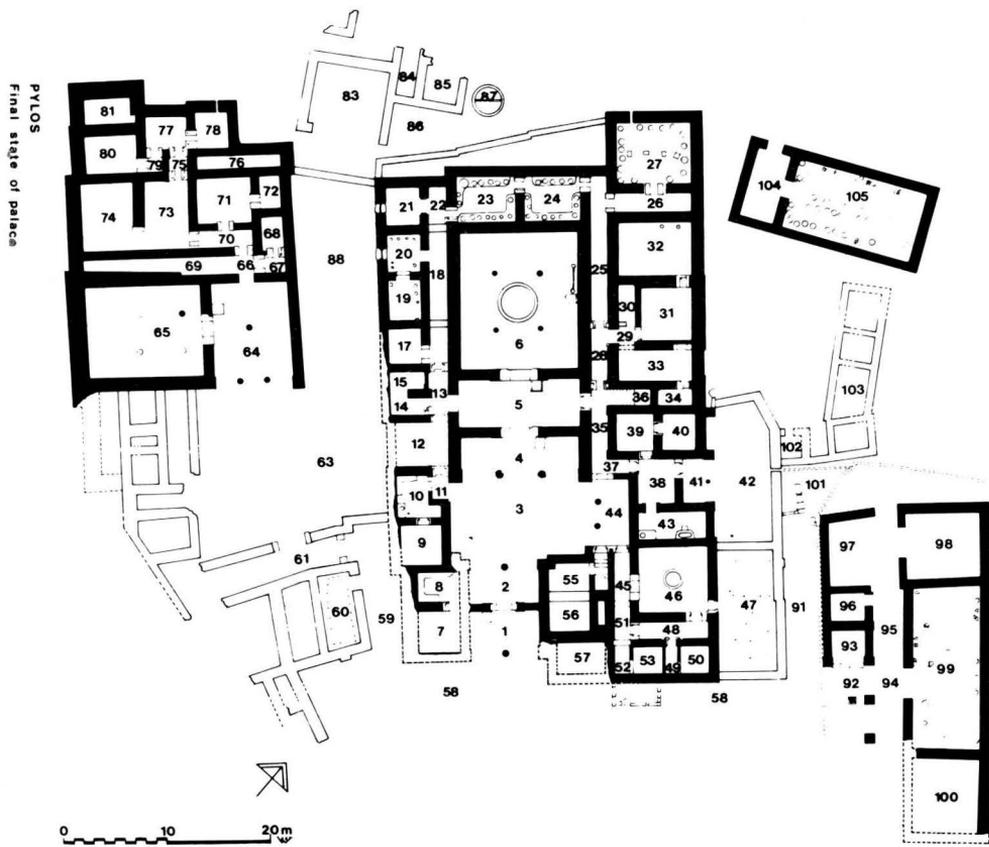


Figure 1: Plan of the Palace at Pylos.

THE COVER

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1. Mayan: The Leyden Plate. Found near Puerto Barrios, Guatemala in 1864, it carries the earliest known date in the Mayan Long Count:

8.14.3.1.12 (AD 320).

2. Egyptian: Hieroglyphic text, part of an inscription containing a hymn to Osiris with figure of Kheruef. The text reads:

Prince, friend of the Lord of the Two Lands, Confidant of the good god, royal scribe, chief royal herald, steward of the great royal wife.

3. Japanese: The name Mimaki-iri-biko, written using Chinese characters purely for their phonetic values. Kojiki Book II, ch. 4: Sakamoto et al. 1967, I:182.

4. Indian: A couplet from the Rgveda:

If with the Yadus, Turevaṣas, ye sojourn, with Druhyus, Anus,  
Pūrus, Indra-Agni!  
Even from thence, ye mighty Lords, come hither, and drink  
libations of the flowing Soma. (Rgveda I.108.8)

Translated by R.T.H. Griffith, Hymns of the Rigveda (Benares, 1896-97).

5. Sumerian: Cuneiform text, part of a legal document from c. 2250 BC:

It is of Ur-Šara.

6. Linear B: Knossos tablet Dk(2)1065 by Hand 119:

KADANOR 100 [✓] rams 34 kg. of wool  
[at] Kutaton deficit: 41 kg. of wool

7. Greek: The opening lines of Herodotus' Histories:

Herodotus of Halicarnassus, his Researches are here set down to preserve the memory of the past by putting on record the astonishing achievements both...(Herodotus, Histories I.1)

Translated by A. de Sélincourt. Harmondsworth, Penguin.

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