









DRY MEASURE

	× 4
= 	× 6
= 	× 10
= 	(WHEAT)

LIQUID MEASURE

	× 4
= 	× 6
= 	× 3
= 	(WINE)

The volumetric systems of Linear B

The two lowest units stand in the same relationship as the classical *kotylē* and *oinix*, but the higher ones are different. The determination of their values is much harder than in the case of the weights. No measuring vessels have been reliably identified from any Mycenaean site. The size of the smallest unit probably lies between 0.2 and 0.4l., and there is some reason to prefer a value near the top of this range. This will give a major unit of up to 96l. in dry measure, or 29l. in liquid. The difference is probably due to the fact that a litre of wine weighs more than a litre of grain. The highest units may well represent the maximum load an average man could carry.

4 The Tablets as Historical Documents

The excavation of palaces in the Near East has revealed immense archives of tablets, far larger and more detailed than anything we have from Mycenaean Greece. But there have also been found among them annals, if not real histories, diplomatic correspondence, treaties, and even literary and religious texts. Linear B has produced nothing of the kind, and it may be doubted if the writing system was adequate to serve such purposes; it appears to have been devised solely as a means of keeping records, a way of extending the collective memory of the administrators.

Another major difference is that, unlike the Near Eastern tablets, Mycenaean tablets were never deliberately baked; they were accidentally baked in the fires that destroyed the buildings where they were kept, and in the absence of a fire no records survive. This means that at any one site we have only such tablets as were stored there at the time of the destruction. Moreover, there is a remarkable absence of dates on the tablets; only a small proportion have the name of a month, and years are only mentioned in such formulas as 'last year' or 'this year'. This implies that the tablets were rarely kept for more than a year; indeed, it seems likely that every winter the records of the past year were scrapped and a new collection begun. It is of course possible that on this occasion an abstract was transferred to some more expensive, but perishable, writing material; but if so, we have no trace of it.

It would seem at first sight almost impossible to glean any historical information from such records, and we must admit we know nothing about such matters as the names of kings or the lengths of their reigns. But within the limits imposed by the nature of the documents, it is possible to make some firm deductions and at least to advance hypotheses to explain the records. It is obvious that each tablet recorded a fact which was meaningful to the writer. Without his knowledge of the circumstances in which the tablet was written, we may find the record meaningless; but if we can conjecture the circumstances, we may be able to offer some explanation, or choose between different possible interpretations.

An example may help to explain this. Among the Pylos tablets is a large document (fig. 17) recording contributions of bronze from thirty-two officials all



17 Pylos tablet Jn 829,
listing contributions of bronze

over the kingdom. This bronze is described by a word which might mean 'of ships' or 'of temples'. The fact that some of the districts named are known to lie inland means that the official would be unlikely to have available 'ship bronze', whatever that might be. But temples, or rather small shrines, must have existed in all the major centres of population, and in later times we know that these were regularly furnished with vessels and other implements of bronze. Thus 'temple bronze' is the more likely interpretation, and this strongly suggests that the king was so short of metal he was demanding the surrender of temple property to help the war effort.

A further clue to the interpretation of the tablets is the possibility of grouping them into series. Very many tablets are exceedingly brief and laconic; in this they



resemble single cards extracted from a card index, and they become meaningful only if we can reconstruct the file to which they belong. Some of these series were easily recognisable, especially by the ideograms they use, so that we could group together those listing, for instance, men, women, grain, oil, wine and other goods. But we can go further with this analysis, and here the study of handwriting has proved a valuable clue. As a rule, all the tablets belonging to the same file were written by the same scribe, while another superficially similar file was compiled by a different scribe. We can thus sometimes reconstruct the whole files, or rather baskets, into which the tablets were originally sorted; and the study of a whole file is infinitely more revealing than that of a single brief tablet. Of course tablets may well

be missing from the file, and many that we have are damaged, so that our information is inevitably incomplete.

The tablets from Mycenae, Tiryns and Thebes are still too few to yield much useful information, but at least we can verify that they disclose the same sort of organisation as the two major archives, those of Pylos and Knossos. Generally speaking, the Pylos tablets are better organised and thus easier to interpret than those of Knossos; this might be due to their date, if the Knossos ones are really a century or more earlier. But despite differences it is clear that the system of administration was broadly similar in both kingdoms, and such evidence as we have from the other sites fits the picture we can build here.

We need of course to look at the tablets in the light of what we know of the geography of the region, and in some cases we can compare the records with the direct evidence of archaeology. But this has limits: for instance, most agricultural products leave little trace which can be detected archaeologically, and here the tablets can supply crucial information. There is, for example, nothing in the archaeological record of the south-west Peloponnese to suggest that flax was here an important crop. But the Pylos tablets reveal a highly organised textile industry based on flax; and this is strikingly confirmed by the fact that in modern times also much flax has been produced in this area.

The Pylos tablets confirm that Pylos (*pu-ro*) was the Mycenaean name of the site; but among the other place names there are few which can be located on the map. This is because in the period immediately following the destruction of the Palace around 1200 BC, the whole south-western Peloponnese seems to have suffered an abrupt decline in population. Thus many of the sites mentioned on the tablets were probably uninhabited for a time, and if they were later re-occupied, they then acquired new names. But there are a number of clues which enable us to guess the approximate location of the more important names. For instance, a number of names are listed as the location of coastguard units or as supplying rowers for the fleet; such place names must obviously be situated on or near the coast. There is also a standard order in which the major districts are listed; if we can relate that to the geography, we can deduce approximately where some of the areas must be.

We can now determine fairly accurately the limits of the kingdom administered by Pylos. It was divided into a Hither Province; the broad strip of habitable land down the west coast, and a Further Province, across the mountains in the fertile plain of Messenia. Each province was divided into districts, each of which had a governor and his deputy in charge. These sixteen districts are all listed on the tablet illustrated in fig. 17, together with the contributions of bronze required from the governor and deputy governor of each.

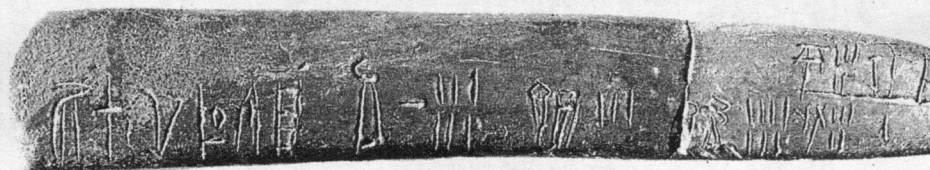
At Knossos the situation is a little better. Apart from Knossos itself (*ko-no-so*), we can recognise the names of Amnisos, its harbour, Phaistos, the major site in the south of the island, Lyktos a little further to the east, and Kydonia (the modern Khania) in the far west. There are a number of other names which may be the early form of known Cretan towns. There is a mention of Mount Dikte, already

associated with the worship of Zeus. But the picture that has emerged seems to exclude the eastern end of the island, and the kingdom of Knossos seems to have been based on the main central section with some sort of control extending to the western end only.

At neither site is the king mentioned by name; we have only the title 'the king' (*wa-na-ka*). He had an important officer who may have been his second-in-command, perhaps the chief of the army. His court was composed of officers called 'Followers' (*e-qe-ta*), or as we might say 'Companions'.

Some tablets appear to record large quantities of wheat; but it is clear that most of these documents are really lists of persons holding land, which is measured in seed-corn. The holders of land clearly had obligations to fulfil in return for their holding, for we have notes that some of them had not met their obligations; these probably included military service in time of war.

There was no currency in use, but the Palace appears to have paid its workers in kind. Two files of tablets at Pylos list women workers who receive rations of wheat and figs (fig. 18). Some of the women are domestics, such as the 'bath-pourers' already mentioned, who were probably responsible for the functions discharged in modern times by plumbing. But the majority seem to have been workers in the textile industry, producing woollen and linen cloth of various kinds. Other tradesmen are listed as receiving quantities of food and drink.



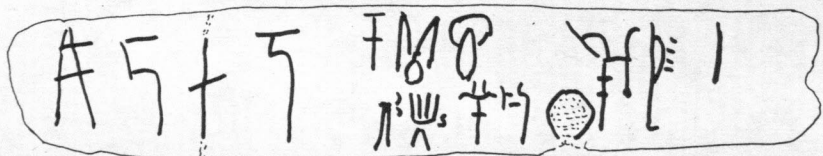
18 Pylos tablet Ab 573, listing sixteen women of Miletus, with three girls and seven boys, and a ration of wheat and figs

At Knossos something like a third of all the tablets in the archive are concerned with sheep and wool. Each card in the file records the name of the person responsible for the flock, its location, size and in some cases make-up. Other files record the difference between the actual numbers and the nominal strength, most being a round hundred. Yet other tablets record the wool clip, showing deficiencies below the target figure. In Crete at least the production of wool was highly organised; and there too the Palace controlled groups of female workers, who spun the yarn, wove and decorated the cloth. The linen industry was a speciality of the Pylos area.

These women are not specifically called 'slaves', but their status can hardly have been much higher. Other workers are specifically called by this title, but perhaps the

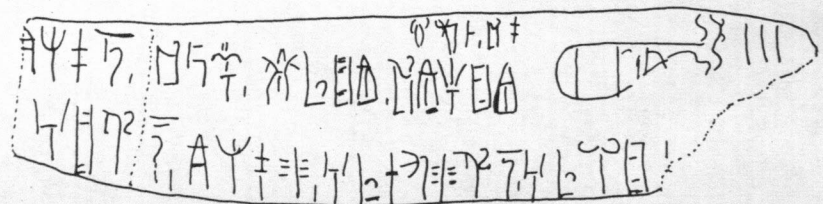
distinction between slave and free was not so rigidly drawn as in later Greece. There are also slaves (or servants) of various deities, but some of these seem to have been of higher status.

Wheat and barley both figure prominently on the tablets. Other agricultural produce listed includes figs, olives, olive oil and wine, all still staple items in the diet of the Greek peasant. Apart from sheep, we have records of goats, pigs and oxen; but oxen are not numerous, and seem to have been largely used for traction. This is surely true of the tablets at Knossos which list yokes of oxen, giving not only the name of their driver but actually those of the oxen too.



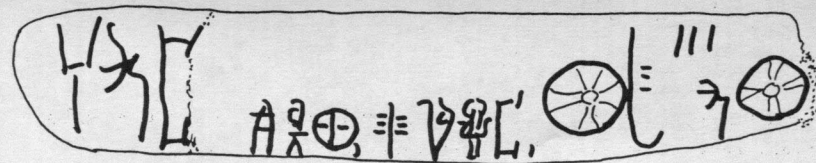
19 Knossos tablet Ch 897, showing the name of an ox-driver and his two charges

Many series of tablets are concerned with manufactured goods, either listed as in the Palace storerooms or as being produced for the Palace. There was a system by which raw materials were issued to workers, and a careful record was kept of the quantities each received. This is clearly seen at Pylos, where bronze was allotted to groups of smiths, whose names were listed, though what they were required to make with it is not given. The contributions of 'temple bronze' mentioned above are specifically said to be for points for javelins and spears. Weapons as well as tools must have been an important part of the production.



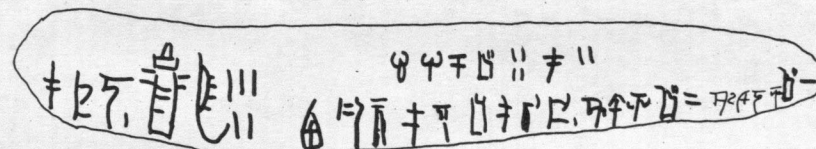
20 Knossos tablet Sd 4403, with a description of three chariot-bodies

At Knossos we have detailed descriptions of chariots, a regular piece of military equipment at that time. Some of them are elaborately decorated, painted red and inlaid with ivory. The wheels are listed separately; they are described as made of elm or willow, but some have bronze or even silver fittings.



21 Knossos tablet So 4439, listing three pairs and one single wheel made of willow

There are also records of body armour, though the material it is made of is not specified. A complete set of bronze armour has been found in a tomb of Mycenaean date, but it would seem that the type listed at Pylos was made of some material such as linen or leather with bronze plates sewn on to reinforce it. Fig. 22 shows a Pylos tablet recording five pairs of old corslets, each with twenty large and ten small plates, and with four plates for the helmet and two for cheek-pieces. 'Old' probably means no more than 'not newly made'.



22 Pylos tablet Sh 740, showing armour

There are lists of leather goods mentioning equipment such as harness and trappings for horses, and listing the skins of deer as well as of domestic animals. Some of these were used for making footwear.

In many ways the most interesting document is a set of tablets from Pylos which begins with a heading stating that these objects were inspected when a certain important official was appointed by the king. The list begins with vessels, probably of bronze, which are described by their decoration; among them are six tripod-cauldrons. One of these tablets, where the drawing of a three-legged vessel is clear, was mentioned above as having proved the validity of the decipherment. There are also fire-rakes and tongs, axes and swords. But the list then goes on to describe a collection of furniture. There are 'thrones', i.e. formal chairs of state, decorated with ivory, lapis lazuli and gold, and a larger number of stools, possibly foot-stools, but perhaps also used as seats, equally decorated. Then there is a collection of ten tables, all described in detail and elaborately decorated. The translation of these descriptions is difficult, but there is no doubt that this is a sumptuous collection of precious items. The whole list must be an inventory of a palace storeroom for valuables.

It is surprising that although there was plenty of evidence found in the excavation of the Palace at Pylos to show that no expense had been spared on its construction and decoration, hardly any portable objects of value were found in it. This strongly suggests that before the disastrous fire which destroyed it, the Palace had been

deliberately stripped of valuable goods. This would happen if it had been captured by a raiding party, looted and then set on fire. We are therefore justified in asking whether the Pylos tablets give any indication of a state of emergency.

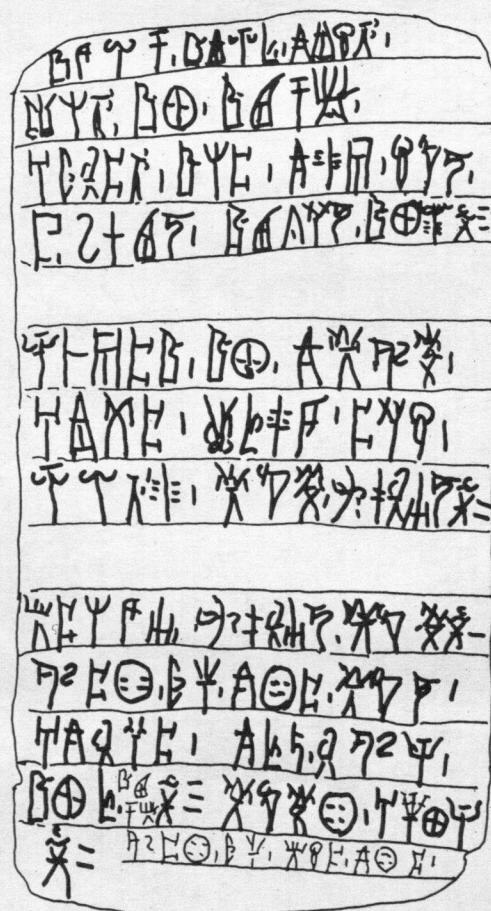
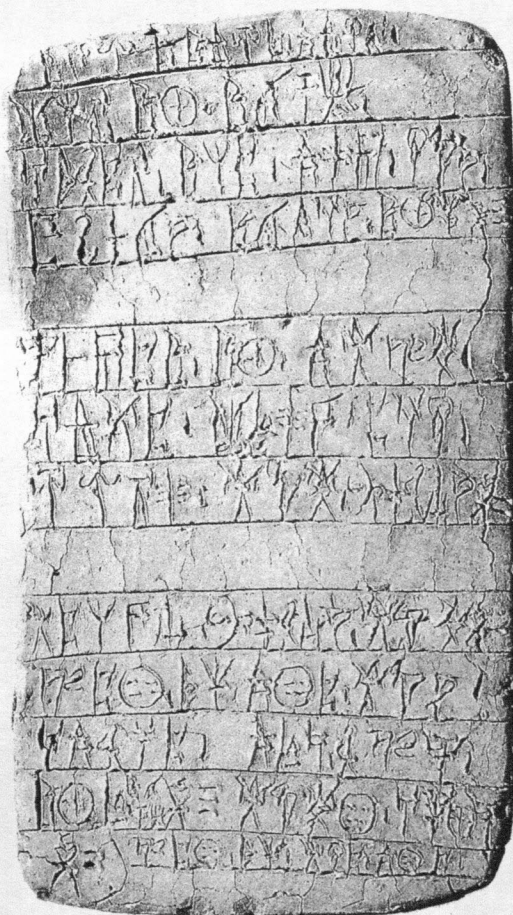
There is no direct evidence, but a number of documents offer indirect evidence, which, taken together, certainly constitute a proof that Pylos was expecting an attack coming from the sea. The most telling is a series of tablets which records the establishment of a coastguard organisation. Some have argued that in default of information about regular practice, this cannot be regarded as proof of an emergency. It would nevertheless be very remarkable if a kingdom of this size could in normal times produce a force of some eight hundred men to keep watch on the coastline. It is clearly not a defensive force, since there are about a hundred miles of coastline, so the force works out at, on average, one man for each 220 yds; and it would be absurd to split the force up into small units, some of only ten men.

Fig. 23 shows the first of five similar tablets dealing with this subject. The first line is a heading which translates: 'As follows the watchers are guarding the coastal

area.' Then the commands of two officers are described, giving the force at their disposal and their location together with the names of their subordinate officers. Eight other commands are listed on the other four tablets of the series. In the case of the second command on this tablet (line 6) it is known that the two men named as the commander and his first subordinate are almost certainly the governor and vice-governor of one of the districts in the north of the kingdom. The men under their command are described partly as natives of a particular town, but also by proper names which sound like non-Greek tribal or ethnic names. The men used for this purpose may therefore not have been full citizens.

At the end of the tablet we have an entry stating that a certain 'Follower', an officer of the royal court, was with them. These Followers are rather curiously distributed among the districts, and they seem to be concentrated in the area nearest to the Palace. It is therefore a fair guess that they were in fact in command of the military forces in each area, and the army has been stationed where it is best placed to repel attacks on the main centres of population.

23 Pylos tablet An 657, showing the coastguard organisation



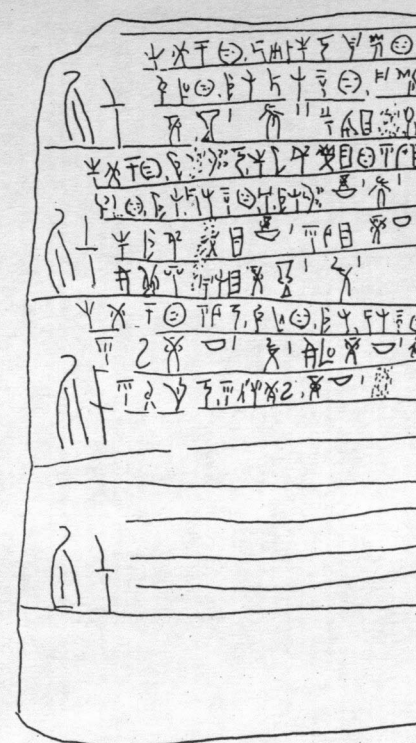
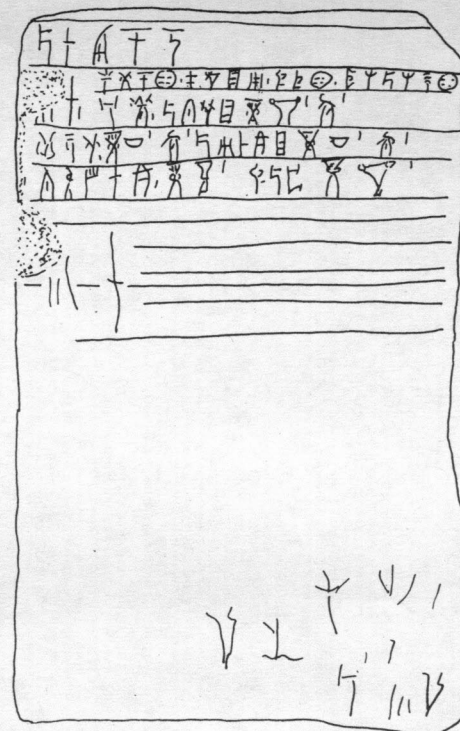
A defensive system based on the coast must obviously envisage an attack from the sea, but there is no indication who the expected enemy might be. There are in fact only two reasonable routes by which a land force could attack: either coming down the west coast, where there is a pass which could fairly easily be held, or by a much more difficult route through the mountains of Arcadia. We should therefore expect the Pylians to have manned their fleet, so when we find a document recording about six hundred men who are to serve as rowers, it is reasonable to infer that this is the expected mobilisation of the ships. There is even another tablet which records that small numbers of those due to serve in the fleet have been excused.

Another piece of evidence has already been mentioned, the document (fig. 17) recording the collection of temple bronze from every district in the kingdom. This is specifically said to be 'for points for javelins and spears', that is to say, scrap metal was being requisitioned for the making of armaments. Another document, which is hardly likely to be a normal demand, records the payment of large quantities of gold by local governors and other important officials; the tablet is damaged and some of the figures are lost, but the total comes to the astonishing sum of more than five kg. Wealth on this scale can hardly have been requisitioned annually; it only makes sense if this is a 'one-off' levy for the war.

But the most striking document is that shown in fig. 24. Religious offerings are quite a common type of entry, since the Palace was obviously responsible for maintaining the local shrines. We have lists from Knossos of the issue of olive oil, honey and other goods to various addresses, one of which is the celebrated cave of Eileithyia at Amnisos, well known both from Homer and its archaeological finds. There are similar mentions at Pylos of perfumed oils being sent to addresses, some of which are clearly religious institutions. But the tablet discussed here is unique.

It was, as the illustration shows, written on both sides. This is unusual, though on occasion a scribe, having miscalculated the length of his text, does allow it to run over onto the back or even the edge. Generally, however, a second tablet is written to contain the surplus. What is worse, the scribe here began his draft with blank lines which were never filled. Moreover, there are signs of erasure all over the tablet, and it looks as if it was originally written, then deleted and re-used for the present text. What is now the beginning is written on what was originally the back of the tablet. Even when he wrote the final text, the scribe made obvious mistakes, since in writing formulas that occur several times he omitted signs which are clearly needed. What he wrote is in places exceedingly difficult to read, and this is not entirely due to subsequent damage to the tablet. Altogether the impression given is that of a hasty draft, and had the tablet been stored in the archive room for any length of time, we should have expected a clean copy to have been made, so that this could be destroyed. Since it was not, we may well assume it to have been written in the last days, if not hours, before the Palace was destroyed.

It begins with a date and a place; it is a place name we only know from the tablets, but it is probably the name of the district within which the Palace lay, since the name 'PYLOS' is written six times in large signs at the left. The formula used is not



24 Pylos tablet Tn 316, written on both sides, obviously badly drafted and incomplete

wholly clear, but it refers to the bringing of gifts and an unknown word, which seems to mean something like 'victims'. Then after each repetition of the introductory formula we have a list of deities, some familiar such as Zeus, Hera and Hermes, but also including many more obscure names and titles. Each entry ends with a pictogram showing a cup or other vessel, preceded by the ideographic sign for 'gold' and followed by the numeral 1. Each deity is receiving a gold vessel, and since there are no less than thirteen of them, this can hardly be a regular ritual. The scribe began by drawing each cup differently, but as he went on he tired of this and used a simple conventional outline. But in nine of the entries the gold cup is followed by the mention of a human being; most often one woman, but once two women, and twice one man. The women are associated with female deities, the men with male ones. Whether these unlucky people were to be human sacrifices or merely given over to divine service we cannot be sure; but since early Greek legends often refer to human sacrifice, we cannot suppose it was unknown at this period. There is also some archaeological evidence from other sites which points the same way. But if it was a sacrifice of ten human beings at once, it surely suggests an extreme emergency. This ceremony was probably being planned in a last-minute attempt to invoke divine aid, and perhaps the blow fell before it could be carried out.