

TEXT AND CONTEXT: LEVELS OF APPROACH TO THE INTEGRATION OF
ARCHAEOLOGICAL AND TEXTUAL DATA IN THE LATE BRONZE AEGEAN

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Introduction

The aim of this article is to consider in general terms the relationships that exist between texts and their archaeological contexts: specifically the situation where the text is a component part of a society's material culture. It therefore does not concern itself with the situation where texts refer indirectly to an archaeological situation (cf. Barnes, Chakrabarti and Jüdice Gamito, this volume), nor, equally, with the situation where contemporary texts form part of our direct historical information, such as those preserved in Egypt or Mesopotamia, is not considered here (cf. Kemp and Postgate, this volume). The specific example used to elucidate the approach is taken from the Aegean Late Bronze III period (c. 1400-1200 BC), and is that of the Linear B texts discovered in several of the regional centres in the Aegean area. Firstly, a brief introduction to the Linear B documents and their general historical context is presented. (For a more thorough introduction, see, e.g., Chadwick 1976 or Hooker 1980.) Secondly, the way in which we handle texts of this type -- and the information they provide -- is briefly analysed and set out in two sections relating to context and integration. The first of these is treated in outline so as not to overlap with the more detailed development by Palaima and Shelmerdine (this volume). Finally, conclusions are drawn as to the value of this approach, and possible further developments outlined.

Background

The Linear B writing system, like several in the ancient world, is asyllabary. That is, each phonetic symbol (of which there are over 80) stands for a syllable: a, da, je, ko, ru, etc. This syllabary was used to represent an early form of Greek (Ventriss and Chadwick 1953; Chadwick 1967) and, for this reason, should be distinguished from the related, but chronologically antecedent, Linear A script, which remains to be deciphered. In addition to signs representing sounds (syllabograms), the script contains a number, called ideograms, which on their own represent commodities such as olive oil, cloth (of various types), wool, sheep (and other livestock), even women and men. Numerals (up to 10,000s) and units of measurement by weight and by volume are also used.

To date, examples of the script have been discovered only in building complexes which probably fulfilled the function of regional centres (conventionally referred to as 'palaces' by Aegean archaeologists), or in buildings closely associated with such centres. In general, it seems, the script was used to record the day-to-day running of these centres both in Greece and at Knossos on Crete (Figure 2, p. 75). The

script was written using a sharp point -- it is called 'linear' to distinguish it from the distinctively wedge-shaped (cuneiform) characters of other ancient systems using clay as a medium -- on slightly rounded pieces of clay of two forms: page-shaped (i.e. taller than long) and leaf-shaped or elongated (i.e. longer than tall).

The clay was not deliberately baked (e.g. Evans 1899-1900, 56), but invariably was fired during the destructions which overwhelmed many palatial sites towards the end of the Late Bronze period. The hard-baked documents produced by these conflagrations are thus often referred to as 'tablets'. It is assumed that the documents within each destruction horizon refer to a single year's administrative activity (e.g. Ventris and Chadwick 1973, 114; Hooker 1980, 35), the tablets probably being 'pulped' each year, perhaps after their information had been transferred onto a perishable medium.

A second class of inscriptions is found sometimes on coarse-ware transport/storage vessels called stirrup jars (those with inscriptions being labelled 'inscribed stirrup jars' [ISJs]). Recent research (Catling et al. 1980) has shown that ISJs often travelled some distance from their place of manufacture and are not wholly confined to regional centres (Figure 2). In this class of object the inscription is painted on the vessel before firing. In some cases, the origins of the clay of the ISJs (as of some of the non-inscribed examples: Catling et al. 1980, 101) is Crete, and west Crete appears to have been an important, though not the only, manufacturer of such jars (Catling et al. 1980, 93).

From the summary above, it should be clear that the documents (and other texts) present in Aegean Late Bronze contexts are limited both in the explicit information they themselves can communicate, and in their distribution over the Aegean region. Not only is their occurrence confined to particular sites, but within those sites it is far from widespread. We do not discover the tens of thousands of documents sometimes recovered on Near Eastern sites (e.g. Ellis 1983, 501). In fact the total number of inscribed tablets known from the Aegean is only 4,603, and there are 144 vessel inscriptions (Bartoněk 1983, 16). Furthermore, just over 30% of these documents have two or fewer syllabograms on them (*ibid.*, 18). It is thus very important to establish clearly the context in which individual texts are preserved archaeologically, and equally the context in which they function as records, since much information is contained in precisely these contextual relationships, as well as in the individual texts themselves.

Context

Figure 1 is an attempt to represent, diagrammatically, ways in which texts can be understood. The diagram embodies two contrasts: first, between material information derivable from the document (i.e. tangible data, such as the medium on which the text is inscribed, or its mode of preservation), and information that is non-material (such as linguistic

or conceptual data). The second contrast is between the individual text and its wider context, which can again, as the diagram shows, be divided into material (here labelled 'archaeological') and non-material ('textual') contexts. The procedures that take place at the individual and contextual levels are considered to be analytical procedures, and consequently, this section of the diagram is labelled 'analytical'. The third section of the diagram, to the right, is imagined to be where integration takes place, and the two types of information are synthesised. Consequently, it is labelled 'synthetic'.

It will be useful to summarise the types of information gained at each level. This will be done with specific reference to the diagram, using the letters and numbers briefly explained in the caption. First, the individual text is analysed. This is the meaning of the phrase 'individual observations', and this process takes place at both the levels outlined above (non-material and material: A and B, on the diagram). The various elements of the text itself (as opposed to the document, or tablet -- the object inscribed) are isolated and defined (A): syllabograms, ideograms, numerals, etc. Similarly, meanings are assigned to these various functional elements. The document (the material object carrying the text) is also described (B): material of manufacture is determined (and can be characterised chemically, for example), the method of inscription (stylus, brush, etc.), the mode and extent of preservation, even the dating (where absolute dating is feasible). All these observations are important, and are carried through to the contextual analyses.

It is, however, vital to realise that such individual observations are, to an extent, independent of a document's relationship to its archaeological context, but not of a text's relationship to its textual context. In other words, without knowing a single fact about a document's textual make-up or content, it can be related to its archaeological context, as with any other artefact. Thus, on the diagram, there is a second arrow directly linking the document to its archaeological context. This realisation highlights a striking feature of the diagram: its lack of absolute symmetry. The need to define the elements of an individual text before incorporating them in a wider contextual analysis means that a second arrow, linking the text directly to its textual context, is not appropriate. More importantly, the local identification of context (represented in the archaeological context by stage 1) is in fact achieved at the 'individual observation' level (A) with a text. This is because, in most cases, several textual elements are involved; they are united by their appearance on a single material object, but they require isolation and definition, just as the individual document must be related to other objects (including other documents) within its specific depositional context (1). The relation of texts to other texts in the same textual context (level i) in fact corresponds to the first two archaeological levels (1 and 2), for, although texts within the same set will often belong in the same archaeological context, this is not always the case. Palaima and Shelmerdine illustrate such an occurrence in the case of Pylos text Sa 1313

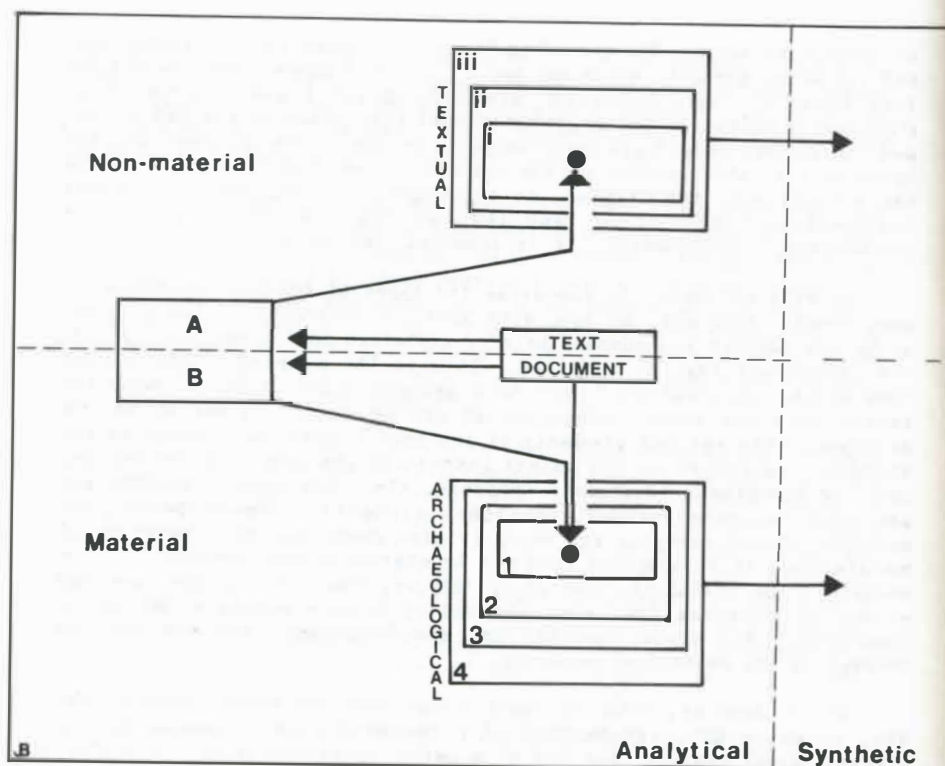


Figure 1: Diagrammatic representation of the analysis of a text at individual and contextual levels.

INDIVIDUAL	
A	Individual observations on text
B	Individual observations on document
CONTEXTUAL	
i	Within set
ii	Within archive
iii	Within script
1	Local
2	Intra-site
3	Regional
4	Inter-regional

recording chariot wheels (below, p. 84), where the Sa texts (united as one textual 'set') do not all occur together within the same archaeological context. A converse instance is the Pylos archive room, where many texts are found within the same archaeological context, but form part of many textual contexts. Here the separate definition of textual context and detailed observation of archaeological context are important in building a complete picture of storage and activity in the archive room.

Individual textual observations (A) are thus incorporated into a contextual analysis of the text which operates at three levels: (i) contextual analysis within a 'set', that is, a group of texts which relate to the same commodity, or the same production activity at the same stage. Within such a grouping, refinements can be made to the isolation and definition of textual elements by comparison with other texts. At a wider level (ii), the context within the archive of a specific site can be analysed. This will again allow further information to be added by comparison with texts dealing with different commodities and activities. A wider range of meanings can thus be assigned to words, and the different ways of handling different administrative tasks studied. This stage corresponds most accurately with the regional archaeological context (3), since it is true, for the most part, that a central archive will refer to a whole region dependent on a single centre. The third level of textual analysis (iii), which corresponds to level 4 in archaeological context, is that at which different archives are compared to show how the range of usages varies over the whole area which uses a particular script, in this case, the 'Linear B' Aegean. A yet wider analysis of word meanings etc. can be undertaken, and the presence or absence of various subjects and types of texts within different archives noted (e.g. Olivier 1984).

The document can be viewed in archaeological context at four levels. Firstly, there is the 'local' level (1), in which the immediate depositional context is examined. At this level it is decided whether the document relates to the objects apparently in association with it (e.g. whether it has fallen from an upper storey), and whether it has been preserved in a primary context (i.e. while records were being made), or in a secondary context (discarded, or in storage), or even in what we might term a tertiary context (in reuse: as sometimes in the Near East: cf. Ellis 1983, 500).

At the next level ('intra-site': 2), the pattern of occurrence of documents is viewed within the overall functional pattern of the individual site. Areas with and without documents will be important here. The third level ('regional': 3) is similar, and is the level at which the literate centre is viewed in its wider context as the primate settlement of a region. Within this region, the structuring and patterning of local sites (with and without documents) are considered and defined archaeologically. Finally, ('inter-regional': 4), the archaeological picture of the whole area is viewed: sites with or without documents are noted, exchange relationships evidenced and described and so forth.

Examples of the procedures outlined above will not be given here, as several are to be found in Palaima and Shelmerdine's article (this volume). It is hoped that this discussion will clarify the importance of their approach. It is worth noting, however, that although much of the discussion here has been in prescriptive terms, much of the data we possess from the Aegean area have already been acquired through excavation. For this reason, the approach cannot be implemented from first principles on material as it is discovered (as yet, at any rate), but its application after the event to the data available is important, as will become clear in the following section.

Integration

The right-hand side of Figure 1 is separated off and labelled 'synthetic', as opposed to 'analytical'. This is because at this stage, after the analysis of individual texts and their contexts, both textual and archaeological, the information is synthesised and integrated into the wider archaeological picture. Such a process is appropriate in the Aegean for two reasons. Firstly, the texts, as simple administrative documents, tell us little without reference to the wider cultural picture. This is not necessarily the case with other literate societies, where lifetimes could have been spent in analysing and publishing purely textual data on diplomacy, trade, myth, literature, history etc. Secondly, the texts refer in many instances to objects or activities which are archaeologically visible, either directly or indirectly. Indeed, as Palaima and Shelmerdine show, the text is often an integral part of the process of production in certain areas. Thus, for example, ideograms can in many cases be related directly to known objects (Vandenabeele and Olivier 1979), and this approach was once considered the only valid way of relating the texts to archaeological discoveries (Gray 1959). However, in line with more recent developments in archaeology, there is now considered to be much more information of a less direct kind to be derived from a combination of archaeological and textual study.

Table 1 attempts to present some of the areas in which textual data can contribute information of this kind. It must be stressed, however, that it is far from exhaustive and it is important to realise that its basis is textual information; it does not set out all the areas in which archaeological data are potentially revealing and indicate where textual data may shed light on some of these, but rather takes the textual data and indicates where they may be reflected in the material record. The diagram follows on from the right-hand side of Figure 1, but the simple material:non-material distinction maintained in Figure 1 has been refined by further dividing the material side into archaeologically visible and invisible. This further distinction allows for information that the texts may provide about material objects (commodities, raw materials, humans etc.) which are either not normally preserved archaeologically (e.g. wool or cloth, in Aegean contexts, at any rate) or are difficult to observe archaeologically. In the latter case, there may well be a systematic relationship between textual information and

archaeologically recoverable material, but it is an indirect, or oblique one. This is indicated by (*) in column 2.

NON-MATERIAL		M A T E R I A L	
	ARCHAEOLOGICALLY INVISIBLE		ARCHAEOLOGICALLY VISIBLE
LANGUAGE (Structure; Phonology; History)			Identification of language-speakers with material culture group (controversial)
SCRIPT USE (Elements: ideograms, syllabo- grams etc.)			WRITING IMPLEMENTS STAGES OF MANUFACTURE OF DOCUMENT SCRIBAL HANDS/FINGER- PRINTS
COGNITIVE ASPECTS (Measures; number)			VESSEL SIZES/WEIGHTS
IDEOLOGY (Deity names; attributes)	OFFERINGS MADE (*)		CULT SITES; REMAINS OF CULT VESSELS
ADMINISTRATIVE ORGANI- SATION/HIERARCHY:			
Individual System	SCRIBES (*) ADMINISTRATIVE CENTRES (*)		SITES WITH KNOWN NAMES
Official titles			
SOCIAL STRUCTURE			
Elite groups	SPECIAL CLOTHING/ WEAPONRY?		ELITE RESIDENCES/BURIALS
Slavery	TAXATION (*) TRADE (*) INDUSTRIAL PROD- UCTION		PRODUCTION INSTALLATIONS STORAGE/REMAINS OF ITEMS IN STORAGE/ PRODUCTION

Note: (*) indicates that the textual data may have indirect reflections in the material record.

Table 1: Material/non-material information derivable from texts and areas where synthesis with archaeological evidence is possible.

The third column ('archaeologically visible') includes not only material remains directly relatable to objects described or illustrated on the documents, but also those material remains in the wider archaeological context which may, by reference to textual evidence in either of the first two columns, produce further information. Thus, for example, archaeological sites whose ancient name is known to us (and appears on the documents) can be related to the textual information about that particular site. The names Pylos and Knossos, for example, both appear on texts found at sites which archaeology would define as regional centres. Ethnohistorical sources and tradition associate these place-names with the particular locations of those sites. Thus we can be fairly certain that we are observing regional administrative centres, and, further, we can compare the activities that are archaeologically visible at those centres with those attested in the texts. Also, we can note how administrative centres choose to mention themselves on documents written and stored at those centres. Similarly, an important cult and settlement site known from excavation (Amnisos: Figure 2) turns up on documents recording offerings to divinities there, and at other places.

Such one-to-one identifications, as Barnes implies (this volume), are of limited general value, but they can be incorporated into a wider study of, for example, cult networks, economic networks, or of general place-name location, where they assume a much greater importance. Interesting work has recently been done on the relative location of place-names found on the tablets (see McArthur 1981 for a summary). The basis of this work is the assumption that place-names frequently mentioned together on the same text, or in the same series of texts, are in fact geographically proximate. The advantage of such analyses is that they allow us to locate, albeit relatively, some of the majority of place-names which are not readily identifiable with known sites. Clearly the large numbers of associations requiring analysis are difficult to handle manually, and so statistical and computer analyses have been performed (Wilson 1977; Cherry 1977 and McArthur 1979). In the case of Knossos, such studies have produced groupings which could then be combined with known place-names to suggest relative locations for the groups. An interesting feature is the apparent lack of any explicit reference to sites in east Crete (cf. Killen 1977, 45). Evidence of independence, economic or otherwise, has not been detected in the archaeological record to date, but nevertheless suggests a further area for detailed archaeological examination, to see if such a distinction can be detected.

Similarly, at Pylos, textual evidence suggests the existence of two administrative 'provinces', called the 'hither' and the 'further' provinces (Chadwick 1976, 42-48). This separation is backed up by computer multidimensional scaling analysis of the place-name data (Cherry 1977), but it has been argued (e.g. in Bintliff 1977, 39-40) that such a division does not fit the patterning within the settlement evidence derived from a large-scale regional survey of the area (McDonald and Rapp 1972). Work is now in progress to test such doubts by careful

artefactual analysis of material from sites discovered by survey and examined by excavation to see if an alternative pattern does exist, based on intra-regional economic networks.¹

Valuable as computer-aided and statistical analyses are as objective tests of association, it is important not to lose sight of the textual context of such associations (cf. Killen 1977, 44). It can be argued for the Knossos situation, for example, that certain associations of place-names are not indicative of geographical proximity, but rather reflect a similarity of status. Indeed such distinctions can be valuable in themselves, since they may allow further conclusions to be drawn. This is particularly so where the centre Knossos is mentioned in association with a place name. It is possible to postulate a series of administrative centres of secondary status to Knossos, most of which can plausibly be identified with known place-names. Furthermore, these place-names all refer to sites of some status at the time of the destructions at the end of the preceding Late Bronze I phase. These sites appear to come into reuse early in the succeeding LB II-III phase, probably under the influence of Knossos (Bennet n.d.). Thus from a combination of textual and archaeological data hypotheses are generated not only about the administrative hierarchy at the time of the Knossos documents, but also about the possible historical development of the Knossos administration.

Such examples are highly generalised, but are chosen to show the application of textual-archaeological integration to wider situations than those exemplified elsewhere in this volume. That is not to denigrate approaches that are more concentrated, but to illustrate a wider viewpoint, and one that requires a degree of indirect evaluation of the data.

One further example may be valuable in demonstrating how the fuller integration of textual and archaeological information may be productive. We shall see, in the following paper, how the perfumed oil industry at Pylos was managed largely at a palace, or intra-site level. At Knossos, however, John Killen has examined the structure of the wool industry which involved about 100,000 sheep, plus several hundred cloth workers over much of west-central and central Crete (Killen 1964; n.d.). I do not wish to cover ground already well known both within and without Mycenaean circles, but should like to stress two important aspects of his work.

The first point to be stressed is Killen's careful use of ethno-historical analogy from English medieval manorial records dealing with sheep, which allows him to explain the function of the various textual components on the extensive group of sheep documents, and relate this to fairly well known husbandry patterns (Killen 1964). Such analogies were not used to imply a deeper similarity in the two societies involved (contrast Hutchinson 1977). For elucidating the wider questions of the organisation and structure of the industry, Killen confines himself to analogies from cultures where the cultural context of such production

and management is similar, such as the centralised, mobilisation economies of the ancient Near East, or of the Inka in Peru (cf. Murra 1980).

Secondly, he has developed the textual analysis to such an extent that the establishment of a set of potentially archaeologically testable criteria for observing the operation of such an industry is now possible. In so doing, he has shed considerable light on Mycenaean industrial organisation in general. Production centres can be expected both outside the administrative centre at Knossos as well as within it, and these should provide evidence of organised weaving activity. Equally, in the many communities which are listed as being responsible for flocks, animal husbandry patterns might be detected in faunal assemblages from their excavation (cf. Halstead 1981, 204-205). Naturally, this will be indirect evidence, since the animals will appear in the archaeological record presumably as food debris, whereas they appear on the texts as productive in a different sense. Careful faunal analysis of age at death, relative proportions of species etc. may help to shed further light on Killen's text-based conclusions. An interesting aside to this question is the recent discovery, in skeletal remains from an extensive LB III cemetery at Armenoi in west-central Crete (Figure 2), of indications that the population may have suffered endemic diseases such as tuberculosis and brucellosis, which are associated with herding communities (McGeorge 1984). In this way, with greater refinement of our archaeological techniques, it is possible that such contexts where texts are not actually present could be shown to relate indirectly, but systematically to the picture presented by textual analysis.

Summary and Conclusion

This article has attempted to argue for a rigorous methodological approach to the analysis of textual data both in its own context and in its archaeological context, and further, that such analyses should be incorporated into the wider archaeological picture in an imaginative and open-minded manner. Only in this way, it is suggested, can the maximum amount of information be extracted from such documents as are preserved in Aegean LB contexts and that information be fully incorporated into our general understanding of cultural process in the area. It is important to stress that the problem is as much archaeological as it is textual. Textual study *in vacuo*, as it were, is highly developed (cf., e.g., Palmer 1963; Ventris and Chadwick 1973), and has been for some time. It is in exploiting the archaeological information to the full, in conjunction with such textual data, that the full potential has not yet been reached.

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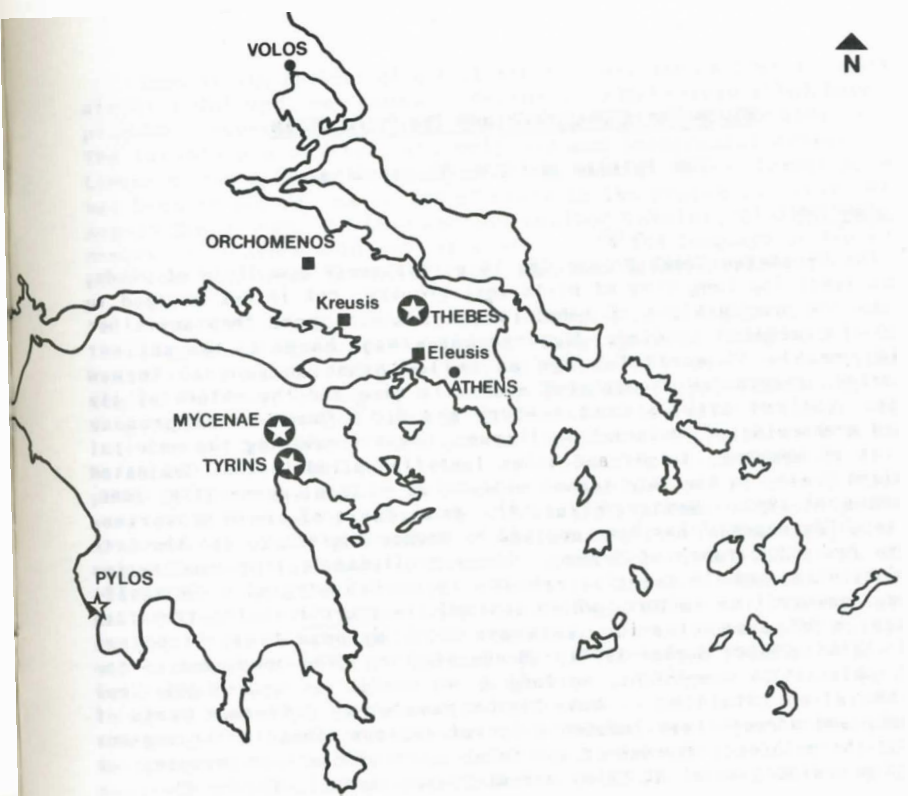
Note

1. I am indebted to Holly Morris of the University of Minnesota for bringing to my attention her own and others' work in this area.

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PYLOS probable regional centres

Kreusis other sites

★ sites with tablets & ISJ(s)

☆ only

■ ISJs only (+1/1.)

● archaeological sites



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