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THE DATE OF LINEAR B

The Linear B script of bronze age Greece consists of phonetic signs, ideograms, metrical signs, and numerals. Fifty of the phonetic signs, that is about two thirds of the total number, are recognisably the same in form as the fifty most frequent phonetic signs of the Cretan Linear A script. Of the remaining thirty or so Linear B phonetic signs some have recognisable ancestors, either in the so-called Pictographic script (12, 48, and perhaps 35) or from among the Linear A signs that are either ideographic or restricted in their phonetic usage (61 and 38); the others are perhaps arbitrary inventions, perhaps transferred from some other now lost script. Of the ideograms and metrical signs, some occur in Linear A and a few in Pictographic as well. The numerals are the same as in Linear A, but differ from Pictographic. Linear B does not however possess some of the «special phonetic» signs (e. g. 63 which is only used in middle positions), the wealth of ligatures, or the system of fraction signs of Linear A.

We can now see what Linear B is. It is the Linear A script, shorn of a few refinements, and supplemented by some thirty new phonetic signs. The natural explanation for the script, and the only convincing one, is that it was a special creation designed on the basis of Linear A in order to meet the requirements of a new language.

My purpose today is to attempt to fix the date of the creation of Linear B. It may well seem over-ambitious. Excavation can give us a *terminus ante quem* — at present 1400 B. C. — but can never give us more. Indeed since the Linear B documents seem only to have been written on unbaked clay, and can only be preserved by the accident of fire, we are lucky to have any at all, and it is next to impossible that we should ever find a sequence of deposits of different date.

However there is a road open — a road that in theory at least will lead to a valid and certain answer. This road is the analysis of style and handwriting. Moreover one half of the road is already clear. Any writing system must within itself be conservative, or it

will defeat its own ends, and Linear B is likely to have been more conservative than most. It was a craft, exercised by professionals and not a general accomplishment. It seems to have been used for a single purpose only — that of keeping palace accounts — since it died when that purpose fell away. There was, if we except the rare and dubious inscriptions on completed pottery, only one medium-unbaked clay. Thus all the normal incentives for change and development were lacking, and in fact the examples of Linear B that we possess, though scattered in both place and time, attest a considerable degree of uniformity. This is no matter for surprise, and indeed we can feel confident in supposing that the original script, whenever and wherever it was first created, differed comparatively little from the script as we know it from our surviving documents.

For Linear A however the conditions are different. Literacy was less restricted. The script was used for at least two purposes, religious and accounting. And it was written on a variety of materials — not only unbaked clay, but also pottery and stone vessels, seal-stones, metal, and wall-frescoes. There is indirect evidence that it was also used on papyrus or some such perishable material. Different styles are suitable for different materials and we should expect some interaction and development to take place. And indeed this is what we find. Linear A writing exhibits considerable variety. Now some particular Linear A style must have been the parent of Linear B. Can we locate it?

One thing is clear and generally agreed. Linear B could not have been developed from the Linear A style of Hagia Triada—the style that is best attested in our evidence. The Hagia Triada signs are more economical of line, less curvaceous, and in many cases specifically different from their Linear B equivalents. The scribes neither ruled their lines, nor regarded line-endings. The tablets themselves are of different size, and the palm-leaf shape does not occur. But there is no need to labour the point. Everybody agrees that the Linear A of Hagia Triada is an unsuitable parent for Linear B. Everybody also agrees that the Minoan inscriptions which approach closest to Linear B in sign formation are those of some sacral inscriptions — particularly the ink-written MM IIIa cups from Knossos.

Starting from this common ground there are two possible theories. Either Linear B was created on the Greek mainland in M. M.

III times or it was created by the Achæan invaders of Knossos in LM II.

Since our earliest attested Linear B is at LM II Knossos we are naturally tempted to assume that LM II Knossos was the period and place of its creation. But this could only have happened if the current Linear A style was suitable. Unfortunately there are no Linear A inscriptions from LM Ib Knossos. So we are driven to a double hypothesis---that the Hagia Triada style represents a regional variation, and that at Knossos the Linear A writing of the MM IIIa cups eventually turned into something very close to Linear B in style. Only thus could the LM II invaders have adopted the current Knossos script as the foundation of their own.

Let us now see if we can test this theory. FIG 1 shows ten signs of comparatively frequent occurrence whose Hagia Triada and Linear B forms differ in some distinctive manner. FIG 2 shows the forms of these signs in the Knossos Linear A inscriptions. On the theory of independent regional development they should show an evolution in time towards the Linear B type. But they do not. The duplicated cross - bar at the top of L 26 has been simplified towards the Hagia Triada type in the tablet (IV 2) from the Temple Repository. The L 53 faces in the Linear B direction in the MM IIIa cup, but in the tablet (IV 1) and disk (III 3) from the

Normal Linear B form	Normal Hagia Triada form	
69		6
55		25
6		26
7		51
8		52
60		53
54		75
37		78
4		92
81		98

Fig. 1. - The normal Linear B and the normal Hagia Triada forms of ten common signs.

Temple Repository it faces in the Hagia Triada direction. And this latter form of the L 53 is twice found together with the Hagia Triada style L 52, whereas the former type consorts with the Linear B style L 52 on one of the MM IIIa cups.

The only apparently late inscription in which the L 53 has the

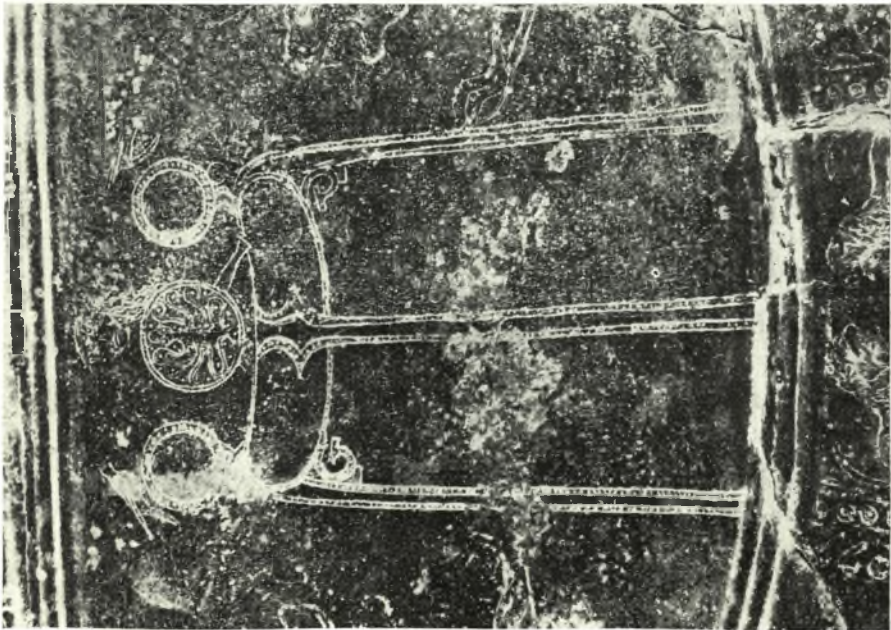


Εικ. 2. - Παις ἐν λήβητι· ἐκτὶ ληξυθου ἐκ Leyden.



Εικ. 1 (ἀριστερά). - Ἡ γέννησις τοῦ Διὸς. Ἐγχαράκτος παρὰ τῆσι χαλκῆσι μήτρῃσι Ἄξου.

Εικ. 3 (δεξιὰ). - Ἡ γέννησις τοῦ Ἄρεως. Παρά τῃσι μήτρῃσι ἔτροσε κλέπτῃσι (τμήμα).





Ἐκ τοῦ ἀναγλύφου ἀμφορέως τῆς Γεννήσεως: Τήνος;

Reference (Brice) & Nature of Object	Signs with resemblance to Linear B form	Indeter- minate	Signs with specifically Linear A form
II 1 cup (MM IIIa)	𐀀 𐀁 𐀂 𐀃	𐀀	𐀀
II 2 cup (MM IIIa)	𐀀 𐀁 𐀂(?) 𐀃		
II 4 vase (MM IIIb)	𐀄 𐀁 𐀂		
I 8 sacral (LM Ia)	𐀀 𐀁 𐀂 𐀃		𐀀 𐀁
I 15 sacral (MM III)	𐀁		
I 16 sacral (MM III)	𐀀 𐀂		𐀀/ 𐀁 𐀂
I 17 sacral		𐀁	𐀀/
V 12 seal			𐀂
V 14 seal (MM III)		𐀃	𐀀/ 𐀁 𐀂 𐀃
IV 1 tablet (MM IIIb)	𐀂		𐀀/
IV 2 tablet (MM IIIb)			𐀀/
III 3 disk (MM IIIb)			𐀀/
IV 12 tablet			𐀀/ 𐀁

Fig. 2. - The same ten signs: Knossos and environs.

Linear B direction is the libation vessel from the House of the Frescoes (I 8). This was found in an L M I context (Evans P M II 438-9). However one of the L M Ia frescoes from the same house

contains a sign, unhappily incomplete, but which Evans felt confidence in restoring as an L 53 facing the Hagia Triada direction (ibid. 441 fig. 2581). Thus it seems inevitable that we must explain the libation vessel either as an heirloom dating from an earlier period or as carrying an inscription carved in a purposely archaising manner. In any case the other signs on this libation vessel are not such that one would exclaim «Here we have proto-Linear B!» In particular the L 25, L 31, L 75, and L 95 have forms unexampled in Linear B.

In fact the evidence does not at all suggest that Late Minoan Knossos was developing a style approaching that of Linear B.

This impression is confirmed if we look at the evidence for these ten signs outside Knossos (FIG 3). Such of them as are attested at the closest sites — Mallia and Tylissos — show scarcely any tendency to resemble the Linear B forms, and considerable affinity with the Hagia Triada style. It is the same with the other signs. In particular the ligatures on the Tylissos tablet (II 9) are exactly like the ligatures at Hagia Triada, and have no counterpart in Linear B.

The closest parallel with Linear B remains the MM IIIa cups, and one or two other sacral inscriptions from Knossos. Next closest are two inscriptions on libation vessels, one from Apodoulou and one from the Dictaeon cave, both dated rather widely to MM III.

So far the argument would seem to show that Linear B came from early Linear A. But here we meet with a check. The earliest Linear A we have — the tablets and disks from the recent excavations at Phaistos — are at the latest MM IIb, and in the opinion of their excavator even earlier. Their sign forms show none of the Linear B characteristics of the Middle Minoan III Knossos material. However there seems to be a connection with Knossos. The elaborate L 51 would appear to be the ancestor of the L 51 found on the Mavro Spelio gold ring (V 14) and the tablet (IV 12 — probably from Knossos), and is very possibly the ancestor of the unusual B 7 employed by some scribes at Pylos. Incidentally the form of the sign on the unstratified tablet (IV 14) may indicate that it belongs to this early period.

Let us now leave the Phaistos tablets and come to a site we have not yet visited — Palaikastro in the far north east corner of Crete (FIG. 4). Here some of the resemblances to Linear B are striking. In particular the L 53 always has a Linear B direction, even on the L M I tablet; and an L 25 exhibits curved cross-strokes

in the centre. Also the tablet (IV 5) is of large size, has ruled lines, and avoids splitting words at the line-endings—in all of which respects it resembles a Linear B tablet. Nevertheless the similarities are certainly not close enough for the Palaikastro script to have provided a model for the creation of Linear B (see the Palaikastro forms of L 31, L 92, L 98, L 103).

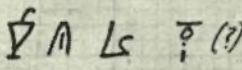
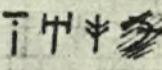



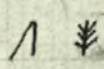

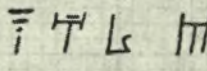

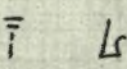


Reference (Brice) & Nature of Object	Signs with resemblance to Linear B form	Indeter- minate	Signs with specifically Linear A form
IV 5 tablet (LM I)			
IV 6 tablet			
I 12 sacral			
I 3 sacral (MM IIB)			
I 6 sacral (MM III)			
I 4 sacral			
I 5 sacral			
II 16 vase (LM Ia)			

Fig. 4. — The same ten signs : Palaikastro.

Before leaving Palaikastro I think we may make a guess at the origin of its Linear A style. The central stroke in the L 78 on the tablet (IV 5) is unique outside Knossos Linear A and Linear B; one of the Palaikastro forms of L 100 (on I 5) is found elsewhere only at Gournia (III 10) and Knossos (I 17); the reversed L 53, though not quite unexampled elsewhere, is most frequent in Middle Minoan Knossos. The town of Palaikastro was apparently refounded at the beginning of Middle Minoan III. It seems quite probable that this was when its period of literacy began—perhaps with the arrival of

Knossos - trained scribes. Thereafter it will not be surprising if in so comparatively remote a town the local handwriting maintained some old - fashioned characteristics.

Let us leave Palaikastro and come to our final site, Hagia Triada-

Sign L	HT 28	Hagia Triada forms		Other Lin.A forms	Linear B forms
		normal	exceptional		
53					
52			 (14, 99, 110) (92 & 109)		
26			 (25)		
97			 (10)		
60					 Kn Dv 447

1. II 2 Knossos MM III a
I 8 Knossos LM I a
I 4 Palaikastro
I 5 Palaikastro
I 12 Palaikastro
IV 5 Palaikastro LM I
II 25 Schoinia
2. c I 12 Palaikastro
3. a II 2 Knossos MMM III a
I 16 Trullos MM III
IV 13 Phaistos MM III b
- b II 1 Knossos MM III a
I 4 Palaikastro
- I 5 Palaikastro
4. II 1 Knossos MM III a
5. a — Phaistos MM II a
b — Phaistos MM II a
c IV 5 Palaikastro LM I
2. a I 15 Juktas MM III
II 4 Knossos MM III b
- b II 1 Knossos MM III a
II 2 Knossos MM III a
II 25 Schoinia
I 4 Palaikastro

Fig. 5. - A Hagia Triada hand (HT 28 and the disks stamped with seal number 31).

da. Here I shall try to be less impersonal. So far I have talked of a Hagia Triada style, and indeed the style is remarkably uniform. But handwritings differ, and I wish to discuss that of one particular scribe. We may guess that he was a meticulous man. We may guess also that he was senior in the office hierarchy — for he wrote the greater number of the clay disks, and signed them with his seal, — a simple seal portraying a house-fly (numbered 31 in Levi «Le cretule di Haghia Triada...» *Annuario* viii - ix p. 94). He also wrote the tablet HT 28. The table in FIG 5 shows the distinctive nature of five of his signs. The first three we have

met before. They are similar to the signs in MM IIIa Knossos that we have already seen to bear some similarities with Linear B. Are we then to assume that the man came from Knossos, that he was perhaps an agent from the capital city? Only if we suppose that the Knossos script remained static or developed on its own lines independently of the rest of Crete. But we have seen this to be unlikely. Moreover some of our scribe's other characteristics do not bear this out. Several of his signs could not come from a style which gave rise to Linear B. In particular it is extremely unlikely that his L 60 could have come from the contemporary Knossos of LM Ib. Its form is not accidental since it is repeated more than once and is moreover made in the same way as his L 31. In fact it is the Pictographic form of the sign (P 103). Closest to it in Linear A are the MM IIb examples from Phaistos. Our scribe's version has a cross-bar. But the form with a cross-bar never occurs in Linear B. The only other Linear A example of the sign that is at all similar is on the Palaikastro tablet (IV 5), and we have seen reason to believe that Palaikastro forms were often old-fashioned.

As for our scribe there can be no doubt that his hand is not a modern one in advance of that of his colleagues. Rather it is old-fashioned, perhaps pedantic, perhaps merely the product of a more conservative school of scribal tradition. In either case it reflects an earlier style of writing. Yet it is the only Hagia Triada hand to show unusual resemblances to Linear B. The moral is clear. Linear B cannot have been created from a late LM Ib style. Indeed since the scanty remains of tablets from the end of MM IIIb already show an almost total advance (except at Palaikastro) to the late Hagia Triada style, the creation of Linear B should be earlier than that date. But we must go even further. The inscriptions that are nearest to Linear B are the ink-written MM IIIa Knossos cups. Next nearest are some features of the Palaikastro style, and it is possible that this itself stems from MM IIIa Knossos. Here though we must stop. The inscriptions from the recent Phaistos excavations warn us that we may not get closer by going further back in time.

So we have come to the end of our quest. It is perhaps an unpopular end but I can see no alternative. On present palaeographical evidence we must say that the foundation for the Linear B script was the Linear A style of early Middle Minoan III Knossos. That is to say that Linear B was created at a date somewhere near 1700 B. C. (or 1600 B. C. on the chronology advocated by Dr,

Aström). Thereafter its evolution, if it evolved at all, was independent. Moreover it was created to serve the needs of a new language. But the language of Linear B is Greek. So to have been in contact with Knossos the Greeks must have been already present in Greece, and to have needed a palace accounting system they must have already possessed political power in the Middle Helladic period.

NOTE ON THE FORM OF L 52 = B 8:

The difference in form between the A and B versions of this sign has not, I think, been remarked on before. Except by a single scribe at Mycenae (Bennett's hand 55 «The Mycenae Tablets II» T A P S 48 i p. 92)—and that not very certainly—the central line is never carried above the cross-bar in the simple form of the sign in Linear B. On the other hand in Linear A it is always carried above the cross-bar (the only possible exception being a single damaged example of the sign on HT 37). However the complex form of the sign with a double cross-bar (sometimes in Linear A reduced to a mere dot) and no upward extension of the central line is common to both scripts.

On this criterion two otherwise doubtful Knossos inscriptions should be assigned to Linear B — the painted sherd from the Court of the Distaffs (Her. Mus. 2932; Evans S. M. I p. 54 fig. 29, P. M. II p. 247 fig. 144; Carratelli's Cn. 8) and the brief notice at the entrance to a tholos tomb at Kephala (Brice V 15). The sherd is certainly late (LM IIIa), and the tomb inscription, in the opinion of its discoverer (Hutchinson BSA 51 p. 77) is probably late. But one cannot be certain. Once Linear B was being written at Knossos, cross-influence — especially in such a minor detail — cannot be excluded,