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## SEALS AND SEALINGS: SOME COMMENTS

### THE KNOSSOS SEALINGS WITH LINEAR B INSCRIPTIONS

Sealings found scattered over many parts of the palace at Knossos illustrate the variety of practical purposes for which seals were employed in Minoan times. According to period, method of manufacture and usage, the clay nodules differ in basic shape, number of seal impressions on each, and marks of any objects to which they may have been attached. Those inscribed in Linear B, with which this article is mainly concerned, differ in shape from earlier inscribed nodules; how far this reflects a change in usage and to what extent the differences are merely technical, the result of new methods of making, will probably only be ascertained when a greater understanding of the Minoan scripts has been reached.

Most of the inscribed sealings from the Hieroglyphic deposit are of a crescent shape, not repeated later. Moulded round an irregularly twisted strand of cord, each was placed on a flat surface while the seal impressions were made, inscriptions being added afterwards to the smooth under-face so produced, and to the spaces between the

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#### Abbreviations

as in Kadmos 3, 1964, 29, V. E. G. Kenna, <i>Seals and Script III</i>	
except: Her., Her. s.	Catalogue numbers of seals and sealings in the Archaeological Museum, Herakleion.
Ox.	Catalogue numbers of the Ashmolean Museum, Oxford.
also: AE/NB	Sir Arthur Evans's <i>Excavation Notebooks</i> .
CMS I	<i>Corpus der minoischen und mykenischen Siegel</i> , Band I, A. Sakellariou, Die minoischen und mykenischen Siegel des Nationalmuseums in Athen. Berlin 1964.
IMGT	L. R. Palmer, <i>The Interpretation of Mycenaean Greek Texts</i> . Oxford 1963.
MMGC	G. M. A. Richter, <i>The Metropolitan Museum of Art — Handbook of the Greek Collection</i> . Cambridge 1953.
MT II	<i>Transactions of the American Philosophical Society</i> 48 (1958) 1, E. L. Bennett and J. Chadwick, <i>The Mycenaean Tablets II</i> .
NB. BMCG	by H. B. Walters 1926.

\* examples already listed in Kadmos 3, 1964, 47—48, 55—57. Seals are described, as there, according to the direction of their impressions.

impressions. The flat surface was not necessarily that of the object to which the sealing was attached, since the string perforating the nodule was at least slack enough to permit it to be turned for the addition of an inscription, so that the probable function of the nodules was to label rather than to seal.

The rare nodules from Knossos inscribed in Linear A may have served some other purpose, perhaps resting inside cupboard or container and thus protected from damage, or carried by the transporter of goods or messages by way of authorization, for there is no simple way in which the unperforated roundels could have been securely attached as outer labels. Their disk-shape was produced by squeezing a ball of clay between the thumb and first finger of the left hand, revolving it as the seal(s) was impressed round the edge. A short inscription was then written on one of the flattened sides.

Bennett (MT II 103—4) has described the 'normal Mycenaean' method of making a sealing, by which a lump of clay was held between the thumb, first and second fingers of the left hand and pressed against a seal held in the right palm (fig. 1 A). Of the ones with Linear B inscriptions from Knossos only Her. s. 122 and Her. n. No. 95, PZ (285 ii) were made by this method, though Her. s. 129 was formed in a similar way, holding the nodule between the tips of the first finger and thumb (fig. 1 B). The remainder were made by balancing the lump on the first and second fingers of the left hand, across the upper joints, using the thumb to press the seal into the clay (fig. 1 C), the only exceptions being two of the three nodules without impressions. These have been included among the sealings in the museum catalogue for reasons of size and shape, that distinguish them from the labels catalogued with the tablets. Her. s. 117 was moulded in the hand and the prints are blurred. On Her. s. 195 they are clear, showing how a bomb-shaped nodule resulted from squeezing a ball of clay between thumb, first and second fingers of both hands (fig. 1 D).

Apart from Her. s. 122, where the seal had been held upside-down so that before the countermark could be made the nodule had to be turned, inscriptions on the obverse could be written without shifting the nodule from the left hand. For inscribing the backs, most were turned the 'normal way' described by Bennett, i. e. revolving on the vertical axis. Her. s. 108, 117, 118 and 125 however, were turned on the horizontal axis, and Her. s. 129 askew. The two facets of the reverse were then inscribed as though forming a single face, usually with two horizontal lines of writing.

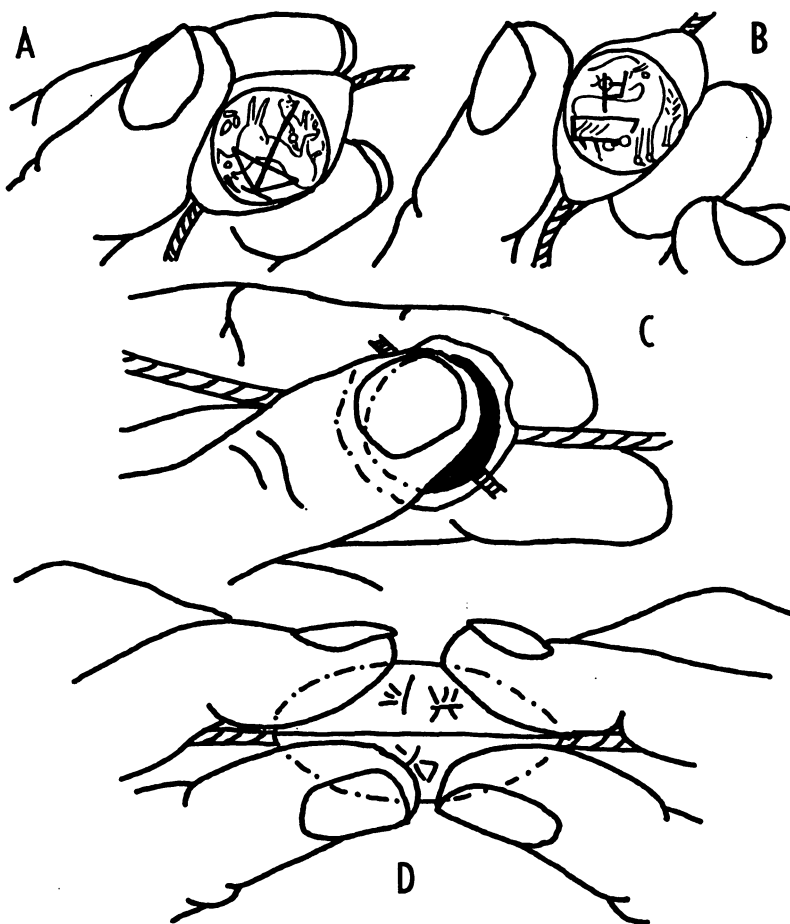


Fig. 1. Methods of making sealings

Distinction between countermarks (across the seal impressions) and endorsements is only a matter of length. The side with the impression seems to have been regarded as the front; the most important word, usually an ideogram permitting immediate recognition, was superimposed, but not so as to obscure the impression. Possibly the sign on Her. s. 118 was felt likely to interfere too much with the legibility of the impression and so was relegated to the back. The word *e-po* only occurs three times in Mycenaean texts in reference to an unidentified commodity; that it has apparently no ideogram,

may be an abbreviation and is in any case short enough not to interfere with the impression, may have justified its use on the obverse of Her. s. 121 (fig. 2.1). Inscriptions on the reverse explain the ideogram, either writing the word in full, or giving further descriptive details.

Chadwick (BICS 5 (1958) 1—5) has shown for Pylos the relationship between sealings and tablets found in the same area, the former acting as labels for groups of the latter. This same usage can be illustrated for certain of the Knossos sealings (for location of tablets cf. OTKT I 8—35, and of sealings cf. BSA 60 (1965) 58—98):

#### Magazine 8

The inscription on Ox. 1938. 1080 (fig. 3.11) is somewhat of a problem. The main difficulty in interpretation lies in the counter-sign, ostensibly \*115 WEIGHT. In this position a commodity rather than a unit of weight is to be expected; and that this sign can refer to an article seems to be confirmed by PY La 630 rev., on which it is followed by an alternative form of \*115 WEIGHT. This tablet shows \*115 COMMODITY associated with cloth, and *o-nu-ke* on the third side of the sealing indicates a similar context. In other texts this word relates to cloth or wool, and on the basis of this sealing alone a third meaning as an article described by *o-nu-ke* has been suggested for *ta-to-mo*, as neither of the other meanings seems appropriate. Among the tablets found in Magazine 8 were several dealing with various sorts of textiles (L 501, 508 bis, 513—6, Lc 505, 507, 512, 586, Od 502).

#### Magazine 15

The WOOL ideogram appears as the countermark on Ox. 1938.861 (fig. 3.10). The word of endorsement *ne-ki-ri-de* occurs on two tablets in textile contexts; it may not be accidental that one of them (L 1568) was found also in Magazine 15 along with a large number of tablets dealing with the same subject (L 587—9, 590, 594, 596, 598—9, 641—2, 647, 654, 656, 1568, Ld 571—7, 579, 583, 646, 649, Od 666—7).

#### Northern Entrance Passage

That the word *do-ke* is repeated on Her. s. 117 associated with WOOL, may or may not indicate the character of Her. s. 125 (fig. 4.19). Since tablets from this area cover practically every subject, occurrence there of L 868—70, Ld 871 and Le 1009 mentioning cloth, is no remarkable coincidence.

### Room of the Chariot Tablets

This also contained tablets dealing with a variety of commodities, but of the four inscribed sealings, three are appropriate, Her. s. 122 (fig. 2.2) with E 71, 132, 165 (WHEAT), Her. s. 121 (fig. 2.1) with V 283 (the only instances of *e-po* at Knossos), and Her. s. 117 (fig. 3.18) with L 104, Lc 178, 281 (WOOL and CLOTH).

### Corridor of the Sword Tablets

Ws 1708 has the same ideogram \*103 MAN B as As 1517 (a list of men), found near the Sword Tablets.

It may be a matter of chance that the remainder of the inscribed sealings were found without relevant tablets in the vicinity (and conversely that numerous groups of tablets are without corresponding sealings), but there is evidence that inscribed sealings had other usages. Inscriptions on a set of seven from Mycenae refer to vases stored in the House of Sphinxes (MT II 11—2), and the oft-quoted examples from the Arsenal at Knossos were associated with a couple of chests of arrows (figs. 2.7, 9, 3.17), showing that commodities as well as tablets were labelled. However, there are two inscribed sealings, probably from the Room of the Niche, which cannot have been labels to containers of either, since they are unperforated. The ideogram of the countersign should perhaps be taken literally, referring not to tablets mentioning women, nor to articles appertaining to women, but to the women themselves. The seal impressions, the same in both cases, may have been made by an official sending or authorizing the women to work in the palace. The nodules would then been carried as a means of identification.

### A. Countermarked Sealings

(Column 1, references to figs. 2—4, column 5, catalogue numbers BSA 60 (1965) 58—98).

* 1 Her. s. 121 1. <i>e-po</i>	N 10	Room of the Chariot Tablets.
* 2 Her. s. 122 1.* 120 WHEAT	N 7	Room of the Chariot Tablets.
* 3 Her. s. 124 1.*134	N 13	AE/NB 1900.45: 'Just S. of Stone Vase Room', probably also from Room of the Chariot Tablets.



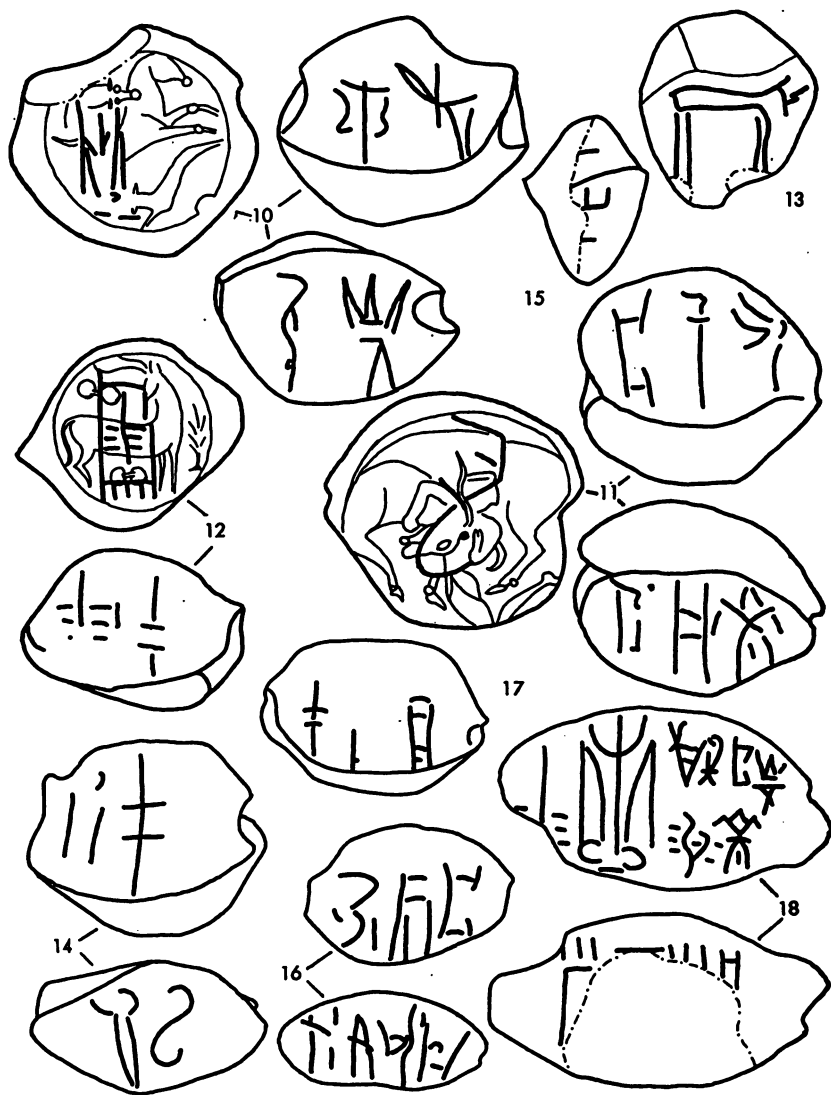


Fig. 3. Sealings from Knossos

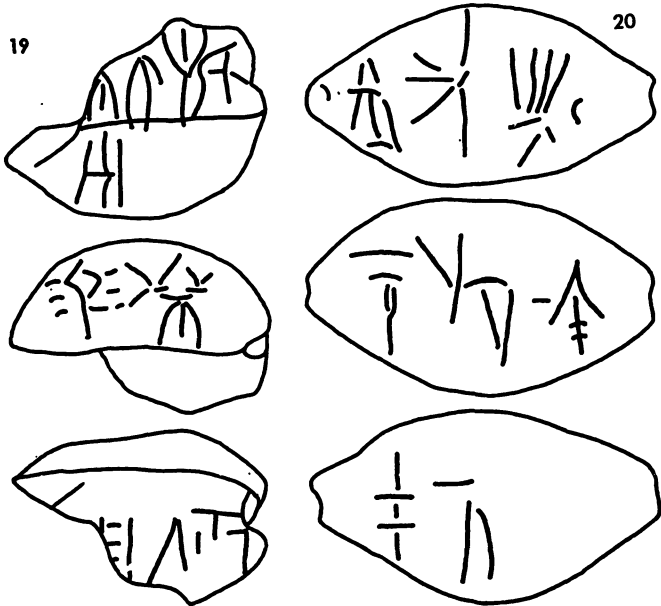


Fig. 4. Inscribed nodules from Knossos

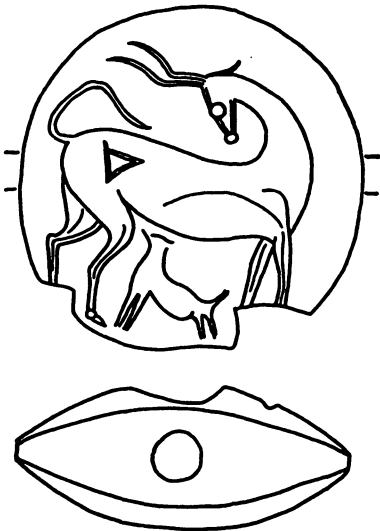


Fig. 5. Minoan seal from Tocca



* 4 Her. s. 156	}	07	AE/NB 1901.17 bis:
1.*102 WOMAN			
5 Hers. s. 224	}	R104	Queen's Megaron.
1.*102 WOMAN			
* ...	1713	(C 5)	
1.*26 RU		C 45	Domestic Quarters.
* ...			
1. ?			
* ? ...		U 93	The linear sign is
1.*30 FIGS		(E 15)	more probably part
			of the engraved de-
			sign on the original
			seal, cf. infra p. 16
			No. 30. Little Palace.
...	1708 Ws 1708	S 1	Corridor of the
	1636		Sword Tablets.
1.*103 MAN B			

## B. Countermarked and endorsed Sealings

* 6 Her. s. 108	1701 Ws 1701	04	Room of the Niche.
1.*185			
2. <i>ma-se-wi-q</i> ...			
* 7 Her. s. 119	?Ws1702	Vc	Arsenal.
1.*231 ARROW			
2. <i>pa-ta-ja</i>			
3. <i>o-pa</i>			
* 8 Her. s. 129		J1	N. of the Room of the
1.*246 + SU			Stirrup Jars.
2. ... <i>-ni-qa</i> ...			
3. <i>a-sa-mi-to</i>			
9 Her. s. 401	1704 Ws 1704	Vc	Arsenal.
1.*231 ARROW			
2. <i>o-pa</i>			
3. <i>pa-ta-ja</i>			
*10 Ox.1938.861	{1709 Ws 8152	G 15	Magazine 15.
	{1706 Ws 1706		
1.*145 WOOL			
2. <i>ne-ki</i>			
3. <i>ri-de</i>			

- \*11 Ox.1938.1080 1703 Ws 1703 G 6 Magazine 8.  
 1.\*115  
 COMMODITY  
 2. *ta-to-mo*  
 3. *o-nu-ke*
- \*12 Ox.1938.1152 Ws 8153 J 1 N. of the Room of  
 the Stirrup Jars.  
 1.\*159 CLOTH  
 + TE  
 2. *te-pa*

## C. Endorsed Sealings

- 13 Her. s. 118 1702 05 Room of the Niche.  
 2.\*? (not \*185)
- 14 Her. s. 138  
 2. *o-pa*  
 3. *ko-wo*
- 15 Her. s. 225 06 Room of the Niche.  
 2. . . .
- 16 Her. n. No. 95, F 2 AE/NB 1900.27:  
 PZ (258 ii) 'Near the S. W. door',  
 2. *ku-wa-ta* i. e. S. of doorway W.  
 3. *o-e-so-nu* of Corridor of the  
 Cupbearer Fresco.  
 Arsenal.
- 17 Her. s. 403 1705 Ws 1705 Vc  
 2. *pa-ta-ja*

## D. Nodules without Impressions

- 18 Her. s. 117 N 12 Room of the Chariot  
 Tablets.  
 1. TE \*145  
 WOOL  
*ki-ri-ta-de*  
*do-ke*  
 2. *se-to-i-ja*
- 19 Her. s. 125 1707 Ws 1707 J 4 Northern Entrance  
 Passage.  
 1. . . .*ke-gi-re-u-si*  
 2. *do-ke*  
 3. . . .*ja-wo-ne*  
 Her. s. 193

- 20 1. *pi-mo-no* G 17 Magazine 18.  
 2. *na-ki-zo*  
 3. *pa-wo*

Correlation of Scripta Minoa II  
 with sealings and Ws, Wb numbers.

1701 (Za 31) B 435 a, b	Her. s. 108	Ws 1701
1702 (Za 01) B 435 c	Her. s. 118	
1703 (Za 11)	Ox. 1938.1080	Ws 1703
1704 (Za 02)	Her. s. 401	Ws 1704
1705 (Za 21)	Her. s. 403	Ws 1705
1706 (Za 41) = 1709		Ws 1706
1707 (Za 51)	Her. s. 125	Ws 1707
1708 (Za 61) 1636	...	Ws 1708
1709 (Za 71)	Ox. 1938.861	Ws 8152
1710	Her. s. 284	
1711	Her. s. 285	
1712		
1713	...	
1714 a	} Her. Tablet } Catalogue numbers.	Wb 1714
b		Wb 1816
c 1653		Wb 1817
...	Ox. 1938.1152	Ws 8153

Notes

- Ws 1702 Gives part of the inscription on Her. s. 119.  
 1706 The misreading of the second side of Ox. 1938. 861 (1709) as *ru-ki* (AE/NB 1901.6 bis) repeated in PM iv 756 fig. 721, led to its alienation from context in SM ii.  
 1710-11 Have no inscriptions. The mistake was due to misreading Evans's comments in BSA 7 (1900-1) 43 and PM iv 706, where the reference to counter-signing applies only to 1709. 1709-11 are illustrated OTKT I pl. X.  
 1712 Is probably a duplicate record of 1714. 1712 are said to have been found near B 1516 (PM iv 597) i. e. Hall of Colonnades (OTKT I 35 ON 1553). 1714 ( E/NB 1902. 48) are from the same area.

Linear Signs on Minoan and Mycenaean Seals

Last summer's excavations at Tocra in Libya produced a Minoan sealstone from an Archaic level (fig. 5)<sup>1</sup>. The characteristically Minoan motif had one curious feature — a triangle incised on the

<sup>1</sup> This will be published in due course with the site report, by Mr. J. Boardman, to whom I am grateful for permission to illustrate the stone.

hindquarters of the cow, for which there is no exact parallel in Minoan art<sup>2</sup>. Analogy cannot be drawn with the 'herring-bones' or darts superimposed on the bodies of lions, since these represent realistically or symbolically arrows wounding the beasts; a cow suckling her calf is an unlikely quarry. Nor is a brand or dye-mark indicating ownership a likely explanation, for had one lapidary adopted this means of making a seal personal, the idea would no doubt have been repeated and other examples would have survived. Despite its position, the triangle may rather be related to the enigmatic series of Linear signs on which Kenna has commented in *Kadmos* 3, 55—7.

Many glyptic compositions are completed by motifs that have no physical relationship to the main design. These fall into two categories, natural objects, parts of animals, sacred knots, figure-of-eight shields, plants etc., and linear characters, mostly rectilinear but sometimes with the addition of a drilled globule where lines meet to form an angle. Whether there is any significant distinction between the two classes may be doubted for they occur in similar contexts, making it impossible sometimes to distinguish between a stylized representation and what may be a linear sign.

The certain linear signs are few in number (fig. 6). Most common is the impaled triangle and variants, the basic Minoan form being isosceles with a line dividing the angle between the two equal sides and extending below the base to form a stem. On No. 22 (cf. Catalogue at end of article for such references) one of the sides seems to have been intentionally omitted; the rest of the engraving is so deep that we cannot account for its disappearance from the edge of the stone. In another version the three converging lines do not meet but compose a trident. A fourth type, popular on Mycenaean stones, has a horizontal line balanced on the top of the triangle or truncating its point. The remaining certain characters (fig. 6.25—31) appear on only one or two sealstones.

Of the possible signs, in some contexts the cross seems to play a role comparable with the impaled triangle, as for example on No. 2, where both, a figure-of-eight shield and a branch are scattered in the field. Elsewhere it appears merely to be filling for an unsightly gap. Other figures seem on one stone to belong to the category of linear signs, while on another they are more convincingly explained as the stylizations of natural objects. A trifurcated character

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<sup>2</sup> Possibly there are signs on the backs of the bulls on CMS I Nr. 152; Nr. 286.

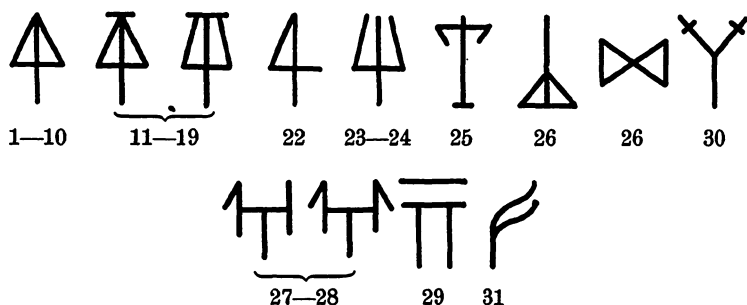


Fig. 6. Linear signs on seals (direction as on original stones)

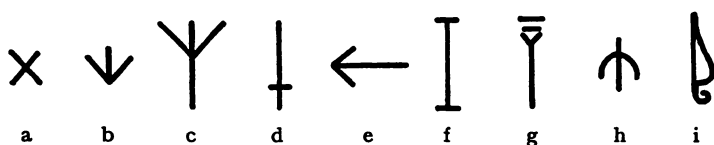


Fig. 7. Other possible signs

(fig. 7c) is associated on No. 26 with two clearly linear signs, but where it occurs alone there is nothing to distinguish it from a simplified plant, especially when it stands beneath the belly of a bull (as on BMCG 75) and in other places normally occupied by sprays of vegetation. Kenna has suggested that the crossed line above the animal's back on the British Museum stone may be another Linear sign. Simple lines or rows of dots, usually interpreted as javelins (even when the attitude of the beast is of one neither wounded nor in flight), groups of two or three lines and sprays of vegetation frequently appear in the same position; this makes it difficult to decide whether, when the crossed-line, darts or trifurcated character occur there, they should be regarded as weapons and plants or as linear signs. Further possible ones are three short convergent lines like an arrow head<sup>3</sup> (fig. 7b) and fig. 7 f—g<sup>4-5</sup>, which could equally be stylizations of vegetation or pillars respectively, a curious 'device like an arrow' between the wings of a griffin<sup>6</sup> (fig. 7h), and an

<sup>3</sup> A. J. Evans, *Pierres gravées antiques*, Paris 1906. pl. I, 6

<sup>4</sup> *Antiquarium* pl. I, 26; CS 349

<sup>5</sup> CMS I Nr. 390

<sup>6</sup> CS 367

inexplicable motif<sup>7</sup> (fig. 7i) somewhat similar to Linear A sign A13<sup>8</sup>.

Even if the cross sometimes seems to have been incised on stones to compensate for compositional inadequacies, and some of the possible signs may after all be stylizations of natural objects, similar explanations cannot account for the presence of the certain linear signs. The two examples of the 'television-aerial' (fig. 6.27—8) have been identified by Kenna as the work of one man, but they are not the artist's signature nor obviously are they marks of ownership, for impaled triangles appear on stones engraved by many hands and coming from diverse places.

The general impression is that the signs belong to a script, but like the marks on pottery, masonry and bronze ingots, they show no complete correspondence to the Hieroglyphic, Linear A or B sign-lists. It may be accidental that only fig. 6.31 occurs in Linear B without apparent Linear A parallel and that otherwise, although the seals were made when Linear B was current, the signs show a greater number of similarities with Linear A. Where a sign happens to be like a Linear B ideogram, the meaning does not provide any satisfactory clue to the function of the signs on seals. FIGS (No. 30), CYPERUS (?) and WHEAT (Nos. 11—9) are unpromising associates with bulls and minotaurs.

Perhaps the linear signs on sealstones should be considered together with the other category of additional elements, the representational motifs, that occur in identical contexts and often on the same stone. Animal compositions may have satisfied sphragistic needs, while, in hinting at religious associations by means of sacred knots, figure-of-eight shields or animal limbs, parts of sacrifices, seal engravers may have found a way of satisfying customers who required seals with extra talismanic value. Although writing played an important part in palace life, neither the lapidary nor his customer may be assumed to have been literate. In semi-literate communities letters tend to be regarded with awe and superstition, and attributed with magical value. The basic Minoan impaled triangle probably did have a specific meaning, but other signs may have been imitations or meaningless copies of contemporary script, designed to give religious significance to mundane scenes, and endow the stones with talismanic qualities.

<sup>7</sup> CMS I Nr. 75

<sup>8</sup> W. C. Brice, *Inscriptions in the Minoan Script of Class A*, Oxford 1961

## Catalogue

1. Ox. 1938.1094, CS 336. Lentoid of lapis lacedaemonius. Two joined forequarters of calves; impaled triangle and figure-of-eight shield in field above, bull's head below.
- \* 2. BMCG 38 (74).
- \* 3. BMCG 85 (70).
- \* 4. Colville Collection, Sotheby's Catalogue, July 1st 1957, 16, Lot 84 ii (not illustrated).
5. Her. 155, Ephemeris 1907 pl. 8, 116. Lentoid of lapis lacedaemonius. Two hounds attacking wild bull in flight to left; impaled triangle, figure-of-eight shield and plant (or sign?) in field. Diktaean Cave.
- \* 6. Her. 877, PM iv 41, fig. 26.
7. Her. s. 147, 313. Sealings, from lentoid. Standing bull to right, head lowered and turned back; impaled triangle beneath. Knossos.
8. Her. s. 312. Sealing from lentoid. Bull's head en face; impaled triangle above; goat's head to left. Knossos.
- \* 9. Her. s.  $\Lambda\Delta$ , NH, Ox. 1938.1047, CS 49 S. Sealings from lentoid. Two goats antithetically disposed, running to right; impaled triangle and figure-of-eight shield in field. Room of the Seal Impressions, Knossos.
10. MMNY. 26.31.242, MMGC 172 fig. 12f. Lentoid. Bull to right; impaled triangle in front.
- \*11. Ox. 1938. 1071, CS 322. Psychro Cave.
12. Her. s. 300—1, 305i—ii, 306—7, 314, 323—4  $\Xi$  . Sealings from lentoid. Two antithetic hounds attacking prey from above; impaled triangle between backs of hounds. Grand Staircase Landing, Knossos.
13. Ox. 1941. 119, CS 3 P. Lentoid of banded agate. Goat running to left, attacked by lion; palm-tree beneath, impaled triangle above. Palaiokastros.
- \*14. Colville Collection. No published illustration.
- \*15. Her. 1865, Arch. in Greece 1957 pl. I, i. Sellopoulo, Grave I.
- \*16. NMA. 2424, CMS I Nr. 73. Mycenae, Lower Town, Grave 42.
17. NMA. 2976, CMS I Nr. 106. Lentoid of lapis lacedaemonius. Lioness suckling cub to right; impaled triangle in field. Mycenae, Lower Town, Grave 68.
18. Finlay Collection No. 14. Lentoid of agate. Bull to left;

- impaled triangle over back. (Details accompanying an impression in Ashmolean).
19. NMA. 6526, CMS I Nr. 137. Amygdaloid of carnelian. Bull-leaper and bull to left; impaled triangle in field behind. Mycenae, Lower Town, Grave 504.
  20. Her. s. 286. Fragment of sealing. Part of bull to right, head lowered and turned back; impaled triangle above. Knossos.
  21. ... AE/NB 1905. 10. Sealings. 'Animals with  $\Phi$ ' = PM 606 E 38. Little Palace, Knossos.
  22. Ox. 1938.1065, CS 350. Lentoid of carnelian/agate. Two anti-thetic hounds attacking goat from above; impaled triangle in field to left.
  - \*23. NMA. 4612, CMS I Nr. 484 = Kadmos 3, 56 NMA (un-numbered)? Crete.
  24. ... PM iv 581 fig. 568. Lentoid of haematite. Hound standing on double base-line to right, bird in front; impaled triangle above.
  25. Berlin S 4490, Antiquarium pl. I, 24. Lentoid of banded agate. Cow suckling calf; sign in field above. Greece.
  26. Story Maskelyne Collection, AG pl. VI, 6. Lentoid of lapis lacedaemonius. Contorted goat-man to left, dog in front; three signs in field.
  - \*27. Her. 131, Ephemeris 1907 pl. 7, 103. Siteia.
  - \*28. MMNY. 23.160.27, AJA 29 (1925) 245 fig. 5.
  - \*29. NMA. 6615, CMS I Nr. 217. Prosymna, Grave 44.
  30. ... PM iv 605 E 15. Missing sealing. From sketch and comments (AE/NB 1905.11) it is impossible to judge whether the sign beside the bull is an incised countermark or part of the engraving of the original seal; the latter is more probable. Little Palace, Knossos.
  - \*31. Ox. 1938.1075, CS 342.
  32. Leningrad 509. Amygdaloid of agate. 'Lion attacking bull. Signs'.
  33. Leningrad 510. Amygdaloid of agate. 'Lion attacking bull. Sign'.

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\* The Hermitage kindly sent me descriptions of Nos. 32—3.