

## THE DECIPHERMENT OF LINEAR A

by SIMON DAVIS

### I

Evans had discovered in Crete three kinds of writing of the Bronze Age (2nd Millennium B.C.). These are in order of development: (i) the Minoan Pictographic (Hieroglyphic), (ii) the Minoan Linear A, a simplified form of the Pictographic script, written cursively, in which the pictures had become signs formed of lines (Latin: *linea*, 'a line'), and (iii) the Mycenaean Greek Linear B script, a linearised form like the preceding, which was characteristic of the Greek mainland and which was also used at the great Cretan palace at Knossos after the Mycenaean Greeks had taken over that centre of Minoan civilization.

Ventris's great decipherment, in 1952, of the last-mentioned script opened the way for the present writer's decipherment not only of the antecedent Pictographic and Linear A scripts, which are in the Hittite language, but also of the Eteocretan (the only one of the scripts to use the Greek alphabet), and the Cypro-Minoan and Eteocypriot scripts which are also in Hittite. The decipherment of the Pictographic script has been dealt with in a previous article<sup>1</sup>, and it appears only fitting to deal now with the decipherment of Linear A, the next script, which is derived from it.

The present writer's method in elucidating the values of the syllabic signs and writing conventions of Linear A through comparison with those of Linear B has already been stated<sup>2</sup>, as also the existence of *homophones*, different signs which have the same phonetic value<sup>3</sup>. *Homophones*, it may be noted, occur also in the Cuneiform (originally pictographic) and the Hiero-

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<sup>1</sup> S. DAVIS, 'Cretan Hieroglyphs: the end of a quest?', *Greece Rome* XI (1964), 106-127.

<sup>2</sup> *Ibidem*, 107-110.

<sup>3</sup> *Ibidem*, 110.

LINEAR A GRID

Value	a	e/i	u
Vowel		19  38,100  99,123	87
w	75	72  69,94  Fig. 6	
j	32		
k, kw, h, hw g, gw	52  64  Fig. 3  29  62	103 <sup>85</sup> Fig. 15  50,92 66  88  Fig. 11  24	98 45
p, b	1   2		34
t, d	74  30	20  78  51	6   93
r, l	53	54  12	55
m	95	76  27  84  104	
n	26	60  56  41  57	25  131 Fig. 8  Fig. 11
s	31		59
z	23		

Fig. 1

NOTE : Numbers next to signs refer to the list in G. PUGLIESE CARRATELLI, *Le Epigrafi di Hagia Triada in Lineare A*, *Minos*, Supplement 3 (1963), 80-85, and to Table I in W. C. BRICE, *Inscriptions in the Minoan Linear Script of Class A*, Oxford (1961), unless otherwise indicated.

glyphic (pictographic) writing systems of Mesopotamia and Egypt, respectively.

For the sake of convenience, only the signs which occur on the select inscriptions discussed in this article are set out, with their values, in the form of a grid (Fig. 1). It is to be noted that the *o* series of signs common to both Linear A and B belongs to the *u* series in Linear A, and that in some cases Linear A signs do not have the same values as those which similar signs have in Linear B, for example, the double axe 'eye' and 'tree' signs.

The great majority of the Linear A tablets, hitherto discovered, are, like the Linear B ones, 'accounting' tablets which list commodities. When the commodities are written in full as words, instead of being indicated by ideograms, such nouns may, *tentatively*, be identified as belonging to this or that, known, ancient language. Nouns, however, may be of varied origins; some belong basically to a language, others may be borrowed from other, diverse languages.

Thus the *final* identification of a language can only be made if its *morphology* can be discovered; in this respect grammatical forms, especially of the verb, are decisive. The grammatical forms which occur on the inscriptions here discussed find, as will be seen, parallels in several of those set out in the short conspectus below:

A. HITTITE NOUN AND ADJECTIVE FORMS  
DECLENSION ENDINGS

	Common	SINGULAR	Neuter	Common	PLURAL	Neuter
Nom.	-š, -z(a) = -i-š		—, -n	-eš		—, -a, -i
Acc.	-n		—, -n	-uš		—, -a, -i
Gen.		-aš			-aš	
Dat.-Loc.		-i			-aš	
Abl.		-az(a)			-az(a)	
Instr.		-i			-i	

B. HITTITE VERB FORMS  
ACTIVE VOICE ENDINGS

	Present	INDICATIVE	Past (Preterite)
Sing. 1.	-mi, -hi		-un, -nun, -hu <sup>n</sup>
2.	-ši, -ti		-š
3.	-zi, -i		-i, -ia
1.	-weni		-wen
2.	-ieni		-ien
3.	-anzi		-ir

## C. HITTITE DEMONSTRATIVE PRONOUN

	Common	SINGULAR	Neuter
Nom.	<i>kaš</i>		<i>ke/ki</i> , 'this'
Acc.	<i>kan/kun</i>		<i>ke/ki</i> ,

## D. HITTITE ENCLITIC POSSESSIVE PRONOUN

	Common	SINGULAR	Neuter
Nom.	<i>-miš</i>		<i>-mit</i> , 'my'
Acc.	<i>-min/-man</i>		<i>-mit</i>
Gen.		<i>-maš</i>	
Dat. -Loc.		<i>-mi</i>	

## E. HITTITE ADVERBS

*hanti/handi/handa*, 'infront' (cf. ἀντί, *ante*)  
*ka*, 'here'  
*ket*, 'here'

A selection from the inscriptions in the Linear A script, deciphered by the present writer, is here given. It is to be noted that words are often separated; every word, however, is not separated, but in such cases the context indicates into what words phrases are to be divided.

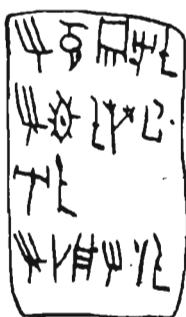


Fig. 2

A clay tablet found in 1953, inside a vase in a room of the First Palace at Phaistos in southern Crete (Fig. 2)<sup>4</sup> and dated by the Italian archaeolo-

<sup>4</sup> W. C. BRICE, *Inscriptions in the Minoan Linear Script of Class A*, Oxford University Press, for the Society of Antiquaries (London, 1961), 22 and Pl. XXVIII.

gist, Professor D. Levi, its discoverer, to c. 2000 B.C., is one of the earliest hitherto discovered. It is very illuminating for it is not an 'accounting' tablet like the rest but a 'dedicatory' tablet, and it gives the *dative* case of two nouns, the *accusative* case of a noun, a demonstrative pronoun and an adjective, and the *first person singular, preterite* (past tense), of a verb, forms which are morphologically Hittite. The transliteration and translation, with a commentary, are set out below.

<i>i-na'-wa . h(a)-wi-</i>	To Inaras I let ru-
<i>nu" ke wi-n(i)-ta'.</i>	n this wine,
<i>h(a)-wi-</i>	I let ru-
<i>nu" da-pa". i-s(a)-wi</i>	n all for the festival

It is to be noted that in Linear A silent or dead vowels are, at times, used to help out with the writing of some consonants, e.g. *wi-n(i)-ta'* = *wintar*, 'wine', or of some consonant clusters, e.g. *i-s(a)-wi* = *iswi*, 'for the festival'. In a syllabic script like Linear A consonants are not indicated separately from vowels, yet, *l*, *m*, *n*, *r*, *s*, or *i*, may, at times, be understood at the end of a syllable (a writing convention first found in the Minoan Pictographic script,<sup>5</sup> and then in the derived Linear A and B scripts), e.g. *h(a)-wi-nu"*, 'I let run'; thus signs are used, each to indicate *consonant + vowel* or, at times, a vowel alone, e.g. *i-s(a)-wi*.

There is no distinction, it is to be noted, in writing at least, between the *e* and *i* series of syllabic signs in the Pictographic and Linear A scripts (cf. Fig. 1); furthermore, the extended spelling, with *w* or *j*, of Hittite words in the Pictographic and Linear A scripts is the precedent followed in the spelling, with *w* or *j* (the so-called 'glides'), of words in Linear B<sup>6</sup>.

*i-na'-wa* = *Inara*, the old dative case of *Inaraš* (cf. *aruna/i*, 'to the sea'), the name of a goddess in Cuneiform Hittite<sup>7</sup>.

*h(a)-wi-nu"* = *huinun*, the as yet unattested first person singular, preterite, of *huinu-*, 'cause to go, let run', found in Cuneiform Hittite<sup>8</sup>. The phonetic interpretation of *huinu-*, is, according to Sturtevant, *hwinu-*<sup>9</sup>. The Cuneiform script, originally devised for a non-Indo-European language, could not adequately express the consonant clusters of Indo-European Hittite; hence in that script *consonant + w* was written as *consonant + u*, e.g.

<sup>5</sup> Cf. S. DAVIS, *op. cit.*, 109, for this and other writing conventions of the Minoan scripts.

<sup>6</sup> Cf. E. VILBORG, *A tentative grammar of Mycenaean Greek*, (Göteborg, 1960), 35.

<sup>7</sup> Cf. J. FRIEDRICH, *Hethitisches Wörterbuch*, (Heidelberg, 1952), 34; *Ergänzungsheft* (1959), 8.

<sup>8</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 71; E. H. STURTEVANT and E. A. HAHN, *A comparative grammar of the Hittite language* (Yale, 1951), 128.

<sup>9</sup> E. H. STURTEVANT & E. A. HAHN, *op. cit.*, 173, s. v. *hu-(u)-i-nu-(uz)-zi*, 128.

*kw* was written as *ku*, or even as *ku-wa*<sup>10</sup>, and *sw* as *su*, or even as *su-wa* (cf. *išuwāš* below); so too, then, *hwi* was written as *hwi*. In the Linear A script, containing practically the same Hittite language, an almost similar device was used, for *hwi* was written as *h(a)-wi*, and *swi* as *s(a)-wi* (see below); moreover, the *k/h/g* series of signs could also be used to express *k<sup>w</sup> /h<sup>w</sup>* (cf. Figs. 1, 7).

*ke* is the assusative singular, neuter, of *kaš*, 'this', found in Cuneiform Hittite<sup>11</sup>.

*wi-n(i)-ta'* is an accusative singular, neuter, as *ke* indicates. This word, though as yet unattested in Cuneiform Hittite, is found in Luwian as (*u*)*wintar*, 'wine'<sup>12</sup>; the dative singular occurs in an inscription on a cup from Knossos (cf. Fig. 3).

*da-pa* = *dapijan/dapin*, the accusative singular, neuter, of *dapijanza*, 'all, whole', found in Cuneiform Hittite<sup>13</sup>. In both the Pictographic and Linear A scripts *consonant + a* may, at times, stand for *consonant + j + a*, e.g. *sa* = *šija*<sup>14</sup>.

*i-s(a)-wi* = *iswi* = *išuwī*, the dative singular of *išuwāš*, 'festival', found in Cuneiform Hittite<sup>15</sup>. Compare *h(a)-wi-nu<sup>n</sup>* = *hwinun* = *hwinun* above.

In most of the Linear A inscriptions found on sacral vessels in Crete a simple dedicatory formula is recognizable running throughout, identical in some of the inscriptions and varying in others. A brief conspectus is given below and then follows an analysis of each inscription. (Square brackets indicate parts of words reconstructed, round brackets silent or helping vowels; the letters *l, m, n, r, s*, or *i*, written above the line at the end of a syllable, indicate here sounds not shown in writing).

#### CUP (Fig. 3)

*wi<sup>n</sup>-ti-ri i-ja-nu<sup>n</sup> ha<sup>n</sup>-di da-ki-ti pa'-ku ha-ku-na<sup>i</sup> pa'-ku ha[...]*  
 For wine I made in front for the hearth a high vessel a high [vessel]

#### LIBATION TABLE (Fig. 4)

*[ha<sup>n</sup>]-ta-nu<sup>n</sup> kă-ti ja-sa-sa-ra-ma-n(a) da-wa<sup>n</sup> kă<sup>s</sup>-du-wa-n(a) i-ja-[nu<sup>n</sup>]. . .*  
 I set here before my Queen a vessel I made . . .

#### CUP (Fig. 5).

*ha<sup>n</sup>-ka-nu<sup>n</sup> ke-ti du-ra-ri ha<sup>i</sup>-ki [...] ha-n(a)-da E.NI.-TI*  
 I offered here for the precinct for grain [...] in front for the goddess

<sup>10</sup> *Ibidem*, 14-51.

<sup>11</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1 (Heidelberg, 1960), 67.

<sup>12</sup> E. LAROCHE, *Dictionnaire de la langue luwite*, (Paris, 1959), 111, s.v. (*u*)*wintar*.

<sup>13</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 211-212.

<sup>14</sup> S. DAVIS, *op. cit.*, 122.

<sup>15</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 92.

*LAMP* or *LADLE* (Fig. 6).

*ha<sup>n</sup>-ta-nu<sup>n</sup>* *k(e-w)ă-ti* *u-su-ka-li* *ja-sa-sa-ra<sup>s</sup>* *ku-we-na* *ka-n(a)* ...  
 I set here for the sanctuary of the Queen an ornament this ...

*LIBATION TABLE* (Fig. 7)

[*ha<sup>n</sup>*]-*ta-nu<sup>n</sup>* *k(e-w)ă-ti* *ha<sup>n</sup>-di* *ki-k(e)-ke-[ni]* ... *ha-sa-sa-ra-mi*  
 I set here in front for the shrine ... for my Queen

*LIBATION TABLE* (Fig. 8)

[*ha<sup>n</sup>*]-*ta-nu<sup>n</sup>* *k(e-wa-j)a* *ha<sup>n</sup>-di* *ki-[k(e)-ke-ni]* ... *ha-sa-sa-ra-mi*  
 I set here in front for the shrine ... for my Queen

*LIBATION TABLE* (Fig. 9)

[*ha<sup>n</sup>-ta*]-*nu<sup>n</sup>* [?]-*ti* *ja<sup>n</sup>-[di]* *ki-k(e)-ke-ni* *pu-re-ja<sup>n</sup>*  
 I set [ ] in front for the shrine a libation table  
*tu-ki-li* *ja-sa-[sa-ra<sup>s</sup>]*  
 for the dwelling of the Queen

*LIBATION BOWL* (Fig. 10)

... *ja<sup>n</sup>-ta-nu<sup>n</sup>* *ke-ti* *ja-sa-[sa-ra-mi]* ...  
 I set here for my Queen ...

*LIBATION TABLE* (Fig. 11)

*ki-ke-ni* *ta-na-nu<sup>n</sup>* *ke-ti* *nu[...]* *ja<sup>n</sup>-ti* *ja-sa-sa-ra-mi*  
 For the shrine I put here [ ... ] in front for my Queen

*LIBATION BOWL* (Fig. 12)

[*i<sup>s</sup>-la*]-*na-ne* *i-ni-na-ma-[...]-ku* *pa<sup>s</sup>-na<sup>s</sup>* *tu-na-[ki<sup>s</sup>-na]*  
 For the offering table a bowl [ ... ] for the inner chamber of the house  
 [*i*]-*ni-[na]-mi-na* *ke* *i-na-ja-re-nu<sup>n</sup>* [...]-*ka*  
 this vessel I set [ ... ]

*ANIMAL STATUETTE* (Fig. 13)

[...]-*mi* *tu-nu-ki<sup>s</sup>-[na]* ...  
 My [ ... ] for the inner chamber ...

*BRONZE AXE* (Fig. 14)

*tu-nu*  
 For the inner chamber

*MALE FIGURINE* (Fig. 15)

*da-ki-ti*  
 For the hearth

*LIBATION VESSEL*

[*i<sup>s</sup>*]-*ta-na* *ta-pa* *k(e-w)ă-[ti]* *ha-n(a)-di* *ha-sa-sa-ra-mi* [...]  
 For the offering table a vessel here in front for my Queen [I set]

*LIBATION VESSEL*

[*ha<sup>n</sup>-di*] *ja-sa-[sa]-ra-mi* *ki[ke]-ke[ni]* [*ke*]*wă-ti* *i-[ja-nu<sup>n</sup>]* ...  
 In front] for my Queen for the shrine here I made ...



Fig. 3

A high clay cup from Knossos bears an inscription, running from the inside outwards (Fig. 3), 'written before firing, on the interior, in black ink with a reed pen'<sup>16</sup>. The transliteration and translation, with a commentary, of this inscription are set out below.

<i>wi<sup>n</sup> -ti-ri</i>	For wine
<i>i-ja-nu<sup>n</sup> ' ha<sup>n</sup>-di da-ki-ti pa<sup>n</sup>ku'</i>	I made in front for the hearth a high
<i>ha-ku-na<sup>i</sup> pa<sup>n</sup>-ku ha-[. . .]</i>	vessel ; a high [vessel]

*wi<sup>n</sup> -ti-ri* = *wintari*, the dative singular (cf. *huppari*, dative singular of *huppar*, 'dish'<sup>17</sup>), of *wintar*, 'wine' (cf. Fig. 2); the shortening of the *ta* of the nominative to *ti* in the dative in the Minoan Hittite is to be noted here.

*i-ja-nu<sup>n</sup>* = *ijanun*, 'I made', the first person singular, preterite, of *ija-*, 'make', found in Cuneiform Hittite (cf. Fig. 4)<sup>18</sup>.

*ha<sup>n</sup> -di* = *handi/hanti/handa*, 'in front', an adverb found in Cuneiform Hittite<sup>19</sup>; *ha<sup>n</sup> -di* occurs on two other Linear A sacral inscriptions (Figs. 7, 8); *ha-n(a)-da* occurs on yet another inscription (Fig. 5)<sup>20</sup>. (Cf. Figs. 9, 11, for *ja<sup>n</sup> -di*|*ja<sup>n</sup> -ti* = *ha<sup>n</sup> -di*).

<sup>16</sup> W. C. BRICE, *op. cit.*, p. 15 and Pl. XXII a, II 1.

<sup>17</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1, 54, par. 80.

<sup>18</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 80.

<sup>19</sup> Cf. E. H. STURTEVANT and E. A. HAHN, *op. cit.*, 172, s. v. *ha-an-ti*, *ha-an-di*; 49, par. 74, *ha-an-da*; J. FRIEDRICH, *Hethitisches Wörterbuch*, 51, s. v. *hant-*.

<sup>20</sup> W. C. BRICE, *op. cit.*, Pl. XVII, 1 4a, Pl. VIII, 1 5a; Pl. XXI, 1 17; XXII, II 2.



*da-ki-ti* = *dakitti*, the dative singular of the Hurrian loan word *daki-*, 'hearth'; the Hittite dative ending *ti*, as an alternative to the usual *i*, is a feature of nouns borrowed from Hurrian, a language neighbour of Cuneiform Hittite<sup>21</sup>. *Minoan Hittite* shows the same characteristic as *Cuneiform Hittite* in borrowing certain words from neighbouring languages such as Hattic, Hurrian (Fig. 3, *da-ki-ti* Fig. 5, *e-ni-ti*; Fig. 5, *ha'-ki*), Sumerian and Semitic Akkadian (Fig. 6, *u-su-ka-li*; Figs. 7, 8, 9, *ki-k(e)-ke-ni*), but the *morphology* of the Minoan language, as has already been shown from the Phaistos tablet (Fig. 2) and as is evident enough from the remaining words on the present one, is indisputably Hittite.

*pa'-ku* = *parku*, the accusative singular, neuter, of *parkuš*, 'high', found in Cuneiform Hittite<sup>22</sup>.

*ha-ku-na'* = *hakkunai*, the accusative singular, neuter, of *hakkunai*, 'vessel'<sup>23</sup>. The first sign appears to be a slipshod rendering of the 'double axe' sign.

The last word of the inscription begins with the 'double axe' sign with value *ka/ha*. 'Vessel', again, is probably the meaning of this word; the word is of neuter gender, since the neuter adjective *pa'-ku*, 'high', appears before it, as it does before *ha-ku-na'*.

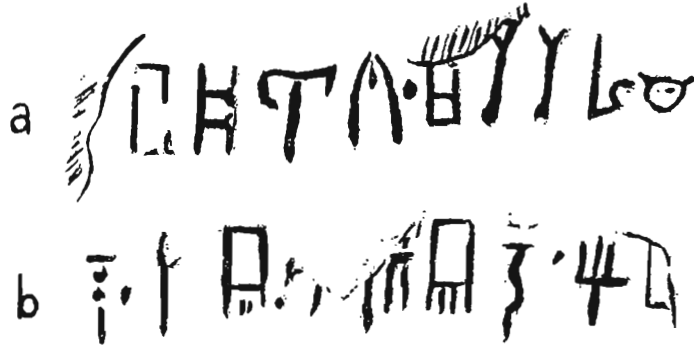


Fig. 4

On the fragment of a four-sided libation table, along the two sides which are preserved, from Knossos, an inscription occurs (Fig. 4)<sup>24</sup>, which is transliterated and translated, with a commentary, below.

- (a) [*ha*<sup>n</sup>]-*ta-nu*<sup>n</sup> *kā-ti* | *ja-sa-sa-ra-ma*  
 (b) *n(a)* | *da-wa*<sup>n</sup> | *kā*<sup>s</sup> -*du-wa-n(a)* | *i-ja-[nu*<sup>s</sup>] . . .  
 I set here before my Queen a vessel; I made . . .

<sup>21</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1, 59; *Hethitisches Wörterbuch*, 325.

<sup>22</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 161.

<sup>23</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 46.

<sup>24</sup> W. C. BRICE, *op. cit.*, Pl. XIX, 1 8.

*-ta-nu*<sup>n</sup> is the same word as that which occurs in a similar primary position on several other Minoan sacral inscriptions and which is spelled as *ha*<sup>n</sup>-*ta-nu*<sup>n</sup> (Figs. 6, 7, 8)<sup>25</sup> or *ja*<sup>n</sup>-*ta-nu*<sup>n</sup> (Fig. 10; cf. *ja-sa-sa-ra* below)<sup>26</sup>. This is *hantanun*, the first person singular, preterite, of *handai-*, 'set in order', 'make ready', found in Cuneiform Hittite<sup>27</sup>.

*kă-ti* = the Cuneiform Hittite *ket*, 'here'<sup>28</sup>; the first sign, the 'double axe', has the value *ka/k<sup>w</sup>a* (cf. Fig. 1). An extended spelling of the word occurs as *k(e-w)ă-ti* on two other sacral inscriptions (cf. Figs. 6, 7)<sup>29</sup>, and *ke-ti* actually occurs on three more inscriptions (Figs. 5, 10, 11)<sup>30</sup>. It is to be noted that *ka*, another Cuneiform Hittite adverb meaning 'here', occurs on yet another inscription in the extended spelling *k(e-wa-j)a* (Fig. 8)<sup>31</sup>.

*ja-sa-sa-ra* (cf. Figs. 6, 9, 10, 11), is the same word as *ha-sa-sa-ra* which occurs on several other Minoan sacral inscriptions (Figs. 7, 8)<sup>32</sup>. The *j* is usually explained as a glide sound after a preceding vowel; this usage, however, points to an original value of *ha/hja* for the sign L 32 which often has the value *ja*, as in Linear B. (cf. *ja*<sup>n</sup>-*ta-nu*<sup>n</sup> for *ha*<sup>n</sup>-*ta-nu*<sup>n</sup> above). *ha-sa-sa-ra* = \**haššuššara-*, the word stem postulated for 'Queen' by Cuneiform Hittite scholars<sup>33</sup>. Actually here *ha-sa-sa-ra* = *hasasaran*, the accusative case, common, for the final *n* has been assimilated to the *m* of *-ma-n(a)*<sup>34</sup>. Evans, it is to be noted, had already drawn the inference that *ja-sa-sa-ra/ha-sa-sa-ra* referred to the Minoan goddess<sup>35</sup>.

*-ma-n(a)* = *-man*, the accusative singular, common, of the enclitic possessive pronoun, *-miš*, 'my', found in Cuneiform Hittite<sup>36</sup>. Just as in Linear B, so too in Linear A, *n* cannot be written by itself in a syllabic script but must *either* be omitted in writing, at the end of a syllable (see below), *or* have, in writing, a helping vowel; hence *n(a)* = *n* here (cf. p. 94).

<sup>25</sup> *Ibidem*, Pl. XX, I 16; Pl. XVII, I 4; Pl. XVIII, I 5.

<sup>26</sup> W. C. BRICE, *op. cit.*, Pl. XX, I 14.

<sup>27</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 51-52.

<sup>28</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 127, par. 224.

<sup>29</sup> W. C. BRICE, *op. cit.*, Pl. XVII, I 4; Pl. XX, I 16.

<sup>30</sup> *Ibidem*, Pl. XVI, I 1; Pl. XX, I 14.

<sup>31</sup> *Ibidem*, Pl. XVIII, I 5.

<sup>32</sup> *Ibidem*, Pl. XVII, I 4. Pl. XVIII, I 5, Pl. XXI, I 17.

<sup>33</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 64, 335. Cf. L. R. PALMER, 'Luwian and Linear A', *Transactions of the Philological Society* (Oxford, Blackwell, 1958), 75-100; in *Mycenaeans and Minoans* (Faber & Faber, 1961), 233, Palmer, unaware of the fact that the 'double axe' sign has in Linear A the value *ka/hja*, postulated an hypothetical Luwian phrase *Asha-saras-mes*, 'My Lady' for *ha-sa-sa-ra-mi*, equating this phrase with Hittite *išhaššaraš*, 'Lady' and the enclitic possessive personal pronoun, *-miš*, 'my'.

<sup>34</sup> Cf. J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 66; *tuzzi-man* < *tuzzin-man*.

<sup>35</sup> A. J. EVANS, *The Palace of Minos at Knossos*, I (1921), 630-631.

<sup>36</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 65.

*da-wa*<sup>n</sup> = \**dawan* 'opposite, in front of'. Hittite does not possess prepositions but postpositions; although \**dawan* is not yet attested for Cuneiform Hittite, a similar word with the same meaning is for Hieroglyphic 'Hittite' (*tawan/tawian*) and for Luwian (*dawejan*)<sup>37</sup>. Here, then, is further evidence, in the use of a *postposition*, to corroborate the other evidence, previously given (cf. Fig. 2), that the *morphology* of Linear A is Hittite. Linear A cannot be Hieroglyphic 'Hittite' or Luwian for, inter alia, the verb forms of Linear A (cf. Fig. 2, *h(a)-wi-nu*<sup>n</sup>; Fig. 3, *i-ja-nu*<sup>n</sup>; Fig. 5, *ha*<sup>n</sup>-*ka-nu*<sup>n</sup>; Fig. 6 *ha*<sup>n</sup>-*ta-nu*<sup>n</sup>; Fig. 11, *ta-na-nu*<sup>n</sup>) are like those of Cuneiform Hittite and these are different from Luwian and Hieroglyphic 'Hittite'<sup>38</sup>, the latter of which Friedrich actually calls 'Bild-Luwisch'<sup>39</sup>. The postposition here governs the preceding phrase in the accusative case.

*kā-du-wa-n(a)* = *kāsdu(wa)n*, the accusative singular, common, of *kištuš*/\**keštuš*, 'vessel', which appears as *kišdun* in Cuneiform Hittite (cf., for the *e/i* alternation, the accusative plural *keštimuš*/*kištemuš*<sup>40</sup>, and, for the lengthened spelling *kāsdu(wa)n* = *kešdun*/*kišdun*, *išpandu(wa)š*, 'vessel'<sup>41</sup>.

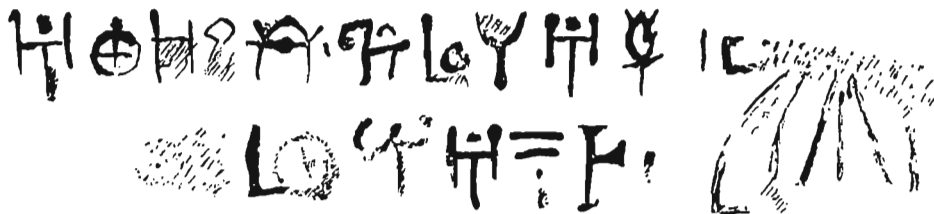


Fig. 5

Another high clay cup from Knossos bears an ink-written inscription on the inside (Fig. 5)<sup>42</sup>; the transliteration (as far as is possible, owing to the illegibility of some of the signs) and the translation, with a commentary, are set out below.

*ha*<sup>n</sup>-*ka-nu*<sup>n</sup> *ke-ti* | *du-ra-ri ha*<sup>t</sup>-*ki*

[ ] *ha-n(a)-da*

I offered here for the precinct for grain

[ ] in front

*E-NI-TI*

FOR THE GODDESS

<sup>37</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 2. *Ergänzungsheft* (Heidelberg, 1961), 47, 43.

<sup>38</sup> S. DAVIS, *op. cit.*, 107, fig. 1.

<sup>39</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 15.

<sup>40</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, p. 112.

<sup>41</sup> *Ibidem*, p. 89.

<sup>42</sup> W. C. BRICE, *op. cit.*, Pl. XXII, II, 2.

*ha<sup>n</sup>-ka-nu<sup>n</sup>*: this is another first person, singular, preterite, of a Hittite verb, the meaning of which, from the context, is something like 'offer'. The verb may possibly be *hinkanun*, the first person singular, preterite, of *hinganu-*, 'show reverence'<sup>43</sup> and so 'offer reverently'. It is to be noted that the *k* series of syllabic signs may also represent a *g* series (cf. Fig. 1); furthermore, *ha<sup>n</sup>* for *hi<sup>n</sup>* may be due to the assimilation, in writing at least, of the vowel *i* to the *a* of the next syllable, a characteristic which occurs often enough on the 1953 Cypro-Minoan tablet from Enkomi, Cyprus - a tablet which is the longest in any of the Aegean scripts and which the present writer has deciphered as Hittite. Other examples of the assimilation of *i* to *a* occur, viz. *ta-na-nu<sup>n</sup>* for *taninun* (Fig. 11).

*ke-ti* = *ket*, 'here', an adverb found in Cuneiform Hittite<sup>44</sup>; it occurs again on two other sacral inscriptions (Figs. 10, 11).

*du-ra-ri*: this, on the analogy of *da-ki-ti* (Fig. 3), is the Hittite dative case of a word borrowed from one of the neighbouring languages and probably meaning 'for the precinct'<sup>45</sup>.

*ha<sup>1</sup>-ki* = *halki*, the dative singular of *halkiš*, 'grain', a Hurrian loan word, found also in Cuneiform Hittite<sup>46</sup>.

*ha-n(a)-da* = *handa*, 'in front' (cf. Figs. 3, 7, 8, *ha<sup>n</sup>-di*, *ha-n(a)-di*)<sup>47</sup>.

*E-NI-TI* = *eniti*, the Hittite dative singular of the Hurrian loan word *eni-*, 'deity'<sup>48</sup>. It has already been stated that, in the case of Hurrian loan words, the dative singular in Cuneiform Hittite may end in *ti* (cf. Fig. 3, *da-ki-ti*)<sup>49</sup>. The first sign, which often occurs on Linear A tablets as the MAN ideogram, has probably the phonetic value *e/i*; the next sign is to be restored as **L 56** = *ni*, a value confirmed for it from other Linear A inscriptions (cf. Fig. 9), and the value of the final sign, which is illegible, is probably *ti*. Confirmation comes from the occurrence of *e-ne-tē/e-ni-ti*, in both the Greek and Linear A scripts, respectively, on the Eteocretan inscription from Psychro which may well be a thousand years later than the present Minoan inscription<sup>50</sup>.

An inscription occurs on a lamp or ladle (Fig. 6)<sup>51</sup> discovered in a sanc-

<sup>43</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 70.

<sup>44</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 108.

<sup>45</sup> Cf. *Assyrian Dictionary*, Oriental Institute of the University of Chicago, 3(D) (1959), 196, s. v. *ḏuru* 4. 'enclosure of a house, temple or camp'.

<sup>46</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 47.

<sup>47</sup> E. H. STURTEVANT and E. A. HAHN, *op. cit.*, 59, par. 82, s. v. *ḥa-an-za* dat. *ḥa-an-ta-(i)*, *ḥa-an-di*, *ḥa-an-da*.

<sup>48</sup> Cf. J. FRIEDRICH, *Hethitisches Wörterbuch*, 320.

<sup>49</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 59.

<sup>50</sup> S. MARINATOS, 'Γραμμάτων διδασκάλια', in E. GRUMACH ed., *Minoica*, Festschrift zum 80. Geburtstag von Johannes Sundwall (Berlin, 1958), pp. 227 and pl. 1.

<sup>51</sup> W. C. BRICE, Pl. XX, I 16.

tuary of the Minoan goddess at Trullos, near Arkhanes, 'a natural starting-place for pilgrimages to the Peak Sanctuary of Juktas' <sup>52</sup>.

The inscription is transliterated and translated, with a commentary, below.

<i>ha<sup>n</sup>-ta-nu<sup>n</sup></i>	<i>k(e-w)ă-ti</i>	<i>u-su-ka-li</i>	<i>ja-sa-sa-ra<sup>s</sup></i>	<i>ku-we-na</i>
I set	here	for the sanctuary	of the Queen	an ornament
<i>ka-n(a)</i> . . .				
this . . .				

*ha<sup>n</sup>-ta-nu<sup>n</sup>* = *hantanun*, the first person singular, preterite, of *handai-*, 'set in order' (cf. Figs. 4, 7, 8).

*k(e-w)ă-ti* = *kăti*, 'here' (cf. Figs. 4, 7).

*u-su-ka-li*: this is the Hittite dative singular of the Sumerio-Akkadian loan word *usukku/u-sug*, 'sanctuary, shrine' <sup>53</sup>.

*ja-sa-sa-ra<sup>s</sup>* = *ha-sa-sa-ra<sup>s</sup>*, for the Cuneiform Hittite \**haššuššaraš*, 'Queen' (cf. p. 10); the case is genitive which in this word has the same form as the nominative.

*ku-we-na* = *kunna*, an extended spelling (cf. p. 5) of the accusative singular of a heteroclite noun meaning 'stone ornament'; this noun occurs in Cuneiform Hittite as *kunna* <sup>54</sup> or, in an extended spelling there as *kuwanna* <sup>55</sup>.

*ka-n(a)* = *kan*, the accusative singular, common, of *kaš*, 'this', found in Cuneiform Hittite <sup>56</sup>.

An inscription occurs on a libation table found at Palaikastro at the north-eastern end of Crete (Fig. 7) <sup>57</sup>; the inscription (as far as is possible, owing to the illegibility of some signs) is transliterated and translated, with a commentary, below:

(a)	<i>[ha<sup>n</sup>]-ta-nu<sup>n</sup></i>	<i>k(e-w)ă-ti</i>		<i>ha<sup>n</sup>-di</i>		<i>ki-k(e)-ke-[ni]</i>		
	I set	here		in front		for the shrine		
(b)	<i>[i<sup>s</sup>]-ta-na-ne</i>			<i>ke<sup>s</sup>-du-wa<sup>n</sup></i>		<i>ku-wa-na-n(a)</i>		
	for the offering table			a vessel		of stone		
(c)	<i>ha-[sa]-sa-ra-mi</i>			<i>u-na-ru<sup>n</sup></i>		<i>ka-n(a) ti-</i>		
	for my Queen			I set		this		
(d)	<i>pa<sup>n</sup> i<sup>s</sup>-[ta-na]-ne</i>			<i>lu-[]</i>		<i>i<sup>s</sup>-na-ja</i>		<i>pa<sup>t</sup>-[hi]</i>
	vessel;	for the offering table		I placed		for the festival		a vessel

*[ha<sup>n</sup>]-ta-nu<sup>n</sup>* = *hantanun*, 'I set in order' (cf. Figs. 4, 6, 8).

*k(e-w)ă-ti* = *kăti*, 'here' (cf. Figs. 4, 6).

*ha<sup>n</sup>-di* = *handi*, 'in front' (cf. Figs. 3, 8).

<sup>52</sup> A. J. EVANS, *The Palace of Minos at Knossos*, 1 (Macmillan 1921), 623.

<sup>53</sup> S. DEIMEL, *Sumerisches Lexikon*, Teil 111, Band 2 (Rome 1937), 120. s. v. 2, *usukku*, "Heiligtum, Göttergemach".

<sup>54</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 116.

<sup>55</sup> *Ibidem*, 122.

<sup>56</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 67.

<sup>57</sup> W. C. BRICE, *op. cit.*, Pl. XVII, I 4.

*ki-k(e)-ke-[.]* = *kikkeni* (cf. Fig. 9 for the full spelling and the sign values), the Hittite dative singular of the Sumerian loan word *gikunu/kukunnu*, 'shrine' <sup>58</sup>.

[*i*<sup>s</sup>]-*ta-na-ne* = *ištanani*, the dative singular, common, of *ištananaš*, 'offering table' (cf. Fig. 12) <sup>59</sup>; this word also occurs in (*d*), with a slightly different spelling.

*ke<sup>s</sup>-du-wa<sup>n</sup>* (cf. *kā<sup>s</sup>-du-wa-n(a)*, Fig. 4), an extended spelling (cf. *išpandu(wa)š*, 'vessel') of *kešdun* = *kišdun*, accusative singular, common, of *kištuš*, 'vessel' <sup>60</sup>. The second syllabic sign of the word here is partly effaced but can be recognised as L 93. The third sign is L 52, not L 75; so too the second sign of the next word.

*ku-wa-na-n(a)* = *kuwannan*, accusative singular of the heteroclitite noun, *kuwanna*, which occurs in Hittite with the meaning, as given by Friedrich, of 'stone ornament' (cf. *ku-we-na*, Fig. 6) <sup>61</sup>.

*ha-[sa]-sa-ra-mi* = *ha-sa-sa-ra-mi*, dative singular, common, of *hasasaras*, 'Queen', plus the dative singular, common, *-mi*, of the enclitic possessive *-miš*, 'my'. The phrase is *hasasara-mi* 'for my Queen', standing for *hasasaras-mi*, a compound in which the second part alone is declined, the independent grammatical identity of the first part having disappeared <sup>62</sup>.

*u-na-ru<sup>n</sup>*: this, from its form, appears to be, from the context, another verb for 'set, put, place' (cf. *i-na-ja-re-nu<sup>n</sup>*, Fig. 12).

*ka-n(a)* = *kan*, the accusative singular, common, of *kaš*, 'this' (cf. Fig. 6).

*ti-pa<sup>n</sup>* = *tipan*, the accusative singular, common, probably, of yet another word for 'vessel'.

*i<sup>s</sup>-[ta-na]-ne*, as this word should be reconstructed, is *ištanani* the dative singular, common, of *ištananaš*, 'offering table' (cf. Fig. 12) <sup>63</sup>.

*lu[ ]*: this word, from the context, is also a verb for 'set, put, place'.

*i<sup>s</sup>-na-ja* = *isnaja*, the dative singular (cf. *šuppaja*, dative singular of *šuppiš*, 'clean') <sup>64</sup> of an *i* stem noun, *\*isnis*, not yet found in Cuneiform Hittite, meaning 'for the festival', a religious rite of some kind (cf. *i-s(a)-wi* Fig. 2). The word appears to be a loan word of Sumerian-Akkadian origin since similar words *ezen*, *izin*, *izun* and *isinnu* occur, respectively, in Sumerian and Akkadian with this meaning <sup>65</sup>.

<sup>58</sup> *The Assyrian Dictionary*, Oriental Institute of the University of Chicago, 5 (1956), 67.

<sup>59</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 91.

<sup>60</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 112.

<sup>61</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 122.

<sup>62</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1, 66, par. 190 b.

<sup>63</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 91.

<sup>64</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1, 49, par. 71.

<sup>65</sup> Cf. A. DEIMEL, *Sumerisches Lexikon*, Teil 111, Band 2 (Rome, 1937), 179; *The Assyrian Dictionary*, 7 (1960), 195; J. FRIEDRICH, *Hethitisches Wörterbuch*, 271.

$pa^1$ -[*hi*] = *palhi*, the accusative singular, neuter of *palhi*, 'vessel', a word found in Cuneiform Hittite <sup>66</sup>.

An inscription occurs on a second libation-table from Palaikastro (Fig. 8) <sup>67</sup> but owing to the illegibility of most of the signs on the second, third and fourth faces, only the first line and a phrase in the second are transliterated and translated, with a commentary, below.

- |     |                                     |                   |                         |                    |
|-----|-------------------------------------|-------------------|-------------------------|--------------------|
| (a) | $[ha^n]$ - <i>ta-nu<sup>n</sup></i> | <i>k(e-wa-j)a</i> | $ha^n$ - <i>di</i>      | <i>ki</i> -[. . .] |
| (b) |                                     |                   | [. . .]- <i>ra-mi</i>   |                    |
| (a) | I set                               | here              | in front for the shrine |                    |
| (b) | [                                   |                   | ]for my Queen           |                    |

$[ha^n]$ -*ta-nu<sup>n</sup>* = *hantanun*, 'I set in order' (cf. Figs. 4, 6, 7).

*k(e-wa-j)a* = *ka*, 'here', an adverb found in Cuneiform Hittite (cf. p. 10) <sup>68</sup>.

$ha^n$ -*di* = *handi*, 'in front', (Cf. Figs. 3, 7).

*ki*-[. . .] = *kikkeni* (cf. Fig. 7; and Fig. 9 for the full spelling), 'for the shrine'.

[. . .]-*ra-mi* = *ha-su-sa-ra-mi* (cf. Fig. 11, *ja-sa-sa-ra-mi*).

An inscription occurs on a third libation table from Palaikastro (Figure 9) <sup>69</sup>. Two fragments of the libation table survive but we need only be concerned here with the main part of the inscription which may be transliterated and translated as follows:

- |  |                |  |                      |                             |
|--|----------------|--|----------------------|-----------------------------|
| $[ha^n$ - <i>ta</i> ]- <i>nu<sup>n</sup></i> | [?]- <i>ti</i> | $ja^n$ -[ <i>di</i> ]                      | <i>ki-k(e)-ke-ni</i> | <i>pu-re-ja<sup>n</sup></i> |
| I set.                                       | [ ]            | in front                                   | for the shrine       | a libation table            |
| <i>tu-ki-li</i>                              |                | <i>ja-sa</i> -[ <i>sa-ra<sup>s</sup></i> ] | . . .                |                             |
| for the dwelling                             |                | of the Queen                               | . . .                |                             |

A phrase on the pattern of  $ha^n$ -*ta-nu<sup>n</sup>* *k(e-w)ä-ti*  $ha^n$ -*di* (cf. Fig. 7), 'I set here in front', is to be expected before *ki-k(e)-ke-ni*, 'for the shrine', on the present inscription; then come the words  $pu-re-ja<sup>n</sup>$  *tu-ki-li*  $ja-sa$ -[*sa-ra<sup>s</sup>*], 'a libation table for the dwelling of the Queen'.

-*nu<sup>n</sup>* indicates the last syllable of a verb in the first person singular, preterite, like  $ha^n$ -*ta-nu<sup>n</sup>*, 'I set', (cf. Figs. 4, 6, 7, 8).

[?]-*ti*: an adverb probably; cf. *k(e-w)ä-ti* (Figs. 6, 7), *kä-ti* (Fig. 4), *ke-ti* (Figs. 5, 10, 11) and *k(e-wa-j)a* (Fig. 8), 'here', on other sacral inscriptions.

$ja$ -[ ] is to be reconstructed as  $ja^n$ -*ti*| $ja^n$ -*di* =  $ha^n$ -*ti*| $ha^n$ -*di*, 'in front of' (cf. p. 8), which occupies the same position in the sentence on several

<sup>66</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 156.

<sup>67</sup> W. C. BRICE, *op. cit.*, Pl. XVIII, I 5.

<sup>68</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 127, par. 224.

<sup>69</sup> W. C. BRICE, *op. cit.*, Plate XVII, I 3.



Fig. 6

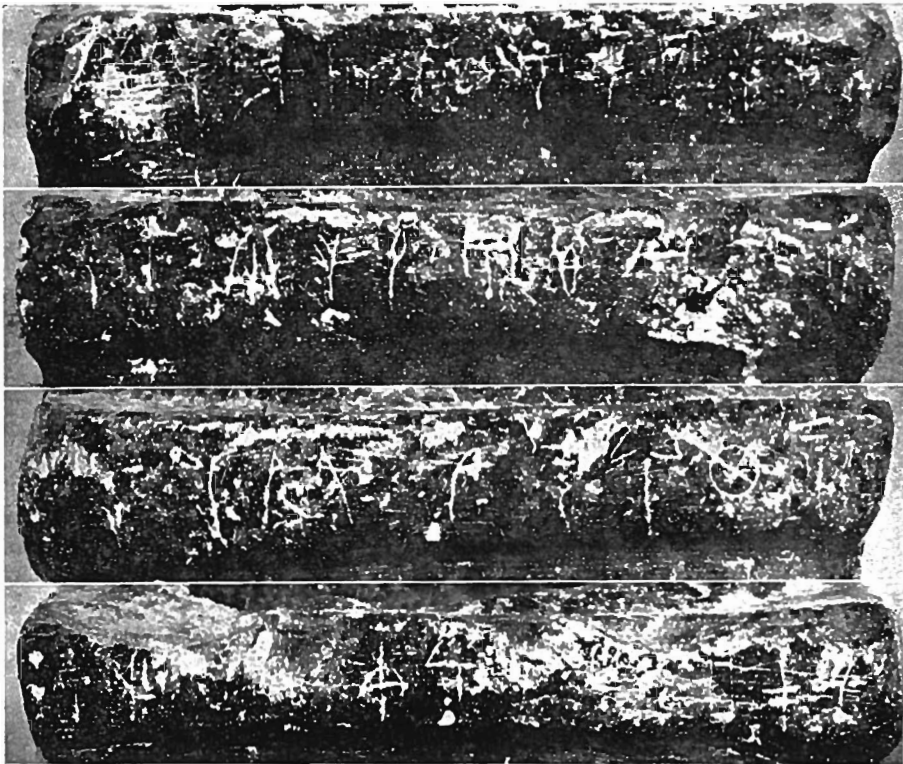


Fig. 7



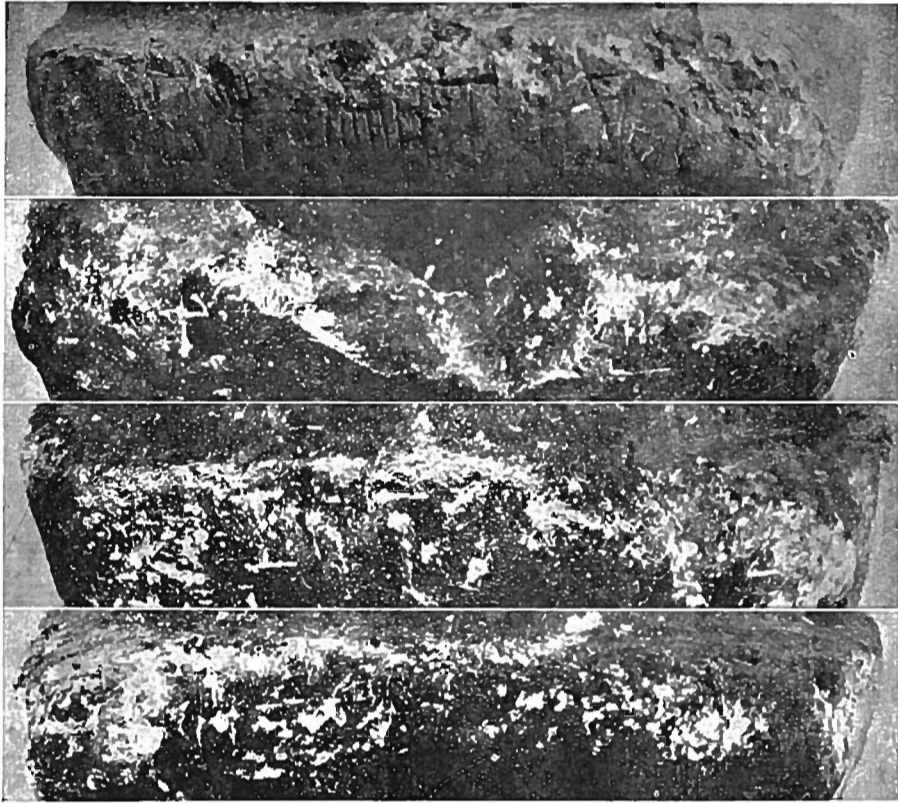


Fig. 8



Fig. 9



Fig. 10

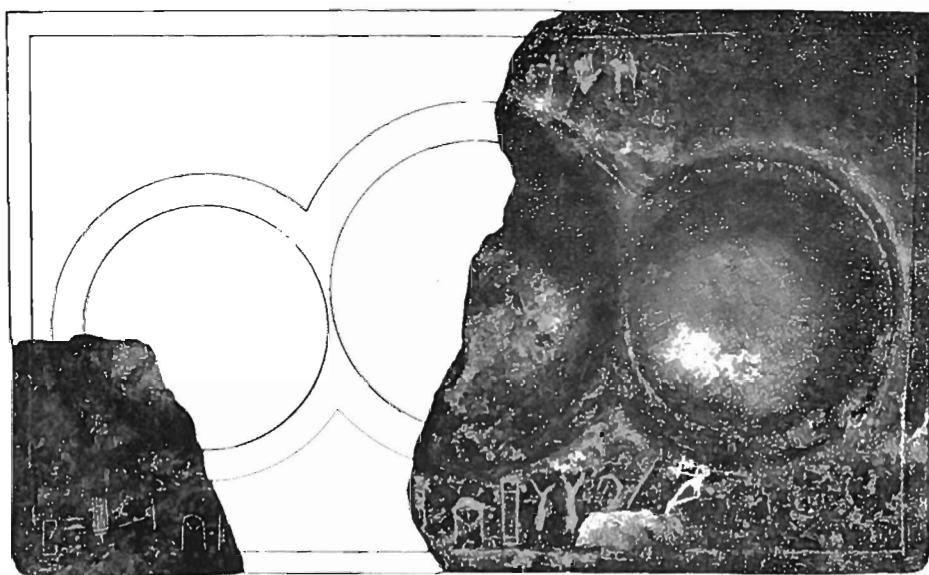


Fig. 11

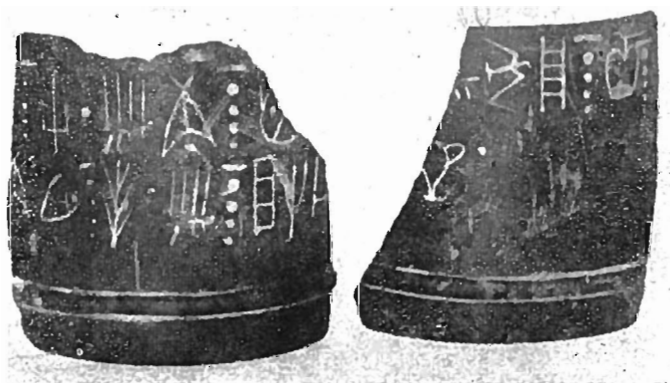


Fig. 12

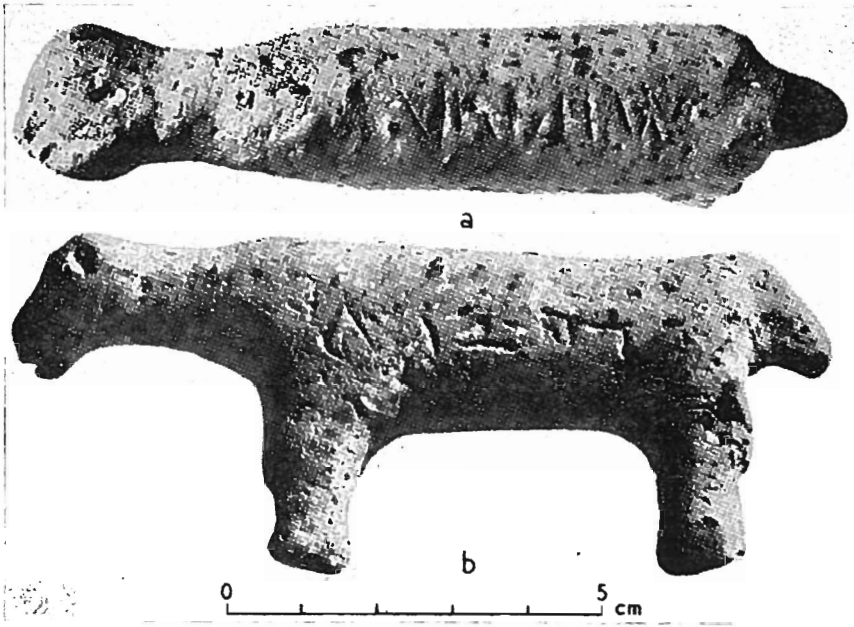


Fig. 13



Fig. 14



Fig. 15

other sacral inscriptions (cf. Figs. 7, 8); *ja* for *ha* is due to the preceding word ending in *i* (cf. Fig. 11).

*ki-k(e)-ke-ni* = *kikkeni*, the full spelling of the word which occurs on the two preceding inscriptions (cf. Figs. 7, 8), 'for the shrine'; the values *ke* and *ni*, respectively, for the relevant signs of this word are confirmed from other Linear A inscriptions and from the Pictographic script (cf. for *ke* Fig. 7; for *ni* Figs. 5, 7).

*pu-re-ja<sup>n</sup>* = *purijan*, the accusative singular, common, of *purijaš*, 'libation table', found in Cuneiform Hittite <sup>70</sup>; the first syllabic sign of the word is damaged by a break in the inscription but shows that it is **L 34** = *pu*.

*tu-ki-li*, the Hittite dative case of a loan word from one of the neighbouring languages; from the context the word probably means 'dwelling, shrine'.

*ja-sa-[sa-ra<sup>s</sup>]* = *hasasaras*, probably genitive case of *hasasaras*.

On a fragment of a libation bowl from Apodoulou, south west of Knossos, an inscription (Fig. 10) <sup>71</sup> occurs; this inscription is transliterated and translated, with a commentary, below.

... *ja<sup>n</sup>-ta-nu<sup>n</sup>* *ke-ti ja-sa-[. . .]*  
 ... I set here for (before?) the Queen ...

*ja<sup>n</sup>-ta-nu<sup>n</sup>* = *hantanun*, 'I set in order' (cf. Figs. 4, 6, 7, 8); *ja* is due to the fact that a preceding word missing from the inscription ended in *i* (cf. p. 10, and *ja-sa-[. . .]* below).

*ke-ti* = *ket*, 'here', an adverb found in Cuneiform Hittite and one which also occurs on two other inscriptions (Figs. 5, 11) <sup>72</sup>.

*ja-sa-[. . .]* = either *hasasaran*, the accusative case of *hasasaras*, before a postposition like *da-wa<sup>n</sup>* (cf. Fig. 4) or more probably *hasasara-mi*, the dative case (cf. Figs. 7, 8, 11).

An inscription occurs on the Dictaeon libation table from the Cave of Psychro in the Lasithi mountains (Fig. 11) <sup>74</sup>. This inscription is transliterated and translated, with a commentary, below. The libation table itself has been reconstructed and is now in the Ashmolean Museum <sup>75</sup>.

				<i>ki-ke-ni</i>
<i>ta-na-nu<sup>n</sup></i>	<i>ke-ti</i>	<i>nu-[. . .]</i>	<i>ja<sup>n</sup>-ti</i>	<i>ja-sa-sa-ra-mi</i>
I put	here	[ ]	in front	For the shrine for my Queen

<sup>71</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 165.

<sup>72</sup> W. C. BRICE, *op. cit.*, Pl. XX, I 14.

<sup>73</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 127, par. 224.

<sup>74</sup> A. J. EBANS, *The Palace of Minos at Knossos*, I, (1921), 728-9, figs. 466-7; W. C. BRICE, *op. cit.*, Pl. XVI, I 1.

<sup>75</sup> A. J. EVANS, *Scripta Minoa*, 1, Clarendon Press, Oxford, 1909, 14, Fig. 7.

*ki-ke-ni* = *kikkeni*, 'for the shrine' (cf. Figs. 7, 8, 9). As the 'tree' sign has the value *ke*, the last sign *ni* (cf. Fig. 9), and the 'hand' sign *ke* according to the Acrophonic principle (cf. p. 20), for the word for 'hand' is *keššeraš* in Hittite <sup>76</sup>, the word may be transliterated as *ki-ke-ni*; it may be assumed, since *kikkeni* appears on three other sacral inscriptions (cf. Figs. 7, 8, 9), that this is the word on this inscription.

*ta-na-nu<sup>n</sup>* = *\*taninun*, a shorter form of *taninunun* (cf. *kištanun*/*\*kištanunun*) <sup>77</sup>, the first person singular, preterite of *taninu-* a synonym of *handai-*, 'set in order' (cf. p. 12 for the assimilation of *i* to *a*) <sup>78</sup>.

*ke-ti* = *ket*, 'here' (cf. Figs. 5, 10).

An inscription on a libation bowl from Apodoulou (Fig. 12) <sup>79</sup> reads, when reconstructed as far as is possible, as follows:

[i<sup>s</sup>-ta]-na-ne<sup>1</sup> i-ni-na-ma- [. . .]-ku pa<sup>r</sup>-na<sup>s</sup> tu-na-[ki<sup>s</sup>-na]

[i]-ni-[na]-mi-na ke<sup>1</sup> i-na-ja-re-nu<sup>n</sup> [. . .]-ka

For the offering table a bowl [. . .] for the inner chamber of the house this bowl I set [. . .]

[i<sup>s</sup>-ta]-na-ne = *ištanani*, dative singular of *ištananaš*, 'offering table' (cf. Fig. 7) <sup>80</sup>.

*i-ni-na-ma-*, from the context, should be a form of the word for 'bowl' (cf. [i]-ni-[na]-mi-na below).

*pa<sup>r</sup>-na<sup>s</sup>* = *parnaš*, the genitive singular of *parn-*, 'house' (cf. Fig. 7). <sup>81</sup>

*tu-na-[ki<sup>s</sup>-na]* = *tunnakišna*, dative singular of *tunnakkišsar*, 'inner chamber' <sup>82</sup>.

[i]-ni-[na]-mi-na (the last part of the sign for *na* is visible on this inscription although the upper part, for some reason, was not inscribed) is the word for bowl, unattested as yet in Cuneiform Hittite; a similar word, however, occurs in Eteocypriot Hittite.

*ke* is accusative singular, neuter, of *kaš*, 'this' <sup>83</sup>, referring to the preceding word.

*i-na-ja-re-nu<sup>n</sup>* = *ina(ja)renun*, an extended spelling of the first person, preterite, of a verb, (cf. p. 3) of which the stem is probably *\*innarai-*, meaning, from the context, 'I set' or 'I put'.

In a graffito on a clay votive figure of a ram or horned sheep from Amisus on the north coast of Asia Minor <sup>84</sup>, the same word for 'inner chamber' as

<sup>76</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 108.

<sup>77</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, I, 34, par. 33.

<sup>78</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 209.

<sup>79</sup> W. C. BRICE, *op. cit.*, Pl. XX, I 13.

<sup>80</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 91.

<sup>81</sup> *Ibidem*, 162.

<sup>82</sup> *Ibidem*, 228.

<sup>83</sup> J. FRIEDRICH, *Hethitisches Elementarbuch*, 1, 67.

<sup>84</sup> W. C. BRICE, *op. cit.*, Pl. XIX, V 3.

on the preceding inscription, although slightly differently spelled, occurs. The relevant part of the inscription (upper illustration) reads as follows:

[. . .]-mi<sup>1</sup> tu-nu-ki<sup>s</sup>-[na]

tu-nu-ki<sup>s</sup>-[na] = *tunnakišna*. On the present inscription the vowel of the second syllable has been assimilated to that of the first (cf. the assimilation of the second syllable in Cuneiform Hittite \**haššuššaraš* and Hieroglyphic 'Hittite' *hašušaraš*<sup>85</sup> to that of the first in *ha-sa-sa-ra/ja-sa-sa-ra*).

An inscription on a bronze axe-head from Kardhamoutsa, Lasithi, Crete (Fig. 14)<sup>86</sup>, reads as follows:

tu-nu!

tu-nu! may well be an abbreviation of *tu-nu-ki<sup>s</sup>-na*, 'for the inner chamber', the word which occurs on the preceding inscription.

The graffito inscription (Fig. 15)<sup>87</sup> on a votive clay male figurine from Tyliisos reads as follows:

da-ki-ti

Like the Pictographic (Hieroglyphic) inscription on the Libation Vessel from Mallia<sup>88</sup>, the inscription on the figurine is to be read from the top downwards.

da-ki-ti = *dakitti*, 'for the hearth' (cf. Fig. 3). The first and third signs, with values *da* and *ti* respectively, are clear enough, and it may be inferred that the middle sign is a writing variation of the 'plough' sign L 103 (cf. Fig. 3) which has the value *ki*.

An inscription occurs on three sides of a libation table from Prassà<sup>89</sup>; the fourth side probably had an inscription which has been effaced but which may be conjectured from the context (cf. p. 7 and Fig. 12). The inscription, with a transliteration, translation and commentary, is set out below.

(a)	(b)	(c)	(d)		
[i <sup>s</sup> ]-ta-na	ta-pa	k(e-w)ă-[ti]	ha-n(a)-di	ha-sa-sa-ra-mi	
For the offering	table a vessel	here	in front	for my Queen	[I set]

<sup>85</sup> Cf. J. FRIEDRICH, *Hethitisches Wörterbuch*, 64, 335.

<sup>86</sup> W. C. BRICE, *op. cit.*, Pl. XXXI, V 17.

<sup>87</sup> W. C. BRICE, *op. cit.*, Pl. XXIX, V 2; A. J. EVANS, *The Palace of Minos at Knossos*, 1, 634, fig. 472.

<sup>88</sup> S. DAVIS, *The Decipherment of the Minoan Linear A and Pictographic Scripts*, Witwatersrand University Press, Johannesburg (1967), Fig. 114.

<sup>89</sup> W. C. BRICE, *op. cit.*, Pl. XXI, I 17; N. PLATON, 'Inscribed libation vessel from a Minoan house at Prassà, Heraklion', *Minoica*, 305-317, Tafel 1-2.

[i<sup>s</sup>]-*ta-na* = *išta(na)na*, the old dative singular (cf. (*i-na'-wa*, Fig. 2 and p. 5) of. *ištananaš*, 'offering table' (cf. Fig. 12). For the unextended and extended spelling of this word which occurs in Cuneiform Hittite, compare another Cuneiform Hittite word, *ištanza(na)š*, which occurs *with*, or *without*, the syllable *na*<sup>90</sup>.

*ta-pa*: from the context, a word for 'vessel' (cf. Fig. 12).

*k(e-w)ă-[ti]*: 'here' (cf. Figs. 6, 7). It is to be noted that the top part of L 75, = *wa*, occurs after the first sign of the word but L 78, = *ti*, appears to be effaced at the end of the word.

*ha-n(a)-di*: 'in front' (cf. Figs. 3, 7, 8, 9, 11). In Fig. 7, *ha<sup>n</sup>-di* follows after *k(e-w)ă-ti*, just as here *ha-n(a)-di* follows after *k(e-w)ă-[ti]*.

*ha-sa-sa-ra-mi*: 'for my Queen' (cf. Figs. 7, 8, 11). It is to be noted that the first syllable of *ha-sa-sa-ra* is represented by L 52 and not L 32; the latter is more usual after a final *i* in the preceding word (cf. Figs. 4, 6, 9, 10, 11); furthermore, in Fig. 11 *ja<sup>n</sup>-ti*, = *handi*, precedes *ja-sa-sa-ra-mi*, just as here *ha-n(a)-di* precedes *ha-sa-sa-ra-mi*.

An inscription occurs on one side of a rectangular libation vessel of unknown provenance, now in the Heraklion Museum<sup>91</sup>. Although several of the signs are partly or wholly effaced some significant words can be made out on this inscription. A transliteration, translation and brief commentary are set out below.

[*ha<sup>n</sup>-di*] *ja-sa-[sa]-ra-mi* *ki-[ke]-ke-[ni]* [*ke*]-*wă-ti* *i-[ja-nu<sup>n</sup>]* . . .

[*ha<sup>n</sup>-di*]: 'in front' (cf. *ja<sup>n</sup>-ti* before *ja-sa-sa-ra-mi*, Fig. 11), effaced here.

*ja-sa-sa-ra-mi*: 'for my Queen' (cf. Fig. 11).

*ki-[k(e)]-ke-[ni]*: 'for the shrine' (cf. Figs. 7, 8, 9).

*k(e-w)ă-ti*: 'here' (cf. Figs. 6, 7).

*i-[ja-nu<sup>n</sup>]*: 'I made' (cf. Figs. 3, 4).

## II

It has already been emphasised that the decipherment of the language and script of the Minoans helps to explain more fully the world of the Aegean civilization before the arrival of the Greeks<sup>92</sup>. From the point of view of

<sup>90</sup> J. FRIEDRICH, *Hethitisches Wörterbuch*, 91.

<sup>91</sup> W. C. BRICE, *op. cit.*, Pl. XXI, I 18; N. PLATON 'Inscribed libation vessel from a Minoan house at Prassà Heraklion', Supplement, *Minoica* 317-318, Tafel 3.

<sup>92</sup> S. DAVIS, 'Cretan Hieroglyphs: the end of a quest?', *Greece and Rome*, XI, 1964, 127.

Classical studies, however, that decipherment is of the utmost importance for the light it sheds on the Mycenaean Greek Linear B script.

The latter script, as scholars have long suspected, did not spring forth suddenly, like Athena from the head of Zeus, but was dependant on the previous two Minoan scripts, the Pictographic and Linear A writing systems. Certain puzzling features of the Linear B script can, in fact, only be explained through this dependance. One of these features is the use of *homophones*, a violation of the rule that ideally one value should be represented by only one sign as in the phonetic, alphabetic systems of Greek and Latin from which our own alphabet is derived.

In both Egypt and Mesopotamia writing began as picture signs. *Ideograms*, picture signs standing for an actual object or idea, came first, then later *phonograms*, standing for syllables - without indication of vowels, as in the Hieroglyphic (Pictographic) script of ancient Egypt, e.g. *p-r*, 'house', or with indication of vowels, as in the Cuneiform script of Mesopotamia, e.g. *ka*, 'mouth', in Sumerian Cuneiform. In the Cuneiform script which was later used to write Semitic Akkadian and, in Asia Minor, Indo-European Hittite, an original picture sign (denoting, for example, a syllable of the type *la*, *al* or *lal*) had been transformed beyond recognition into wedge-shaped characters (Latin *cuneus*, 'a wedge'). The mere fact, however, that picture signs could represent different objects, the words for which had the same initial syllable, led, in Minoan Crete, to the use of several signs having the same value, e.g. several signs, standing for objects whose initial letter was *ki/ke/ke* (cf. Fig. 1) could be used to indicate this syllabic value; the principle involved is called *Acrophonic*, and signs, which are different in appearance but have the same value, are called *homophones*.

The original picture signs of the Minoan Pictographic script can often hardly be recognised, for what they originally represented, in their more cursive and linearised form in the Linear A script.

*Homophones* in a syllabic script- and the Minoan Hittite Pictographic and Linear A scripts are such scripts — can only be explained on the assumption set out above, that, in the very origin of the script, picture signs, different in appearance but standing for objects beginning with the same initial syllable, were used. At a later stage it was found more efficient to have in a syllabic script, as was still later the case in alphabetic scripts, one sign for one value, the main difference being that in a syllabic script a single sign may stand for *consonant + vowel*, whereas, in an alphabetic script, separate signs are used for *consonants* and *vowels*.

Linear B appears to have reached the later stage but not completely so, as the existence in it of *homophones* shows<sup>93</sup>. One significant example may be mentioned here. 'The cases of alternation of *a/a<sub>2</sub>/ja*', as the Linear B

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<sup>93</sup> Cf. E. VILBORG, *A tentative grammar of Mycenaean Greek* (Göteborg, 1960), 30.



signs L 52, 55, 32, are transliterated, 'may be explained by assuming an original pronunciation [ha] . . . ; when the aspiration was weakened a spelling with simple *a* became possible: *a-ke-te-re/a<sub>2</sub>-ka-te-re/ja-ke-te-re*'<sup>94</sup>. This example of alternation in Linear B, *inter alia*, led the present writer to his deduction of the original values in Linear A of L 52, the 'double axe' sign, as *ka/ħa*, and of L 32 as *ħa/ħja/ja*, as shown in the preceding pages<sup>95</sup>.

Another puzzling feature of the Linear B script, the alternation of *i/e*, e.g. *ai-ke-wa-to/ai-ki-wa-to, e-pha-sa-na-ti/i-pha-sa-na-ti*<sup>96</sup>, can only be explained as due to the precedent established by the Pictographic and Linear A scripts of making no distinction, in writing at least, between these two vowel sounds (cf. Figs. 1, 2, 3).

Furthermore, the spelling of words with the 'glide' sounds *w* and *j* in Linear B can only be accounted for as based on the pattern of the extended spelling of words in the Pictographic and Linear A scripts (cf. pp. 5, 10).

In this brief account space does not permit one to describe and assess fully the repercussions on the Mycenaean Linear B script of the present writer's decipherment of the earlier, Minoan Hittite scripts; nevertheless, it has been shown that certain important and hitherto very puzzling features of the Linear B script can only be explained by means of that decipherment and not otherwise. Furthermore, the decipherment of these earlier scripts vindicates Ventris's decipherment of the Mycenaean Greek Linear B script, since *writing conventions* and *sign values* (and, where these differ as between the Linear A and Linear B scripts, it has been shown that the differences are capable of explanation) have been adopted and adapted from the earlier Minoan Hittite scripts.

University of the Witwatersrand, Johannesburg.

<sup>94</sup> Cf. E. VILBORG, *op. cit.*, 31.

<sup>95</sup> Cf. E. BENNET, 'The Olive Oil Tablets of Pylos', *Minos*, Supplement 2, University of Salamanca, 1958, 20-22.

<sup>96</sup> Cf. E. VILBORG, *op. cit.*, 49.