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Title: Proposal to encode the Northern Palaeohispanic script

1. Summary

Palaeohispanic scripts are attested in the Iberian Peninsula by *ca.* 2,700 inscriptions dating from the 7th century BC to the 1st century AD. They were used to write at least four different local languages: Celtiberian, Iberian, the south-western or Tartessian language and probably as well Turdetanian. Although the longest inscription contains *ca.* 500 words, most long texts rarely reach over 50 words; others, on the other hand, are very short and contain just a personal name or abbreviations.

The Palaeohispanic script family consists of several scripts that can be divided into 2 types: the northern (with *ca.* 2,500 inscriptions) and the southern group (with *ca.* 170 inscriptions). That's why we codify them according to two different standards:

1. Northern Palaeohispanic, which includes the north-eastern Iberian and the Celtiberian script.
2. Southern Palaeohispanic, which includes the south-eastern Iberian script, the south-western or Tartessian script, the Turdetan script and the Espanca abecedary.

All Palaeohispanic writing systems are characterised by a similar corpus of signs and by the coexistence of alphabetic and syllabic characters. Moreover, all of them share a common ancestor, which might ultimately arise from the Phoenician alphabet (see fig. 1). However, the differences between the two groups are too deep to be appropriately processed into a unique Unicode character set. The main obstacle is the different degree of decipherment between the two groups, which is almost complete for the north-eastern Iberian group and still incomplete for at least a third of the signs attested in the southern scripts. The second obstacle is that a large number of signs shared by these two groups actually have different values: it is the case for most of the vocalic signs, as well as for other frequent signs for which there is clear consensus on their value.

The decipherment of the northern Palaeohispanic scripts was accomplished at the beginning of the 20th century by Manuel Gómez-Moreno (1922, 1949). Nevertheless, some aspects were not entirely deciphered until very recent dates. Such is the case of a variant of this script called *the dual system*, which consists of the use of signs with two variants, each of them with its own distinctive value, differing from each other in presenting an additional stroke (e. g. $\text{X} = \text{da}$ and $\text{X} = \text{ta}$). In fact, some concrete features of this system are even still undergoing research. Unlike the northern scripts, the southern scripts have not been fully deciphered, since there are many signs for which there is no agreed value among specialists. The non-deciphered characters will be named in this proposal after an arbitrary code, as it is currently in use in the specialized bibliography.

The Palaeohispanic inscriptions are being edited and digitalized in the Hesperia open access database (<http://hesperia.ucm.es/>), in the framework of a research project carried out by a team of scholars from different Spanish universities.

2. Background

This proposal, together with the one devoted to "Southern Palaeohispanic", is an updated version of three earlier proposals: "L2/15-120-Preliminary proposal to encode the north-eastern Iberian script";

"L2/15-119 Preliminary proposal to encode the southern Palaeohispanic scripts"; and L2/18-283 "Proposal to encode the Palaeohispanic script".

The last of them was an attempt to codify all the Palaeohispanic scripts together, under a single encoding. However, after submitting this possibility for analysis with several Unicode specialists, we have come to the conclusion that a separate codification for the southern and northern scripts makes it possible to better reproduce the graphematic system in the different scripts. The revised charts in the current proposal now reflect repertoires that reflect the graphemes in the writing systems. Therefore, two documents are produced, this one for the northern Palaeohispanic script, and another one for the southern Palaeohispanic script.

With the proposed repertoires, all characters in Northeastern Iberian and Celtiberian scripts can be represented. As with Old Italic, fonts will be used to represent the different alphabets of Iberia.

The earlier proposals, L2/15-120 and L2/15-119, contain detailed discussion on the characters, figures, and references. See also the article J. Ferrer, N. Moncunill, J. Velaza, "Toward a systematisation of Palaeohispanic scripts in Unicode: synthesising multiple transcription hypotheses into two consensus encodings", *Palaeohispanica* 15, 2015, pp. 13-55.

3. Structure









All Palaeohispanic scripts are semisyllabic: vowels, nasals, laterals, sibilants and trills are alphabetical, whereas characters for plosives are syllabic.

There is another feature shared by most Palaeohispanic scripts: the possibility they offer to differentiate some similar signs with close phonetic value by an additional stroke; rather than a mere diacritic (although originally it might have been so), this stroke tends to be an integrating component of the sign itself. This subset of scripts with a larger number of variants has been labelled as "dual". The recent discovery of dual abecedaries confirms that these dualities were integrated in the standard scripts, where the pair of signs appears always in the same order: the complex variant, with its additional stroke, in the first place and, thereafter, the simple one.

These dualities can affect different sets of sounds: plosives, continuous consonants and even vowels. However, and despite their autonomous apparition in the abecedaries, only for the first ones the phonetic opposition (in this case, voiced – voiceless) between the simple and the complex has been confirmed. Therefore, according to the extension of the use of dualities, it is possible to identify different subsets within every script:

- The north-eastern Iberian script can be divided into: i. extended dual, when dualities affect plosives, continuous consonants and vowels; ii. standard dual, when it only affects plosives, and iii. non-dual, when the script lacks dualities.
- The Celtiberian script, either in its eastern or western variant, can be divided into: i. standard dual, or ii. non-dual.

The standard script for Unicode has been built taking into account an inventory of signs as large as possible, including all dual variants confirmed in the extant abecedaries; in general terms, the glyphs for the proposed characters to be encoded match the glyphs of the north-eastern Iberian dual extended script.

In addition, the Unicode repertoire also considers as meaningful a three-elements variability for the signs **ke** and **ka** in the standard or extended dual script: // and //. Indeed, some long standard dual inscriptions show the simultaneous use of three variants of the **ke** sign. That's the case of the lead sheet from Castelló (F.6.1) where two-stroke **ke** () coexist with one-stroke () and no-marked variants

(C). In a similar way, on the lead sheet from Ensérune (B.1.373*; Hesperia HER.02.773) a two-dot variant of the **ke** sign (Ċ), coexists with a one-dot (Ċ) and a no-marked variant (C). Furthermore, it needs to be pointed out that the most common word in the lead sheet from Castelló with the two-stroke **ke**, **balke**, was written in this same way in painted inscriptions of the extended dual type from Llíria. This behavior can also be observed in the lead sheet from Los Villares (F.17.2) where three simultaneous variants of the **ka** sign are used (K̇/K̇/K̇). This suggests that the three-element variation for these two characters is also a characteristic of the extended dual script, although it is not explicitly documented in any of the known abecedaries.

Although this three-elements variation has not been confirmed to be meaningful for the rest of characters, our proposal also includes three different glyphs for **ti** and **to**: Ṫ / Ṫ / Ṫ and Ṫ / Ṫ / Ṫ . In this case, this choice is not due to linguistic but rather technical reasons related to the Unicode codification. That way, the most common dual opposition found in Palaeohispanic inscriptions, which is expressed as Ṫ / Ṫ and Ṫ / Ṫ, and the less common dual opposition expressed as Ṫ / Ṫ and Ṫ / Ṫ, can be both easily codified, avoiding overlapping solutions for the shared characters Ṫ and Ṫ .

As for other characters which can also display a more than two elements variation, such as N / Ṅ / Ṅ / the glyphs with more than one additional stroke have not been encoded separately, since they can be considered in most cases as an allograph of the glyph with only one additional bar and the conflictive cases are very scarce.

4. Direction of script

The proposed default direction of the script is left to right, which is the predominant direction in inscriptions of the northern group. In order to render texts right to left, users should use RLO and PDF overrides, or other mechanisms as described in UAX #9 (<http://www.unicode.org/reports/tr9/proposed.html>). If the default direction of the script is overridden, the glyphs in the font should be mirrored from those presented here.

5. Character names

The character names are based by default on the north-eastern script, which is the script with more inscriptions and the one whose decipherment is completed. However, since the values are not usually the same in each Palaeohispanic script, notes are used to specify the value of the character in every script. For instance:

The lack of notes implies that the sign has the same value in all scripts. For instance:

10227 Ṅ PALAEOHISPANIC NORTHERN LETTER N1

When a sign is exclusive of one single script it is specified that way:


1020D L̇ PALAEOHISPANIC NORTHERN NUMERAL A

- Northern Palaeohispanic

The marked signs in the "dual" scripts are named with the terminology "with one additional stroke" or "with two additional strokes". For instance:

10202  PALAEOHISPANIC NORTHERN LETTER E WITH ONE ADDITIONAL STROKE

- Northeastern Iberian (Dual Extended)

10237  PALAEOHISPANIC LETTER KA WITH TWO ADDITIONAL STROKES

- Northeastern Iberian (Dual)

When the phonetic value of a sign is unknown, we use the conventional code used in the specialized bibliography. For instance:

10214  PALAEOHISPANIC NORTHERN LETTER S87

Please note that the names of the letters don't always reflect the transcription system used in the discursive parts of the proposal. These are the correspondences:

S1 = **s**

S2 = **ś**

S1 WITH ONE ADDITIONAL STROKE = **ŝ**

N1 = **n**

N1 WITH ONE ADDITIONAL STROKE = **ñ**

N2 = **m**

N3 = **rn̄**

N4 = **m̄**

R1 = **r**

R2 = R1 WITH ONE ADDITIONAL STROKE = **ř**

R2 WITH ONE ADDITIONAL STROKE = **ř̄**

A = **a**

A WITH ONE ADDITIONAL STROKE = **á**

A2 = **â**

E = **e**

E WITH ONE ADDITIONAL STROKE = **é**

I = **i**

I WITH ONE ADDITIONAL STROKE = **í**

O = **o**

O WITH ONE ADDITIONAL STROKE = **ó**

U = **u**

U WITH ONE ADDITIONAL STROKE = **ú**

KA = **ga**

KA WITH ONE ADDITIONAL STROKE = **ka**

KA WITH TWO ADDITIONAL STROKES = **kā**

KE = **ge**

KE WITH ONE ADDITIONAL STROKE = **ke**

KE WITH TWO ADDITIONAL STROKES = **kē**

KI = **gi**

KI WITH ONE ADDITIONAL STROKE = **ki**

KO = **go**

KO WITH ONE ADDITIONAL STROKE = **ko**

KU = **gu**

KU WITH ONE ADDITIONAL STROKE = **ku**

TI WITHOUT INNER STROKE = **di**

TO WITHOUT INNER STROKE = **do**

...

6. Numbers

Iberian metrological expressions are basically formed by groups of vertical bars (equivalent to the sign **ba**) to generate the numerical component of the expression: I = 1, II = 2, III = 3, IIII = 4, IIIII = 5. The accumulation of bars can reach up to 20 elements (F.17.1). Occasionally these bars can appear together with a sign similar to Greek **π**, which appears to be acting as an auxiliary base, perhaps with the value of 5 or 6.

Some metrological expressions use a specific L-shaped sign, which does not match any other character of the Iberian script; the numerical value for that sign is still uncertain. This sign also appears in metrological expressions on painted amphora inscriptions from Vieille-Toulouse (for instance **L IIII**) and in lead-sheet inscriptions from Iàtova (for instance **L π IIIII** [F.20.2]).

Finally, some coin inscriptions present value marks, which, in some cases, have an equivalent symbol formed by the initial of the unit followed by the numerical component. In the case of **undikesken** coins, quarters show the – sign and halves the = sign, which is actually a reduplication of the former ($\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$).

7. Punctuation

The most common word separator consists of two vertical dots. Nevertheless, the oldest epigraphic tradition tends to use rather 3 or more vertical dots; in the most recent inscriptions on stone, on the other hand, the use of an isolated dot is frequent, imitating the Roman style. Finally, the vertical bar can also be used and, in some rare cases, just a blank.

Since all these word separators can be found in other scripts, to represent the Palaeohispanic punctuation we recommend already-encoded characters to be employed:

007C VERTICAL LINE

00B7 MIDDLE DOT

205A TWO DOT PUNCTUATION

205D TRICOLON

205E VERTICAL FOUR DOTS

8. Order

For the code chart: vowels will appear in the alphabetical order **a, e, i, o, u**; plosives in the usual alphabetical order **b, k/g, t/d**; and continuous consonants in the alphabetical order **l, m, n, r, s**. The marked-sign pairs will be grouped together, the marked character preceding the unmarked, as appears in the north-eastern Iberian abecedaries. The conflictive T-shaped sign is grouped together with nasals, as it actually appears in the attested abecedaries. The conflictive sign in the shape of an Iberian I (**â**) with an additional stroke is placed together with this sign, as it appears in the Castellet de Bernabé

abecedary. The exceptional cases of glyphs which have been codified considering a three-elements variation, *i.e.* **ka** and **ke** with two additional strokes, and **ti** and **to** without the inner bar will appear at the end. Numerals are grouped at the end after letters.

The proposed order for sorting is as follows: **a, á, â, ba, be, bi, bo, bu, da, ta, de, te, di, ti, do, to, du, tu, e, é, ga, ka, ka, ge, ke, ké, gi, ki, go, ko, gu, ku, i, í, l, m, n, o, ó, r, r, ř, s, s, ŝ, u, ú, m, m, S87**. Specific exceptions to the alphabetical order are as follows:

- Consecutive order for simple sibilant (**s**) and sibilant with an additional stroke (**ŝ**);
- Consecutive order for voiceless and voiced plosives in order to keep together the dual and non-dual transcriptions of the same elements (for instance, the word **ekiar / egiar**).
- Consecutive order for **m** and **n**, since they are signs that can alternate (for instance **iunstir / iumstir**).
- Consecutive order for the supposed nasal **m̃** and **m̄**, after the two signs for **u**, since the characteristic vocalic component of **m̃** can be usually identified as **u** (for instance **m̃bař / VMAR**).

9. Unicode Character Properties

All the Palaeohispanic letters from 10200 to 10238 are as below.

10200;NORTHERN PALAEOHISPANIC LETTER A WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10201;NORTHERN PALAEOHISPANIC LETTER A;Lo;0;L;;;;;N;;;;;

10202;NORTHERN PALAEOHISPANIC LETTER E WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10203;NORTHERN PALAEOHISPANIC LETTER E;Lo;0;L;;;;;N;;;;;

10204;NORTHERN PALAEOHISPANIC LETTER I WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10205;NORTHERN PALAEOHISPANIC LETTER I;Lo;0;L;;;;;N;;;;;

10206;NORTHERN PALAEOHISPANIC LETTER O WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10207;NORTHERN PALAEOHISPANIC LETTER O;Lo;0;L;;;;;N;;;;;

10208;NORTHERN PALAEOHISPANIC LETTER U WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10209;NORTHERN PALAEOHISPANIC LETTER U;Lo;0;L;;;;;N;;;;;

1020A;NORTHERN PALAEOHISPANIC LETTER BA;Lo;0;L;;;;;N;;;;;

1020B;NORTHERN PALAEOHISPANIC LETTER BE;Lo;0;L;;;;;N;;;;;

1020C;NORTHERN PALAEOHISPANIC LETTER BI;Lo;0;L;;;;;N;;;;;

1020D;NORTHERN PALAEOHISPANIC LETTER BO;Lo;0;L;;;;;N;;;;;

1020E;NORTHERN PALAEOHISPANIC LETTER BU;Lo;0;L;;;;;N;;;;;

1020F;NORTHERN PALAEOHISPANIC LETTER KA WITH TWO ADDITIONAL STROKES;Lo;0;L;;;;;N;;;;;

10210;NORTHERN PALAEOHISPANIC LETTER KA WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;

10211;NORTHERN PALAEOHISPANIC LETTER KA;Lo;0;L;;;;;N;;;;;

10212;NORTHERN PALAEOHISPANIC LETTER KE WITH TWO ADDITIONAL STROKES;Lo;0;L;;;;;N;;;;;
10213;NORTHERN PALAEOHISPANIC LETTER KE WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10214;NORTHERN PALAEOHISPANIC LETTER KE;Lo;0;L;;;;;N;;;;;
10215;NORTHERN PALAEOHISPANIC LETTER KI WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10216;NORTHERN PALAEOHISPANIC LETTER KI;Lo;0;L;;;;;N;;;;;
10217;NORTHERN PALAEOHISPANIC LETTER KO WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10218;NORTHERN PALAEOHISPANIC LETTER KO;Lo;0;L;;;;;N;;;;;
10219;NORTHERN PALAEOHISPANIC LETTER KU WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
1021A;NORTHERN PALAEOHISPANIC LETTER KU;Lo;0;L;;;;;N;;;;;
1021B;NORTHERN PALAEOHISPANIC LETTER TA WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
1021C;NORTHERN PALAEOHISPANIC LETTER TA;Lo;0;L;;;;;N;;;;;
1021D;NORTHERN PALAEOHISPANIC LETTER TE WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
1021E;NORTHERN PALAEOHISPANIC LETTER TE;Lo;0;L;;;;;N;;;;;
1021F;NORTHERN PALAEOHISPANIC LETTER TI WITH TWO ADDITIONAL STROKES;Lo;0;L;;;;;N;;;;;
10220;NORTHERN PALAEOHISPANIC LETTER TI WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10221;NORTHERN PALAEOHISPANIC LETTER TI;Lo;0;L;;;;;N;;;;;
10222;NORTHERN PALAEOHISPANIC LETTER TO WITH TWO ADDITIONAL STROKES;Lo;0;L;;;;;N;;;;;
10223;NORTHERN PALAEOHISPANIC LETTER TO WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10224;NORTHERN PALAEOHISPANIC LETTER TO;Lo;0;L;;;;;N;;;;;
10225;NORTHERN PALAEOHISPANIC LETTER TU WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10226;NORTHERN PALAEOHISPANIC LETTER TU;Lo;0;L;;;;;N;;;;;
10227;NORTHERN PALAEOHISPANIC LETTER L;Lo;0;L;;;;;N;;;;;
10228;NORTHERN PALAEOHISPANIC LETTER A2;Lo;0;L;;;;;N;;;;;
10229;NORTHERN PALAEOHISPANIC LETTER N2;Lo;0;L;;;;;N;;;;;
1022A;NORTHERN PALAEOHISPANIC LETTER N1 WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
1022B;NORTHERN PALAEOHISPANIC LETTER N1;Lo;0;L;;;;;N;;;;;
1022C;NORTHERN PALAEOHISPANIC LETTER N3;Lo;0;L;;;;;N;;;;;
1022D;NORTHERN PALAEOHISPANIC LETTER N4;Lo;0;L;;;;;N;;;;;
1022E;NORTHERN PALAEOHISPANIC LETTER R1;Lo;0;L;;;;;N;;;;;
1022F;NORTHERN PALAEOHISPANIC LETTER R2 WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;;N;;;;;
10230;NORTHERN PALAEOHISPANIC LETTER R2;Lo;0;L;;;;;N;;;;;

10231;NORTHERN PALAEOHISPANIC LETTER S1 WITH ONE ADDITIONAL STROKE;Lo;0;L;;;;N;;;;

10232;NORTHERN PALAEOHISPANIC LETTER S1;Lo;0;L;;;;N;;;;

10233;NORTHERN PALAEOHISPANIC LETTER S2;Lo;0;L;;;;N;;;;

10234;NORTHERN PALAEOHISPANIC LETTER S87;Lo;0;L;;;;N;;;;

All the NORTHERN PALAEOHISPANIC numerals and fractions from 10235 to 10239 are as below.





































10235;NORTHERN PALAEOHISPANIC NUMERAL ONE;No;0;L;;;;1;N;;;;





















10236;NORTHERN PALAEOHISPANIC NUMERAL A;No;0;L;;;;N;;;;

10237;NORTHERN PALAEOHISPANIC NUMERAL B;No;0;L;;;;N;;;;


10238;NORTHERN PALAEOHISPANIC FRACTION ONE QUARTER;No;0;L;;;;1/4;N;;;;

10239;NORTHERN PALAEOHISPANIC FRACTION ONE HALF;No;0;L;;;;1/2;N;;;;


c	1020	1021	1022	1023	1024
0	 A WITH ONE ADDITIONAL STROKE	 KA WITH ONE ADDITIONAL STROKE	 TI	 R2	
1	 A	 KA	 TI WITHOUT INNER STROKE	 S1 WITH ONE ADDITIONAL STROKE	
2	 E WITH ONE ADDITIONAL STROKE	 KE WITH TWO ADDITIONAL STROKES	 TO WITH ONE ADDITIONAL STROKE	 S1	
3	 E	 KE WITH ONE ADDITIONAL STROKE	 TO	 S2	
4	 I WITH ONE ADDITIONAL STROKE	 KE	 TO WITHOUT INNER STROKE	 S87	
5	 I	 KI WITH ONE ADDITIONAL STROKE	 TU WITH ONE ADDITIONAL STROKE	 ONE	
6	 O WITH ONE ADDITIONAL STROKE	 KI	 TU	 A	
7	 O	 KO WITH ONE ADDITIONAL STROKE	 L	 B	
8	 U WITH ONE ADDITIONAL STROKE	 KO	 A2	 ONE QUARTER	


9		U		KU WITH ONE ADDITIONAL STROKE		N2	=	ONE HALF		
A		BA		KU		N1 WITH ONE ADDITIONAL STROKE				
B		BE		TA WITH ONE ADDITIONAL STROKE		N1				
C		BI		TA		N3				
D		BO		TE WITH ONE ADDITIONAL STROKE		N4				
E		BU		TE		R1				
F		KA WITH TWO ADDITIONAL STROKES		TI WITH ONE ADDITIONAL STROKE		R2 WITH ONE ADDITIONAL STROKE				

10. Proposed Characters

10200  NORTHERN PALAEOHISPANIC LETTER A WITH ONE ADDITIONAL STROKE


- Northeastern Iberian (Dual extended)

10201  NORTHERN PALAEOHISPANIC LETTER A

10202  NORTHERN PALAEOHISPANIC LETTER E WITH ONE ADDITIONAL STROKE


- Northeastern Iberian (Dual extended)

10203  NORTHERN PALAEOHISPANIC LETTER E

10204  NORTHERN PALAEOHISPANIC LETTER I WITH ONE ADDITIONAL STROKE


- Northeastern Iberian (Dual extended)

10205  NORTHERN PALAEOHISPANIC LETTER I

10206  NORTHERN PALAEOHISPANIC LETTER O WITH ONE ADDITIONAL STROKE

- Northeastern Iberian (Dual extended)

10207  NORTHERN PALAEOHISPANIC LETTER O

10208  NORTHERN PALAEOHISPANIC LETTER U WITH ONE ADDITIONAL STROKE

- Northeastern Iberian (Dual extended)

10209  NORTHERN PALAEOHISPANIC LETTER U


1020A | NORTHERN PALAEOHISPANIC LETTER BA


1020B  NORTHERN PALAEOHISPANIC LETTER BE

1020C  NORTHERN PALAEOHISPANIC LETTER BI


1020D  NORTHERN PALAEOHISPANIC
LETTER BO


1020E  NORTHERN PALAEOHISPANIC
LETTER BU

1020F  NORTHERN PALAEOHISPANIC
LETTER KA WITH TWO ADDITIONAL STROKES


10210  NORTHERN PALAEOHISPANIC
LETTER KA WITH ONE ADDITIONAL STROKE

10211  NORTHERN PALAEOHISPANIC
LETTER KA


10212  NORTHERN PALAEOHISPANIC
LETTER KE WITH TWO ADDITIONAL STROKES

10213  NORTHERN PALAEOHISPANIC LETTER
KE WITH ONE ADDITIONAL STROKE


10214  NORTHERN PALAEOHISPANIC LETTER
KE

10215  NORTHERN PALAEOHISPANIC
LETTER KI WITH ONE ADDITIONAL STROKE


10216  NORTHERN PALAEOHISPANIC
LETTER KI

10217  NORTHERN PALAEOHISPANIC
LETTER KO WITH ONE ADDITIONAL STROKE


10218  NORTHERN PALAEOHISPANIC
LETTER KO

10219  NORTHERN PALAEOHISPANIC
LETTER KU WITH ONE ADDITIONAL STROKE


1021A  NORTHERN PALAEOHISPANIC
LETTER KU

1021B  NORTHERN PALAEOHISPANIC
LETTER TA WITH ONE ADDITIONAL STROKE


1021C  NORTHERN PALAEOHISPANIC
LETTER TA


1021D  NORTHERN PALAEOHISPANIC
LETTER TE WITH ONE ADDITIONAL STROKE

1021E  NORTHERN PALAEOHISPANIC
LETTER TE


1021F  NORTHERN PALAEOHISPANIC
LETTER TI WITH ONE ADDITIONAL STROKE


10220  NORTHERN PALAEOHISPANIC
LETTER TI

10221  NORTHERN PALAEOHISPANIC
LETTER TI WITHOUT INNER STROKE


10222  NORTHERN PALAEOHISPANIC
LETTER TO WITH ONE ADDITIONAL STROKE


10223  NORTHERN PALAEOHISPANIC
LETTER TO

10224  NORTHERN PALAEOHISPANIC
LETTER TO WITHOUT INNER STROKE


10225  NORTHERN PALAEOHISPANIC
LETTER TU WITH ONE ADDITIONAL STROKE

10226  NORTHERN PALAEOHISPANIC
LETTER TU

10227  NORTHERN PALAEOHISPANIC LETTER
L

10228  NORTHERN PALAEOHISPANIC LETTER
A2

10229  NORTHERN PALAEOHISPANIC
LETTER N2


1022A  NORTHERN PALAEOHISPANIC
LETTER N1 WITH ONE ADDITIONAL STROKE

1022B  NORTHERN PALAEOHISPANIC LETTER
N1


1022C  NORTHERN PALAEOHISPANIC
LETTER N3


1022D  NORTHERN PALAEOHISPANIC
LETTER N4

1022E  NORTHERN PALAEOHISPANIC LETTER
R1

1022F  NORTHERN PALAEOHISPANIC
LETTER R2 WITH ONE ADDITIONAL STROKE

10230  NORTHERN PALAEOHISPANIC
LETTER R2

10231  NORTHERN PALAEOHISPANIC LETTER
S1 WITH ONE ADDITIONAL STROKE

10232  NORTHERN PALAEOHISPANIC LETTER
S1


10233  NORTHERN PALAEOHISPANIC
LETTER S2

10234  NORTHERN PALAEOHISPANIC
LETTER S87

10235  NORTHERN PALAEOHISPANIC
NUMERAL ONE

10236  NORTHERN PALAEOHISPANIC
NUMERAL A

10237  NORTHERN PALAEOHISPANIC
NUMERAL B

10238  NORTHERN PALAEOHISPANIC
FRACTION ONE QUARTER















































10239  NORTHERN PALAEOHISPANIC
FRACTION ONE HALF

11. Glyph Variation Chart

Encode d glyph			Northern						
			Iberian			Celtiberian			
			NI+	NI++	NI-	WC+	WC-	EC+	EC-
𐌲	10200	á	𐌲𐌳	𐌲𐌲		𐌲𐌲	𐌲	𐌲𐌲	
𐌳	10201	a		𐌳𐌳	𐌳				𐌳𐌳
𐌴	10202	é	𐌴𐌴	𐌴𐌴		𐌴𐌴	𐌴𐌴	𐌴𐌴	
𐌵	10203	e		𐌵𐌶	𐌵𐌶𐌷𐌸				𐌵
𐌶	10204	í		𐌶𐌷𐌸					
𐌷	10205	i	𐌷𐌷	𐌷𐌸	𐌷𐌸𐌷	𐌷𐌷	𐌷𐌸	𐌷𐌸	𐌷
𐌸	10206	ó		𐌸𐌸𐌸					
𐌹	10207	o	𐌹𐌹𐌹	𐌹𐌹𐌹	𐌹𐌹𐌹	𐌹𐌹𐌹	𐌹𐌹𐌹	𐌹𐌹𐌹	𐌹𐌹𐌹
𐌺	10208	ú		𐌺					
𐌻	10209	u	𐌻𐌻	𐌻𐌻	𐌻𐌻𐌼𐌽	𐌻𐌻	𐌻𐌻	𐌻𐌻	𐌻𐌻
𐌼	1020A	ba	𐌼(𐌼(𐌼	𐌼	𐌼	𐌼	𐌼
𐌽	1020B	be	𐌽𐌾𐌿𐌸	𐌽𐌾	𐌽𐌾𐌿	𐌽	𐌽	𐌽	𐌽𐌾
𐌾	1020C	bi	𐌾𐌿𐌸	𐌾𐌿𐌸	𐌾𐌿𐌸	𐌾	𐌾	𐌾	𐌾𐌿
𐌿	1020D	bo	𐌿	𐌿	𐌿	𐌿	𐌿	𐌿	𐌿
𐍀	1020E	bu	𐍀	𐍀	𐍀	𐍀	𐍀	𐍀	𐍀

	1020F	ka							
	10210	ka							
	10211	ga			 ka/ga		 ka/ga		 ka/ga
	10212	ke							
	10213	ke							 ke/ge
	10214	ge			 ke/ge		 ke/ge		
	10215	ki							
	10216	gi			 ki/gi		 ki/gi		 ki/gi
	10217	ko							
	10218	go			 ko/go		 ko/go		 ko/go
	10219	ku			 ku/gu		 ku/gu		 ku/gu
	1021A	gu							
	1021B	ta							
	1021C	da			 ta/da		 ta/da		 ta/da
	1021D	te							
	1021E	de			 te/de		 te/de		 te/de

	1021F	ti							
	10220	di							
	10221	đi							
	10222	to							
	10223	do							
	10224	do							
	10225	tu							
	10226	du							
	10227	l							
	10228	â							
	10229	m							
	1022A	ń							
	1022B	n							
	1022C	ń							
	1022D	ň							
	1022E	r							
	1022F	ř							

						r		r	
	10230	ř							
	10231	š							
	10232	s							
	10233	ś							
	10234	S87							
	10235	numeral 1							
	10236	numeral-A							
	10237	numeral-B							
	10238	1/4							
	10239	1/2							

NI+ = Northeastern Iberian dual standard

NI++ = Northeastern Iberian dual extended

NI- = Northeastern Iberian non dual

WC+ = Western Celtiberian dual

WC- = Western Celtiberian non dual

EC+ = Eastern Celtiberian dual

EC- = Eastern Celtiberian non dual

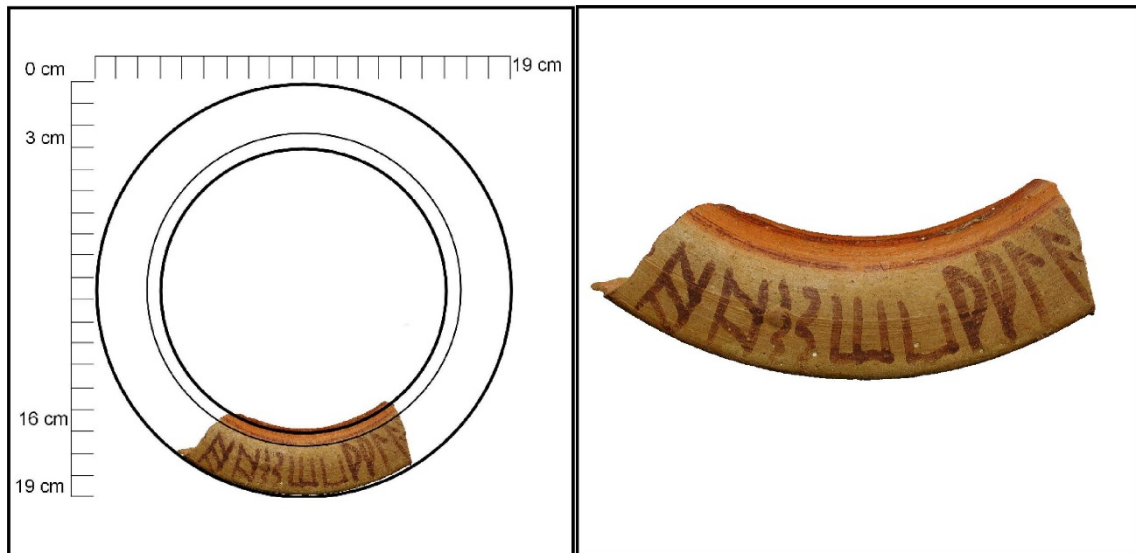


Fig 4.-Castellet de Bernabé's abecedary (Extended dual script).

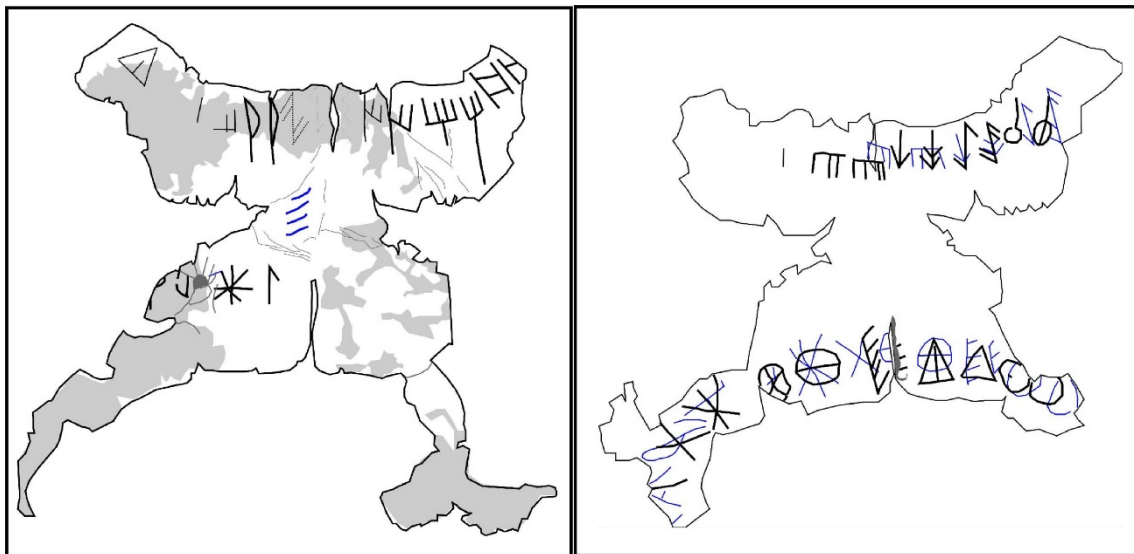
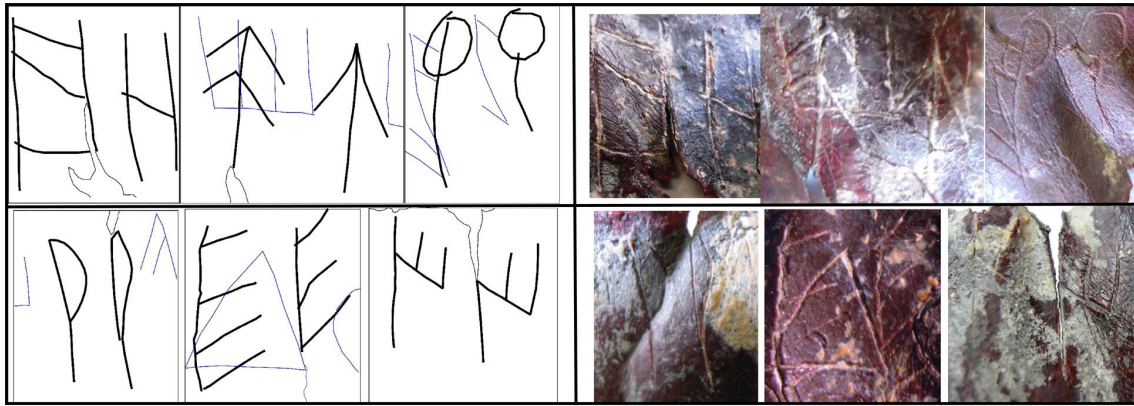


Fig 5.- Tos Pelat's abecedy (F.13.77*) (Extended dual script). Above, detail of dualities for vowels and trill.





Fig 6.-Bolvir's abecedary (Standard dual script).

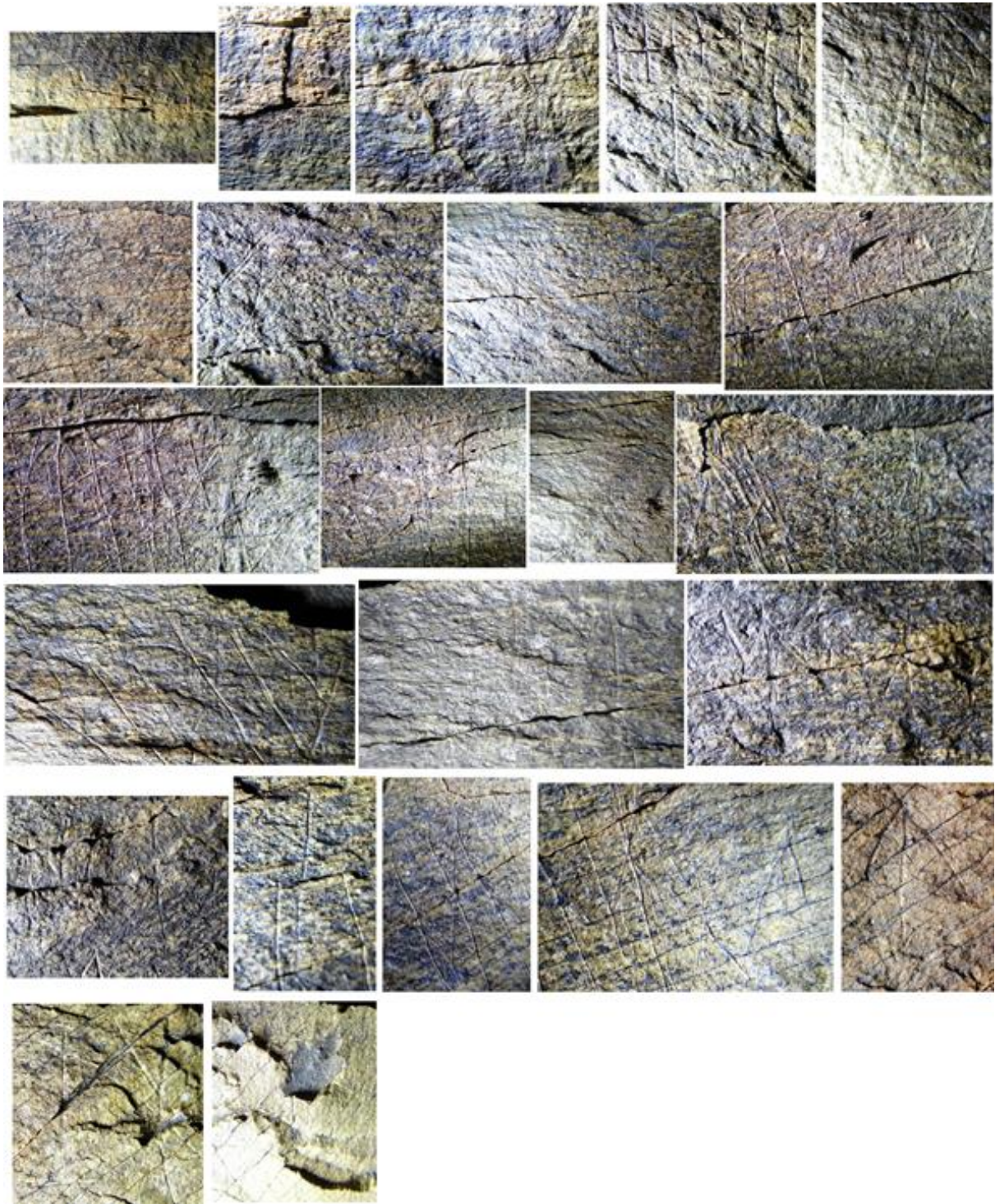
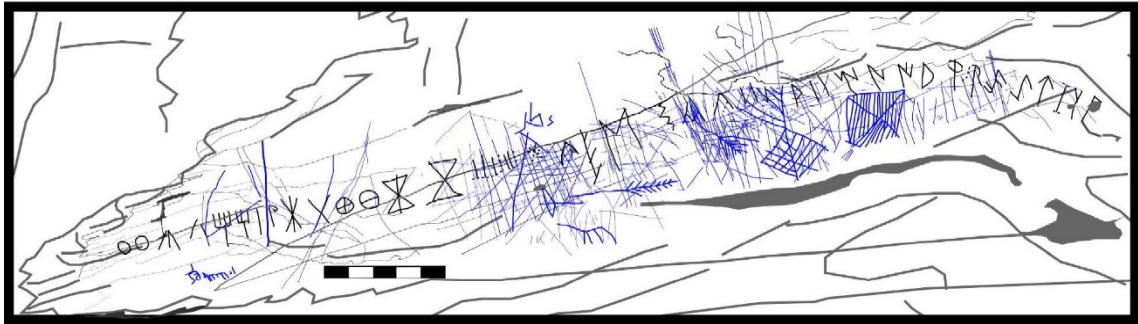


Fig 7.-Ger's abecedary (Standard dual script).

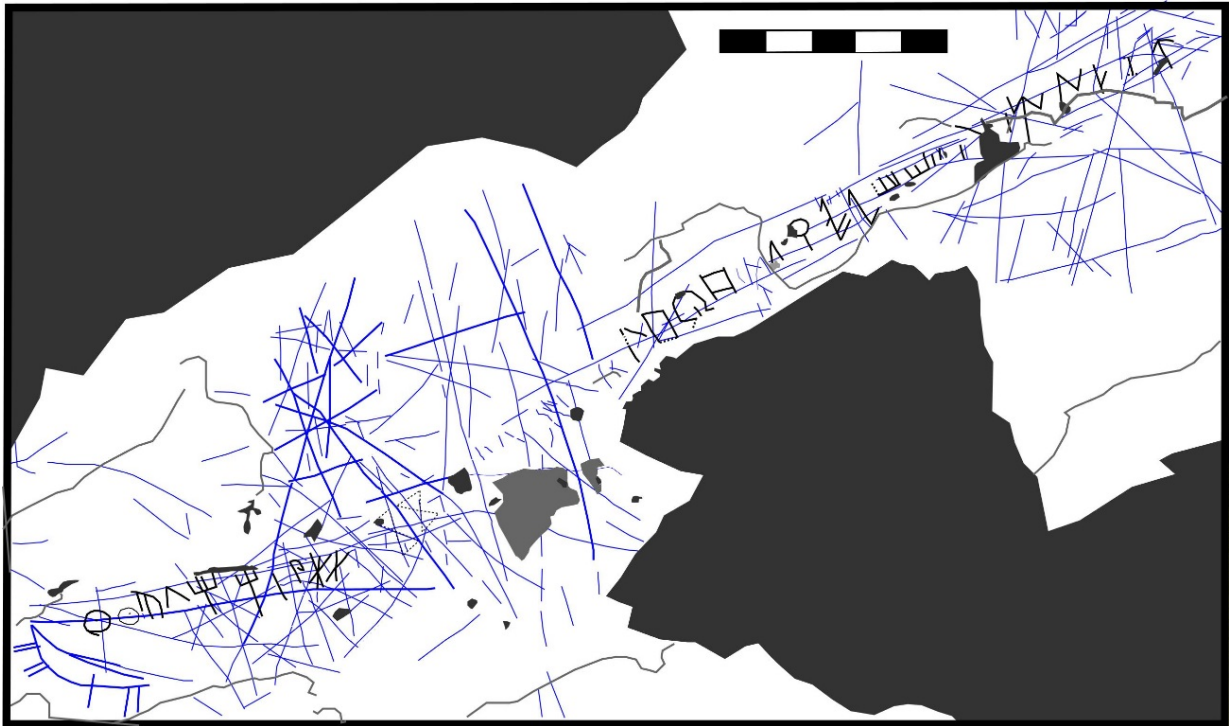


Fig 8.-La Tor de Querol's abecedary (Standard dual script).



Fig. 9.-Simplified abecedaries from Can Rodon (Non-dual script).

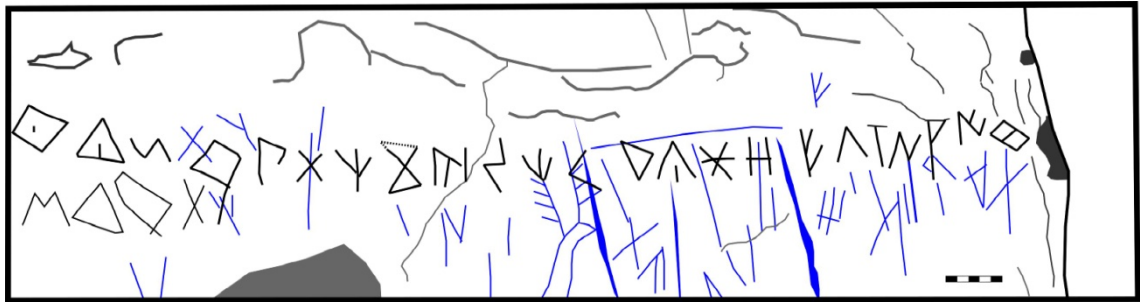


Fig. 10.-Esquirol's abecedary (Non-dual script).



Fig 11.- Lead sheet from Ullastret (C.2.4) (dual script).



Fig 12.- Lead sheet from La Balaguera (F.17.*) (dual script).

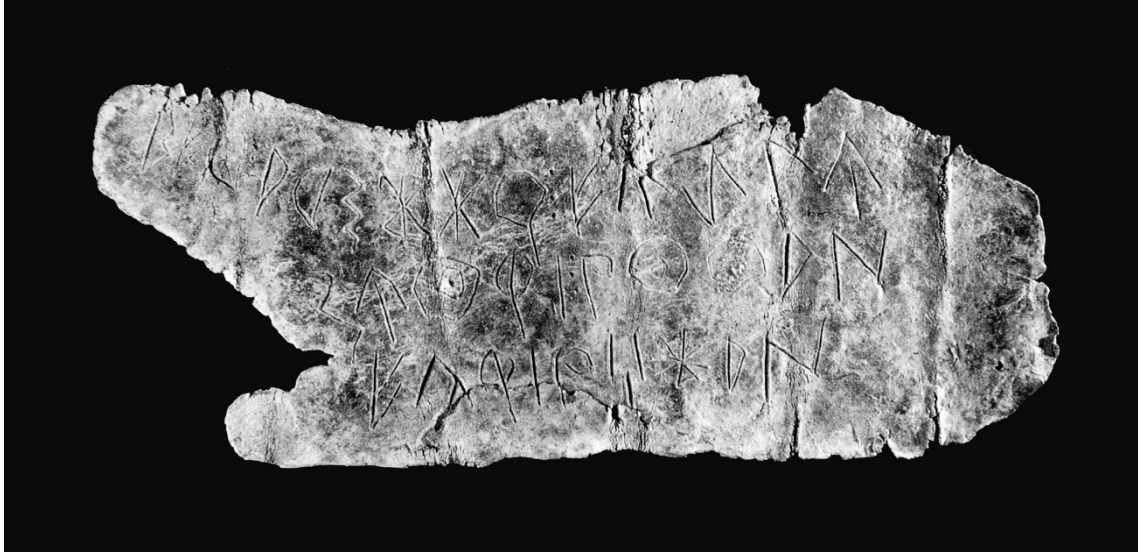


Fig 13.- Lead sheet from Castellet de Bernabé (F.13.75*). Extended dual abecedary with explicit duality for *ř*.

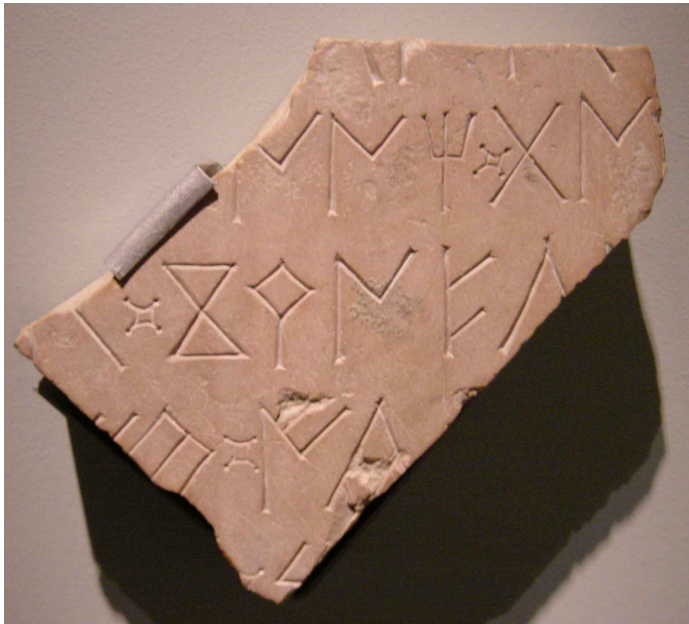


Fig 14.- Stone plaque from Empúries (non-dual script).



Fig 15.- Stele from Vispesa.



Fig 16.- Bronze coin from **undikesken** (non-dual script), with mark of value: e= (1/2)



Fig 17.-Bronze coin from **undikesken** (non-dual script), with mark of value: e- (1/4)



Fig 18.- Ceramic vase from Terrassa with name **talskubilos** (non-dual script).



⋮ 9 0 4 1 4 7 X M A

Fig 19.- Spindle-whorl from Gebut (non-dual script, right to left).



Fig 20.-Painted inscription in a ceramic vase from Lliria (F.13.5) (Extended dual script).



Fig 21.- Stamps on dolium from Pech Maho (B.7.32) (Standard dual script).



Fig 22.- Vase from Joncosa (D.18.1*) (non-dual script).

13. Bibliography

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ISO/IEC JTC 1/SC 2/WG 2

PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS

FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest *Roadmaps*.

A. Administrative

1. Title:	Proposal to encode the NORTHERN PALAEOHISPANIC script
2. Requester's name:	<i>Joan Ferrer, Noemí Moncunill, Javier Velaza, and Deborah Anderson</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>liaison</i>
4. Submission date:	<i>FILL IN</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<input checked="" type="checkbox"/>
(or) More information will be provided later:	<input type="checkbox"/>

B. Technical – General

1. Choose one of the following:		
a. This proposal is for a new script (set of characters):	<input checked="" type="checkbox"/>	
Proposed name of script:	<i>NORTHERN PALAEOHISPANIC</i>	
b. The proposal is for addition of character(s) to an existing block:	<input type="checkbox"/>	
Name of the existing block:		
2. Number of characters in proposal:	<i>58</i>	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary <input type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input checked="" type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	<input checked="" type="checkbox"/>	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<input checked="" type="checkbox"/>	
b. Are the character shapes attached in a legible form suitable for review?	<input checked="" type="checkbox"/>	

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

5. Fonts related:

a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

The Atelier National de Recherche Typographique (Thomas Huot-Marchand and Arthur Francietta)

b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

Fill in

6. References:

a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes

b. Are published examples of use (such as samples from newspapers, magazines, or other sources)

of proposed characters attached?

yes

7. Special encoding issues:

Does the proposal address other aspects of character data processing (if applicable) such as input,

presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?

yes

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database (<http://www.unicode.org/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?	<i>yes</i>
If YES explain	<i>L2/15-119, L2/15-120, and L2/15-012</i>
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?	<i>yes</i>
If YES, with whom?	<i>Scholars in Spain, Portugal, France, Germany, and UK</i>
If YES, available relevant documents:	
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	<i>yes</i>
Reference:	<i>See proposal</i>
4. The context of use for the proposed characters (type of use; common or rare)	<i>rare</i>
Reference:	<i>See proposal</i>
5. Are the proposed characters in current use by the user community?	<i>yes</i>
If YES, where? Reference:	<i>Books, articles, database, etc.</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	<i>no</i>
If YES, is a rationale provided?	
If YES, reference:	
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	<i>yes</i>
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?	
If YES, is a rationale for its inclusion provided?	<i>yes</i>
If YES, reference:	<i>See proposal</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	<i>no</i>
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?	<i>yes</i>
If YES, is a rationale for its inclusion provided?	<i>yes</i>
If YES, reference:	<i>See proposal</i>
11. Does the proposal include use of combining characters and/or use of composite sequences?	<i>no</i>

If YES, is a rationale for such use provided?	
If YES, reference:	
Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?	<i>no</i>
If YES, reference:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	<i>no</i>
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility characters?	<i>no</i>
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	