

Universal Multiple-Octet Coded Character Set
International Organization for Standardization
Organisation Internationale de Normalisation
Международная организация по стандартизации

Doc Type: Working Group Document

Title: Final proposal for encoding the Phoenician script in the UCS

Source: Michael Everson

Status: Individual Contribution

Action: For consideration by JTC1/SC2/WG2 and UTC

Date: 2004-05-29

Replaces: N1932 (1998-11-23)

This document revises and replaces N1932, which was based on the proposal written by Rick McGowan and published in UTR#3, and the proposal written by me in N1592. It contains the proposal summary.

A. Administrative

1. Title

Final proposal for encoding the Phoenician script in the UCS

2. Requester's name

Michael Everson

3. Requester type (Member body/Liaison/Individual contribution)

Individual contribution.

4. Submission date

2004-05-29

5. Requester's reference (if applicable)

N1592, N1932

6. Choose one of the following:

6a. This is a complete proposal

Yes.

6b. More information will be provided later

No.

B. Technical – General

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

Yes.

Proposed name of script

Phoenician.

1b. The proposal is for addition of character(s) to an existing block

No.

1b. Name of the existing block

2. Number of characters in proposal

27.

3. Proposed category (see section II, Character Categories)

Category C

4a. Proposed Level of Implementation (1, 2 or 3) (see clause 14, ISO/IEC 10646-1: 2000)

Level 1.

4b. Is a rationale provided for the choice?

Yes.

4c. If YES, reference

Spacing characters are proposed.

5a. Is a repertoire including character names provided?

Yes.

5b. If YES, are the names in accordance with the character naming guidelines in Annex L of ISO/IEC 10646-1: 2000?

Yes.

5c. Are the character shapes attached in a legible form suitable for review?

Yes.

6a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Michael Everson. TrueType.

6b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer.

7a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes, see bibliography below.

7b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

8. 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, see below.

9. 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/Public/UNIDATA/UnicodeCharacterDatabase.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

Yes, see Unicode properties below.

C. Technical – Justification

1. Has this proposal for addition of character(s) been submitted before? If YES, explain.

Yes. N1592, N1932

2a. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?

Yes. Phoenician is a simple and well-known historic script used in a wide variety of contexts.

2b. If YES, with whom?

- Jo Ann Hackett, who is Professor of the Practice of Biblical Hebrew and Northwest Semitic Epigraphy at Harvard. She is against using a Hebrew encoding (with a Phoenician font) and, though admitting many scholars may not use it for publication, said the new script would be useful to students and laypeople. Indeed, she says she would use it and suggests the particular glyph shape in the code chart could even become the default “standard.” She adds: “And I would argue that even with only Eshmunazor available [represented by the glyphs in the proposal’s codechart], there would be times when it would be nice to distinguish between Ph[oenicia]n and Hebrew and Aramaic.”
- Dr. Peter Haarer, Centre for the Study of Ancient Documents, Oxford University, who will be editing a book for Oxford University Press based on papers from a conference on “Alphabetic Responses to Western Semitic Writing”;
- Barry Powell, Professor of Classics, University of Wisconsin-Madison, who has written on the history of the Greek alphabet;
- Miguel Carrasquer Vidal, author (who holds a degree from Leiden University in Slavic languages and literature), who is currently writing a chapter on the transmission of the Phoenician alphabet to Greece, Anatolia, and Italy for the *International Encyclopedia of Language and Linguistics*, and who will be using Phoenician fonts for the article;
- Andrew Beck, Commissioning editor of Religion and Anthropology at Cambridge University Press, for whom the proposal could be of potential use.

2c. If YES, available relevant documents

This information was provided to me by Deborah Anderson.

3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?

Scholarly communities researching the Phoenician language; educational communities of all kinds interested in the history of the Latin, Greek, Hebrew, and other alphabets..

4a. The context of use for the proposed characters (type of use; common or rare)

Phoenician script is proposed to unify the similar writing styles (palaeographic “scripts”) known in some sources as Palaeo-Hebrew, Archaic Phoenician, Phoenician, Early Aramaic, Late Phoenician cursive, Phoenician papyrus, Siloam Hebrew, Hebrew seals, Ammonite, Moabite, and Punic.

4b. Reference

N2311.

5a. Are the proposed characters in current use by the user community?

Yes.

5b. If YES, where?

By scholars and script enthusiasts worldwide.

6a. After giving due considerations to the principles in Principles and Procedures document (a WG 2 standing document) must the proposed characters be entirely in the BMP?

No.

6b. If YES, is a rationale provided?

6c. If YES, reference

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?

Yes, they should be encoded in a single block as presented here.

8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?

No.

8b. If YES, is a rationale for its inclusion provided?

8c. If YES, reference

9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?

No.

9b. If YES, is a rationale for its inclusion provided?

9c. If YES, reference

10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?

No.

10b. If YES, is a rationale for its inclusion provided?

10c. If YES, reference

11a. Does the proposal include use of combining characters and/or use of composite sequences (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

No.

11b. If YES, is a rationale for such use provided?

11c. If YES, reference

12a. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?

No.

12b. If YES, reference

13a. Does the proposal contain characters with any special properties such as control function or similar semantics?

No.

13b. If YES, describe in detail (include attachment if necessary)

14a. Does the proposal contain any Ideographic compatibility character(s)?

No.

14b. If YES, is the equivalent corresponding unified ideographic character(s) identified?

14c. If YES, reference

D. Proposal

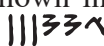
The Phoenician alphabet and its successors were widely used over a broad area surrounding the Mediterranean Sea. Phoenician evolved over the period from about the 12th century BCE with some modifications until the 2nd century BCE, with the last neo-Punic inscriptions dating from about the 3rd century CE (it is not certain as of this writing whether Neo-Punic should be unified with Phoenician or whether it attained a differentiation significant enough for consideration as a separate script). Garbini 2001 suggests that while the origins of Phoenician may have been a reform of the Proto-Sinaitic/Canaanite script, it came into its own from the 9th century BCE, when it “became a very elegant script with long, slightly slanting vertical lines, minuscule loops and flat letters.” A less elegant older form of the Phoenician alphabet is a forerunner of the Etruscan, Latin, Greek, Arabic, Hebrew, and Syriac scripts among others, many of which are still in modern use. It has also been suggested that Phoenician is the ultimate source of Kharoshthi and of the Indic scripts descending from Brahmi.

Phoenician is illustrative of the historical problem of where to draw lines in an evolutionary tree of continuously changing scripts in use over thousands of years. The twenty-two letters in the Phoenician block may be used, with appropriate font changes, to express (for instance) Palaeo-Hebrew, Archaic Phoenician, Phoenician, Early Aramaic, Late Phoenician cursive, Phoenician papyrus, Siloam Hebrew, Hebrew seals, Ammonite, Moabite, and Punic. The historical cut that has been made here considers the line from Phoenician to Punic to represent a single continuous branch of script evolution.

Processing

Phoenician is written from right to left horizontally. Phoenician language inscriptions usually have no space between words; there are sometimes dots between words in later inscriptions (*e.g.* in Moabite inscriptions). Typical fonts for the Phoenician and especially Punic have very exaggerated descenders. These descenders help distinguish the main line of Phoenician evolution toward Punic from the other (*e.g.* Hebrew) branches of the script, where the descenders instead grew shorter over time.

Numerals

Phoenician numerals are built up from four elements in combination; samples of these are shown in Figures 3, 5, 6, 7, 8 and 11. Like the letters, Phoenician numbers are written from right to left:  means 143 (100 + 20 + 20 + 1 + 1 + 1).

Names

The names used for the characters here are those reconstructed by Theodor Nöldeke in 1904, as given in Powell 1996 (see Figure 1).

Unicode Character Properties

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10900;PHOENICIAN LETTER ALF;Lo;0;R;;;;;N;;;;;
10901;PHOENICIAN LETTER BET;Lo;0;R;;;;;N;;;;;
10902;PHOENICIAN LETTER GAML;Lo;0;R;;;;;N;;;;;
10903;PHOENICIAN LETTER DELT;Lo;0;R;;;;;N;;;;;
10904;PHOENICIAN LETTER HE;Lo;0;R;;;;;N;;;;;
10905;PHOENICIAN LETTER WAU;Lo;0;R;;;;;N;;;;;
10906;PHOENICIAN LETTER ZAI;Lo;0;R;;;;;N;;;;;
10907;PHOENICIAN LETTER HET;Lo;0;R;;;;;N;;;;;
10908;PHOENICIAN LETTER TET;Lo;0;R;;;;;N;;;;;
10909;PHOENICIAN LETTER YOD;Lo;0;R;;;;;N;;;;;
1090A;PHOENICIAN LETTER KAF;Lo;0;R;;;;;N;;;;;
1090B;PHOENICIAN LETTER LAMD;Lo;0;R;;;;;N;;;;;
1090C;PHOENICIAN LETTER MEM;Lo;0;R;;;;;N;;;;;
1090D;PHOENICIAN LETTER NUN;Lo;0;R;;;;;N;;;;;
1090E;PHOENICIAN LETTER SEMK;Lo;0;R;;;;;N;;;;;
1090F;PHOENICIAN LETTER AIN;Lo;0;R;;;;;N;;;;;
10911;PHOENICIAN LETTER PE;Lo;0;R;;;;;N;;;;;
10912;PHOENICIAN LETTER SADE;Lo;0;R;;;;;N;;;;;
10913;PHOENICIAN LETTER QOF;Lo;0;R;;;;;N;;;;;
10914;PHOENICIAN LETTER ROSH;Lo;0;R;;;;;N;;;;;
10915;PHOENICIAN LETTER SHIN;Lo;0;R;;;;;N;;;;;
10916;PHOENICIAN LETTER TAU;Lo;0;R;;;;;N;;;;;
10917;PHOENICIAN NUMBER ONE;No;0;R;;;1;N;;;;;
10918;PHOENICIAN NUMBER TEN;No;0;R;;;10;N;;;;;
10919;PHOENICIAN NUMBER TWENTY;No;0;R;;;20;N;;;;;
1091A;PHOENICIAN NUMBER ONE HUNDRED;No;0;R;;;100;N;;;;;
1091F;PHOENICIAN WORD SEPARATOR;Po;0;R;;;;;N;;;;;

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Rumford, James. 2002. *There's a monster in the alphabet*. Boston: Houghton Mifflin. ISBN 0-618-22140-9

Figures

Table I *The place of early Greek letter forms in the development of Phoenician letter forms*

Phoen. names	PHOENICIAN				GREEK		PHOENICIAN			Greek names
	Shipitbaal I (Byblos) (= DR No. 7) c. 900	Cyprus Stele (= DR No. 30) c. 900-875	Nora Stone (Sardinia) (= DR No. 40) 9th cent.	Kilamuva (Zincirli) (= DR No. 24) c. 825	Dipylon jug (Athens) c. 740	Lefkandi, Pithekoussai c. 750-25	Limassol (Cyprus) (= DR No. 31) c. 750-25	Karatepe (= DR No. 26) c. 720	Ipsambul c. 590	
ʔalf	𐤀	𐤁	𐤂	𐤃	𐤄	ΑΑΑ	𐤅	𐤆	𐤇 𐤈	alpha
bēt	𐤉	𐤊	𐤋	𐤌			𐤍	𐤎	𐤏 𐤐	bēta
gaml	𐤑	𐤒	𐤓	𐤔				𐤕	𐤖	gamma
delt	𐤗	𐤘	𐤙	𐤚	𐤛	Δ	𐤜	𐤝	𐤞	delta
hē	𐤟	𐤠	𐤡	𐤢	𐤣	Ε		𐤤	𐤥	ei
wau	𐤧	𐤨		𐤩		Υ		𐤪 𐤫	𐤬	[wau]
zai	𐤭	𐤮		𐤯		Ζ	Ζ	𐤰		zēta
hēt	𐤱			𐤲 𐤳	𐤴	Θ	𐤵	𐤶 𐤷	𐤸 𐤹 𐤺	[h]ēta
iēt	𐤻						𐤼	𐤽		thēta
yōd	𐤿	𐐀	𐐁	𐐂	𐐃	Ι	𐐄	𐐅 𐐆	𐐇 𐐈	iōta
kaf	𐐉		𐐊	𐐋 𐐌		Κ	𐐍	𐐎 𐐏	𐐐	kappa
lamd	𐐑	𐐒	𐐓	𐐔	𐐕	Λ	𐐖	𐐗	𐐘	lambda
mēm	𐐙	𐐚	𐐛	𐐜	𐐝	Μ	𐐞	𐐟 𐐠 𐐡	𐐢	mū
nūn	𐐣	𐐤	𐐥	𐐦	𐐧	Ν	𐐨	𐐩	𐐪	nū
semk				𐐬			𐐭	𐐮	𐐯 𐐰	xei
ʿain	𐐱	𐐲	𐐳	𐐴	𐐵	Ο	𐐶	𐐷	𐐸	ou
pē	𐐹	𐐺	𐐻		𐐼	Π		𐐽	𐐾 𐐿	pei
šādē			𐑀	𐑁		Μ	𐑂	𐑃	𐑄 𐑅 𐑆	san
qōf	𐑇	𐑈		𐑉			𐑊	𐑋	𐑌	qoppa
rōš	𐑍	𐑎	𐑏	𐑐	𐑑	Ρ	𐑒	𐑓	𐑔	rhō
šin	𐑕	𐑖	𐑗	𐑘	𐑙	Σ	𐑚	𐑛	𐑜 𐑝	sigma
tau	𐑞	𐑟	𐑠	𐑡	𐑢	Τ	𐑣	𐑤	𐑥 𐑦	tau

All signs are drawn from right to left.
Phoenician forms are based on Friedrich-Röllig, 1970: end table.

Figure 1. Table of Phoenician and Greek letterforms from Powell 1996. The character names taken from Theodor Nöldeke's reconstruction are shown in the first column.

139 AK G1 G 1 VL3 139 AK S 1 CO 9 ~~XXXX~~ LO 7 I 13 9 K
 13 CO 9 T ~~XXXX~~ + w V 13 9 K

 1 + 5 M 3 1 K 3 x Y 3 4 F 3 I 3 V F Y 1 3 V L 3 9 1 V L 3 1 L K Y
 1 V + ~~XXXX~~ + 1 3 9 ~~XXXX~~ W 3 1 9 ~~XXXX~~ M 1 7 F + H + 1 3 I 1 3 9 K 1 G 1 2 Y 1 G 1 1 2 6
~~XXXX~~ ~~XXXX~~ 7 F M 3 7 K 3 Y 1 G 1 1 L 0 1 H 9 9 X + 1 3 Y 1 3 ~~XXXX~~ L 3 1 K F V

12. Phoenician inscription of Ahiram. From Byblos, late 11th century BC.

Figure 2. Text sample from Healey 1990.
 Note the use of the PHOENICIAN WORD SEPARATOR with a short vertical glyph.

~~XXXXXX~~ ~~XXXXXX~~ ḫs 1 / 1 ḫywy sy ʾšyḥ ʾšy ḫḫw ʾšy ḫḫw
~~XXXXXX~~ ḫyḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy
 ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy
 ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy ḫy

 ḫy ḫy . ḫy ḫy . ḫy ḫy ḫy ḫy . ḫy ḫy ḫy ḫy . ḫy ḫy
 ḫy ḫy . ḫy ḫy . ḫy ḫy ḫy ḫy . ḫy ḫy ḫy ḫy . ḫy ḫy ḫy ḫy
 ḫy ḫy ḫy ḫy . ḫy ḫy . ḫy . ḫy ḫy ḫy ḫy ḫy . ḫy ḫy

corps 18 Trois inscriptions de Larnaca

Figure 3. Sample from Imprimerie Nationale 1990:161. Note the use of digits (6 and 1 in line 1, and 2 in line 3) and of the PHOENICIAN WORD SEPARATOR with a dotted glyph in the second passage.

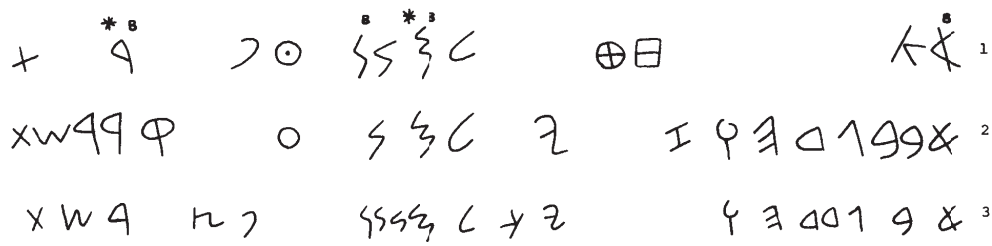


PLATE II
COLONIAL PHOENICIAN INSCRIPTIONS, BEFORE 800 B.C.

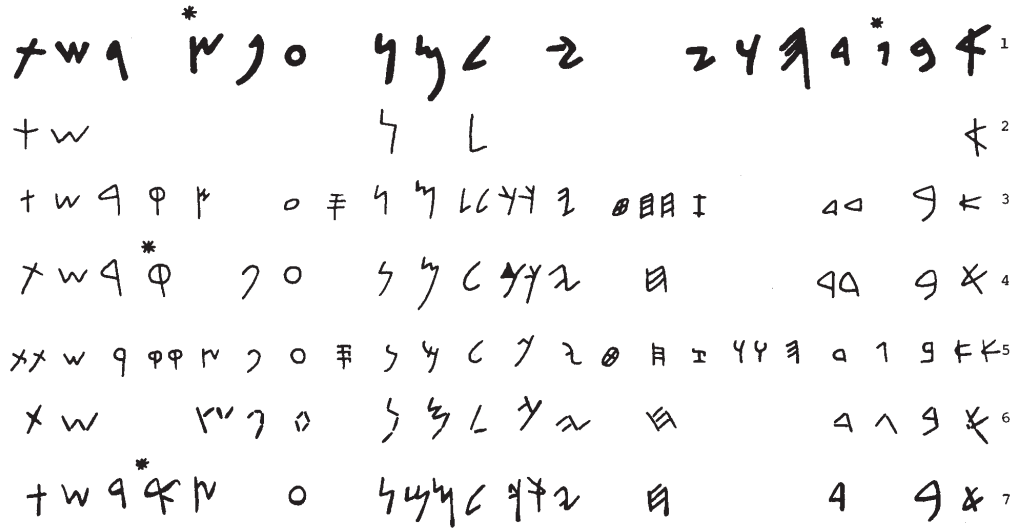
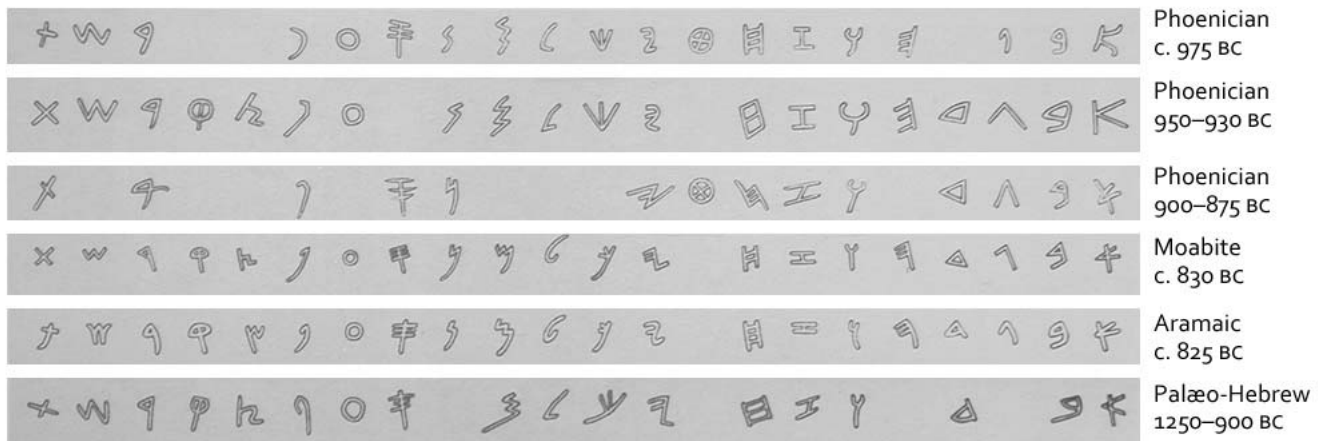


PLATE III
COLONIAL PHOENICIAN INSCRIPTIONS, EIGHTH CENTURY B.C.

Figure 4. Plates from McCarter 1975 showing different glyph variants of Phoenician script.



from Birnbaum, Solomon. *The Hebrew Scripts*. Vol.2, Palæographia, London, 1954–57. Figs. 019–1

Figure 5. Comparison of alphabets from Birnbaum 1954–57. Stylistically, all of these are similar enough to be unified under Phoenician.

Phönikische Zeichen	Phönikische Zahlen	Wert
𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆	1 \	1 1
𐤇 𐤈		2 1 + 1
𐤉 𐤊		3 1 + 1 + 1
𐤋 𐤌 𐤍 𐤎	\	4 1 + 1 + 1 + 1
𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗		5 3 + 2
𐤘 𐤙 𐤚 𐤛		6 3 + 3
𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦		7 3 + 3 + 1
𐤧 𐤨 𐤩 𐤪 𐤫 𐤬 𐤭 𐤮		8 3 + 3 + 2
𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶		9 3 + 3 + 3
𐤷 𐤸 𐤹 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿	𐤀 𐤁 -	10 10
𐤿 𐆀 𐆁 𐆂 𐆃 𐆄 𐆅 𐆆 𐆇	𐤀 -	11 10 + 1
𐆈 𐆉	𐤀 = = 𐤁 𐤂	20 20
𐆊 𐆋 𐆌 𐆍 𐆎 𐆏 𐆐 𐆑 𐆒	𐤀 𐤁 𐤂 𐤃 𐤄 𐤅	21 20 + 1
𐆓 𐆔	10 1 = 1𐤁	
𐆕 𐆖 𐆗 𐆘 𐆙 𐆚 𐆛 𐆜 𐆝 𐆞 𐆟 𐆠 𐆡 𐆢 𐆣 𐆤	𐤀 𐤁 - = - 𐤀	30 20 + 10
𐆥 𐆦 𐆧 𐆨 𐆩 𐆪 𐆫 𐆬 𐆭 𐆮 𐆯 𐆰 𐆱 𐆲 𐆳 𐆴 𐆵 𐆶 𐆷 𐆸 𐆹 𐆺 𐆻 𐆼 𐆽 𐆾 𐆿	= = 𐤀 𐤁 𐤂 𐤃	40 20 + 20
𐇀 𐇁 𐇂 𐇃 𐇄 𐇅 𐇆 𐇇 𐇈 𐇉 𐇊 𐇋 𐇌 𐇍 𐇎 𐇏 𐇐 𐇑 𐇒 𐇓 𐇔 𐇕 𐇖 𐇗 𐇘 𐇙 𐇚 𐇛 𐇜 𐇝 𐇞 𐇟 𐇠 𐇡 𐇢 𐇣 𐇤 𐇥 𐇦 𐇧 𐇨 𐇩 𐇪 𐇫 𐇬 𐇭 𐇮 𐇯 𐇰 𐇱 𐇲 𐇳 𐇴 𐇵 𐇶 𐇷 𐇸 𐇹 𐇺 𐇻 𐇼 𐇽 𐇾 𐇿	𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆 𐤇 𐤈 𐤉 𐤊 𐤋 𐤌 𐤍 𐤎 𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗 𐤘 𐤙 𐤚 𐤛 𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦 𐤧 𐤨 𐤩 𐤪 𐤫 𐤬 𐤭 𐤮 𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶 𐤷 𐤸 𐤹 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿	70 20 + 20 + 20 + 10
𐇿 𐈀 𐈁 𐈂 𐈃 𐈄 𐈅 𐈆 𐈇 𐈈 𐈉 𐈊 𐈋 𐈌 𐈍 𐈎 𐈏 𐈐 𐈑 𐈒 𐈓 𐈔 𐈕 𐈖 𐈗 𐈘 𐈙 𐈚 𐈛 𐈜 𐈝 𐈞 𐈟 𐈠 𐈡 𐈢 𐈣 𐈤 𐈥 𐈦 𐈧 𐈨 𐈩 𐈪 𐈫 𐈬 𐈭 𐈮 𐈯 𐈰 𐈱 𐈲 𐈳 𐈴 𐈵 𐈶 𐈷 𐈸 𐈹 𐈺 𐈻 𐈼 𐈽 𐈾 𐈿	𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆 𐤇 𐤈 𐤉 𐤊 𐤋 𐤌 𐤍 𐤎 𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗 𐤘 𐤙 𐤚 𐤛 𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦 𐤧 𐤨 𐤩 𐤪 𐤫 𐤬 𐤭 𐤮 𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶 𐤷 𐤸 𐤹 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿	80 20 + 20 + 20 + 20
𐈿 𐉀 𐉁 𐉂 𐉃 𐉄 𐉅 𐉆 𐉇 𐉈 𐉉 𐉊 𐉋 𐉌 𐉍 𐉎 𐉏 𐉐 𐉑 𐉒 𐉓 𐉔 𐉕 𐉖 𐉗 𐉘 𐉙 𐉚 𐉛 𐉜 𐉝 𐉞 𐉟 𐉠 𐉡 𐉢 𐉣 𐉤 𐉥 𐉦 𐉧 𐉨 𐉩 𐉪 𐉫 𐉬 𐉭 𐉮 𐉯 𐉰 𐉱 𐉲 𐉳 𐉴 𐉵 𐉶 𐉷 𐉸 𐉹 𐉺 𐉻 𐉼 𐉽 𐉾 𐉿	10 1 𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆 𐤇 𐤈 𐤉 𐤊 𐤋 𐤌 𐤍 𐤎 𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗 𐤘 𐤙 𐤚 𐤛 𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦 𐤧 𐤨 𐤩 𐤪 𐤫 𐤬 𐤭 𐤮 𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶 𐤷 𐤸 𐤹 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿	100 100
𐉿 𐊀 𐊁 𐊂 𐊃 𐊄 𐊅 𐊆 𐊇 𐊈 𐊉 𐊊 𐊋 𐊌 𐊍 𐊎 𐊏 𐊐 𐊑 𐊒 𐊓 𐊔 𐊕 𐊖 𐊗 𐊘 𐊙 𐊚 𐊛 𐊜 𐊝 𐊞 𐊟 𐊠 𐊡 𐊢 𐊣 𐊤 𐊥 𐊦 𐊧 𐊨 𐊩 𐊪 𐊫 𐊬 𐊭 𐊮 𐊯 𐊰 𐊱 𐊲 𐊳 𐊴 𐊵 𐊶 𐊷 𐊸 𐊹 𐊺 𐊻 𐊼 𐊽 𐊾 𐊿	𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆 𐤇 𐤈 𐤉 𐤊 𐤋 𐤌 𐤍 𐤎 𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗 𐤘 𐤙 𐤚 𐤛 𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦 𐤧 𐤨 𐤩 𐤪 𐤫 𐤬 𐤭 𐤮 𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶 𐤷 𐤸 𐤹 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿	200 2 + 100
𐊿 𐋀 𐋁 𐋂 𐋃 𐋄 𐋅 𐋆 𐋇 𐋈 𐋉 𐋊 𐋋 𐋌 𐋍 𐋎 𐋏 𐋐 𐋑 𐋒 𐋓 𐋔 𐋕 𐋖 𐋗 𐋘 𐋙 𐋚 𐋛 𐋜 𐋝 𐋞 𐋟 𐋠 𐋡 𐋢 𐋣 𐋤 𐋥 𐋦 𐋧 𐋨 𐋩 𐋪 𐋫 𐋬 𐋭 𐋮 𐋯 𐋰 𐋱 𐋲 𐋳 𐋴 𐋵 𐋶 𐋷 𐋸 𐋹 𐋺 𐋻 𐋼 𐋽 𐋾 𐋿	10 𐤀 𐤁	300 2 + 100

Figure 6. Sample from Faulmann 1880 showing glyph variants for Phoenician letters and numbers.

KHATRA			NABATAEA			PALMYRA			PHOENICIA		
UNITS			UNITS			UNITS			UNITS		
a > 5	 4	 1	b 5	a X or W 4	 1	a y 5	 4	 1	 5	 4	 1
> 9			W5 or W 9			y5 9			 9		
TENS			TENS			TENS			TENS		
d -	c -	b -	f -	e -	d -	c -	b -	a -	c -	b -	a -
TWENTY			TWENTY			TWENTY			TWENTY		
h 3	g 3	f 3	e 2	i 3	h 2	g 2	f 2	i 3	h 2	g 2	
l 2	k 3	j 3	k 2	j 3	i 2	l 2	k 2	j 2	l 2	k 2	

Figure 7. Sample from Ifrah 1998 showing the Phoenician numbers ONE, TEN, and TWENTY.

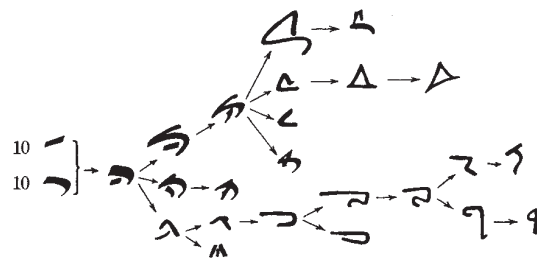


FIG. 18.6. Origin and development of the figure 100. All these signs derive from placing two variants of the sign for 10 one above the other. This multiplicative combination has a kind of additional superscript to avoid confusing it with the sign for 20, and produced widely different graphical representations of the number 100.

KHATRA			NABATAEA		PALMYRA		PHOENICIA		
k 100 × 1	j 100 × 1	i 100 × 1	91 100 × 1		100 × 1		o 100 × 1	n 100 × 1	m 100 × 1
100 × 2			9 ^m 100 × 2		100 × 2		100 × 2		100 × 2
100 × 3			9 ⁿ 100 × 3		100 × 3		100 × 3		100 × 3
100 × 4			9x ^o 100 × 4		100 × 4		100 × 4		100 × 4

FIG. 18.7. Semitic representations of the number 100. Attested examples are given in solid lines; reconstructed examples in outline. For sources, see list of references in Fig. 18.2 and 18.5.

Figure 8. Sample from Ifrah 1998 showing the Phoenician number ONE HUNDRED.

TEXTE PHÉNICIEN.

CORPUS INSCRIPTIONUM SEMITICARUM, 1, 3. AU LOUVRE.

𐤀𐤋𐤌 𐤏𐤍𐤋𐤌𐤀 | 𐤀𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀 𐤏𐤁𐤁𐤀
klm yklml 1+3+10 'bra w rs^c tnšb lb hryb
 du roi du règne quatre et dix en l'an de Bol Au mois

𐤏𐤍𐤋𐤌𐤀 𐤀𐤋𐤌 𐤏𐤍𐤋𐤌𐤀 𐤀𐤋𐤌 𐤏𐤍𐤋𐤌𐤀 𐤀𐤋𐤌 𐤏𐤍𐤋𐤌𐤀 𐤀𐤋𐤌 𐤏𐤍𐤋𐤌𐤀
mndš klm tnbt klm nb mndš klm rz'nmša
 .des Sidoniens roi Tabnit du roi fils des Sidoniens roi Ešmunazar

𐤋𐤁 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀
lb tlzgn rmal mndš klm rz'nmša klm rbd
 avant j'ai été déposé : en ces termes des Sidoniens roi Ešmunazar le roi A dit

𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀
tnb ša z rblš b w z tlh b kna bks w yt^c
 .j'ai construit que ce tombeau dans et ce sarcophage dans je repose et mon temps

𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀 𐤏𐤍𐤋𐤌𐤀
z bkšm tya htpy la mda lk w tkllmm lk ta ymnk
 .cette tombe qu'il n'ouvre pas homme tout et roi tout J'adjure

NOTICES. 5
IMPRIMERIE NATIONALE.

Figure 9. Phoenician text sample from Fossey 1948. The text is from the Sarcophagus of Eshmunazar which is now in the Louvre. Compare the coloured lines with those in Figure 11.



Figure 10. Phoenician font samples. Sidon (Michael Everson); Eshmoon (Salim G. Khalaf), Phoenician Moabite (David Myriad Rosenbaum), and Pthem (Maroun Kassab)

The Descendants of the Phoenician Alphabet

The Phoenician alphabet is the ancestor of many alphabets. Below are its most famous offspring: English in black, Greek in purple, Hebrew in orange, and Arabic in turquoise. The earliest forms of the letters are in gray and go back before the Phoenician alphabet, to Egypt itself. The link between these forms and Phoenician ones is not certain, and here and there you will see question marks. Don't worry. This just means that there is a lot more for you to discover. We borrowed our alphabet from the Romans who borrowed most of their letters from the Etruscans [ee-TRUSS-kins], who lived in Italy, too. The Etruscans got their letters from the Greeks, who, in turn, got theirs from the Phoenicians. Each time the alphabet changed hands, it was transformed. For example, the Greeks put Y at the back of the alphabet along with X. The Romans invented G and put Z at the end. And the Europeans in the Middle Ages invented J, U, and W.

ALF ox alpha aleph alif	BET house beta beth ba	GAML ? boomerang gamma gimel jim	DELT door delta daleth dal	HE ? praise epsilon he ha
 Y upsilon waw WAW ? fork	ZAI ? sword zeta zayin za	HET ? fence eta heth ha	TET not used theta teth ta	YOD hand iota yod ya
KAF palm kappa kaph kaf	LAMD ? goadstick lamda lamed lam	MEM water mu mem mim	NAHESH snake nu nun nun	SEMK ? fish ksi samekh sin
AIN eye omicron ayin ain	PE mouth pi pe fa	SADE ? fishhook not used sadhe sad	QOF ? neck phi qoph qaf	ROS head rho resh ra
SHIN ? teeth sigma shin shin	TAU mark tau taw ta	<p>With this chart you can decode the words I have written on the pages of this book with Phoenician letters. If you have trouble, here are the answers: [introduction] For Jonathan; Cadmus; [the letter C] The hunter; [the letters I and K] The water of Ares [AIR-eez] (Ares was the god of war and an ancestor of the monster); [the letters O and P] The monster of Ares; [the letter T] The names of the five men were Echion, Oudaeus, Chtonius, Hyperenor, and finally Pelorus [ee-KIGH-on, oh-DAY-us, Ktone-ee-us, high-PURR-en-or, peh-LOR-us]</p> <p>These three works helped in the writing of this book: Andrew Robinson's <i>The Story of Writing</i>, David Diringer's <i>The Alphabet</i>, and the book that first got me interested in the history of the alphabet when I was a boy, <i>The 26 Letters</i> by Oscar Ogg.</p>		

Figure 12. Sample from Rumford 2002. This delightful children's book is an example of non-scholarly yet educational use of Phoenician script in the context of the history of our alphabet. The character names Rumford uses are based on Theodor Nöldeke's reconstruction, except that he uses NAHESH 'snake' rather than NUN 'fish'.



Figure 13. A fragment of the Septuagint dated between 50 BCE and 50 CE. The fragments is part of the “Nahal Hever Minor Prophets” collection, containing fragments of Jonah, Micah, Nahum, Habakkuk, Zephaniah and Zechariah found in the Nahal Hever cave, south of Qumran. The Tetragrammaton in Phoenician script is indicated with the large black arrow; the rest of the text is Greek.

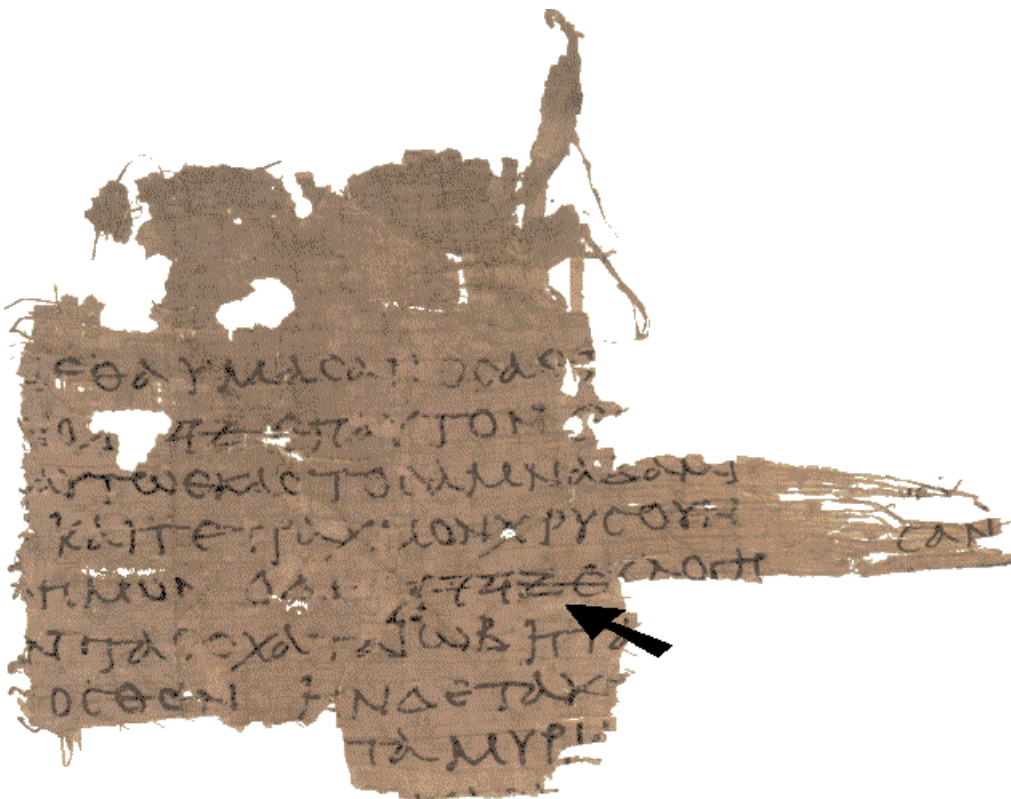


Figure 14. A fragment of Job 42, again containing the Tetragrammaton in Phoenician script alongside Greek text. Apparently no copies of the Septuagint dated before the mid-2nd century CE substitutes the Tetragrammaton with ΚΥΡΙΟΣ ‘LORD’. Sample from www.elijah.com/lxx.html

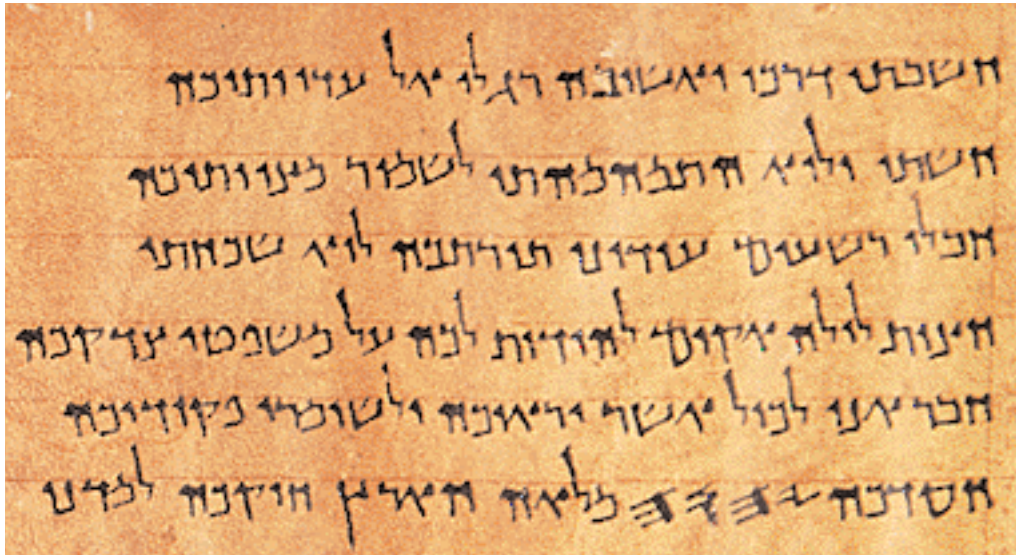


Figure 14. A text from Qumran, containing the Tetragrammaton in Phoenician script (Palaeo-Hebrew variant) alongside Hebrew text.

(PHÉNICIEN, GREC ET NÉO-PUNIQUE.)

VALEUR.	PHÉNICIEN ARCHAÏQUE.	PHÉNICIEN ANCIEN.	NOM.	GREC.	NOM.	PHÉNICIEN RÉCENT.	NÉO-PUNIQUE.
ʾ	𐤀	𐤁	alef	A	alfa	𐤀	𐤀
b	𐤂	𐤃	bet	B	bēta	𐤂	𐤂
g	𐤄	𐤅	gimel	Γ	gamma	𐤄	𐤄
d	𐤆	𐤇	dalet	Δ	delta	𐤆	𐤆
h	𐤈	𐤉	hē	E	epsilon	𐤈	𐤈
w	𐤊	𐤋	waw	Υ F	upsilon digamma	𐤊	𐤊
z	𐤌	𐤍	zāin	Z	zēta	𐤌	𐤌
ḥ	𐤎	𐤏	ḥet	H	ēta	𐤎	𐤎
ṭ	𐤐	𐤑	ṭet	Θ	tēta	𐤐	𐤐
y (i)	𐤒	𐤓	yod	I	iōta	𐤒	𐤒
k	𐤔	𐤕	kaf	K	kappa	𐤔	𐤔
l	𐤖	𐤗	lamed	Λ	lambda	𐤖	𐤖
m	𐤙	𐤚	mem	M	mu	𐤙	𐤙
n	𐤛	𐤜	nun	N	nu	𐤛	𐤛
s	𐤞	𐤟	samek	Ξ	xi	𐤞	𐤞
ʿ	𐤠	𐤡	ʿāin	O	omicron	𐤠	𐤠
p (ph)	𐤣	𐤤	pé	Π	pi	𐤣	𐤣
ṣ	𐤥	𐤦	ṣadé	Μ	san	𐤥	𐤥
ḵ	𐤨	𐤩	ḵof	Ϟ	ḵoppa	𐤨	𐤨
r	𐤫	𐤬	reš	P	rhō	𐤫	𐤫
š	𐤭	𐤮	šin	Σ	sigma	𐤭	𐤭
t	𐤯	𐤰	taw	T	tau	𐤯	𐤯

Figure 15. Table of Archaic Phoenician, Old Phoenician, Greek, Late Phoenician, and cursive Neo-Punic letterforms from Fossey 1948.

TABLE XX - Row 109: PHOENICIAN

	1090	1091
0	𐤀	𐤁
1	𐤂	𐤃
2	𐤄	𐤅
3	𐤆	𐤇
4	𐤈	𐤉
5	𐤊	𐤋
6	𐤌	𐤍
7	𐤎	𐤏
8	𐤐	𐤑
9	𐤒	𐤓
A	𐤔	
B	𐤕	
C	𐤖	
D	𐤗	
E	𐤘	
F	◦	•

G = 00
P = 01

TABLE XX - Row 109: PHOENICIAN

hex	Name	hex	Name
00	PHOENICIAN LETTER ALF		
01	PHOENICIAN LETTER BET		
02	PHOENICIAN LETTER GAML		
03	PHOENICIAN LETTER DELT		
04	PHOENICIAN LETTER HE		
05	PHOENICIAN LETTER WAU		
06	PHOENICIAN LETTER ZAI		
07	PHOENICIAN LETTER HET		
08	PHOENICIAN LETTER TET		
09	PHOENICIAN LETTER YOD		
0A	PHOENICIAN LETTER KAF		
0B	PHOENICIAN LETTER LAMD		
0C	PHOENICIAN LETTER MEM		
0D	PHOENICIAN LETTER NUN		
0E	PHOENICIAN LETTER SEMK		
0F	PHOENICIAN LETTER AIN		
10	PHOENICIAN LETTER PE		
11	PHOENICIAN LETTER SADE		
12	PHOENICIAN LETTER QOF		
13	PHOENICIAN LETTER ROSH		
14	PHOENICIAN LETTER SHIN		
15	PHOENICIAN LETTER TAU		
16	PHOENICIAN NUMERAL ONE		
17	PHOENICIAN NUMERAL TEN		
18	PHOENICIAN NUMERAL TWENTY		
19	PHOENICIAN NUMERAL ONE HUNDRED		
1A	(This position shall not be used)		
1B	(This position shall not be used)		
1C	(This position shall not be used)		
1D	(This position shall not be used)		
1E	(This position shall not be used)		
1F	PHOENICIAN WORD SEPARATOR		