

ALPHABETUM

(VERSION 5.00),

**A UNICODE FONT
FOR LINGUISTICS AND ANCIENT LANGUAGES:**

**OLD ITALIC (Etruscan, Oscan, Umbrian, Picene etc)
CLASSICAL & MEDIEVAL LATIN, ANCIENT GREEK,
HEBREW, COPTIC, SANSKRIT, GOTHIC, RUNIC,
IBERIC, CELTIBERIC AND OLD & MIDDLE ENGLISH.**

(It also includes characters for LATIN-based European languages
and CYRILLIC-based languages)



USER'S MANUAL

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PRELIMINARY ADVICE :

1. *It would be worth spending a few minutes reading the information given below.*
2. *It would be a good idea to print this document too (39 pages). Note that the print quality will be better than the on-screen display.*
3. *You have obtained a trial version of ALPHABETUM, named ALPHA-Demo, Some functions are disabled in the demo and many important characters, (around 250) e.g. “x” letter, omega, eta and alpha+subscript-iota, vowels “a” and “u”+breve, a few metrical symbols etc passim, that the full version contains, are missing in it (a crossed rectangle will appear instead of them). If you wish to acquire the full version of the font, please read chapters 27 and 28.*

1. INTRODUCTION

ALPHABETUM multilingual Unicode font for Windows and Web browsers has been designed by **Juan-José Marcos**, born in Salamanca (SPAIN) in 1963, with a degree in Classical Philology and Linguistics (PhD), University of Salamanca (1981-1986) and teacher of classical languages.

This font is the result of a personal interest dating back many years in the problems faced by classicists who need special characters to type ancient languages.

ALPHABETUM font has been specifically designed to type classical and medieval **LATIN**, ancient **GREEK**, **COPTIC**, **HEBREW**, **SANSKRIT**, **GOTHIC**, **RUNIC**, **OLD ITALIC** (Etruscan, Oscan, Umbrian, Picene, Faliscan, Messapic etc), **IBERIAN**, **CELTIBERIAN** and **OLD & MIDDLE ENGLISH**, but this font includes support for most of the Latin-based European languages (Esperanto, English, Spanish, French, German, Dutch, Italian, Polish, Romanian, Hungarian, Turkish, Danish, Norwegian, Swedish, Finnish, Icelandic, Estonian, Latvian, Lithuanian, Croatian, Slovak, Czech, Welsh, Gaelic, Catalan and Portuguese), Modern Greek, most of the Cyrillic-based languages (**Russian**, **Byelorussian**, **Bulgarian**, **Macedonian**, **Moldavian**, **Ukrainian**, **Azerbaijani/Azeri**, **Abkazh**, **Kazah** etc) and most of the Devanagari-based languages (**Hindi**, **Nepali**, **Marathi**, **Bihari** etc)

2. FONT INSTALLATION

As will be explained below, Unicode is an encoding, not a type of font. A “Unicode” font can be any of a number of types: TrueType, OpenType, Type1, PostScript etc.

For Windows and Macintosh users, the easiest fonts to use are TrueType and OpenType.

ALPHABETUM is a TrueType font (TTF) and it is intalled on your computer like any other fonts of the same type.

Steps to install a font in Windows:

1. click the Start button on the taskbar, then choose Settings and click on Control Panel.
2. once the Control Panel window is opened, double-click on the Fonts icon.
3. select the File menu, then click Install New Font. Add Fonts dialog box will appear.
4. in the dialog box Add Fonts select the drive and navigate to the folder where you saved the font file and contain the font you want to add.
5. when the name of the font with the extension .ttf you wish to install appear in the list of fonts, select (highlight) it, then click OK to add the font.
6. close the font dialog when it is finished. Start your word processor and you should see the name of the new font in the list of available fonts.

3. ENCODING SYSTEM

As mentioned above, ALPHABETUM is based on the Unicode Standard encoding system.

Unicode is a universal standard for character encoding, developed and published by the Unicode Consortium, that permits thousands of separate characters to be referenced with the same standard.

Unicode provides the most internationally recognized and standardized way to include more than 256 characters in a font. (Remember that a normal or standard font on a PC or a Mac contains only 256 characters. The first 128 - ASCII code - contain the letters, numbers and punctuation marks we see on the keyboard, plus a few others that are used internally by the computer. Characters with accent marks, non-English characters and additional symbols are found in the block 128-255.)

This possibility of including more than 256 characters in a font is clearly beneficial to those who:

- a) mix languages in their documents -- Unicode font users do not have to switch to a different font when they need to write in another script.
- b) need to use a wide variety of characters and diacritics.
- c) wish to exchange documents with other users without running into incompatible arrangements of characters.

Ancient Greek is an obvious beneficiary.

ALPHABETUM supports the characters defined in version 3.2 of the Unicode Standard and a few new Greek characters included in version 4.0 such as the capital lunate sigma, the san and so on.

For further information about Unicode standard encoding, please visit the following web pages:

- UNICODE CONSORTIUM home page. <http://www.unicode.org/>
- PATRICK ROURKE'S excellent page on Unicode Polytonic Greek on the Web.
<http://www.stoa.org/unicode/>
- ALAN WOOD'S list of Unicode resources. Its detailed information is indispensable.
<http://www.alanwood.net/unicode/>
- DAVID J. PERRY: Word processing in Classical Languages, an excellent document, full of information about Unicode and why it is useful to scholars.
<http://scholarsfonts.net/wordprcw.zip>

Other interesting links on typography:

- YANNIS HARALAMBOUS: "From Unicode to Typography, a Case Study: the Greek script":
<http://genepi.louis-jean.com/omega/boston99.pdf>

An excellent article full of information about Greek typesetting practices. It is on pdf format (3 Mb), so you will need the free Adobe Acrobat Reader program on your computer to read this document.

- ADAM TWARDOCH: Polish diacritics. How to? About Polish alphabet and its diacritics (ogonek, kreska and kropka).
<http://studweb.euv-frankfurt-o.de/twardoch/f/en/typo/ogonek>

- TRUE TYPE TYPOGRAPHY <http://www.truefont.demon.co.uk/>
- MICROSOFT TYPOGRAPHY <http://www.microsoft.com/typography/>

4. SOFTWARE REQUIREMENTS

Only a Windows version of ALPHABETUM is currently available, however this font should be usable on Macintosh running OSX. This is not a problem, since MacOSX recognizes PC Unicode fonts without complaint. (Note that you will need to restart the computer to fully install the font.)

For Unix/Linux systems: I have had reports of people using ALPHABETUM successfully under these systems, however, I have only tested myself the font under Debian. In any case, you need to configure your Xfree server to recognize and to use TrueType fonts in Unix/Linux.

You also need a word processor which supports a Unicode font.

Mac users. There isn't a great variety of Unicode-sensitive text processors on MacOSX yet.

You can use SUE, Pepper, Mellel or even TextEdit, which comes with the Mac, for rendering Unicode. At the time of writing, Word is still non Unicode compatible. See Alan Wood's site for further details.

Pc users. Recent versions of MS Word (MS Word 97, Ms Word 2000 / 2002 and MS Word XP) support Unicode (not MS Word 95 and earlier versions).

Word Perfect 10 (WP Office 2002) for Windows does not support Unicode. All recent web browsers (Internet Explorer, Netscape and Opera on Windows; OmniWeb, Chimera and Mozilla on Macintosh).

Unix/Linux users. StarOffice, OpenOffice and KWord support Unicode. However, the Unicode editor Yudit (only plain text) is the best in contemporary Unicode support under Unix/Linux system.

5. UNICODE COVERAGE IN ALPHABETUM

The current version of the Unicode standard, i.e. Unicode 4.0, defines 65,635 characters and the number of characters can be increased further in the near future.

The Unicode standard is divided up into ranges or blocks, each range supporting a script/writing system or set of diacriticals or symbols.

Naturally, the ALPHABETUM font does not contain all Unicode characters, it was never the intention of the Unicode Consortium to suggest that all fonts come with all characters.

ALPHABETUM currently contains over 2,433 glyphs.

Among others, ALPHABETUM includes most characters of importance to classicists.

The following ranges of Unicode are included in ALPHABETUM (complete coverage unless otherwise noted) :

- Basic Latin
- Latin-1 Supplement
- Latin Extended A
- Latin Extended B (not all, it includes characters needed for major European languages.)
- Latin Extended Additional (selected characters)
- Devanagari
- Runic
- Iberic
- Greek & Coptic
- Greek Extended
- IPA extensions
- Old Italic
- Gothic
- Hebrew
- Cyrillic
- Alphabetic Presentation forms (only a few lacking characters)
- Spacing Modifier letters
- General punctuation (selected characters)
- Combining Diacritical Marks (60 selected characters)
- Superscripts and Subscripts (selected characters)
- Letterlike Symbols (selected characters)
- Number forms (selected characters)
- Arrows (selected characters)
- Miscellaneous Symbols (selected characters. Among them full set of planetary and zodiacal symbols)
- Mathematical Operators (selected characters)
- Geometric Shapes (selected characters)
- Miscellaneous Technical (selected characters)
- CJK Symbols and Punctuation (selected characters used in academic publishing)
- Private Use Area (additional characters for GREEK – letters with underdot, epsilon with circumflex, capital upsilon+smooth, signs for poetry schemes etc, LATIN – epigraphy, signs for poetry schemes, medieval abbreviations, vowels with brevia or macra and stress mark, vowels with underdot etc, OLD & MIDDLE English – “Saxon” typeface variants, vowels with brevia and macra in combination with stress mark, signs for metrics . . . , SANSKRIT – half letters.
- Many additional characters from different areas of Unicode.

6. THE ISSUE OF PRECOMPOSED CHARACTERS AND COMBINING DIACRITICALS.

- NORMALIZATION FORM C vs NORMALIZATION FORM D -

A text (in Ancient Greek for instance) in Unicode can be typed using either precomposed characters (Normalization Form C), in which all the diacritics occur as part of the same glyph as the character they modify, or using combining diacriticals (Normalization Form D), in which the diacritical combinations are on a separate glyph from the character they modify and are displayed in the same space as the character they modify.

For example, Greek small letter alpha with smooth (lenis) breathing and (oxia) acute is the precomposed character U-1F04, but the combined characters U-0313 + U-0301 + U-03B1.

The two Unicode strings are by definition entirely equivalent. However if you use the combining diacriticals, by default the multiple diacritics of polytonic Greek stack on top of each other, whereas an acute or grave appears next to the breathing mark, so it is safer for now to use the precomposed characters, where available, rather than combining diacritics, to guarantee optimal display.

In fact, the World Wide Web Consortium recommends the use of Normalization Form C for World Wide Web documents. Normalization D is what should be used if you ever want to process the text, the conversion between the two is automatic, as long as the proper conventions are followed.

However, note that a number of useful precomposed combinations are not yet included in Unicode and there is very little chance of their being added. The decision of not allowing many additional precomposed combinations after Version 3.0 of Unicode was made because of the increasing reliance on Unicode by web applications and other software that change decomposed into precomposed forms in order to display text properly; such applications will have to be constantly updated if additional precomposed combinations continue to be added.

Nevertheless, proposals for additional characters to the standard block can be submitted to the Unicode Consortium and while waiting for them to be approved, these additional precomposed characters can be located in Private Use Area, a special block of Unicode. See the following chapter.

If you try to use the combining diacritics in a Unicode font (whatever TTF font you use), you will find that the diacritics usually do not line up properly over or under the base character.

You must adjust them manually if your software supports this action. In the future the combining diacriticals may well become more useful when OpenType fonts become widely supported.

Nevertheless, ALPHABETUM works with both precomposed characters and combining diacriticals.

Despite the difficulty of using the combining diacriticals, I have included a selection of them in ALPHABETUM (60 selected combining diacriticals needed to type I.P.A., Ancient Greek, Latin and major European languages) for various reasons:

- a)- they are currently being experimented on.
- b)- Perseus Project employs them for its display option.
- c)- the diacritical combining is, for the moment, the only way to put many diacritics used in phonetic transcriptions. The same is applicable to letters with underdot in Greek. However, you can find the underdot precomposed Greek characters which have not been defined by Unicode yet in the ALPHABETUM Private Use Area.

7. PRIVATE USE AREA (PUA)

▪ A PROBLEM: THE MISSING CHARACTERS

As mentioned above, Unicode provides precomposed characters for most characters of interest to classicists, however, a number of useful precomposed combinations are not included.

The most important missing characters are: Greek letters with underdot, capital Upsilon with smooth breathing, epsilon with circumflex accent, uppercase omega with circumflex accent, a few Latin letters with underdot, symbol for sestertius and denarius, Roman numerals with lines above, vowels and diphthongs with macron or breve in combination with stress mark, signs for metrics, medieval Latin abbreviations etc.

▪ THE SOLUTION: PRIVATE USE AREA (PUA)

If there are no codepoints already assigned to these characters in Unicode Standard, the font designers can place them in a block of Unicode called Private Use Area (PUA)

Unicode reserves this block for characters which will never have codepoints assigned to them by the Unicode Standard.

Therefore, this area is available to users for their own needs.

▪ THE WEAK POINT: INCOMPATIBILITY

There is only one disadvantage to PUA: incompatibility. As far as I know, unfortunately there are no two Unicode fonts that agree in their Private Use Area.

It is of the utmost importance that font designers come to a consensus about how to utilize the PUA.

Failure to do so will result in many unnecessary incompatibilities to the easy exchange of information.

One has only to look at the large number of Greek fonts with many different and incompatible encoding systems (SGreek, GreekKeys, WinGreek, LaserGreek, SPionic, BetaCode etc) to see why this is not a desirable situation.

For this reason, I have coordinated ALPHABETUM private codepoints (where available, as far as possible) with TITUS Cyberbit Basic (U+EA00-U+EB9B / U+ E900-U+E9FF) and with JUNICODE (U+F109 - U+F191) – two excellent, widely available, Unicode fonts –, so it will be easy to convert one into the other by using your word-processor's Search and Replace function.

This means that if you receive a text written in TITUS or JUNICODE, you could change the font to ALPHABETUM and the text would, in essence, be the same.

Note that if you get crossed rectangles for any characters, it is because they are not present in ALPHABETUM.

ALPHABETUM Unicode font does have all the above mentioned characters, plus many others in its PUA.

ALPHABETUM also contains exclusive characters (metrical symbols, Old Italic variants, Iberic etc) positioned in a subrange of PUA (U+F200 – U+F249, U+F300 – U+F750 and U+F800 – U+F850).

These unique characters are not present in Titus or Junicode.

8. CLASSICAL LATIN

□ INTRODUCTION

Printing a text in Classical Latin requires no special characters; a standard font has sufficient resources; however beginner's textbooks require, at a minimum, vowels with macrons, breves and stress marks (sometimes in combination with a breve or macron).

These same signs are also used for metrics and others as the sign for elision, synizesis etc, (see below).

Medieval Latin and Epigraphical texts need specialized characters: ligatures, abbreviations etc.

ALPHABETUM provides the most common metrical signs and a small selection of epigraphical and medieval characters.

All these are discussed separately in the following chapters.

Finally, modern editors place dots under letters to indicate doubtful readings and employ a lot of signs such as angle brackets, daggers to mark corrupt passages, etc.

Most characters mentioned above (except the dagger) are not found in standard fonts. Unicode provides precomposed forms for most characters (but not quite all), the main difficulty with Unicode, as far as Latinists are concerned, is that a number of useful precomposed combinations are not included, the most important are: Y / y plus breve, C/c. F/f, G/g, J/j, Q/q, X/x with underdot and vowels with macra or brevia plus stress.

ALPHABETUM includes all of them, many in Private Use Area.

□ VOWELS WITH MACRONS AND BREVES. VOWELS WITH STRESS

ALPHABETUM contains all vowels (uppercase and lowercase) with breve (Y/y, V/v in Private Use Area), all vowels with macron (V/v in Private Use Area), all vowels with breve in combination with stress mark and all vowels with macron in combination with stress mark (in Private Use Area).

Unicode includes only two instances of the combination of macron plus acute accent (E/e and O/o) and only one of acute plus breve (A/a).

I have included all these combinations because Latin teachers need them and they are not present in Unicode Standard 3.2

SAMPLES :

Ā Ē Ī Ō Ū Ṽ Ȳ Æ Ć ĀŪ	ā ē ī ō ū ṽ ȳ æ ċ āū ēū ūī
Ă Ĕ Ĭ Ǫ Ǫ̇ Ṽ Ȳ Æ Ć	ă ę ĭ ǫ ǫ̇ ṽ ȳ æ ċ
Á É Í Ó Ú V́ Ý Æ Ć	á é í ó ú v́ ý æ ċ áú éí éú úí
Ǻ Ǽ Ĭ Ǫ̇ Ū̇ Ṽ Ȳ Æ Ć	Ǻ Ǽ ĭ ǫ̇ ū̇ ṽ ȳ æ ċ áú
Ǻ̇ Ǽ̇ Ĭ̇ Ǫ̇̇ Ū̇̇ Ṽ̇ Ȳ̇	Ǻ̇ Ǽ̇ ĭ̇ ǫ̇̇ ū̇̇ ṽ̇ ȳ̇
Ă Ĕ Ĭ Ǫ Ǫ̇ Ṽ Æ Ć	ă ę ĭ ǫ ǫ̇ ṽ ȳ æ ċ
Ǻ̇ Ǽ̇ Ĭ̇ Ǫ̇̇ Ū̇̇	Ǻ̇ Ǽ̇ ĭ̇ ǫ̇̇ ū̇̇

áurum cúique ténes amórem princípium obcédiens César

In divisiōne orbis terra plerīque in parte tertia Afrīcam posuēre, pauci tantummodo Asiam et Eurōpam esse, sed Africam in Eurōpa. Ea finis habet a occidente fretum nostri maris et Oceāni ab ortu solis declīvem latitudīnem, quem locum Catabathmon incolae appellant.

□ TYPING WITH MACRONS AND BREVES

The David J. Perry Latin keyboard for Unicode designed specifically for the needs of classicists makes it easy to enter the vowels with macrons and breves, ligatures Æ æ Ć œ, letters with overdot and underdot, Tironian “and”, versicle & response signs, and many others used in classical Latin.

You can download this keyboard from: <http://scholarsfonts.net/kbdonly.exe>

You must have Tavultesoft Keyman 5.0 or higher installed in your computer to use the Latin keyboard.

This program is free available from: <http://www.tavultesoft.com/keyman/>

□ EPIGRAPHY

Epigraphical texts needs specialized characters that are not found in conventional fonts, the most common characters are the I-longa, the turned F, the open O, Roman numerals with lines over them, the apex, the interpunct - a dot to separate words -, abbreviations and various ligatures.

ALPHABETUM contains those characters (several in Private Use Area) and a large string of others needed for transcribing Latin inscriptions such as parentheses for filled-out abbreviations, the underdot for the uncertain characters, the angle brackets for letters accidentally omitted, double brackets for letters deliberately erased, inter alia.

SAMPLES :

- INSCRIPTION

H|C•SITA•EST•MONTEIA•SATURNINA•QUAE•V|XIT•ANN•XXVI

- NASAL VOWELS

ã ë ï õ ù
cēsor cōsul virū

- ROMAN NUMERALS WITH LINES

Ī V X L C D M denarius X sestertius HS

□ MEDIEVAL LATIN

Medieval Latin texts require specialized characters such as ligatures, abbreviations (a large number of them are found in medieval texts) and others: Æ æ Œ œ Eꝛ eꝛ Ó ó ʒ ʃ c̄ m̄ n̄ q̄ k̄ P̄ p̄ P̄ p̄ 9 3 2 ' ÷ (many in PUA).

There are also symbols used in liturgical texts such as the versicle and response signs: W R

I have coordinated the Private Use Area codepoints (PUA) with JUNICODE font. Therefore there is full compatibility between both fonts.

SAMPLES:

Solenti nempe auctoref numerorū ita ei⁹ celsitudinem dignitatē ecclē filiif demonstrare. Qui numer⁹ ut Aureliuf Auguftinuf ait p̄pterea p̄fectuf dicitur qua partz fuiif cōplet.

Transcription in classical Latin : (Solenti nempe auctores numerorum ita eius celsitudinem dignitatem ecclesiae filiis demonstrare. Qui numerus ut Aurelius Augustinus ait propterea praefectus dicitur qua partibus suis complet.)

□ METRICS

Additional characters are needed when dealing with metrics.

The most important signs needed for metrics are the macron and breve (for more information, see above the chapter titled *Vowels with macrons and breves*), the sign for anceps, the sign for caesura (indicated by a double line), the sign for synizesis (indicated with a tie) and the sign for elision (indicated with an undertie).

These symbols suffice for printing texts aimed at intermediate students as well as for classical Latin, since Latin metrics are somewhat less complex than Greek.

The advanced study of Greek metrics requires a large number of special symbols.

In Anglo-Saxon poetry, which is likewise organized around stressed and unstressed syllables, stressed syllables are indicated by an acute and unstressed syllables by the anceps sign.

It should also be mentioned that, at a very advanced level, not all scholars use symbols in the same way, which complicates the issue further.

Πηληϊάδεω θεοί antehac deinde desse conticuere omnes intentique ora tenebant

There are two ways to do the scansion of poetry verses with a word-processor:

a) By typing all the scansion marks on a separate line above the line of text

έξ οὔ δῆ τὰ πρῶτα διαστήτην ἐρίσαντε (*Homer. Iliad I.6*)
_ _ /_ _ _ || _ /_ _ /_ _ /_ _
Donec eris felix, multos numerabis amicos

b) By typing the vowels with macrons or breves directly.

tēmpōrā / sī fūērīnt || nūbīlā / sōlūs ěřis (*Ovid. Tristium Liber I, IX v.5-6*)

The first method allows the caesura to be indicated more easily and it also allows to type the marking of vowels that are long by nature, if desired, in addition to the metrically long and short syllable.

If you are using the first method, you will also need to adjust the spacing between metrical characters so that they will line up as far as they can over the vowels below to get the metrical characters well lined up.

Fully conscious of this difficulty and in order to facilitate a fine appearance of the scansion, I have included in ALPHABETUM a few space characters with different advance widths such as figure space, thin space, hair space etc. See below the chapter titled *Using metrical signs*.

The second method provides a better appearance if the metrical citation is located within a regular run of text. Both methods, however, are in use in scholarly texts.

Such metrical characters are hard to find in computer fonts and no standard exists for their placement and use. To my knowledge, only *Anaxiphorminx* and *Junicode* fonts contain symbols for metrics.

ALPHABETUM provides (in Private Use Area) all the above signs quoted in two strings, the first one with metrical symbols positioned below the baseline to facilitate the scansion according to mentioned method “a”, and the second one includes the same metrical symbols positioned above the baseline, because the metrical signs are also sometimes printed separately, without accompanying text, for example in explanations of metrical schemes.

Note that ALPHABETUM also contains duplicates of a few metrical symbols (U+F164 - U+F16C), this is only for compatibility with Junicode. Please do not use them in the regular scansion of verses.

▪ **METRICAL SIGNS AND MARKS FOR ICTUS INCLUDED IN ALPHABETUM**

|| // caesura | / colon division mark \frown \smile tie \underbar undertie - long \cup short \times anceps

$\underline{\cup}$ \cup $\underline{\underline{\cup}}$ $\underline{\cup}$ $\underline{\cup}$ long-short \times \times anceps stress \cup \cup $\underline{\cup}$ $\underline{\cup}$ $\underline{\underline{\cup}}$ $\underline{\underline{\cup}}$ long and short ictus

$\cup\cup$ two shorts joined \otimes poem end indicator — — triseme — tetraseme — pentaseme

EXAMPLES:

$\underline{\cup}$ \cup / $\underline{\cup}$ — / $\underline{\cup}$ // $\cup\cup$ / $\underline{\cup}$ \cup / $\underline{\underline{\cup}}$ Sapphic verse

— $\underline{\underline{\cup}}$ | — $\underline{\underline{\cup}}$ | — || $\underline{\underline{\cup}}$ | — $\underline{\underline{\cup}}$ | — $\cup\cup$ | — \times Hexameter

— $\underline{\underline{\cup}}$ | — $\underline{\underline{\cup}}$ | — || — $\cup\cup$ | — $\cup\cup$ | \times Pentameter

▪ **USING METRICAL SIGNS**

ALPHABETUM is a specialized font in classical metrics because it contains around 25 different metrical signs. Nevertheless, these metrical symbols cannot be accessed directly from the keyboard.

Naturally you can use the Symbol/Insert command to enter characters, however this is a hard, tedious and laborious task. This is fine for rarely used characters but too slow for things you use all the time.

Therefore fully conscious of this difficulty and in order to facilitate the insertion of metrical signs, I have created a template (Metrics.dot) to use under Word which provides an easy and suitable way to access directly to metrical signs by using shortcut keys.

ALPHABETUM also provides many space characters that allows you to control exactly how metrical signs are placed over the vowels below to get metrical characters well lined up.

You may be able to get the results you want by using the space characters.

For this reason I have also included in Metrics.dot template shortcut keys for the most useful space characters such as *six-per-em-space* (341 points of advance width) and *hair space* (205 points of advance width).

Note that the normal advance width when you press the space bar is 550 points in ALPHABETUM font.

Registered users interested in metrics can acquire this template of Word on request, free of any additional charge.

I also supply them with a document on pdf format with information on how to install Metrics.dot and the list of keystroke combinations (shortcut keys) required to get metrical characters on your PC.

Registered users can modify the template according to their tastes or even add more shortcut keys if desired.

9. ANCIENT (POLYTONIC) GREEK

➤ INTRODUCTION

If you are new to the world of Greek fonts, you may find it helpful to read the following chapters, to get some idea of how and why they differ. Anyone starting to study Greek with the help of a computer is first of all confronted with the technical problem of the Greek fonts.

➤ TYPING IN GREEK: THE BASICS

You will need...

- A Greek font. Without one of these fonts you will not be able to see any Greek on your computer
- A keyboard utility. Most (but not all) Greek fonts for the PC need some kind of program to facilitate the addition of accents and breathings, or in some cases to get any Greek on the screen at all.

➤ ENCODING SYSTEMS

There are a lot of encoding systems to type in Ancient Greek: WinGreek, GreekKeys, SGreek, SILGreek, Mounce/TekniaGreek, BetaCode, Unicode etc.

The WinGreek and the SGreek Greek fonts, for example, belong to different encoding systems - this is another way of saying that the characters in each font are ordered differently. For example:

= with the WinGreek Grammata font, pressing the letter 'c' on the keyboard makes the Greek letter 'chi' appear on the screen.

= with the SGreek font, pressing 'c' on the keyboard gives the Greek letter 'xi'.

This means that if you were given a text written in the WinGreek Milan font (based on the WinGreek encoding system), you could change the font to Grammata, Greek Old Face, Greek, Korinthus, Angaros, Grecs du Roi or any other font based on the WinGreek encoding system, and the text would in essence be the same - it would just look slightly different.

However, if you were to change the font to SGreek, which is based on a different encoding system, the text would become a meaningless gibberish.

This has two important consequences:

1. Most utilities to type Greek are designed for a particular encoding system: thus *Son of WinGreek* works with fonts based on the WinGreek system, but no others. The same goes for *Antioch*, that works with fonts based on Unicode system, but no others. So your choice of font limits your choice of utility, and vice versa.
2. The issue of encoding systems comes most clearly to the fore when exchanging documents containing Greek text with colleagues: if you both have the same font on your computers, then obviously there are no problems. If you are both using fonts based on the same encoding system (for example, one uses Grammata and the other Greek Old Face), then it is easy to convert one to the other by using your word-processor's Search and Replace function. However, if you are using fonts based on different encoding systems (such as Grammata and SGreek), there is no easy way to convert one to the other and the Greek text will be unintelligible.

The arrival of Unicode fonts should help in time to bring some order to the current chaotic situation.

➤ KEYBOARD UTILITIES WITH UNICODE SUPPORT

There is no an easy way to access directly to Greek characters in a Unicode font. Unlike normal fonts, which contain about 256 characters, Unicode fonts can contain thousands of characters - potentially a character set for each one of the world's languages. This means that they operate slightly differently to normal fonts: for example, the Unicode Greek fonts tend to contain a Roman font as well as a Greek font, and indeed, the Greek cannot be accessed directly from the keyboard at all. Pressing 'c' on the keyboard will produce a 'c' on the screen, so some kind of utility (or laborious use of the Insert / Symbol command) is required to produce a Greek letter of any kind.

Windows 98 and Windows Me do not provide Unicode support to type polytonic Greek in Word.

If you have Windows 2000 or Windows XP, you can use the polytonic Greek keyboard that comes on the Windows CD to type your Greek in Word, Notepad, Outlook Express and several other applications as well.

Nevertheless, in my opinion, this keyboard is sometimes very little intuitive, therefore I guess some users may not want to use it. There are vey good alternatives available, however.

At the time of this writing, the most important utilities for inputting polytonic Greek are the following:

WINDOWS:

- RALPH HANCOCK'S **Antioch**. An excellent program (keyboard and also format convertor US \$50).
<http://www.users.dircon.co.uk/~hancock/antioch.htm>
- STEFAN HAGEL'S **Multikey** (keyboard and also format convertor. Free).
<http://www.oeaw.ac.at/kal/multikey/>
- (MATZENTA) or MAGENTA SOFTWARE **Accentuator** (Polytonistis) for Unicode. US \$85).
<http://www.magenta.gr/>
- MANUEL A. LOPEZ'S **Classical Greek Unicode keyboard**. Another free utility.
<http://members.aol.com/~AtticGreek/>
- DAVID J. PERRY'S **Greek Polytonic Unicode keyboard**. Another free utility.
<http://scholarsfonts.net/kbdsonly.exe>

These last both keyboard utilities use **Tavultesoft Keyman** controller, version 5.0 or newest.

<http://www.tavultesoft.com/keyman/>

MAC:

- DONALD MASTRONARDE'S **GreekKeys Unicode keyboard** for MacOSX.
It has the support of the American Philological Association:
<http://socrates.berkeley.edu/~pinax/unicodeMac.html>
 - NICK NICHOLAS' **GkUnicode Keyboard** for MacOSX. Free. It constitutes a variant of the GreekKeys keyboard, with all the Unicode 3.2 Greek characters accessible.
<http://www.opoudjis.net/Play/GkUnicode.html>
 - LUCIUS HARTMANN **Alkaios keyboard**. for MacOSX. Free.
<http://www.unizh.ch/~luciush/docs/alkaios.zip>
-

LINUX:

- SYGGRAFEUS. Application of binaries. Free.(GNU license)
http://www.prometheas.com/projects/_syggrafeus/download.html
- XWINGGREEK. Currently supports 3 popular encodings for polytonic Greek: Unicode, WinGreek and WinLanguage (= Unitype or ParatypePG). Free.(GNU license)
<http://www.geocities.com/autokratoria/download.html>

➤ UNICODE GREEK FONTS

Links to fonts that are available for Unicode Ancient Greek:

⇒ **LUCIUS HARTMANN**. *Altgriechische Zeichensätze*. (in German). *Ancient Greek character set*, with wide information about the different Greek encoding systems. It also provides visual samples of many Greek fonts and includes the possibility of downloading these.

<http://www.unizh.ch/~luciush/greek.html>

⇒ Dr **HOWARD BERLIN**. Greek Typefaces: (It includes a download area)

<http://user.dtcc.edu/~berlin/font/greek.htm>

⇒ **MATTHEW ROBINSON**. Greek fonts and utilities: (It includes a download area)

<http://users.ox.ac.uk/~ball0087/download/frameFonts.html>

⇒ **TLG (Thesaurus Linguae Graecae)** web page provides a list of fonts that support polytonic Greek: (Only links, no download area)

<http://www.tlg.uci.edu/~tlg/help/UnicodeTest.html>

⇒ **ALAN WOOD**. List of Unicode resources: (Only Links and information on the features of the fonts)

<http://www.alanwood.net/unicode/fonts.html>

⇒ **PETER GAINSFORD**. Font Archive. Classical Greek fonts: (Only Links and information on the features of the fonts)

<http://gainsford.tripod.com/archive.htm>

⇒ **P. ROURKE**. Unicode Polytonic Greek: (Only links and information about the features of the fonts)

<http://stoa.org/unicode/fonts/>

⇒ **DENIS LIÉGOIS**. Listing of polytonic Greek Unicode fonts (in French): (Only links)

<http://club.euronet.be/frederique.bouras/polices.htm>

Note that all links (URL) quoted above were valid as of May 2003.

➤ ALPHABETUM GREEK FONT

The ALPHABETUM'S Greek design is mainly based on the typeface of the Goeschen editions, published in Leipzig. (Note that the original typeface is in italics, though.)

This design is representative of the German Greek typefaces used in the late 18th and early 19th century.

ALPHABETUM contains all regular polytonic precomposed characters of ancient Greek, archaic letters: Ϝ ϝ ϗ ϛ ϣ and alternative forms for a few letters: β̄ β̅ κ̄ κ̅ φ̄ φ̅ ρ̄ ρ̅ Ῡ Υ̅ Θ̄ Θ̅, lunate sigma Ϙ ϙ, lunate epsilon ε̄, san Μ̄ μ̄, “and” ligature Ϟ ϟ, capital upsilon with smooth breathing Ὑ for poetry in the Aeolic dialect (in PUA), precomposed underdot combinations α̣ β̣ δ̣ ε̣ η̣ θ̣ Δ̣ Ε̣ Ζ̣ Η̣ Π̣ etc (in PUA), epsilon with circumflex accent ε̄̄ and uppercase omega with circumflex accent Ω̄̄ (in PUA) needed when transcribing inscriptions but not found in classical literary texts etc.

SAMPLES :

The following Greek text has been typed using *precomposed characters* with ALPHABETUM :

Μῆνιν ἄειδε θεὰ Πηληϊάδεω Ἀχιλῆος (1)
οὐλομένην, ἣ μυρὶ Ἄχαιοῖς ἄλγε' ἔθηκε,
πολλὰς δ' ἰφθίμους ψυχὰς Ἄϊδι προΐαψεν
ἠρώων, αὐτοὺς δὲ ἐλώρια τεῦχε κύνεσσιν
οἰωνοῖσί τε πᾶσι, Διὸς δ' ἐτελείετο βουλή, (5)
ἔξ οὗ δὴ τὰ πρῶτα διαστήτην ἐρίσαντε
Ἄτρεΐδης τε ἄναξ ἀνδρῶν καὶ δῖος Ἀχιλλεύς.
Τίς τάρ σφωε θεῶν ἕριδι ξυνέηκε μάχεσθαι;
Λητοῦς καὶ Διὸς υἱός· ὃ γὰρ βασιλῆϊ χολωθεῖς

- **Homer** *Iliad* 1-9

The following Greek text has been typed using *diacritical combining* with ALPHABETUM:

Θουκυδίδης Ἀθηναῖος ξυνέγραψε τὸν πόλεμον τῶν Πελοποννησίων καὶ Ἀθηναίων,
ὡς ἐπολέμησαν πρὸς ἀλλήλους, ἀρξάμενος εὐθύς καθισταμένου καὶ ἐλπίσας μέγαν
τε ἔσεσθαι καὶ ἀξιολογώτατον τῶν προγεγενημένων, τεκμαιρόμενος ὅτι ἀκμάζοντές
τε ἦσαν ἐς αὐτὸν ἀμφοτέρω παρασκευῇ τῇ πάσῃ . . .

- **Thucydides** *Peloponesian War*.

➤ COPTIC

The Copts (Egyptian Christians) adopted the Greek alphabet and added several characters to represent sounds that did not occur in Greek. The Coptic alphabet is the Greek alphabet with a few additions:

Ϡ ϡ Ϣ ϣ Ϥ ϥ Ϧ ϧ Ϩ ϩ Ϫ ϫ Ϭ ϭ Ϯ ϯ

10. OLD & MIDDLE ENGLISH

Writing Old and Middle English have some special needs that are not in standard fonts.

Only a few letters such as *eth*, *thorn*, *yogh* and *wynn* are part of the standard character set.

Old and Middle English need special characters such as *thaet*, vowels with macrons, breves, signs for metrics and other ones.

Unicode provides many characters, but not all.

ALPHABETUM contains most of them. In Private Use Area I have included the characters that are not found in Unicode 4.0

ALPHABETUM also includes “Saxon” typeface variants (in PUA).

I have coordinated private codepoints (PUA) with JUNICODE font. Therefore there is full compatibility between both fonts.

- **SAMPLES:**

LETTERS: Thorn, wynn, yogh, eth, etc. Þ þ ƿ ƿ 3 3 Ð ð í, abbreviations “thaet” þ̅, “and” ȝ, vowels with breves, macrons and stress ă, ū, ǣ . . . (many in Private Use Area).

ALPHABETUM also includes “Saxon” typeface: A L E G h M S ð f ɣ n r τ (in Private Use Area).

Text with “Saxon” typeface:

ƿe æthrynon mid urum arun þa yðan þær deopan ƿæliȝ; ƿe gefaron eac þa muntaȝ ymbe þære fealtan fæ ftranðe, and ƿe mid aðenedum hrægle and geƿundfullum ƿindum þær geƿicedon on þam gemærum þære fægeƿerstan þeode. Þa yðan getacniað þiȝne deopan cræft, and . . .

The same text with modern letter-forms:

Wē æthrynon mid ūrum ārun þā yðan þæs dēopan wālis; wē gesāwon ēac þā muntas ymbe þære sealtan sǣ strande, and wē mid āðenedum hrægle and gesundfullum windum þær gewīcedon on þām gemærum þære fægerestan þeode. Þa yðan getacniað þisne deopan cræft, and . . .

Ðām eafera wæs æfter cenned
geong in gearðum, þone god sende
folce tō frōfre. fyrenðearfe ongeat
þæt hīe ær drugon aldorlēase
lange hwīle.

– *Beowulf*. Prologue 12-16 a

- **TYPING OLD & MIDDLE ENGLISH:**

I have created a template (OldEngl.dot) to use under Word which provides an easy and convenient way to access directly to Old English characters (including Saxon typefaces variants) present in ALPHABETUM by using shortcut keys. Registered users interested in Old English script can acquire this template of Word on request, free of any additional charge.

I also supply them with a document on pdf format with information on how to install OldEngl.dot and the list of keystroke combinations (shortcut keys) required to get Old English characters on your PC. Registered users can modify the template or even add more shortcut keys if desired.

14. ESPERANTO

Up until now, the most important standard for Esperantists has been ISO 8859-3 (Latin 3), because the accented letters for Esperanto are in this standard, therefore Esperantists often use Latin 3 in their documents and homepages.

This is a problem for Russian, Greek and Hebrew Esperantists (among others) who want to create homepages, because these languages and Esperanto cannot be represented in the same document using the standard Latin 3.

The solution to these problems is Unicode which defines codes for all major languages.

A keyboard utility that allows to type Esperanto in Unicode is available from **Gyula Zsigri** site at <http://zsigri.tripod.com/fontboard/espero.html>

It is very easy to use, simply type an "x" after "cghjsu" letters to accent them.

(Note that you also need the free *Tavultesoft Keyman controller* version 5.0 or later)

ALPHABETUM allows users to type Esperanto in Unicode because this font contains the 12 special letters of its alphabet:

ĉ Ĉ ĝ Ĝ ĥ Ĥ ĵ Ĵ ŝŜ ŭ Ŭ

SAMPLES:

Se vi havas TTT-ejon kun multaj paĝoj en Esperanto, vi konas la problemon. La supersignajn Esperantajn literojn oni povas prezenti en pluraj malsamaj manieroj: laŭ Unikodo, laŭ Latino 3, laŭ la Fundamenta H-sistemo, laŭ la X-sistemo k.t.p. Ne ĉiuj legantoj povas vidi ĝustajn Esperantajn literojn laŭ Unikodo aŭ Latino 3, kaj ĉiu havas sian preferon pri plej bona surogata sistemo.

La ĝardeno de la imeroj (1909)

Leviĝas preĝo el izol-ĝardeno.
Forflugas paŝoeoj ĉe la padoj,
kaj l' arbo-ombroj laŭ fantom-ondadoj
sur kristal-lagon falas kun ekstremo.

Ĉe la parko-fon' en romantika spleno
kaj ŝancelanta skalo da korbatoj,
fontan' fieras pri perlar-kromatoj
sub pala roza lum' enb milda sveno.

L' animo de Chopin solec-inklina
esprimas triston per lirika ploro,
malsana pro tro da kares' virina.

Dormiĝas lasta pian-not' sen gloro.
Ĉe l' parkofrondo mortas kant' proksima,
ja najtiongal' tremkantas kun langvoro.

Francisco Villaespesa

15. LATIN-BASED EUROPEAN LANGUAGES

As I mentioned in the introduction, ALPHABETUM includes support for the most and major European languages (**English, Spanish, French, German, Dutch, Modern Greek, Italian, Polish, Romanian, Hungarian, Turkish, Danish, Norwegian, Swedish, Finnish, Icelandic, Estonian, Latvian, Lithuanian, Croatian, Slovak, Czech, Welsh, Gaelic, Catalan and Portuguese**).

ALPHABETUM contains all the regular characters for these languages in precomposed characters or combining diacritical marks.

SAMPLES:

POLISH

Jest więc taki świat,
nad którym los sprawuję niezależny?
Czas, który wiąże łańcuchami znaków?
Istnienie na mój rozkaz nieustanne?
Radość pisania.
Możność utrwalania.
Zemsta ręki śmiertelnej.

– *Wisława Szymborska.*

TURKISH

Uğur Menkul Değerler adlı borsa aracı kurumun Genel Müdürü Orhan Atalay tarafından dolandırma olayına adı karışan güzel emlakçı soley Akkaya, Mali Şube'de ifadesi alındıktan sonra savcılık tarafından serbest bırakıldı. Atalay'ın sevgilisi olduğu iddia edilen Akkaya suçlamaları reddederek şöyle konuştu: “Kurumun sahibi Mustafa Kurt, benim aracılığım ile sattığı villasının, 1 milyar 200 milyon liralık komisyon borcuna karşılık bana çek vermişti. Ancak paramı alamayınca haciz kararı çıkarttım. Öç almak amacıyla, bana iftirada bulundu.” Akkaya, borsacı hakkında tazminat davası açacağını söyledi.

– *Türkiye'nin en iyi gazetesi.*

SPANISH (Español)

Don Quijote de la Mancha. Parte primera. Capítulo IV.

La del alba sería cuando don Quijote salió de la venta tan contento, tan gallardo, tan alborozado por verse ya armado caballero, que el gozo le reventaba por las cinchas del caballo. Mas viniéndole a la memoria los consejos de su huésped cerca de las prevenciones tan necesarias que había de llevar consigo, especial la de los dineros y camisas, determinó volver a su casa . . .

– *Miguel de Cervantes*

DANISH

Iliaden, 1. sang, 1-10.

Vreden, Gudinde! besyng, som greb Peleiden Achilleus
Rædsomt, og Qvaler i tusinde Tal Achaierne voldte.
Heel mangfoldige Heltens behjertede Sjele den skikked
Ned til Hades's Hjem, og for Hunde til Rov som for alskens
Fugle den gav deres Liig, - fuldbragt blev Zeus's Beslutning 5
Alt fra den Stund, Uenighed først og Splid havde reist sig
Mellem den Ædling Achilles og Mændenes Drot Agamemnon.
Hvo blandt Guderne hidsed dem op til Strid og til Kivsmål?
Letos og Zeus's Søn; thi høist forbittret på Kongen
Ypped i Hæren han dødelig Sot, så Krigerne segned 10

– *Homer*

HUNGARIAN (Magyar)

Odüsszeia 1.1-10

Férfiuról szólj nékem, Múza, ki sokfele bolygott
s hosszan hányódott, földúlván szentfalu Tróját,
sok nép városait, s eszejárását kitanulta,
s tengeren is sok erős gyötrelmet túrt a szivében,
menteni vágyva saját lelkét, társak hazatértét. 5
Csakhogy nem tarthatta meg őket, akárhogy akarta:
mert önnön buta vétkeikért odavesztek a társak,
balgák: fölfalták Hüperión Éliosznak
barmait, és hazatértük napját ő elorozta.
Istennő, Zeusz lánya, beszélj minekünk is ezekből. 10

– *Homérosz*

17. HEBREW

➤ ALPHABETUM HEBREW FONT

ALPHABETUM contains the characters needed to type Hebrew (Ivrit), Yiddish and Sephardi.

This font includes not only the **Hebrew letters** (the *Alefbet*) but all **vowels points** (*nikuddim*, i.e. segol, kubbutz, holam etc), **accents** and **cantillation marks** (ole, tevir, pazer, munah etc) required for Biblical Hebrew.

Therefore with ALPHABETUM you can write Hebrew “pointed” text.

➤ A PROBLEM: THE HEBREW DIACRITICS

As I mentioned in the chapter 6, the combining diacritics usually do not line up properly over or under the letter, and in the Unicode Hebrew block there are 48 combined characters!

At the time of this writing, as far as I know, there are not many Unicode fonts with the full set of Hebrew characters and most of them do not display the multiple diacritics of Hebrew script well, specially cantillation marks.

It is undoubtedly almost impossible to get an optimal diacritic display with the TTF technology.

Nevertheless, ALPHABETUM composes diacritics rather well in Word, all thing considered, though with a few exceptions, I admit.

To my knowledge, only the LaserHebrew Unicode font of Linguist's Software, that makes use of the OpenType technology, displays combining Hebrew diacritics properly, however it costs \$60 and only includes support for Hebrew and some Latin-based European languages.

Other wide available Unicode fonts such as Cardo, EzraSIL, Code 2000 or Titus display Hebrew diacritics more or less acceptably, but with different positions in each font.

Vusillus displays the Hebrew diacritics well, but unfortunately it lacks many diacritics and most of the cantillation marks.

➤ TYPING IN HEBREW

Hebrew script requires you to type backwards (Hebrew goes from right to left) however word processors go from left to right, therefore if you need to type a significant amount of text in Hebrew, you will need a method which allows you to type backwards.

An excellent keyboard and font utility for Word 97 and higher (under Windows) is **Antioch** of Ralph Hancock which allows fast typing of Hebrew with vowels points and common accents.

With this program you do not have to buy an expensive special Windows version.

Antioch is available at <http://www.users.dircon.co.uk/~hancock/antioch.htm>

A Hebrew word processor is **Davka Writer**, available from Davka Software.

SAMPLES:

א ב ג ד ה ו ז ח ט י כ ל מ נ ס ע פ ק ר ת
ל ו י י ע א ה ב ה ד א ש ב ג ש פ ה א א ש י י ו ו

א בְּרֵאשִׁית, בָּרָא אֱלֹהִים, אֵת הַשָּׁמַיִם, וְאֵת הָאָרֶץ.
ב וְהָאָרֶץ, הִיְתָה תְהוֹ וְבָהוּ, וַחֲשֶׁךְ, עַל־פְּנֵי תְהוֹם; וְרוּחַ אֱלֹהִים,
מְרַחֶפֶת עַל־פְּנֵי הַמַּיִם.
ג וַיֹּאמֶר אֱלֹהִים, יְהִי אוֹר; וַיְהִי־אוֹר.
- *Genesis 1:1-2.*

הכרזה לכל באי עולם בדבר זכויות האדם.
סעיף ב. (1) כל אדם זכאי לזכויות ולחירויות שנקבעו בהכרזת זו ללא
הפליה כלשהיא מטעמי גזע, צבע, מיז לשון, דת, דעה פוליטית או דעה
בבעיות אחרות, בגלל מוצא לאומי או חבתי, קנין, לידה או מעמד אחר.

- *Universal Declaration of Human Rights.*

18. DEVANAGARI

The Devanagari script is used for writing classical Sanskrit and several languages such as Hindi, Nepali, Kashmiri, Konkani, Marathi, Bihari, among others.

ALPHABETUM font contains the full set of Devanagari characters represented in Unicode, range U+0900-U+097F.

However, there are no codepoints already assigned to many Devanagari characters in Unicode Standard as ligatures or conjuncts, that are not represented in the Unicode Standard.

Devanagari characters can combine or change shape depending on their context, i.e. a character's appearance is affected by its ordering with respect to other characters.

Some Devanagari consonant letters have alternative presentation forms whose choice depends upon neighboring consonants.

The indic scripts are noted for a large number of consonant conjunct forms that serve as orthographic abbreviations (ligatures)

Consonant letters may also be rendered as half-forms, which are presentation forms used to depict the initial consonant in consonant cluster.

The Unicode Standard notes: "In a font that is capable of rendering Devanagari, the set of glyphs is greater than the number of Devanagari Unicode characters" (Unicode Consortium 6-38).

In Private Use Area (PUA, E900-E9FF) I have included many Devanagari characters that are not found in Unicode 3.2 such as half-letters.

I have coordinated private codepoints mentioned in the earlier paragraph with TITUS Cyberbit font.

The *Devanagari Keyboard* produced by **Andrew Glass** (University of Washington) provides a convenient way to input Devanagari in Unicode enabled Windows systems.

The *Devanagari Keyboard* is available at: <http://depts.washington.edu/ebmp/software.html>

This keyboard utility uses *Tavultesoft Keyman* controller (free) version 5.0.1 or earlier.

SAMPLES: Sanskrit Alphabet (*Sanskṛta varṇa mālā*)

Detached or independent vowels (*svara*): अ आ इ ई उ ऊ ऋ लृ ए ऐ ओ औ

Vowel marks: ऀ ँ ं ः ऄ अ आ इ (anusvāra) अं (visarga) आः

Numbers: ० १ २ ३ ४ ५ ६ ७ ८ ९

Consonants (*vyañjana*): क ख ग घ ङ च छ ज झ ञ ट ठ ड ढ ण
त थ द ध न प फ ब भ म य र ल व श ष स ह

Half letters (in PUA): क्ख ग्घ च्छ ज्झ ञ्ण ट्ठ ड्ढ ण्ण
त्थ द्ध न्ण प्फ ब्भ म्म य् य र् र ल् ल व् व श् श ष् ष ह् ह etc.

Devanāgarī script

वैशंपायन उवाच

Roman transcription

vaiśampāyana uvāca

Mahābhārata MB 3, 185

अथ कलेन महता स मत्स्यः सुमहानभूत् ।

atha kalena mahatā

sa matsyaḥ sumahān abhūt

अलिञ्जरे जले चैव नासौ समभवत्किल ॥१३॥

aliñjare jale caiva nāsau samabhavat kila (13)

19. GOTHIC

The Gothic language is the earliest recorded Germanic idiom that has come down to us.

Gothic was originally written with a Runic alphabet about which very little is known.

The Gothic alphabet was probably devised around middle the 4th century AD by Bishop Wulfila (Ulphilas) to produce a translation of the Bible into the Gothic language. The surviving manuscripts include considerable portions of the New Testament and minor parts of the Old Testament.

The Gothic script seems to have been derived from the Greek alphabet, with the exception of some letters that must be of Runic and Latin origin. The Gothic alphabet comprises 26 letters and two characters that represent only numbers. Each letter also has a numeric value. Numbers are distinguished by preceding and following centered dots or by horizontal strokes above and/or below the characters. Gothic script is written left to right with no spaces between words. Sentences, or distinctive portions of sentences, may be separated by a space, centered dot or colon.

The design of the Gothic characters in ALPHABETUM font is based on the famous manuscript known as “*Codex Argenteus*” (an impressive purple parchment written in silver and gold letters with an ornate binding, currently preserved at Uppsala University in Sweden).

- **SAMPLES:**

The Gothic alphabet.

ᚠ	ᚢ	ᚦ	ᚨ	ᚱ	ᚴ	ᚷ	ᚹ	ᚻ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	ᛟ	ᛠ	ᛡ	ᛢ	ᛣ	ᛤ	ᛥ	ᛦ	ᛧ	ᛨ	ᛩ	ᛪ	᛫	᛬	᛭	ᛮ	ᛯ	ᛰ	ᛱ	ᛲ	ᛳ	ᛴ	ᛵ	ᛶ	ᛷ	ᛸ	᛹	ᚰ	ᚱ	ᚲ	ᚳ	ᚴ	ᚵ	ᚶ	ᚷ	ᚸ	ᚹ	ᚺ	ᚻ	ᚼ	ᚽ	ᚾ	ᚿ	ᛀ	ᛁ	ᛃ	ᛅ	ᛇ	ᛈ	ᛉ	ᛋ	ᛏ	ᛒ	ᛖ	ᛗ	ᛘ	ᛚ	ᛞ	
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20. RUNIC

Little is known about the origins of the Runic alphabet. In popular culture Runes have always been seen as possessing of mystical properties. Even the supposed etymology of the word *rune*, the German word *raunen* which means “to whisper”, helped in adding a secretive bend to Runes.

The Runes, associated with the *pagan* or non-Christian past, had a important role in ritual and magic.

Runic writing was first used in southern Europe and was carried north by Germanic tribes during Roman times.

The earliest known Runic inscriptions date from the 1st century AD, but the vast majority of Runic inscriptions date from the 11th century AD and have been found throughout Europe from the Balkans to Germany, Scandinavia and the British Isles. When Europe adopted the Christian faith, the Runes slowly fell out of favor, replaced by variations of the Roman/Latin alphabet.

The Runic alphabet is also known as *Futhark*, a name composed from the first six letters of the alphabet, namely *f*, *u*, *th*, *a*, *r* and *k*. In this way, Futhark is analogous to the word “alphabet”, which is from *alpha* and *beta*, the first two letters of the Greek alphabet.

Many of the Runes letters seem to have been borrowed from other alphabets, such as the Greek, the Etruscan, the Old Italic and the Early Latin.

Most Runic texts are found on hard surfaces as rock, wood and metal, and this might explain its angular shape.

The direction of writing in early Runic inscriptions is variable (left-to-right, right-to-left, even boustrophedon). Later they settled down into a left-to-right pattern.

Word divisions were not generally recognised, although one or more dots were occasionally used for this function.

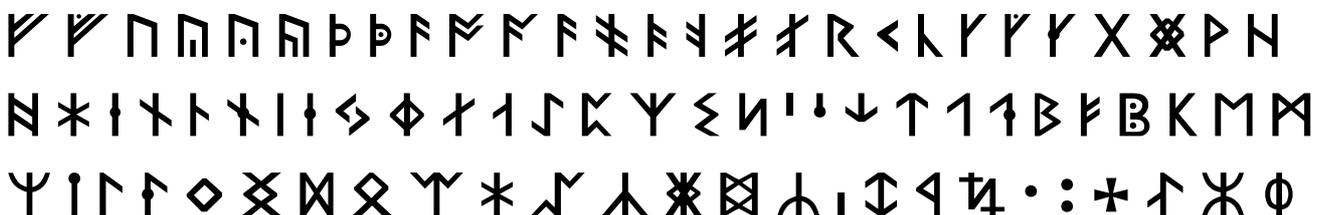
There are a number of different versions of the Runic alphabet including: Elder Futhark (Germanic languages), Gothic Runes, Anglo-Saxon Futhorc, Younger Futhork (*Viking-Age*, Danish, Swedish and Norwegian), Hungarian Runes (Székely Rovásírás), Turkic Runes (Orkhon) and Cirth (Tolkein’s Runic-like alphabet).

The original Germanic Runic alphabet contained 24 letters, when the Runes spread north into Scandinavia, the alphabet was simplified to 16 letters, however, in Britain, the Anglo-Saxon Runes were expanded to 32 characters.

ALPHABETUM font contains all 81 Runic characters encoded by the Unicode Consortium, range: U+16A0 - U+16FF

- **SAMPLES:**

The Runic alphabet.



- **TYPING RUNIC:**

Lars Törnqvist has created a keyboard for use with Tavultesoft Keyman 5.0 that enables typing Runic characters with a standard physical keyboard.

This keyboard is free available at <http://www.thesauruslex.com/typo/fonter/runor5.zip>

You can also use a Unicode plain text editor such as UniPad or BabelPad to enter Runic characters into your documents. See below the chapter 23 titled “*Input methods for entering Unicode characters*”

21. OLD ITALIC

(Etruscan, Oscan, Umbrian, Messapic, Faliscan and Picene)

- **OLD ITALIC: DEFINITION AND ORIGINS**

“Old Italic” is an umbrella term for a range of alphabetic scripts that were in use in the Italian peninsula prior to the rise of the Roman Empire and the consequent spread of the Latin script.

The alphabets were not identical, but they do have a common core to which individual alphabets add specific characters. Nor were the alphabets static once they developed.

The Old Italic alphabets were developed from the west Greek alphabet, which came to Italy via the Greek colonies on Sicily and along the west coast of Italy. The Etruscans adapted the Greek alphabet to write Etruscan sometime during the 6th century BC, or possibly earlier. Most of the other alphabets used in Italy are thought to have derived from the Etruscan alphabet.

The alphabets unified as “Old Italic” include: Etruscan, Oscan, Umbrian, North Picene, South Picene, Faliscan and archaic Latin.

- **ETRUSCAN**

Before Rome became the dominant state of the Italic peninsula and imposed its culture and language on the non-Roman Italic population, there were a bewildering number of ethnic and linguistic groups that thrived in the Italic peninsula.

One of the most dominant and powerful of these groups is the Etruscans, the first people in the Italic peninsula to learn to write and from them writing spread to other cultures of the Italic peninsula such as the Romans.

However, little is known about the Etruscans or their language.

The Etruscan language has never been conclusively shown to be related to any other language in the world. The problem is compounded by the fact that the textual corpus is limited in scope, mostly from tombstones. There are some bilingual texts with Phoenician, but they are short and few in number.

As a consequence, the Etruscan language remains poorly understood.

The Etruscan alphabet is thought to have been developed from the Euboean Greek alphabet.

The earliest known inscription dates from the middle of the 6th century BC.

More than 10,000 Etruscan inscriptions have been found on tombstones, vases, statues, mirrors and jewellery. One of the most famous is the Tablets of Pyrgi, golden plates discovered in 1964 with text from the Etruscan sanctuary at Pyrgi, the port of Caeres. Fragments of a Etruscan book made of linen have also been found, it is known as “Liber Linteus”.

Most Etruscan inscriptions are written in horizontal lines from right to left, but some are left to right and a few even boustrophedon (running alternately left to right then right to left).

There are various stages of the Etruscan alphabet:

1.- The Archaic Etruscan alphabet (8th-5th centuries BC.)

The "Archaic" alphabet was used between the 8th and 4th century BC, before the Etruscans were part of the Roman Empire.

2.- The Neo-Etruscan alphabet (4th-3rd centuries BC.). A transitional stage, influenced by Latin.

3.- The Late Etruscan alphabet. (2nd BC.–1st AD.) The "Late" version was used at a time when Etruscan as a language was rapidly being replaced by Latin. The knowledge of Etruscan finally died out by the 1st century AD.

The Etruscan alphabet was the foundation for many other alphabets such as Oscan, Umbrian, and maybe even Futhark. However, its descendent, the Latin alphabet, would come to be one of the most widely used alphabets in the world.

ALPHABETUM is the more complete font you can find at the present time, since it contains most of the character variants used in Etruscan script. Please, see below the character listing.

- **OSCAN**

Other ethnic Italic group is the Oscans, who occupied the southern part of the Peninsula that were not settled by Greeks. Oscan is believed was spoken in Samnium, Campania, Lucania and in Abruzzo.

The Oscan speakers adopted the Etruscan alphabet to write their language.

This event probably occurred around the 7th century BC. but the first evidence of the Oscan alphabet did not appear until the 5th century BC. in the form of inscriptions on coins. Because the Oscan language is Indo-European, its phonology is different from that of Etruscan. As a result, many letters not used in Etruscan but inherited from Greek were revived to denote Oscan sounds such as [b], [g], and [d]. Sometimes the [u] letter is used to denote the [o] sound (which did not exist in Etruscan and therefore there was no letter for it). Also, two new letters were invented during the 4th century BC, namely í and ú, for the long vowels of [i:] and [u:]. The total tally of letters in the Oscan alphabet is therefore 21.

The Oscan alphabet is written from right to left. Also, to mark separation between words, a dot is used.

More than 300 Oscan inscriptions, dating from between 400 and 79 BC, have been found in various sites in southern Italy: “Cippus Abellanus”, “Tabula Bantina”, “Tabula Agnona” etc.

As Rome conquered territory occupied by Oscans, it assimilated the Oscan people into the Roman world. As a consequence, the Oscan ethnic identity and culture disappeared, and the Oscan language ceased to be spoken and written by the end of the 1st century AD.

- **UMBRIAN**

Other language spoken in ancient Italy in the region of Umbria was the Umbrian.

Umbrian it is known to us primarily from the “Tabulae Iguvinae”, seven bronze tablets, dating from between about 350 and 50 BC, which contains some notes on the ceremonies and statues for priests.

These plates are almost the only examples of the Umbrian alphabet that have been found.

The Umbrian alphabet is likewise of Etruscan origin.

The Umbrian is written from right to left and two dots are used to mark separation between words.

- **MESSAPIC**

The Messapic alphabet is thought to have derived directly from the Greek alphabet, rather than developing from the Etruscan alphabet.

The Messapic language was not related to other languages of Italy. It is quite certain that Messapic is of Illyrian descent, having been brought over across the Adriatic.

The only known inscriptions in the Messapic alphabet date from the 2nd and 1st centuries BC.

Some inscriptions have come down to us in the native alphabet, but others are written with Greek letters.

- **PICENE**

Picene is less of a linguistic concept than a geographical one; there being two very distinct (unrelated) varieties: northern Picene and southern Picene, generally listed together, but quite different.

The southern Picene has much in common with the Osco-Umbrian group.

However, it is doubtful whether northern Picene is even Indo-European.

- **LATINIAN DIALECTS (FALISCAN and LATIN)**

The Latinian dialects are those that show a preservation of Indo-European /qu/. Faliscan is of this type, though it shows a good deal of borrowing from its neighbor languages. Faliscan is very closely related to Latin.

Latin, once restricted to a small area of Latium (archaic Latin), soon became the official language of the Empire (classical Latin) and gave rise to the modern Romance languages. Its alphabet has survived to the present and is the basis for the modern western European scripts.

ALPHABETUM Unicode font contains the 35 Old Italic characters encoded by the Unicode Consortium in the Supplementary Multilingual Plane (Plane 1), plus other 175 characters (in Private Use Area) needed to type the languages described above.

ALPHABETUM is for the moment the only Unicode font which offers such wide coverage for Old Italic scripts.

OLD ITALIC. ALPHABETUM GLYPH CHART

These are the 210 glyphs required to represent Old Italic scripts in electronic text documents.

Less characteres would be required if duplications of glyphs are eliminated, which I do not recommend.

Duplications of glyphs facilitate the task of entering Old Italic characters present in Private Use Area via Insert/Symbol in Word, since they are encoded as a string in alphabetical order.

Most of the characters shown below are not found in the Unicode 4.0 specification.

IMPORTANT NOTICES: 1).= There is not fully consensus among specialists concerning the shapes, number and even attributions to letters of Old Italic characters, so that you will probably find some shape discrepancies or unexpected locations of any characters in the following chart.

2).= I am well aware that some glyphs inserted in ALPHABETUM are surely superfluous, however I prefer to err on the safe side and to include an unnecessary glyph for a letter than to omit one.

	ETRUSCAN	UMBRIAN	OSCAN	FALISCAN	PICENE	MESSAPIC	LATIN	Others
a	𐌆𐌆𐌆𐌆	𐌆	𐌆𐌆𐌆𐌆	𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆	𐌆𐌆	𐌆𐌆
b		𐌆	𐌆		𐌆	𐌆	𐌆𐌆	𐌆
c	𐌆𐌆𐌆𐌆		𐌆	𐌆𐌆	𐌆	𐌆	𐌆𐌆	
d			𐌆𐌆𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆𐌆
e	𐌆𐌆𐌆𐌆	𐌆𐌆	𐌆𐌆𐌆𐌆	𐌆	𐌆	𐌆𐌆	𐌆𐌆	
v	𐌆𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆𐌆𐌆	𐌆	𐌆	𐌆	𐌆𐌆	𐌆
z	𐌆𐌆𐌆𐌆	𐌆𐌆	𐌆𐌆	𐌆𐌆𐌆	𐌆	𐌆	[𐌆𐌆]	
h	𐌆𐌆𐌆𐌆	𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆𐌆	𐌆
th	𐌆𐌆𐌆𐌆	𐌆		𐌆𐌆	𐌆𐌆	𐌆𐌆		𐌆
i	𐌆	𐌆	𐌆	𐌆	𐌆	𐌆	𐌆	
k	𐌆𐌆	𐌆	𐌆	𐌆	𐌆	𐌆	𐌆𐌆	
l	𐌆𐌆	𐌆	𐌆	𐌆𐌆	𐌆𐌆	𐌆𐌆	𐌆𐌆	𐌆
m	𐌆𐌆𐌆𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆
n	𐌆𐌆𐌆𐌆	𐌆	𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆
š	𐌆𐌆		𐌆		𐌆	+		
o	[𐌆𐌆𐌆]		[·]	𐌆	𐌆	𐌆𐌆	𐌆	
p	𐌆𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆𐌆𐌆	𐌆
ś	𐌆𐌆𐌆			𐌆	𐌆𐌆	[𐌆]		
q	𐌆𐌆		[𐌆𐌆]	𐌆		𐌆	𐌆𐌆𐌆	𐌆
r	𐌆𐌆𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆	𐌆	𐌆𐌆𐌆𐌆	𐌆𐌆𐌆
s	𐌆𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆	𐌆𐌆	𐌆𐌆	𐌆
t	𐌆𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆𐌆	𐌆𐌆	𐌆	𐌆	
u	𐌆𐌆𐌆𐌆	𐌆	𐌆𐌆	𐌆	𐌆		𐌆	

ks	+			X			X	
ph	ϕ 0							φ
kh	ψ γ ↓ ↓			↓ γ	ψ	X ↑		
f	8 8 8	[8]	[8:]					
rs		ρ ρ						
ch		ɔ ɔ						
í			ı ı ı ı					
ú			υ γ		υ υ			
1	100 C							
5	V 100 *							
10	X 500 ☺							
50	↑ 1000 ☼							

• **SAMPLES:**

➤ **OSCAN**

The Oscan alphabet.

Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
a b g d e v z h i k l m n p r s t u f í ú

Sample text: “Cippus Abellanus” (Boundary stone from Abella)



Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
[Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ]
[Ϣ ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ]

➤ **UMBRIAN**

Sample text: “Tabulae Iguvinae” (Iguvian tablet I)

ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ
ϣ ϥ ϧ ϩ ϫ Ϭ ϭ Ϯ ϯ ϰ ϱ ϲ ϳ ϴ ϵ ϶ Ϸ ϸ Ϲ Ϻ ϻ ϼ Ͻ Ͼ Ͽ Ͽ

➤ ETRUSCAN

Sample text: Golden tablets from Pyrgi

Side A



ITA·TIRA·ICAC·BE
 DAMAZFA·FATIEYE
 YNIAJASTDES·OEMIA
 RA·MEV·OVTA·OEBA
 DIEI·FELIAR·RAL
 CVFENIAR·TVDA
 CE·MYNITAR·OYFA
 TAMDESCA·IACFE·
 TYEDARE·NAK·I·AFI
 J·VADPAD·TEZIMAIT
 ALE·IACFE·ALZARE
 NAK·ADANER·IILAC
 AL·SELEIATA·ACNAZE
 ED·ITANIM·BEDAM
 FE·AFIL·ENIAR·L·V
 VMYFA·

Sample text: “Liber Linteus”



REMINDER: ALPHABETUM Unicode font provides a lot of glyph variants for Old Italic languages, but remember that ALPHABETUM is a computerized font. Ancient scribes and engravers did not have word processors. A word processor cannot duplicate the various epigraphical and handwriting nuances such as the size of caps, long descenders, etc. You MUST do some scribing with your word processor by using the Format/Font/Character spacing utility to increase point sizes, bold if necessary, and lower or raise character positioning . . . letter by letter. You cannot just type along and duplicate the style of an ancient manuscript or epigraphical inscription. It takes a little work and time.

22. IBERIC and CELTIBERIC

As its name implies, the Iberic scripts were found mainly on the Iberian peninsula, i.e. Spain and Portugal, although some are found in southern France as well (Aquitanian).

The Iberic family of scripts (non-Indo-European languages which have so far resisted decipherment) is consisted of three “styles”, called Iberian, Celtiberian and SudLusitanian or Tartessian.

- **Iberian**

Very little is known about the Iberian.

The Iberian is a isolate language since it has no clear relationship or affinity with other languages.

There are lexical coincidences with Basque, but it is hard to know if they are more than a result of vicinity.

The Iberian language has two variants: northeast or Levantine Iberian and southern Iberian.

Structurally they are more or less the same, and the major differences between them are:

- a) the geographical location – the Levantine version was used mainly in Catalonia and Levante, the southern version was used in Murcia and Andalucia.
- b) the shape of the characters.
- c) the direction in which they were written. Levantine Iberian was mainly written left to right, while southern Iberian was written right to left.

The oldest inscriptions date from the 4th century BC.

In the 3rd century BC. the Iberian peninsula was invaded first by Carthage, then by the Romans.

Thereafter, the Iberian scripts and the languages they were used to write gradually disappeared.

The Iberian scripts are thought to have derived from the Phoenician alphabet.

Both Iberian scripts contain monophonemic signs as well as syllabic ones, this means that the Iberian has a semisyllabic system, mainly syllabic but also partly alphabetic.

- **Celtiberian**

Celtiberian is an extinct continental Celtic language which was spoken on the Iberian peninsula until about the 1st century BC. Celtiberian was related to the Celtic languages of Gaul (France).

The Celtiberians came originally from Gaul and their language absorbed many features from the local non-Indo-European languages, such as Iberian and Lusitanian.

In fact, the Celtiberian script developed from the Iberian scripts is a modified version of the Levantine Iberian. This shows the cultural importance of the Iberian culture at that time, since this adoption was made when the Romans were already in Spain.

This Celtiberian script is partly syllabic and partly alphabetic and was not well suited to the language it was used to write. At least there are two variants of Celtiberian script: the more important are the so-called Botorrita and Luzaga.

Only a small number of Celtiberian inscriptions dating from between the 6th and 1st centuries BC. have been found, the more important is the Botorrita bronze.

Celtiberian script was used since the 2nd century BC, mainly in the high basins of the rivers Ebro and Tajo (from Palencia to Zaragoza-Teruel)

When the Romans take over the control of the Iberian peninsula, the Celtiberian script was gradually replaced by the Roman/Latin alphabet and eventually disappeared.

- **Sudlusitanian or Tartessian**

This script was found on over 70 inscriptions (almost all steles, dating from 8th-5th centuries BC.).

Most of them come from south Portugal (Algarve and Baixo-Alemtejo) but a few also from southwestern Spain (Extremadura and western Andalucia).

Although the shape of the signs of the Sudlusitanian inscriptions is very similar to those of the southern Iberian's ones, this system is not a semisyllabary, but an alphabet.

At the time of this writing, I do not know of any Unicode font that includes the characters required to type Iberian and Celtiberian scripts.

ALPHABETUM contains around 155 variants, all of them in the Private Use Area, since the Consortium Unicode has not encoded Iberic scripts in any block, yet.

IBERIC & CELTIBERIC ALPHABET-SYLLABARY

1º) Independent (detached) letters.

(Vowels and non-occlusive consonants)

A = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

E = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

I = Ɔ Ɔ Ɔ Ɔ Ɔ

O = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

U = Ɔ Ɔ Ɔ

Á = Ɔ Ɔ Ɔ Ɔ

L = Ɔ Ɔ Ɔ Ɔ

R = Ɔ Ɔ Ɔ Ɔ

Ŕ = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

S = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

Ś = Ɔ Ɔ

N = Ɔ Ɔ Ɔ Ɔ

M = Ɔ

2º) Syllabic groups.

BA / PA = Ɔ Ɔ Ɔ

BE / PE = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

BI / PI = Ɔ Ɔ Ɔ Ɔ

BO / PO = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

BU / PU = Ɔ Ɔ Ɔ

TA / DA = Ɔ

TE / DE = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

TI / DI = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

TO / DO = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

TU / DU = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

KA / GA = Ɔ Ɔ Ɔ Ɔ

KE / GE = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

KI / GI = Ɔ Ɔ Ɔ Ɔ Ɔ Ɔ

KO / GO = Ɔ Ɔ Ɔ Ɔ Ɔ

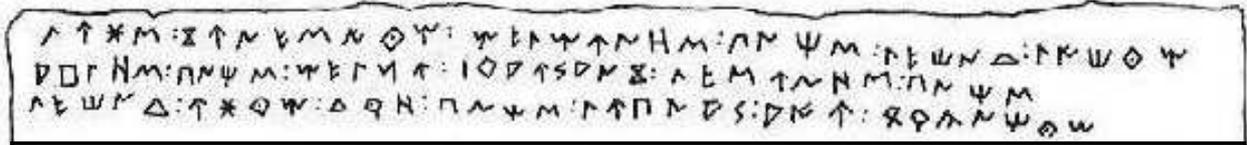
KU / GU = Ɔ Ɔ Ɔ

PUNCTUATION SIGNS = Ɔ : : : :

- **SAMPLE TEXTS:**

- The **Bronze Inscription of Botorrita** (Zaragoza).
Language: Celtiberian. Script: Iberic

Side B. Three first lines.



Λ↑*Μ:Σ↑ΜϋΜΛϙϙ:ϙΕΓϙ↑ΜΗΜ:ΓΜΨΜ:ΓΕΩΜΔ:Γϙϙϙ
 ϙϙΓΗΜ:ΓΜΨΜ:ϙΕΓϙ↑:Ιϙϙ↑ΣϙΜΣ:ΛΕΜ↑ΛΗΜ:ΓΜΨΜ
 ΓΕΩΜΔ:↑*ϙϙ:ΔϙΝ:ΓΜΨ:Γ↑ΓΜϙΣ:ϙϙ↑:ϙϙΛΜΨϙ

Transliteration:

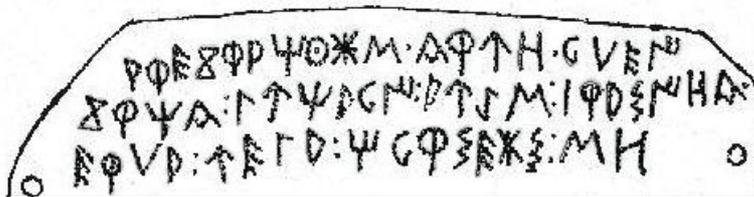
l-u-bo-ś : ko-u-n-e-ś-i-ku-m : m-e-l-n-u-n-o-ś : bi-n-ti-ś : l-e-to-n-tu : l-i-to-ku-m :
 a-bu-l-o-ś : bi-n-ti-ś : m-e-l-m-u : ba-f-a-u-s-a-n-ko : l-e-ś-u-n-o-ś : bi-n-ti-ś :
 l-e-to-n-tu : u-bo-ku-m : tu-r-o : bi-n-ti-ś : l-u-bi-n-a-s : a-i-u : be-f-ka-n-ti-ku-m :

Transcription:

luboś counesićum melnunoś bintiś letontu litocum
 abuloś bintiś melmu bařausanco leśunoś bintiś
 letontu ubocum turo bintiś lubinas aiu beřcanticum

- The **Bronze Inscription of Luzaga** (Guadalajara).
Language: Celtiberian. Script: Celtiberic

Three first lines.



ΡΦΕΣΦΡΨΘΖΜ·ΑΦ↑Η·ΓΥΕΛ
 ΣΦΨΑ:Γ↑ΨΔΓΜ:Ρ↑ΣΜ:ΙΦΔΣΜΗΑ·
 ΕΦΥΡ:↑ΕΓΔ:ΨΓΦΣΕΞΣ:ΜΗ

Transcription:

ařekoratikuboś kařuo keřei
 kortika lutiakei aukiś bařasioka
 erřma uela tikersebos śo

23. SUPPLEMENTARY MULTILINGUAL PLANE (PLANE 1)

- Introduction

The Gothic, Old Italic, Old Persian cuneiform, ancient Greek musical notation (and in a near future a number of characters of interest to classicists) are located in the so-called Supplementary Multilingual Planes.

The characters in the supplementary multilingual planes have a different behaviour than those in the basic multilingual plane.

This has very important consequences.

- What are supplementary characters?

Unicode was originally intended to encode all the world's scripts in a 16-bit code: Basic Multilingual Plane (BMP) or Plane 0, allowing a maximum of 65,536 code points.

It soon became evident that the number of code points needed to encode all scripts, ancient and modern, would vastly exceed this figure.

The designers of Unicode devised a mechanism to provide access to additional planes: Supplementary Multilingual Planes (SMP). There are sixteen supplementary planes named Plane 1, Plane 2 and so on.

Gothic and Old Italic characters are allocated in Plane 1. The Old Persian cuneiform in Plane 16.

There are two ways of referencing code points in the SMP. Firstly by extending Unicode from 16-bits to 32-bits and referencing the code points directly as 32-bit values (UTF-32).

The other way is to make use of surrogate pairs of 16-bit code points.

To properly use these values and reference the entire Unicode character space, applications need to be programmed to recognize surrogate code points and to map these values to the correct values for the associated characters.

Unfortunately, many programs and applications do not recognize surrogate code points.

- Displaying supplementary characters

Evidently to see supplementary characters on your computer, you will need to have an appropriate font.

At present, apart from ALPHABETUM Unicode, I only know of one font that supports Unicode characters in the supplementary planes: CODE 2001, however, this font has a poor coverage for classical languages, for instance no polytonic Greek.

Only Windows 2000 and Windows XP have any support for supplementary characters.

Windows 95/98/Me do not seem able to display glyphs represented by surrogate pairs.

Nevertheless, rumor has it that by installing a recent version of Uniscribe (usp10.dll) on your system, Unicode-aware applications will gain support for supplementary characters. Caveat emptor!

Word 2000 does not have support for supplementary characters.

Nor does the Windows Character Map in XP.

On Mac, at the moment, as far as I know, TextEdit and SUE are the only text editors that can support surrogates.

At the time of this writing the browsers that display the supplementary characters correctly are: Internet Explorer 5.5 or later, Mozilla 1.3 and Opera 6. Netscape 7 does not display SMP properly.

If you want to enter supplementary characters into your documents, please read the next chapter.

24. INPUT METHODS FOR ENTERING UNICODE CHARACTERS

Windows itself provides a poor support for entering non-English characters present in a Unicode font. Two are the main methods, both of them clumsy.

1.- You can turn on the NUM LOCK, hold down the ALT key and type on the numeric keypad the four digit number of any character. Evidently you have to keep a chart of code numbers handy.

2.- You can also use the Character Map, copy the character you want and paste it into your application.

However, if you work in one particularly language, you can install a keyboard (Start menu /Settings /Control Panel /Keyboard /Language tab) for this language and you will then find the characters in their usual position on the original keyboard for this language.

Unfortunately only a few ancient languages (polytonic Greek among them) own keyboards created to run under Windows.

Due to this poor support, some applications have provided their own methods for entering upper-order characters.

Word provides an Insert/Symbol dialog box from which you can insert any character in a font. This is fine for rarely used characters but too slow for signs you use all the time.

There are excellent alternatives however to solve this problem.

One of them is to use a Unicode text editor as **UniPad**, produced by Sharmahd Computing.

Unipad is a text editor specifically designed to work with Unicode.

This program is freely available from <http://www.unipad.org/>

It uses internally its own bitmap font, not TrueType fonts (the package is complete does not need any system font), and has on-screen keyboard layout that allows you to type in several languages and scripts. It supports left to right and right to left directions.

Characters can also be selected from a Character Map.

Since UniPad is a plain text editor, if you wish to use different font sizes, bold, italic etc in your document, after entering characters you want, you can copy and paste them into other application, such as Word. However, in this case note that you will need to have a Unicode font installed in your computer that contains your desired characters. The user interface is English only.

Finally, it should be noted that there are a variety of third-party utilities that you can use to customize your keyboard if you can't find anything available that suits your needs.

One of the best I know for Windows is **Keyman** and **Keyman Developer** (Tavultesoft Keyboard Manager), two shareware applications available from <http://www.tavultesoft.com/keyman>

Keyman and Keyman Developer utilities support both ANSI and Unicode fonts and the latter allows you to create your own Unicode customized keyboard layout for the characters you want.

Therefore with these programs you can remap your keyboard to special characters, so that you can just input special characters directly from your keyboard into any application.

• Supplementary characters

As mentioned above, Word 2000 and Windows Character Map in XP don't support supplementary characters. Therefore for entering them into your documents at the present time you must use one of the following methods:

1.- Typing the five-digit hexadecimal number of the character you want in Word XP or WordPad.

Really a slow, tedious and hard task.

2.- Using Unipad text editor or BabelMap

Babel Map is a Unicode character map for any version of Windows from Windows 95 onwards. It includes Unicode 3.2, and can display characters from the supplementary planes.

You must select a Unicode font (BabelMap does not use its internal own bitmap font as UniPad) and a Unicode range from drop-down lists.

Clicking characters in the grid copies them to the Edit Buffer, visible at the bottom of the window, from where they can be copied and pasted into a document.

BabelMap is produced by Andrew West. You can find more information and download a free copy from <http://uk.geocities.com/BabelStone1357/>

25. QUALITY OF THE FONT

ALPHABETUM Unicode has 2,433 glyphs and 305 “kerning pairs” to avoid unsightly gaps between letters. (Some combinations of letters, such as “Y” followed by “o”, do not look good because the characters come too far apart. To fix this problem a special technique called *kerning* has been developed. Kerning information is used to adjust the space between specific pairs of characters).

A good example is the AV pair. In the following picture you can see a few examples of inter-character spacing, with and without kerning: AV AV WA WA Yo Yo We We

ALPHABETUM, like other high-quality fonts, contains kerning information that word-processors can use to “kern” the text, that is, to adjust the spacing between such pairs.

For best appearance, you must make sure that kerning is turned on.

In Microsoft Word, choose Format/Font/Character Spacing and make sure that the Kerning box is checked. Kerning is not usually applied to font sizes smaller than 10 points or so.

However on screen at specific sizes or low resolutions this font may not look as good as products from the large companies such as Monotype, Adobe, Microsoft and so on.

On screen, some stems of ALPHABETUM letters will look uneven, unlike Times New Roman, for example. This is because these companies have the resources to carry out special ‘hinting’ which improves the appearance of characters on a monitor. (At its most basic level, *hinting* or *instructing* a font is a method of defining exactly which pixels are turned on in order to create the best possible character bitmap shape).

The technical knowledge and the software required for such super-hinting is beyond my reach, so ALPHABETUM has only automatic hints, I have not yet done hand hinting of the characters.

Some of the fonts distributed by big companies do feature this high quality hinting but do not contain all the characters that classicists need; polytonic Greek and classical Latin are a relatively low priority in the computer industry.

Users will have to compromise between aesthetics and coverage in picking their font.

ALPHABETUM does not look its best on a low-resolution screen.

Nevertheless, the outlines of ALPHABETUM are only distorted at a specific number of small sizes or if you use output devices with low and medium resolution; the contours of the letterforms at higher resolutions remain unchanged and undistorted.

In any case, this problem does not affect printed output. Computer screens operate at a much lower resolution than printers.

Please, remember that the print quality will normally be better than screen display.

HOW TO IMPROVE THE APPEARANCE OF A FONT ON A MONITOR:

1 = Font smoothing or anti-aliasing. (Windows 98/2000/Me)

To improve the appearance of ALPHABETUM on the screen, be sure that the function *font smoothing* or *anti-aliasing fonts* is activated on your computer.

By default this function is switched off in Microsoft Windows, but it is a simple matter to switch it on:

- Double click on *My PC* icon on your desktop, then click on *View* menu.
- Select *Folder options*, command at the bottom of the menu.
- In the next window, click on the *View* tab located near the top of the window.
- Scroll down to the bottom of the list.
- Click on the Checkbox labelled *Smooth Edges of Screen Fonts*.
- Press OK.

That's all there is to it!

Font smoothing reduces the jagged edges of on-screen text.

Note that this function only works with Windows 98 and higher, but there is a “patch” for Windows 95 available as a free download for Windows 95 users in Microsoft Typograpy website.

2 = ClearType. (Windows XP)

ClearType is a software technology developed by Microsoft that improves the readability of text on existing LCDs, such as laptop screens, Pocket PC screens and flat panel monitors.

Readability on CRT traditional monitors will be improved somewhat, but ClearType does not provide the same benefits that you experience on an LCD screen. Nevertheless, feel free to give it a try.

With ClearType font technology, the words on your computer screen look almost as sharp and clear as those printed on a piece of paper. ClearType is turned off by default, so if you are using WinXP and have an LCD monitor, be sure that you have the *ClearType option* turned on.

Steps to enable ClearType:

- 1- right-click in a blank space on the desktop. 2- choose *Properties*
- 3- select the *Appearance* tab. 4- click the *Effects* button at the lower right of the dialog box.
- 5- make sure that there is a check mark next to “*Use the following method to smooth edges of screen fonts*” and select “*ClearType*” from the drop down box. 6- click OK to exit.

This makes a very significant improvement in the on-screen appearance of ALPHABETUM.

26. TRIAL VERSION OF ALPHABETUM

➤ A trial version of ALPHABETUM, named ALPHA-Demo is available from:

- 1= UNIVERSITY OF SALAMANCA **Recursos para filólogos:** <http://clasicas.usal.es/soft.htm>
- 2= LUCIUS HARTMANN **Altgriechische Zeichensätze** <http://www.unizh.ch/~lucius/greek.html>
- 3= HOWARD BERLIN **Foreign Font Archive :** <http://user.dtcc.edu/~berlin/font/unicode.htm>
- 4= MATTHEW ROBINSON **Greek fonts and Utilities:**
<http://users.ox.ac.uk/~ball0087/download/frameFonts.html>
- 5= ACADÉMIE NANCY-METZ **Lire et écrire le grec et le latin dans le texte**
http://www.ac-nancy-metz.fr/enseign/lettres/LanguesAnciennes/Textes/Lire_grec.htm

Note that this demo-version lacks many characters (around 250) that the full version contains. A small crossed rectangle will appear instead of them to indicate you the missing characters.

27. REGISTRATION AND PRICE OF THE FONT

ALPHABETUM is the result of long hours of investigation and hard work.

Font development is a painstaking, time-consuming task and ALPHABETUM is a single person's work.

This font is not free. Nevertheless, it has the lowest possible price. Registration costs **US \$15**, **£10** or **€15** for individuals users and **US \$60**, **£45** or **€60** for educational Institutions that wish to put the font on a network (on multiple computers, for example for all members of a Department).

Please, email me before sending anything. Do not forget to include your e-mail address or an account that can receive e-mail attachments.

As soon as payment is received, I will send you the font as an attachment to an e-mail message.

- You can make a direct bank-to-bank cash transfer, – here are the details:

Bank → **CAJA MADRID (Plasencia, Spain) account number 2038.4601.08.3000427626.**

Please, notify me at jmag0042@guindo.cnice.mecd.es when you have made the transfer.

- Or if you wish, please send banknotes by post to → **JUAN JOSÉ MARCOS GARCÍA**
(In order to avoid your letter to get lost, please,
do not forget to send it by registered post. Thanks) **Travesía Cristóbal Oudrid 25.**
10.600 PLASENCIA (SPAIN).

IMPORTANT → Please, do not send checks, the cost of processing them is very high.

28. BY PAYING THE REGISTRATION FEE YOU WILL GET...

- ◆ **The full version of ALPHABETUM Unicode font.**
- ◆ **Technical support:** Registered users get free technical support. I will try to resolve problems that are reported to me.
- ◆ **Finding what you need:** ALPHABETUM contains all the regular characters for the languages mentioned above in precomposed characters or combining diacritical marks. I have taken much care over this piece of work and I have read many documents relating to different languages, but, clearly, I don't know all these languages, and, perhaps some important character that you need may be missing or badly drawn. If this occurs, please send me a message detailing exactly what you need and I will include it free of any additional charge, of course. For other more important corrections or additions, consult me.
- ◆ **Alternative forms for a few Greek letters:** If you prefer the 'script' kappa, the 'curly' rho, the 'closed' phi or the 'open' theta instead of the forms given as default in ALPHABETUM, I can change it for you according to your taste. However, ALPHABETUM has two *instances* of these letters, for example, the letter theta has one at U-38B8 and another one at U-0301
- ◆ **A version of ALPHABETUM** (named ELLENIKE also designed by myself) in the *Son of WinGreek* encoding. If you wish to acquire this font, please let me know, otherwise I will not include it in the attachment.
- ◆ **New releases free.** Your registration will remain valid for future versions of ALPHABETUM.

29. LICENSE and LIMITATIONS

ALPHABETUM is a standard True Type font and should not cause problems on your computer, however it is provided "as is", with no warranty. Use the font at your own risk.

Under no circumstances will Juan-José Marcos be liable for any damage that results from using this font.

Installing the font indicates your acceptance of these terms.

ALPHABETUM is for personal, non-commercial use. You must inform me if you use the font in a publication, it requires the purchase of an appropriate license.

Of course this font must not be modified under any circumstance.

This font must not be posted on any web page or modified or sold in any form without the express permission of the author.

Anyone wishing to incorporate this font into another software package should contact me for permission and an appropriate fee will be charged.

As a software-author my aim is a widespread usage of the font, so please forward a message to all colleagues you know who might be interested in this font and feel free to give them a copy of the demo-version and this Manual, but please, do not pass the full version of the font on to other people.

Those who wish to promote the use of ALPHABETUM are encouraged to put a link to my email address jmag0042@guindo.cnice.mecd.es on their web pages to enable others to locate this font so that others may purchase it. I will send the font to them upon request.

By paying the small registration fee for ALPHABETUM, you will be contributing towards future enhancements.

I hope for the fraternal support of fellow classicists of the world.

30. AUTHOR'S REQUEST. SUGGESTIONS AND QUERIES

I have taken care to see that ALPHABETUM works as well as possible, but this font is the work of only one person, any errors or faults which it contains are mine, so if you find any wrong code or any “bug” in the font, feel free to email me at jmag0042@guindo.cnice.mecd.es

Although you do not purchase the font, please, send me comments, suggestions for improvements or anything else regarding ALPHABETUM. I would like to have your opinion about the font.

I really would appreciate knowing users' feedback.

Such reaction from users will be the deciding factor in my decision of carrying on with the development of ALPHABETUM.

Equally important are e-mails telling how you use the font, what characters or features you would like to see, etc.

You can even send me samples of texts you have created with ALPHABETUM font.

Do not hesitate to contact me. Thanks.

If ALPHABETUM is well received, it will be expanded in the near future (Old Persian cuneiform, Ogham, Linear B, more kerning pairs, more characters, “*Open Type*” version and so forth).

31. ACKNOWLEDGEMENTS

I am very grateful to the following people for comments and suggestions: *TLG team* (Thesaurus Linguae Graecae), i.e., **Maria C. Pantelia** (University of California, Irvine, USA), **Richard Peevers** (University of Birmingham, United Kingdom) and **Nick Nicholas** (University of Melbourne, Australia).

I would especially like to thank the latter for providing me with extremely useful information concerning Greek script and for contributing significantly to improving ALPHABETUM.

The earlier comment is equally valid for **Didier Stadelmann** (Anastésontai) regarding Hebrew script.

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