L2/02-273

TLG®[1] Unicode Proposal (draft 07-08-02)

Short Table of Contents

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Long Table of Contents

Introduction

The TLG® Project

The following document was created by the *Thesaurus Linguae Graecae Project*® (TLG®) at the University of California, Irvine. The TLG is a digital library containing more than 10,000 Greek literary texts (now in excess of 80 million words) from Homer to the end of Byzantium in 1453 CE. TLG texts have been disseminated in CD-ROM format since 1985 and have recently become available online (http://www.tlg.uci.edu). The TLG is a major research tool used by thousands of scholars and students of Greek worldwide.

TLG texts are entered in Beta Code—a character and formatting encoding convention developed by David W. Packard and his team at the *Packard Humanities Institute* in the late 1970s. Each of the twenty-four Greek letters has an assigned ASCII position, and diacritics are indicated by non-alphabetic characters following the accented vowel. Beta Code was necessitated by the absence of a standard, cross-platform font table and keyboard for Ancient (Polytonic) Greek until now, a problem to be addressed by the establishment of a complete Unicode Polytonic Greek set. Beta Code has been used by the TLG and a number of other electronic Greek corpora, such as the *Perseus Project*, the *Duke Databank of Documentary Papyri* (containing documentary Greek papyri) and the *Epigraphy Project* (carried out by the Ohio State University and Cornell University) under the aegis of the *Packard Humanities Institute*. An annotated list of the TLG Beta Code symbols can be found at: http://www.tlg.uci.edu/BetaCode.pdf.[2]

[2] Where discrepancies between the Beta Code Manual and the current document arise, the current document is to be considered authoritative.

Notes on the proposal

Summary

This proposal represents the majority of—mostly non-alphabetic—characters required in the electronic scholarly representation of Greek texts which are currently missing from the Unicode Standard.

Every effort has been made to identify and document the use of these characters as completely as possible. To this end, extensive research has been conducted so that the information included in this document may serve as future reference.

It should be noted, however, that the TLG works exclusively from printed modern scholarly editions; therefore, although every effort has been made to make this proposal as exhaustive as possible and while epigraphical and papyrological evidence has been extensively consulted in the course of writing this proposal, it is possible that characters exist—for example, medieval punctuation—which have not yet been entered into the TLG corpus.

Organization

The proposal is broken down into seven sections:

I. Additional Ancient Greek Letters

II. Ancient Greek Editorial Characters and Punctuation

III. Ancient Greek Numerical Characters

IV. Ancient Greek Musical Characters

V. Ancient Greek Metrical Characters

VI. Ancient Greek Abbreviations

VII. Modern New Testament Editorial Characters

Each section (apart from VI) has an introduction which outlines the characters proposed, places them in context and explains the rationale behind the proposed characters. Also discussed are any difficulties or other issues involved in the encoding of each of these characters.

Each section is broken down into two subsections: (a) those which are proposed as characters new to the Unicode Standard; and (b) those which already exist in the Unicode Standard but with different semantics, so that a further definition be appended to the current character.

The characters are discussed individually in the sections a and b of the proposal. Each character has one table devoted to it. See below for an outline of the table format.

Explanation of Character Tables

Graphic of character

Character reference number and name of character

Where one exists, we include possible Unicode equivalents

We list here the number of times a glyph has appeared in the TLG canon and other projects using Beta Code.*

Beta Code equivalents

V.b.1 Greek Vocal Notation Symbol 25

Sign	Unicode	Beta Code	Count
Ω	03A9	#641	4 instances, 1 author

Definition and comments
This represents the vocal f.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

We give here a definition of the character, together with any further information required, such as information on glyph variants.

Here, we give one or more examples to show how a character appears in text and glyph

Editions given are those used as the basis for the digital TLG text, where possible.

Naming Conventions

We have adopted, where possible, the standard ancient Greek terms for proposed characters. Where this has not been possible, we have adopted the standard modern term which has developed in its stead. On the rare occasion where this has not happened, we have developed an appropriate name for the character; these instances are made clear below.

Notes on Beta Code Counts in the Proposal

TLG counts are offered to provide some idea as to the frequency of the symbols. These counts are not indicative of the actual occurrence of the symbols because

1. the TLG works out of printed editions
2. rendering has not been consistent. We are making efforts to retrofit the characters. However, this has not been completed for this proposal so counts should not be taken as authoritative.

We have occasionally given the Beta Code counts of projects other than the TLG, this is done when the glyph is rarely used in the TLG in order to still give some idea of how frequently is appears.

Notes on Text Samples

Occasionally, it has not been possible to obtain a 'clean' copy of a text, in these instances, we offer instead a 'marked-up' copy from our archives. We trust that these are still clear enough to read.

There are occasional references to sample texts which are too long to fit in the running text of the proposal. These may be found in Appendix 1.

Abbreviations

DNP	eds. Cancik, H. & Schneider, H., *Der Neue Pauly* (Stuttgart & Weimar, 1996-onwards)
Inscr	The *Cornell Greek Epigraphy Project*. The data is included in the PHI CD-ROM 7. Occasionally we make reference to Beta Code counts in these texts. These are indicated by (Inscr) in the 'Count' field.
LSJ	Liddell, Scott & Jones, *Greek English Lexicon with a supplement* 9th ed. (Oxford, 1968)
OCD3	eds. Hornblower, S. & Spawforth, A., *The Oxford Classical Dictionary* 3rd Ed. (Oxford, 1996)
Papyri	The *Duke Databank of Documentary Papyri*. Most of its data is included in the PHI CD-ROM 7 and has been made available online at the Perseus Project (url: http://odyssey.lib.duke.edu/papyrus/). Occasionally we make reference to Beta Code counts in these texts. These are indicated by (Papyri) in the 'Count' field.

I. Additional Greek Letters

Introduction and Overview

Table of Characters Proposed

Character	Name	Similar Unicode
Ϲ	Greek Capital Letter Lunate Sigma	
	Greek Capital Letter San	
	Greek Small Letter San	

Introduction

These three letters are currently missing from the Unicode Standard. They are widely used and it is important that they be included.

Greek Small Letter Lunate Sigma is already present in Unicode Standard 3.2 and has the codepoint 03F2. The space in the Greek and Coptic code table would indicate that Greek Capital Letter Lunate Sigma would be assigned the code 03A2.

Greek Capital Letter San and Greek Small Letter San are discussed together below.

a. Additional Greek Letters: New Characters

I.a.1 Greek Capital Letter Lunate Sigma

Sign	Similar Unicode	Beta Code	Count
C		*S3	1,470 instances, 50 authors

• Greek vocal notation symbol 31 (see Musical section below)

Definition and comments

Capital Lunate Sigma (uppercase version of 03F2).This character is an extremely widely used version of the Greek Sigma, employed over many centuries and in many contexts (for example, epigraphical, papyrological, modern typesetting).

The lowercase lunate sigma is conventionally written with the uppercase lunate sigma (see Example 1 below). Currently it is not possible to achieve this in the current Unicode Standard.

It is also the case that both types of sigma—lunate and non-lunate—may be required in the same text. For instance, a recent edition of Theodorus Metochites' *Carmina XIV-XX* attempts to reproduce an accurate printed edition of exactly what appears in the codex and the editor preserves the original scribe's use of both lunate and non-lunate sigmas.[3] Example 2 below shows another modern printed edition which employs both types of sigma in the same text.

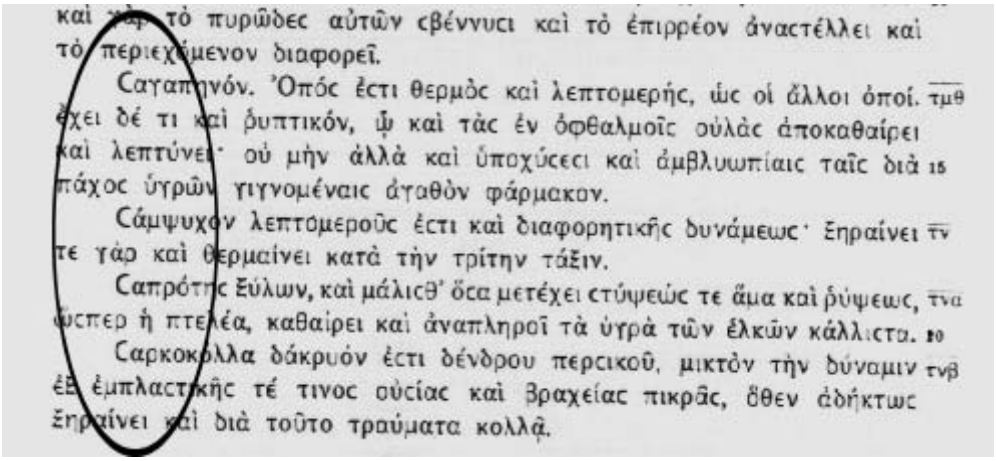
This character is required for the correct and accurate representation of Ancient, Medieval and modern Greek texts and is necessary to complement the Greek Small Letter Lunate Sigma which already exists in the Unicode Standard.[4] It is important for reasons of consistency and because the letter is an important and integral part of the Greek alphabet that this character be included in the Unicode Standard.

[3] See Featherstone (2000)

[4] See also Haralambous (2002) 18: "The Lunate sigma U+03F2 GREEK LUNATE SIGMA SYMBOL, which is not actually a "symbol" (in the sense that it is used for Greek text only and *not* for mathematics), but the traditional way of representing a *context free sigma* (neither initial nor final), requires an uppercase version.[4] Therefore, it is necessary to include its uppercase version as an additional character in the Unicode standard."

Example 1

Aëtius Med., *Iatricosum liber i.* Chapter P



καὶ γὰρ τὸ πυρῶδες αὐτῶν σβέννυσι καὶ τὸ ἐπιρρέον ἀναστέλλει καὶ τὸ περιεχόμενον διαφορεῖ.

Σαγαπηνόν. Ὀπός ἐστι θερμὸς καὶ λεπτομερής, ὡς οἱ ἄλλοι ὀποί. τμθ ἔχει δέ τι καὶ ῥυπτικόν, ᾧ καὶ τὰς ἐν ὀφθαλμοῖς οὐλὰς ἀποκαθαίρει καὶ λεπτύνει· οὐ μὴν ἀλλὰ καὶ ὑποχύσεσι καὶ ἀμβλυωπίαις ταῖς διὰ πάχος ὑγρῶν γιγνομέναις ἀγαθὸν φάρμακον.

Σάμψυχον λεπτομεροῦς ἐστι καὶ διαφορητικῆς δυνάμεως· ξηραίνει τν τε γὰρ καὶ θερμαίνει κατὰ τὴν τρίτην τάξιν.

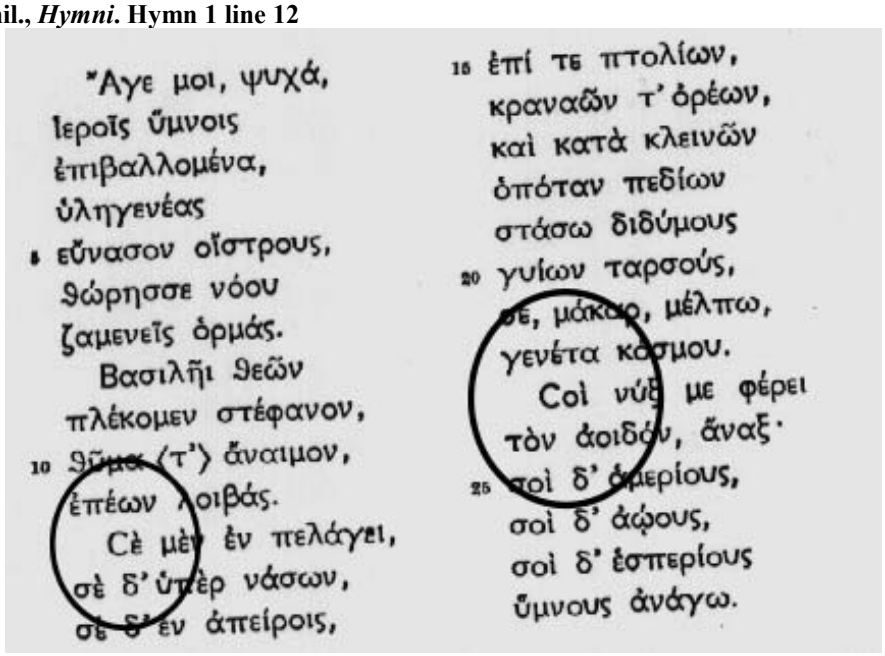
Σαπρότης ξύλων, καὶ μάλιστ' ὅσα μετέχει στύψεώς τε ἅμα καὶ ῥύψεως, τνα ὥσπερ ἡ πτελέα, καθαίρει καὶ ἀναπληροῖ τὰ ὑγρὰ τῶν ἑλκῶν κάλλιστα.

Σαρκοκόλλα δάκρυόν ἐστι δένδρου περσικοῦ, μικτὸν τὴν δύναμιν τνβ ἐξ ἐμπλαστικῆς τέ τινος οὐσίας καὶ βραχείας πικρᾶς, ὅθεν ἀδήκτως ξηραίνει καὶ διὰ τοῦτο τραύματα κολλᾷ.

Olivieri, A., *Aëtii Amideni libri medicinales i-iv* (Teubner, Leipzig, 1935) 129

Example 2

Synesius Phil., *Hymni*. Hymn 1 line 12



Ἄγε μοι, ψυχά,
ἱεροῖς ὕμνοις
ἐπιβαλλομένα,
ὑλιγενέας
εὔνασον οἴστρους,
ϑώρησσε νόου
ζαμενεῖς ὁρμάς.
Βασιλῆι ϑεῶν
πλέκομεν στέφανον,
ϑῦμε ⟨τ'⟩ ἄναιμον,
ἐπέων λοιβάς.
Σὲ μὲν ἐν πελάγει,
σὲ δ' ὑπὲρ νάσων,
σὲ δ' ἐν ἀπείροις,
ἐπί τε πτολίων,
κραναῶν τ' ὀρέων,
καὶ κατὰ κλειτῶν
ὁπόταν πεδίων
στάσω διδύμους
γυίων ταρσούς,
σέ, μάκαρ, μέλπω,
γενέτα κόσμου.
Σοὶ νύξ με φέρει
τὸν ἀοιδόν, ἄναξ·
σοὶ δ' ἀμερίους,
σοὶ δ' ἀφώνους,
σοὶ δ' ἑσπερίους
ὕμνους ἀνάγω.

Dell'Era, A., *Sinesio di Cirene. Inni* (Tumminelli, Rome, 1969) 7

I.a.2 Greek Capital Letter San, Greek Small Letter San

Sign	Similar Unicode	Beta Code	Count
Ϻϻ		#711	4 instances, 3 authors

Definition and comments

The Letter San is an Archaic letter. This letter is used frequently in Greek literature and is especially important for the study and discussion of epigraphical texts.

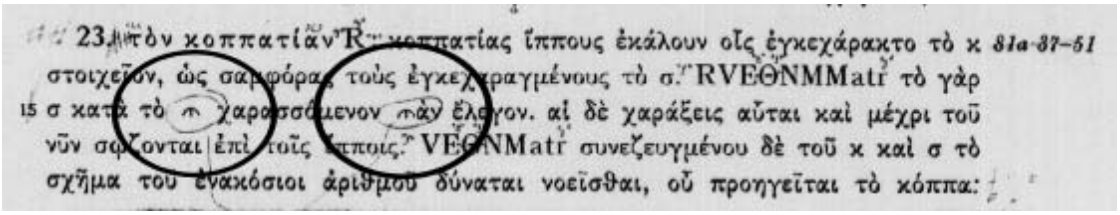
Gardthausen, discussing the pre-Greek characters Zade and Zain (San overlaps these two characters) comments how the letter was sounded 'ts' or 'ss'.[5]

This character is widely used in ancient Greek texts, however because of the difficulty of representation, it has been very difficult to represent in any modern editions. Editors of texts containing the letter San have often resorted to resolving this character into another, more easily available character. For example, in Athenaeus Soph., and Aristoxenus Mus. it has been inappropriately resolved into a Lunate Sigma.

The letter San is sometimes regarded as an archaic form of the letter Sampi (03E0, 03E1), and it does indeed occupy the same position in the alphabet. However, Sampi is a character formed from a combination of the letters San and Pi (hence the name *sam-pi*). The identity of these two letters is only historical, as with the case for Digamma (03DC and 03DD) and Stigme (03DA, 03DB). The same rationale which separated the Archaic and Classical forms of the letters Koppa and Digamma/Stigme should be used here.

The TLG has recorded several glyph variants of the character San, including the once given above and one virtually identical to 039C GREEK CAPITAL LETTER MU.

Example 1
Scholia in Aristophanem, *Scholia in nubes (scholia vetera)* verse 23



Holwerda, D., *Prolegomena de comoedia. Scholia in Acharnenses, Equites, Nubes* (Bouma, Groningen, 1977) 13

[5] Gardthausen (1913:2) 38-39. See also 369

II. Ancient Greek Editorial Characters and Punctuation

Introduction and Overview

Table of Characters Proposed

Number	Character	Name	Unicode	Comment
Section and Pause Markers, Word Separators				
II.a.1		Greek Coronis		
II.a.2		Greek Paragraphos		
II.a.3		Greek Forked Paragraphos		
II.a.4		Greek Reversed Forked Paragraphos		
II.a.5	˙	Greek Ano Stigme		
II.b.1	·	Greek Mese Stigme	0387	
II.b.2	.	Greek Kato Stigme	002E	
II.b.3	:	Greek Dicolon	003A	
II.b.4	⋮	Greek Tricolon	250A	See also Metrical proposal below
II.a.6	⁖	Greek Pentonkion		
II.a.7	͵	Greek Papyrological Hypodiastole		
Word Joiner				
II.a.8	‿	Greek Papyrological Hyphen		
Text Highlighters and Markers				
II.b.5	>	Greek Diple	003E	
II.b.6	<	Greek Reversed Diple	003C	
II.a.9	Ͻ	Greek Antisigma		
II.b.7	—	Greek Obelos	2014	
II.a.10	⸓	Greek Dotted Obelos		
II.a.11	↗	Greek Downward Ancora		
II.a.12	↙	Greek Upward Ancora		
Amended Accents				
II.a.13		Greek Combining Dotted Acute		
II.a.14		Greek Combining Dotted Grave		
Aristarchean Editorial Notation				
II.b.8	•	Greek Aristarchean Stigme	2022	
II.a.15	⸖	Greek Diple Periestigmene		
II.a.16	Ͻ	Greek Sigma Periestigmenon		
II.a.17	Ͼ	Greek Antisigma Periestigmenon		

Introduction

When writing, the ancient Greeks generally wrote in continuous uppercase letters with no space between words. On occasion the scribe—or more commonly a later hand—added in punctuation to make the meaning of the text more transparent: for instance, symbols were added to indicate the end of a sentence, change of speaker or that two words which could be read as one word were in fact separate words.

In modern languages, there are very clear rules about what piece of punctuation may be used and under what circumstances. In this, ancient Greek punctuation is rather different as there is no universally acknowledged system of punctuating text[6] and so one symbol may, for example, be used to represent a word break in one text, but a sentence end or speaker change in another. It is, however, possible to draw general rules of thumb as to how these characters were used.[7] For example, a Dicolon is always used to represent a break in the text, perhaps between letters, words, sentences or sections. Furthermore, the characters are usually used consistently in any one papyrus.

When punctuation is present, it falls into one of two kinds: (1) marginal or semi-marginal characters which mark the end of a section of text (e.g. Coronis, Paragraphos);[8] (2) characters mixed in with the text to mark pauses, end of sense or separation between words (e.g. Stigme, Hypodiastole).

Often two of these characters will be used in conjunction with one another. For example a Coronis is conventionally written next to a Paragraphos to mark the end of a poem; a Paragraphos is often used with a Mese Stigme or a Dicolon to indicate a change of speaker in a drama.

[6] Turner & Parsons (1987) 8

[7] See Flock (1908)

[8] They always mark the end of a section, never the beginning. So, for instance, a Coronis may occur at the end of a poem, but may not introduce one.

Introduction to Aristarchean Editorial Notation

Aristarchos of Samothrace (*c*. 216-144 BCE),[9] fifth head of the Library at Alexandria, provided a major edition of the works of Homer, which forms the basis of our modern editions. In his edition, he made use of the standard ancient critical characters—to which he occasionally applied new definitions—together with a series of new characters. This edition of the text was intended for professional scholars.[10] These additional characters are necessary for a full scholarly discussion of the Homeric corpus as well as for new editions of the text. For a complete list of the extant papyri containing these symbols, please see McNamee (1992) 28-9.

There are four signs whose characters are identical to the standard Greek punctuation symbols but with a different meaning. Their definitions have been appended to the appropriate characters above[11] and not included in this section of the proposal:

Antisigma	Marks a line which is out of place.
Asteriskos	Here it is always marginal. It is also commonly used in combination with the Obelos to indicate lines regarded as transposed.
Diple	Indicates that there is a note on this line in Aristarchus' accompanying commentary.
Obelos	Indicates lines regarded as spurious. See also Asteriskos above.

Please note that all the following signs are all marginal. They appear mostly in editions of Homer's *Iliad*¸ *Odyssey* and the *Homeric Hymns* unless otherwise stated. However, Diogenes Laertius (first half of the 3rd century CE) notes the use of the same sigla in editions of Plato.[12]

[9] Lockwood, J.F., Browning, R. Wilson, N.G. "Aristarchus" in *OCD*[3] (1996) 159

[10] Wace, A.J.B. & Stubbings, F.H. (1962) 224

[11] Except for the Asteriskos which seems to be satisfactorily represented in the current Unicode Standard with 203B REFERENCE MARK.

[12] Diogenes Laertius 3.65-6

Notes on the Editorial and Punctuation Proposal

Problems of representation

While all of these characters appear abundantly in surviving papyri (and increasingly in modern editions) it has not always been possible to render these characters satisfactorily with modern typesetting. For instance, the Ano Stigme has routinely been resolved to 0387 GREEK ANO TELEIA in transcription, something which can harm or destroy the sense of punctuation in a text.

Notes on this section of the proposal

While ancient scholars occasionally write about punctuation, we have avoided referring to them since, as Turner puts it, "it seems that the critical signs did not always have the same meaning or the meaning assigned to them by our authorities."[13] We have preferred, instead, to concentrate on references to modern scholarship and the extant papyri themselves.

Given the current problems of representing these symbols we have on occasion included extracts from the original papyri together with modern transcriptions to enable a more precise depiction of certain characters than simple reference to a modern edition would allow.

[13] Turner & Parsons (1987) 14

a. Ancient Greek Editorial Characters and Punctuation: New Characters

Table of Characters Included in this Section of the Proposal

Number	Character	Name	Unicode	Comment
Section and Pause Markers, Word Separators				
II.a.1		Greek Coronis		
II.a.2		Greek Paragraphos		
II.a.3		Greek Forked Paragraphos		
II.a.4		Greek Reversed Forked Paragraphos		
II.a.5	·	Greek Ano Stigme		
II.a.6	⁖	Greek Pentonkion		
II.a.7	⸵	Greek Papyrological Hypodiastole		
Word Joiner				
II.a.8		Greek Papyrological Hyphen		
Text Highlighters and Markers				
II.a.9	ϽϽ	Greek Antisigma		
II.a.10	⸓	Greek Dotted Obelos		
II.a.11	↗	Greek Downward Ancora		
II.a.12	↙	Greek Upward Ancora		
Amended Accents				
II.a.13		Greek Combining Dotted Acute		
II.a.14		Greek Combining Dotted Grave		
Aristarchean Editorial Notation				
II.a.15	⸗	Greek Diple Periestigmene		
II.a.16	ϽϽ	Greek Sigma Periestigmenon		
II.a.17	ϹϹ	Greek Antisigma Periestigmenon		

Section and Pause Markers, Word Separators

II.a.1 Greek Coronis

Sign	Similar Unicode	Beta Code	Count
		#310 et al, see below	80 instances, 27 authors

Definition and comments

A mark of termination. The Coronis is conventionally used to mark the end of an important section of a piece of text in poetry or prose, most commonly the end of a poem or the end of a section of text.[14] This character is used extremely abundantly in extant papyri.

The Coronis is frequently accompanied by a Paragraphos (see Examples 1a-b and 2a-b below). However, this is not always the case (see Example 3a-b below).

The Coronis is always marginal. The central line lines up with the bottom of the line it refers to. The character is two rows in height. However, in papyri, it may stretch up to four or five lines in either direction.

There are three basic glyph variants for the Coronis: (1) The early form:  which was the dominant form until the first century BCE; (2) The design stabilizes after this period into the Classical form:  . This—or slights variants of it—is the most common glyph variant; (3) a glyph which looks similar to the Forked Paragraphos (see below) appears in later papyri: .[15]

Given the difficulties in typesetting this character in modern editions, it has often been the case that pre-existing ASCII characters have been combined to create something approximating the character (see Example 3a-b below). Alternatively, it has on occasion be resolved to a Forked Paragraphos, something which destroys the meaning of the original punctuation since the Forked Paragraphos has a different semantic meaning (see below).

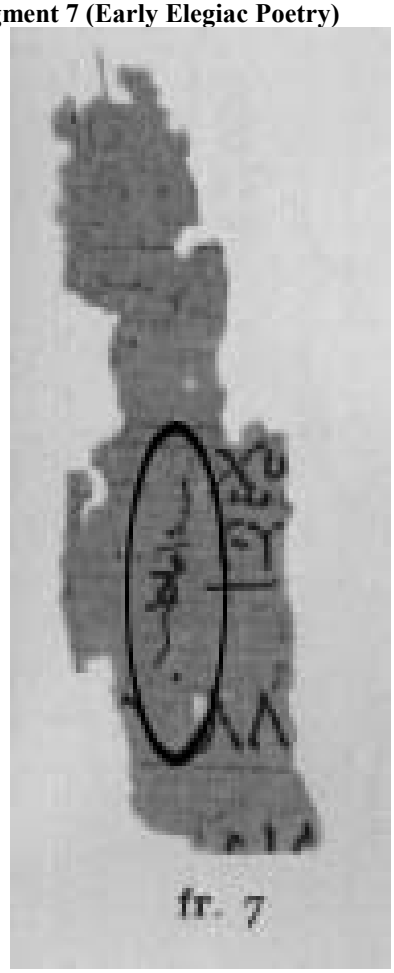
It is important that the Coronis be included in the Unicode Standard because it is an extremely common piece of punctuation (it is in no way a textual ornament)[16] necessary for the accurate representation of ancient Greek texts.

[14] Stephen (1959) 5

[15] Beta Code includes different escapes for each of the main variant forms of the Coronis, as well as special escapes for Coronides which have only partially been preserved (for instance, only the upper half remains). A complete list of the 14 escapes is: Variant Early Coronis (#302); J-form Coronis (#304); Double-J Coronis (#305); Late Coronis (#308); Elaborate Coronis with Double Circle Center (#310); Elaborate Coronis with Cross Center (#313); Small Elaborate Coronis (#315); Early Flattened Coronis (#451); Early Standard Coronis (#456); Triple-Barred Coronis (#504). Partial Coronides: (#300); (#307); (#311); (#312).

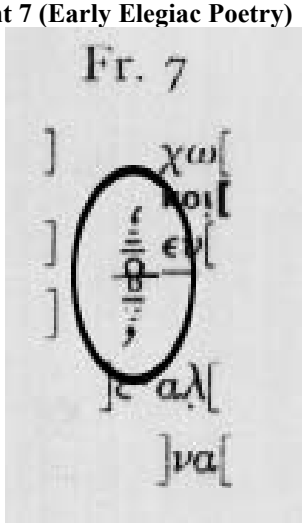
[16] Stephen (1959) 11

Example 1a (Standard Coronis in papyrus)
Oxyrhynchus Papyrus 2327 Fragment 7 (Early Elegiac Poetry)



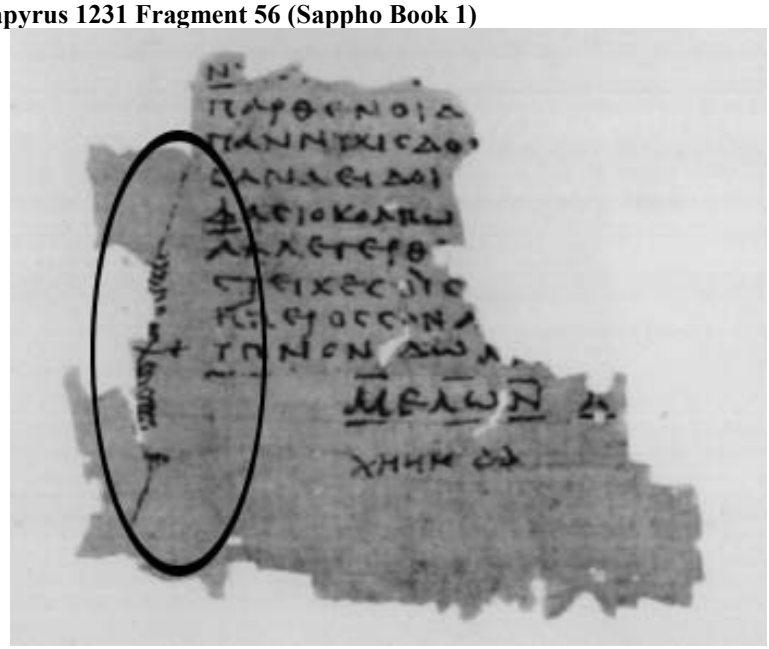
Lobel, E. & Roberts, C.H., *The Oxyrhynchus Papyri XXII* (London, 1954) Plate X

Example 1b (Standard Coronis transcribed)
Oxyrhynchus Papyrus 2327 Fragment 7 (Early Elegiac Poetry)



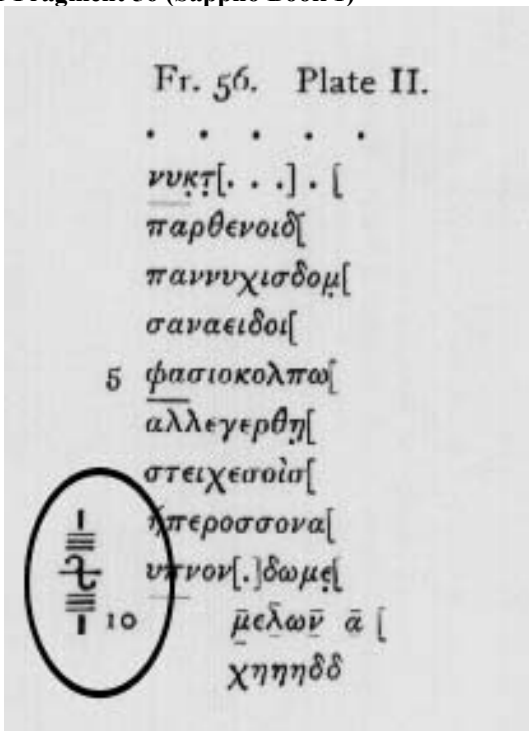
Lobel, E. & Roberts, C.H., *The Oxyrhynchus Papyri XXII* (London, 1954) 70

Example 2a (Long Coronis in papyrus)
Oxyrhynchus Papyrus 1231 Fragment 56 (Sappho Book 1)



Grenfell, B.P. & Hunt, B.P., *The Oxyrhynchus Papyri X* (London, 1914) Plate II

Example 2b (Long Coronis in transcription)
Oxyrhynchus Papyrus 1231 Fragment 56 (Sappho Book 1)

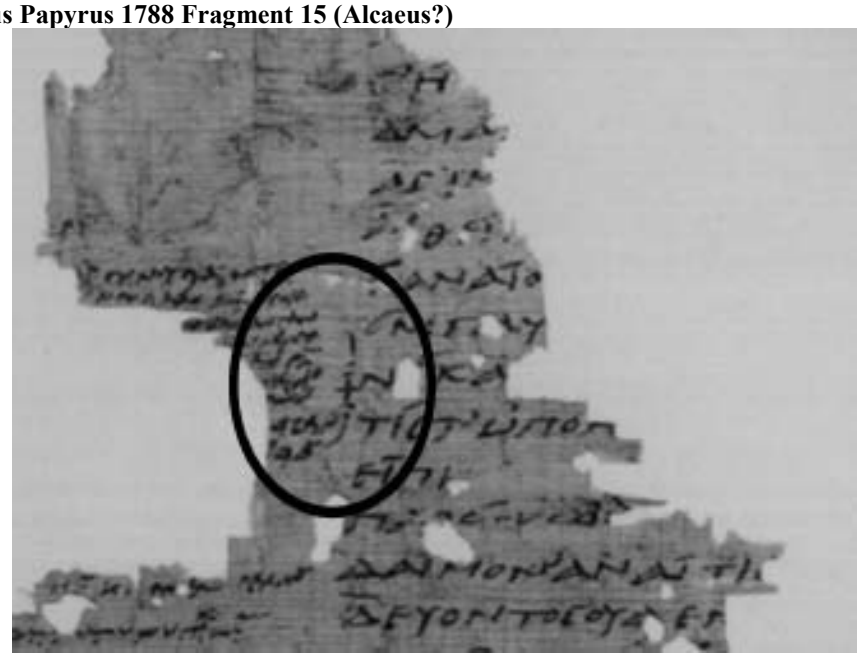


Fr. 56. Plate II.

. . . . .
νυκ̣τ̣[. . .] . [
παρθενοιδ̣[
παννυχισδομ̣[
σαναειδοι[
φασιοκολπω̣[
αλλεγερθη̣[
στειχεσοισ̣[
ὑπεροσσονα[
υπνον[.]δωμε̣[
μελ̣ω̣ν̄ ᾱ [
χηηηδδ

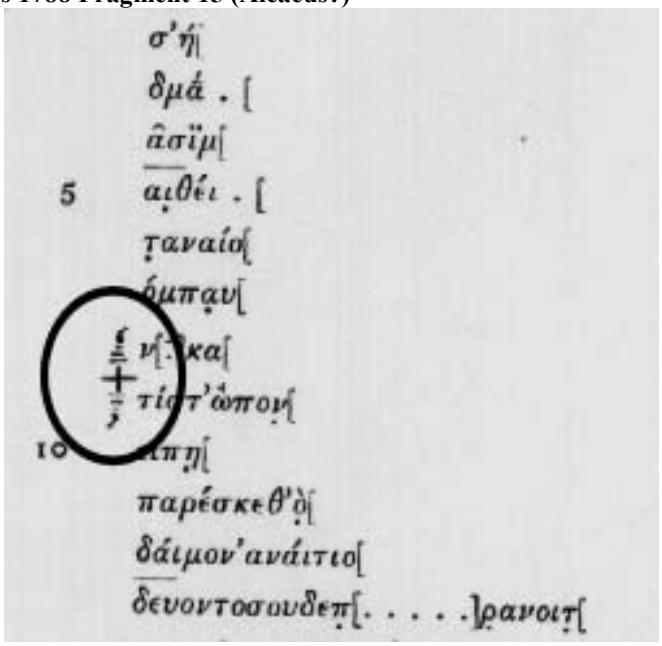
Grenfell, B.P. & Hunt, B.P., *The Oxyrhynchus Papyri X* (London, 1914) 38

Example 3a (Simplified Coronis without Paragraphos[17] in Papyrus)
Oxyrhynchus Papyrus 1788 Fragment 15 (Alcaeus?)



Grenfell, B.P. & Hunt, B.P., *The Oxyrhynchus Papyri XV* (London, 1921) Plate II

Example 3b (Simplified Coronis without Paragraphos in Papyrus)
Oxyrhynchus Papyrus 1788 Fragment 15 (Alcaeus?)



Grenfell, B.P. & Hunt, B.P., *The Oxyrhynchus Papyri XV* (London, 1921) 56

[17] Note how the Paragraphos is used several lines later (with the word ΔAIMON′) to indicate a different sort of division.

II.a.2 Greek Paragraphos

Sign	Similar Unicode	Beta Code	Count
		#6	3,525 instances, 61 authors; (Papyri) 24 instances, 11 authors; (Inscr) 25 instances, 1 author

Definition and comments

A mark of termination.

This character marks the end of a section in text. It underlines the first one or two letters in the line in which the break occurs and usually juts out into the left margin by one to one-and-a-half letter widths. See Example 1a below. See Example 4 for a counter-example where the character does not jut out into the left margin.

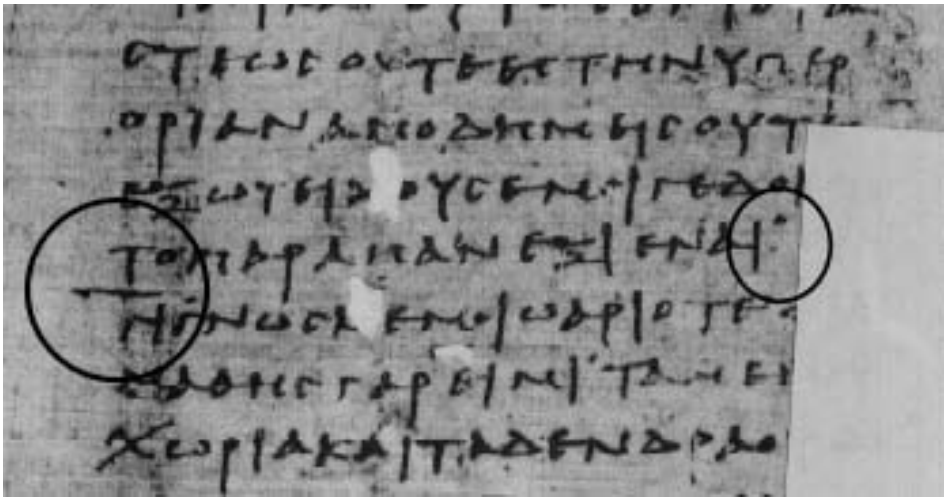
This character may be used with a Coronis, above, to indicate an important end in a text. Please see discussion in the section Coronis above.

However, it is also used without the Coronis to indicate these breaks, or it is used without the Coronis to indicate sub-divisions in a text. For instance, it may indicate the end of a piece of speech and so the change of speaker in a dialogue or drama. It may also indicate the end of a stanza, a new paragraph or end of a sentence.

In this second case, the Paragraphos may be used by itself, or in conjunction with another piece of punctuation—usually mid-line—to indicate specifically where the break occurs. So, in Examples 1a-b, we can see that a Dicolon has been used in conjunction with the Paragraphos to indicate a speaker change (Example 1c is included for easy reference to a modern edition which translates the ancient to modern punctuation). In Examples 2a-b, the Paragraphos is being used in conjunction with a short blank space.

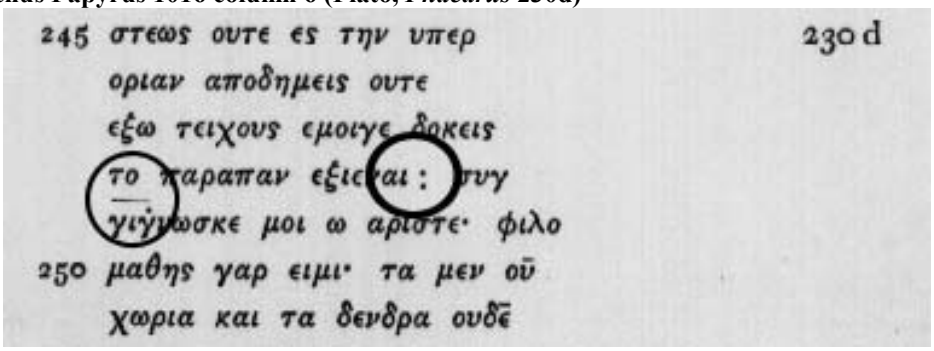
The Paragraphos is one of the most common and distinctive signs of ancient Greek punctuation and editors are often keen to leave them in their modern editions, as Examples 3 and 4 below indicate. In these two examples, the ancient Greek punctuation has been translated into modern Greek punctuation, except for the Paragraphos (and the space in Example 3, which was used in conjunction with the Paragraphos to indicate the end of a section).

Example 1a (Paragraphos used with Dicolon to indicate speaker change. Papyrus)
Oxyrhynchus Papyrus 1016 column 6 (Plato, *Phaedrus* 230d)



Hunt, A.D. *The Oxyrhynchus Papyri VII* (London, 1910) Plate V

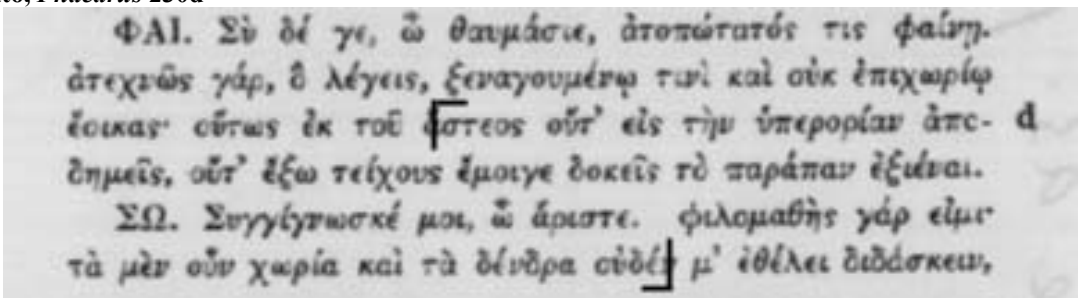
Example 1b (Paragraphos used with Dicolon to indicate speaker change. Transcription)
Oxyrhynchus Papyrus 1016 column 6 (Plato, *Phaedrus* 230d)



στεως ουτε ες την υπερ 230 d
οριαν αποδημεις ουτε
εξω τειχους εμοιγε δοκεις
το παραπαν εξιεναι : συγ
γιγνωσκε μοι ω αριστε· φιλο
μαθης γαρ ειμι· τα μεν οὖ
χωρια και τα δενδρα ουδε

Hunt, A.D. *The Oxyrhynchus Papyri VII* (London, 1910) 124

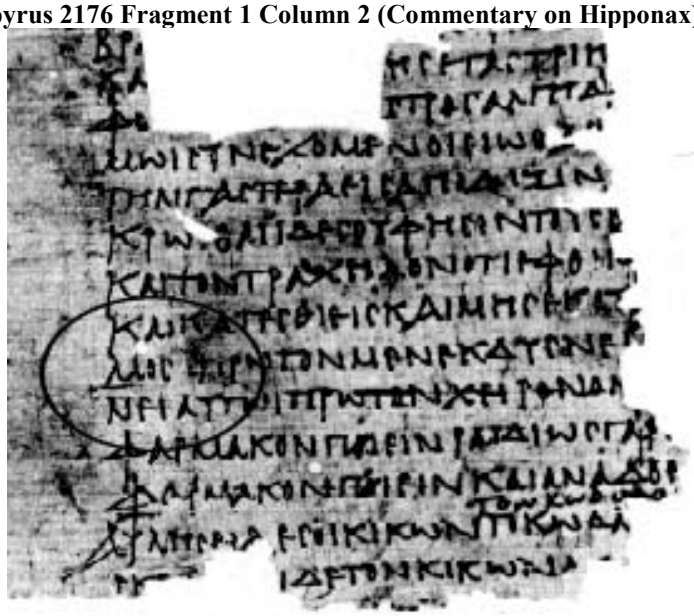
Example 1c (Modern edition of Plato's *Phaedrus* using modern punctuation. For comparison. Brackets mark the start and end of the extract of papyrus above)
Plato, *Phaedrus* 230d



ΦΑΙ. Σὺ δέ γε, ὦ θαυμάσιε, ἀποπώτατός τις φαίνῃ.
ἀτεχνῶς γάρ, ὃ λέγεις, ξεναγουμένῳ τινὶ καὶ οὐκ ἐπιχωρίῳ
ἔοικας· οὕτως ἐκ τοῦ ⌈ἄστεος οὔτ' εἰς τὴν ὑπερορίαν ἀπε- d
δημεῖς, οὔτ' ἔξω τείχους ἔμοιγε δοκεῖς τὸ παράπαν ἐξιέναι.
ΣΩ. Συγγίγνωσκέ μοι, ὦ ἄριστε. φιλομαθὴς γάρ εἰμι·
τὰ μὲν οὖν χωρία καὶ τὰ δένδρα οὐδέ⌋ μ' ἐθέλει διδάσκειν,

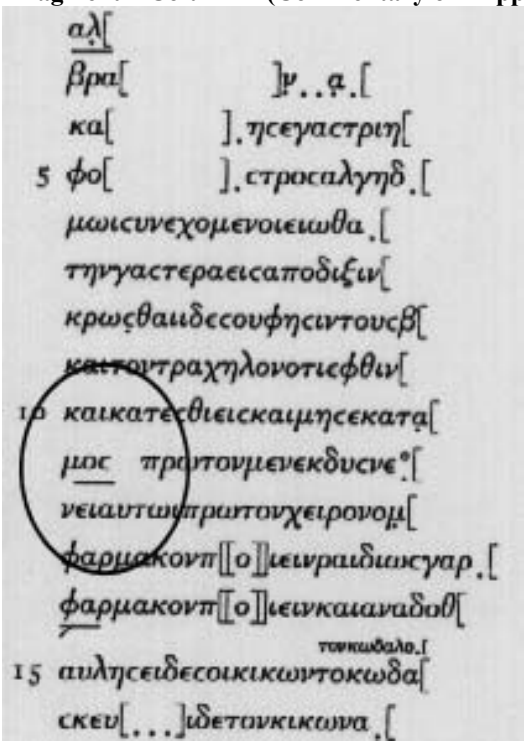
Burnett, J. *Platonis Opera. Tomis II* (Oxford, 1901) 230d

Example 2a (Paragraphos with blank space. Papyrus)[18]
Oxyrhynchus Papyrus 2176 Fragment 1 Column 2 (Commentary on Hipponax)



Lobel, E., Roberts, C.H. & Wegener, E.P., *The Oxyrhynchus Papyri XVIII* (London, 1941) Plate XII

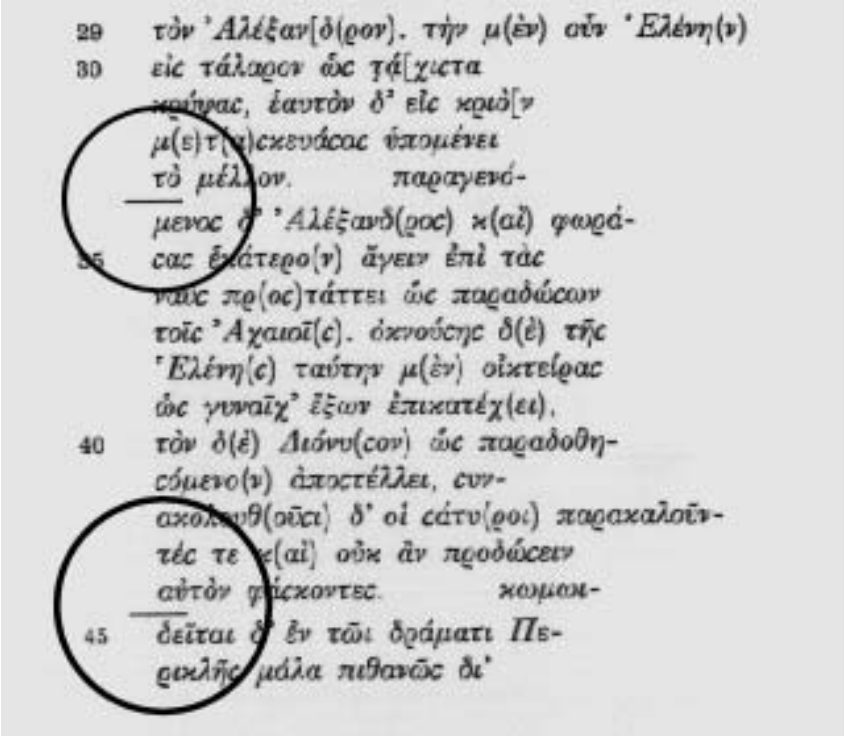
Example 2b (Paragraphos with blank space. Transcription)
Oxyrhynchus Papyrus 2176 Fragment 1 Column 2 (Commentary on Hipponax)



Lobel, E., Roberts, C.H. & Wegener, E.P., *The Oxyrhynchus Papyri XVIII* (London, 1941) 88

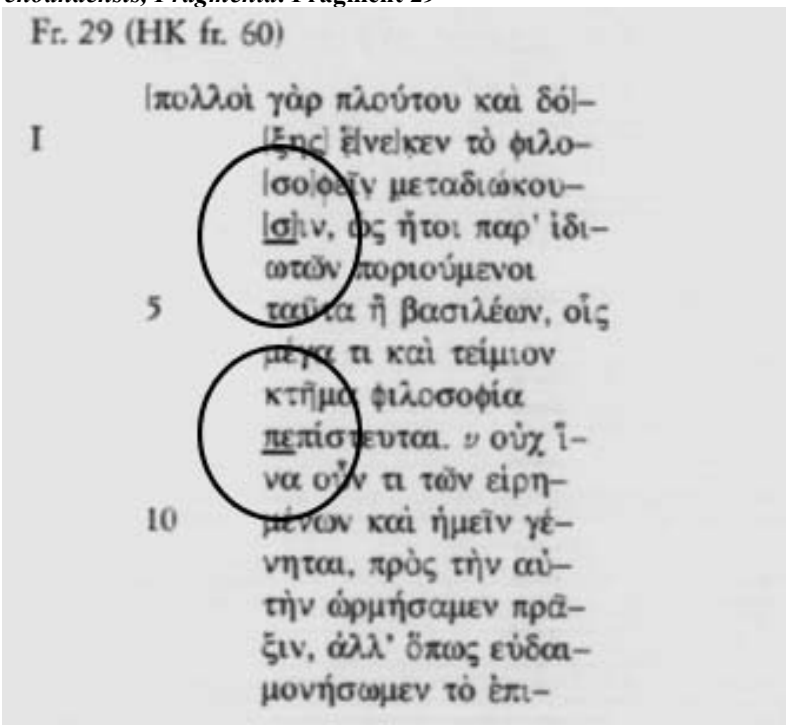
[18] We have adjusted the contrast of this graphic in order to make it more legible.

Example 3 (Speaker change)
Cratinus Comic., *Fragmenta (Austin*). Fragment 70


τὸν Ἀλέξαν[δ(ρον). τὴν μ(ὲν) οὖν Ἑλένη(ν)
εἰς τάλαρον ὡς τ[άχιστα
κρύψας, ἑαυτὸν δ' εἰς κριὸ[ν
μ(ε)τ[α]σκευάσας ὑπομένει
τὸ μέλλον. παραγενό-
μενος δ' Ἀλέξανδ(ρος) κ(αὶ) φωρά-
σας ἑκάτερο(ν) ἄγειν ἐπὶ τὰς
ναῦς πρ(ος)τάττει ὡς παραδώσων
τοῖς Ἀχαιοῖ(ς). ὀκνούσης δ(ὲ) τῆς
Ἑλένη(ς) ταύτην μ(ὲν) οἰκτείρας
ὡς γυναῖχ' ἕξων ἐπικατέχ(ει),
τὸν δ(ὲ) Διόνυ(σον) ὡς παραδοθη-
σόμενο(ν) ἀποστέλλει, συν-
ακολουθ(οῦσι) δ' οἱ σάτυ(ροι) παρακαλοῦν-
τές τε κ(αὶ) οὐκ ἂν προδώσειν
αὐτὸν φάσκοντες. κωμω-
δεῖται δ' ἐν τῷ δράματι Πε-
ρικλῆς μάλα πιθανῶς δι'

Austin, C., *Comicorum Graecorum fragmenta in papyris reperta* (De Gruyter, Berlin, 1973) 70

Example 4 (Non-spacing glyph variant)
Diogenes Phil. *Oenoandensis, Fragmenta*. Fragment 29


Fr. 29 (HK fr. 60)

I
[πολλοὶ γὰρ πλούτου καὶ δό]-
[ξης] ἕ[νε]κεν τὸ φιλο-
[σο]φεῖν μεταδιώκου-
[σ]ιν, ὡς ἤτοι παρ' ἰδι-
ωτῶν πορισύμενοι
ταῦτα ἢ βασιλέων, οἷς
μέγα τι καὶ τείμιον
κτῆμα φιλοσοφία
πεπίστευται. ν οὐχ ἵ-
να οὖν τι τῶν εἰρη-
μένων καὶ ἡμεῖν γέ-
νηται, πρὸς τὴν αὐ-
τὴν ὡρμήσαμεν πρᾶ-
ξιν, ἀλλ' ὅπως εὐδαι-
μονήσωμεν τὸ ἐπι-

Smith, M.F., *Diogenes of Oenoanda: the Epicurean inscription* (Bibliopolis, Naples, 1993) 193

II.a.3 Greek Forked Paragraphos

Sign	Similar Unicode	Beta Code	Count
		#8, #452, #454	306 instances, 28 authors

Definition and comments

A mark of termination.

The Forked Paragraphos takes a variety of forms in practice but usually consists of a Paragraphos with an additional short line rising from the lower left and meeting the Paragraphos some way to the left of its midpoint. Another common glyph variant is with what appears to be a Diple (see below) added to the left hand side: 

This character is used in much the same way as a standard Paragraphos: that is, either by itself, or with another piece of punctuation.

The Forked Paragraphos conventionally appears in texts together with the Paragraphos, indicating subdivisions within a text, with the Paragraphos indicating the main divisions. Alternatively, it may be used to indicate a different sort of termination: this is the case in Example 2, where the Forked Paragraphos indicates the end of an antistrophe, while a Paragraphos indicates the end of a strophe.

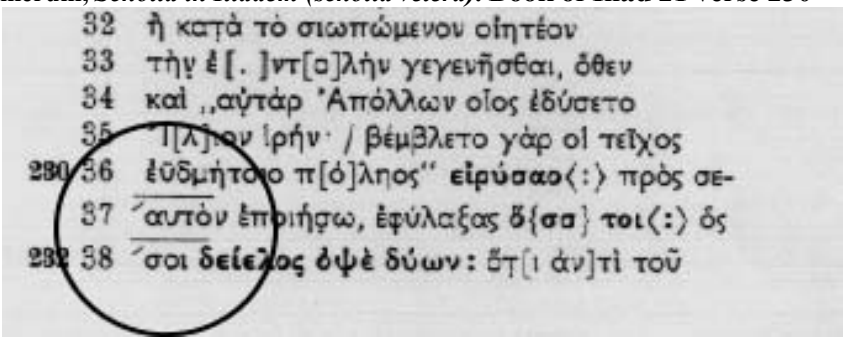
On occasion this character may appear in texts without the Paragraphos, as in Example 2 below, where it indicates quotations from Homer.

There are also occasions where a Coronis may have been resolved in modern editions to a Forked Paragraphos. This is on account of the later form of the Coronis taking a shape very similar to that of the Forked Paragraphos. See discussion in Coronis above.

This is another very common character in Greek punctuation.

Example 1 (Denoting stanzas)
See Appendix 1

Example 2 (Marking quotations from Homer. Note: the quotations are marked in boldface)
Scholia in Homerum, *Scholia in Iliadem (scholia vetera)*. Book of Iliad 21 verse 230



Erbse, H., *Scholia Graeca in Homeri Iliadem (scholia vetera)*, vol. 4 (De Gruyter, Berlin, 1975) 99

II.a.4 Greek Reversed Forked Paragraphos

Sign	Similar Unicode	Beta Code	Count
		#453	3 instances, 2 authors

Definition and comments

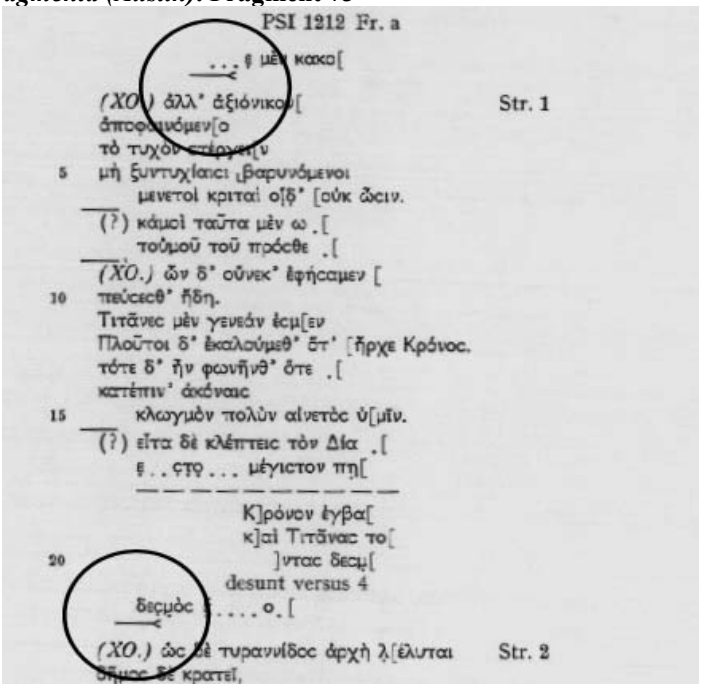
A mark of termination.

This character the Forked Paragraphos reflected in the y-axis. A glyph variant is:  .

This character seems to serve the same function as the Forked Paragraphos (see above), however, unlike the Forked Paragraphos, this character is comparatively rare in the papyri. In the example below, it is used to indicate the termination of strophes in a choral ode, while the Paragraphos proper is used to indicate the end of a section of speech.

Example 1

Cratinus Comic., *Fragmenta (Austin)*. Fragment 73



Austin, C., *Comicorum Graecorum fragmenta in papyris reperta* (De Gruyter, Berlin, 1973) 40

II.a.5 Greek Ano Stigme

Sign	Similar Unicode	Beta Code	Count
·		#72	(Papyri) 44 instances, 11 authors

Definition and comments

Mark of termination of sentence or section or mark of pause.

Turner and Parsons: "Two kinds of stop may be seen in texts of the late ii. B.C. and of i. B.C.: one is placed high in the line [Greek Ano Stigme], the other in a middle position [Greek Mese Stigme]... Normally the high stop… marks period end. The stop in the middle position serves as a subdivision inside the period, with the effect of a modern comma."[19]

While this character is used abundantly in the papyri, it has often—and incorrectly—been rendered as a 0387 GREEK ANO TELEIA, as in Example 1b (compare the position of the Stigme in the original papyri and the transcription). This has the effect of destroying the original intentions of the ancient scholar. It is also misleading, since in this transcription, the other punctuation marks have been preserved from the original papyrus. This helps to account for why such a common character has a relatively low count in the *Duke Databank of Documentary Papyri*.

In Example 2 below, it can been seen that it is used in conjunction with the Mese Stigme, a version using modern Greek punctuation is given on the right-hand side which shows how the Mese Stigme is commonly being used as a full stop while the Ano Stigme is a semi-colon.

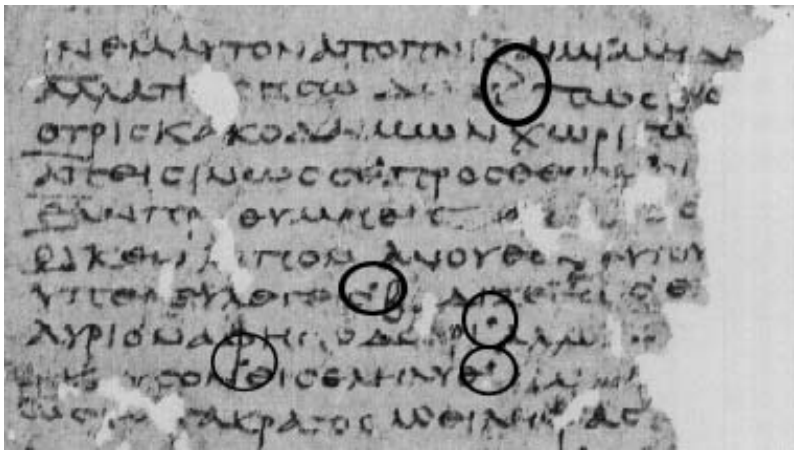
This character is used in combination with the Mese Stigme or the Kato Stigme. Papyri with all three are also known.

For cases of combination with the various Paragraphoi, see the section "Paragraphos" above.

Please see Appendix 1 for a longer example of a text which includes all three Stigmes.

Example 1a (Ano Stigme in papyrus. In order to avoid cluttering the graphic, we have not circled all instances)

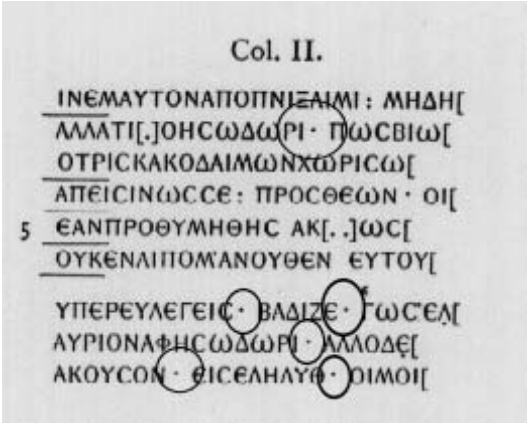
Oxyrhynchus papyrus 211 column 2 (Menander *Perikeiromene*)



Grenfell, B.P. & Hunt, A.S, *The Oxyrhynchus Papyri II* (London, 1899) Plate III

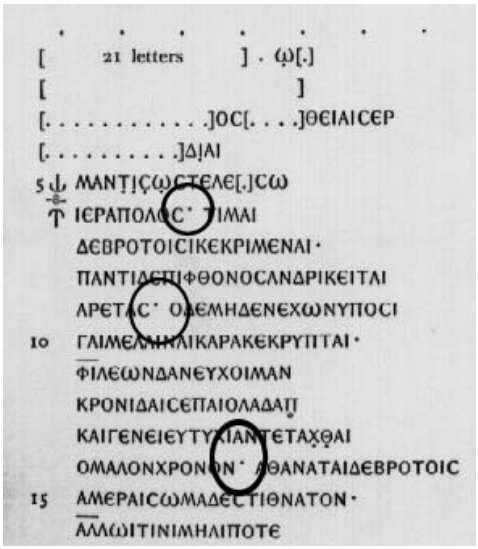
[19] Turner and Parsons (1987) 9

Example 1b (Transcription of 1a)
Oxyrhynchus papyrus 211 column 2 (Menander, *Perikeiromene*)



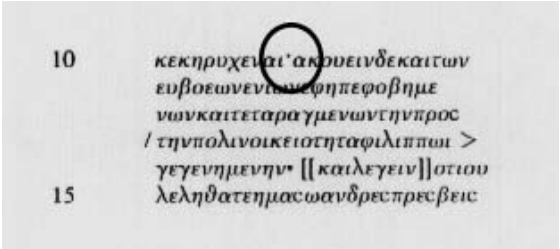
Grenfell, B.P. & Hunt, A.S, *The Oxyrhynchus Papyri II* (London, 1899) 13

Example 2 (Ano Stigme used in conjunction with the Mese Stigme)
Oxyrhynchus Papyrus 659 Column 1 (Pindar, *Partheneion* and ode)



Grenfell, B.P. & Hunt, A.S, *The Oxyrhynchus Papyri IV* (London, 1904) 53

Example 3 (Note: the Ano Stigme is here used in conjunction with the Mese Stigme)
Demosthenes Orat, *De Falsa Legatione* 11-32. B.M. Add MS. 34473, art. 1



Turner, E.G. & Parsons, P.J., *Greek Manuscripts of the Ancient World* 2nd ed. (Institute of Classical Studies, London, 1987) 140

II.a.6 Greek Pentonkion

Sign	Similar Unicode	Beta Code	Count
⁖	See below	#55	(Inscr) 5 instances, 2 authors

Definition and comments

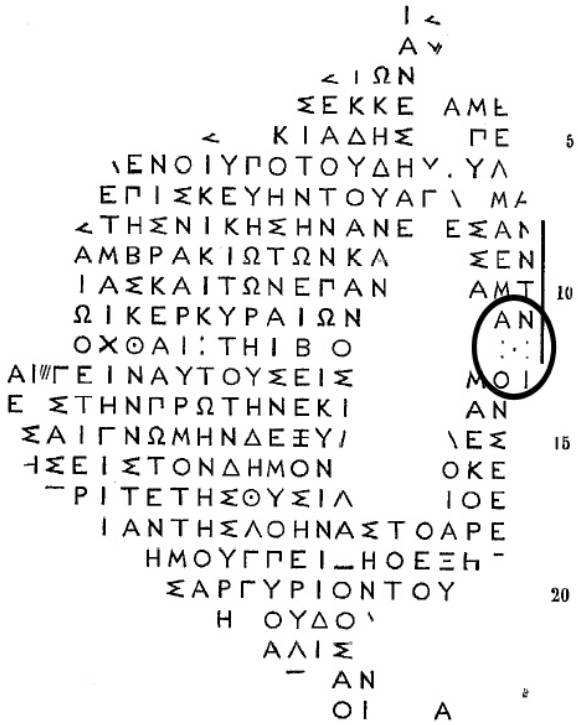
Mark of termination of sentence or section or mark of pause.

This character occurs on inscriptions, albeit rarely. As with other characters of punctuation, the meaning is fluid. Unlike other characters, the meaning here is rather ill-defined. Nonetheless, it is a character which appears often enough to warrant consideration.

This character is similar to 003A + 0387 + 003A. However, it is not quite accurate since the upper dots of 003A do not appear at the top of the line, but rather two thirds of the way up.

Example 1a below is a direct transcription of an Attic inscription. The Pentonkion symbol appears here at the end of the 12th line. Example 1b shows an attempted reconstruction of the text. Note how the Pentonkion has been resolved into 0387 GREEK ANO TELEIA. Later editors appear to have regarded this resolving of the character as rather rash and editions of the 20th century have shown a trend towards preserving the Pentonkion symbol.[20] It is important that this symbol is present in order for epigraphists to be able to accurately discuss and represent Greek inscriptions.

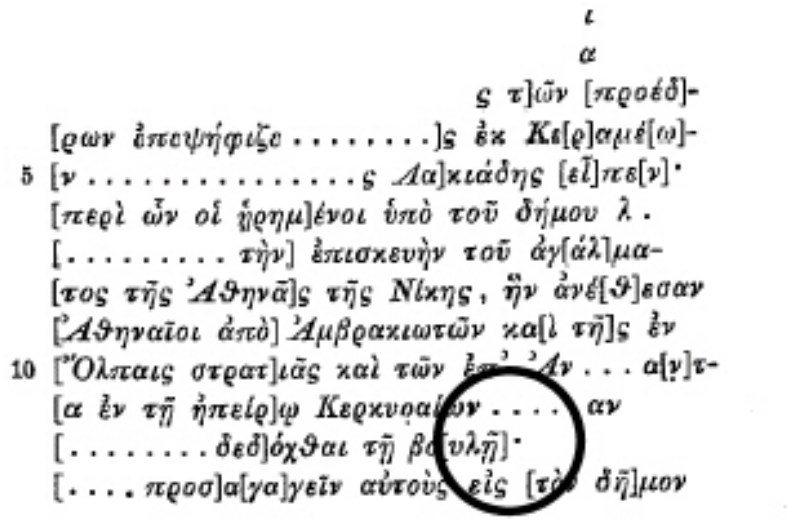
Example 1a
Inscriptiones Graecae II/III.1 404



Köhler, U., "Zur Geschichte des amphilochischen Krieges" in *Hermes* XXVI (1891) 43

[20] See for instance Kirchner, J., *Inscriptiones Graecae* II/III.1 (1913) 168

Example 1b
Inscriptiones Graecae II/III.1 404 (Reconstruction)


ι
α
ς τ]ῶν [προεδ]-
[ρων ἐπεψήφιζε . . . . .]ς ἐκ Κε[ρ]αμέ[ω]-
[ν . . . . . ς Λα]κιάδης [εἶ]πε[ν]·
[περὶ ὧν οἱ ἡρημ]ένοι ὑπὸ τοῦ δήμου λ .
[. . . . . τὴν] ἐπισκευὴν τοῦ ἀγ[άλ]μα-
[τος τῆς Ἀθηνᾶ]ς τῆς Νίκης, ἣν ἀνέ[θ]εσαν
[Ἀθηναῖοι ἀπὸ] Ἀμβρακιωτῶν κα[ὶ τῆ]ς ἐν
[Ὀλπαις στρατ]ιᾶς καὶ τῶν ἐ[π]ὶ Ἀν . . . α[γ]τ-
[α ἐν τῇ ἠπείρ]ῳ Κερκυραί[ων . . . . αν
[. . . . . δεδ]όχθαι τῇ βο[υλῇ]·
[. . . . προσ]α[γα]γεῖν αὐτοὺς εἰς [τὸν δ]ῆμον

Behr, A., "Der amphilochische Krieg und die kerkyraeischen Optimaten" in *Hermes* XXX (1895) 447

II.a.7 Greek Papyrological Hypodiastole

Sign	Similar Unicode	Beta Code	Count
⸏		#532	9 instances, 3 authors

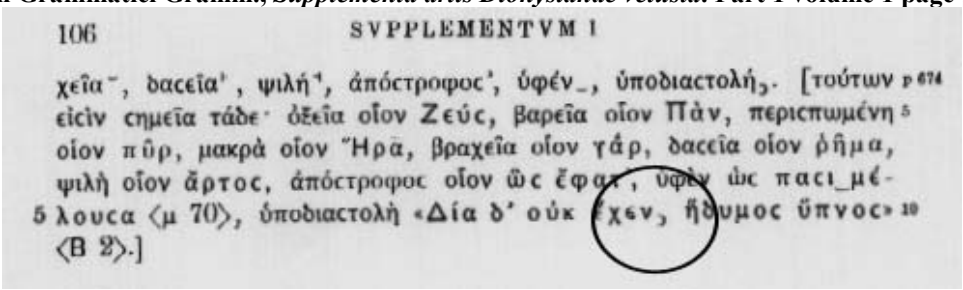
Definition and comments

Mark used to separate words.

This character is similar to 002C COMMA in terms of positioning relative to the line and general shape. However, the Hypodiastole is shaped like the even right-hand of a semi-circle. While using a comma might be a possible typographical solution for this character, it will cause confusion in texts where editors wish to employ both (as in Example 1 below) and, given how common the use of the comma is, this issue will certainly arise. However, given typographical limitations, editors have frequently needed to use a comma (see Example 2 below).

This character is necessary in papyri since there is no spacing in between words and, on occasion, this may cause confusion. In these instances, the Hypodiastole is employed.[21]

Example 1 (Compare with use of comma in this example)
Anonymi Grammatici Gramm., *Supplementa artis Dionysianae vetusta*. Part 1 volume 1 page 106



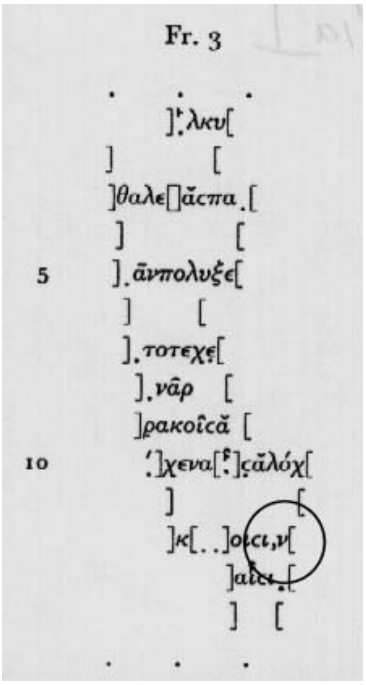
106 SVPPLEMENTVM I

χεῖα⁻, δασεῖα⁺, ψιλή⁻, ἀπόστροφος', ὑφέν_, ὑποδιαστολή⸏. [τούτων p 674
εἰσὶν σημεῖα τάδε· ὀξεῖα οἷον Ζεύς, βαρεῖα οἷον Πὰν, περισπωμένη 5
οἷον πῦρ, μακρὰ οἷον Ἥρᾱ, βραχεῖα οἷον γάρ, δασεῖα οἷον ῥῆμα,
ψιλὴ οἷον ἄρτος, ἀπόστροφος οἷον ὣς ἔφατ', ὑφὲν ὡς παρι_μέ-
λουσα ⟨μ 70⟩, ὑποδιαστολὴ «Δία δ' οὐκ ἔχεν, ἤδυμος ὕπνος» 10
⟨Β 2⟩.]

Uhlig, G., *Grammatici Graeci*, vol. 1.1 (Teubner, Leipzig, 1883) 106

[21] See Turner and Parsons (1987) 11

Example 2
Oxyrhynchus Papyrus 2803 Fragment 3 (Stesichorus?)



Lobel, E., *The Oxyrhynchus Papyri XXXVII* (London, 1971) 6

Word Joiner

II.a.8 Greek Papyrological Hyphen

Sign	Similar Unicode	Beta Code	Count
‿	See below.	%96	9 instances, 4 authors

Definition and comments

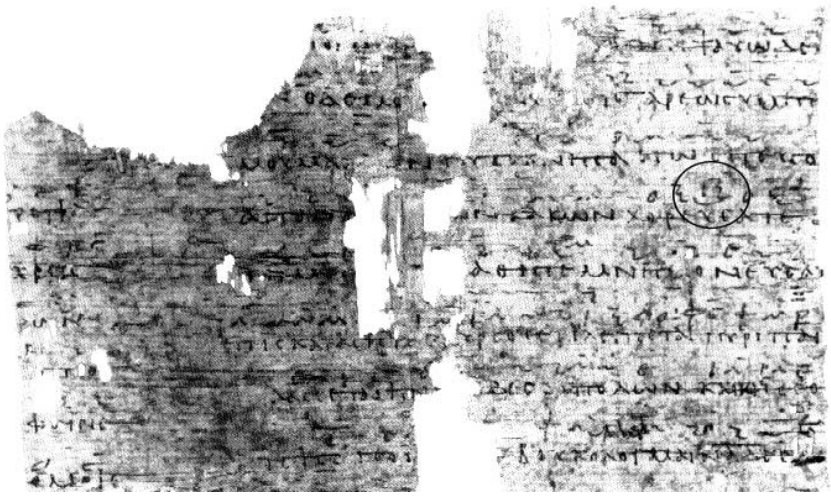
Mark used to make clear link between two parts of a compound word. Also a musical character.

This is a curved symbol, placed below the line (see Examples 1 and 3a-b) to indicate when two words in a papyrus are actually linked and should be read as one word. As most modern editions introduce spaces between words, this character is usually resolved in modern editions. However, on occasions when it has not been, the lack of a character has caused problems: for instance, in Example 2 below, the typographer have not been able to combine the character with the normal text. This character is essential for the correct representation of papyrological texts.

This character is also used in standard Greek musical notation (see section below) to indicate when a single syllable is sung on two notes, as in Example 1a-b below.

It will be noted that in Example 2 below, a space is introduced between the two parts of the word. This spacing version can currently be encoded using the Unicode Standard with 203F UNDERTIE. This character is not, however, adequate for the Greek Papyrological Hyphen. The currently proposed character may be regarded visually as a non-spacing 203F.

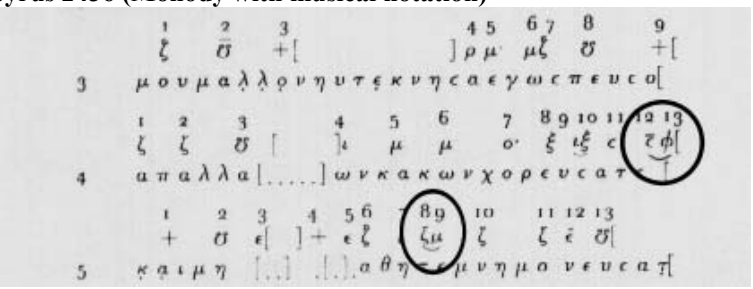
Example 1a (Musical symbol. Papyrus. In order to avoid cluttering the graphic, we have not circled all instances)[22]
Oxyrhynchus Papyrus 2436 (Monody with musical notation)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 71

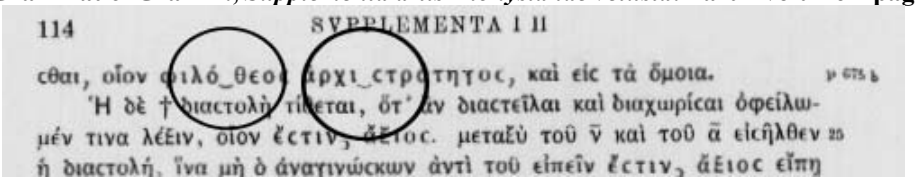
[22] We have increased the contrast and brightness of this graphic in order to make it more legible.

Example 1b (Musical symbol. Papyrus. In order to avoid cluttering the graphic, we have not circled all instances)
Oxyrhynchus Papyrus 2436 (Monody with musical notation)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 70

Example 2 (Non-combining form)
Anonymi Grammatici Gramm., *Supplementa artis Dionysianae vetusta*. Part 1 volume 1 page 114

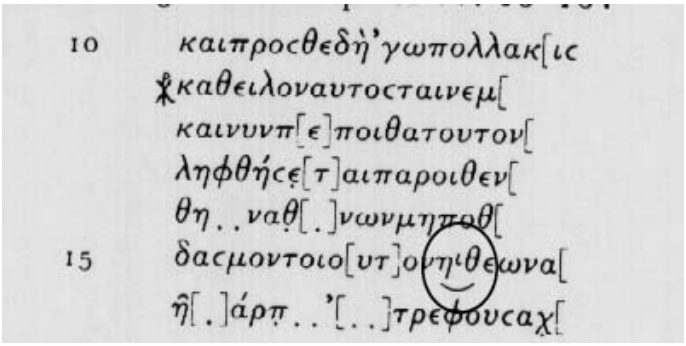


Uhlig, G., *Grammatici Graeci*, vol. 1.1 (Teubner, Leipzig, 1883) 114

Example 3a (Papyrus)
British Museum Papyrus 3036 (Sophocles, *Theseus*)

Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 57

Example 3b (Transcription)
British Museum Papyrus 3036 (Sophocles *Theseus*)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 56

Text Highlighters and Markers

II.a.9 Greek Antisigma

Sign	Similar Unicode	Beta Code	Count
Ͻ	See below	#10, #114, #512	22 instances, 11 authors

· Greek Instrumental Notation Symbol 33 (See Example 4 below and musical notation section below)

Definition and comments
Editorial character, marking, for instance, omissions, errors, variants, corrections. A musical sign. A sign for a Hemiobolon (half an Obol, see numerical section below).

This character is similar, but not identical to 0186 LATIN CAPITAL LETTER OPEN O.

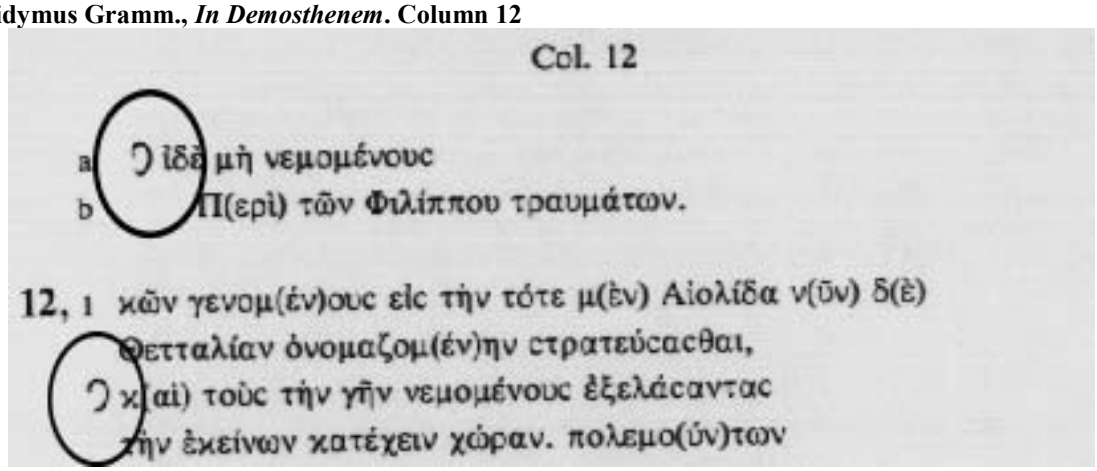
McNamee writes: "The antisigma and a handful of lunate sigmas possibly intended for antisigmas were the appropriate marks for introducing textual revisions, especially variants and textual comments. … An antisigma beside the text may be matched by a similar sign beside the revision. Typically, then, the sign was a sort of localized reference mark, guiding the reader's eye elsewhere in the vicinity of the column. … the work of the antisigma extended beyond the flagging of textual variants. It sometimes accompanies errors or corrections or even informational notes, and at least once (in *P. Oxy*. 1.12) it marks factual errors. ... most antisigmas that we find with corrections or errors seem to be the work of the original scribe, while those accompanying variants or other notes are usually in a different hand, and were undoubtedly written by the book's owner."[23] This is a marginal sign. For most common use, please see Example 1.

A second use is as an Aristarchean sign for his edition of Homer (see Aristarchean Editorial Signs below for a fuller description). This is a marginal sign. Please see Example 2.

For the musical symbol (see Musical Notation below for a fuller explanation) please see Example 3. This is not a marginal sign.

A fourth and final use is as a character representing a Hemiobolon, see Example 4 below.

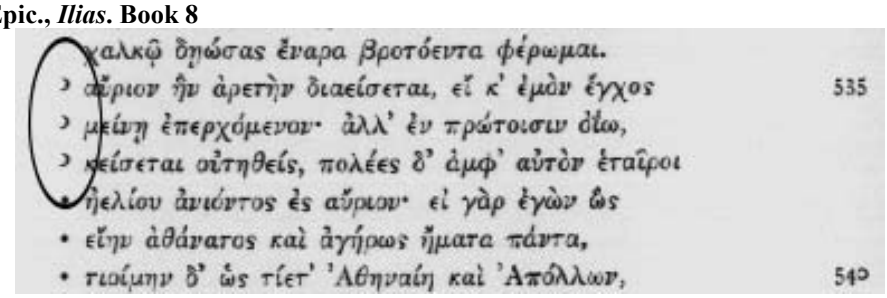
Example 1 (footnote marker)
Didymus Gramm., *In Demosthenem*. Column 12



Pearson, L. & Stephens, S., *Didymi in Demosthenem commenta* (Teubner, Stuttgart, 1983) 43

[23] McNamee (1992) 14

Example 2 (Aristarchean editorial sign),
Homerus Epic., *Ilias*. Book 8

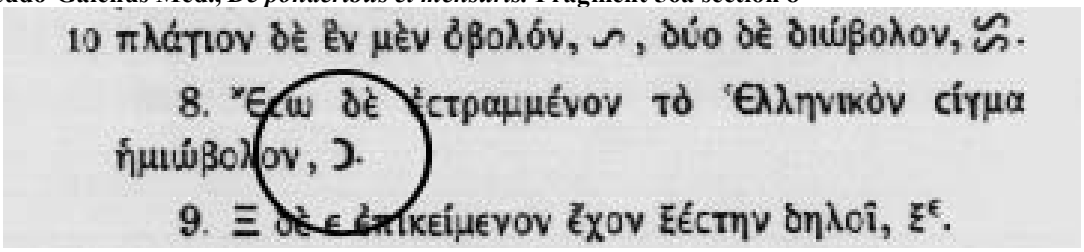


Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 234-235

Example 3 (musical notation)
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 4 (Hemiobolon)
Pseudo-Galenus Med., *De ponderibus et mensuris.* Fragment 56a section 8



Hultsch, F., *Metrologicorum scriptorum reliquiae*, vol. 1 (Teubner, Leipzig, 1864) 226

II.a.10 Greek Dotted Obelos

Sign	Similar Unicode	Beta Code	Count
⁘	See below	#523	154 instances, 9 authors

Definition and comments

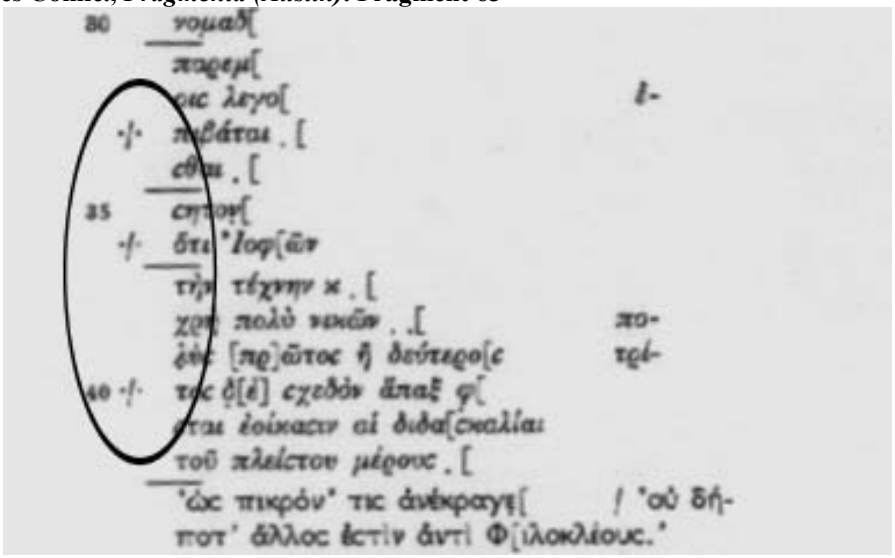
Editorial character, marking, for instance, errors, marginal notes, restorations, variant readings and corrections. It is also used as an abbreviation for ἐστί (*esti*), for more on this latter use please see Appendix 2 below.

Turner writes: "sometimes used as a caret to indicate an omission to be made good… sometimes acts as a reference mark for a marginal note… and sometimes may have a quite separate signification."[24] McNamee, "its meaning is unclear in the majority of cases … there are indications, not individually persuasive but suggestive in combination, that it too served as a reference mark linking commentaries and literary texts."[25] This character is comparatively rare. It is a marginal sign.

This character has a series of glyph variants, the most common of which is ÷ (which may be encoded using 00F7 DIVISION SIGN. The other glyph variants usually occur only once or rarely (e.g. ⁜). See McNamee 37 for a complete list.

This symbol is not the same as e.g. 1D10E MUSICAL SYMBOL REPEATED FIGURE-2 because there are various glyph variant.

Example 1
Aristophanes Comic., *Fragmenta (Austin)*. Fragment 63



Austin, C., *Comicorum Graecorum fragmenta in papyris reperta* (De Gruyter, Berlin, 1973) 29

[24] Turner and Parsons (1987) 14

[25] McNamee (1992) 18

II.a.11 Greek Downward Ancora

Sign	Similar Unicode	Beta Code	Count
↗		#506	2 instances, 2 authors

Definition and comments

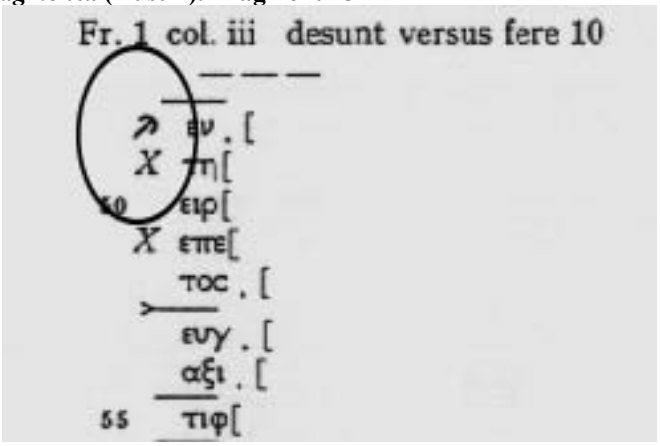
Editorial character, marking, for instance, omissions, variant, restorations and errors.

This character is usually written with a diagonal line, but glyph variants with an upright line are also common. Please see Example 3 below.

McNamee writes: "The ancora … was used almost exclusively to mark a place where text had been omitted and (or) to draw attention to the necessary restoration in the top or bottom margin. It may appear with a diagonal penstroke, particularly to mark the two lines between which an omission has occurred. … Interestingly, although the sign may strike the eye as having the shape of an arrow, its 'business end'—the directional pointer—was normally the open part of its central shaft. Thus ↙ typically served as a pointer upward, ↗ down. Only one papyrus preserves a complete pair... Nor did the conventional role of the symbol as a caret mark keep scribes from dragooning it for other purposes when they saw a parallel need. Thus ancorae occasionally mark errors and variant readings."[26]

Example 1

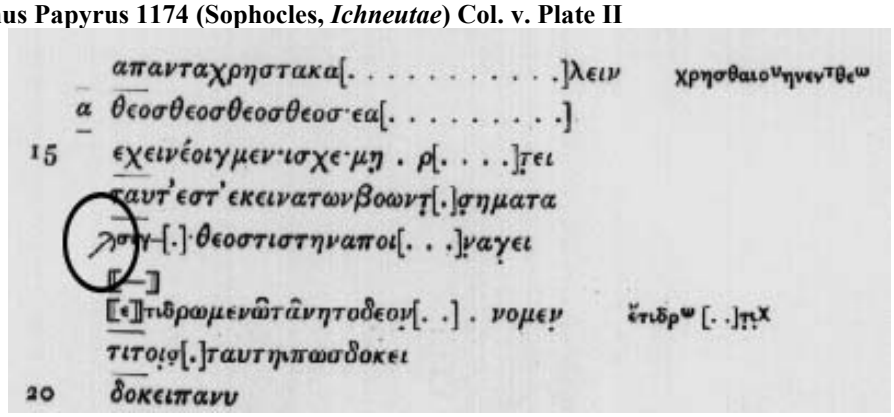
Menander Comic., *Fragmen*ta (Austin). Fragment 157



Austin, C., *Comicorum Graecorum fragmenta in papyris reperta* (De Gruyter, Berlin, 1973) 158

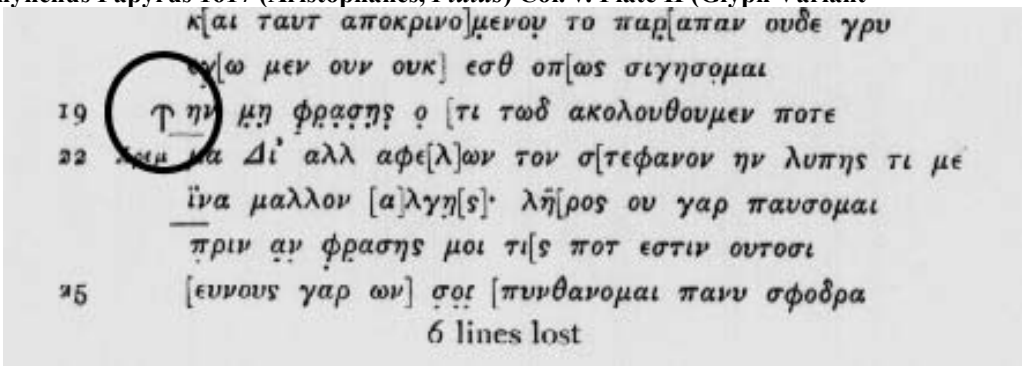
[26] McNamee (1992) 11. See also Turner and Parsons (1987) 16

Example 2
Oxyrhynchus Papyrus 1174 (Sophocles, *Ichneutae*) Col. v. Plate II



Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri,* Part 9 (London, 1912) 142

Example 3 (Glyph variant)
Oxyrhynchus Papyrus 1617 (Aristophanes, *Plutus*) Col. v. Plate II (Glyph Variant



Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri,* Part 13 (London, 1919) 166

II.a.12 Greek Upward Ancora

Sign	Similar Unicode	Beta Code	Count
↙		#506	2 instances, 2 authors

Definition and comments

Editorial character, marking, for instance, omissions, variant, restorations and errors.

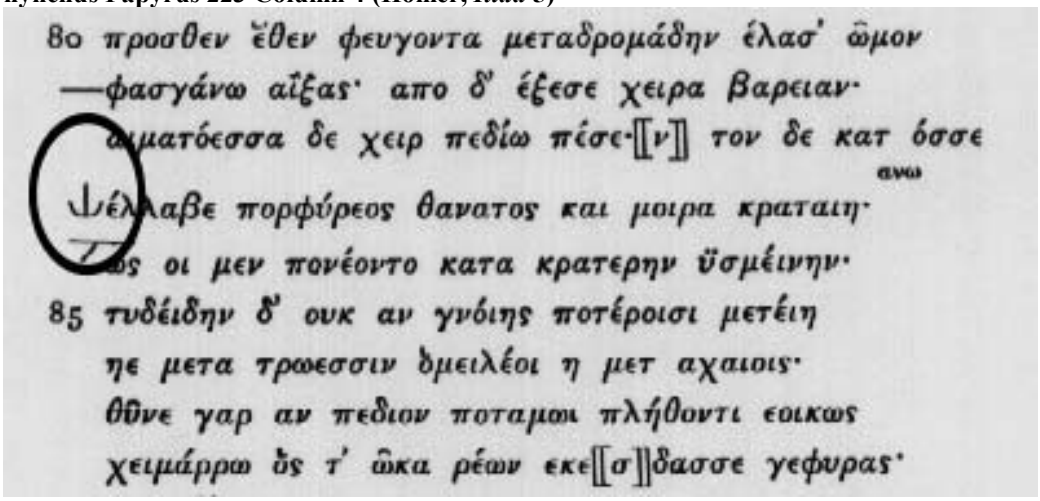
This character is usually written with a diagonal line, but glyph variants with an upright line are also common. Please see Example 3 below.

McNamee writes: "The ancora … was used almost exclusively to mark a place where text had been omitted and (or) to draw attention to the necessary restoration in the top or bottom margin. It may appear with a diagonal penstroke, particularly to mark the two lines between which an omission has occurred. … Interestingly, although the sign may strike the eye as having the shape of an arrow, its 'business end'—the directional pointer—was normally the open part of its central shaft. Thus ↙ typically served as a pointer upward, ↗ down. Only one papyrus preserves a complete pair... Nor did the conventional role of the symbol as a caret mark keep scribes from dragooning it for other purposes when they saw a parallel need. Thus ancorae occasionally mark errors and variant readings."[27]

McNamee regards this character as being more common than the Downward Ancora. She also regards the diagonal form as more common[28]

Note that in Example 2 below, the Ancora occurs in the right-hand margin. However, it is impossible here to tell what it signifies, since the rest of the line is lost.

Example 1 (Glyph variant)
Oxyrhynchus Papyrus 223 Column 4 (Homer, *Iliad* 5)

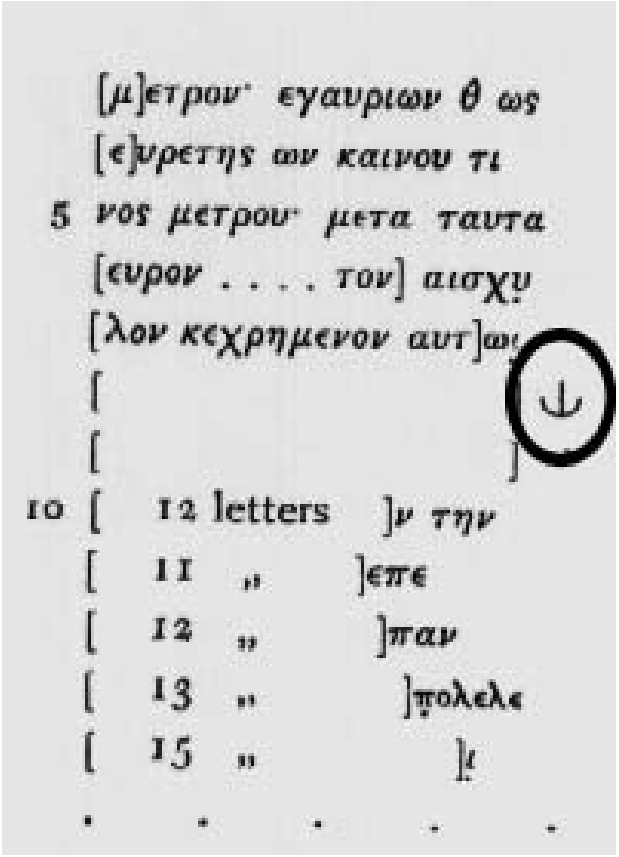


Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri,* Part 2 (London, 1899) 101

[27] McNamee (1992) 11. See also Turner and Parsons (1987) 16

[28] McNamee (1992) 11

Example 2
Oxyrhynchus Papyrus 223 Column 6 (Treatise on metres)



Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri,* Part 2 (London, 1899) 45

Amended Accents

II.a.13 Greek Combining Dotted Grave

Sign	Similar Unicode	Beta Code	Count
◌̣		%95	5 instances, 4 authors

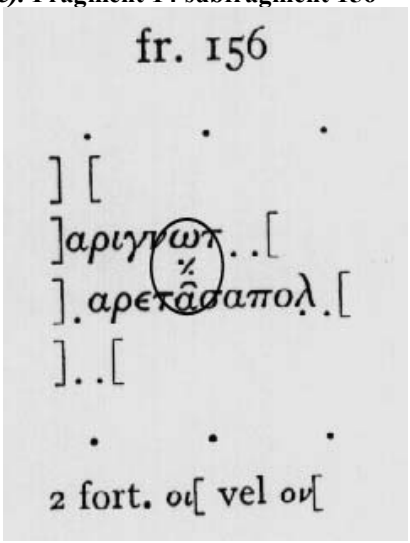
Definition and comments

Amended grave accent.

This is the standard way in papyri for drawing attention to inserted accents or marking them as deleted. McNamee writes: "The papyri in question tend to be heavily encrusted with diacritical signs, which naturally were subject to revision just like regular text. An individual scribe, therefore, might reasonably have added dots to draw attention to a diacritical mark that was adding or to expunge an erroneous one."[29]

In the example below, the Dotted Grave can be seen printed above a circumflex. In modern editions, this character is usually revolved—the editor keen only to include the correct accent—however, in cases such as this, where it is not possible to distinguish which accent is correct, some editors have chosen to preserve the papyrological punctuation.

Example 1
Simonides Lyr., *Fragmenta (Page).* Fragment 14 subfragment 156



Page, D.L., *Poetae melici Graeci* (Clarendon Press, Oxford, 1962) 271

[29] McNamee (1992) 18

II.a.14 Greek Combining Dotted Acute

Sign	Similar Unicode	Beta Code	Count
		%93	1 instance, 1 author

Definition and comments

Amended acute accent.

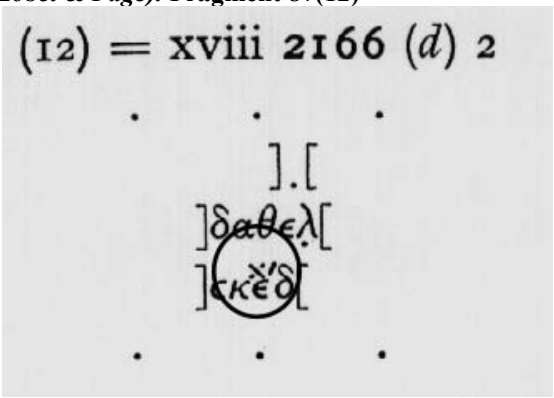
This is the standard way in papyri for drawing attention to inserted accents or marking them as deleted.

McNamee writes: "The papyri in question tend to be heavily encrusted with diacritical signs, which naturally were subject to revision just like regular text. An individual scribe, therefore, might reasonably have added dots to draw attention to a diacritical mark that was adding or to expunge an erroneous one."[30]

In the example below, the Dotted Acute can be seen printed to the left of a grave. In modern editions, this character is usually revolved—the editor keen only to include the correct accent—however, in cases such as this, where it is not possible to distinguish which accent is correct, some editors have chosen to preserve the papyrological punctuation.

Example 1

Sappho Lyr., *Fragmenta (Lobel & Page).* Fragment 87(12)



Lobel, E., Page, D.L., *Poetarum Lesbiorum fragmenta* (Clarendon Press, Oxford, 1955) 63

[30] McNamee (1992) 18

Aristarchean Editorial Notation

II.a.15 Greek Diple Periestigmene

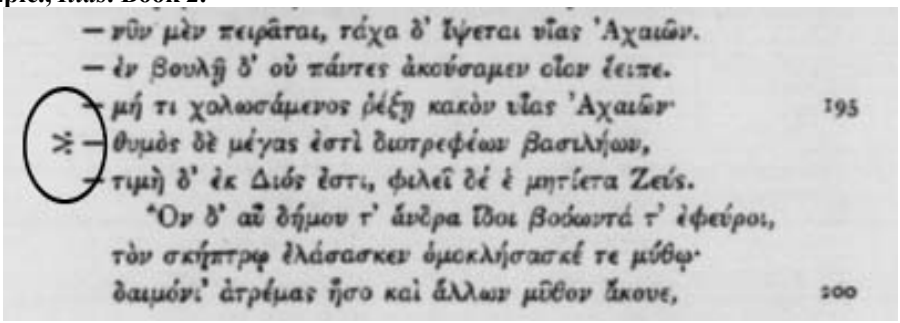
Sign	Similar Unicode	Beta Code	Count
⸚		#14	299 instances, 2 authors

Definition and comments

Wace & Stubbings write that, with this sign, Aristarchus indicates "a line in which his text differed from Zenodotus's".[31]

This character has the glyph variants of ⸚ and ⸚[32]

Example 1 – Aristarchean editorial sign
Homerus Epic., *Ilias*. Book 2.


— νῦν μὲν πειρᾶται, τάχα δ' ἴψεται υἷας Ἀχαιῶν.
— ἐν βουλῇ δ' οὐ πάντες ἀκούσαμεν οἷον ἔειπε.
— μή τι χολωσάμενος ῥέξῃ κακὸν υἷας Ἀχαιῶν· 195
⸚ — θυμὸς δὲ μέγας ἐστὶ διοτρεφέων βασιλήων,
— τιμὴ δ' ἐκ Διός ἐστι, φιλεῖ δέ ἑ μητίετα Ζεύς.
Ὃν δ' αὖ δήμου τ' ἄνδρα ἴδοι βοόωντά τ' ἐφεύροι,
τὸν σκήπτρῳ ἐλάσασκεν ὁμοκλήσασκέ τε μύθῳ·
δαιμόνι' ἀτρέμας ἧσο καὶ ἄλλων μῦθον ἄκουε, 200

Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 39

[31] Wace & Stubbings (1962) 224. See also Du Cange (1688) 3 and Gardthausen (1913:2) 411. Zenodotus (b. *c*. 325 BCE) first head of the Library at Alexandria, also produced an edition of Homer. See Lockwood, J.F., Browning, R. Wilson, N.G. "Zenodotus" in *OCD*[3] (1996) 1653-6.

[32] McNamee (1992) 28-9

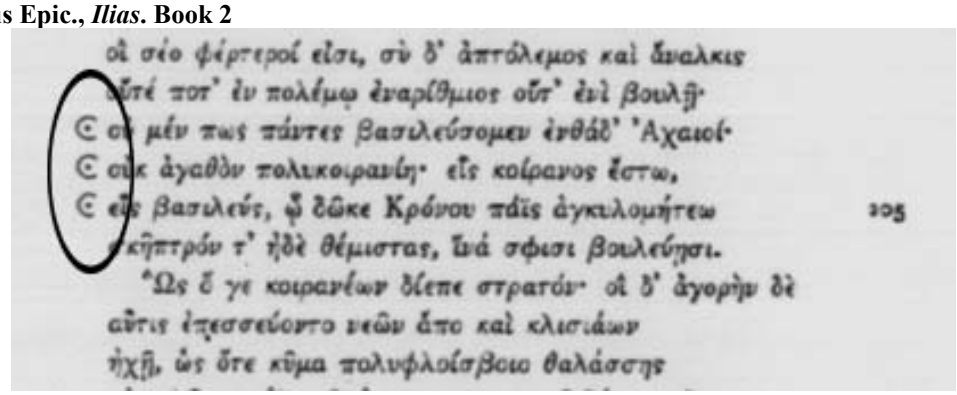
II.a.16 Greek Sigma Periestigmenon

Sign	Similar Unicode	Beta Code	Count
Ϲ		#16	3 instances, 1 author

Definition and comments

Wace & Stubbings write that this character marks a line or lines which are incorrectly placed in the current text and need to be moved to a new position.[33]

Example 1 (Aristarchean editorial sign)
Homerus Epic., *Ilias*. Book 2


οἱ σέο φέρτεροί εἰσι, σὺ δ' ἀπτόλεμος καὶ ἄναλκις
οὔτέ ποτ' ἐν πολέμῳ ἐναρίθμιος οὔτ' ἐνὶ βουλῇ·
Ϲ σὺ μέν πως πάντες βασιλεύσομεν ἐνθάδ' Ἀχαιοί·
Ϲ οὐκ ἀγαθὸν πολυκοιρανίη· εἷς κοίρανος ἔστω,
Ϲ εἷς βασιλεύς, ᾧ δῶκε Κρόνου πάϊς ἀγκυλομήτεω
σκῆπτρόν τ' ἠδὲ θέμιστας, ἵνά σφισι βουλεύῃσι.
Ὣς ὅ γε κοιρανέων ὄτρυνε στρατόν· οἱ δ' ἀγορὴν δὲ
αὖτις ἐπεσσεύοντο νεῶν ἄπο καὶ κλισιάων
ἠχῇ, ὡς ὅτε κῦμα πολυφλοίσβοιο θαλάσσης

Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 40

[33] Wace & Stubbings (1962) 224

II.a.17 Greek Antisigma Periestigmenon

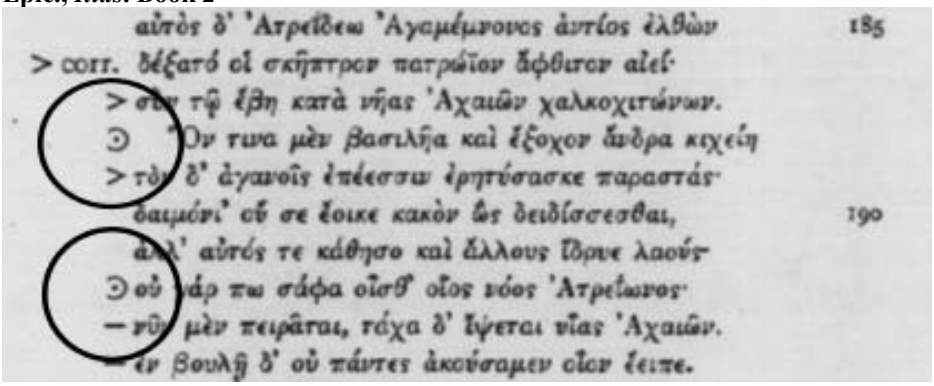
Sign	Similar Unicode	Beta Code	Count
ϽΘ		#11	2 instances, 1 author

Definition and comments

Wace & Stubbings write that this character "indicates a line after which a re-arrangement should be made."[34] Du Cange specifies that this refers to variant readings over the priority of which there is uncertainty.[35]

This character may also be used as a mark of abbreviation, please see section VI below.

Example 1 (Aristarchean editorial sign)
Homerus Epic., *Ilias*. Book 2


αὐτὸς δ' Ἀτρεΐδεω Ἀγαμέμνονος ἀντίος ἐλθὼν 185
> corr. δέξατό οἱ σκῆπτρον πατρώϊον ἄφθιτον αἰεί·
> σὺν τῷ ἔβη κατὰ νῆας Ἀχαιῶν χαλκοχιτώνων.
ϽΘ Τὸν τινα μὲν βασιλῆα καὶ ἔξοχον ἄνδρα κιχείη
> τὸν δ' ἀγανοῖς ἐπέεσσιν ἐρητύσασκε παραστάς·
δαιμόνι' οὔ σε ἔοικε κακὸν ὣς δειδίσσεσθαι, 190
ἀλλ' αὐτούς τε κάθησο καὶ ἄλλους ἴδρυε λαούς·
ϽΘ οὐ γάρ πω σάφα οἶσθ' οἷος νόος Ἀτρεΐωνος·
— νῦν μὲν πειρᾶται, τάχα δ' ἴψεται υἷας Ἀχαιῶν.
ἐν βουλῇ δ' οὐ πάντες ἀκούσαμεν οἷον ἔειπε.

Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 39

[34] Wace & Stubbings (1962) 224

[35] Du Cange (1688) 3. See also Gardthausen (1913:2) 412

b. Ancient Greek Editorial Characters and Punctuation: Additional Definition of Preexisting Characters

Table of Characters Included in this Section of the Proposal

Number	Character	Name	Unicode	Comment
Section and Pause Markers, Word Separators				
II.b.1	·	Greek Mese Stigme	0387	
II.b.2	.	Greek Kato Stigme	002E	
II.b.3	:	Greek Dicolon	003A	
II.b.4	⋮	Greek Tricolon	250A	See also Metrical proposal below
Text Highlighters and Markers				
II.b.5	>	Greek Diple	003E	
II.b.6	<	Greek Reversed Diple	003C	
II.b.7	—	Greek Obelos	2014	
Aristarchean Editorial Notation				
II.b.8	•	Greek Aristarchean Stigme	2022	

Section and Pause Markers, Word Separators

II.b.1 Greek Mese Stigme

Sign	Unicode	Beta Code	Count
.	0387	#71	(Papyri) 108 instances, 15 authors

Definition and comments

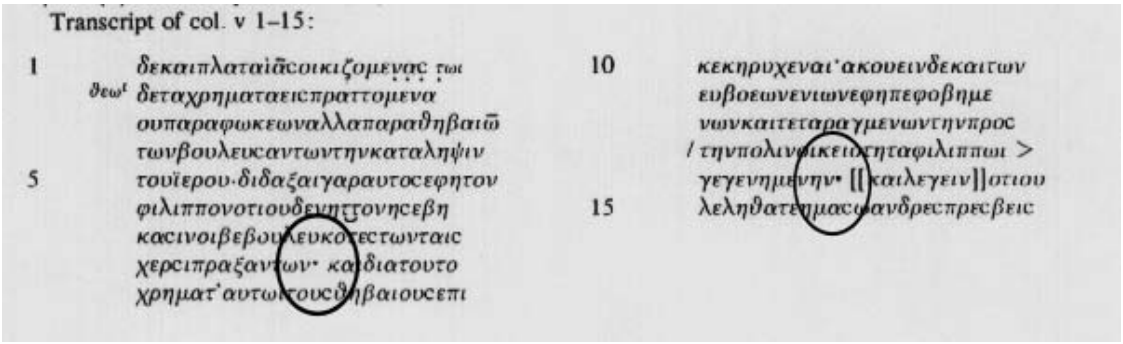
Mark of termination of sentence or section, or mark of pause.

Turner and Parsons: "Two kinds of stop may be seen in texts of the late ii. B.C. and of i. B.C.: one is placed high in the line [Greek Ano Stigme], the other in a middle position [Greek Mese Stigme]... Normally the high stop… marks period end. The stop in the middle position serves as a subdivision inside the period, with the effect of a modern comma."[36]

This character is identical to 0387 GREEK ANO TELEIA, however it usually has, as explained in the section Ano Stigme above, a different semantic meaning.

Please see Appendix 1 for a longer example of a text which includes all three Stigmes.

Example 1 (Note: the Mese Stigme is here used in conjunction with the Ano Stigme)
Demosthenes Orat, *De Falsa Legatione* 11-32. B.M. Add MS. 34473, art. 1. ii C.E.



Turner, E.G. & Parsons, P.J., *Greek Manuscripts of the Ancient World* 2nd ed. (Institute of Classical Studies, London, 1987) 140

[36] Turner and Parsons (1987) 9

II.b.2 Greek Kato Stigme

Sign	Unicode	Beta Code	Count
.		#70	(Papyri) 10 instances, 5 authors

Definition and comments

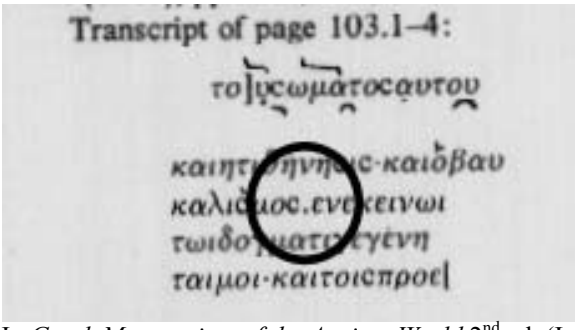
Mark of termination of sentence or section, or mark of pause.

This character performs the same function as the Greek Ano Stigme and Greek Mese Stigme. While it is a less common form of punctuation, it is still found in papyri using the Greek Ano Stigme and the Greek Mese Stigme or in papyri where it combines with one or the other or both of them (see Turner and Parsons 1987: 9).

This character is identical to 002E FULL STOP, however, it has a different semantic meaning.

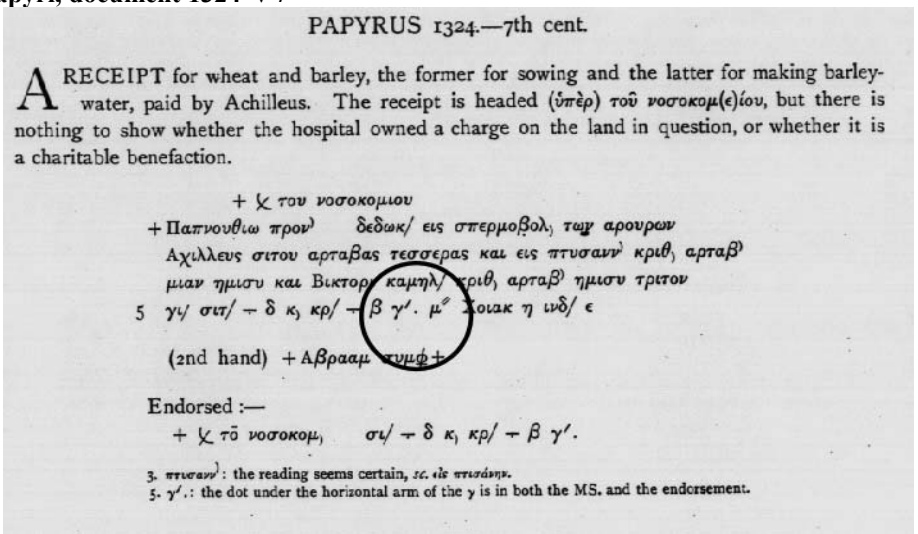
Please see Appendix 1 for a longer example of a text which includes all three Stigmes.

Example 1 (Note: the Kato Stigme is here used in conjunction with the Mese Stigme)
***Life of Mani*, Cologne, P. Colon. Inv. 4780. iv or iv/v C.E.**



Turner, E.G. & Parsons, P.J., *Greek Manuscripts of the Ancient World* 2nd ed. (Institute of Classical Studies, London, 1987) 129

Example 2
London Papyri, document 1324 v 7



PAPYRUS 1324.—7th cent.

A RECEIPT for wheat and barley, the former for sowing and the latter for making barley-water, paid by Achilleus. The receipt is headed (ὑπὲρ) τοῦ νοσοκομ(ε)ίου, but there is nothing to show whether the hospital owned a charge on the land in question, or whether it is a charitable benefaction.

+ ☧ του νοσοκομιου
+ Παπνουθιω προν) δεδωκ/ εις σπερμοβολ) τῳ αρουρων
Αχιλλευς σιτου αρταβας τεσσερας και εις πτυσανν) κριθ) αρταβ)
μιαν ημισυ και Βικτορ[ι] καμηλ/ κριθ) αρταβ) ημισυ τριτον
γι/ σιτ/ ⊢ δ κ) κρ/ ⊢ β γ′. μ[ε] Χοιακ η ινδ/ ϵ
(2nd hand) + Αβρααμ συμφ+

Endorsed :—
+ ☧ τō νοσοκομ) σι/ ⊢ δ κ) κρ/ ⊢ β γ′.

3. πτισανν): the reading seems certain, *sc.* εἰς πτισάνην.
5. γ′.: the dot under the horizontal arm of the γ is in both the MS. and the endorsement.

Kenyon F.G. & Bell H.I., *Greek Papyri in the British Museum. III, (Nos. 485—1331)* (London, 1907) 276

II.b.3 Greek Dicolon

Sign	Unicode	Beta Code	Count
· ·	003A	#73	25 instances, 7 authors; (Papyri) 6 instances, 4 authors

Definition and comments

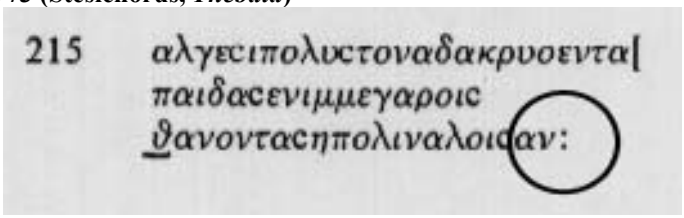
Mark of termination of sentence or section or mark of pause.

Turner and Parsons: "The double dot **:** , often called Dicolon, is another mark which can certainly be traced back to iv B.C.… and is probably a simplification of the common older row of three vertical dots... Its function also is to divide. We are especially familiar with its employment (usually coupled with the paragraphus [see above]) in dramatic texts, especially those of comedy, to mark changes of speaker, both at the end of a line and inside a line, and to mark a change of speakers in a Platonic dialogue. But in both genres scribes may employ it also as a strong stop… We may also note its use as a stop… at colon- and period-end… and in commentaries to distinguish notes from lemmata"[37]

This character may be used in the same way as—and in conjunction with any or all of—the Ano, Mese and Kato Stigme above. In Example 1, for example, it is used to indicate the end of a sentence and verse in Stesichorus. For its use in combination with the Paragraphos, please see the section "Paragraphos" above. See also Example 2 below.

This character is identical to 003A COLON, however it has a different semantic meaning.

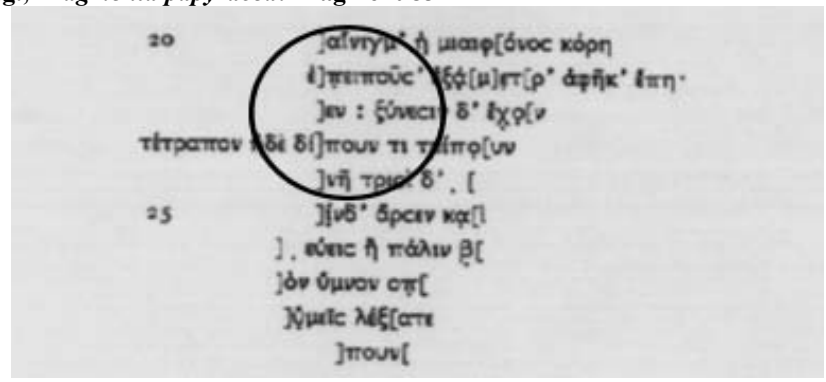
Example 1
Lille Papyri inv 76a+73 (Stesichorus, *Thebaid*)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 124

Example 2
See Appendix 1

Example 3
Euripides Trag., *Fragmenta papyracea*. Fragment 83



Austin, C., *Nova fragmenta Euripidea in papyris reperta* (De Gruyter, Berlin, 1968) 61

[37] See Turner and Parsons (1987) 9

II.b.4 Greek Tricolon

Sign	Unicode	Beta Code	Count
⋮	22EE	#74	1,138 instances, 11 authors

Definition and comments

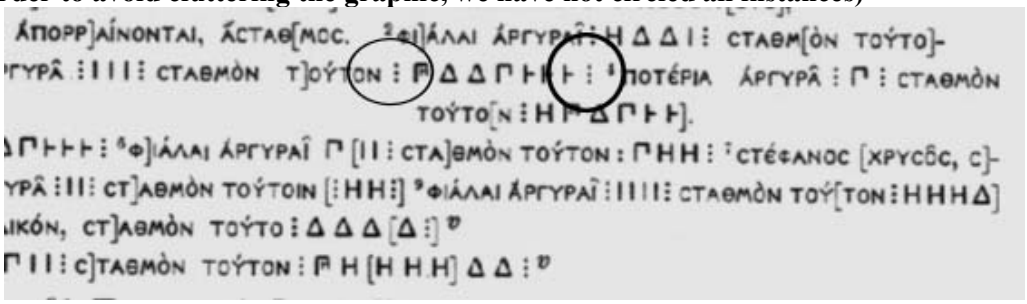
Mark of termination of sentence or section or mark of pause. Also used to separate words from numbers in inscriptions and as a metrical character (see metrical section below).

As a mark or termination, this character has a similar meaning to the Dicolon. This form is earlier than the Dicolon and eventually the Dicolon becomes the dominant form.[38] This character may be used in the same way as—and in conjunction with any or all of—the Ano, Mese, Kato Stigme and Dicolon above.

This character is also used to separate text from numbers. Example 1 below shows an inscription with acrophonic numerals (see numerical section below).[39]

This character is identical to 22EE VERTICAL ELLIPSIS, however it has a clearly different semantic meaning.

Example 1
(In order to avoid cluttering the graphic, we have not circled all instances)



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 151

[38] Turner and Parsons (1987) 7, 9 & 14

[39] See also Gardthausen (1913:2) 360

Text Highlighters and Markers

II.b.5 Greek Diple

Sign	Unicode	Beta Code	Count
>	See below	#15, #1512	5,203 instances, 14 authors; (Papyri) 27 instances, 1 author; (Inscr) 27 instances, 1 author

Definition and comments

Editorial character, marking, for instance, quotations, divisions in text, marginal notes and textual variants. Line filler.

This character has a series of glyph variants, the most common of which is 7 (the others usually occur only once).[40]

McNamee writes: "Papyri... provide abundant evidence for the use of the Diple as a punctuator marking new sections in texts of prose as well as poetry. Presumably the rightward point of the usual form made it a convenient divider. It was also the standard symbol for marking quotations, and when so used it appears at the left of each line quoted. Once or twice, like antisigma, it marks erroneous text. Occasionally it introduces or concludes a marginal note."[41] This is a marginal sign. McNamee[42] and Wattenbach[43] also note the tendency in Herculaneum to use Diplae where Egyptian scribes used Paragraphoi. Example 1 shows the Diple as a marker of quotations.

A second use is as an Aristarchean sign for his edition of Homer (see Introduction: Aristarchean Editorial Signs above for a fuller description). This is a marginal sign. Please see Example 2.

A third use of this character is as a line filler. In papyri where one line is slightly too short, this character is inserted at the end to make it appear the same length as the other lines. This character is not marginal. Please see Example 3a-b below.

The most common glyph is identical to 003E GREATER-THAN SIGN, however it has a different semantic meaning.

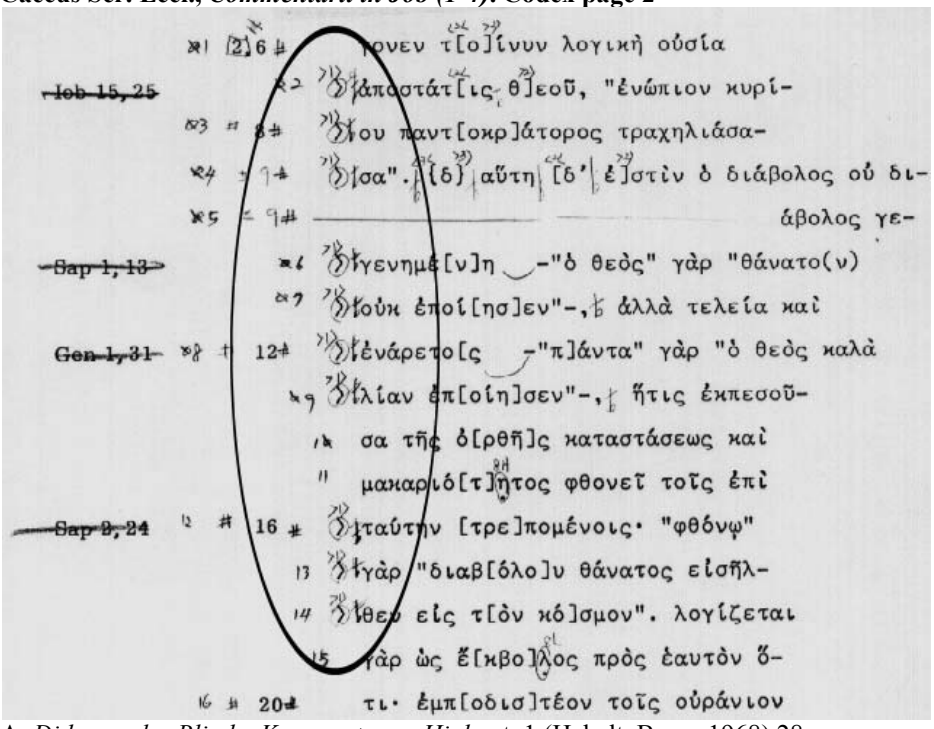
[40] See McNamee (1992) 32-4 for a complete list

[41] McNamee (1992) 16. See also Gardthausen (1913:2) 406 & 411

[42] McNamee (1992) 24-25

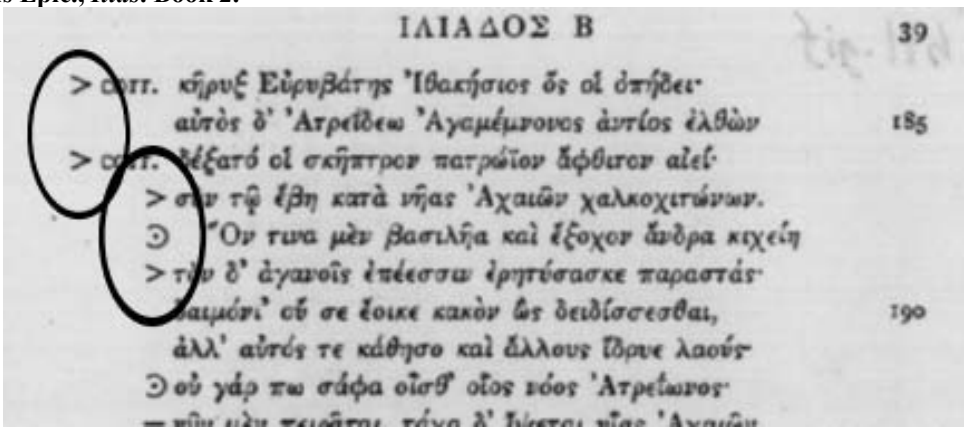
[43] Wattenbach (1895) 120

Example 1 (Biblical quotations)
Didymus Caecus Scr. Eccl., *Commentarii in Job (1-4)*. Codex page 2



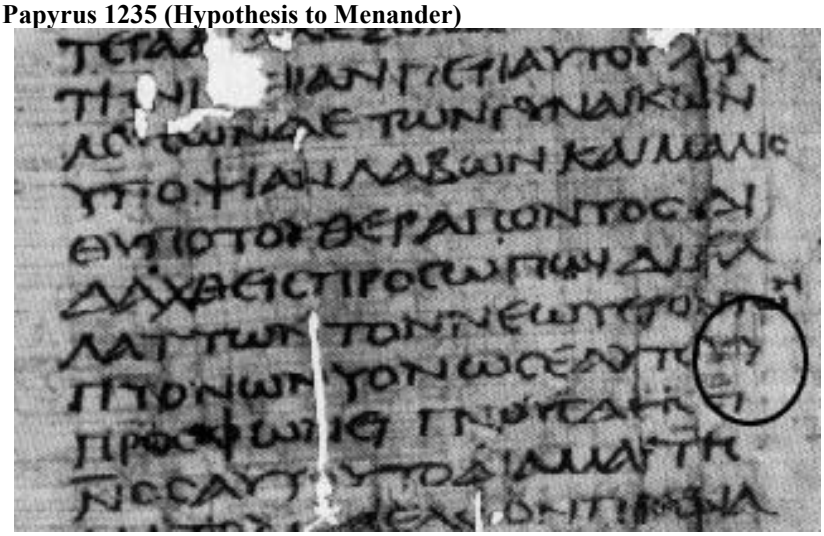
Henrichs, A. *Didymos der Blinde. Kommentar zu Hiob*, pt. 1 (Habelt, Bonn, 1968) 28

Example 2 (Aristarchean editorial sign)
Homerus Epic., *Ilias*. Book 2.



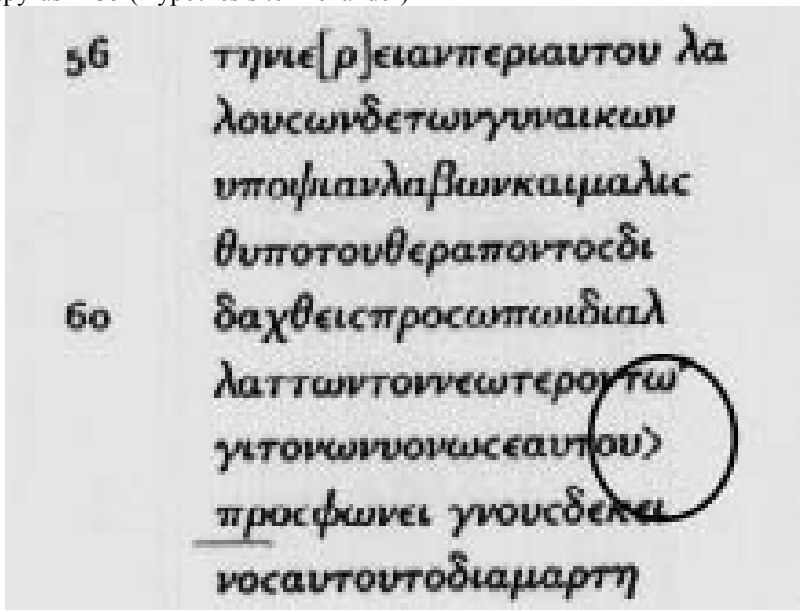
Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 39

Example 3a (Papyrus)
Oxyrhynchus Papyrus 1235 (Hypothesis to Menander)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 81

Example 3b (Transliteration)
Oxyrhynchus Papyrus 1235 (Hypothesis to Menander)



Turner, E.G. & Parsons, P.J. *Greek Manuscripts of the Ancient World* (London, 1987) 80

II.b.6 Greek Reverse Diple

Sign	Unicode	Beta Code	Count
<	003C	#18, #323	*c*.20 instances, 4 authors

Definition and comments

Editorial character.

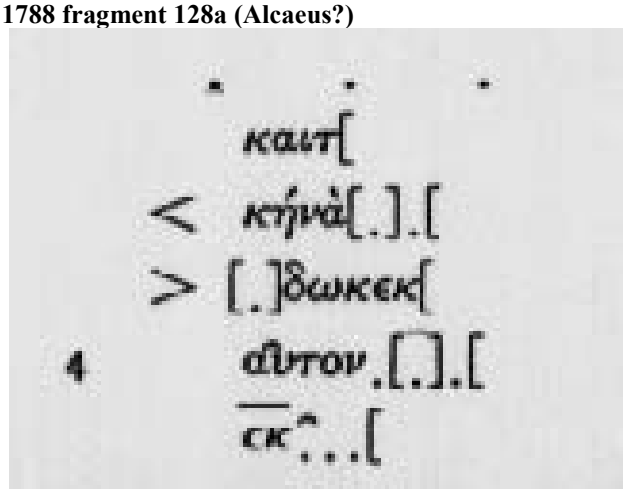
McNamee writes: "although the [Diple] is quite common in papyri, there are scarcely any examples of its opposite. Among poetic texts it appears only once in papyrus containing lyric (Alcaeus) and once in a text of tragedy... In its other rare appearances, its significance is unclear, and I suspect it is actually a carelessly written version of its more common counterpart >."[44]

Please see the example below for a fragment of Alcaeus where it is used in conjunction with a Diple proper. This is an extremely rare character. As Lobel writes: "What the meaning of the pair [Diple, reversed Diple] is when employed within one strophe with reference to one another, as they apparently are here, I do not know."[45]

This character is identical to 003C LESS-THAN SIGN, however it has, as is made clear above a different semantic meaning.

Please note that the example given below is the only clear example we were able to locate.

Example 1
Oxyrhynchus Papyrus 1788 fragment 128a (Alcaeus?)



Lobel, E., *The Oxyrhynchus Papyri XXIII* (London, 1956) 105

[44] McNamee (1992) 16

[45] Lobel (1956) 104

II.b.7 Greek Obelos

Sign	Unicode	Beta Code	Count
___	2014	#12	524 instances, 1 author

Definition and comments

An editorial character which marks—for instance—restorations, variants, errors, omissions, corrections, quotations, marginal notes. Also used in the same manner as the Paragraphos to divide up text.

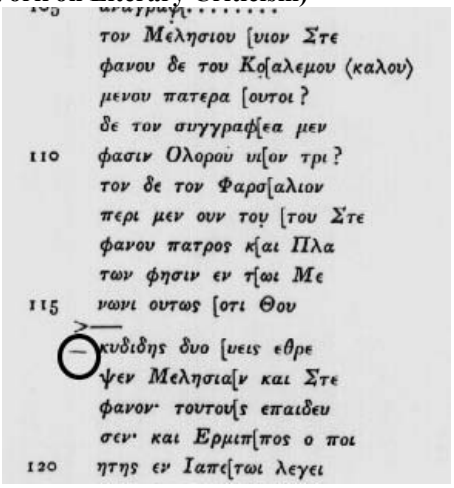
This character has a series of glyph variants, the most common of which is ⁄ (the others occur rarely).[46]

McNamee writes: "It is the commonest of all signs encountered in literary papyri, occurring in more than a hundred texts. Its purpose is obvious about two-thirds of the time. Sometimes it serves as a simple check-mark, set in the left margin besides item in a list. In an extension of this function it also marks text containing variants or (much more frequently) errors, omissions, or restorations. In another role it commonly serves as a kind of divider, appearing like the paragraphus in the left margin at a break in sense, especially at the beginning or end of a speech... Similarly it may precede marginal notes or separate lemmata from comments... In a large number of papyri, however, its function is obscure. Often in those texts it appears beside intact and apparently flawless passages, and not at any natural break in the narrative. In such cases it presumably indicates a passage to be looked into."[47] This is a marginal sign, please see Examples 1 below.

A second use is as an Aristarchean sign for his edition of Homer (see Aristarchean Editorial Signs below for a fuller description). This is a marginal sign. Please see Examples 2 and 3 below.

While 2014 EM DASH covers one glyph variant, it does not cover the second, equally as common, glyph variant.

Example 1 (Note both of the main glyph variants appear in this papyrus)
Oxyrhynchus Papyrus 1611 (Work on Literary Criticism)

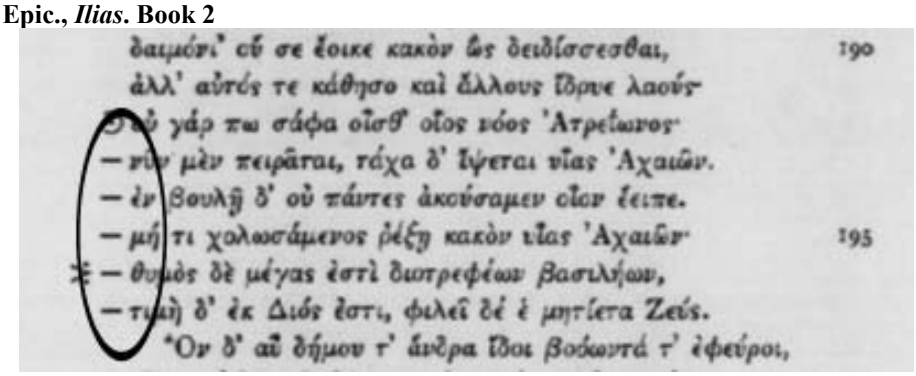


Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri XIII* (London, 1919) 134

[46] See McNamee (1992) 34-6 for a complete list.

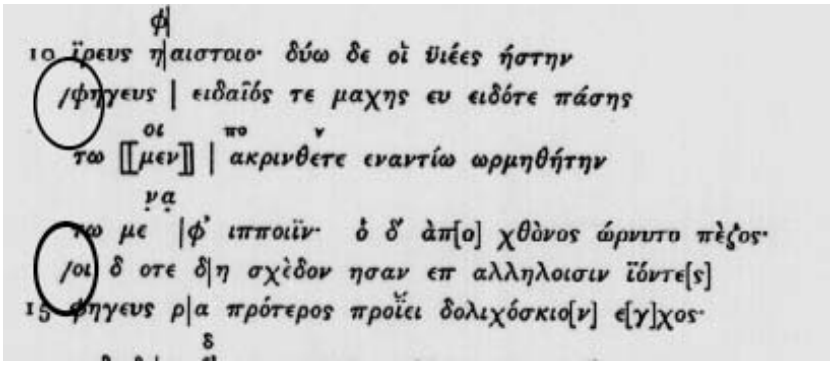
[47] McNamee (1992) 17-8

Example 2 (Aristarchean editorial sign)
Homerus Epic., *Ilias*. Book 2


δαιμόνι᾽ οὔ σε ἔοικε κακὸν ὡς δειδίσσεσθαι, 190
ἀλλ᾽ αὐτός τε κάθησο καὶ ἄλλους ἴδρυε λαούς·
σὺ γάρ πω σάφα οἶσθ᾽ οἷος νόος Ἀτρεΐωνος·
νῦν μὲν πειρᾶται, τάχα δ᾽ ἴψεται υἷας Ἀχαιῶν.
ἐν βουλῇ δ᾽ οὐ πάντες ἀκούσαμεν οἷον ἔειπε.
μή τι χολωσάμενος ῥέξῃ κακὸν υἷας Ἀχαιῶν· 195
θυμὸς δὲ μέγας ἐστὶ διοτρεφέων βασιλήων,
τιμὴ δ᾽ ἐκ Διός ἐστι, φιλεῖ δέ ἑ μητίετα Ζεύς.
Ὃν δ᾽ αὖ δήμου τ᾽ ἄνδρα ἴδοι βοόωντά τ᾽ ἐφεύροι,

Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 39

Example 3
Oxyrhynchus Papyrus 213 (Homer, *Iliad* 5)


ϕ
10 ἴρευς η|αιστοιο· δύω δε οἱ υἱέες ἦστην
/φηγευς | ειδαῖός τε μαχης ευ ειδότε πάσης
οι πο ν
τω [[μεν]] | ακρινθετε εναντίω ωρμηθήτην
γα
τω με |φ᾽ ιπποιϊν· ὁ δ᾽ ἀπ[ο] χθὸνος ὤρνυτο πὲζος·
/οι δ οτε δ|η σχὶδον ησαν επ αλληλοισιν ἴόντε[ς]
15 φηγευς ρ|α πρότερος προΐει δολιχόσκιο[ν] ε[γ]χος·
δ

Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri II* (London, 1899) 9

Aristarchean Editorial Notation

II.b.8 Greek Aristarchean Stigme

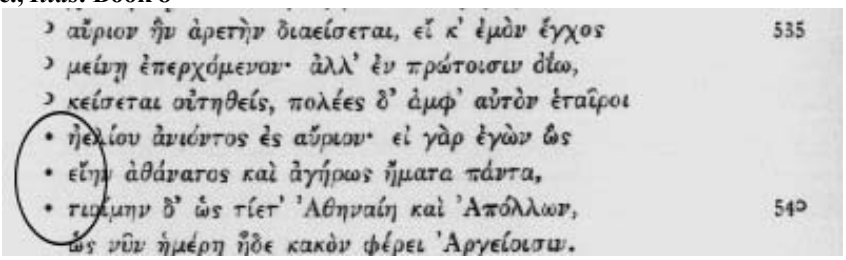
Sign	Unicode	Beta Code	Count
•	2022	%11	57 instances, 5 authors; (Papyri) 28 instances, 17 authors[48]

Definition and comments

Wace & Stubbings write that this indicates "a line which he [Aristarchus] suspected of being un-Homeric but was not prepared to obelize[49] outright."[50]

The current Unicode 2022 is satisfactory for the encoding of this character.

Example 1 (Aristarchean editorial sign)
Homerus Epic., *Ilias*. Book 8



Allen, T.W., *Homeri Ilias*, vol. 2 (Clarendon Press, Oxford, 1931) 234-235

[48] These counts include the non-Aristarchean, non-marginal uses of this Beta Code, the use of which overlaps with Greek Mese Stigme above.

[49] Zenodotus had introduced the meaning of the Obelos as a marker of doubt. See Lockwood, J.F., Browning, R. Wilson, N.G. "Zenodotus" in *OCD*[3] (1996) 1656.

[50] Wace & Stubbings (1962) 224

III. Ancient Greek Numerical Characters

Introduction and Overview

Table of Characters Proposed

Number		Name	Unicode	Comment
Alphabetic Numerals – Fractions				
III.a.1	∠	Acrophonic $^{1}/_{12}$ Unit		2220 is identical to one glyph variant
III.a.2	ϖ	Acrophonic $^{1}/_{8}$ Unit		
Weights, Measures and Money: Standard Greek Weights and Money				
III.a.3	𐅆	Greek Talent Sign		22BC and 2305 are similar
III.a.4	≼	Greek Drachma Sign		22D6, 003C and 039B are similar to three of the glyph variants
III.b.1	>	Greek Half Drachma Sign		
III.a.5	~	Greek Obol Sign		007E, 223D, 005C and 2013 are similar to four glyph variants
III.a.6	≃	Greek Two Obols Sign		2248 is similar to one glyph variant
III.a.7	⌒	Greek Three Obols Sign		0393, 03A4 and 223F are similar to three glyph variants
III.a.8	⌢	Greek Four Obols Sign		
III.a.9	⋐	Greek Five Obols Sign		
Weights, Measures and Money: Standard Greek Measures of Capacity				
III.a.10	⊢	Greek Metretes Sign		
III.a.11	κ	Greek Kyathos Base Sign		
Weights, Measures and Money: Greek Characters for Roman Weights and Measures				
III.a.12	𝒹	Greek Litra Sign		
III.a.13	Γ	Greek Ounkia Sign		
III.a.14	ξ	Greek Xestes Sign		
Weights, Measures and Money: Greek Characters for non-Graeco-Roman Measures				
III.a.15	÷	Greek Artabe Sign		00F7 is similar to one glyph variant
Weights, Measures and Money: Ancient Greek Medical Measures				
III.a.16	Γ	Greek Gramma Sign		
III.a.17	𝒯	Greek Tryblion Base Sign		
Acrophonic Numerals: Basic Characters				
III.b.2	/	Acrophonic $^{1}/_{12}$ Unit	002F	
III.b.3	X	Acrophonic $^{1}/_{8}$ Unit • Acrophonic 1,000 Units • Acrophonic 1,000 Drachmae	03A7	
III.a.18	Ɔ	Acrophonic $^{1}/_{4}$ Unit		
III.a.19	C	Acrophonic $^{1}/_{2}$ Unit		
III.b.4	I	Acrophonic 1 Unit • Acrophonic 1 Obol	0399	

III.a.20	𐅀	Acrophonic 1 Drachma		The character 22A6 is similar
III.a.21	𐅁	Acrophonic 5 Units • Acrophonic five Drachmae		
III.b.5	𐅂	Acrophonic 10 Units • Acrophonic 10 Drachmae	0394	
III.a.22	𐅃	Acrophonic 50 Units • Acrophonic 50 Drachmae		
III.b.6	𐅄	Acrophonic 100 Units • Acrophonic 100 Drachmae	0397	
III.a.23	𐅅	Acrophonic 500 Units • Acrophonic 500 Drachmae		
III.a.24	𐅆	Acrophonic 5,000 Units • Acrophonic 5,000 Drachmae		
III.b.7	𐅇	Acrophonic 10,000 Units • Acrophonic 10,000 Drachmae • Acrophonic 1 Mna	039C	
III.a.25	𐅈	Acrophonic 50,000 Units • Acrophonic 50,000 Drachmae • Acrophonic 5 Mnae		
Acrophonic Numerals: Additional Character for Depicting Talents				
III.b.8	𐅉	Acrophonic 1 Talent	03A4	
III.a.26	𐅊	Acrophonic 5 Talents		
III.a.27	𐅋	Acrophonic 10 Talents		
III.a.28	𐅌	Acrophonic 50 Talents		
III.a.29	𐅍	Acrophonic 100 Talents		
III.a.30	𐅎	Acrophonic 500 Talents		
III.a.31	𐅏	Acrophonic 1,000 Talents		
III.a.32	𐅐	Acrophonic 5,000 Talents		
III.a.33	𐅑	Acrophonic 10,000 Talents		
III.a.34	𐅒	Acrophonic 50,000 Talents		
Acrophonic Numerals: Additional Character for Depicting Staters				
III.b.9	𐅓	Acrophonic 1 Stater	03A3	
III.a.35	𐅔	Acrophonic 5 Staters		
III.a.36	𐅕	Acrophonic 10 Staters		
III.a.37	𐅖	Acrophonic 50 Staters		
III.a.38	𐅗	Acrophonic 100 Staters		
III.a.39	𐅘	Acrophonic 500 Staters		
III.a.40	𐅙	Acrophonic 1,000 Staters		
III.a.41	𐅚	Acrophonic 5,000 Staters		
III.a.42	𐅛	Acrophonic 10,000 Staters		
III.a.43	𐅜	Acrophonic 50,000 Staters		
Acrophonic Numerals: Additional Character for Depicting Mnae				
III.a.44	𐅝	Acrophonic 10 Mnae		
III.a.45	𐅞	Acrophonic 50 Mnae		
III.a.46	𐅟	Acrophonic 100 Mnae		

III.a.47		Acrophonic 500 Mnae		
III.a.48		Acrophonic 1,000 Mnae		
III.a.49		Acrophonic 5,000 Mnae		
III.a.50		Acrophonic 10,000 Mnae		
III.a.51		Acrophonic 50,000 Mnae		

Introduction

This section of the proposal is divided into three subsections.

1. Alphabetic Numerals
2. Weights, Measures and Money
3. Acrophonic Numerals

1. Alphabetic Numerals – Fractions

In order to display and discuss ancient Greek mathematical works accurately, the following two characters will need to be added to the Unicode Standard. These are characters which represent fractions.

Heath writes: "The Greeks had a preference for expressing ordinary proper fractions as the sum of two or more submultiples... The orthodox sign for a submultiple was the letter for the corresponding number (the denominator) but with an accent instead of a horizontal stroke above it; thus γ′ = ⅓ ... (γ′ is in fact short for τρίτος, so that it is used for the ordinal number 'third' as well as for the fraction ⅓, and similarly with all other accented numeral signs);... There were special signs for ½ namely ∠′ or C′, and for ⅔, namely ϐ′. When a number of submultiples are written one after the other, the sum of them is meant, and similarly when they follow a whole number; e.g. ∠′δ′ = ½ ¼ or ¾ ...; κθ ϐ′ ιγ′ λθ′ = 29 ⅔ 1/13 1/39 or 29 10/13."[51]

In the descriptions given below, the half and two-thirds characters are given without the Keraia (or the 'accent' as Heath terms it above) placed after: it is to be understood, that these symbols are correctly written with the Keraia afterwards (unless the Keraia or double Keraia[52] appear over the character as in ϔ below).

[51] Heath (1921:1) 41-2

[52] Ibid. 42: "A less orthodox method found in later manuscripts was to use two accents and to write e.g. ζ′′ instead of ζ′ for ⅐."

2. Weights, Measures and Money

Weights and Money

In order to display and discuss ancient Greek weights and money accurately, the following characters will need to be added to the Unicode Standard.

The standard ancient Greek system of weights uses the same terminology as the money and uses the same abbreviations. Therefore we discuss them together. The system had many local variations, but the Attic-Euboic system is dominant—this system is set out in the table below:

Scale[53]	Nominal	Post-Hippias (standard)	Unicode
6000	Talent	*c*. 25.74kg	
200	(Large) Stater	*c*. 858.00g	03A3 or 03DE
100	Mna	*c*. 429.00g	
2	(Small) Stater/ Didrachmon	*c*. 8.58g	03A3 or 03DE
1	Drachme	*c*. 4.29g	
$^1/_6$	Obol	*c*. 0.72g	

Further, as a point of interest: the table shows that the ancient Greek weight and coin system unifies both sexigesimal (1 Talent = 30 Large Staters = 60 Mnas) and decimal (1 Mna = 50 Small Staters = 100 Drachmae) systems.

Mna (often called Mina in modern usage) is usually written by stacking a small capital nu over a capital mu ($\overset{N}{M}$), as said above in the discussion of myriads. See Section VI below for the stacking letters proposal.

[53] This table is based on that in Viedebantt (1923) 38

Measures of Capacity

The ancient Greeks had two systems of measurement: one for wet, and one for dry products. The *kotyle*, which is the basic measure in both wet and dry systems, is made up of six *kyathoi* or four *oxybapha*; its value is different depending on local variations, but it is roughly $^{1}/_{4}$l.[54]

The dry measures

Scale	Nominal	Approximate weight[55]	Unicode
$^{1}/_{6}$	Kyathos	*c*.40ml	
$^{1}/_{4}$	Oxybaphon	*c*.60ml	No standard character
1	Kotyle	*c*.240ml	
4	Choinix	*c*.1l	No standard character
32	Hekteus	*c*.30l	No standard character
192	Medimnos	*c*.180l	No standard character

The liquid measures

Scale	Nominal	Approximate weight	Unicode
$^{1}/_{6}$	*Kyathos*	*c .40ml*	
$^{1}/_{4}$	*Oxybaphon*	*c. 60ml*	No standard character
1	*Kotyle*	*c. 240ml*	
6	Hemichous	*c*. 1.5l	No standard character
12	Chous	*c*. 3l	03C7 + <superscript> 03BF
144	Metretes	*c*. 35l	

[54] Pryce, F.N., Lang, M.L. & Vickers, M. in OCD[3] (1996) 943

[55] For the sake of convenience, we will take the capacity 240ml for this and the following table. This is for illustration only.

Characters for Roman Weights and Measures

Five characters are included in this sub-section. These characters are the Greek characters to represent weights (and occasionally also measures) in the Roman system. The Roman system is based on the *Libra* or *As*, of 327.45g. This is divided into 12 *Unciae*. The Greek translations for these terms are *Litra* for *Libra*, and *Ounkia*[56] for *Uncia*.

While the Greek character representing the Ounkia is settled, there are two main variants of the character for the Litra character: one based on either 039B GREEK CAPITAL LETTER LAMBDA or 03BB GREEK SMALL LETTER LAMBDA with either a slash or an iota subscript (the lambda for the l in Litra, the iota for the i); and a second which is quite distinct.

For the standard character for Keration (roughly a pint), please see Greek Vocal Notation Symbol 27 in the ancient Greek Musical section below.

[56] Also *Onkia*. See LSJ 1268

3. Acrophonic Numerals[57]

This is the second system of Greek numeral notation. It is currently not possible to encode the majority of these using the current Unicode Standard. It is necessary to include them to facilitate correct and accurate representation of Greek inscriptions and other sources of texts, as well as to facilitate scholarly discussion.

This system was used widely across the Greek world, with local variations, primarily in inscriptions down to Roman times. The standard—and most widely used—variation was the Athenian, which is the standard proposed here. This variant was used in all public inscriptions until the first century BCE and sporadically thereafter.[58]

The characters are based on the first letters of the full words for the numbers (with the exception of the character for 1, which is a vertical stroke and 100 where an Eta is used although the word for 100 begins with an Epsilon[59]):

Number	Character	Greek Name	Transliterated Name	Notes
5	Γ	πέντε	Pente	Note this is the inscriptional form of the letter Pi
10	Δ	δέκα	Deka	
100	H	ἕκατον	Hekaton	
1,000	X	χίλιοι	Chilioi	
10,000	M	μύριοι	Murioi	

The 'half-way' numbers 50, 500, 5,000 and 50,000 are expressed by combining Γ (5) with the other signs. So:

Number	Character
50	⸤Δ
500	⸤H
5,000	⸤X
50,000	⸤M

[57] A draft proposal for Greek Acrophonic Numerals was submitted to the UTC by Bruce Robertson on July 29, 1997. As no action was taken, the Acrophonic Numerals have been included in this proposal.

[58] Heath & Toomer (1996) 1052

[59] This presumably occurs because it is easier to write letters within an eta than it is an epsilon.

These characters are written with the higher numbers written before the lower. For example:

7	ΓII
134	HΔΔIIII
4,999	XXXX𐅵HHHH𐅵ΔΔΔΔΓIIII

To denote units of coinage or weight the same system was extended so that the first letter of the relevant weight was compiled with the acrophonic numeral. The weights involved are:

Number	Character	Greek Name	Translated Name	Notes
5	T	τάλαντον	Talent	
10	Σ	στατήϱ	Stater	
100	M	μνᾶ	Mna	

So, for instance, we find 𐅄 representing 10 Talents and 𐅵 representing 500 Staters.

A single Drachma is represented by the character ⊢ and the Obol with I. All acrophonic numbers are assumed to be Drachmae unless otherwise stated. For example:

723 Drachmae	𐅵 H H Δ Δ ⊢⊢⊢
30 Talents, 2 Drachmae, 1 Obol	𐅄𐅄𐅄⊢⊢I
207 Staters	𐅂𐅂𐅵ΣΣ
20 Mnae	𐅅𐅅

Fractions of the Unit/Obol are represented with the following characters:

Fraction	Character
$^1/_{12}$ Unit	/
$^1/_8$ Unit	X
$^1/_4$ Unit	ↄ
$^1/_2$ Unit	ↀ

For example:

1 Drachma, 3 $^3/_4$ Obols	⊢IIIↄ

It will be noted that the character used to represent 5 is Γ and not Π. The form Γ is identical to the form of Pi used in Greek inscriptions. This form is conventionally used when writing out Acrophonic numerals. Not that in the example below, the form Γ is used for acrophonic numerals but the form Π is used for text.[60]

No sample texts are given for a few of the higher acrophonic numbers. This is because the higher numbers are rare and locating instances of them in inscriptions can be difficult. However, they are a necessary and integral part of the acrophonic numeral system.

[60] Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

a. Ancient Greek Numerical Characters: New Characters

Table of Characters Included in this Section of the Proposal

Number		Name	Unicode	Comment
Alphabetic Numerals – Fractions				
III.a.1	∠	Acrophonic $^{1}/_{12}$ Unit		2220 is identical to one glyph variant
III.a.2	ϖ	Acrophonic $^{1}/_{8}$ Unit		
Weights, Measures and Money: Standard Greek Weights and Money				
III.a.3	𐅆	Greek Talent Sign		22BC and 2305 are similar
III.a.4	≼	Greek Drachma Sign		22D6, 003C and 039B are similar to three of the glyph variants
III.a.5	~	Greek Obol Sign		007E, 223D, 005C and 2013 are similar to four glyph variants
III.a.6	≒	Greek Two Obols Sign		2248 is similar to one glyph variant
III.a.7	⌒	Greek Three Obols Sign		0393, 03A4 and 223F are similar to three glyph variants
III.a.8	𐅇	Greek Four Obols Sign		
III.a.9	𐅈	Greek Five Obols Sign		
Weights, Measures and Money: Standard Greek Measures of Capacity				
III.a.10	𐅉	Greek Metretes Sign		
III.a.11	κ	Greek Kyathos Base Sign		
Weights, Measures and Money: Greek Characters for Roman Weights and Measures				
III.a.12	𐅊	Greek Litra Sign		
III.a.13	ℾ	Greek Ounkia Sign		
III.a.14	ξ	Greek Xestes Sign		
Weights, Measures and Money: Greek Characters for non-Graeco-Roman Measures				
III.a.15	÷	Greek Artabe Sign		00F7 is similar to one glyph variant
Weights, Measures and Money: Ancient Greek Medical Measures				
III.a.16	ℾ	Greek Gramma Sign		
III.a.17	ϑ	Greek Tryblion Base Sign		
Acrophonic Numerals				
III.a.18	ↄ	Acrophonic $^{1}/_{4}$ Unit		
III.a.19	ↄ	Acrophonic $^{1}/_{2}$ Unit		
III.a.20	⊢	Acrophonic 1 Drachma		The character 22A6 is similar
III.a.21	⊓	Acrophonic 5 Units • Acrophonic five Drachmae		
III.a.22	⊓	Acrophonic 50 Units • Acrophonic 50 Drachmae		
III.a.23	⊓	Acrophonic 500 Units • Acrophonic 500 Drachmae		
III.a.24	⊓	Acrophonic 5,000 Units • Acrophonic 5,000 Drachmae		

III.a.25		Acrophonic 50,000 Units • Acrophonic 50,000 Drachmae • Acrophonic 5 Mnae		
III.a.26		Acrophonic 5 Talents		
III.a.27		Acrophonic 10 Talents		
III.a.28		Acrophonic 50 Talents		
III.a.29		Acrophonic 100 Talents		
III.a.30		Acrophonic 500 Talents		
III.a.31		Acrophonic 1,000 Talents		
III.a.32		Acrophonic 5,000 Talents		
III.a.33		Acrophonic 10,000 Talents		
III.a.34		Acrophonic 50,000 Talents		
III.a.35		Acrophonic 5 Staters		
III.a.36		Acrophonic 10 Staters		
III.a.37		Acrophonic 50 Staters		
III.a.38		Acrophonic 100 Staters		
III.a.39		Acrophonic 500 Staters		
III.a.40		Acrophonic 1,000 Staters		
III.a.41		Acrophonic 5,000 Staters		
III.a.42		Acrophonic 10,000 Staters		
III.a.43		Acrophonic 50,000 Staters		
III.a.44		Acrophonic 10 Mnae		
III.a.45		Acrophonic 50 Mnae		
III.a.46		Acrophonic 100 Mnae		
III.a.47		Acrophonic 500 Mnae		
III.a.48		Acrophonic 1,000 Mnae		
III.a.49		Acrophonic 5,000 Mnae		
III.a.50		Acrophonic 10,000 Mnae		
III.a.51		Acrophonic 50,000 Mnae		

Alphabetic Numerals – Fractions

III.a.1 Ancient Greek Half Sign

Sign	Similar Unicode	Beta Code	Count
∠	See below	`#20, #21, #24, #25, #161, #171, #172, #689`	9,772 instances, 73 authors

Definition and comments

This is the standard ancient Greek mathematical abbreviation for one half, and occurs highly frequently in extant sources.

The TLG has recorded several glyph variants: ∠, ◟, C, ◡, C̋, ◡̋, s, ˢ, s̋ (each of which have been encoded separately, hence the various Beta Codes given above). The first is an angle, the second and third are curved variants. The fourth and the fifth show this symbol being read as a Lunate Sigma; the remaining three are variants which read the character as a non-Lunate Sigma. Friedlein notes two more variants: ∟ and C◡′.[61]

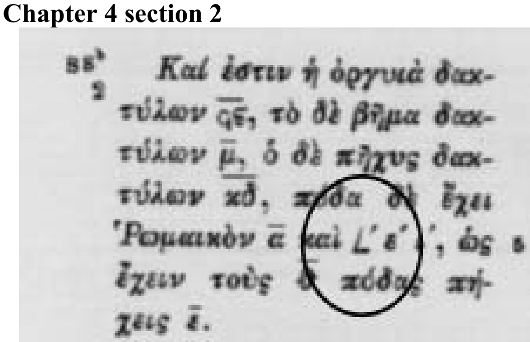
Four glyphs have pre-existing Unicode characters:

∟ - 221F
∠ - 2220
◡ - 25E1
s - 0073

A fifth glyph is identical to the Capital Lunate Sigma, proposed above.

However, no codepoint covers all of the glyph variants and it should be noted that while the TLG prefers to use the glyph variant identical to 2220, at least the first three above are in regular use.[62]

Example 1
Heron Mech., *Geometrica*. Chapter 4 section 2



Heiberg, J.L., *Heronis Alexandrini opera quae supersunt omnia*, vol. 4 (Teubner, Leipzig, 1903) 184

[61] Friedlein (1869) Tafel 2

[62] See Oikonomides (1974) 130; Heath (1921:1) 42

III.a.2 Greek Two-Thirds Sign

Sign	Similar Unicode	Beta Code	Count
ϖ́		#131, #132	112 instances, 6 authors

Definition and comments

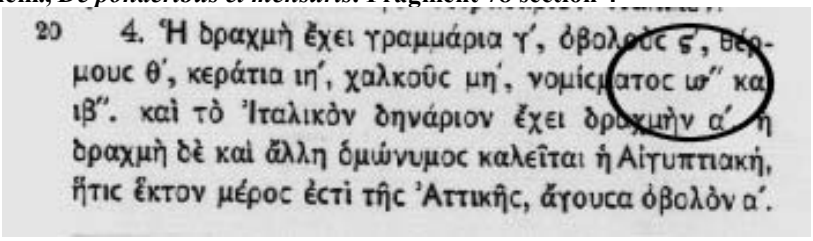
This is the standard ancient Greek mathematical abbreviation for two thirds.

This character is 03C9 GREEK SMALL LETTER OMEGA with a curl at the right hand side. Hultsch describes this symbol as a contraction of the symbol for a half (which he gives as C) together with the symbol for a sixth. So Cς′ becomes ϖ́ .[63] Kenyon, however, regards this symbol as o᾽.[64] In any case, this is a distinct, commonly used mathematical symbol and should not be regarded as a ligature of other characters since it has developed its own distinct and independent form.

This symbol has one main glyph variant. Hultsch records the use of 03B2 GREEK SMALL CASE BETA (β) to mean two thirds, and the TLG has recorded the use of 03B2 GREEK SMALL CASE BETA + 0338 COMBINING LONG SOLIDUS OVERLAY (β̸) for the same symbol. The omega-like symbol is the more common. However, the TLG records 81 instances of the Omega variant in four authors and 31 of the Beta variant in two authors.

Example 1

Cleopatra Alchem., *De ponderibus et mensuris*. Fragment 78 section 4



4. Ἡ δραχμὴ ἔχει γραμμάρια γ′, ὀβολοὺς ς′, θέρμους θ′, κεράτια ιη′, χαλκοῦς μη′, νομίσματος ω″ καὶ ιβ″. καὶ τὸ Ἰταλικὸν δηνάριον ἔχει δραχμὴν α′. ἡ δραχμὴ δὲ καὶ ἄλλη ὁμώνυμος καλεῖται ἡ Αἰγυπτιακή, ἥτις ἕκτον μέρος ἐστὶ τῆς Ἀττικῆς, ἄγουσα ὀβολὸν α′.

Hultsch, F., *Metrologicorum scriptorum reliquiae*, vol. 1 (Teubner, Leipzig, 1864) 154

[63] Hultsch (1864:1) 174

[64] Kenyon (1974) 130

Weights, Measures and Money: Standard Greek Weights and Money

III.a.3 Greek Talent Sign

Sign	Similar Unicode	Beta Code	Count
	See below		

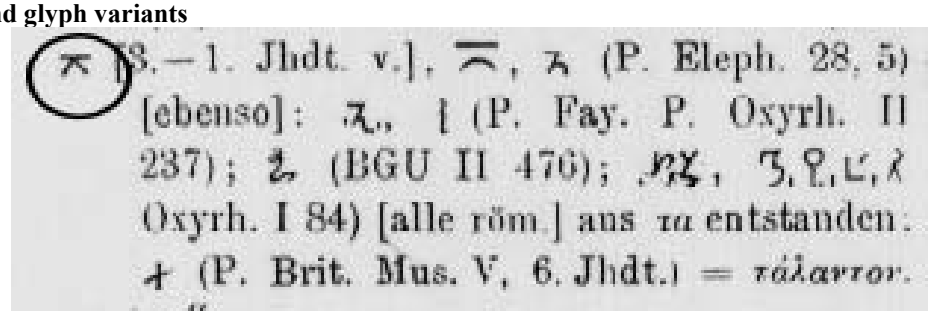
Definition and comments

A Talent consists of 6,000 drachmae and is a weight of approximately 25.74kg in the standard Attic system.

This character is formed from the horizontal bar of 03A4 GREEK CAPITAL LETTER TAU placed over a slightly shortened 039B GREEK CAPITAL LETTER LAMBDA which are the first and third letters of the word Talent. Hultsch also records the abbreviation T^ for Talent.[65] Example 1 below shows the standard abbreviation as well as a series of further glyph variants.

This character is similar but not identical to 22BC NAND and 2305 PROJECTIVE. However, with the Talent, there is no space in between the arrow and the horizontal line.

Example 1
Talent and glyph variants



Bilabel, "Siglae" in *Pauly's Real-Encyclopädie der classischen Altertumswissenschaft. Zweite Reihe. Zweiter Band* (Stuttgert, 1923) 2315

[65] Hultsch (1871:2) xxx

III.a.4 Greek Drachma Sign

Sign	Similar Unicode	Beta Code	Count
≮	See below	#101, #129	11,876 instances, 20 authors

Definition and comments

A Drachme, which consists of six Obols and is a weight of approximately 4.31g in the standard Attic system is a very frequently used character in extant Greek texts. The two examples below are extracts from medical texts giving weight measures.

The TLG has recorded three glyph variants of this character: ≮, < and Λ̰. These three glyph variants may all currently be represented by the Unicode Standard:

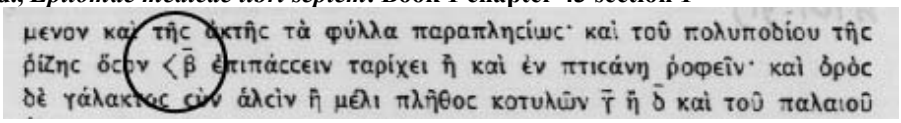
≮ 22D6 LESS-THAN WITH DOT

< 003C LESS-THAN SIGN

Λ̰ 039B GREEK CAPITAL LETTER LAMBDA with 0325 COMBINING DOT BELOW.

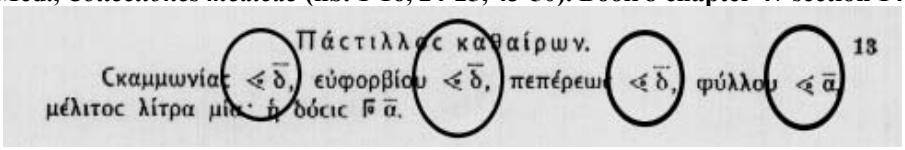
However, there is no single Unicode codepoint which unifies all these glyph variants. The TLG prefers the use of ≮ over < because it is easier to see at first glance that this is a weight and is not to be confused with, say, Greek Reverse Diple. Both of the first two glyph variants are commonly used.

Example 1
Paulus Med., *Epitomae medicae libri septem*. Book 1 chapter 43 section 1


μενον καὶ τῆς ὀκτῆς τὰ φύλλα παραπλησίως· καὶ τοῦ πολυποδίου τῆς
ῥίζης ὅσον ≮ β̄ ἐπιπάσσειν παρίχει ἢ καὶ ἐν πτισάνῃ ῥοφεῖν· καὶ ὀρὸς
δὲ γάλακτος σὺν ἁλσὶν ἢ μέλι πλῆθος κοτυλῶν γ̄ ἢ δ̄ καὶ τοῦ παλαιοῦ

Heiberg, J.L., *Paulus Aegineta*, vol. 2 (Teubner, Leipzig, 1921) 29

Example 2 (glyph variant)
Oribasius Med., *Collectiones medicae* (lib. 1-16, 24-25, 43-50). Book 8 chapter 47 section 14


Πάστιλλος καθαίρων. 13
Σκαμμωνίας ≮ δ̄, εὐφορβίου ≮ δ̄, πεπέρεως ≮ δ̄, φύλλου ≮ ᾱ,
μέλιτος λίτρα μία· ὑ δόσις ℈ ᾱ.

Raeder, J., *Oribasii collectionum medicarum reliquia*e, vol. 1 (Teubner, Leipzig, 1928) 299

III.a.5 Greek Obol Sign

Sign	Similar Unicode	Beta Code	Count
~	See below	#113, #116, #123	12 instances, 6 authors

Definition and comments

The Obol is the smallest standard Greek weight measure and weighs approximately 0.72g in the standard Attic system.

The TLG has recorded three glyph variants: ~, ∽ and \. Kenyon also records a fourth: –.[66] All four of these glyph variants may currently be encoded in Unicode:

~ 007E TILDE

∽ 223D REVERSED TILDE

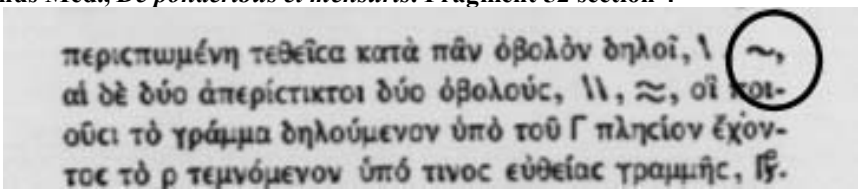
\ 005C REVERSED SOLIDUS

– 2013 EN DASH

The first two and the fourth glyph variants are the most common. The TLG prefers the variant identical to 007E TILDE. While this character has glyph variants identical to four Unicode codepoints it cannot currently be encoded using one Unicode codepoint.

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 52 section 4


περιεπωμένη τεθεῖσα κατὰ πᾶν ὀβολὸν δηλοῖ, \ ~,
αἱ δὲ δύο ἀπερίστικτοι δύο ὀβολούς, \\, ≈, οἳ ποι-
οῦσι τὸ γράμμα δηλούμενον ὑπὸ τοῦ Γ πλησίον ἔχον-
τος τὸ ρ τεμνόμενον ὑπό τινος εὐθείας γραμμῆς, ℽ.

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 220

[66] Kenyon (1974) 129

III.a.6 Greek Two Obols Sign

Sign	Similar Unicode	Beta Code	Count
⩽	See below	#119, #122	2 instances, 2 authors

Definition and comments

Two Obols weighs approximately 1.43g in the standard Attic system.

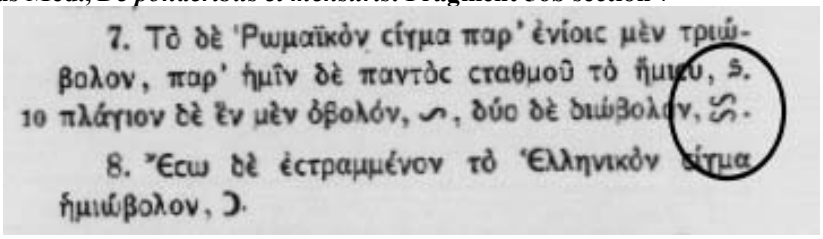
The TLG has recorded two glyph variants: ⩽ and ≈. Kenyon also records a third ⩵.[67] The second of theses glyph variants may currently be encoded in Unicode:

≈ 2248 ALMOST EQUAL TO

While this character has a glyph variant identical to one current Unicode codepoint all the glyph variants are not covered by a single Unicode codepoint

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 56b section 7



7. Τὸ δὲ Ῥωμαϊκὸν σίγμα παρ' ἐνίοις μὲν τριώ-
βολον, παρ' ἡμῖν δὲ παντὸς σταθμοῦ τὸ ἡμιεύ, ς.
πλάγιον δὲ ἓν μὲν ὀβολόν, ⊃, δύο δὲ διώβολον, ⊃.
8. Ἔσω δὲ ἐστραμμένον τὸ Ἑλληνικὸν σίγμα
ἡμιώβολον, Ↄ.

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 226

[67] Kenyon (1974) 129

III.a.7 Greek Three Obols Sign

Sign	Similar Unicode	Beta Code	Count
⍀	See below	#1338	1 instance, 1 author

Definition and comments

Three Obols weigh approximately 2.12g in the standard Attic system.

While this character appears only once in the TLG corpus this should not be taken as representative of the number of times this character has been used in ancient works: it is often inscriptional or papyrological or it may have been resolved in modern editions.

The TLG has recorded only one glyph variant (see Example 1 below); Bilabel records four further variants: Γ, ⍀, ⨍, ⊤ and ∿.[68] None of these can currently be encoded using Unicode. However, three are similar—but not identical—to preexisting Unicode codepoints:

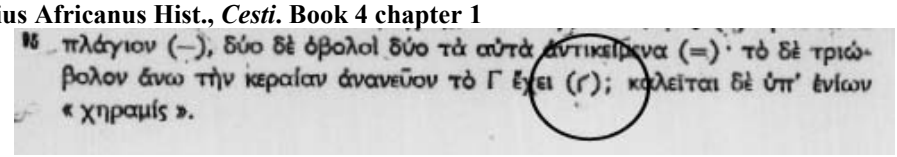
Γ 0393 GREEK CAPITAL LETTER GAMMA. The three Obols sign may not have serifs, so cannot be considered unified with the gamma.

⊤ 03A4 GREEK CAPITAL LETTER TAU. The three Obols sign may not have serifs, so cannot be considered unified with Tau.

∿ 223F SINE WAVE. The three Obols sign takes up the whole line in terms of height.

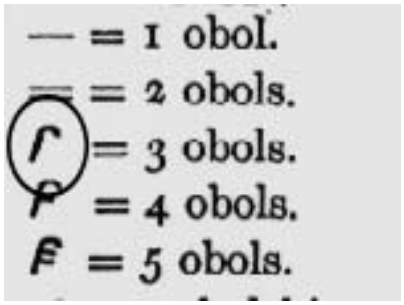
Example 1

Sextus Julius Africanus Hist., *Cesti*. Book 4 chapter 1


πλάγιον (–), δύο δὲ ὀβολοὶ δύο τὰ αὐτὰ ἀντικείμενα (=)· τὸ δὲ τριώ-
βολον ἄνω τὴν κεραίαν ἀνανεῦον τὸ Γ ἔχει (⍀); καλεῖται δὲ ὑπ' ἐνίων
« χηραμίς ».

Vieillefond, J.-R., *Les "Cestes" de Julius Africanus* (Sansoni, Florence, 1970) 275

Example 2



Kenyon, F.G. "Abbreviations and symbols in Greek papyri" in Oikonomides, A.N., (ed.) *Greek* Abbreviations (Chicago, 1974) 129

[68] Bilabel (1923) 2308, 2314

III.a.8 Greek Four Obols Sign

Sign	Similar Unicode	Beta Code	Count
𐅂			

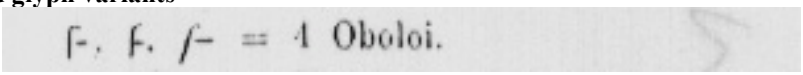
Definition and comments

Four Obols weigh approximately 2.86g in the standard Attic system.

This character does not yet appear in the TLG corpus. However, it is discussed in Kenyon[69] and Bilabel[70]. Bilabel and Kenyon record glyph variants which are all virtually identical: 𐅂.[71]

It is currently not possible to encode this using the Unicode Standard.

Example 1
Four Obols and glyph variants



Bilabel, "Siglae" in *Pauly's Real-Encyclopädie der classischen Altertumswissenschaft. Zweite Reihe. Zweiter Band* (Stuttgart, 1923) 2315

III.a.9 Greek Five Obols Sign

Sign	Similar Unicode	Beta Code	Count
𐅃			

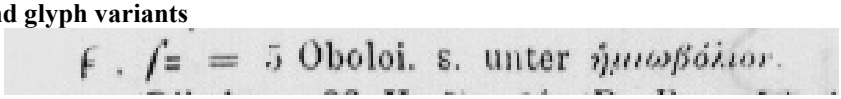
Definition and comments

Five Obols weigh approximately 3.58g in the standard Attic system.

This character does not yet appear in the TLG corpus. However, it is discussed in Kenyon[72] and Bilabel[73]. Bilabel and Kenyon record glyph variants which are all virtually identical: 𐅃.[74]

It is currently not possible to encode this using the Unicode Standard.

Example 1
Five Obols and glyph variants



Bilabel, "Siglae" in *Pauly's Real-Encyclopädie der classischen Altertumswissenschaft. Zweite Reihe. Zweiter Band* (Stuttgart, 1923) 2315

[69] Kenyon (1974) 129

[70] Bilabel (1923) 2307 and 2314

[71] Bilabel (1923) 2308 & 2314 and Kenyon (1974) 129

[72] Kenyon (1974) 129

[73] Bilabel (1923) 2307 & 2314

[74] Bilabel (1923) 2308 & 2314 and Kenyon (1974) 129

Weights, Measures and Money: Standard Greek Measures of Capacity

III.a.10 Greek Metretes Sign

Sign	Similar Unicode	Beta Code	Count
⊢			

Definition and comments

Kenyon records this as the standard symbol for the Greek liquid measure, the Metretes, which is approximately 35l.

This character is 03DC GREEK DIGAMMA reflected in the x-axis.

Example 1

Kenyon, F.G. "Abbreviations and symbols in Greek papyri" in Oikonomides, A.N., (ed.) *Greek* Abbreviations (Chicago, 1974) 129

III.a.11 Greek Kyathos Base Sign

Sign	Similar Unicode	Beta Code	Count
Κ	See below	#111	17 instances, 3 authors

Definition and comments

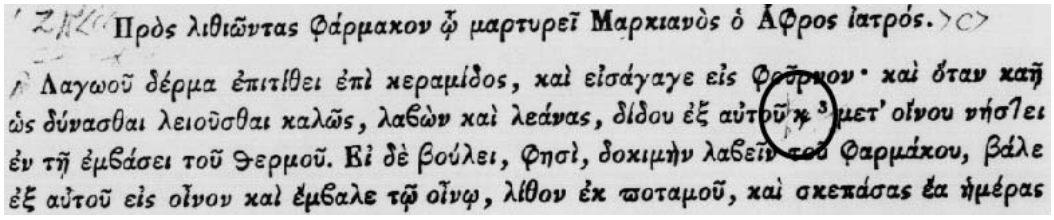
"*carat, 1/1728 of a pound*" (LSJ 941).

This character forms the first part of the characters used to form three measures: the Kyathos, the Kotyle and some glyph variants of the Keration. This character is conventionally followed by a superscripted upsilon (for the second letter of Kyathos) or omicron (the second letter of Kotyle) or epsilon (the second letter of Keration). These letters may also appear above this character. Please see Section VI for a discussion of stacking characters, and slashed characters.

This is also an Archaic form of the abbreviation 03D7, for more on this see Appendix 5.

Example 2

Aëtius Med., *Iatricorum liber xi.* Chapter 11



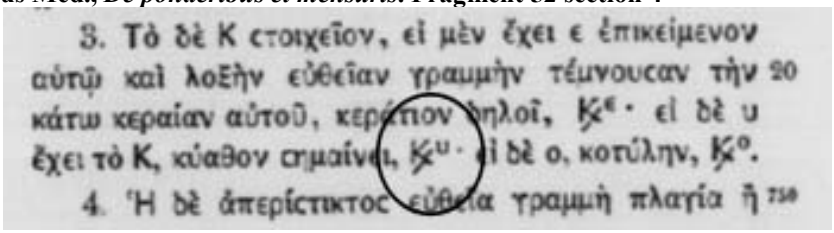
Πρὸς λιθιῶντας Φάρμακον ᾧ μαρτυρεῖ Μαρκιανὸς ὁ Ἄφρος ἰατρός.

Λαγωοῦ δέρμα ἐπιτίθει ἐπὶ κεραμίδος, καὶ εἰσάγαγε εἰς Φοῦρνον· καὶ ὅταν καῇ ὡς δύνασθαι λειοῦσθαι καλῶς, λαβὼν καὶ λεάνας, δίδου ἐξ αὐτοῦ κ μετ' οἴνου νήσ|ει ἐν τῇ ἐμβάσει τοῦ θερμοῦ. Εἰ δὲ βούλει, φησὶ, δοκιμὴν λαβεῖν τοῦ Φαρμάκου, βάλε ἐξ αὐτοῦ εἰς οἶνον καὶ ἔμβαλε τῷ οἴνῳ, λίθον ἐκ ποταμοῦ, καὶ σκεπάσας ἕα ἡμέρας

Daremberg, C. & Ruelle, C.É., *Oeuvres de Rufus d'Éphèse* (Imprimerie Nationale, Paris, 1879) 571

Example 2

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 52 section 4



3. Τὸ δὲ Κ στοιχεῖον, εἰ μὲν ἔχει ε ἐπικείμενον αὐτῷ καὶ λοξὴν εὐθεῖαν γραμμὴν τέμνουσαν τὴν κάτω κεραίαν αὐτοῦ, κεράτιον ἥλοι, Κ^{ε}· εἰ δὲ υ ἔχει τὸ Κ, κύαθον σημαίνει, Κ^{υ}· εἰ δὲ ο, κοτύλην, Κ^{ο}.

4. Ἡ δὲ ἀπερίστικτος εὐθεῖα γραμμὴ πλαγία ἢ

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 218

Weights, Measures and Money: Greek Characters for Roman Weights and Measures

III.a.12 Greek Litra Sign

Sign	Similar Unicode	Beta Code	Count
ℒ	See below	#103, #117, #118, #127	686 instances, 12 authors

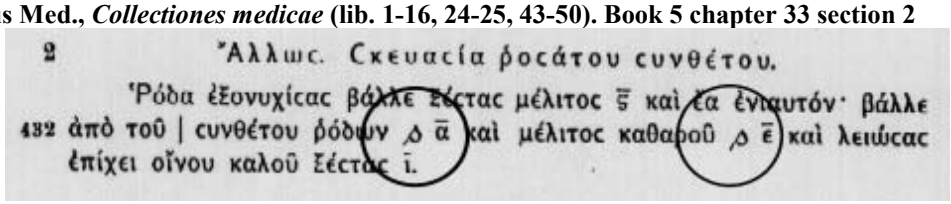
Definition and comments

This is the base measurement for the Roman weights system. It weighs 327.45g. LSJ[75] also record the word *Litra* being used for a Sicilian silver coin (later, one third of a standard Roman *As*) and for the Italic version of the Kotyle (as a measure of capacity).[76]

The TLG has recorded one glyph variants of this character, ℒ. Bilabel notes[77] a further glyph variant, ℑ. This character occurs with great frequency in the extant sources.

Example 1

Oribasius Med., *Collectiones medicae* (lib. 1-16, 24-25, 43-50). Book 5 chapter 33 section 2


2 Ἄλλως. Σκευασία ῥοσάτου συνθέτου.
Ῥόδα ἐξουνυχίσας βάλλε ξέστας μέλιτος ξ̄ καὶ τὰ ἐνιαυτόν· βάλλε
132 ἀπὸ τοῦ | συνθέτου ῥόδων λ ᾱ καὶ μέλιτος καθαροῦ λ ε̄ καὶ λειώσας
ἐπίχει οἴνου καλοῦ ξέστας ῑ.

Raeder, J., *Oribasii collectionum medicarum reliquia*e, vol. 1 (Teubner, Leipzig, 1928) 152

[75] LSJ 1054

[76] See Ancient Greek Measures of Capacity above.

[77] Bilabel (1923) 73

III.a.13 Greek Ounkia Sign

Sign	Similar Unicode	Beta Code	Count
Γο		#106	4048 instances, 22 authors

Definition and comments

This character represents one-twelfth of a Litra on the Roman system, or 27.29g.

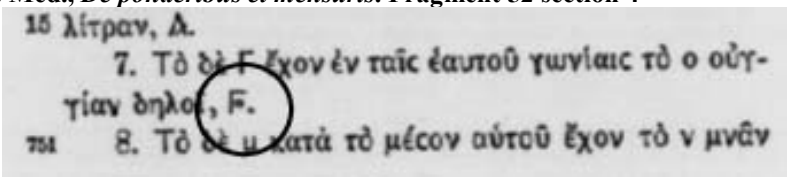
This character is formed from the letters 0393 GREEK CAPITAL LETTER GAMMA and 03BF GREEK SMALL LETTER OMICRON.

This character occurs very frequently in the extant sources. Note that while the Beta Code count is high, it is nonetheless an underestimate because—owing to difficulties of display—this character has often been spelled out as Γο, γο or γō.

The TLG has recorded three glyph variants: Fo, $\overset{o}{\gamma}$ and $\overline{\gamma}$. Bilabel[78] also records o′, γº and ouγ. The first variant is the most common as well as being the hardest to represent using the current Unicode Standard. The second glyph variant is discussed in Section VI below. The remaining four glyphs can currently be encoded without problem in the current Unicode Standard.

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 52 section 4


15 λίτραν, Δ.
7. Τὸ δὲ F ἔχον ἐν ταῖς ἑαυτοῦ γωνίαις τὸ ο οὐγ-
γίαν δηλοῖ, F.
754 8. Τὸ δὲ μ κατὰ τὸ μέσον αὐτοῦ ἔχον τὸ ν μνᾶν

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 220

[78] Bilabel (1923) 2307

III.a.14 Greek Xestes Sign

Sign	Similar Unicode	Beta Code	Count
ϗ		#121	430 instances, 8 authors

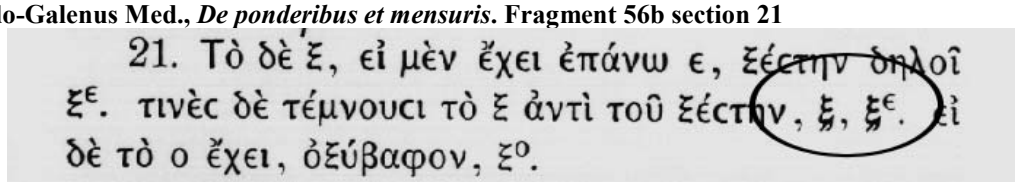
Definition and comments

The Greek *Xestes* is a translation of *Sextarius* which means sixth part and can refer to either a weight or a measure. However, it is most commonly used to refer to the liquid measure with is approximately 500ml.

The TLG notes four glyph variants: ϗ , ϗ , ϛ , ϟ. Bilabel notes six glyph variants: ϗ, ϗ, ϗ, ϗ, ϗ and ϗ.[79]

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 56b section 21



21. Τὸ δὲ ξ, εἰ μὲν ἔχει ἐπάνω ϵ, ξέστην δηλοῖ ξϵ. τινὲς δὲ τέμνουσι τὸ ξ ἀντὶ τοῦ ξέστην, ξ, ξϵ. εἰ δὲ τὸ ο ἔχει, ὀξύβαφον, ξο.

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 228

[79] Bilabel (1923) 2306

Weights, Measures and Money: Greek Characters for non-Graeco-Roman Measures

III.a.15 Greek Artabe Sign

Sign	Similar Unicode	Beta Code	Count
÷	See below	#100	269 instances, 3 authors

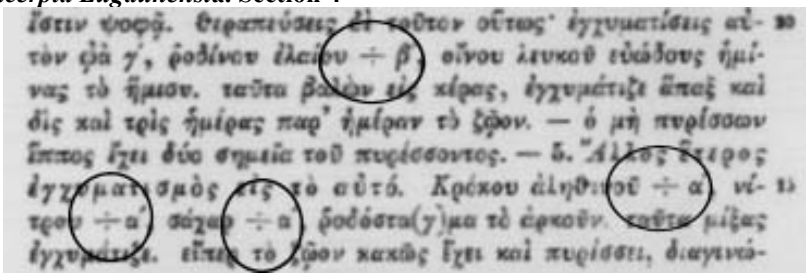
Definition and comments

This is used in both Persian and Egyptian measures systems. In the Persian it represented either one Medimnus or one Medimnus and three Choinikes (see ancient Greek Measures of Capacity above. One Choinix is approximately 1l). In the Egyptian it represented a measure of between 21-42 Choinikes.

Kenyon records three glyph variants for the Artabe: <, ϟ, ⨪.[80] However he deems the first two to be rare. Bilabel records 16 glyph variants which, excluding the variants of Kenyon's rare glyphs, are: ⨪, ÷, ⨪, ⨪ and ⨪.

While the glyph ÷ can currently be encoded using the current Unicode Standard with 00F7 DIVISION SIGN, there is no single Unicode codepoint which unifies all these glyph variants.

Example 1
Hippiatrica, *Excerpta Lugdunensi*a. Section 4



Oder, E. & Hoppe, K., *Corpus hippiatricorum Graecorum*, vol. 2 (Teubner, Leipzig, 1927) 273

[80] Kenyon (1974) 129

Weights, Measures and Money: Ancient Greek Medical Measures

III.a.16 Greek Gramma Sign

Sign	Similar Unicode	Beta Code	Count
Γ℘		#112	18 instances, 1 author

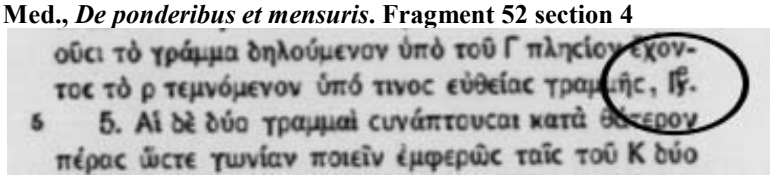
Definition and comments

The *Gramma* translates the Roman *Scrupulus* which is $^{1}/_{24}$ of an *Ounkia* or 1.137g. This was a standard measure used by doctors.[81]

This character may be regarded as a joined 0393 GREEK CAPITAL LETTER GAMMA with a superscripted 03A1 GREEK CAPITAL LETTER RHO with a slash half-way down its vertical bar.

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 52 section 4


οὖσι τὸ γράμμα δηλούμενον ὑπὸ τοῦ Γ πλησίον ἔχον-
τος τὸ ρ τεμνόμενον ὑπό τινος εὐθείας γραμμῆς, ℽ℘.
5. Αἱ δὲ δύο γραμμαὶ συνάπτουσαι κατὰ θάτερον
πέρας ὥστε γωνίαν ποιεῖν ἐμφερῶς ταῖς τοῦ Κ δύο

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 220

III.a.17 Greek Tryblion Base Sign

Sign	Similar Unicode	Beta Code	Count
ϙ		#115	2 instances, 1 author

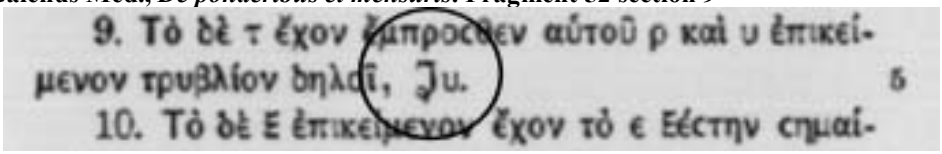
Definition and comments

The *Tryblion* was a receptacle often used by doctors to measure out prescriptions. As a measure it is exactly one *Kotyle* (see above). It also functions as a weight where it represents six *Drachmae*.

The symbol for a *Tryblion* is formed with the character given above followed by 03C5 GREEK SMALL LETTER UPSILON. The character above may be regarded as being formed from a ligature of 03A4 GREEK CAPITAL LETTER TAU with 03C1 GREEK SMALL LETTER RHO. However these characters have been reflected in the y-axis so forming quite a distinct character.[82]

Example 1

Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 52 section 9


9. Τὸ δὲ τ ἔχον ἔμπροσθεν αὐτοῦ ρ καὶ υ ἐπικεί-
μενον τρυβλίον δηλοῖ, ϙυ.
10. Τὸ δὲ Ε ἐπικείμενον ἔχον τὸ ε Εέστην σημαί-

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 221

[81] See Hultsch (1912) 1708

[82] See Radke (1939) 710-11

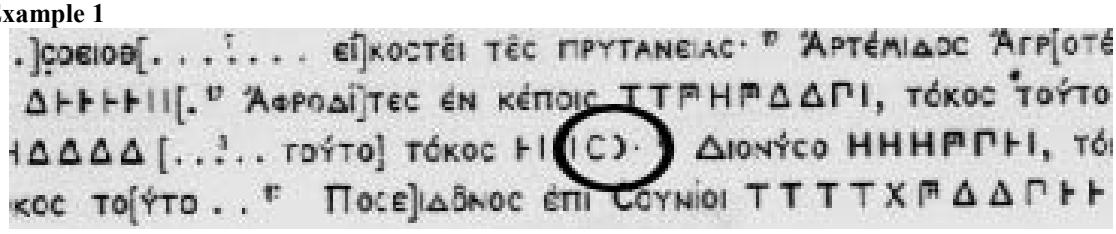
Acrophonic Characters

III.a.18 Acrophonic $^1/_4$ Unit

Sign	Similar Unicode	Beta Code	Count
)		#801	

Definition and comments
Character for $^1/_4$ of a unit or Obol. This is a right-hand semi-circle.

Example 1



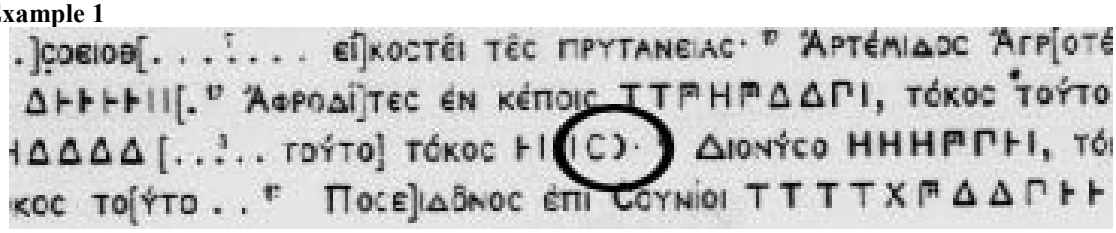
Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 151

III.a.19 Acrophonic $^1/_2$ Unit

Sign	Similar Unicode	Beta Code	Count
(		#802	

Definition and comments
Character for $^1/_4$ of a unit or Obol. This is a left-hand semi-circle.

Example 1



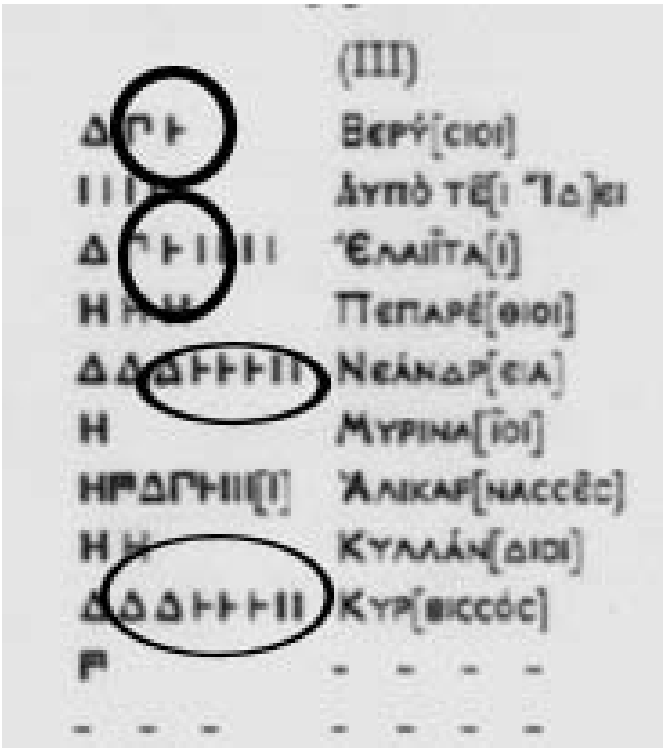
Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 151

III.a.20 Acrophonic 1 Drachma

Sign	Similar Unicode	Beta Code	Count
𐅁		#61	2 instances, 1 author

Definition and comments
Character for 1 Drachma.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

III.a.21 Acrophonic 5 Units

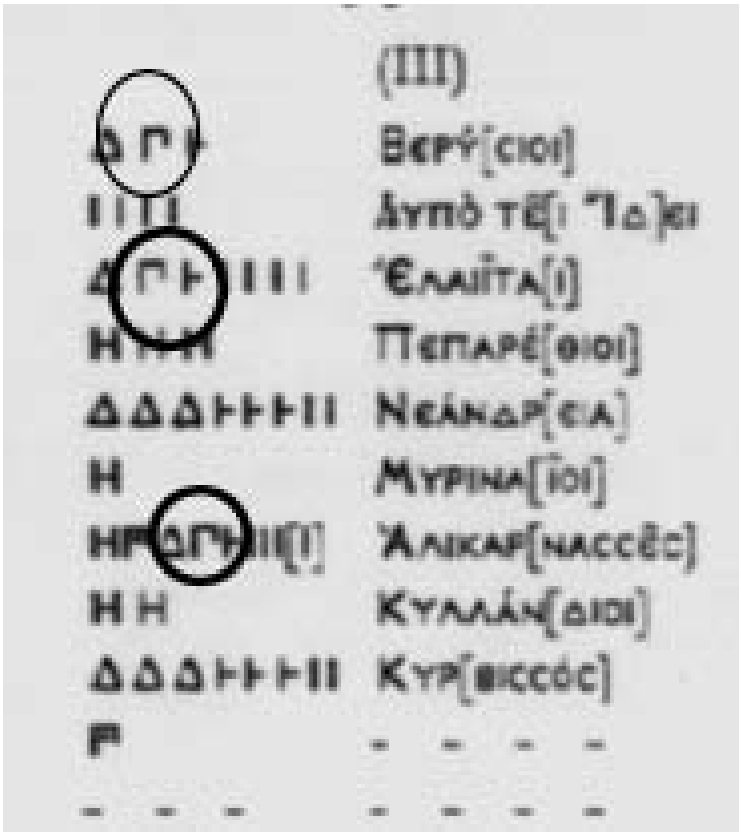
Sign	Similar Unicode	Beta Code	Count
𐅄		#62	2 instances, 1 author

• Acrophonic 5 Drachmae

Definition and comments

Character for 5 units or Drachmae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI, the initial letter of the Greek word for five (*pente*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

III.a.22 Acrophonic 50 Units

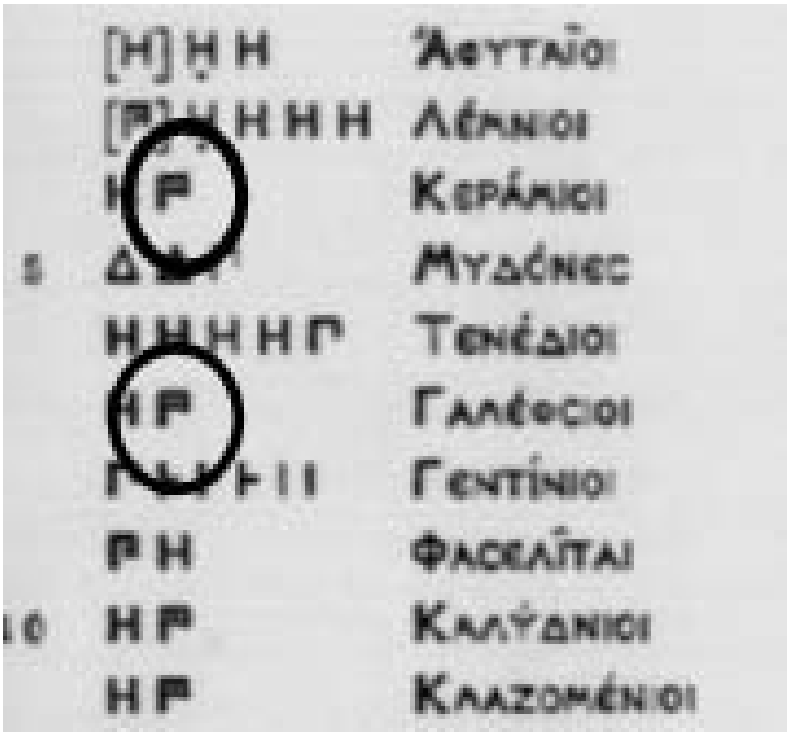
Sign	Similar Unicode	Beta Code	Count
𐅅		#64	12 instances, 2 authors

• Acrophonic 50 Drachmae

Definition and comments

Character for 50 units or Drachmae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the letter 0394 GREEK CAPITAL LETTER DELTA written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Delta is the first letter of the Greek word for 10 (*deka*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

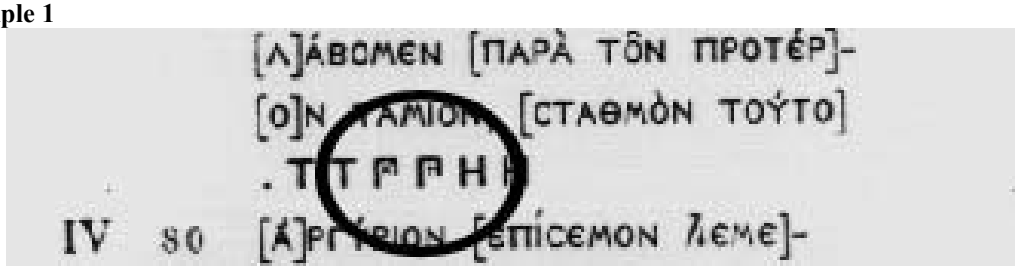
III.a.23 Acrophonic 500 Units

Sign	Similar Unicode	Beta Code	Count
𐅅			

• Acrophonic 500 Drachmae

Definition and comments
Character for 500 units or Drachmae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the letter 0397 GREEK CAPITAL LETTER ETA written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Eta here represents the first letter of the Greek word for 100 (hekaton).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 83

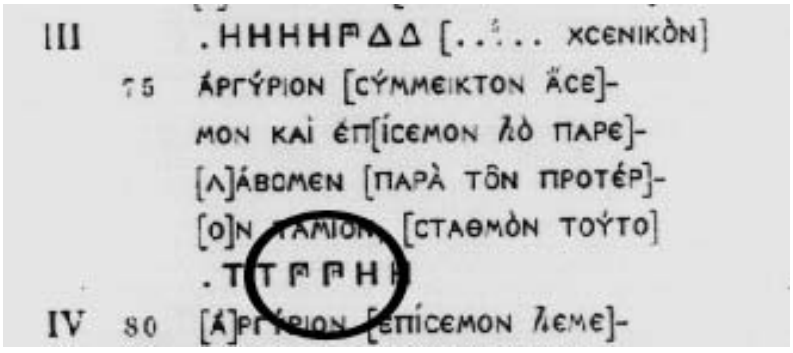
III.a.24 Acrophonic 5,000 Units

Sign	Similar Unicode	Beta Code	Count
𐅆		#68	2 instances, 2 authors

• Acrophonic 5,000 Drachmae

Definition and comments
Character for 5000 units or Drachmae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the letter 03A7 GREEK CAPITAL LETTER CHI written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Chi is the first letter of the Greek word for 1000 (*chilioi*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 83

III.a.25 Acrophonic 50,000 Units

Sign	Similar Unicode	Beta Code	Count
𐅵			

• Acrophonic 50,000 Drachmae

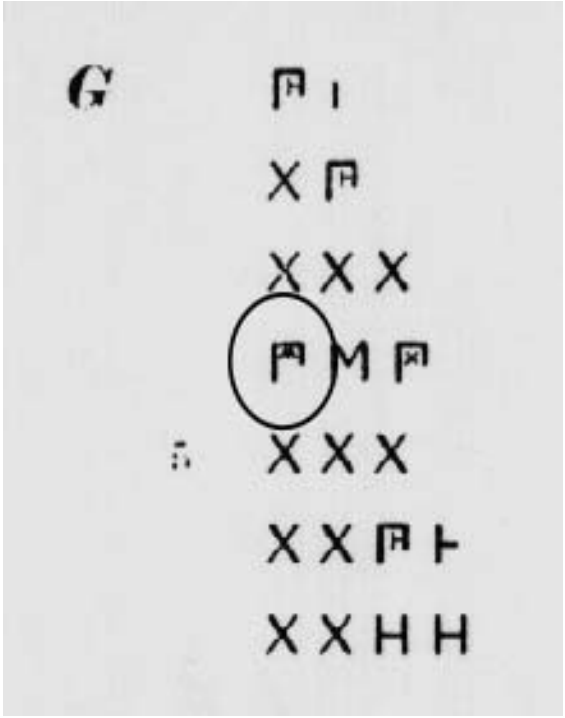
• Acrophonic 5 Mnae

Definition and comments

Character for 50,000 units or Drachmae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the letter 039C GREEK CAPITAL LETTER MU written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Mu is the first letter of the Greek word for 10000 (*myrioi*).

In the case of 5 Mnae, the Mu stands as the first initial of the word Mnae, rather than Myrioi.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 170

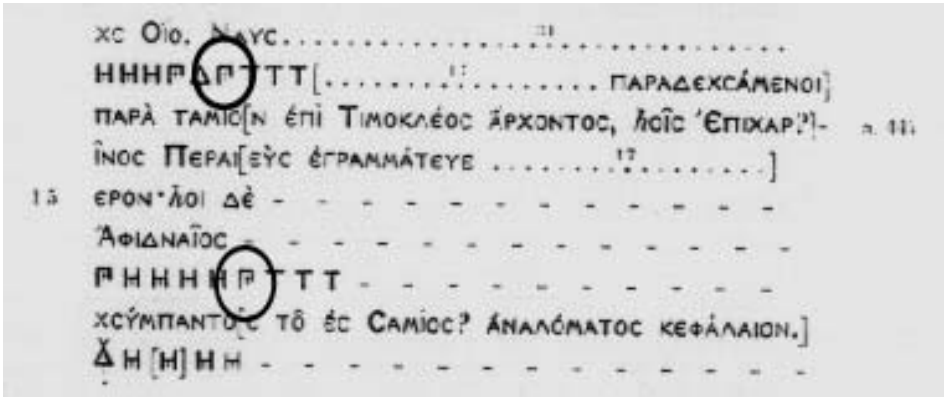
III.a.26 Acrophonic 5 Talents

Sign	Similar Unicode	Beta Code	Count
𐅆		#812	

Definition and comments

Character for 5 Talents. This character is 03A0 GREEK CAPITAL LETTER PI with the letter 03A4 GREEK CAPITAL LETTER TAU written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Tau is the first letter of the Greek word Talent.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 130

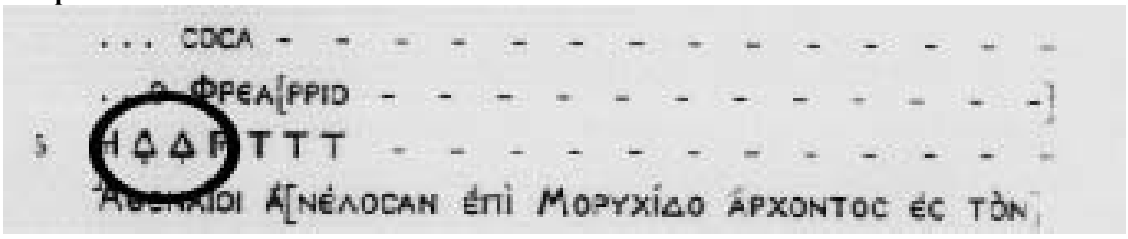
III.a.27 Acrophonic 10 Talents

Sign	Similar Unicode	Beta Code	Count
𐅇		#813	

Definition and comments

Character for 10 Talents. This character is 0394 GREEK CAPITAL LETTER DELTA with the letter 03A4 GREEK CAPITAL LETTER TAU written underneath it. Delta is the first letter of the Greek word for 10 (*deka*). Tau is the first letter of the Greek word Talent.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 130

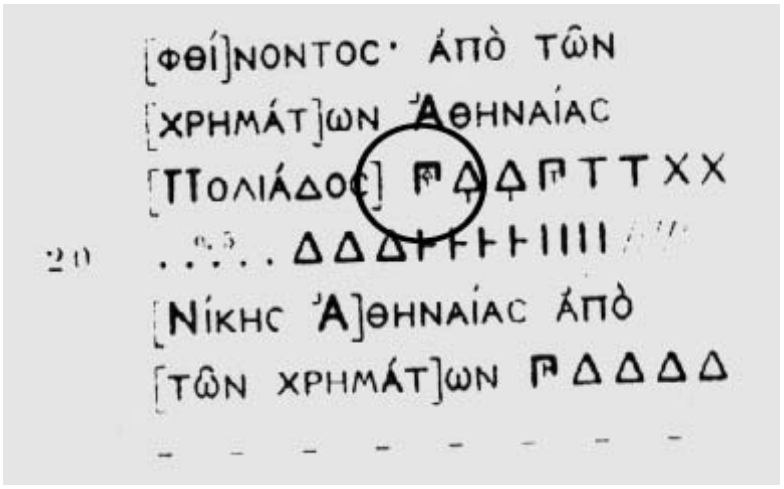
III.a.28 Acrophonic 50 Talents

Sign	Similar Unicode	Beta Code	Count
𐅁		#814	

Definition and comments

Character for 50 Talents. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10 Talents written inside it. Pi is the first letter of the Greek word for 5 (*pente*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 132

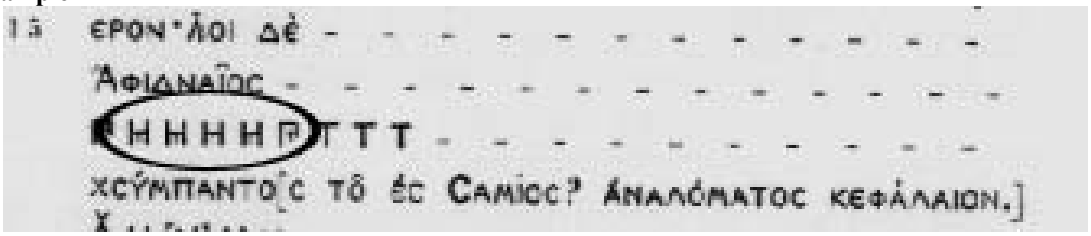
III.a.29 Acrophonic 100 Talents

Sign	Similar Unicode	Beta Code	Count
𐅂		#815	

Definition and comments

Character for 100 Talents. This character is 0397 GREEK CAPITAL LETTER ETA with a vertical line descending from the center of the horizontal line which represents 03A4 GREEK CAPITAL LETTER TAU. Eta here represents the first letter of the Greek word for 100 (hekaton). Tau is the first letter of the Greek word Talent.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 130

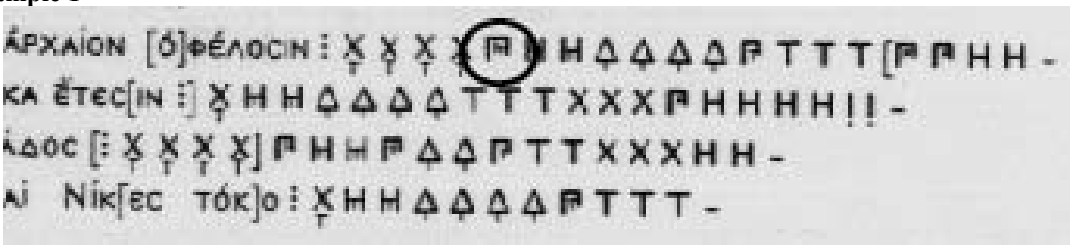
III.a.30 Acrophonic 500 Talents

Sign	Similar Unicode	Beta Code	Count
𐅄		#816	

Definition and comments

Character for 500 Talents. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 100 Talents written inside it. Pi is the first letter of the Greek word for 5 (*pente*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 152

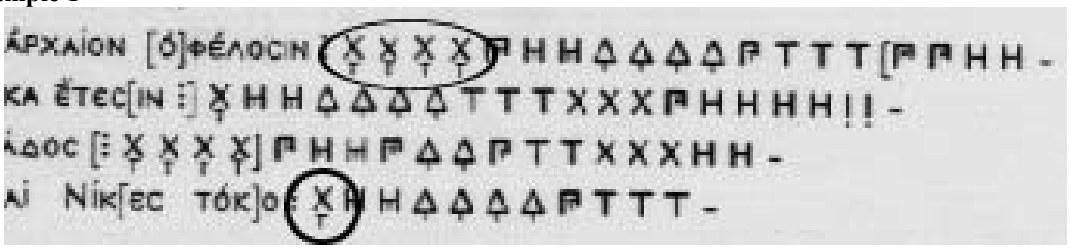
III.a.31 Acrophonic 1,000 Talents

Sign	Similar Unicode	Beta Code	Count
𐅅		#817	

Definition and comments

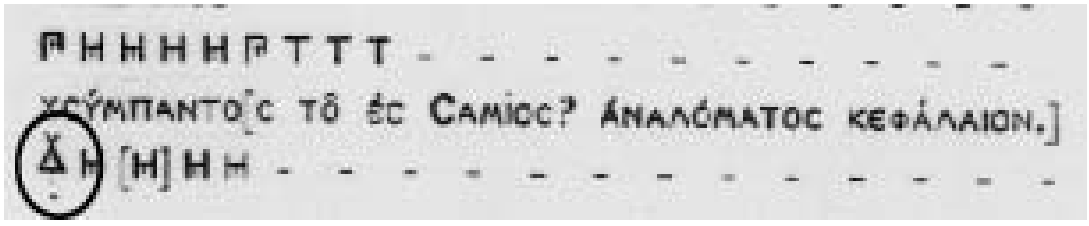
Character for 1,000 Talents. This character is 03A7 GREEK CAPITAL LETTER CHI with the letter 03A4 GREEK CAPITAL LETTER TAU written below it. Chi is the first letter of the Greek word for 1,000 (*chilioi*). Tau is the first letter of the Greek word Talent.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 152

Example 2



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 130

III.a.32 Acrophonic 5,000 Talents

Sign	Similar Unicode	Beta Code	Count
		#818	
Definition and comments Character for 5,000 Talents. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 1,000 Talents written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1			

III.a.33 Acrophonic 10,000 Talents

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 10,000 Talents. This character is 039C GREEK CAPITAL LETTER MU with the letter 03A4 GREEK CAPITAL LETTER TAU written inside it. Mu is the first letter of the Greek word for 10,000 (*myrioi*). Tau is the first letter of the Greek word Talent.			
Example 1			

III.a.34 Acrophonic 50,000 Talents

Sign	Similar Unicode	Beta Code	Count
		#131, #132	
Definition and comments Character for 5,000 Talents. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10,000 Talents written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1			

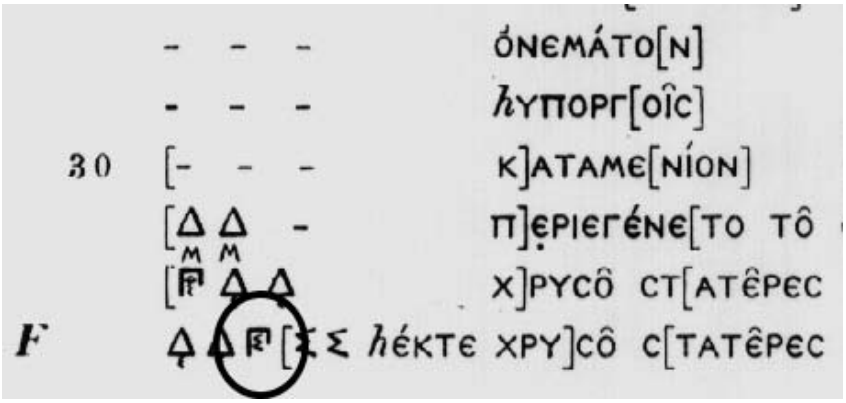
III.a.35 Acrophonic 5 Staters

Sign	Similar Unicode	Beta Code	Count
𐅅		#131, #132	

Definition and comments

Character for 5 Staters. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the letter 03A3 GREEK CAPITAL LETTER SIGMA written inside it. Pi is the first letter of the Greek word for 5 (*pente*). Sigma is the first letter of the Greek word Stater.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 163

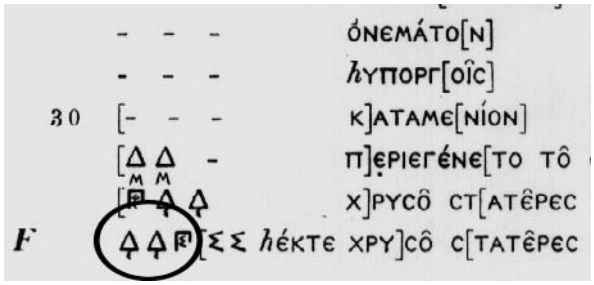
III.a.36 Acrophonic 10 Staters

Sign	Similar Unicode	Beta Code	Count
𐅄		#823	

Definition and comments

Character for 10 Staters. This character is 0394 GREEK CAPITAL LETTER DELTA with the letter 03A3 GREEK CAPITAL LETTER SIGMA written underneath it. Delta is the first letter of the Greek word for 10 (*deka*). Sigma is the first letter of the Greek word Stater.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 163

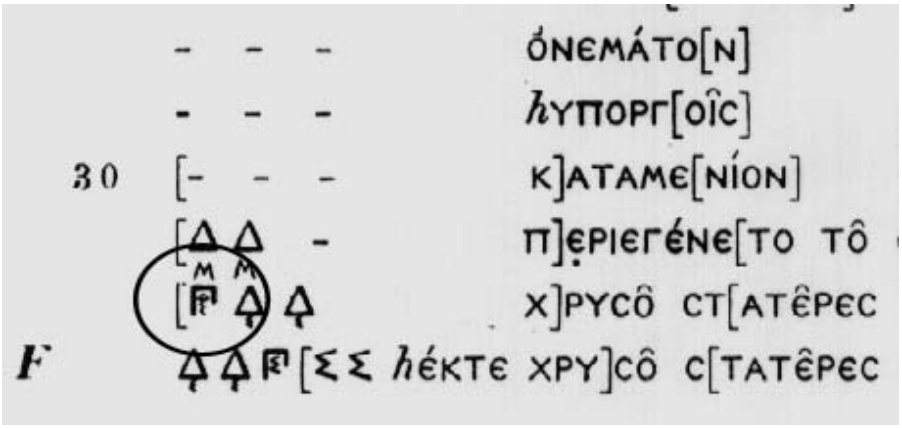
III.a.37 Acrophonic 50 Staters

Sign	Similar Unicode	Beta Code	Count
𐅅		#824	

Definition and comments

Character for 50 Staters. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10 Staters written inside it. Pi is the first letter of the Greek word for 5 (*pente*).

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 163

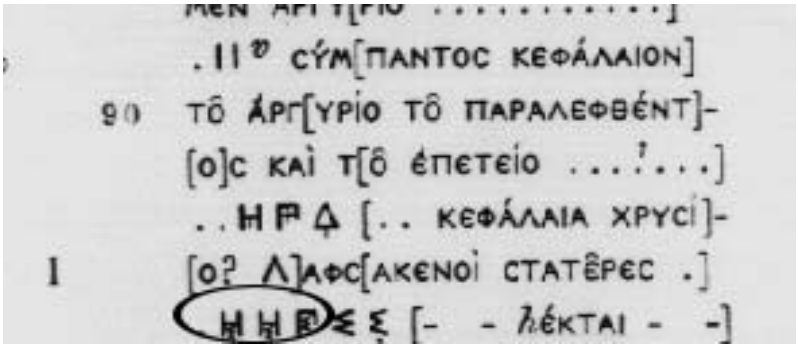
III.a.38 Acrophonic 100 Staters

Sign	Similar Unicode	Beta Code	Count
𐅆		#825	

Definition and comments

Character for 100 Staters. This character is 0397 GREEK CAPITAL LETTER ETA with 03A3 GREEK CAPITAL LETTER SIGMA written underneath the horizontal line. Eta here represents the first letter of the Greek word for 100 (hekaton). Sigma is the first letter of the Greek word Stater.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 135

III.a.39 Acrophonic 500 Staters

Sign	Similar Unicode	Beta Code	Count
		#826	
Definition and comments Character for 500 Staters. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 500 Staters written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.40 Acrophonic 1,000 Staters

Sign	Similar Unicode	Beta Code	Count
		#827	
Definition and comments Character for 1,000 Staters. This character is 03A7 GREEK CAPITAL LETTER CHI with the letter 03A3 GREEK CAPITAL LETTER SIGMA written below it. Chi is the first letter of the Greek word for 1000 (*chilioi*). Sigma is the first letter of the Greek word Stater.			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.41 Acrophonic 5,000 Staters

Sign	Similar Unicode	Beta Code	Count
		#828	
Definition and comments Character for 5,000 Staters. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 1,000 Staters written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.42 Acrophonic 10,000 Staters

Sign	Similar Unicode	Beta Code	Count
		#829	
Definition and comments Character for 10,000 Staters. This character is 039C GREEK CAPITAL LETTER MU with the letter 03A3 GREEK CAPITAL LETTER SIGMA written below it. Mu is the first letter of the Greek word for 10,000 (*myrioi*). Sigma is the first letter of the Greek word Stater.			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.43 Acrophonic 50,000 Staters

Sign	Similar Unicode	Beta Code	Count
𐅅		#832	

Definition and comments
Character for 50,000 Staters. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10,000 Staters written inside it. Pi is the first letter of the Greek word for 5 (*pente*).

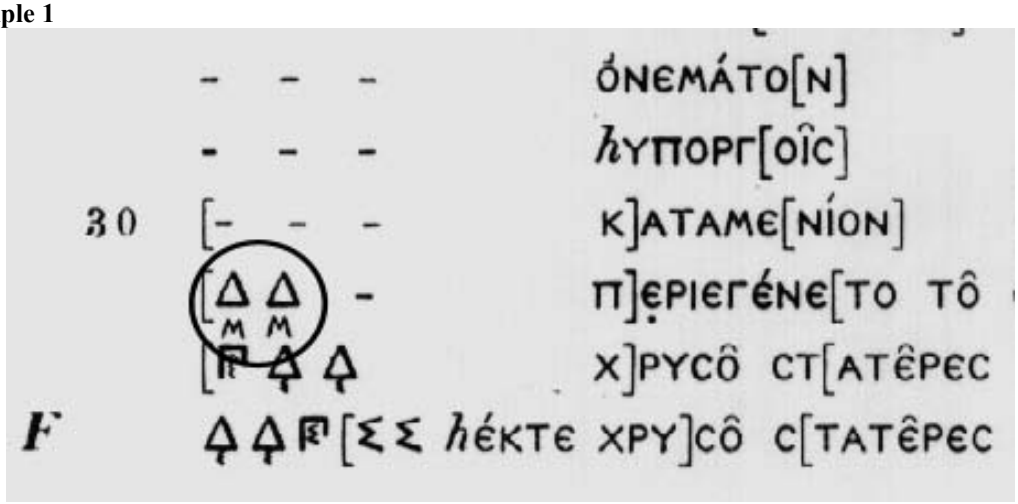
Example 1
No example given. Please see *Introduction 3. Acrophonic Numerals* above.

III.a.44 Acrophonic 10 Mnae

Sign	Similar Unicode	Beta Code	Count
𐅄		#834	

Definition and comments
Character for 10 Mnae. This character is 0394 GREEK CAPITAL LETTER DELTA with the letter 039C GREEK CAPITAL LETTER MU written underneath it. Delta is the first letter of the Greek word for 10 (*deka*). Mu is the first letter of the Greek word Mna.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 163

III.a.45 Acrophonic 50 Mnae

Sign	Similar Unicode	Beta Code	Count
𐅆			

Definition and comments
Character for 50 Mnae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10 Mnae written inside it. Pi is the first letter of the Greek word for 5 (*pente*).

Example 1
No example given. Please see *Introduction 3. Acrophonic Numerals* above.

III.a.46 Acrophonic 100 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 100 Mnae. This character is 0397 GREEK CAPITAL LETTER ETA with 039C GREEK CAPITAL LETTER MU written underneath the horizontal line. Eta here represents the first letter of the Greek word for 100 (hekaton). Mu is the first letter of the Greek word Mna.			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.47 Acrophonic 500 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 500 Mnae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 100 Mnae written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.48 Acrophonic 1,000 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 1,000 Mnae. This character is 03A7 GREEK CAPITAL LETTER CHI with the letter 039C GREEK CAPITAL LETTER MU written below it. Chi is the first letter of the Greek word for 1,000 (*chilioi*). Mu is the first letter of the Greek word Mna.			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.49 Acrophonic 5,000 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 5,000 Mnae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 1,000 Mnae written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.50 Acrophonic 10,000 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 10,000 Mnae. This character is 039C GREEK CAPITAL LETTER MU 039C GREEK CAPITAL LETTER MU written below it. The first stands for the first letter of the Greek word for 10,000 (*myrioi*). The second Mu, stands for the first letter of the Greek word Mna.			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

III.a.51 Acrophonic 50,000 Mnae

Sign	Similar Unicode	Beta Code	Count
			
Definition and comments Character for 50,000 Mnae. Based on the inscriptional form of 03A0 GREEK CAPITAL LETTER PI with the characters for 10,000 Mnae written inside it. Pi is the first letter of the Greek word for 5 (*pente*).			
Example 1 No example given. Please see *Introduction 3. Acrophonic Numerals* above.			

b. Ancient Greek Numerical Characters: Additional Definition of Preexisting Characters

Table of Characters Included in this Section of the Proposal

Number		Name	Unicode	Comment
Weights, Measures and Money: Standard Greek Weights and Money				
III.b.1	>	Greek Half Drachma Sign		
Acrophonic Characters				
III.b.2	/	Acrophonic $^{1}/_{12}$ Unit	002F	
III.b.3	X	Acrophonic $^{1}/_{8}$ Unit • Acrophonic 1,000 Units • Acrophonic 1,000 Drachmae	03A7	
III.b.4	I	Acrophonic 1 Unit • Acrophonic 1 Obol	0399	
III.b.5	Δ	Acrophonic 10 Units • Acrophonic 10 Drachmae	0394	
III.b.6	H	Acrophonic 100 Units • Acrophonic 100 Drachmae	0397	
III.b.7	M	Acrophonic 10,000 Units • Acrophonic 10,000 Drachmae • Acrophonic 1 Mna	039C	
III.b.8	T	Acrophonic 1 Talent	03A4	
III.b.9	Σ	Acrophonic 1 Stater	03A3	

Weights, Measures and Money: Standard Greek Weights and Money

III.b.1 Greek Half Drachma Sign

Sign	Unicode	Beta Code	Count
>	003E	#1337	3 instances, 2 authors

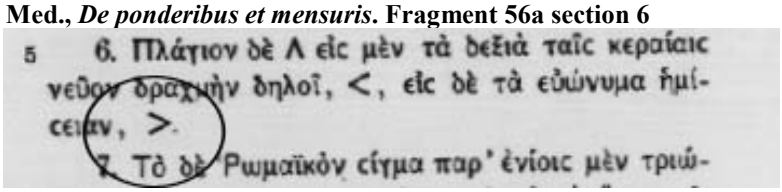
Definition and comments

A Half-Drachme consists of three Obols and is a weight of approximately 2.12g in the standard Attic system.

This character is identical to 003E GREATER-THAN SIGN, however it has, as is made clear above a different semantic meaning.

Example 1

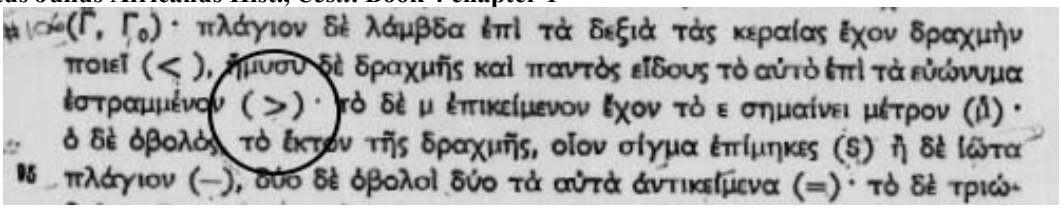
Pseudo-Galenus Med., *De ponderibus et mensuris*. Fragment 56a section 6


6. Πλάγιον δὲ Λ εἰς μὲν τὰ δεξιὰ ταῖς κεραίαις
νεῦον δραχμὴν δηλοῖ, <, εἰς δὲ τὰ εὐώνυμα ἡμί-
σειαν, >.
7. Τὸ δὲ Ρωμαϊκὸν σίγμα παρ' ἐνίοις μὲν τριώ-

Hultsch, F., *Metrologicorum scriptorum reliquia*e, vol. 1 (Teubner, Leipzig, 1864) 228

Example 2

Sextus Julius Africanus Hist., *Cesti*. Book 4 chapter 1


(Γ, Γ₀)· πλάγιον δὲ λάμβδα ἐπὶ τὰ δεξιὰ τὰς κεραίας ἔχον δραχμὴν
ποιεῖ (<), ἡμισυ δὲ δραχμῆς καὶ παντὸς εἴδους τὸ αὐτὸ ἐπὶ τὰ εὐώνυμα
ἐστραμμένον (>)· τὸ δὲ μ ἐπικείμενον ἔχον τὸ ε σημαίνει μέτρον (μ)·
ὁ δὲ ὀβολὸς τὸ ἕκτον τῆς δραχμῆς, οἷον σίγμα ἐπίμηκες (ς) ἢ δὲ ἰῶτα
πλάγιον (—), δύο δὲ ὀβολοὶ δύο τὰ αὐτὰ ἀντικείμενα (=)· τὸ δὲ τριώ-

Vieillefond, J.-R., *Les "Cestes" de Julius Africanus* (Sansoni, Florence, 1970) 275

Acrophonic Characters

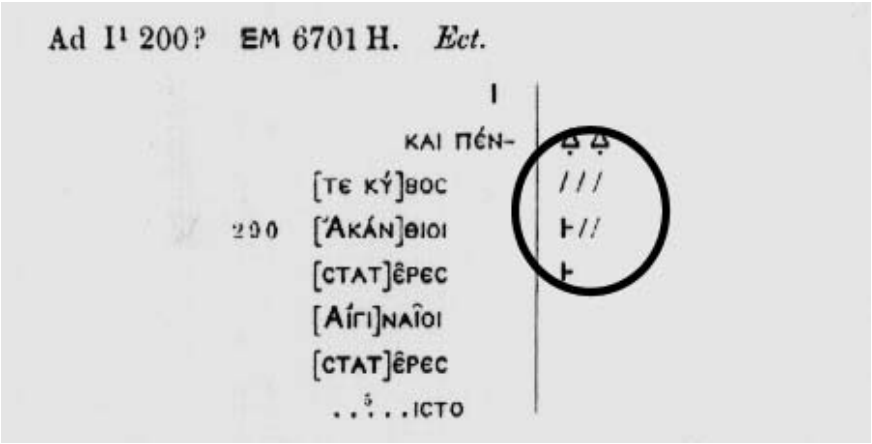
III.b.2 Acrophonic $^{1}/_{12}$ Unit

Sign	Unicode	Beta Code	Count
/		#804	

Definition and comments

This character represents $^{1}/_{12}$ of a unit or Obol. It is visually identical to 002F SOLIDUS.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 143

III.b.3 Acrophonic $^{1}/_{8}$ Unit

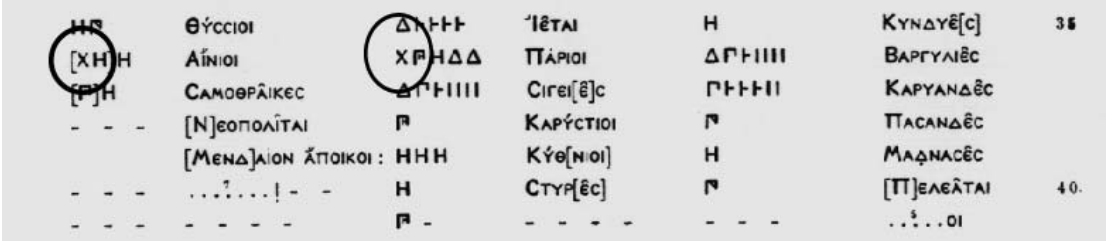
Sign	Unicode	Beta Code	Count
X		#67	

- Acrophonic 1,000 Units
- Acrophonic 1,000 Drachmae

Definition and comments

This character represents, $^{1}/_{8}$ of a unit or Obol and 1,000 units or Drachmae. It is identical to 03A7 GREEK CAPITAL LETTER CHI.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 85

III.b.4 Acrophonic 1 Unit

Sign	Unicode	Beta Code	Count
Ι		#60	

• Acrophonic 1 Obol

Definition and comments
This character represents 1 unit or Obol. It is visually identical to 0399 GREEK CAPITAL LETTER IOTA.

Example 1

Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

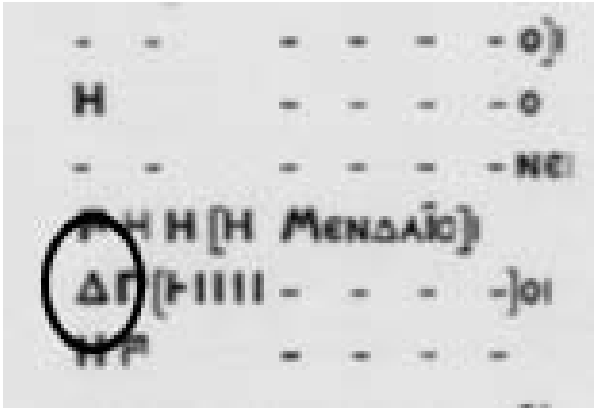
III.b.5 Acrophonic 10 Units

Sign	Unicode	Beta Code	Count
Δ		#63	

• Acrophonic 10 Drachmae

Definition and comments
This character represents, 10 units or Drachmae. It is identical to 0394 GREEK CAPITAL LETTER DELTA.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

III.b.6 Acrophonic 100 Units

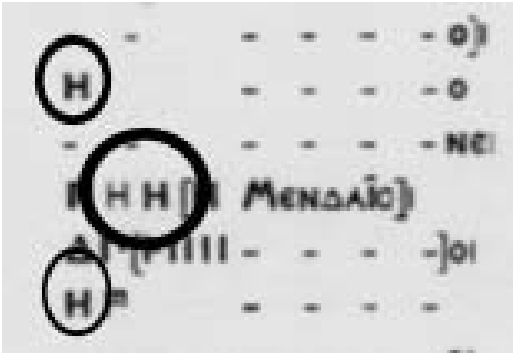
Sign	Unicode	Beta Code	Count
H		#65	

• Acrophonic 100 Drachmae

Definition and comments

This character represents 100 units or Drachmae. It is identical to 0395 GREEK CAPITAL LETTER ETA.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 82

III.b.7 Acrophonic 10,000 Units

Sign	Unicode	Beta Code	Count
M		#69, #833	

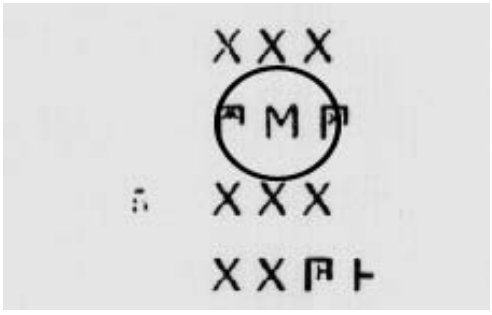
• Acrophonic 10,000 Drachmae

• Acrophonic 1 Mna

Definition and comments

This character represents 1,000 units or Drachmae. It is identical to 039C GREEK CAPITAL LETTER MU.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 170

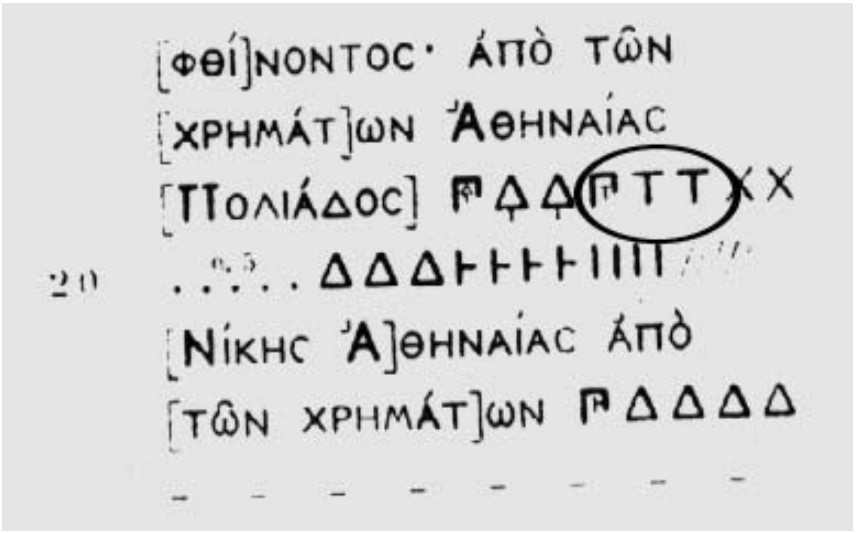
III.b.8 Acrophonic 1 Talent

Sign	Unicode	Beta Code	Count
T		#811	

Definition and comments

This character represents 1 Talent. It is identical to 03A4 GREEK CAPITAL LETTER TAU

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 132

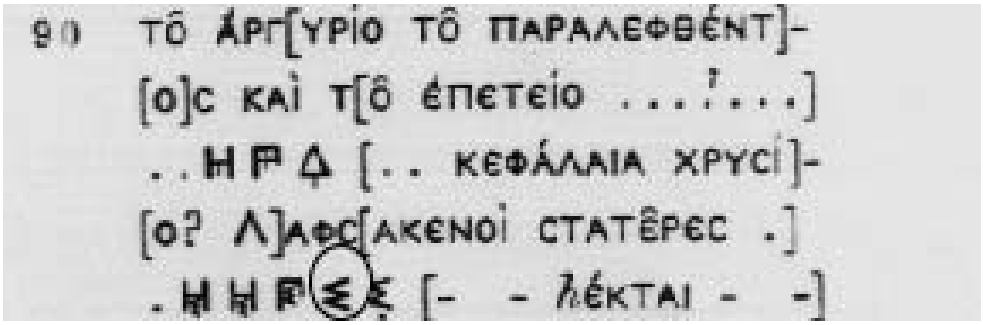
III.b.9 Acrophonic 1 Stater

Sign	Unicode	Beta Code	Count
Σ		#821	

Definition and comments

This character represents 1 Stater. It is identical to 03A3 GREEK CAPITAL LETTER SIGMA.

Example 1



Hiller von Gaertringen, F., *Inscriptiones Graecae I Editio Minor* (Berlin, 1924) 135

IV. Ancient Greek Musical Characters

Introduction and overview

Table of Characters Proposed

Number		Name	Unicode	Comment
Ancient Greek Vocal Notation				
IV.a.1		Greek Vocal Notation Symbol 1		
IV.a.2		Greek Vocal Notation Symbol 2		
IV.a.3		Greek Vocal Notation Symbol 3 · Greek Instrumental Notation Symbol 3		
IV.a.4		Greek Vocal Notation Symbol 4		
IV.a.5		Greek Vocal Notation Symbol 5		
IV.a.6		Greek Vocal Notation Symbol 6 · Greek Instrumental Notation Symbol 21		
IV.a.7		Greek Vocal Notation Symbol 7 · Greek Instrumental Notation Symbol 9		
IV.a.8		Greek Vocal Notation Symbol 8		
IV.a.9		Greek Vocal Notation Symbol 9 · Greek Instrumental Notation Symbol 44		
IV.a.10		Greek Vocal Notation Symbol 10		
IV.a.11		Greek Vocal Notation Symbol 11		
IV.a.12		Greek Vocal Notation Symbol 12		
IV.a.13		Greek Vocal Notation Symbol 13		
IV.a.14		Greek Vocal Notation Symbol 14 · Greek Instrumental Notation Symbol 41		
IV.a.15		Greek Vocal Notation Symbol 15 · Greek Instrumental Notation Symbol 35		
IV.a.16		Greek Vocal Notation Symbol 16		
IV.a.17		Greek Vocal Notation Symbol 17		
IV.a.18		Greek Vocal Notation Symbol 18 · Greek Instrumental Notation Symbol 15		
IV.a.19		Greek Vocal Notation Symbol 19		
IV.a.20		Greek Vocal Notation Symbol 20 · Greek Instrumental Notation Symbol 28		
IV.a.21		Greek Vocal Notation Symbol 21		
IV.a.22		Greek Vocal Notation Symbol 22		
IV.a.23		Greek Vocal Notation Symbol 23		
IV.a.24		Greek Vocal Notation Symbol 24		
IV.b.1	Ω	Greek Vocal Notation Symbol 25	03A9	
IV.b.2	Ψ	Greek Vocal Notation Symbol 26	03A8	
IV.b.3	Χ	Greek Vocal Notation Symbol 27	03A7	
IV.b.4	Φ	Greek Vocal Notation Symbol 28	03A6	
IV.b.5	Υ	Greek Vocal Notation Symbol 29	03A5	

IV.b.6	𝙏	Greek Vocal Notation Symbol 30	03A4	
IV.b.7	𝘾	Greek Vocal Notation Symbol 31		
IV.b.8	𝙋	Greek Vocal Notation Symbol 32	03A1	
IV.b.9	𝞟	Greek Vocal Notation Symbol 33	03A0	
IV.b.10	𝙊	Greek Vocal Notation Symbol 34	039F	
IV.b.11	𝙓	Greek Vocal Notation Symbol 35	039E	
IV.b.12	𝙉	Greek Vocal Notation Symbol 36 · Greek Instrumental Notation Symbol 46	039D	
IV.b.13	𝙈	Greek Vocal Notation Symbol 37	039C	
IV.b.14	𝞚	Greek Vocal Notation Symbol 38	039B	
IV.b.15	𝙆	Greek Vocal Notation Symbol 39 · Greek Instrumental Notation Symbol 34	039A	
IV.b.16	𝙄	Greek Vocal Notation Symbol 40	0399	
IV.b.17	𝞗	Greek Vocal Notation Symbol 41	0398	
IV.b.18	𝙃	Greek Vocal Notation Symbol 42	0397	
IV.b.19	𝙕	Greek Vocal Notation Symbol 43	0396	
IV.b.20	𝙀	Greek Vocal Notation Symbol 44 · Greek Instrumental Notation Symbol 16	0395	
IV.b.21	𝞓	Greek Vocal Notation Symbol 45	0394	
IV.b.22	𝞒	Greek Vocal Notation Symbol 46	0393	
IV.b.23	𝘽	Greek Vocal Notation Symbol 47	0392	
IV.b.24	𝘼	Greek Vocal Notation Symbol 48	0391	
IV.a.25	𝝯	Greek Vocal Notation Symbol 49		
IV.a.26	𝝰	Greek Vocal Notation Symbol 50		
IV.a.27	𝝬	Greek Vocal Notation Symbol 51		
IV.a.28	𝝧	Greek Vocal Notation Symbol 52		
IV.a.29	𝝠	Greek Vocal Notation Symbol 53		
IV.a.30	𝝩	Greek Vocal Notation Symbol 54 · Greek Instrumental Notation Symbol 20		
Ancient Greek Instrumental Notation				
IV.a.31	𝝮	Greek Instrumental Notation Symbol 1		
IV.a.32	𝝭	Greek Instrumental Notation Symbol 2		
IV.a.33	𝝱	Greek Instrumental Notation Symbol 4		
IV.a.34	𝝲	Greek Instrumental Notation Symbol 5		
IV.a.35	𝝳	Greek Instrumental Notation Symbol 7		
IV.a.36	𝝴	Greek Instrumental Notation Symbol 8		
IV.a.37	𝝷	Greek Instrumental Notation Symbol 11		
IV.a.38	𝝸	Greek Instrumental Notation Symbol 12		
IV.a.39	𝝹	Greek Instrumental Notation Symbol 13		
IV.a.40	𝝺	Greek Instrumental Notation Symbol 14		
IV.a.41	𝝻	Greek Instrumental Notation Symbol 17		
IV.a.42	𝝼	Greek Instrumental Notation Symbol 18		
IV.a.43	𝝽	Greek Instrumental Notation Symbol 19		
IV.a.44	𝝿	Greek Instrumental Notation Symbol 23		
IV.a.45	𝞁	Greek Instrumental Notation Symbol 24		

IV.a.46		Greek Instrumental Notation Symbol 25		
IV.a.47		Greek Instrumental Notation Symbol 26		
IV.a.48		Greek Instrumental Notation Symbol 27		
IV.a.49		Greek Instrumental Notation Symbol 29		
IV.a.50		Greek Instrumental Notation Symbol 30		
IV.a.51		Greek Instrumental Notation Symbol 32		
IV.a.52		Greek Instrumental Notation Symbol 36		
IV.a.53		Greek Instrumental Notation Symbol 37		
IV.a.54		Greek Instrumental Notation Symbol 38		
IV.a.55		Greek Instrumental Notation Symbol 39		
IV.a.56		Greek Instrumental Notation Symbol 40		
IV.a.57		Greek Instrumental Notation Symbol 42		
IV.a.58		Greek Instrumental Notation Symbol 43		
IV.a.59		Greek Instrumental Notation Symbol 45		
IV.a.60		Greek Instrumental Notation Symbol 47		
IV.a.61		Greek Instrumental Notation Symbol 48		
IV.a.62		Greek Instrumental Notation Symbol 49		
IV.a.63		Greek Instrumental Notation Symbol 50		
IV.a.64		Greek Instrumental Notation Symbol 51		
IV.a.65		Greek Instrumental Notation Symbol 52		
IV.a.66		Greek Instrumental Notation Symbol 53		
IV.a.67		Greek Instrumental Notation Symbol 54		
Further Greek Musical Notation Symbols				
IV.a.68		Greek Musical Diseme		
IV.a.69		Greek Musical Triseme		
IV.a.70		Greek Musical Tetraseme		
IV.a.71		Greek Musical Pentaseme		
IV.a.72		Greek Musical Stigme		
IV.a.73	+	Greek Musical Unreadable Notation		
IV.a.74		Greek Musical Leimma		

Historical Background

Music played a central role in Ancient Greek and Roman societies.[83] We have surviving musical scores of all sorts, ranging from a fragment of Euripides' *Orestes* to Christian hymns.[84]

This ancient system of musical notation was developed by the middle of the third century BCE at the very latest[85] and was used consistently until the late third century CE, when our spring of papyri dries up.[86] The musical notation system, however, continues to be discussed long after this period, for instance in the *De instiutione musica* 4.3-4 of Boethius who lived from 480-524 CE.[87] This system, then, had a life span of at least seven centuries. The system is still known to scholars in the sixteenth century, as Gioseffo Zarlino cites Gaudentius in his *Institutioni harmonici* (3.5).[88]

[83] See Landels (1999) 1-23

[84] Ibid. 218-263 for an in depth analysis of surviving scores. See also Mathiesen (1999) 12-13, 247-252.

[85] On the earliest date possible: See Winnington-Ingram (1978) 237. Also, Pririe, J.W., Jeffery, L.H. & Johnston, A.W. in *OCD*[3] (1996) 66: "The East Ionic alphabet was officially adopted by Athens in the archonship of Euclides (403-402 BC), but had infiltrated fully into private script by then." Winnington-Ingram, therefore, raises the possibility that the system of musical notation could have been developed earlier than 403-402 BCE. The latest possible date is shortly before our earliest surviving papyrus with musical notation, Pap. Zenon 59 533. See Pöhlmann (1970) 110-112. See also Winnington-Ingram (1978) 237. Barker, A.D. in *OCD*[3] (1996) 1012 raises the possibility that we may have notation on a black-figure vase from *c.*500 BCE. See also Landels (1999) 206.

[86] See Barker, A.D. in *OCD*[3] (1996) 1011-12 for a complete list of surviving musical scores.

[87] Other later authors include, for example, Alypius (4th or 5th centuries CE), Aristides Quintilianus (3rd or 4th centuries CE), Bacchius (4th century CE or later), Gaudentius (3rd or 4th century CE). See Mathiesen (1999) 292.

[88] Mathiesen (1998) 67

The System of Notation

The Greeks had, in fact, two systems of musical notation which correspond note for note with each other:[89] one for the vocal and one for the instrumental melody. Please see the diagram overleaf for a complete overview of the two systems of notation. The numbers given to the left of each columns reflects the modern system by the characters are names, for instance, "vocal notation symbol 5." In this table—based closely on that of West[90]—the numerical order has been reversed,[91] so the table moves from the highest pitch downwards.

The whole scheme covers a little over three octaves. The symbols form groups of three. The bottom symbol in each triad represents a 'natural' note on a diatonic scale. The modern notes shown in the boxes are the conventional equivalents used in most scholarly literature... The other two symbols in each triad represent successive sharpenings of the 'natural' note.[92]

West also notes that the "degree of sharpening is not fixed but varies between a quarter–tone and a semitone, depending on the genus of the composition or the conventions of the key."[93] There is no distinction in this system between enharmonic and chromatic scales.[94]

[89] Winnington-Ingram (1978) 237

[90] West (1996) 256

[91] As is conventional: see also Pöhlmann (1970) 144

[92] West (1992) 255

[93] Ibid.

[94] Alypius *Isagoge, genus chromaticum* 1—at Jan (1962) 384—does mark chromatic notes with a short line through them, but only in the Lydian scale. Boethius at *Inst. Mus.* 4.3-4 does likewise. However, this line is not attested in the musical documents and so is not proposed here.

Overview of complete Ancient Greek Musical Notation[95]

Modern Equivalent	Notation Number	Vocal Characters	Instrumental Characters	Modern Equivalent	Notation Number	Vocal Characters	Instrumental Characters	Modern Equivalent	Notation Number	Vocal Characters	Instrumental Characters	Modern Equivalent	Notation Number	Vocal Characters	Instrumental Characters
					54	⊥	⋋		33	Π	Ɔ		12	И	Ħ
					53	⅄	⌿		32	P	∩		11	NN	Ꜧ
				a′	52	ϴ	Ϟ	*a*	31	C	C	*A*	10	ϙ	H
					51	Ж	⍀		30	T	Ⅎ		9	Ш	з
					50	⋔	⫽		29	Y	ᒷ		8	Ь	ω
g′′	70	Ʊ′	Ꞁ′	*g′*	49	Ʊ	Ꞁ	*g*	28	Φ	F	*G*	7	ɜ	ɛ
	69	A′	＼′		48	A	＼		27	X	ᒣ		6	⊣	T
	68	B′	／′		47	B	／		26	Ψ	ᒪ		5	≺	≻
f′′	67	Γ′	N′	*f′*	46	Γ	N	*f*	25	Ω	Ꮁ	*F*	4	ᑯ	ᑭ
	66	Δ′	⊐′		45	Δ	⊐		24	∀	˥		3	⋇	⋇
	65	E′	⊔′		44	E	⊔		23	R	L		2	϶	Є
e′′	64	Z′	⊏′	*e′*	43	Z	⊏	*e*	22	ℸ	Γ	*E*	1	Ↄ	Ꜿ
	63	H′	>′		42	H	>		21	∇	⊣				
	62	Θ′	V′		41	Θ	V		20	F	⊥				
d′′	61	I′	<′	*d′*	40	I	<	*d*	19	⁊	⊢				
	60	K′	Λ′		39	K	Λ		18	Ⱶ	∃				
	59	Λ′	⋖′		38	Λ	⋖		17	⌓	Ш				
c′′	58	M′	⋗′	*c′*	37	M	⋗	*c*	16	＼	E				
	57	N′	ꓘ′		36	N	ꓘ		15	⋊	ꟶ				
	56	Ξ′	⋉′		35	Ξ	⋉		14	V	ᚽ				
b′	55	O′	K′	*b*	34	O	K	*B*	13	ʍ	Ϧ				

[95] Not including combining characters.

Formation of the Characters

Greek Vocal Notation

The characters proposed here represent in the most part simple rotations or reflections of the characters of standard Greek alphabet. There are some exceptions to this, however, which will be discussed with the appropriate characters below. Greek Vocal Notation Symbols 1-24 are a set of variants on the whole Greek alphabet in reverse order. Greek Vocal Notation Symbols 49-54 are further variants of the last six letters of the standard Greek alphabet, again in reverse order.

Greek Instrumental Notation

The Instrumental set is rather more complicated in form and obscure in origin than the vocal notation.[96] The first two triads are variations on the last six letters of the Greek alphabet. The following twelve triads are formed thus: the first character is usually either a standard Greek letter or is a variant thereof; the second character in the triad is usually the first character rotated 90º counter-clockwise; the third usually the first character reflected in the y-axis. The final three triads proposed all have variants of 039D GREEK CAPITAL LETTER ETA as their first symbol. The second and third symbols in each are based on diagonal slashes.[97]

[96] See Winnington-Ingram (1978) 237

[97] See Winnington-Ingram (1978) 241-248

Notes on the Musical Notation Proposal

Characters Excluded from this Proposal

It will be noted that the characters 55-70 in both the vocal and instrumental system repeat the characters 34-70 but with ticks by them. These characters are not proposed separately since they may be depicted by placing the character 2033 PRIME after them.

The Font Used in this Proposal

The vast majority of these characters are variant forms of standard upper case Greek letters. We have used a font without serifs to represent these characters, for reasons of clarity and because scholars usually type musical characters in fonts without serifs in order to distinguish them from the usually serifed standard Greek font they are using. It is not, however, prescriptive that these characters are used in a font without serifs; for instance West uses a font with serifs.[98]

The Beta Code Field

Of the central ancient Greek musical treatises, only Aristides Quintilianus and Alypius are currently in the TLG Canon. Further, there are as yet, no musical scores in the TLG Canon. As a result, the Beta Code Counts should not be taken as representative, but rather perhaps as indicators, of the frequency these characters occur in Greek literature. See also the note on Greek Musical Diacritics below.

Naming Conventions

There is no standardized ancient system for naming these characters. For instance, while Alypius—our most extensive source[99]—provides descriptive names for the characters, such as 'inverted gamma' for Vocal Notation Symbol 22, his scheme of naming is based on his own deductions from looking at the characters, rather than understanding how they developed and, on occasion his naming is misleading and his terminology inconsistent. For instance, Vocal Notation Symbol 20 is described as being a Digamma, however, given its position in the list of following a variant Delta and preceding a variant Zeta, it is much more likely that it is a variant Epsilon.[100] We propose the standard names widely used by modern scholars. The naming convention is simple: Vocal Notation Symbol 1, etc.[101]

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[98] West (1996) 256

[99] Landels (1999) 207

[100] For further discussion on this, and on the problems of naming these musical symbols based on ancient testimony, see Winnington-Ingram (1978) 237-248. See also Landels (1999) 207-208.

[101] An attempt to provide a revised system, which removed Vocal and Instrumental Notation Symbols 1-3 was proposed by Pöhlmann (1970) 144 (who in turn was following Chailley) on the argument that these were late additions. However, this revision has since been discarded since new papyri have now been published which include these characters. See Johnson (2001).

a. Ancient Greek Musical Characters: New Characters

Table of Characters Included in this Section of the Proposal

Number		Name	Unicode	Comment
Ancient Greek Vocal Notation				
IV.a.1	𝅘	Greek Vocal Notation Symbol 1		
IV.a.2	𝅙	Greek Vocal Notation Symbol 2		
IV.a.3	𝅚	Greek Vocal Notation Symbol 3 · Greek Instrumental Notation Symbol 3		
IV.a.4	𝅛	Greek Vocal Notation Symbol 4		
IV.a.5	𝅜	Greek Vocal Notation Symbol 5		
IV.a.6	𝅝	Greek Vocal Notation Symbol 6 · Greek Instrumental Notation Symbol 21		
IV.a.7	𝅗𝅥	Greek Vocal Notation Symbol 7 · Greek Instrumental Notation Symbol 9		
IV.a.8	𝅘𝅥	Greek Vocal Notation Symbol 8		
IV.a.9	𝅘𝅥𝅮	Greek Vocal Notation Symbol 9 · Greek Instrumental Notation Symbol 44		
IV.a.10	𝅘𝅥𝅯	Greek Vocal Notation Symbol 10		
IV.a.11	𝅘𝅥𝅰	Greek Vocal Notation Symbol 11		
IV.a.12	𝅘𝅥𝅱	Greek Vocal Notation Symbol 12		
IV.a.13	𝅘𝅥𝅲	Greek Vocal Notation Symbol 13		
IV.a.14	𝅥	Greek Vocal Notation Symbol 14 · Greek Instrumental Notation Symbol 41		
IV.a.15	𝅦	Greek Vocal Notation Symbol 15 · Greek Instrumental Notation Symbol 35		
IV.a.16	𝅧	Greek Vocal Notation Symbol 16		
IV.a.17	𝅨	Greek Vocal Notation Symbol 17		
IV.a.18	𝅩	Greek Vocal Notation Symbol 18 · Greek Instrumental Notation Symbol 15		
IV.a.19	𝅪	Greek Vocal Notation Symbol 19		
IV.a.20	𝅫	Greek Vocal Notation Symbol 20 · Greek Instrumental Notation Symbol 28		
IV.a.21	𝅬	Greek Vocal Notation Symbol 21		
IV.a.22	𝅭	Greek Vocal Notation Symbol 22		
IV.a.23	𝅮	Greek Vocal Notation Symbol 23		
IV.a.24	𝅯	Greek Vocal Notation Symbol 24		
IV.a.25	𝅰	Greek Vocal Notation Symbol 49		
IV.a.26	𝅱	Greek Vocal Notation Symbol 50		
IV.a.27	𝅲	Greek Vocal Notation Symbol 51		
IV.a.28	𝅳	Greek Vocal Notation Symbol 52		
IV.a.29	𝅴	Greek Vocal Notation Symbol 53		
IV.a.30	𝅵	Greek Vocal Notation Symbol 54 · Greek Instrumental Notation Symbol 20		
Ancient Greek Instrumental Notation				
IV.a.31	𝅶	Greek Instrumental Notation Symbol 1		

IV.a.32		Greek Instrumental Notation Symbol 2		
IV.a.33		Greek Instrumental Notation Symbol 4		
IV.a.34		Greek Instrumental Notation Symbol 5		
IV.a.35		Greek Instrumental Notation Symbol 7		
IV.a.36		Greek Instrumental Notation Symbol 8		
IV.a.37		Greek Instrumental Notation Symbol 11		
IV.a.38		Greek Instrumental Notation Symbol 12		
IV.a.39		Greek Instrumental Notation Symbol 13		
IV.a.40		Greek Instrumental Notation Symbol 14		
IV.a.41		Greek Instrumental Notation Symbol 17		
IV.a.42		Greek Instrumental Notation Symbol 18		
IV.a.43		Greek Instrumental Notation Symbol 19		
IV.a.44		Greek Instrumental Notation Symbol 23		
IV.a.45		Greek Instrumental Notation Symbol 24		
IV.a.46		Greek Instrumental Notation Symbol 25		
IV.a.47		Greek Instrumental Notation Symbol 26		
IV.a.48		Greek Instrumental Notation Symbol 27		
IV.a.49		Greek Instrumental Notation Symbol 29		
IV.a.50		Greek Instrumental Notation Symbol 30		
IV.a.51		Greek Instrumental Notation Symbol 32		
IV.a.52		Greek Instrumental Notation Symbol 36		
IV.a.53		Greek Instrumental Notation Symbol 37		
IV.a.54		Greek Instrumental Notation Symbol 38		
IV.a.55		Greek Instrumental Notation Symbol 39		
IV.a.56		Greek Instrumental Notation Symbol 40		
IV.a.57		Greek Instrumental Notation Symbol 42		
IV.a.58		Greek Instrumental Notation Symbol 43		
IV.a.59		Greek Instrumental Notation Symbol 45		
IV.a.60		Greek Instrumental Notation Symbol 47		
IV.a.61		Greek Instrumental Notation Symbol 48		
IV.a.62		Greek Instrumental Notation Symbol 49		
IV.a.63		Greek Instrumental Notation Symbol 50		
IV.a.64		Greek Instrumental Notation Symbol 51		
IV.a.65		Greek Instrumental Notation Symbol 52		
IV.a.66		Greek Instrumental Notation Symbol 53		
IV.a.67		Greek Instrumental Notation Symbol 54		
Further Greek Musical Notation Symbols				
IV.a.68		Greek Musical Diseme		
IV.a.69		Greek Musical Triseme		
IV.a.70		Greek Musical Tetraseme		
IV.a.71		Greek Musical Pentaseme		
IV.a.72		Greek Musical Stigme		
IV.a.73	+	Greek Musical Unreadable Notation		
IV.a.74		Greek Musical Leimma		

Ancient Greek Vocal Notation

IV.a.1 Greek Vocal Notation Symbol 1

Sign	Similar Unicode	Beta Code	Count
ϽϽ		#635	4 instances, 1 author

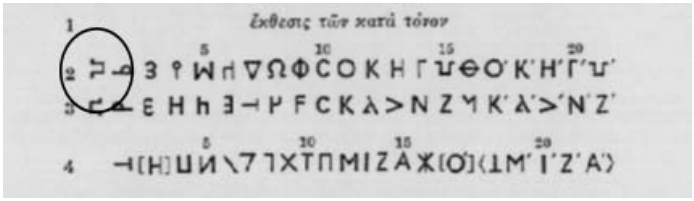
Definition and comments

This symbol is 03A9 GREEK CAPTIAL LETTER OMEGA rotated 90º counter-clockwise.

This represents the vocal E.

Example 1

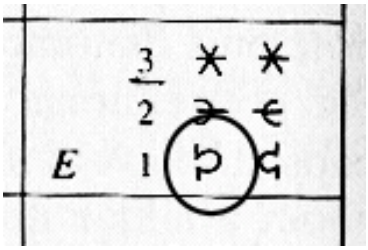
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.2 Greek Vocal Notation Symbol 2

Sign	Similar Unicode	Beta Code	Count
		#622	5 instances, 1 author

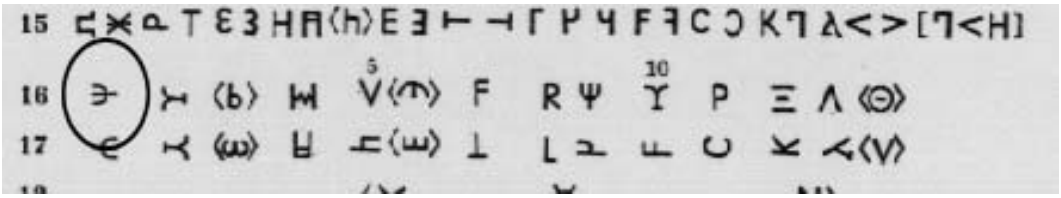
Definition and comments

This symbol is 03A8 GREEK CAPITAL LETTER PSI rotated 90º counter-clockwise.

This represents the vocal first sharp of E.

Example 1

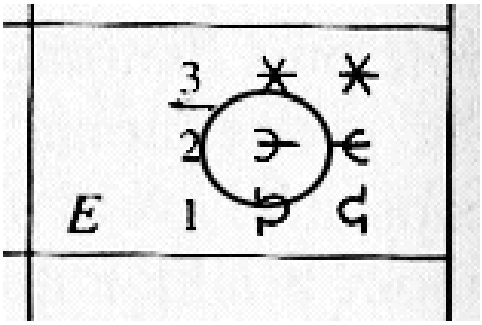
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.3 Greek Vocal Notation Symbol 3

Sign	Similar Unicode	Beta Code	Count
		#655	4 instances, 1 author

• Greek Instrumental Notation Symbol 3

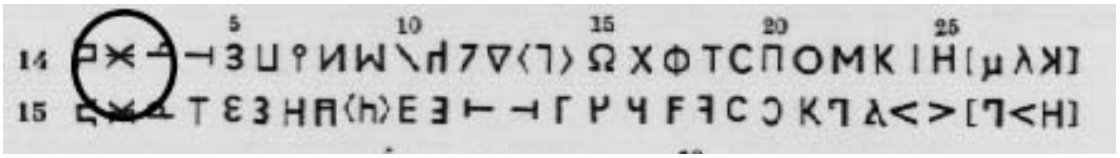
Definition and comments

This symbol is 03A7 GREEK CAPITAL LETTER CHI with a horizontal line through the center.

This represents the vocal second sharp of E.

Example 1

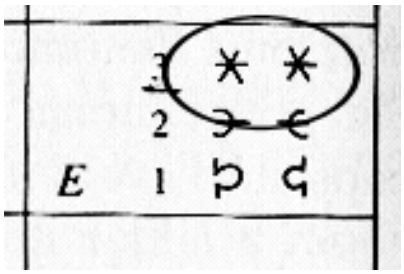
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.4 Greek Vocal Notation Symbol 4

Sign	Similar Unicode	Beta Code	Count
		#636, #594	6 instances, 2 authors

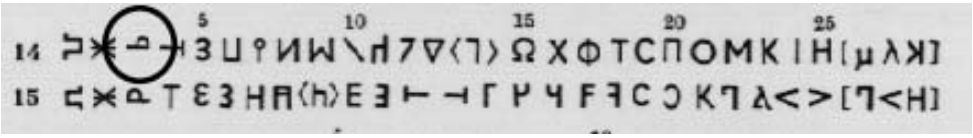
Definition and comments

This symbol is a variant form of 03A6 GREEK CAPITAL LETTER PHI rotated 90º clockwise and with the right arm and lower semi-circle removed.

This represents the vocal F.

Example 1

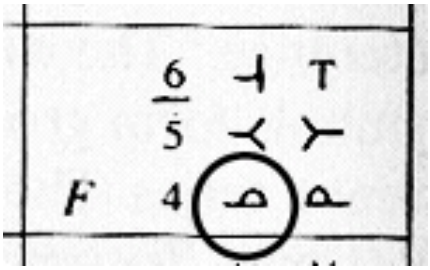
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

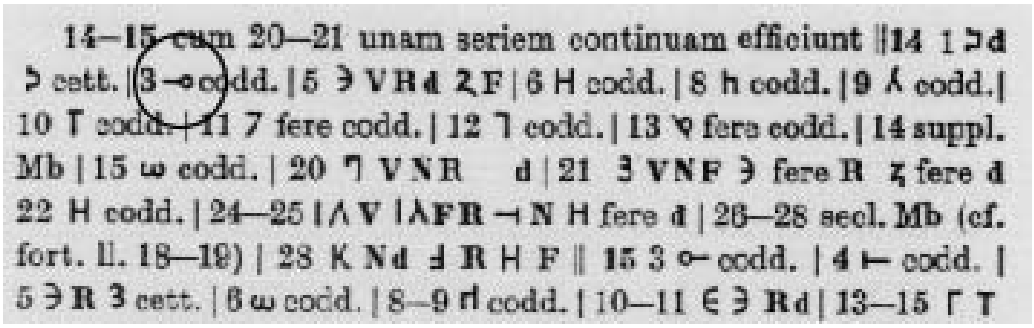
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 3 (Glyph variant)

Aristides Quintilianus Mus., *De musica* 1.11



14—15 cum 20—21 unam seriem continuam efficiunt ‖14 1 ⊃d ⊃ cett. | 3 ⊸ codd. | 5 ∋ VHd 2F | 6 H codd. | 8 h codd. | 9 ʎ codd. | 10 T codd. | 11 7 fere codd. | 12 ⅂ codd. | 13 ∀ fere codd. | 14 suppl. Mb | 15 ω codd. | 20 ⅂ VNR d | 21 ∃ VNF ∋ fere R ʒ fere d 22 H codd. | 24—25 | Λ V | ΛFR ⊣ N H fere d | 26—28 secl. Mb (cf. fort. ll. 18—19) | 28 K Nd ∃ R H F ‖ 15 3 ⊸ codd. | 4 ⊢ codd. | 5 ∋ R 3 cett. | 6 ω codd. | 8—9 ⊓ codd. | 10—11 Є ∋ Rd | 13—15 Γ T

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26 App. Crit.

IV.a.5 Greek Vocal Notation Symbol 5

Sign	Similar Unicode	Beta Code	Count
		#679	2 instances, 1 author

Definition and comments

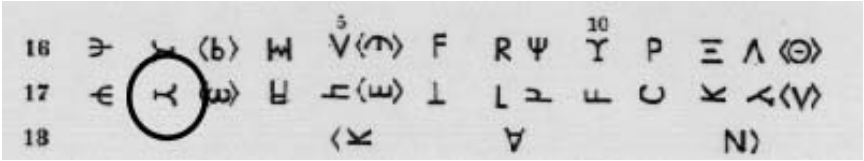
This symbol is a 03A5 GREEK CAPITAL LETTER UPSILON rotated 90º clockwise.

This represents the vocal first sharp of F.

In Aristides Quintillianus, this symbol is used for Greek Instrumental Notation Symbol 5.

Example 1

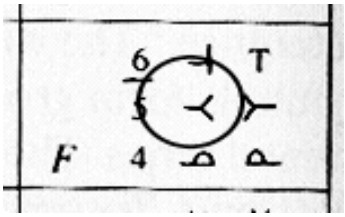
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.6 Greek Vocal Notation Symbol 6

Sign	Similar Unicode	Beta Code	Count
⊣		#621	7 instances, 1 author

• Greek Instrumental Notation Symbol 21

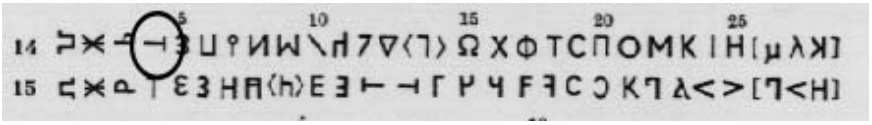
Definition and comments

This symbol is a 03A4 GREEK CAPITAL LETTER TAU rotated 90º clockwise.

This represents the vocal second sharp of F.

Example 1

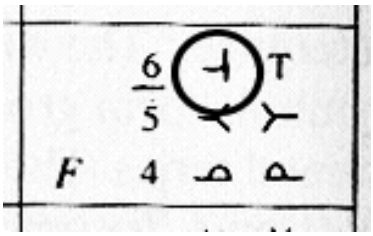
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.7 Greek Vocal Notation Symbol 7

Sign	Similar Unicode	Beta Code	Count
Ϟ		#637	7 instances, 1 author

• Greek Instrumental Notation Symbol 9

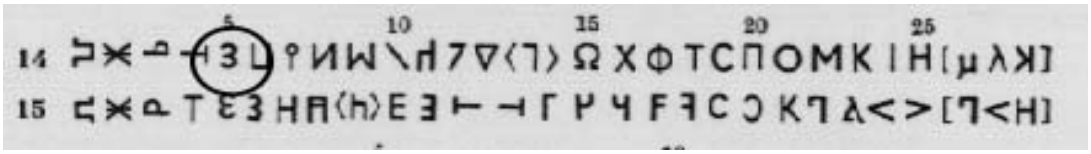
Definition and comments

This symbol is most probably 03A3 GREEK CAPITAL LETTER SIGMA rounded and reflected in the y-axis, or is possibly a doubled GREEK CAPITAL LUNATE SIGMA reflected in the y-axis.[102]

This represents the vocal G.

Example 1 (Vocal notation)

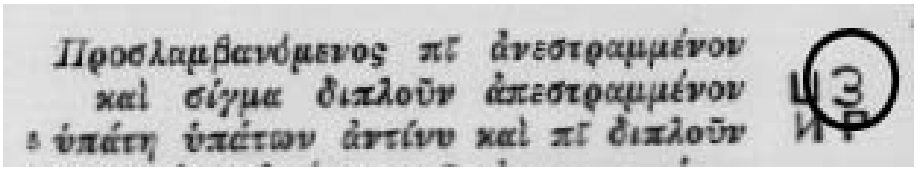
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2 (Instrumental notation)

Alypius Mus., *Isagoge* Diat. 5



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

[102] For discussion on the origins of this character see Winnington-Ingram (1978) 240-241 who convincingly argues that a rounded capital letter Sigma is the most plausible solution.

IV.a.8 Greek Vocal Notation Symbol 8

Sign	Similar Unicode	Beta Code	Count
ϸ		#670	3 instances, 1 author

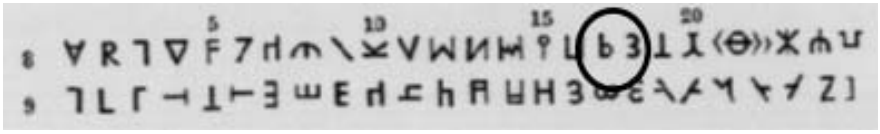
Definition and comments

This symbol is 03A1 GREEK CAPITAL LETTER RHO reflected in the x-axis.

This represents the vocal first sharp of G.

Example 1

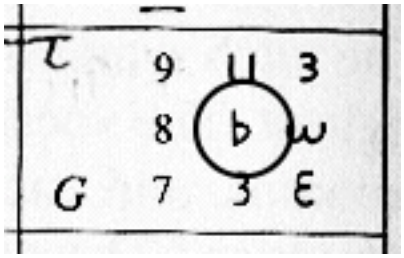
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.9 Greek Vocal Notation Symbol 9

Sign	Similar Unicode	Beta Code	Count
⊔		#588	41 instances, 2 authors

• Greek Instrumental Notation Symbol 44

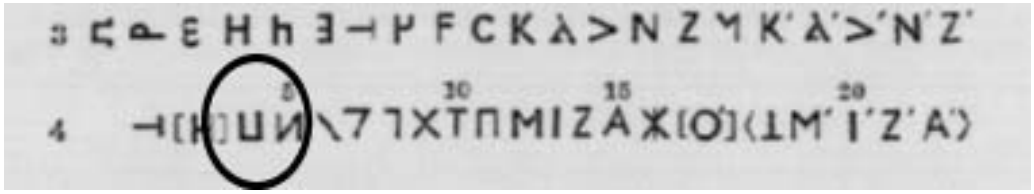
Definition and comments

This symbol is 03A0 GREEK CAPITAL LETTER PI rotated 180º.

This represents the vocal second sharp of G.

Example 1 (Vocal notation)

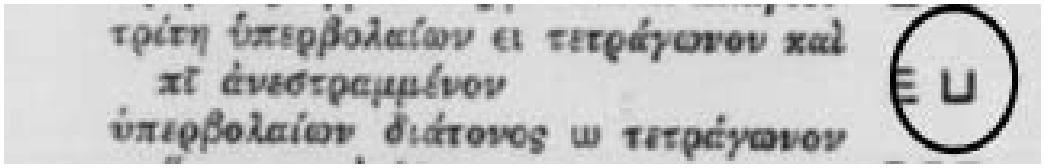
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 2 (Instrumental notation)

Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 370

IV.a.10 Greek Vocal Notation Symbol 10

Sign	Similar Unicode	Beta Code	Count
ϙ	03D8	#638	4 instances, 1 author

Definition and comments

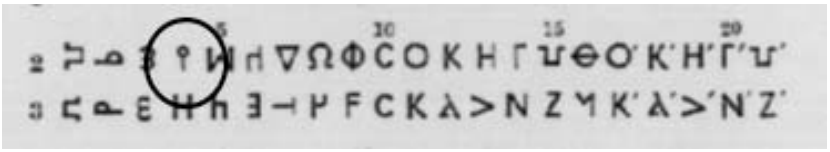
This is a variant of 039F GREEK CAPITAL LETTER OMICRON: the character has been reduced in size, and a short bar is added below.[103]

This symbol is visually close to 03D8 ARCHAIC KOPPA although the origin of the letter is quite different.

This represents the vocal A.

Example 1

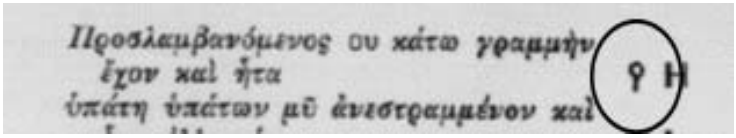
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 2

Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 370

[103] That this is a variant omicron and not a variant of a common glyph variant of 03DE GREEK LETTER KOPPA can be seen by its position in the series: following the variant of Pi and preceding the variant of Xi.

IV.a.11 Greek Vocal Notation Symbol 11

Sign	Similar Unicode	Beta Code	Count
		#669	3 instances, 1 author

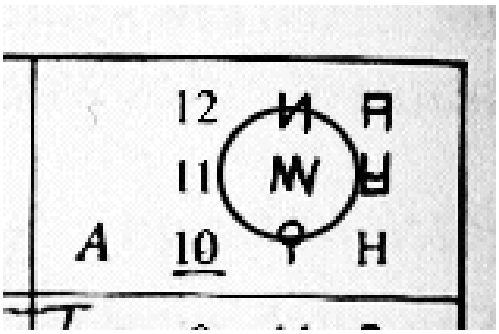
Definition and comments

This symbol is 039C GREEK CAPITAL LETTER XI rotated 90º counter-clockwise.

This represents the vocal first sharp of A.

Example 1

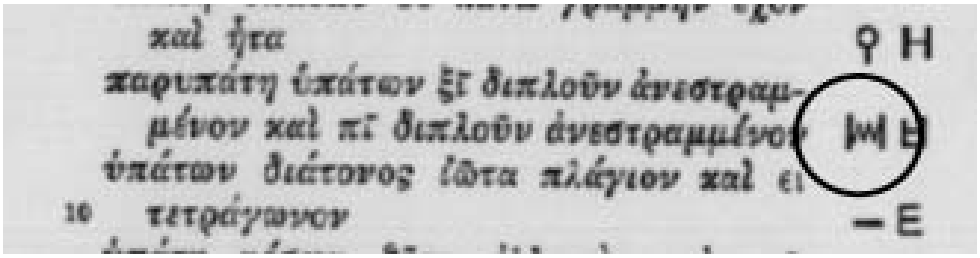
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

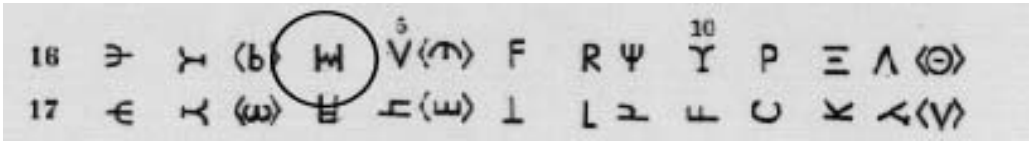
Alypius Mus., *Isagoge* Diat. 8



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 376

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.12 Greek Vocal Notation Symbol 12

Sign	Similar Unicode	Beta Code	Count
И		#649	4 instances, 1 author

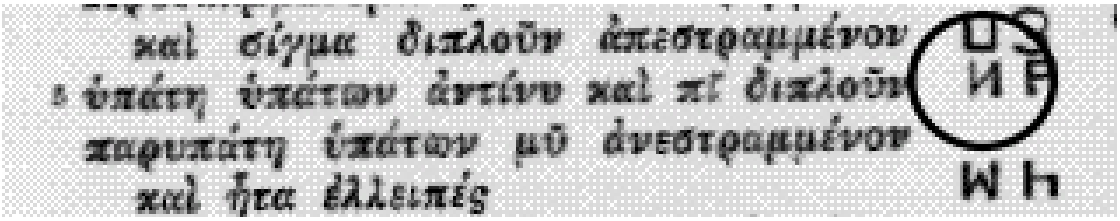
Definition and comments

This symbol is 039C GREEK CAPITAL LETTER NU reflected in the y-axis.

This represents the vocal second sharp of A.

Example 1

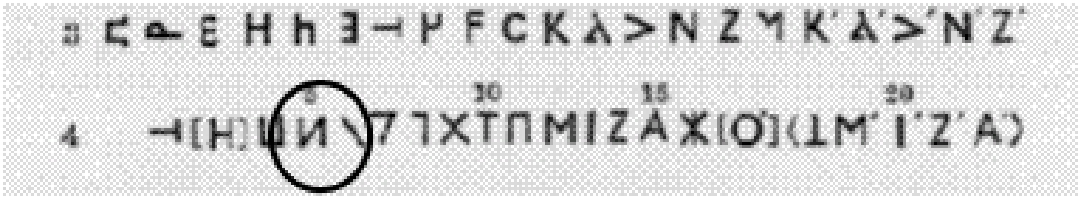
Alypius Mus., *Isagoge* Diat. 5



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.13 Greek Vocal Notation Symbol 13

Sign	Similar Unicode	Beta Code	Count
		#639	4 instances, 1 author

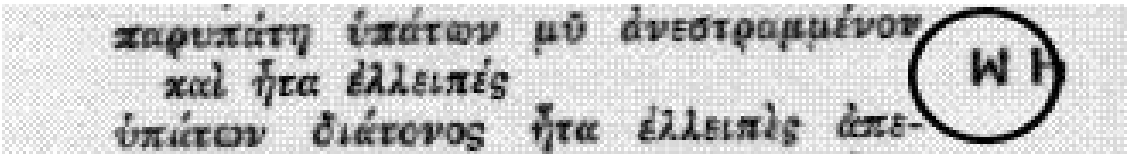
Definition and comments

This symbol is either 039C GREEK CAPITAL LETTER MU rotated 180º.

This represents the vocal B.

Example 1

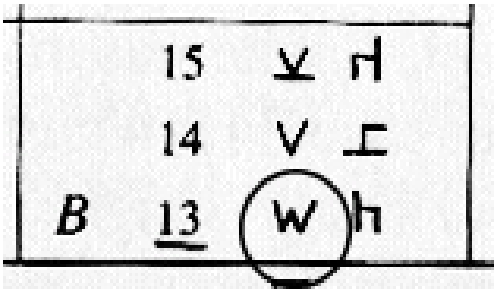
Alypius Mus., *Isagoge* Diat. 5



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

Example 2 (Glyph variant)

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.14 Greek Vocal Notation Symbol 14

Sign	Similar Unicode	Beta Code	Count
V		#582	18 instances, 2 authors

• Greek Instrumental Notation Symbol 41

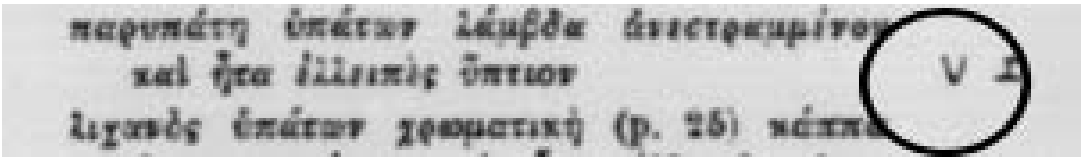
Definition and comments

This symbol is 039B GREEK CAPITAL LETTER LAMBDA rotated 180º.

This represents the vocal first sharp of B.

Example 1 (Vocal)

Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

Example 2 (Instrumental)

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.15 Greek Vocal Notation Symbol 15

Sign	Similar Unicode	Beta Code	Count
		#632	8 instances, 1 author

• Greek Instrumental Notation Symbol 35

Definition and comments

This symbol is 039A GREEK CAPITAL LETTER KAPPA rotated 90º counter-clockwise.

This represents the vocal second sharp of B.

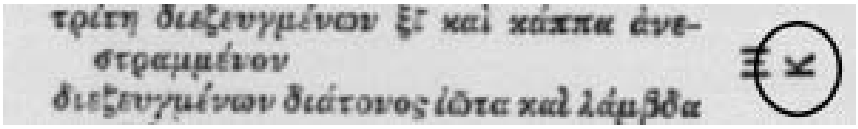
Example 2 (Vocal)

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 1 (Instrumental)

Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 370

IV.a.16 Greek Vocal Notation Symbol 16

Sign	Similar Unicode	Beta Code	Count
—	See below	#650	9 instances, 1 author

Definition and comments

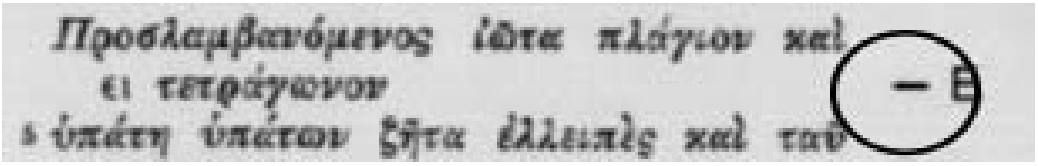
There are two glyph variants of this character: — and ⟍, both forms seem to be widely used.[104]

Since this has a glyph variant of, —, it is not the same as Greek Instrumental Notation Symbol 48. While the codepoint FF3C covers one glyph variant, there is no single Unicode character which currently unifies these glyph variants.

This symbol represents vocal c.

Example 1

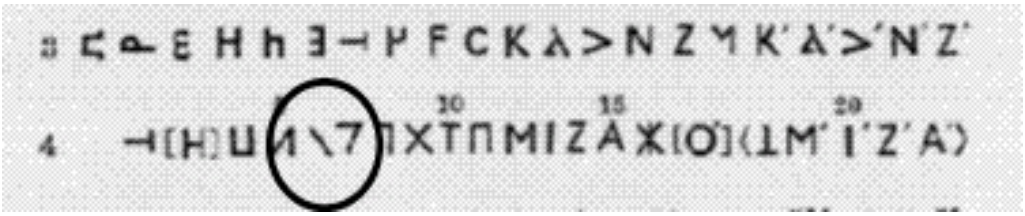
Alypius Mus., *Isagoge* Diat. 7



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 375

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

[104] See Winnington-Ingram (1973) 246-7

IV.a.17 Greek Vocal Notation Symbol 17

Sign	Similar Unicode	Beta Code	Count
		#668	3 instances, 1 author

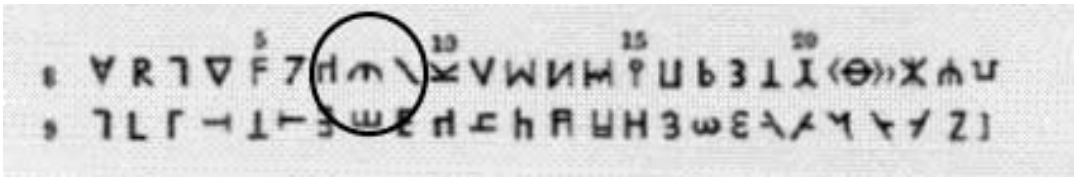
Definition and comments

This symbol is half of 0398 GREEK CAPITAL LETTER THETA with the open end face down.

This symbol represents the vocal first sharp of c.

Example 1

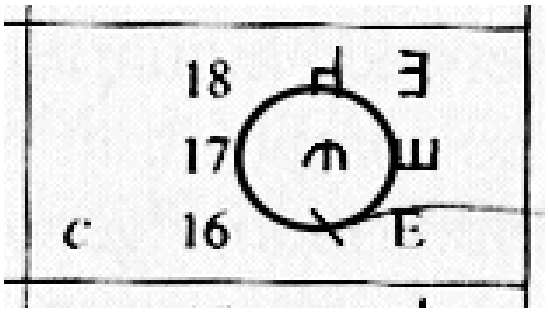
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.18 Greek Vocal Notation Symbol 18

Sign	Similar Unicode	Beta Code	Count
		#640	6 instances, 1 author

• Greek Instrumental Notation Symbol 15

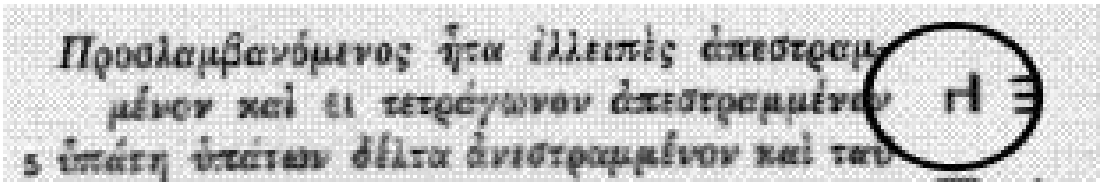
Definition and comments

This symbol is 0397 GREEK CAPITAL LETTER ETA with the top half of the left hand vertical bar removed.

This symbol represents the vocal second sharp of c.

Example 1 (Vocal)

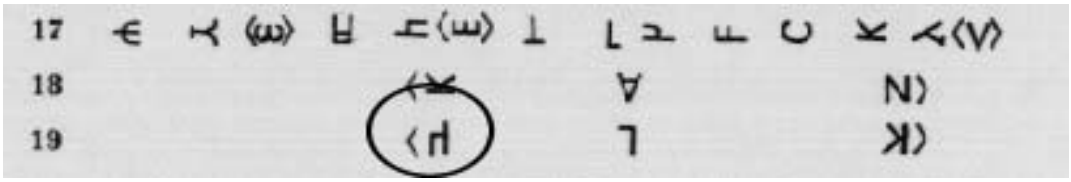
Alypius Mus., *Isagoge* Diat 5



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

Example 1 (Instrumental)

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.19 Greek Vocal Notation Symbol 19

Sign	Similar Unicode	Beta Code	Count
7		#573	**80 instances, 27 authors**

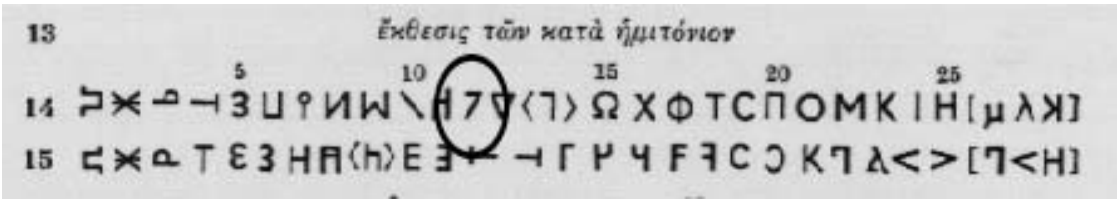
Definition and comments

This symbol is 0396 GREEK CAPITAL LETTER ZETA with the lower horizontal bar removed.

This symbol represents the vocal d.

Example 1

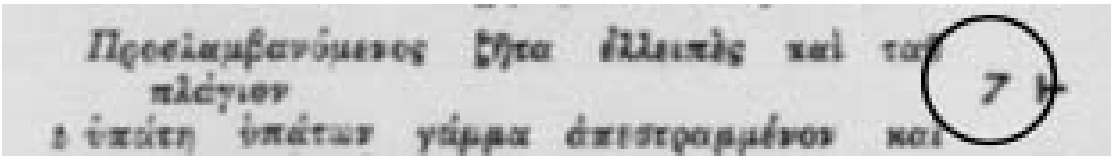
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

Alypius Mus., *Isagoge* Chrom. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 384

IV.a.20 Greek Vocal Notation Symbol 20

Sign	Similar Unicode	Beta Code	Count
F		#599	80 instances, 27 authors

• Greek Instrumental Notation Symbol 28

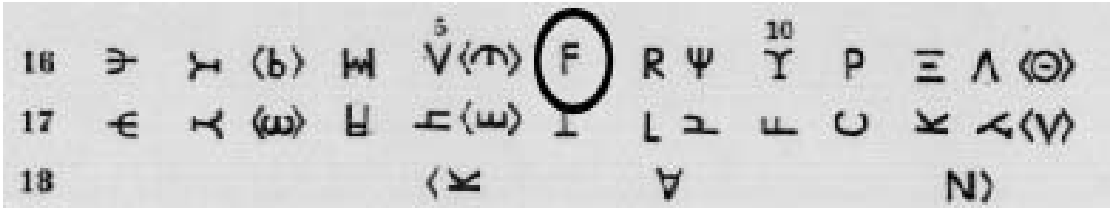
Definition and comments

This symbol is either 0395 GREEK CAPITAL LETTER EPSILON with its lower bar removed, or possibly is identical to 03DC GREEK LETTER DIGAMMA.

This represents the vocal first sharp of d.

Example 1

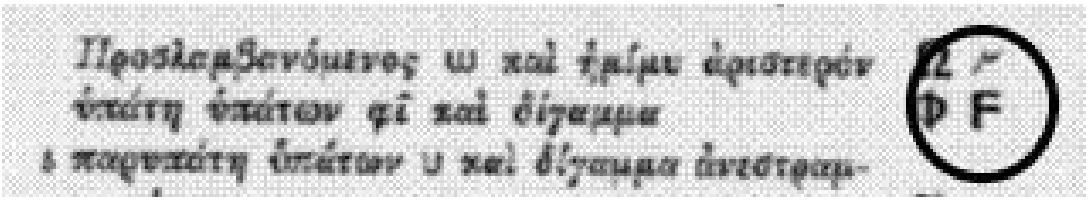
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

Alypius Mus., *Isagoge* Diat. 9



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 377

IV.a.21 Greek Vocal Notation Symbol 21

Sign	Similar Unicode	Beta Code	Count
∇		#599	6 instances, 1 author

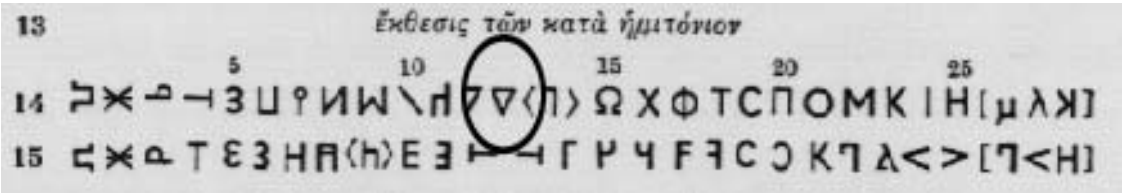
Definition and comments

This symbol is 0394 GREEK CAPITAL LETTER DELTA rotated 180º.

This represents the vocal second sharp of d.

Example 1

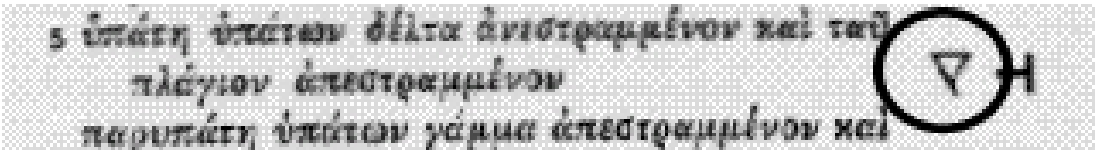
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 372

IV.a.22 Greek Vocal Notation Symbol 22

Sign	Similar Unicode	Beta Code	Count
⅂		#575	17 instances, 2 authors

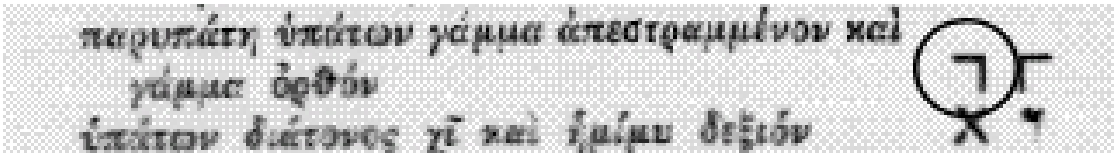
Definition and comments

This symbol is 0393 GREEK CAPITAL LETTER GAMMA reflected in the y-axis.

This represents e.

Example 1

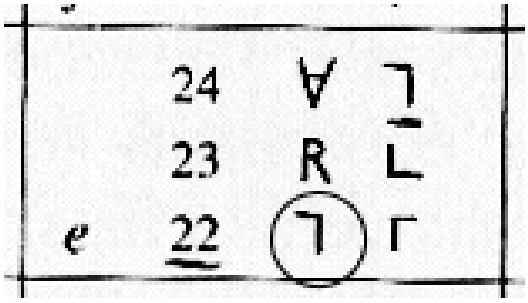
Alypius Mus., *Isagoge* Diat. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 372

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.23 Greek Vocal Notation Symbol 23

Sign	Similar Unicode	Beta Code	Count
R		#576	11 instances, 2 authors

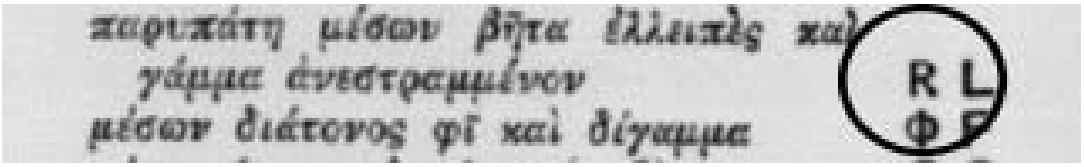
Definition and comments

This symbol is a variant form of 0392 GREEK CAPITAL LETTER BETA.

This represents the vocal first sharp of e.

Example 1

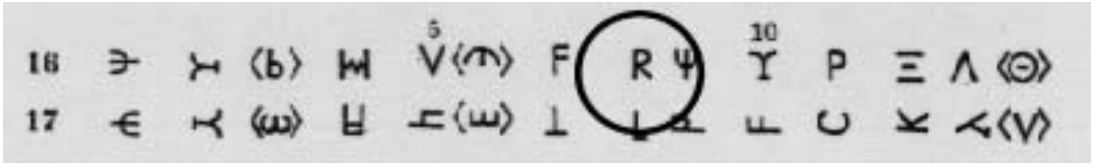
Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 370

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.24 Greek Vocal Notation Symbol 24

Sign	Similar Unicode	Beta Code	Count
∀		#627	7 instances, 1 author

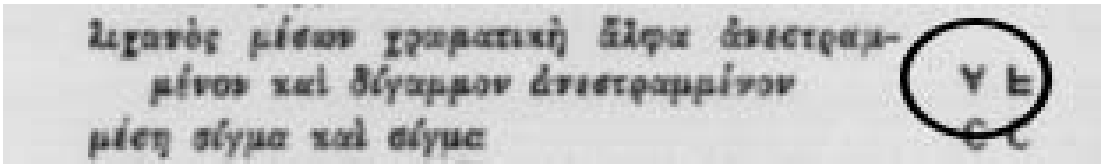
Definition and comments

This symbol is 0391 GREEK CAPITAL LETTER ALPHA rotated 180º.

This represents the vocal second sharp of e.

Example 1

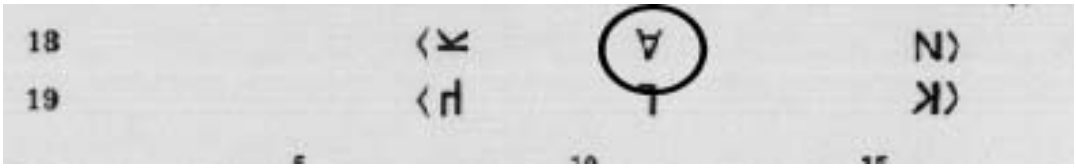
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.25 Greek Vocal Notation Symbol 49

Sign	Similar Unicode	Beta Code	Count
℧	2127	#564, #623	5 instances, 2 authors

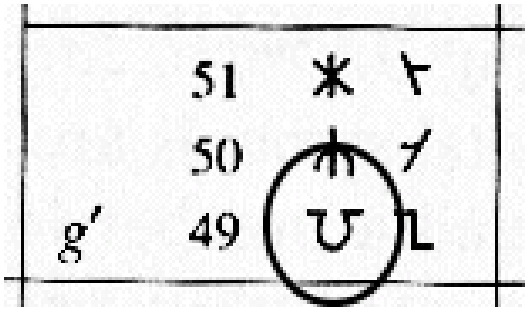
Definition and comments

This symbol is 03A9 GREEK CAPITAL LETTER OMEGA rotated 180º.

This represents g´.

Example 1

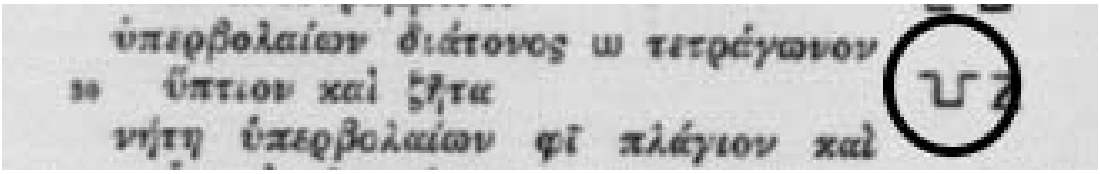
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 370

IV.a.26 Greek Vocal Notation Symbol 50

Sign	Similar Unicode	Beta Code	Count
		#672	3 instances, 1 author

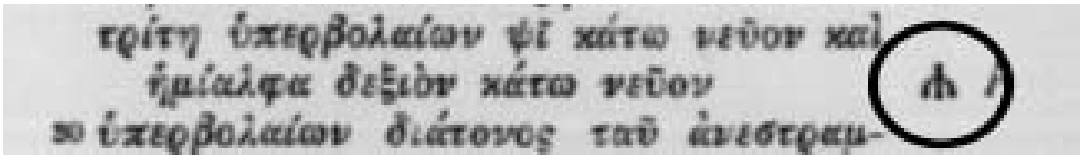
Definition and comments

This symbol is 03A8 GREEK CAPITAL LETTER PSI rotated 180º.

This represents the vocal second sharp of g´.

Example 1

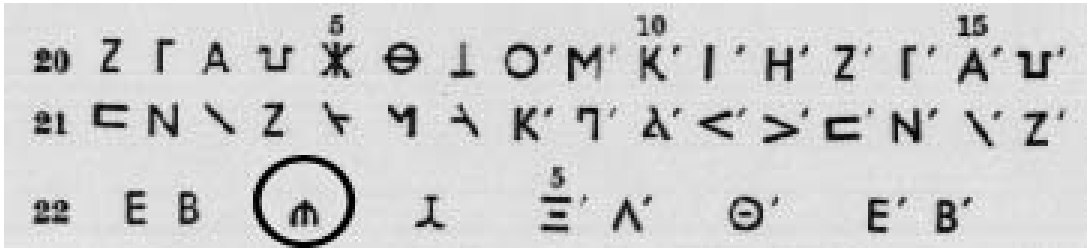
Alypius Mus., *Isagoge* Diat. 7



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 375

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.27 Greek Vocal Notation Symbol 51

Sign	Similar Unicode	Beta Code	Count
		#653	4 instances, 1 author

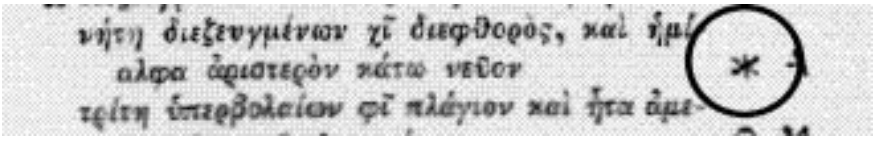
Definition and comments

This symbol is 03A7 GREEK CAPITAL LETTER CHI with a vertical line through the center.

This represents the vocal second sharp of g´.

Example 1

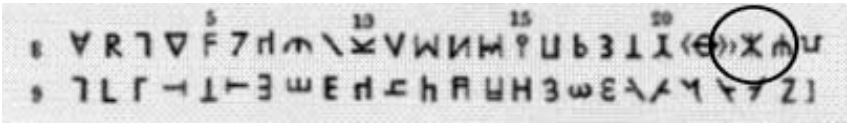
Alypius Mus., *Isagoge* Diat. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 372

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.28 Greek Vocal Notation Symbol 52

Sign	Similar Unicode	Beta Code	Count
		#589	9 instances, 2 authors

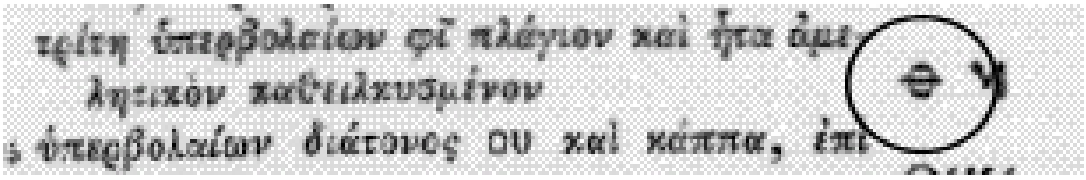
Definition and comments

This symbol is 03A6 GREEK CAPITAL LETTER PHI rotated 90º.

This represents a´.

Example 1

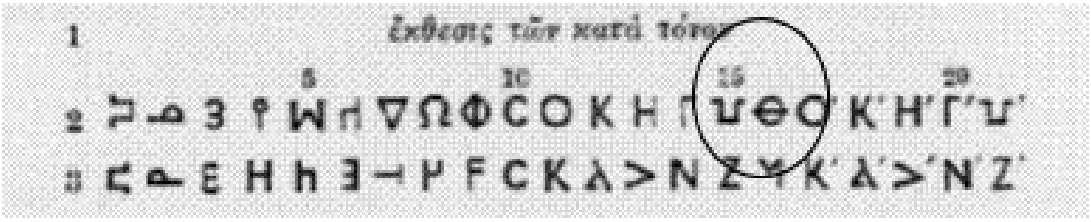
Alypius Mus., *Isagoge* Diat. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 372

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.29 Greek Vocal Notation Symbol 53

Sign	Similar Unicode	Beta Code	Count
		#591, #671	4 instances, 2 authors

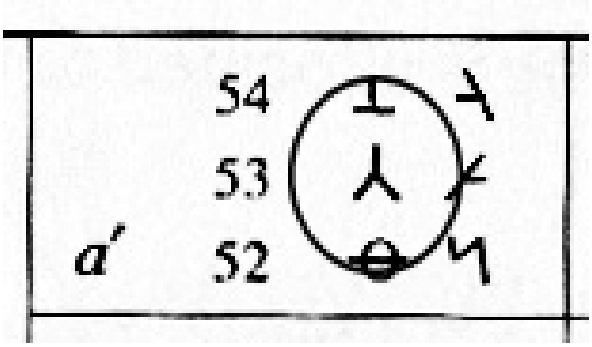
Definition and comments

This symbol is 03A5 GREEK CAPITAL LETTER upsilon rotated 180º.

This represents the vocal first sharp of a´.

Example 1

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.30 Greek Vocal Notation Symbol 54

Sign	Similar Unicode	Beta Code	Count
⊥		#654	6 instances, 1 author

• Greek Instrumental Notation Symbol 20

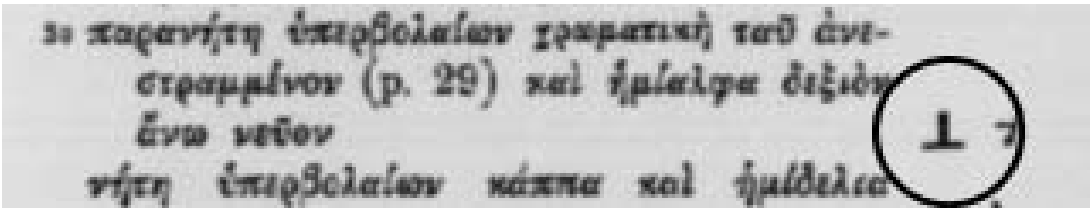
Definition and comments

This symbol is 03A4 GREEK CAPITAL LETTER TAU rotated 180º.

This represents the vocal second sharp of a´.

Example 1

Alypius Mus., *Isagoge* Chrom. 3



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 386

Example 2

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Greek Instrumental Notation

IV.a.31 Greek Instrumental Notation Symbol 1

Sign	Similar Unicode	Beta Code	Count
⊂		#643	3 instances, 1 author

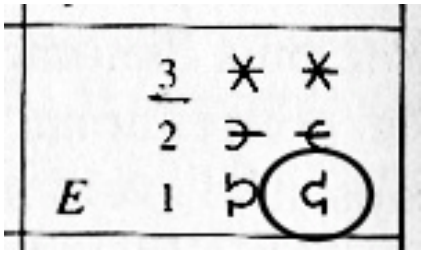
Definition and comments

This symbol is 03A9 GREEK CAPTIAL LETTER OMEGA rotated 90º clockwise.

This represents the instrumental E.

Example 1

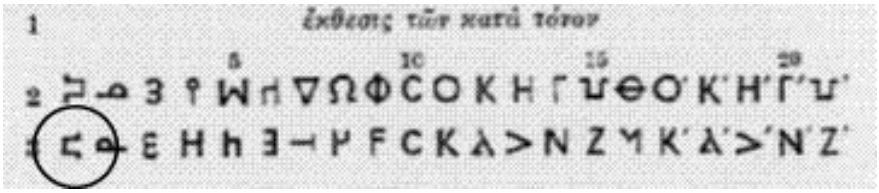
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2 (Glyph variant)

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.32 Greek Instrumental Notation Symbol 2

Sign	Similar Unicode	Beta Code	Count
∈		#616	4 instances, 1 author

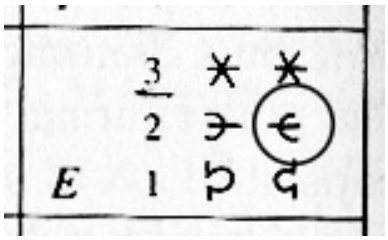
Definition and comments

This symbol is 03A8 GREEK CAPITAL LETTER PSI rotated 90º clockwise.

This represents the instrumental first sharp of E.

Example 1

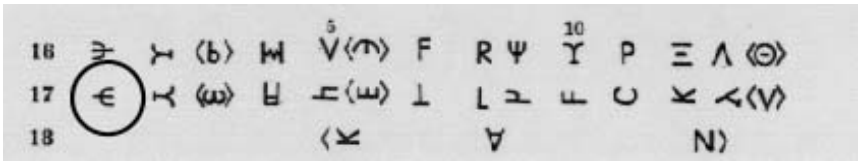
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.33 Greek Instrumental Notation Symbol 4

Sign	Similar Unicode	Beta Code	Count
		#644, #594	6 instances, 2 authors

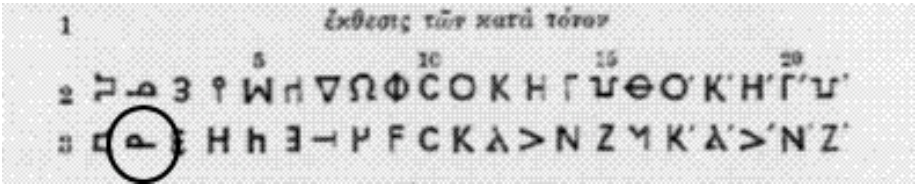
Definition and comments

This symbol is a variant form of 03A6 GREEK CAPITAL LETTER PHI rotated 90º clockwise and with the left arm and lower semi-circle removed.

This represents the instrumental F.

Example 1

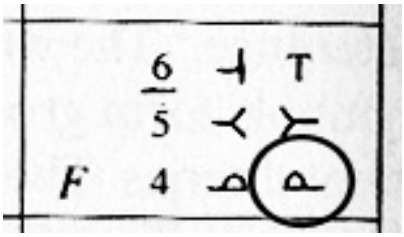
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 2

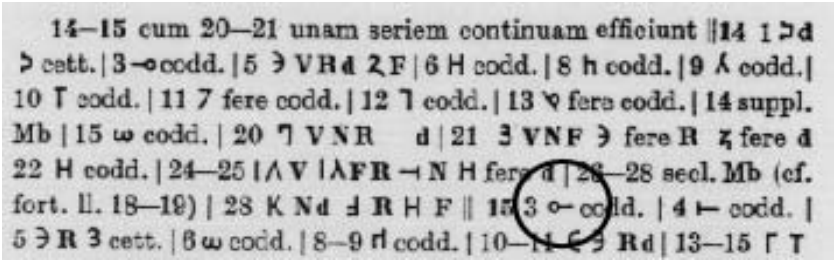
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 3

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26 App. Crit.

IV.a.34 Greek Instrumental Notation Symbol 5

Sign	Similar Unicode	Beta Code	Count
		#678	2 instances, 1 author

Definition and comments

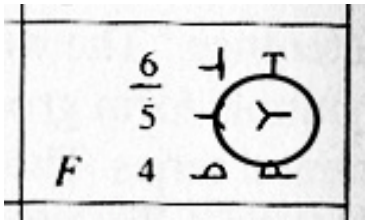
This symbol is a 03A5 GREEK CAPITAL LETTER UPSILON rotated 90º counter-clockwise.

This represents the instrumental first sharp of F.

In Aristides Quintillianus, this symbol is used for Greek Vocal Notation Symbol 5.

Example 1

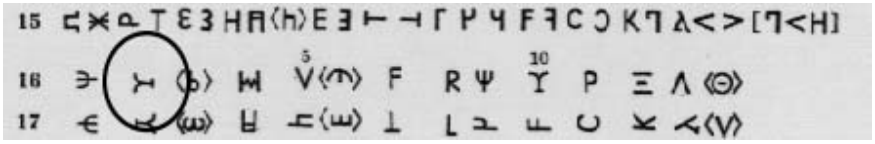
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.35 Greek Instrumental Notation Symbol 7

Sign	Similar Unicode	Beta Code	Count
Ε		#645	4 instances, 1 author

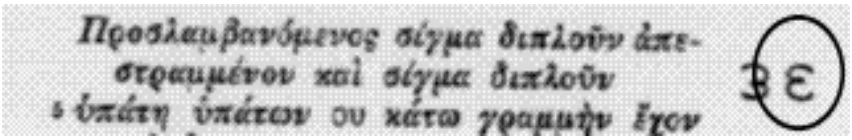
Definition and comments

This symbol is most probably a rounded form of 03A3 GREEK CAPITAL LETTER SIGMA, or is possibly a doubled GREEK CAPITAL LUNATE SIGMA reflected in the y-axis.[105]

This represents the instrumental G.

Example 1

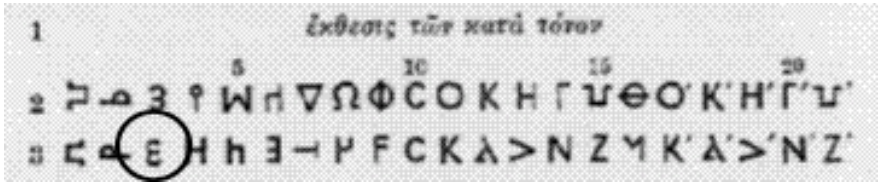
Alypius Mus., *Isagoge* Diat. 8



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 376

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

[105] For discussion on the origins of this character see Winnington-Ingram (1978) 240-241 who convincingly argues that a rounded capital letter Sigma is the most plausible solution.

IV.a.36 Greek Instrumental Notation Symbol 8

Sign	Similar Unicode	Beta Code	Count
ϖ		#674	2 instances, 1 author

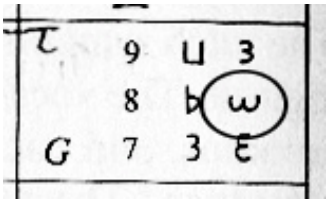
Definition and comments

This symbol is GREEK INSTRUMENTAL NOTATION SYMBOL 7 rotated 90º counter-clockwise.

This represents the instrumental first sharp of G.

Example 1

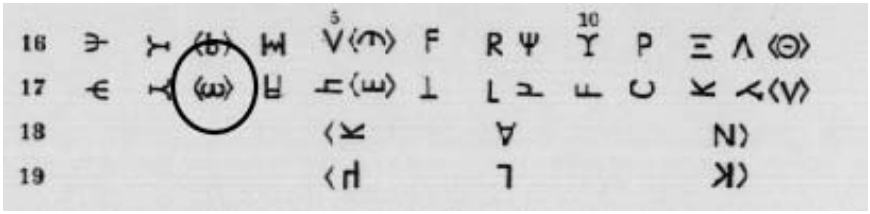
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.37 Greek Instrumental Notation Symbol 11

Sign	Similar Unicode	Beta Code	Count
		#673	3 instances, 1 author

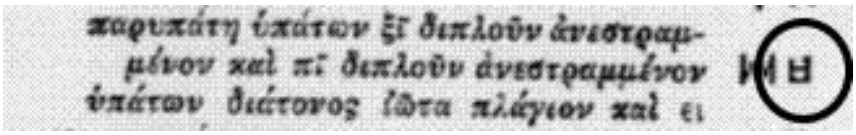
Definition and comments

This symbol is either 0397 GREEK CAPITAL LETTER ETA with a horizontal at the bottom or possibly 03A0 GREEK CAPITAL LETTER PI with a horizontal bar half-way up and rotated 180º.

This represents the instrumental first sharp of A.

Example 1

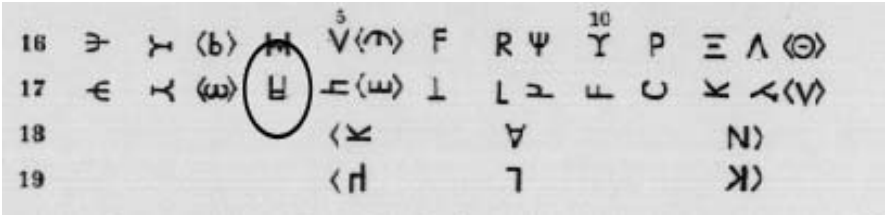
Alypius Mus., *Isagoge* Diat. 8



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 376

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.38 Greek Instrumental Notation Symbol 12

Sign	Similar Unicode	Beta Code	Count
𝍈		#656	4 instances, 1 author

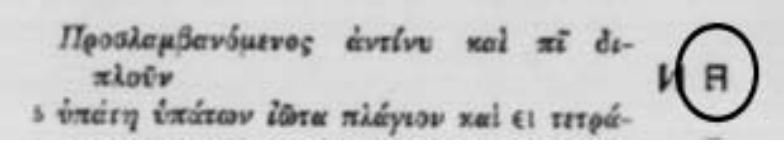
Definition and comments

This symbol is either 0397 GREEK CAPITAL LETTER ETA with a horizontal at the top or possibly 03A0 GREEK CAPITAL LETTER PI with a horizontal bar half-way up.

This represents the instrumental second sharp of A.

Example 1

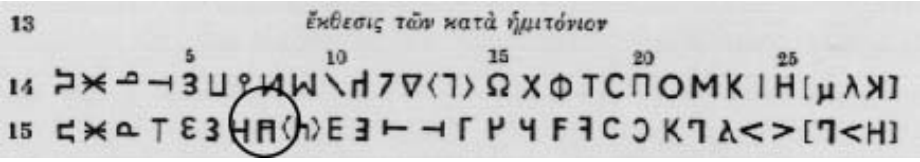
Alypius Mus., *Isagoge* Diat. 13



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 381

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.39 Greek Instrumental Notation Symbol 13

Sign	Similar Unicode	Beta Code	Count
		#646	4 instances, 1 author

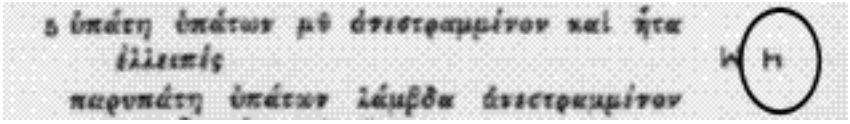
Definition and comments

This symbol is 0397 GREEK CAPITAL LETTER ETA with the top half of the right hand vertical bar removed.

This represents the instrumental B.

Example 1

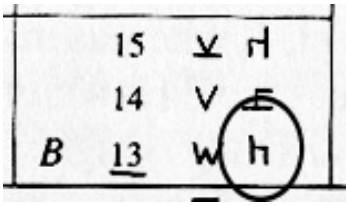
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 1

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.40 Greek Instrumental Notation Symbol 14

Sign	Similar Unicode	Beta Code	Count
		#604	2 instances, 1 author

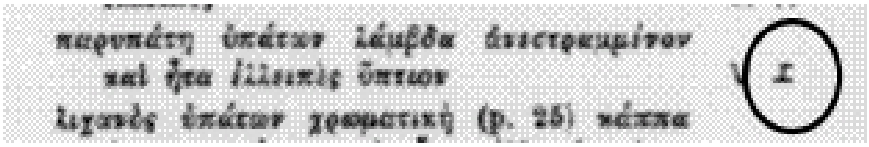
Definition and comments

This symbol is Greek Instrumental Notation Symbol 13 rotated 90º counter-clockwise.

This represents the instrumental first sharp of B.

Example 1

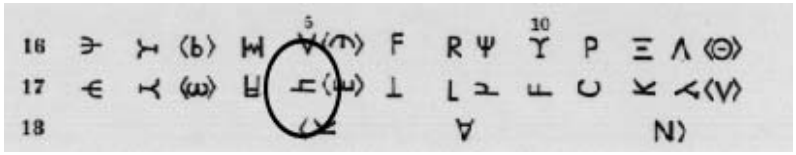
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.41 Greek Instrumental Notation Symbol 17

Sign	Similar Unicode	Beta Code	Count
Ϣ		#565	6 instances, 2 authors

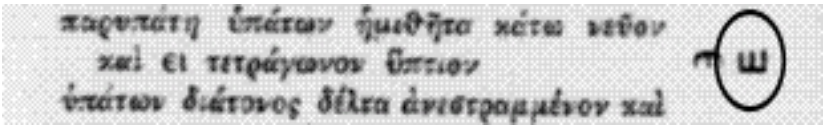
Definition and comments

This symbol is 0395 GREEK CAPITAL LETTER EPSILON rotated 90º counter-clockwise.

This represents the instrumental first sharp of c.

Example 1

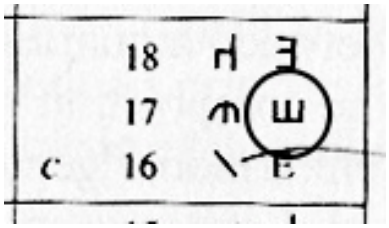
Alypius Mus., *Isagoge* Diat. 13



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 381

Example 2

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.42 Greek Instrumental Notation Symbol 18

Sign	Similar Unicode	Beta Code	Count
Ǝ		#600	6 instances, 1 author

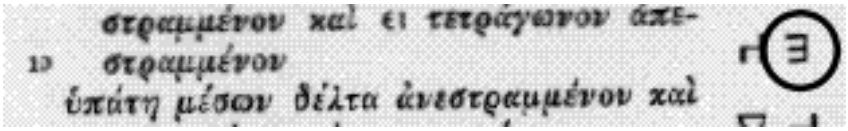
Definition and comments

This symbol is 0395 GREEK CAPITAL LETTER EPSILON rotated 180º.

This represents the instrumental second sharp of c.

Example 1

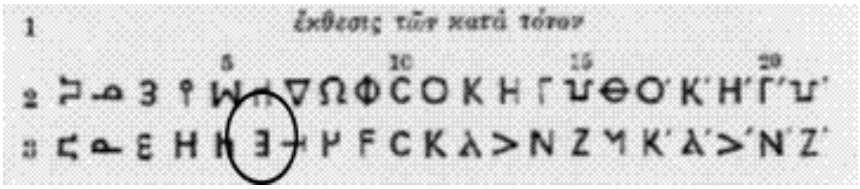
Alypius Mus., *Isagoge* Diat. 5



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 373

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.43 Greek Instrumental Notation Symbol 19

Sign	Similar Unicode	Beta Code	Count
⊢		#572	44 instances, 2 authors

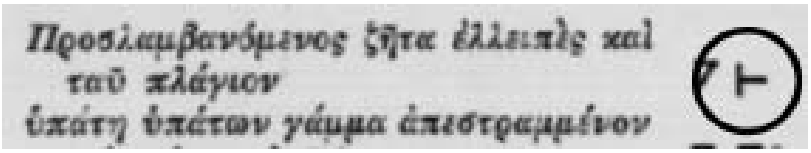
Definition and comments

This symbol is 03A4 GREEK CAPITAL LETTER TAU rotated 90º counter-clockwise.

This represents the instrumental d.

Example 1

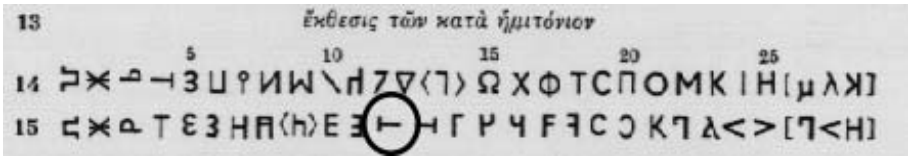
Alypius Mus., *Isagoge* Diat. 1



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 369

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.44 Greek Instrumental Notation Symbol 23

Sign	Similar Unicode	Beta Code	Count
⊥		#684	9 instances, 1 author

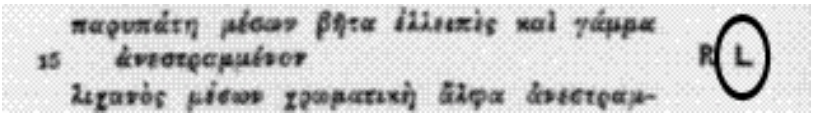
Definition and comments

This symbol is 0393 GREEK CAPITAL LETTER GAMMA reflected in the x-axis.

This represents the instrumental first sharp of e.

Example 1

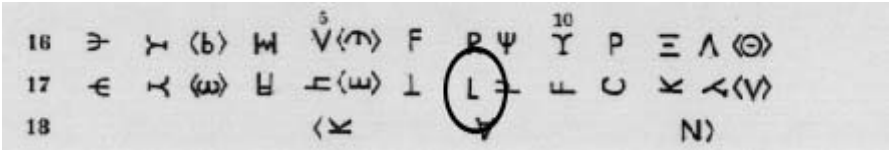
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 2

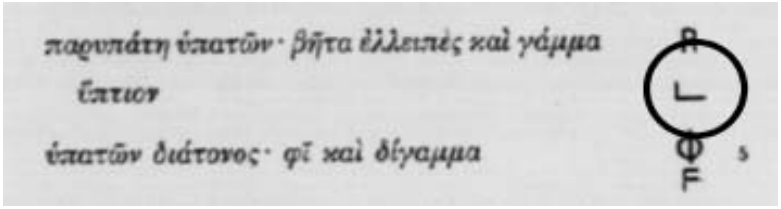
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 3

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 67



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 20

IV.a.45 Greek Instrumental Notation Symbol 24

Sign	Similar Unicode	Beta Code	Count
⅂		#575	17 instances, 2 authors

Definition and comments

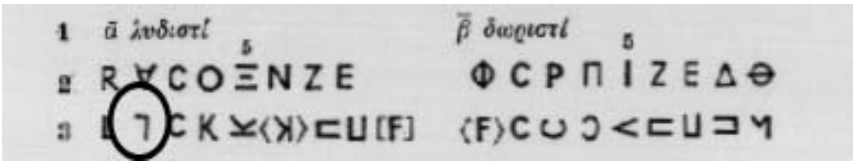
This symbol is 0393 GREEK CAPITAL LETTER GAMMA reflected in the y-axis.

This character is not the same as Greek Vocal Notation Symbol 22 as this character has five glyph variants while Greek Vocal Notation Symbol 22 has only one.

This represents e.

Example 1

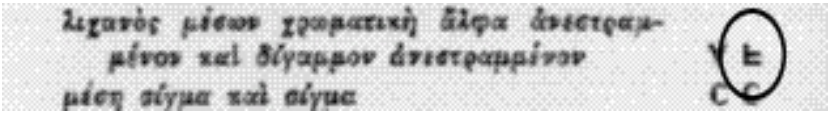
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

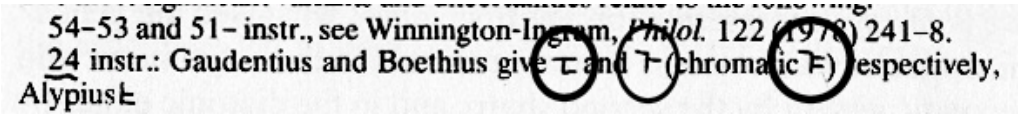
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 3

West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

IV.a.46 Greek Instrumental Notation Symbol 25

Sign	Similar Unicode	Beta Code	Count
		#647	4 instances, 1 author

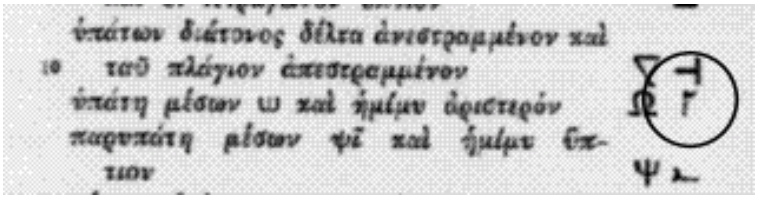
Definition and comments

This symbol is described by Bellermann as being the left hand half of 039C GREEK CAPITAL LETTER MU,[106] however, Winnington-Ingram stresses that the origin is "quite uncertain."[107]

This symbol represents the instrumental f.

Example 1

Alypius Mus., *Isagoge* Diat. 13



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 381

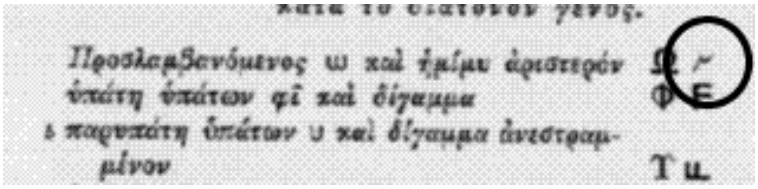
Example 2

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

Example 3 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 9



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 377

[106] Bellermann (1969) 42

[107] Winnington-Ingram (1973) 247

IV.a.47 Greek Instrumental Notation Symbol 26

Sign	Similar Unicode	Beta Code	Count
		#667	3 instances, 1 author

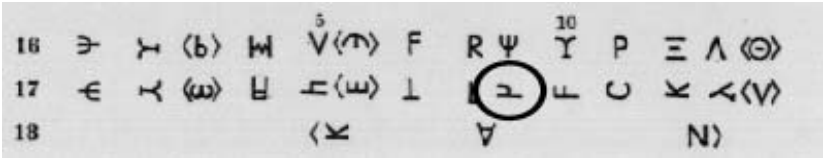
Definition and comments

This symbol is Greek Instrumental Notation Symbol 25 rotated 90º counter-clockwise.

This is the instrumental first sharp of f.

Example 1

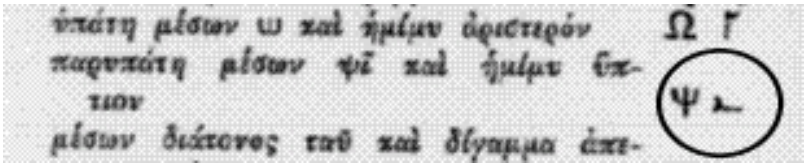
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

Example 2

Alypius Mus., *Isagoge* Diat. 13



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 381

IV.a.48 Greek Instrumental Notation Symbol 27

Sign	Similar Unicode	Beta Code	Count
ϒ		#657	4 instances, 1 author

Definition and comments

This symbol is Greek Instrumental Notation Symbol 25 reflected in the x-axis.

This is the instrumental second sharp of f.

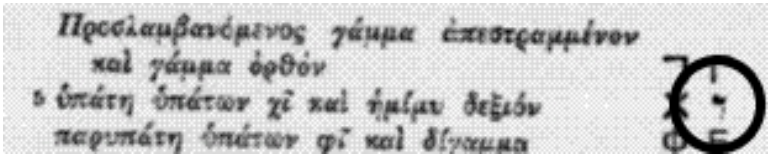
Example 1

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 12



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 380

IV.a.49 Greek Instrumental Notation Symbol 29

Sign	Similar Unicode	Beta Code	Count
𝈦		#666	3 instances, 1 author

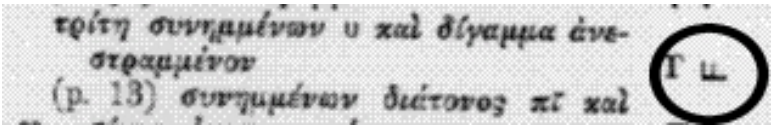
Definition and comments

This symbol is either 0395 GREEK CAPITAL LETTER EPSILON with its lower bar removed and rotated 90º counter-clockwise, or possibly, 03DC GREEK LETTER DIGAMMA rotated 90º counter-clockwise.

This symbol represents the instrumental second sharp of g.

Example 1

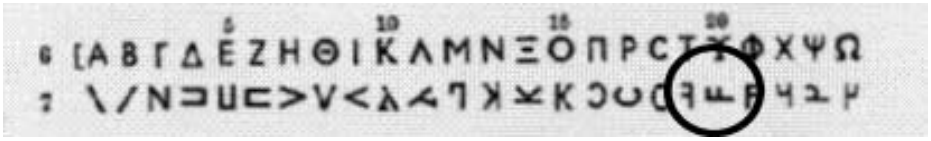
Alypius Mus., *Isagoge* Diat. 8



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 380

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.50 Greek Instrumental Notation Symbol 30

Sign	Similar Unicode	Beta Code	Count
ꟻ		#615	5 instances, 1 author

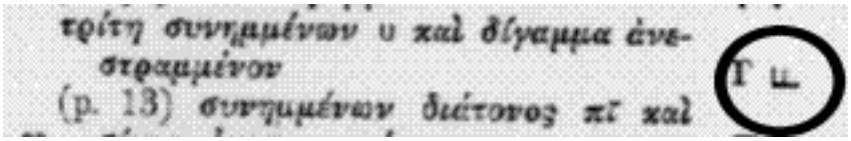
Definition and comments

This symbol is either 0395 GREEK CAPITAL LETTER EPSILON with its lower bar removed reflected in the y-axis, or possibly, 03DC GREEK LETTER DIGAMMA rotated reflected in the y-axis.

This symbol represents the instrumental second sharp of g.

Example 1

Alypius Mus., *Isagoge* Chrom. 4



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 380

Example 2

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.51 Greek Instrumental Notation Symbol 32

Sign	Similar Unicode	Beta Code	Count
		#566	61 instances, 2 authors

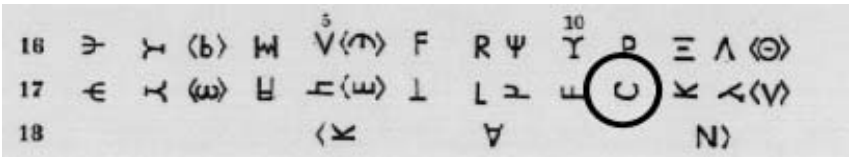
Definition and comments

This symbol is GREEK CAPITAL LETTER LUNATE SIGMA rotated 90º counter-clockwise.

This represents the instrumental first sharp of a.

Example 1

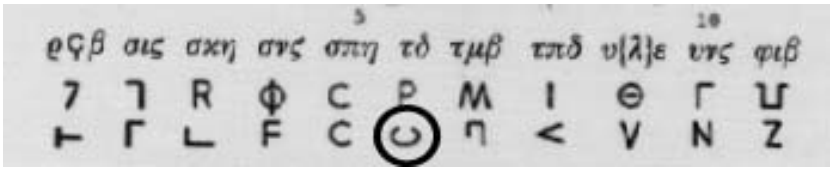
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 77



Najock, D., *Anonyma de musica scripta Bellermanniana* (Leipzig, Teubner, 1975) 24

IV.a.52 Greek Instrumental Notation Symbol 36

Sign	Similar Unicode	Beta Code	Count
		#633	6 instances, 1 author

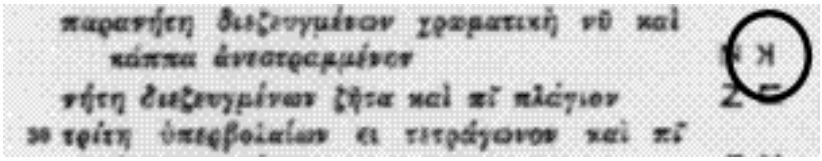
Definition and comments

This symbol is 039A GREEK CAPITAL LETTER KAPPA reflected in the y-axis.

This represents the instrumental second sharp of b.

Example 1

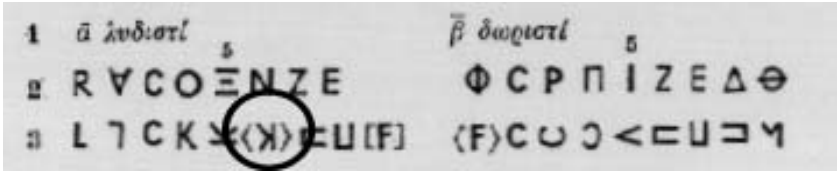
Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

Example 2

Aristides Quintilianus Mus., *De musica* 1.9



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 19

IV.a.53 Greek Instrumental Notation Symbol 37

Sign	Similar Unicode	Beta Code	Count
		#568	75 instances, 2 authors

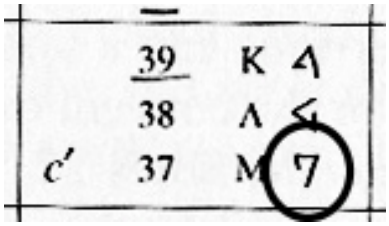
Definition and comments

This symbol is Greek Instrumental Notation Symbol 39 rotated 90º clockwise.

This symbol represents the instrumental c´.

Example 1

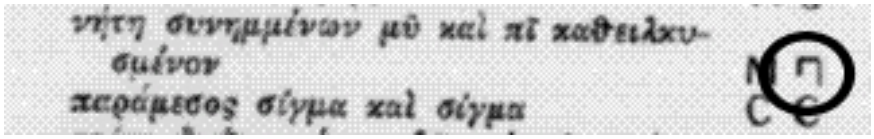
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 8



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 376

IV.a.54 Greek Instrumental Notation Symbol 38

Sign	Similar Unicode	Beta Code	Count
		#665	4 instances, 1 author

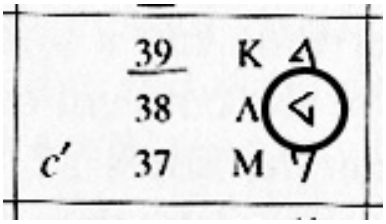
Definition and comments

This symbol is Greek Instrumental Notation Symbol 39 rotated 90º counter-clockwise.

This symbol represents the instrumental first sharp of c´.

Example 1

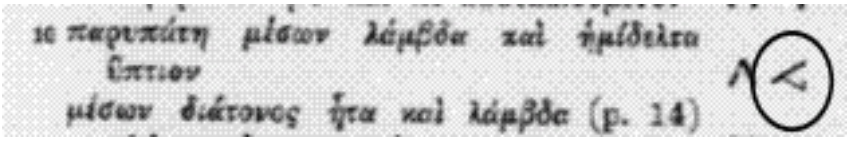
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Alypius Mus., *Isagoge* Diat. 9



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 377

IV.a.55 Greek Instrumental Notation Symbol 39

Sign	Similar Unicode	Beta Code	Count
		#648	5 instances, 1 author

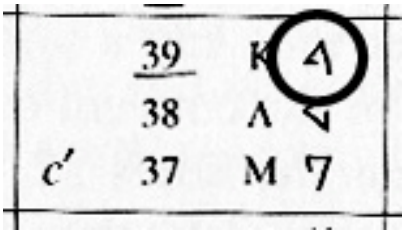
Definition and comments

This symbol is 0394 GREEK CAPITAL LETTER DELTA with the right hand half of its horizontal line removed.

This symbol represents the instrumental second sharp of c´.

Example 1

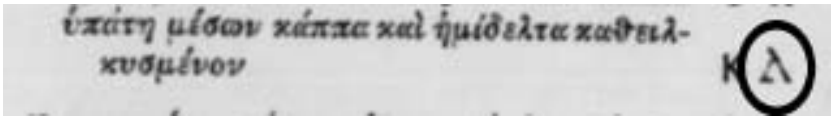
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2 (Glyph variant)

Alypius Mus., *Isagoge* Diat. 6



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 374

IV.a.56 Greek Instrumental Notation Symbol 40

Sign	Similar Unicode	Beta Code	Count
<		#569	76 instances, 2 authors

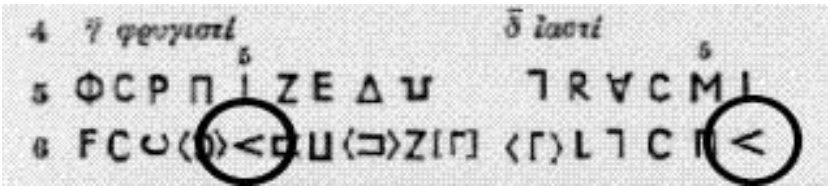
Definition and comments

This symbol is 039B GREEK CAPITAL LETTER LAMBDA rotated 90º counter-clockwise.

This symbol represents the instrumental d´.

Example 1

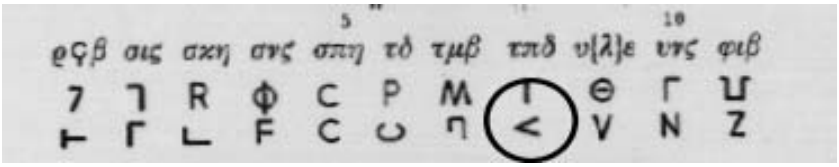
Aristides Quintilianus Mus., *De musica* 1.9



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 19

Example 2

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 77



Najock, D., *Anonyma de musica scripta Bellermanniana* (Leipzig, Teubner, 1975) 25

IV.a.57 Greek Instrumental Notation Symbol 42

Sign	Similar Unicode	Beta Code	Count
>		#602	9 instances, 1 author

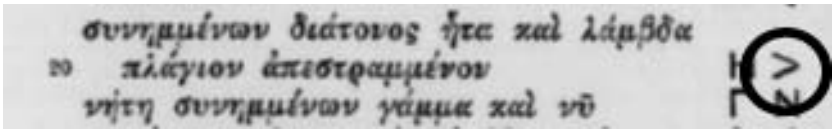
Definition and comments

This symbol is 039B GREEK CAPITAL LETTER LAMBDA rotated 90º clockwise.

This represents the instrumental second sharp of d´.

Example 1

Alypius Mus., *Isagoge* Diat. 7



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 375

Example 2

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.58 Greek Instrumental Notation Symbol 43

Sign	Similar Unicode	Beta Code	Count
⊏		#586	30 instances, 2 authors

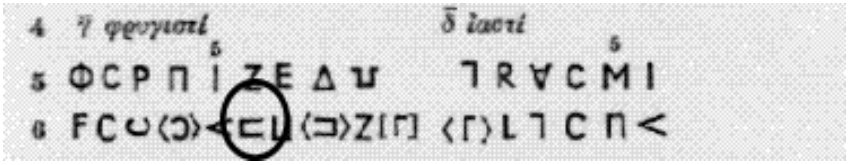
Definition and comments

This symbol is 03A0 GREEK CAPITAL LETTER PI rotated 90º counter-clockwise.

This represents the instrumental e´.

Example 1

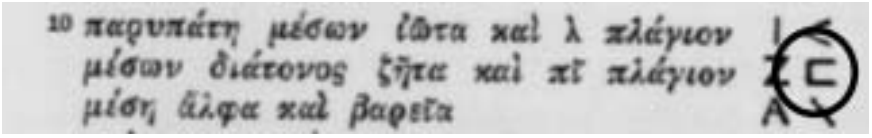
Aristides Quintilianus Mus., *De musica* 1.9



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 19

Example 2

Alypius Mus., *Isagoge* Diat. 6



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 374

IV.a.59 Greek Instrumental Notation Symbol 45

Sign	Similar Unicode	Beta Code	Count
⊐		#634	6 instances, 1 author

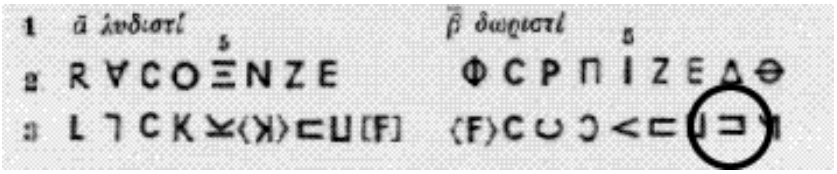
Definition and comments

This symbol is 03A0 GREEK CAPITAL LETTER PI rotated 90º clockwise.

This represents the instrumental second sharp of e´.

Example 1

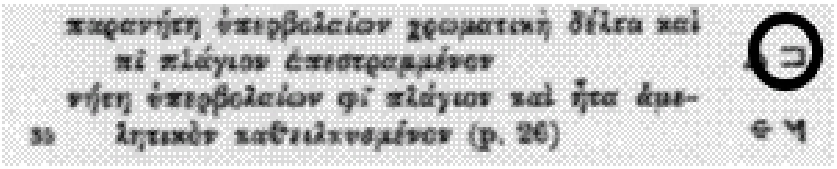
Aristides Quintilianus Mus., *De musica* 1.9



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 19

Example 2

Alypius Mus., *Isagoge* Chrom. 2



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 385

IV.a.60 Greek Instrumental Notation Symbol 47

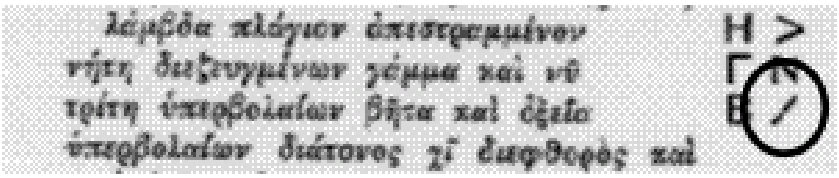
Sign	Similar Unicode	Beta Code #664	Count 4 instances, 1 author

Definition and comments

This represents the instrumental first sharp of f′.

Example 1

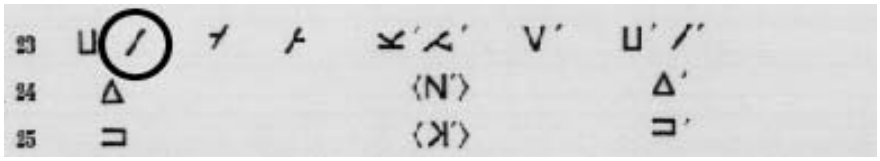
Alypius Mus., *Isagoge* Diat. 13



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 381

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 27

IV.a.61 Greek Instrumental Notation Symbol 48

Sign	Similar Unicode	Beta Code	Count
		#650	9 instances, 1 author

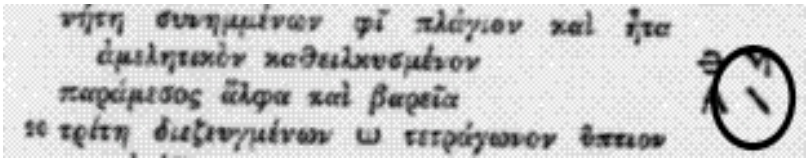
Definition and comments

Note: this symbol has no glyph variants and is therefore not the same As GREEK VOCAL NOTATION SYMBOL 16.

This represents the instrumental second sharp of f˝.

Example 1

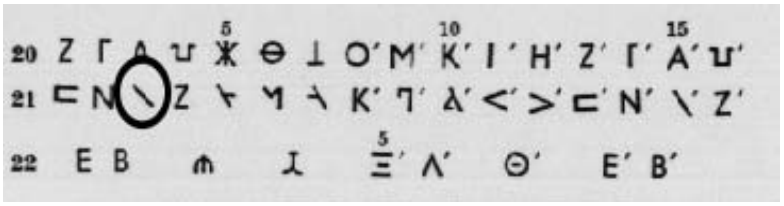
Alypius Mus., *Isagoge* Diat. 12



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 380

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

IV.a.62 Greek Instrumental Notation Symbol 48

Sign	Similar Unicode	Beta Code	Count
⅂		#685	1 instance, 1 author

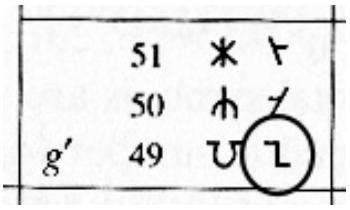
Definition and comments

This character has two glyph variants, the one given above and one which is identical to 0396 GREEK CAPITAL LETTER ZETA.

This represents the instrumental first sharp of g′.

Example 1

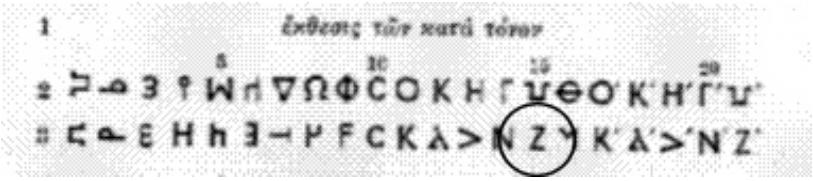
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 24

IV.a.63 Greek Instrumental Notation Symbol 50

Sign	Similar Unicode	Beta Code	Count
		#676	3 instances, 1 author

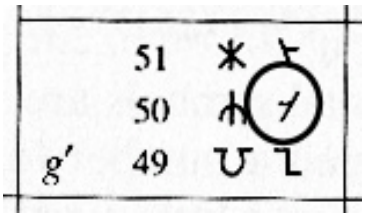
Definition and comments

This symbol is Greek Instrumental Notation Symbol 54 reflected in the x-axis.

This represents the instrumental first sharp of g′.

Example 1

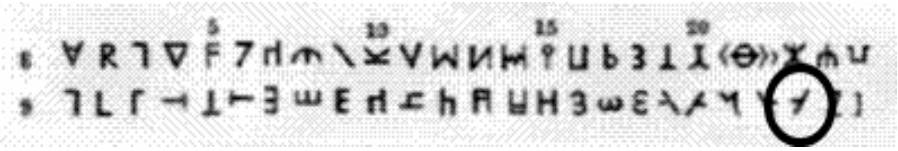
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.64 Greek Instrumental Notation Symbol 51

Sign	Similar Unicode	Beta Code	Count
		#658	4 instances, 1 author

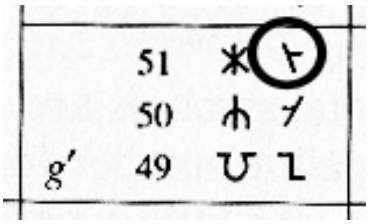
Definition and comments

This symbol is Greek Instrumental Notation Symbol 54 rotated 180º.

This represents the instrumental second sharp of g´.

Example 1

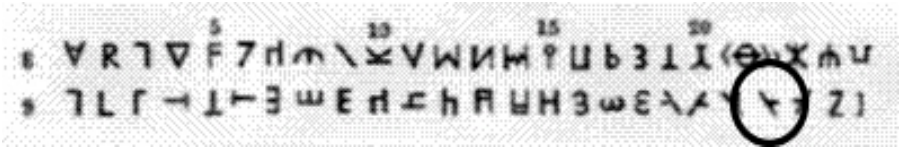
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 2

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

IV.a.65 Greek Instrumental Notation Symbol 52

Sign	Similar Unicode	Beta Code	Count
		#590	33 instances, 2 authors

Definition and comments

This symbol is probably a variant form of 039D GREEK CAPITAL LETTER NU, but may be a variation on 0397 GREEK CAPITAL LETTER ETA.[108]

This represents the instrumental a´.

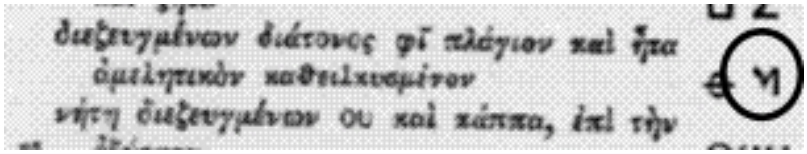
Example 1

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 23

Example 2

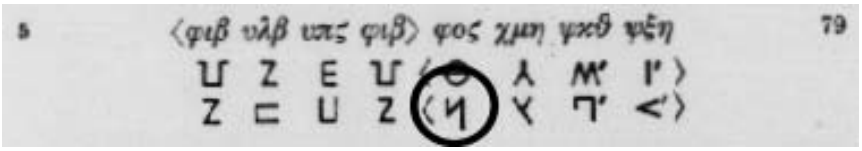
Alypius Mus., *Isagoge* Diat. 12



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 380

Example 3 (Glyph variant)

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 77



Najock, D., *Anonyma de musica scripta Bellermanniana* (Leipzig, Teubner, 1975) 25

[108] See Winnington-Ingram (1978) 246

IV.a.66 Greek Instrumental Notation Symbol 53

Sign	Similar Unicode	Beta Code	Count
		#675	3 instances, 1 author

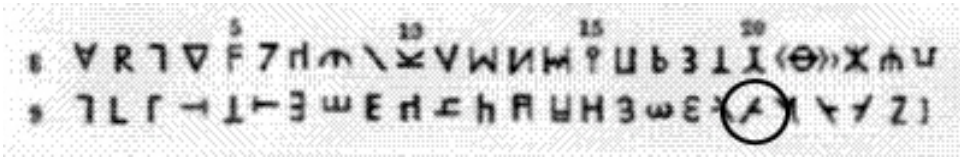
Definition and comments

This symbol is Greek Instrumental Notation Symbol 54 reflected in the y-axis.

This represents the instrumental first sharp of a′.

Example 1

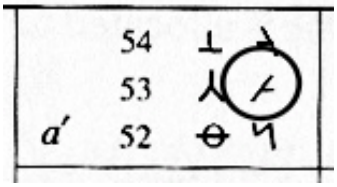
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2

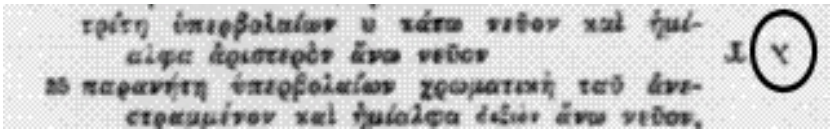
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 3 (Alypian glyph variant)

Alypius Mus., *Isagoge* Chrom. 1



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 384

IV.a.67 Greek Instrumental Notation Symbol 54

Sign	Similar Unicode	Beta Code	Count
		#659	4 instances, 1 author

Definition and comments

This represents the instrumental second sharp of a´.

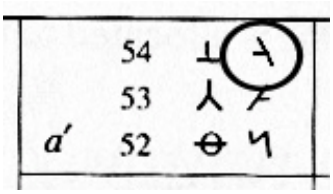
Example 1

Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

Example 2

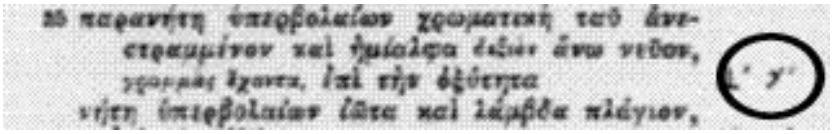
West, M.L., *Ancient Greek Music*



West, M.L., *Ancient Greek Music* (Clarendon Press, Oxford, 1992) 256

Example 3 (Alypian glyph variant)

Alypius Mus., *Isagoge* Chrom. 1



Jan, K., *Musici scriptores Graeci* (Georg Olms, Hildesheim, 1962) 384

IV.a.68 Greek Musical Diseme

Sign	Similar Unicode	Beta Code	Count
			

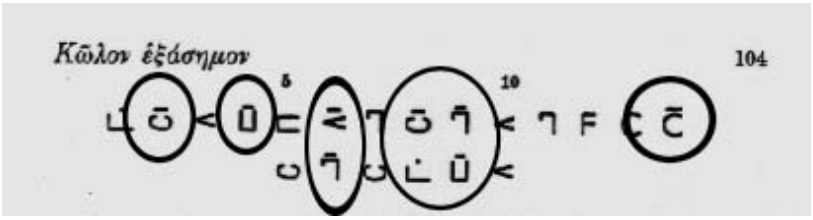
Definition and comments

A long nonspacing overbar which marks two beats. This diacritic may also stretch over two characters.

This form also combines with the Greek Musical Stigme, below.

Example 1

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 104



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 33

Example 2 (Combining with Stigme)

Sicili epitaphium

Jan, K., *Musici scriptores Graeci: Supplementum* (Georg Olms, Hildesheim, 1962) 38

IV.a.69 Greek Musical Triseme

Sign	Similar Unicode	Beta Code	Count
		#563	57 instances, 1 author

Definition and comments

A long nonspacing overbar with a small upright at the right which marks three beats.

There are three glyph variants in antiquity: examples of may be found in Winnington-Ingram (1975) 1, examples of may be found in Jan (1962 Supp) 38, an example of may be found in Johnson (2000) 76.

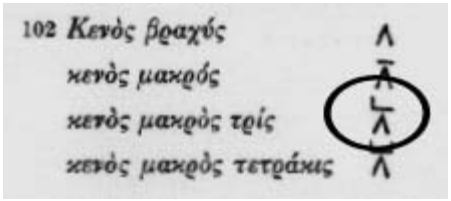
The form is the TLG's preferred glyph as it appears to be the more common.

This form also combines with the Greek Musical Stigme, below.

See also Greek Metrical Triseme below.

Example 1

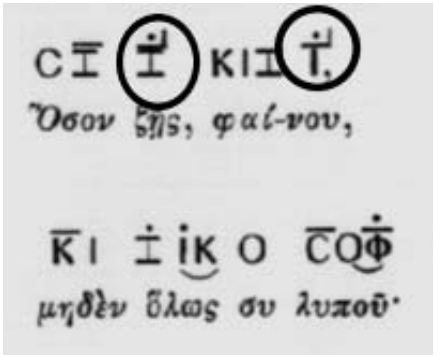
Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 102



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 32

Example 3 (Combining with Stigme)

Sicili epitaphium



Jan, K., *Musici scriptores Graeci: Supplementum* (Georg Olms, Hildesheim, 1962) 38

IV.a.70 Greek Musical Tetraseme

Sign	Similar Unicode	Beta Code	Count
		#564	4 instances, 1 author

Definition and comments

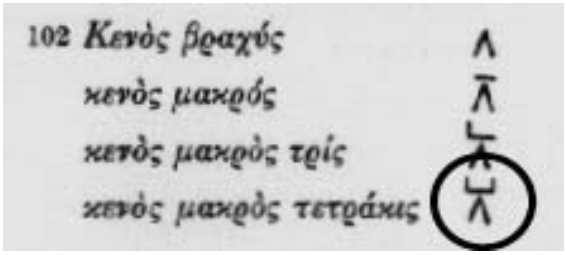
A long nonspacing overbar with a small upright at the left and right which marks four beats.

This form also combines with the Greek Musical Stigme, below.

See also Greek Metrical Tetraseme below.

Example 2

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 83



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 28

IV.a.71 Greek Musical Pentaseme

Sign	Similar Unicode	Beta Code	Count
		#310	80 instances, 27 authors

Definition and comments

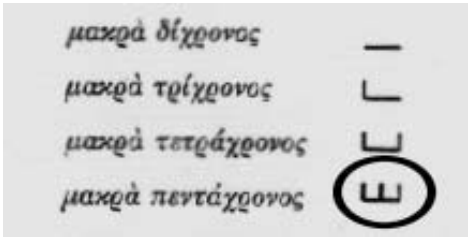
A long nonspacing overbar with a small upright to the left and to the right and at the center which mark five beats.

This form also combines with the Greek Musical Stigme, below.

See also Greek Metrical Pentaseme below.

Example 1[109]

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 83



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 28

[109] This character does not appear in the TLG as a combining form, instead we offer the example where the character is not combined with another.

IV.a.72 Greek Musical Stigme

Sign	Similar Unicode	Beta Code	Count
◌̇		See below	

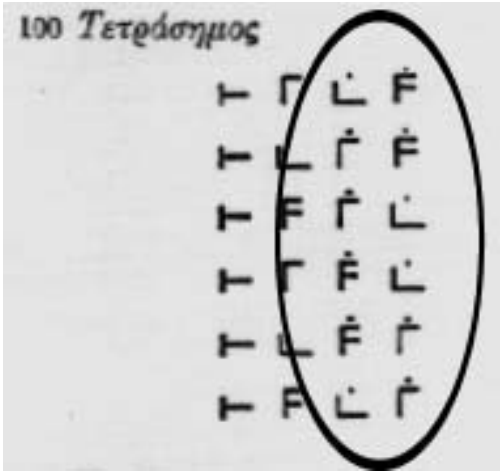
Definition and comments

This nonspacing dot appears above the musical letter, Diseme or Triseme. This diacritic may also stretch over two characters, in which case it appears above and in between the two characters it augments.

The Unicode 0307 COMBINING DOT ABOVE is very similar to this character. The question of how this would combine with the other combining forms given above is unclear. The TLG is uncertain whether this is a matter for rendering or for Unicode.

Example 1

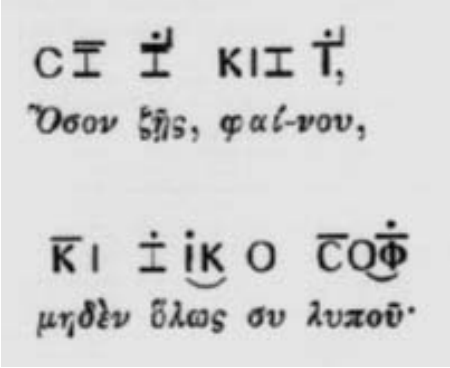
Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 100



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 32

Example 2

Sicili epitaphium



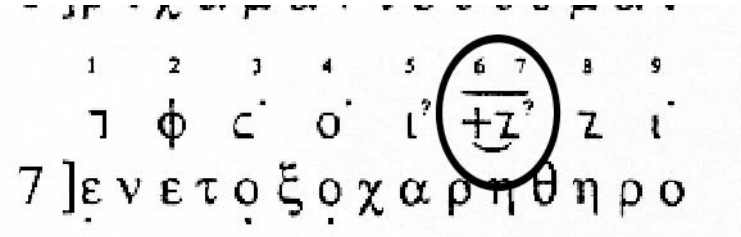
Jan, K., *Musici scriptores Graeci: Supplementum* (Georg Olms, Hildesheim, 1962) 38

IV.a.73 Greek Musical Unreadable Notation

Sign	Similar Unicode	Beta Code	Count
+			

Definition and comments
This character is used in modern publications to indicate that a note cannot be read, it appears as an outsized 002B PLUS SIGN.

Example 1



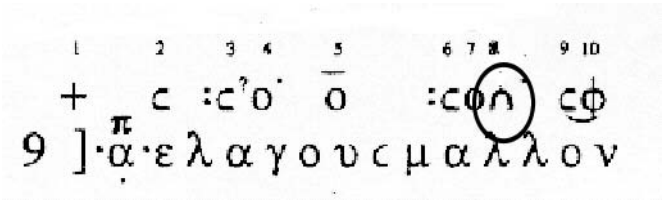
Johnson, W.A., "Musical Evenings in the Early Empire" in *JHS* 120 (2000) 61

IV.a.74 Greek Musical Leimma

Sign	Similar Unicode	Beta Code	Count
∩		#310 et al, see below	80 instances, 27 authors

Definition and comments
This character is used as a mark of lengthening or rest. The TLG notes two glyph variants: ∩ and Λ.

Example 1



Johnson, W.A., "Musical Evenings in the Early Empire" in *JHS* 120 (2000) 61

b. Ancient Greek Musical Characters: Additional Definition of Preexisting Characters

Table of Characters Included in this Section of the Proposal

Number		Name	Unicode	Comment
Ancient Greek Vocal Notation				
IV.b.1	Ω	Greek Vocal Notation Symbol 25	03A9	
IV.b.2	Ψ	Greek Vocal Notation Symbol 26	03A8	
IV.b.3	Χ	Greek Vocal Notation Symbol 27	03A7	
IV.b.4	Φ	Greek Vocal Notation Symbol 28	03A6	
IV.b.5	Υ	Greek Vocal Notation Symbol 29	03A5	
IV.b.6	Τ	Greek Vocal Notation Symbol 30	03A4	
IV.b.7	C	Greek Vocal Notation Symbol 31		
IV.b.8	Ρ	Greek Vocal Notation Symbol 32	03A1	
IV.b.9	Π	Greek Vocal Notation Symbol 33	03A0	
IV.b.10	Ο	Greek Vocal Notation Symbol 34	039F	
IV.b.11	Ξ	Greek Vocal Notation Symbol 35	039E	
IV.b.12	Ν	Greek Vocal Notation Symbol 36 · Greek Instrumental Notation Symbol 46	039D	
IV.b.13	Μ	Greek Vocal Notation Symbol 37	039C	
IV.b.14	Λ	Greek Vocal Notation Symbol 38	039B	
IV.b.15	Κ	Greek Vocal Notation Symbol 39 · Greek Instrumental Notation Symbol 34	039A	
IV.b.16	Ι	Greek Vocal Notation Symbol 40	0399	
IV.b.17	Θ	Greek Vocal Notation Symbol 41	0398	
IV.b.18	Η	Greek Vocal Notation Symbol 42	0397	
IV.b.19	Ζ	Greek Vocal Notation Symbol 43	0396	
IV.b.20	Ε	Greek Vocal Notation Symbol 44 · Greek Instrumental Notation Symbol 16	0395	
IV.b.21	Δ	Greek Vocal Notation Symbol 45	0394	
IV.b.22	Γ	Greek Vocal Notation Symbol 46	0393	
IV.b.23	Β	Greek Vocal Notation Symbol 47	0392	
IV.b.24	Α	Greek Vocal Notation Symbol 48	0391	

Greek Vocal Notation

V.b.1 Greek Vocal Notation Symbol 25

Sign	Unicode	Beta Code	Count
Ω	03A9	#641	4 instances, 1 author

Definition and comments
This represents the vocal f.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

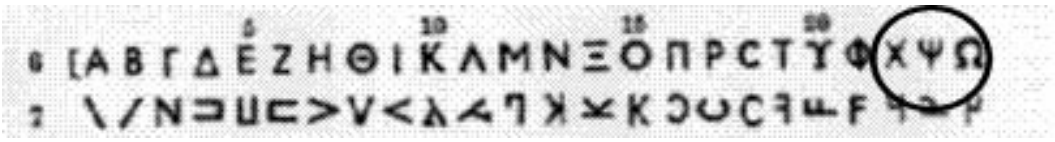
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.2 Greek Vocal Notation Symbol 26

Sign	Unicode	Beta Code	Count
Ψ	03A8		

Definition and comments
This represents the vocal first sharp of f.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.3 Greek Vocal Notation Symbol 27

Sign	Unicode	Beta Code	Count
Χ	03A7	#651	4 instances, 1 author

Definition and comments
This represents the vocal second sharp of f.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.4 Greek Vocal Notation Symbol 28

Sign	Unicode	Beta Code	Count
Φ	03A6	#577	11 instances, 2 author

Definition and comments
This represents the vocal g.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

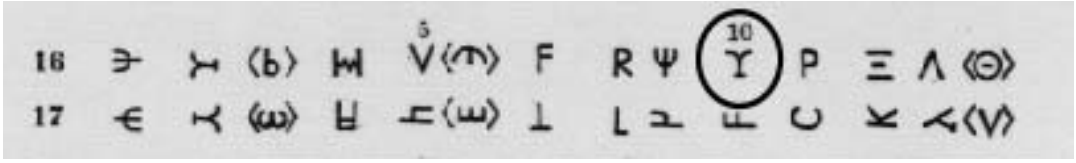
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.5 Greek Vocal Notation Symbol 29

Sign	Unicode	Beta Code	Count
Υ	03A5	#662	3 instances, 1 author

Definition and comments
This represents the vocal first sharp of g.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

V.b.6 Greek Vocal Notation Symbol 30

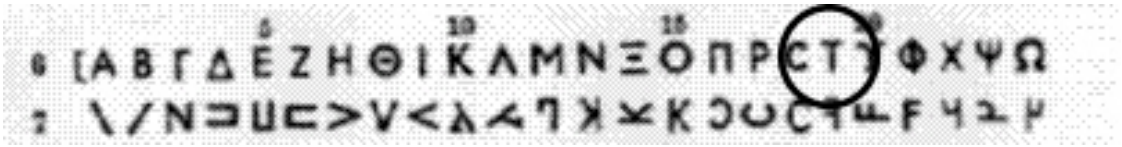
Sign	Unicode	Beta Code	Count
T	03A4	#652	6 instances, 1 author

Definition and comments

This represents the vocal second sharp of g.

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.7 Greek Vocal Notation Symbol 31

Sign	Unicode	Beta Code	Count
C	See below	#570	103 instances, 3 authors

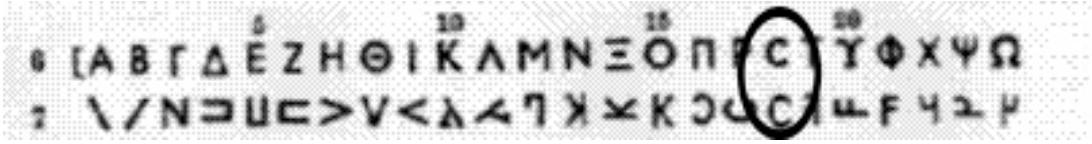
Definition and comments

This represents the vocal a.

This character is discussed with the proposal for the capital lunate sigma above.

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



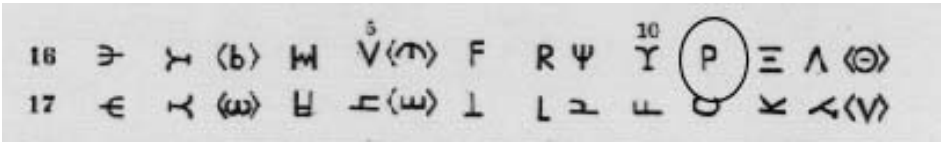
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.8 Greek Vocal Notation Symbol 32

Sign	Unicode	Beta Code	Count
P	03A1	#578	11 instances, 2 authors

Definition and comments
This represents the vocal first sharp of a.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.9 Greek Vocal Notation Symbol 33

Sign	Unicode	Beta Code	Count
Π	03A0	#603	9 instances, 1 author

Definition and comments
This represents the vocal second sharp of a.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

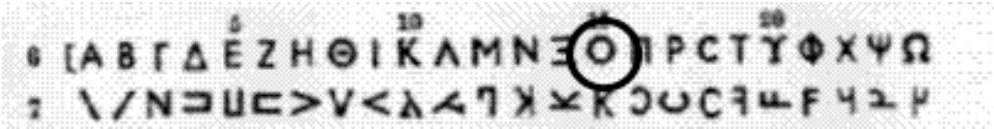
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.10 Greek Vocal Notation Symbol 34

Sign	Unicode	Beta Code	Count
O	039F	#628	8 instances, 1 author

Definition and comments
This represents the vocal b.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.11 Greek Vocal Notation Symbol 35

Sign	Unicode	Beta Code	Count
Ξ	039E	#629	5 instances, 1 author

Definition and comments
This represents the vocal first sharp of b.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.12 Greek Vocal Notation Symbol 36

Sign	Unicode	Beta Code	Count
N	039D	#583	13 instances, 2 authors

• Greek Instrumental Notation Symbol 46

Definition and comments
This represents the vocal second sharp of b.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.13 Greek Vocal Notation Symbol 37

Sign	Unicode	Beta Code	Count
M	039C	#579	16 instances, 2 authors

Definition and comments
This represents the vocal c´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.14 Greek Vocal Notation Symbol 38

Sign	Unicode	Beta Code	Count
Λ	039B	#593	25 instances, 2 authors

Definition and comments
This represents the vocal first sharp of c´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

V.b.15 Greek Vocal Notation Symbol 39

Sign	Unicode	Beta Code	Count
K	039A	#631	13 instances, 1 author

• Greek Instrumental Notation Symbol 34

Definition and comments
This represents the vocal second sharp of c´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11

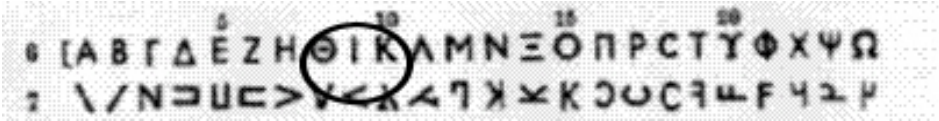
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.16 Greek Vocal Notation Symbol 40

Sign	Unicode	Beta Code	Count
I	0399	#580	17 instances, 2 authors

Definition and comments
This represents the vocal d´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



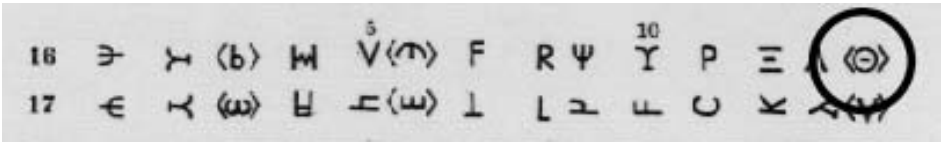
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.17 Greek Vocal Notation Symbol 41

Sign	Unicode	Beta Code	Count
Θ	0398	#581	7 instances, 2 authors

Definition and comments
This represents the vocal first sharp of d´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



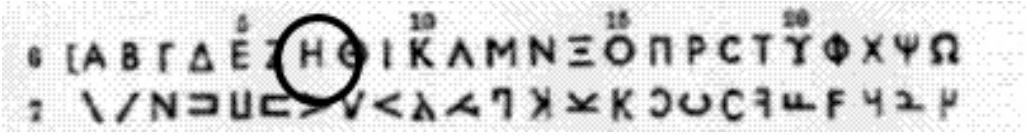
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 26

V.b.18 Greek Vocal Notation Symbol 42

Sign	Unicode	Beta Code	Count
H	0397	#642	11 instances, 1 author

Definition and comments
This represents the vocal second sharp of d´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



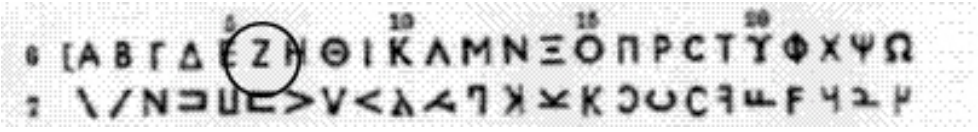
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.19 Greek Vocal Notation Symbol 43

Sign	Unicode	Beta Code	Count
Z	0396	#585	52 instances, 2 authors

Definition and comments
This represents the vocal e´.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.20 Greek Vocal Notation Symbol 44

Sign	Unicode	Beta Code	Count
Ε	0395	#587	16 instances, 2 authors

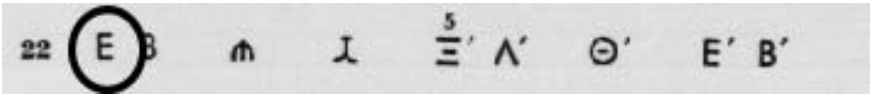
• Greek Instrumental Notation Symbol 16

Definition and comments

This represents the vocal first sharp of e´.

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.21 Greek Vocal Notation Symbol 45

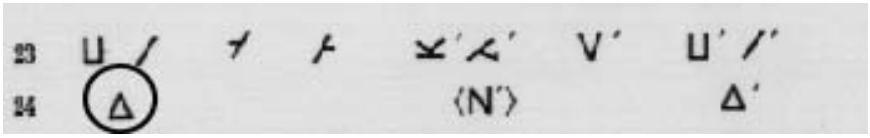
Sign	Unicode	Beta Code	Count
Δ	0394	#598, #630	8 instances, 2 authors

Definition and comments

This represents the vocal second sharp of e´.

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 27

V.b.22 Greek Vocal Notation Symbol 46

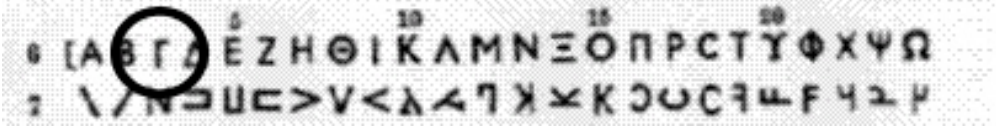
Sign	Unicode	Beta Code	Count
Γ	0393	#574	58 instances, 2 authors

Definition and comments

This represents the vocal f´.

Example 1

Aristides Quintilianus Mus., *De musica* 1.11



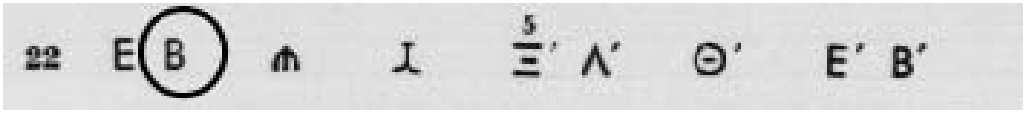
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.23 Greek Vocal Notation Symbol 47

Sign	Unicode	Beta Code	Count
B	0392	#661	4 instances, 1 author

Definition and comments
This represents the vocal first sharp of f′.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



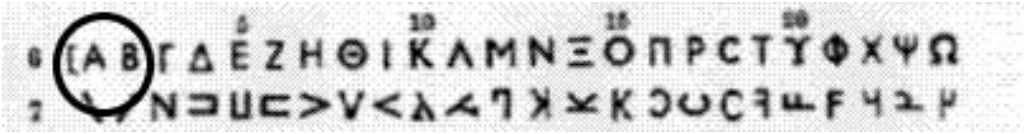
Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V.b.24 Greek Vocal Notation Symbol 48

Sign	Unicode	Beta Code	Count
A	0391	#660	6 instances, 1 author

Definition and comments
This represents the vocal second sharp of f′.

Example 1
Aristides Quintilianus Mus., *De musica* 1.11



Winnington-Ingram, R.P., *Aristides Quintiliani de musica libri tres* (Teubner, Leipzig, 1963) 25

V. Ancient Greek Metrical Characters

Introduction and Overview

Table of Characters Proposed

Number		Name	Unicode	Comment
V.b.1	×	Anceps	00D7	
V.b.2	◡	Breve	02D8	
V.b.3	–	Longum	2012 or 2013	
V.a.1	⏑̄	Metrical Long Over Short	02D8 + 0305	
V.a.2	◡̄	Metrical Short Over Long	02D8 + 0332	
V.a.3	⏑̄ ⏑̄	Metrical Long Over Two Shorts	02D8 + 0305 + 02D8 + 0305	
V.a.4	◡̲ ◡̲	Metrical Two Shorts Over Long	02D8 + 0332 + 02D8 + 0332	
V.a.5	⏑⏑	Metrical Two Shorts Joined	02D8 + 02D8	
V.a.6	⏒	Greek Metrical Triseme		
V.a.7	⏓	Greek Metrical Tetraseme		
V.a.8	⏔	Greek Metrical Pentaseme		

Introduction

For discussion of Greek and Roman meter, a standard set of non-combining forms has been developed. These are widely used in all aspects of works os scholarship pertaining to ancient poetry and music. The Classical Greek metrical system was developed between the 8th and 4th centuries BCE and is based on quantitative rhythm. This system has been highly influential, as Maas writes:

> Not all modern European literatures possess a highly developed metric, and those that do have derived if from the quantitative Greek meters. This is especially true of Latin metric and its derivatives, and also those of the Grecizing metric of such modern poems as Goethe's *Achilleis*, *Pandora*, and *Helena*.

This system has been in use since Classical times: we possess papyri which contain this notation.[110]

The system for representing the Greek quantitative metrics is based on the two characters for short and long syllables: ◡ and – respectively. So the Dactyl—a long followed by two shorts—is represented as: –◡◡. A further character is the *Anceps* which represents a syllable which may either be short or long. So, an Iambic trimeter is written as:

×–◡–×–◡–×–◡–[111]

Two short syllables which may be resolved into a long is represented by the *biceps* ◡◡. So, the Dactyllic hexameter is written out so:

–◡◡–◡◡ –◡◡–◡◡ –◡◡

Similarly, there are long syllables which may be resolved into two shorts: ⏑⏑. In Aeolian metrics the symbol oo is used to represent a foot where one of the two syllables may be either long or short. So the Asclepiadeus is written:

oo–◡◡––◡◡–◡–

A syllable which is usually short but may be long is represented: ◡. A syllable which is usually long but may be short is represented: ⏑. There are also symbols for Trisemes.: ⏓. Also, characters for four and five beats are recorded—being ⏑‿⏑ and ⏑‿⏑‿⏑ respectively.

Further characters include: position lost to syncopation or catalexis represented as ˽; frequent word end, ⋮; word end, |; verse or period end, ||; stanza end, |||; poem end, ⊗;

[110] For example, Oxyrhynchus Papyrus 210 (Treatise on Metres) in Grenfell & Hunt (1899) 41-52

[111] It will be noted that the typesetting of these symbols is rather inconsistent in this document. This is because we are relying partly on the current Unicode Standard and partly on graphic files to be able to represent these symbols more or less correctly.

hiatus, ᴴ; dovetail, ∫; responsion, ~; anaclasis, ¨; ictus, ′. A final symbol is the bridge, which indicates that a word-end is forbidden at that point in the scheme, ◌͡◌.

There are a few other, rarely used symbols which are all stacked versions of the characters given above. For instance, a long which may be resolved into a short stacked on top of an Anceps.

Representation in the Current Unicode Standard (3.2)

All possible non-stacking characters used in the Greek metrical notation are given in the table *Overview of Greek Metrical Notation* below. The majority of characters required for the representation of Greek meter are already present in Unicode Standard 3.2. The characters which are already satisfactorily present in Unicode will not be discussed further. Eleven characters cannot currently be encoded satisfactorily in Unicode 3.2.

Overview of Greek Metrical Notation

	Name	Unicode	Comment
×	Anceps	00D7	
◡	Breve	02D8	
–	Longum	2012 or 2013	
⏑̄	Metrical Long Over Short		Similar to 02D8 + 0305
⏒	Metrical Short Over Long		Similar to 02D8 + 0332
⏑̄⏑̄	Metrical Long Over Two Shorts		Similar to 02D8 + 0305 + 02D8 + 0305
⏒⏑	Metrical Two Shorts Over Long		Similar to 02D8 + 0332 + 02D8 + 0332
oo	Aeolian Basis		Similar to 2218 + 2218
⏑⏑	Metrical Two Shorts Joined		Similar to 02D8 + 02D8
◡̄	Breve Combining with Longum	02D8 + 0336	A second glyph variant may be encoded with 2312 + 0323
̂	Catalexis indicator	0020 + 032D	
⋮	Frequent Word-End Indicator	250A	
|	Word End Indicator	007C	
‖	Period End Indicator	2016 or 2225	
‖|	Stanza End Indicator	007C + 007C + 007C	
⊗	Poem End Indicator	2297	
H	Hiatus	<superscript> 0048	The character ⸗may also be used to represent a hiatus[112] the Unicode of which is 2307.
∫	Dovetail	0283 or possibly 222B	
~	Responsion	007E	
¨	Anaclasis	00A8	
′	Ictus	0301	
a͡a	Bridge	0361	
⏑̄	Greek Metrical Triseme		
⏑̄⏑̄	Greek Metrical Tetraseme		
⏑̄⏑̄⏑̄	Greek Metrical Pentaseme		

[112] See Raven (1965) 13

Comments on Characters Proposed in Section a

This section contains eight characters. Approximations of characters 1-5 may be created using characters in the Unicode Standard; however there are several problems with these representations. For example,

- they are visually inaccurate;
- on occasion a character which is semantically one character may have to be encoded in such a way as to make into two characters (e.g., Long over two Shorts);
- it is necessary to occasionally stack metrical characters. So, for instance, it may be necessary to have Two Shorts over Long stacked over an Anceps. This becomes extremely difficult to effect were the Two Shorts over Long to be encoded as two separate characters.
- Further, in the specific case of the Double Short, to encode it with two Shorts would be visually confusing as the same meter will often contain both Shorts and Double Shorts (e.g. aeolo-chori-ambic and the dactylo-epitric).

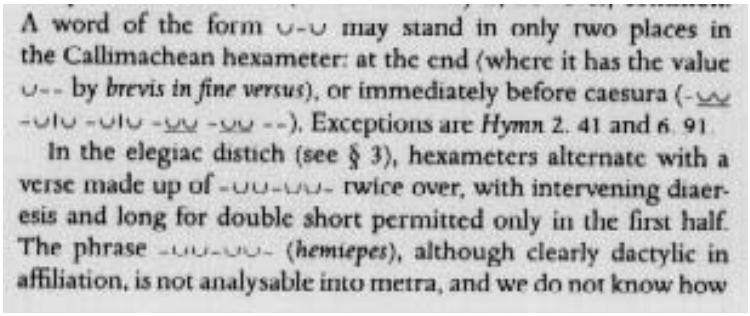
Characters 6-8 cannot currently be encoded in Unicode.

Comments on Characters Proposed in Section b

This section contains three characters. While there is a character 02D8 BREVE in Unicode 3.2, this character will not adequately represent the Greek Metrical Short because 02D8 is the non spacing version 0306 COMBINING BREVE, which is intended to be displayed above the letter. The characters discussed here, however, are typeset alongside the normal letters, as the following two examples from modern reference works show:

Example 1 Oxford Classical Dictionary 3rd Edition (1996) 972

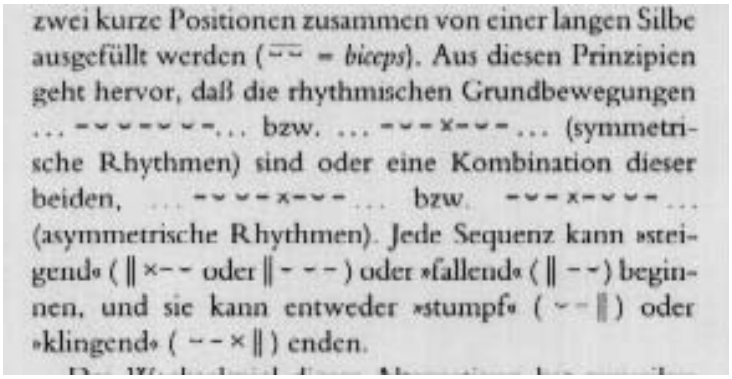
In the OCD[3] the preferred typesetting is to have the Breve line up with the bottom of the line, for the Breve to be approximately 0.5mm shorter than the lower case letters and to format the other characters around them.


A word of the form ⏑–⏑ may stand in only two places in the Callimachean hexameter: at the end (where it has the value ⏑– – by *brevis in fine versus*), or immediately before caesura (– ⏑⏑ – ⏑|⏑ – ⏑|⏑ – ⏑⏑ – ⏑⏑ – –). Exceptions are *Hymn* 2. 41 and 6. 91.

In the elegiac distich (see § 3), hexameters alternate with a verse made up of – ⏑⏑ – ⏑⏑ – twice over, with intervening diaeresis and long for double short permitted only in the first half. The phrase – ⏑⏑ – ⏑⏑ – (*hemiepes*), although clearly dactylic in affiliation, is not analysable into metra, and we do not know how

Example 2 Der Neue Pauly Volume 8 (2000) 118

The DNP however lines up the Longum with the top of the lower case letters, and vertically centers the others on this point. The unadorned Breve here is raise 1.5mm above the line.


zwei kurze Positionen zusammen von einer langen Silbe ausgefüllt werden (⏑⏑ = *biceps*). Aus diesen Prinzipien geht hervor, daß die rhythmischen Grundbewegungen ... – ⏑ – ⏑ – ⏑ – ... bzw. ... – ⏑ – x – ⏑ – ... (symmetrische Rhythmen) sind oder eine Kombination dieser beiden, ... – ⏑ – ⏑ – x – ⏑ – ... bzw. – ⏑ – ⏑ – x – ⏑ – ⏑ – ... (asymmetrische Rhythmen). Jede Sequenz kann »steigend« (‖ x – ⏑ oder ‖ – ⏑ –) oder »fallend« (‖ – ⏑) beginnen, und sie kann entweder »stumpf« (⏑ – ‖) oder »klingend« (– ⏑ x ‖) enden.

For this reason we have proposed 02D8 as a much closer alternative to the appearance of the actual Breve as used by scholars. Using the characters as currently present in Unicode gives an appearance much closer to that of DNP rather than the OCD.

a. Ancient Greek Metrical Characters: New Characters

Table of Characters Included in this Section of the Proposal

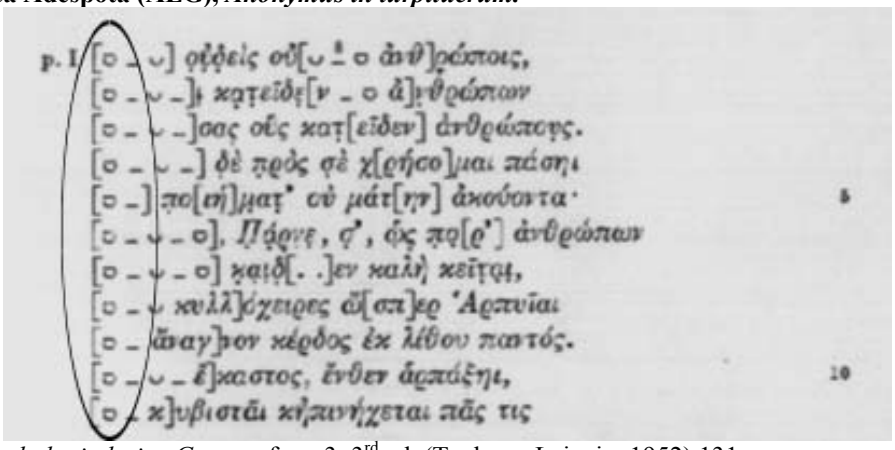
Number		Name	Similar Unicode	Comment
V.a.1	◡̄	Metrical Long Over Short	02D8 + 0305	
V.a.2	◡̆	Metrical Short Over Long	02D8 + 0332	
V.a.3	◡̄ ◡̄	Metrical Long Over Two Shorts	02D8 + 0305 + 02D8 + 0305	
V.a.4	◡̆ ◡̆	Metrical Two Shorts Over Long	02D8 + 0332 + 02D8 + 0332	
V.a.5	◡◡	Metrical Two Shorts Joined	02D8 + 02D8	
V.a.6	⏑‒	Greek Metrical Triseme		
V.a.7	⏑‒‒	Greek Metrical Tetraseme		
V.a.8	⏑‒‒‒	Greek Metrical Pentaseme		

V.a.1 Metrical Long Over Short

Sign	Similar Unicode	Beta Code	Count
‾ ◡	02D8 0304	%44	158 instances, 20 authors

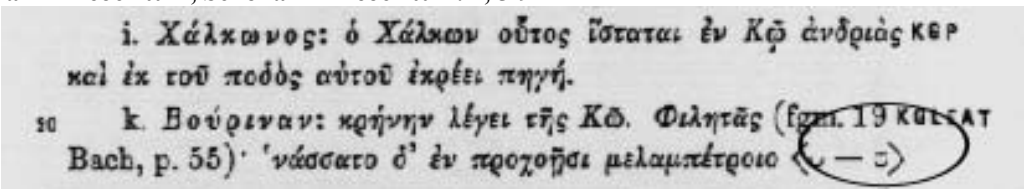
Definition and comments
A usually short Anceps.[113]

Example 1
Choliambica Adespota (ALG), *Anonymus in turpilucrum.*



Diehl, E., *Anthologia lyrica Graeca*, fasc. 3, 3rd ed. (Teubner, Leipzig, 1952) 131

Example 2
Scholia in Theocritum, Scholia in Theocritum. 7, 5-9k



Wendel, K., *Scholia in Theocritum vetera* (Teubner, Leipzig, 1914) 79-80

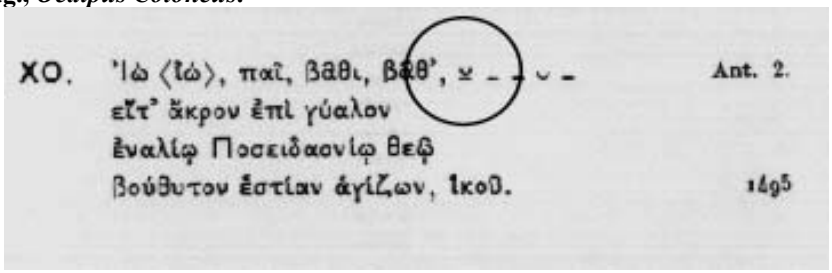
[113] Maas (1962) 28

V.a.2 Metrical Short Over Long

Sign	Similar Unicode	Beta Code	Count
⏑̲	02C9 0306	%45	111 instances, 26 authors

Definition and comments
A usually long Anceps.[114]

Example 1
Sophocles Trag., *Oedipus Coloneus*.



Dain, A., Mazon, P., *Sophocle*, vol. 3 (Les Belles Lettres, Paris, 1960) 139

[114] Maas (1962) 28

V.a.3 Metrical Long Over Two Shorts

Sign	Similar Unicode	Beta Code	Count
⏑⏑		%46	**80 instances, 27 authors**

Definition and comments

A part of the foot which may consist of either a long or two shorts, where the long is more frequent than the two shorts.[115]

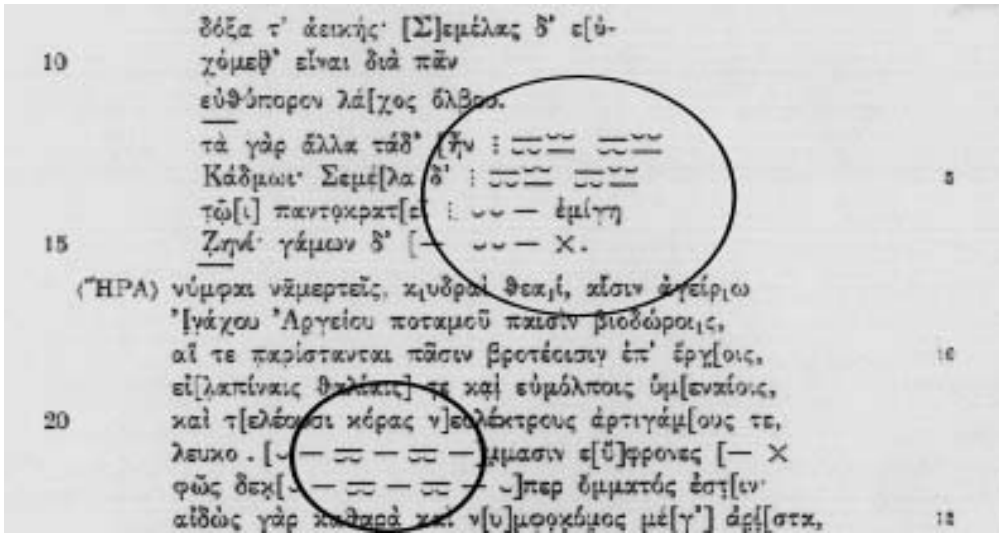
Example 1

Antimachus Eleg. et Epic., *Fragmenta (Wyss)*. Fragment 43

Wyss, B., *Antimachi Colophonii reliquiae* (Weidmann, Berlin, 1936) 23

Example 2

Aeschylus Trag. Atheniensis, *Fragmenta (Mette)*. Tetralogy 34 play A fragment 355



Mette, H.J., *Die Fragmente der Tragödien des Aischylo*s (Akademie-Verlag, Berlin, 1959) 133

[115] Maas (1962) 25

V.a.4 Metrical Two Shorts Over Long

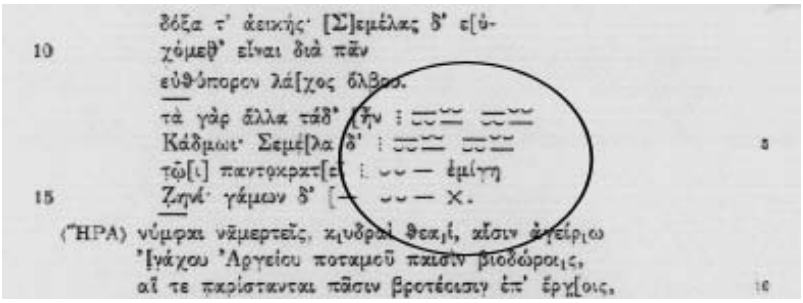
Sign	Similar Unicode	Beta Code	Count
⏑ ⏑		%42	55 instances, 13 authors; (Papyri) 10 instances, 2 authors; (Inscr) 29 instances, 4 authors

Definition and comments

A part of the foot which may consist of either a long or two shorts, where the two shorts are more frequent than the long.[116]

Example 1

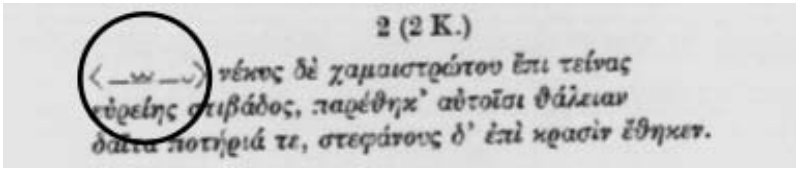
Aeschylus Trag. Atheniensis, *Fragmenta* (Mette). Tetralogy 34 play A fragment 355



Mette, H.J., *Die Fragmente der Tragödien des Aischylo*s (Akademie-Verlag, Berlin, 1959) 133

Example 2

Alcmaeonis, *Alcmaeonis*. Fragment 2.



Bernabé, A., *Poetarum epicorum Graecorum testimonia et fragmenta*, pt. 1 (Teubner, Leipzig, 1987) 33

[116] Maas (1962) 25

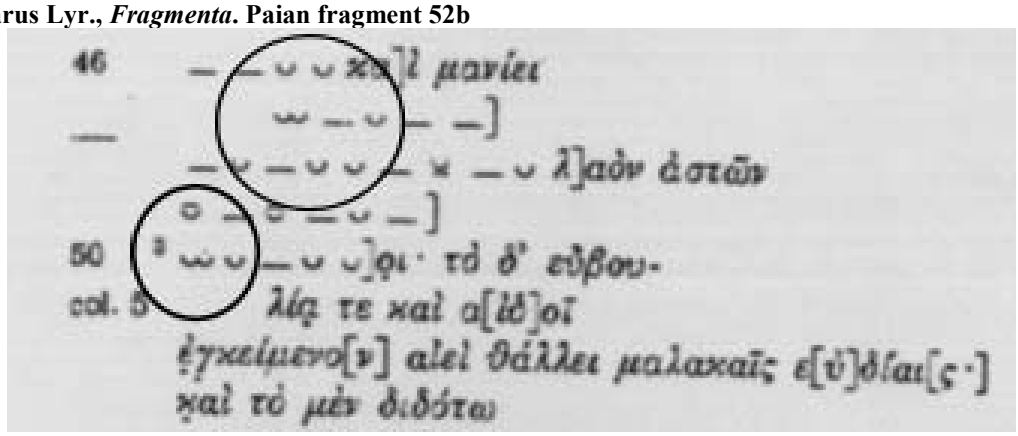
V.a.5 Metrical Two Shorts Joined

Sign	Similar Unicode	Beta Code	Count
⏑		%141	8 instances, 1 author

Definition and comments

This character is used in certain meters (aeolo-chori-ambic and dactylo-epitric) to represent a long which may not be resolved into a double short. This is especially prevalent in Attic drama, notably comic spoken verse.[117]

Example 1 (Note how this symbol is used here in conjunction with separate shorts)
Pindarus Lyr., *Fragmenta*. Paian fragment 52b



Snell, B., *Pindari carmina cum fragmenti*s, 3rd ed. (Leipzig, 1959) 122-3

[117] See Parker, L.P.E., "metre, Greek" in *OCD*[3] (1996) 970

V.a.6 Greek Metrical Triseme

Sign	Similar Unicode	Beta Code	Count
⏑		#563	57 instances, 1 author

Definition and comments

A long nonspacing horizontal bar with a small upright at the right which marks three beats.

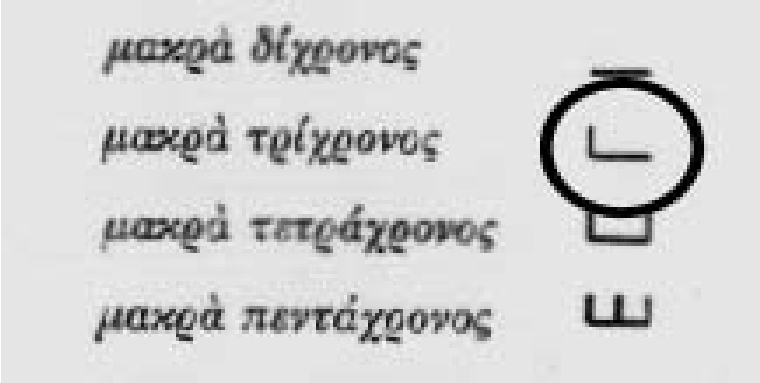
There are two glyphs in antiquity: examples of ⎿‾⏌ may be found in Winnington-Ingram,[118] examples of ‾⏌ may be found in Jan.[119]

The form ‾⏌ is the more common.

See also Greek Musical Triseme in the musical section above.

Example 1 (Non-combining form)

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 83



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 28

[118] Winnington-Ingram (1975) 1

[119] Jan (1962:Supp) 38

V.a.7 Greek Metrical Tetraseme

Sign	Similar Unicode	Beta Code	Count
⏑		#564	4 instances, 1 author

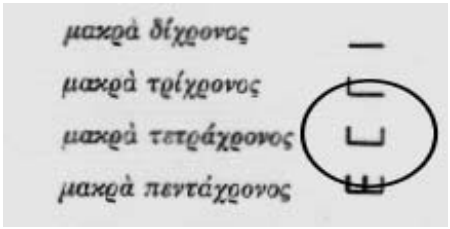
Definition and comments

A long nonspacing horizontal bar with a small upright at the left and right which marks four beats. This symbol occurs in Najock (1975).

See also Greek Musical Tetraseme in the musical section above.

Example 1

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 83



Najock, D., *Anonyma de musica scripta Bellermanniana*. (Leipzig, Teubner, 1975) 28

V.a.8 Greek Metrical Pentaseme

Sign	Similar Unicode	Beta Code	Count
⏑⏑			

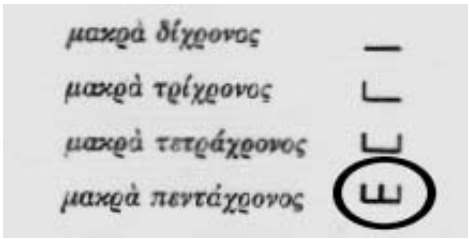
Definition and comments

A long nonspacing horizontal bar with a small uprights at the left and right and the center which mark five beats. This symbol occurs in Najock (1975).

See also Greek Musical Pentaseme in the musical section above.

Example 1

Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* Section 83



Najock, D., *Anonyma de musica scripta Bellermanniana.* (Leipzig, Teubner, 1975) 28

b. Ancient Greek Metrical Characters: Additional Definition of Preexisting Characters

Table of Characters Included in this Section of the Proposal

Number		Name	Unicode	Comment
V.b.1	×	Anceps	00D7	
V.b.2	◡	Breve	02D8	
V.b.3	–	Longum	2012 or 2013	

V.b.1 Metrical Anceps

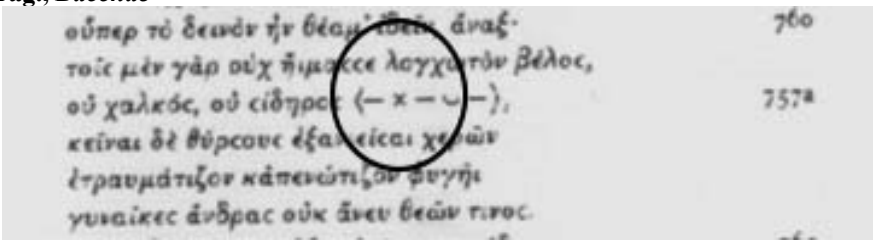
Sign	Unicode	Beta Code	Count
×	00D7	%43	1642 instances, 31 authors

Definition and comments

Denotes a syllable ambiguous between long and short.[120]

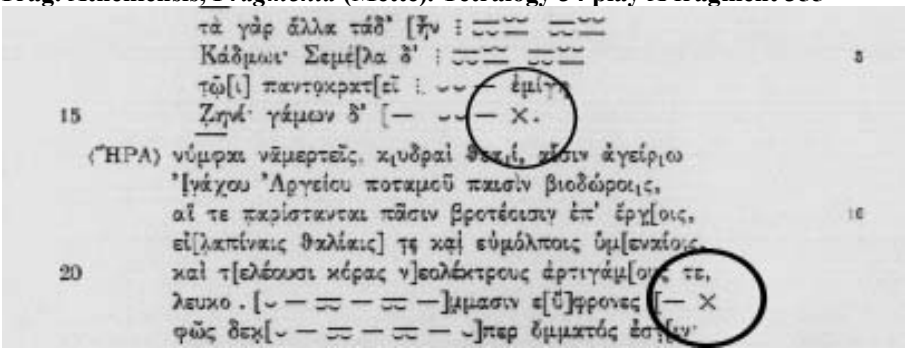
This character represents 00D7, however, METRICAL ANCEPS includes larger glyph variants. The glyph of the diacritic version already exists in Unicode as 033d COMBINING X ABOVE.

Example 1
Euripides Trag., *Bacchae*



Diggle, J., *Euripidis fabulae,* vol. 3 (Clarendon Press, Oxford, 1994) 323

Example 2
Aeschylus Trag. Atheniensis, *Fragmenta* (Mette). Tetralogy 34 play A fragment 355



Mette, H.J., *Die Fragmente der Tragödien des Aischylos* (Akademie-Verlag, Berlin, 1959) 133

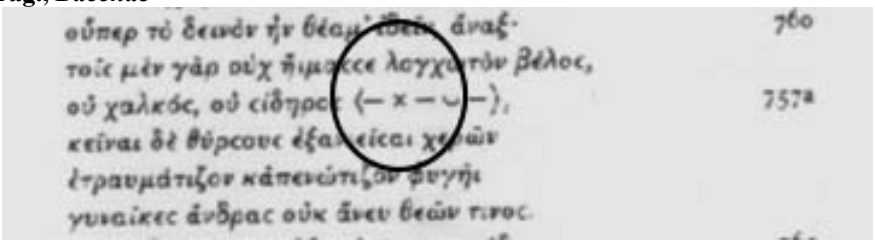
[120] Maas (1962) 24

V.b.2 Metrical Breve

Sign	Unicode	Beta Code	Count
◡	02D8	%40	

Definition and comments
This character represents a short syllable

Example 1
Euripides Trag., *Bacchae*



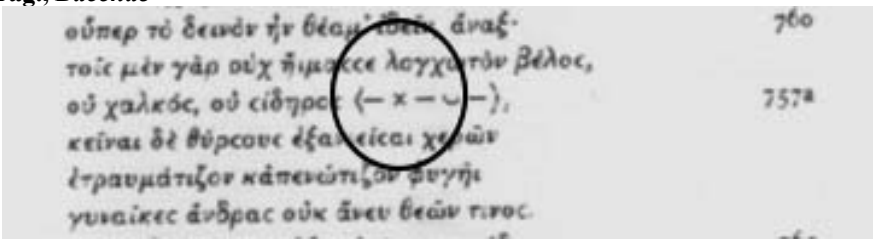
Diggle, J., *Euripidis fabulae,* vol. 3 (Clarendon Press, Oxford, 1994) 323

V.b.3 Metrical Longum

Sign	Unicode	Beta Code	Count
‒	2012, 2013	%41	

Definition and comments
This character represents a long syllable.

Example 1
Euripides Trag., *Bacchae*



Diggle, J., *Euripidis fabulae,* vol. 3 (Clarendon Press, Oxford, 1994) 323

VI. Ancient Greek Abbreviations in Inscriptions, Papyri and Manuscripts

Introduction and Overview

This section does not constitute a complete final proposal, rather it outlines the characters required to be able to correctly represent abbreviations in Greek texts. It also explains the reasons why this is a necessary addition to the Unicode Standard.

Abbreviations in Inscriptions[121]

Introduction

It is standard in Greek inscriptions to abbreviate words. This is done for reasons of brevity, something necessary on a piece of stone of defined length. Far from being idiosyncratic, these abbreviations were universally understood; indeed, that is their purpose since inscriptions placed in public spaces were intended to be read and understood by as many people as possible.

There are two standard methods of abbreviating on inscriptions

1. **Suspension.** (this accounts for 84.7% of all inscriptional abbreviations). This is where letters are dropped from the end of a word. E.g. ἀγαθός (good) becomes ΑΓΑ.[122]
2. **Contraction** (this accounts of 15.3% of all inscriptional abbreviations). This is where letters are dropped from the middle of a word. E.g. Χριστός (Christ) becomes ΧC.

Furthermore abbreviations are indicated by certain abbreviation marks. Many of these may currently be encoded using the Unicode Standard, however a great many cannot. There are two methods of indicating an abbreviation:

1. Changing the position or shape or both of one or more of the letters in the word
2. Adding a special, conventional sign.

[121] This section is based closely on Avi-Yonah (1974)

[122] Note that inscriptions are written in block capitals and without spaces between words.

1. Changing the position or shape or both of one or more of the letters in the word

There are several forms that method (1) may take, many may be accommodated in the current Unicode Standard. The following cannot currently be encoded:

a. Placing letters one over another. "This is the most common method of indicating abbreviation by a change in the position of the letters."[123] Furthermore, if the final letter is an omega, then elongating it and placing it over the final two letters of the shortened word

b. Placing letters under another

c. Placing letters within the previous letter. This only occurs with the letters Γ, Λ, Ο and Π which allow space for another letter inside.

d. There are several conventional and common ligatures. For example

   i ⸸, for the letters Chi and Rho, which is used as an abbreviation for many words including chorus and Christ. A form of this ligature may currently be found in the Unicode Standard: 2627 CHI RHO (this is the form given here).

   ii ⳨, for the letters Pi and Rho. Again this is an extremely common conventional ligature for very many words including πρός (at, to, towards) and πρεσβύτερος (elder, presbyter).

[123] Avi-Yonah (1974) 30

2. Adding a special conventional sign

There are several special conventional signs that may appear. Again several of these may be currently accommodated in the current Unicode Standard. The following cannot:

a. A single stroke across a letter. While 0336 COMBINING LONG STROKE OVERLAY is similar, it is not placed correctly to accurately represent the original Greek and does not combine well with uppercase Greek letters.

b. A diagonal stoke through a letter. While 0338 COMBINING LONG SOLIDUS OVERLAY is similar, it is not placed correctly to accurately represent the original Greek and does not combine well with uppercase Greek letters. The 'letter' in the current Unicode Standard, 03D7 GREEK KAI SYMBOL, is more correctly formed in this fashion. The 'tail' is in fact the standard diagonal stoke and far from representing καί alone, it may represent any word which is abbreviated to a single letter kappa.

c. Several other symbols are placed at the end of the abbreviated word to indicate an abbreviation. Most of these can be encoded using the current Unicode Standard: +, S, 8, < and ~ for example. However, the following cannot currently be encoded:

   i The omicron-upsilon ligature. Latin versions of these already exist in the Unicode Standard:0222 LATIN CAPITAL LETTER OU, 0223 LAIN SMALL LETTER OU. Only the capital letter would be required in the Greek

   ii The Ivy leaf  .

   iii  (Proposed as Greek Instrumental Notation Symbol 27 above).

Further uses of the stacking characters

An alphabet of combining stacking characters would be important not only in the representation of abbreviations, but also in the representation of certain numerical characters. For example, stacking characters are necessary to represent tens of thousands of units.

The following example[124] shows these characters in action in a sum in addition:

,αυκδ	=	1,424
ϱγ		103
$\overset{\alpha}{\text{M}}$,βσπα		12,281
$\overset{\gamma}{\text{M}}$λ		30,030
$\overset{\delta}{\text{M}}$,γωλη		43,838

It is possible for very large numbers to be represented in this way. For instance:

71,755,875 = $\overset{,\zeta\varrho\sigma\varepsilon}{\text{M}}$,εωοε

[124] Taken from Heath (1921:1) 52

The following characters are therefore proposed:

VI.1 GREEK CAPITAL LETTER OMICRO UPSILON

VI.2 GREEK IVY LEAF SYMBOL

VI.3 GREEK COMBINING HORIZONTAL STROKE

VI.4 GREEK COMBINING DIAGONAL STROKE

VI.5 GREEK PI RHO SYMBOL

VI.6-37 A complete alphabet of characters that will stack over other letters. This will also need to include the Stigma, Digamma, Koppa, Archaic Koppa, Roman Letter S, the Number 8, < and Greek Instrumental Notation Symbol 27.

VI.38-70 A complete alphabet—plus the same additional letters as for VI.6-37 above—which will appear below the previous letter.

VI.71-102 A complete alphabet—plus the same additional letters as for VI.6-37 above—which will appear in the middle of the previous letter.

VI.103-127 A complete lowercase alphabet of letters that will stack over other letters.

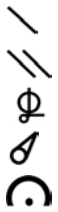
Abbreviations in Papyri

Summary

While papyri use the same method of abbreviation that inscriptions use, there are about 30 additional characters which are regularly found in papyri which would need to be included.

As with the inscriptions, these abbreviations are conventional and not the whim of any single scribe. Indeed, the abbreviations are intended to be understood by anyone reading the text.

These characters would include, for example, the following very common words:[125]



εἶναι to be
εἰσίν they are
φησίν s/he says
ἥλιος sun
πόλις city

Characters proposed

VI.127-*c.*160 Around 30 further characters used in papyri

[125] Examples taken from Kenyon (1974)

Abbreviations in Manuscripts

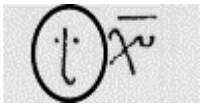
Summary
Manuscripts use a different type of abbreviation from inscriptions and papyri. Further, later manuscripts include miniscule letters and letter still mixtures of both upper case and miniscule letters as well as space between the words.

As with the inscriptions and papyri, these abbreviations are conventional and not the whim of any single scribe. Indeed, the abbreviations are intended to be understood by anyone reading the text.

There are about 100 characters, many of them combining forms, which would need to be included. These characters would include, for example:[126]

Alpha Iota Abbreviation

Gar Abbreviation



Tau Omicron Upsilon Abbreviation

Characters proposed
VI.*c.*160-*c.*260 Around 100 further characters used in papyri

[126] Examples taken from Allen (1974)

VII. Modern New Testament Editorial Characters

Introduction and Overview

Table of Characters Proposed

Number	Character	Name	Unicode	Comment
Modern New Testament Editorial Sigla				
VII.a.1	⸋	Substitution Marker		Similar to <superscript> 231C and <superscript> 250C
VII.a.2	⸌	Repeat Substitution Marker		
VII.a.3	⸍	Opening Substitution Bracket		
VII.a.4	⸎	Closing Substitution Bracket		
VII.a.5	⸏	Repeat Opening Substitution Bracket		
VII.a.6	⸐	Repeat Closing Substitution Bracket		
VII.a.7	⸑	Interpolation Marker		
VII.a.8	⸒	Repeat Interpolation Marker		
VII.a.11	⸓	Closing Transposition Bracket		
VII.a.9	⸔	Transposition Marker		
VII.a.10	⸕	Opening Transposition Bracket		

Introduction

The most widely used and accepted edition of the New Testament in the original Greek is that of the United Bible Societies, edited by Nestle Sr., Nestle Jr. and Aland. In order to clearly and accurately represent and discuss the various textual variants in the New Testament while still leaving the text clear and readable, Nestle Jr. introduced a set of editorial characters into the United Bible Societies' edition.[127]

These editorial characters have become the recognized method of annotating the New Testament and are therefore required for accurate scholarly discussion of the new Testament.

These characters divide into two groups:

1. Modern New Testament Editorial Sigla,
2. Modern New Testament Editorial Abbreviations.

1. Modern New Testament Editorial Sigla

As the New Testament has held a central place in the West for 2,000 years, there exist myriad manuscripts with very many textual variants. While a 'Majority text' has largely been agreed upon, it is important for scholars to have access to these textual variants. The editorial system introduced by Nestle Jr. goes far beyond a standard system of critical apparatus: rather than simply referring the reader to the footnotes, the sigla in the text show the reader instantly exactly what sort of textual variants exist. So, for instance, there are sigla to show that a word or words have been substituted with others in the textual variants; there are sigla to show that there is extra text in the variants; there are sigla to show that a piece of text is missing from some or all of the textual variants. For a complete outline of the system please see below.

It will be noted that approximately half of these characters can currently be encoded without problem using the Unicode Standard. There are, however, 11 sigla which cannot currently be encoded. These are proposed below.

The TLG has encoded a different edition of the New Testament, therefore no TLG counts are provided in this section.

[127] Nestle, Nestle, Aland (1963) *64

Overview of Modern New Testament Editorial Sigla

Character	Name	Unicode	Comment
Modern New Testament Editorial Sigla			
⌜	Substitution Marker		Similar to <superscript> 231C and <superscript> 250C
⌜	Repeat Substitution Marker[128]		
⸢	Opening Substitution Bracket		
⸣	Closing Substitution Bracket		
⸢·	Repeat Opening Substitution Bracket		
·⸣	Repeat Closing Substitution Bracket		
⊤	Interpolation Marker		
⊤	Repeat Interpolation Marker		
º	Omission Marker	00B0	also 02DA
□	Opening Omission Bracket	<superscript> 25A1	
\	Closing Omission Bracket	<superscript> 002F	
⸗	Transposition Marker		
⸗	Opening Transposition Bracket		
⸗	Closing Transposition Bracket		
⁚	Alternative Punctuation Marker	<superscript> 003A	
¦	Separation Marker	00A6	
*	Textual Division Marker	002A	
‘	Opening Interlinear Text Bracket	2035	
’	Closing Interlinear Text Bracket	2032	

[128] In cases when there are more than two instances of substitution in one verse, the pattern is ⌜ 2 and so on. This also applies for the other characters.

2. Modern New Testament Editorial Abbreviations

The second set of special characters are the abbreviations for the groups of Biblical texts. For example, the 'majority text' is abbreviated to 𝔐. The Hebrew Old Testament text or the Egyptian groups of New Testament textual variants is abbreviated to 𝔎. These may currently be encoded with Unicode in the following manner:

𝔐	<font> 004D
𝔎	<font> 0048

A final character is the Hebrew Aleph (א) which is the name of a manuscript. This may currently be encoded using 05D0.

No characters from this sub-section are therefore proposed.

a. Modern New Testament Editorial Characters: New Characters

Table of Characters Included in this Section of the Proposal

Number	Character	Name	Unicode	Comment
Modern New Testament Editorial Sigla				
VII.a.1	⸤	Substitution Marker		Similar to <superscript> 231C and <superscript> 250C
VII.a.2	⸣	Repeat Substitution Marker		
VII.a.3	⸢	Opening Substitution Bracket		
VII.a.4	⸣	Closing Substitution Bracket		
VII.a.5	⸢·	Repeat Opening Substitution Bracket		
VII.a.6	·⸣	Repeat Closing Substitution Bracket		
VII.a.7	⸬	Interpolation Marker		
VII.a.8	⸬·	Repeat Interpolation Marker		
VII.a.9	⸍·	Closing Transposition Bracket		
VII.a.10	⸍	Transposition Marker		
VII.a.11	⸌	Opening Transposition Bracket		

VII.a.1 Substitution Marker

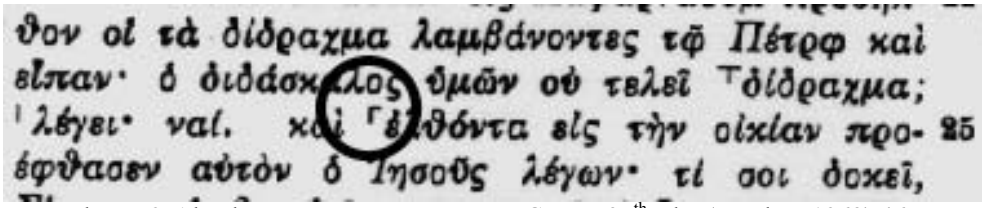
Sign	Similar Unicode	Beta Code	Count
⌜	<superscript> 231C <superscript> 250C		

Definition and comments

This character is placed at the start of a single word where an alternative reading is given in the *apparatus criticus*.

While there are similar characters in existence in the current Unicode standard, none are placed high enough in the line to accurately represent the Substitution Marker.

Example 1
Matthew 17.25



Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 46

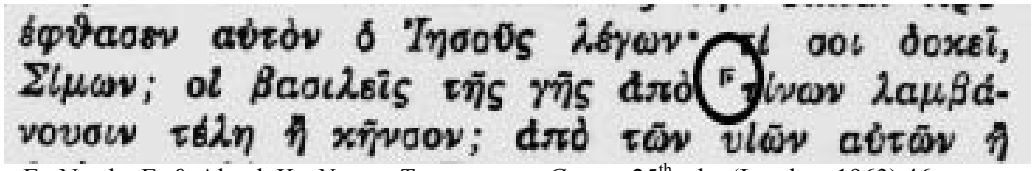
VII.a.2 Repeat Substitution Marker

Sign	Similar Unicode	Beta Code	Count
⌜·			

Definition and comments

This character is placed at the start of a single word where an alternative reading is given in the *apparatus criticus*. If there is a second alternative reading in one verse, this character is used instead of VII.a.1.

Example 1
Matthew 17.25



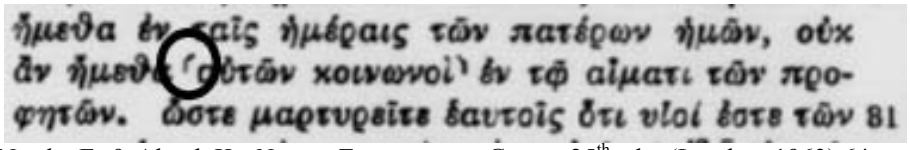
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 46

VII.a.3 Opening Substitution Bracket

Sign	Similar Unicode	Beta Code	Count
⸤			

Definition and comments
This character is placed at the start of a sequence of words where an alternative reading is given in the *apparatus criticus*.

Example 1
Matthew 23.30



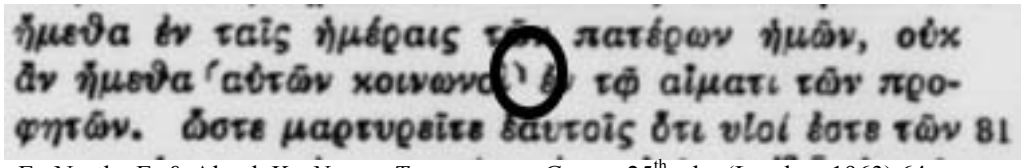
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 64

VII.a.4 Closing Substitution Bracket

Sign	Similar Unicode	Beta Code	Count
⸣			

Definition and comments
This character is placed at the end of a sequence of words where an alternative reading is given in the *apparatus criticus*.

Example 1
Matthew 23.30



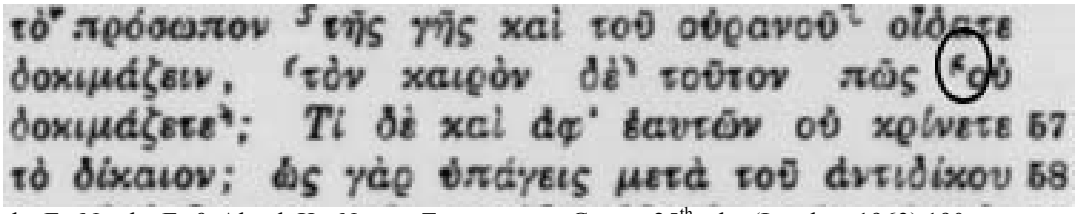
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 64

VII.a.5 Repeat Opening Substitution Bracket

Sign ⌈·	Similar Unicode	Beta Code	Count

Definition and comments
This character is placed at the start of a sequence of words where an alternative reading is given in the *apparatus criticus*. If there is a second alternative reading in one verse, this character is used instead of VII.a.3.

Example 1
Luke 12.56



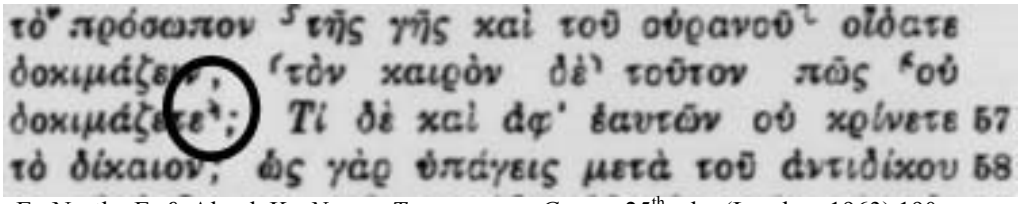
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 190

VII.a.6 Repeat Closing Substitution Bracket

Sign ·⌉	Similar Unicode	Beta Code	Count

Definition and comments
This character is placed at the end of a sequence of words where an alternative reading is given in the *apparatus criticus*. If there is a second alternative reading in one verse, this character is used instead of VII.a.4.

Example 1
Luke 12.56.



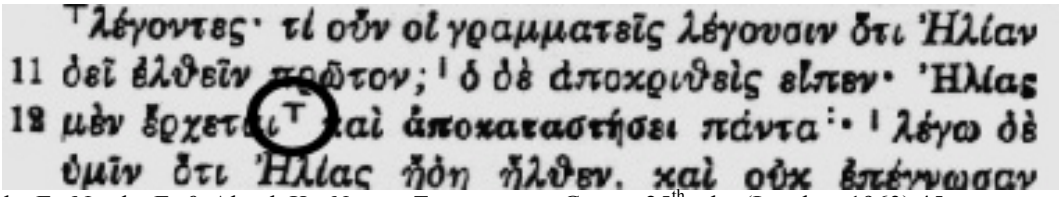
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 190

VII.a.7 Interpolation Marker

Sign ⊤	Similar Unicode	Beta Code	Count

Definition and comments
This character is placed at a point in the text where another version has a longer text. The further text is given in the *apparatus criticus*.

Example 1
Mathew 17.11



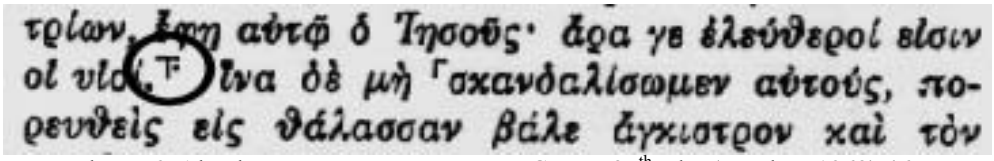
Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 45

VII.a.8 Repeat Interpolation Marker

Sign ⊤·	Similar Unicode	Beta Code	Count

Definition and comments
This character is placed at a point in the text where another version has a longer text. The further text is given in the *apparatus criticus*. If there is a second piece of interpolated text in one verse, this character is used instead of VII.a.7.

Example 1
Matthew 17.26

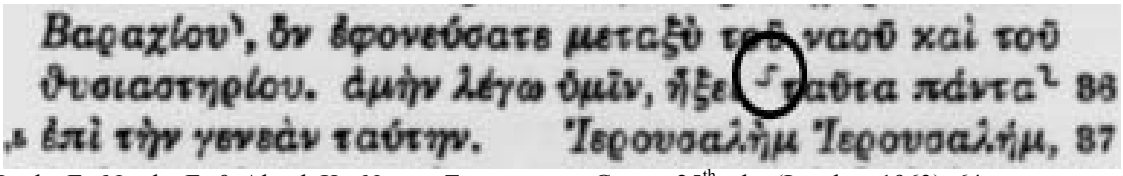


Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 46

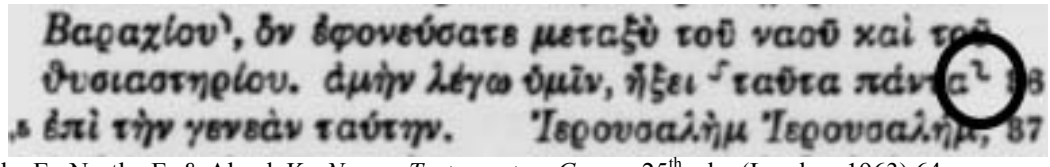
VII.a.9 Transposition Marker

Sign ⸜	Similar Unicode	Beta Code	Count
Definition and comments This character is placed at the start of a single word which has been transposed. The transposition is explained in the *apparatus criticus*. This character is new to this editorial system and will be introduced in the forthcoming new edition of the United Bible Societies *Novum Testamentum Graece*.			
Example 1 This character is not yet in use.			

VII.a.10 Opening Transposition Bracket

Sign ⸜	Similar Unicode	Beta Code	Count
Definition and comments This character is placed at the start of a sequence of words word which have been transposed. The transposition is explained in the *apparatus criticus*.			
Example 1 **Matthew 23.36**  Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 64			

VII.a.11 Closing Transposition Bracket

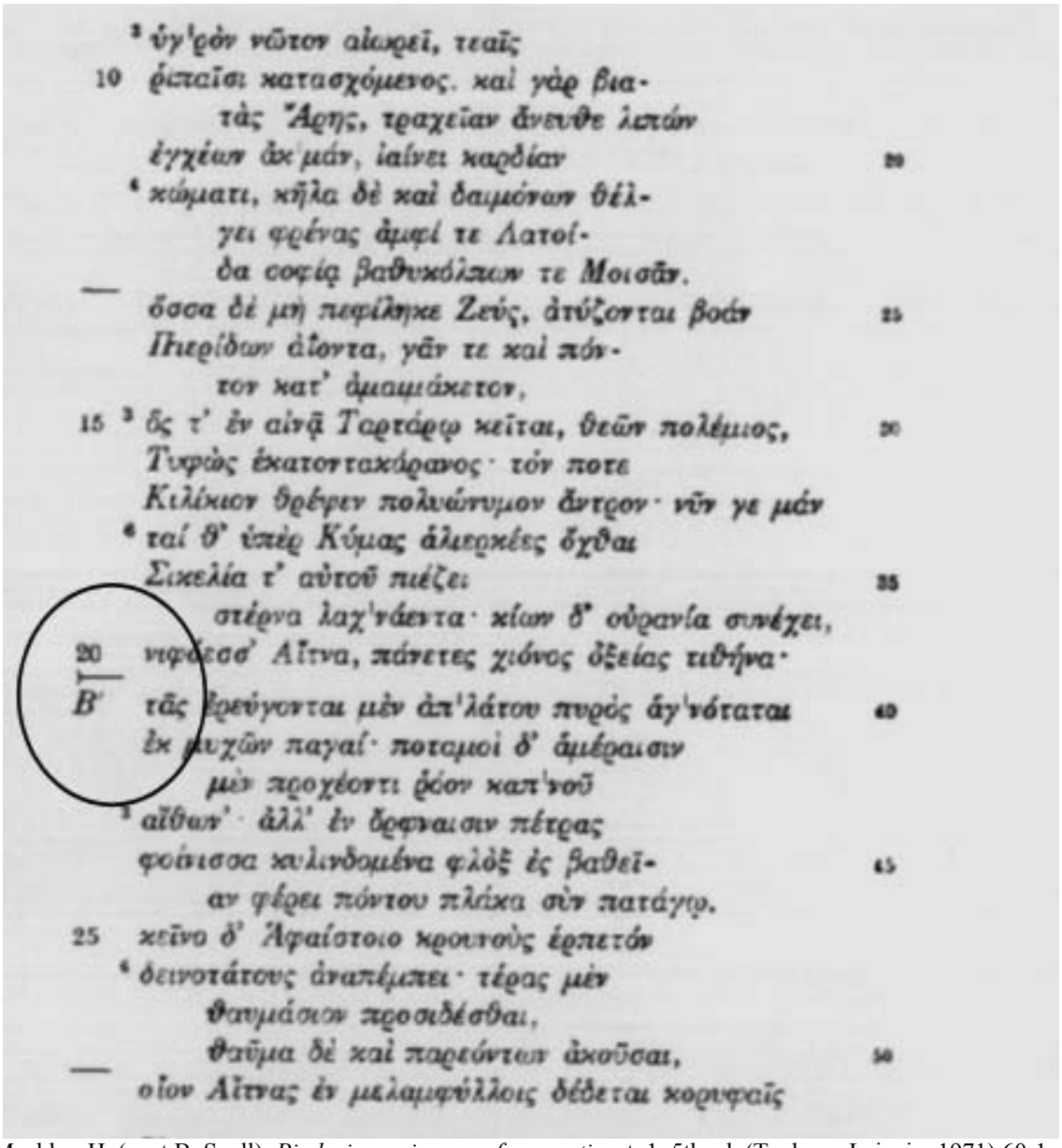
Sign ⸝	Similar Unicode	Beta Code	Count
Definition and comments This character is placed at the end of a sequence of words word which have been transposed. The transposition is explained in the *apparatus criticus*.			
Example 1 **Matthew 23.36**  Nestle, E., Nestle, E. & Aland, K., *Novum Testamentum Graece* 25th edn. (London, 1963) 64			

Appendices

Appendix 1: Longer Sample Texts

Greek Forked Paragraphos: Example 1

Pindarus Lyr., *Pythia*. Ode 1

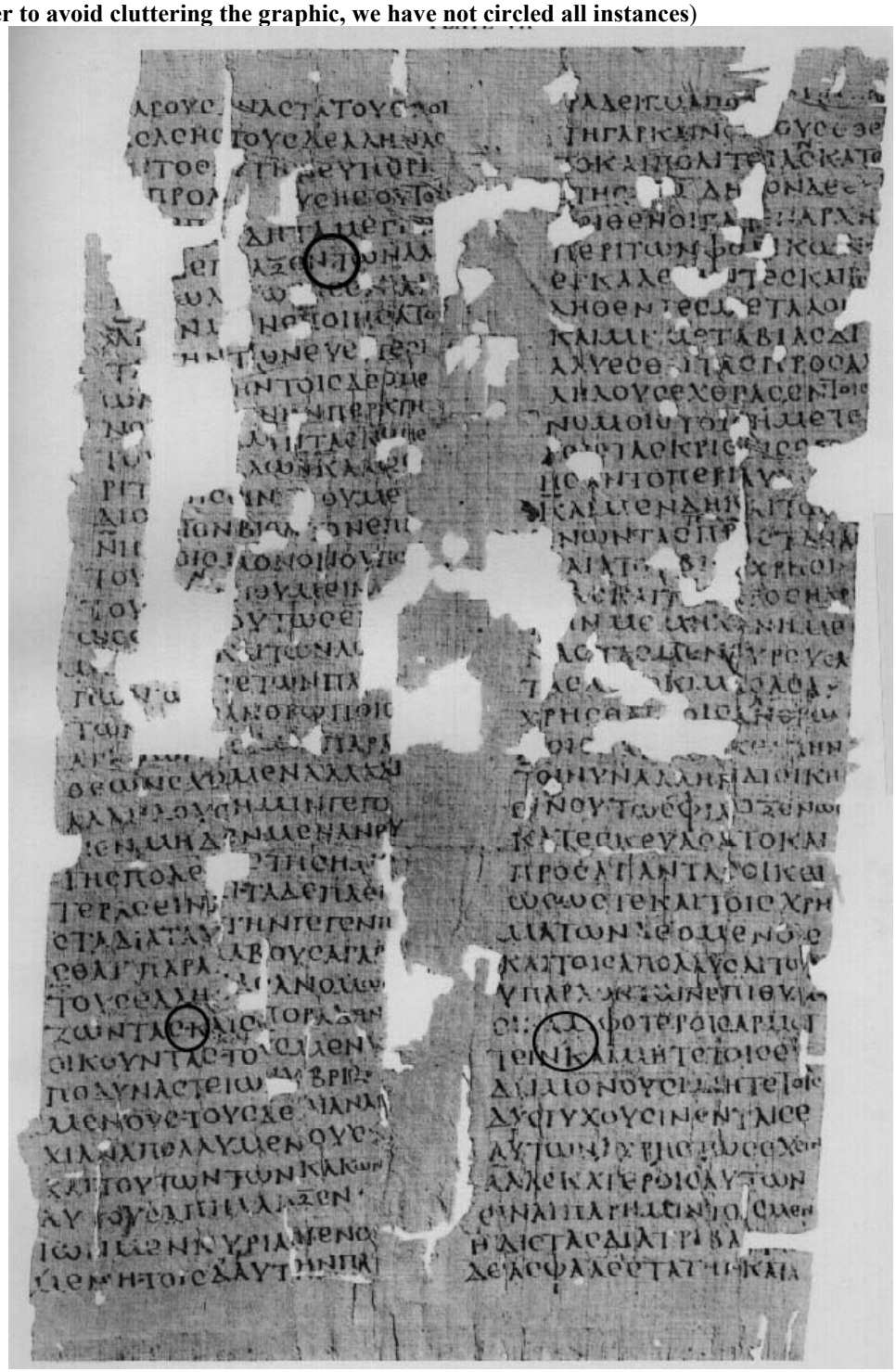


ὑγρὸν νῶτον αἰωρεῖ, τεαῖς
ῥιπαῖσι κατασχόμενος. καὶ γὰρ βιατὰς Ἄρης, τραχεῖαν ἀνευθε λιπών
ἐγχέων ἀκμάν, ἰαίνει καρδίαν
κώματι, κῆλα δὲ καὶ δαμόναν θέλγει φρένας ἀμφί τε Λατοίδα σοφίᾳ βαθυκόλπων τε Μοισᾶν.
ὅσσα δὲ μὴ πεφίληκε Ζεύς, ἀτύζονται βοάν
Πιερίδων ἰόντα, γᾶν τε καὶ πόντον κατ' ἀμαιμάκετον,
ὃς τ' ἐν αἰνᾷ Ταρτάρῳ κεῖται, θεῶν πολέμιος,
Τυφὼς ἑκατοντακάρανος· τὸν ποτε
Κιλίκιον θρέψεν πολυώνυμον ἄντρον· νῦν γε μὰν
ταί θ' ὑπὲρ Κύμας ἁλιερκέες ὄχθαι
Σικελία τ' αὐτοῦ πιέζει
στέρνα λαχνάεντα· κίων δ' οὐρανία συνέχει,
νιφόεσσ' Αἴτνα, πάνετες χιόνος ὀξείας τιθήνα·
τᾶς πυρεύγονται μὲν ἀπλάτου πυρὸς ἁγνόταται
ἐκ μυχῶν παγαί· ποταμοὶ δ' ἀμέραισιν
μὲν προχέοντι ῥόον καπνοῦ
αἴθωνα· ἀλλ' ἐν ὄρφναισιν πέτρας
φοίσσοντα κυλινδομένα φλὸξ ἐς βαθεῖαν φέρει πόντου πλάκα σὺν πατάγῳ.
κεῖνο δ' Ἀφαίστοιο κρουνοὺς ἑρπετόν
δεινοτάτους ἀναπέμπει· τέρας μὲν θαυμάσιον προσιδέσθαι,
θαῦμα δὲ καὶ παρεόντων ἀκοῦσαι,
οἷον Αἴτνας ἐν μελαμφύλλοις δέδεται κορυφαῖς

Maehler, H. (post B. Snell), *Pindari carmina cum fragmentis,* pt. 1, 5th ed. (Teubner, Leipzig, 1971) 60-1

Greek Ano, Mese And Kato Stigmes: Example 1a

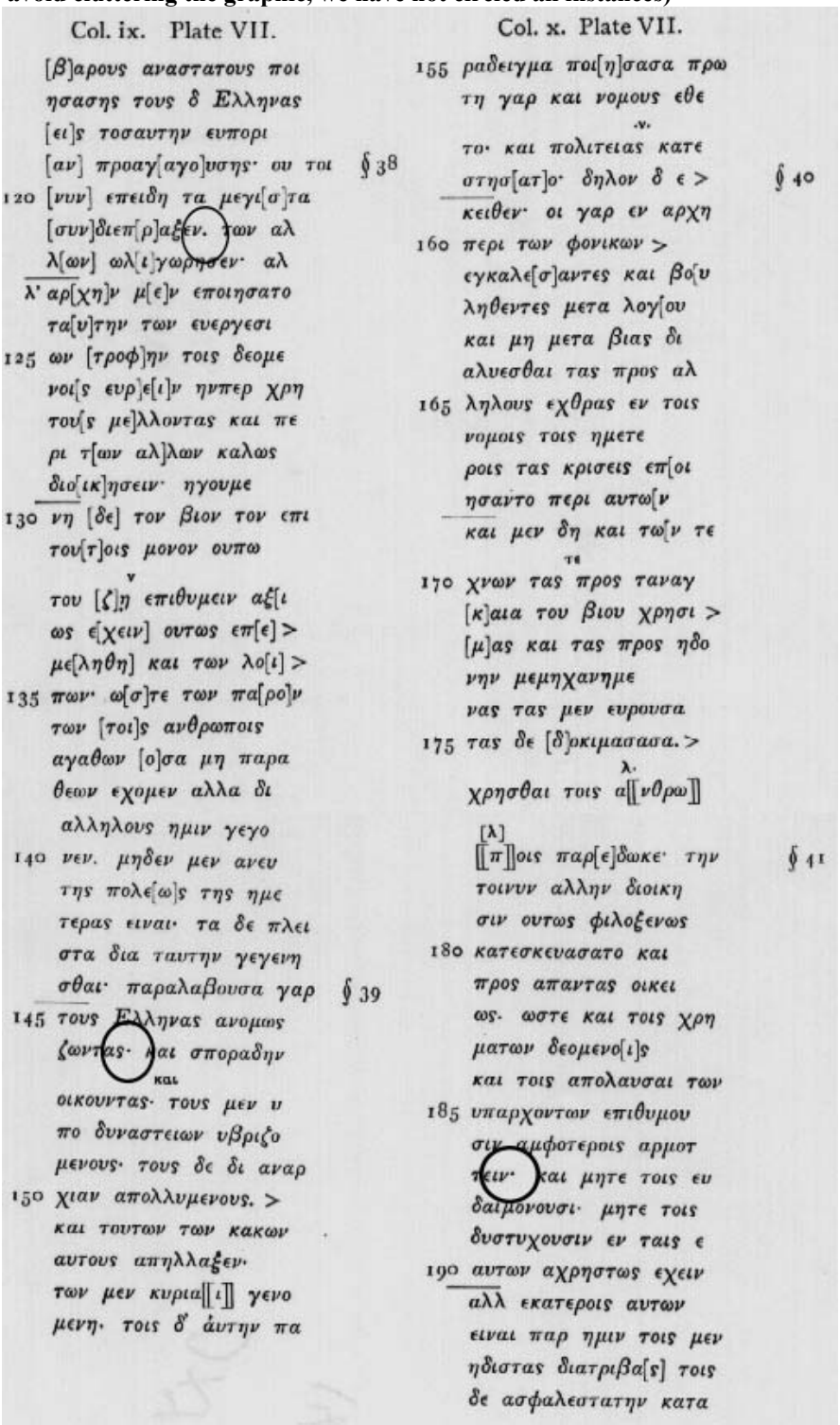
Oxyrhynchus Papyrus 844 Columns 9-10 (Isocrates, *Panegyricus*)
(In order to avoid cluttering the graphic, we have not circled all instances)



Grenfell, B.P.., & Hunt, A.S. *The Oxyrhynchus Papyri V* (London, 1908) Plate VII

Greek Ano, Mese And Kato Stigmes: Example 1b

Oxyrhynchus Papyrus 844 Columns 9-10 (Isocrates, *Panegyricus*) Transcription
(In order to avoid cluttering the graphic, we have not circled all instances)



Col. ix. Plate VII.

[β]αρους αναστατους ποι
ησασης τους δ Ελληνας
[ει]ς τοσαυτην ευπορι
[αν] προαγ[αγο]υσης· ου τοι § 38
[νυν] επειδη τα μεγι[σ]τα
[συν]διεπ[ρ]αξεν. των αλ
λ[ων] ω̄λ[ι]γωρησεν· αλ
λ' αρ[χη]ν μ[ε]ν εποιησατο
τα[υ]την των ευεργεσι
ων [τροφ]ην τοις δεομε
νοι[ς ευρ]ε[ι]ν ηνπερ χρη
του[ς με]λλοντας και πε
ρι τ[ων αλ]λων καλως
διο[ικ]ησειν· ηγουμε
νη [δε] τον βιον τον επι
του[τ]οις μονον ουπω
τ̄ν
του [ζ]ῃ επιθυμειν αξ[ι
ως ε[χειν] ουτως επ[ε] >
με[ληθη] και των λο[ι] >
πων· ω[σ]τε των πα[ρο]ν
των [τοι]ς ανθρωποις
αγαθων [ο]σα μη παρα
θεων εχομεν αλλα δι
αλληλους ημιν γεγο
νεν. μηδεν μεν ανευ
της πολε[ω]ς της ημε
τερας ειναι· τα δε πλει
στα δια ταυτην γεγενη
σθαι· παραλαβουσα γαρ § 39
τους Ελληνας ανομως
ζωντας· και σποραδην
και
οικουντας· τους μεν υ
πο δυναστειων υβριζο
μενους· τους δε δι αναρ
χιαν απολλυμενους. >
και τουτων των κακων
αυτους απηλλαξεν·
των μεν κυρια[[ι]] γενο
μενη· τοις δ' αὐτην πα

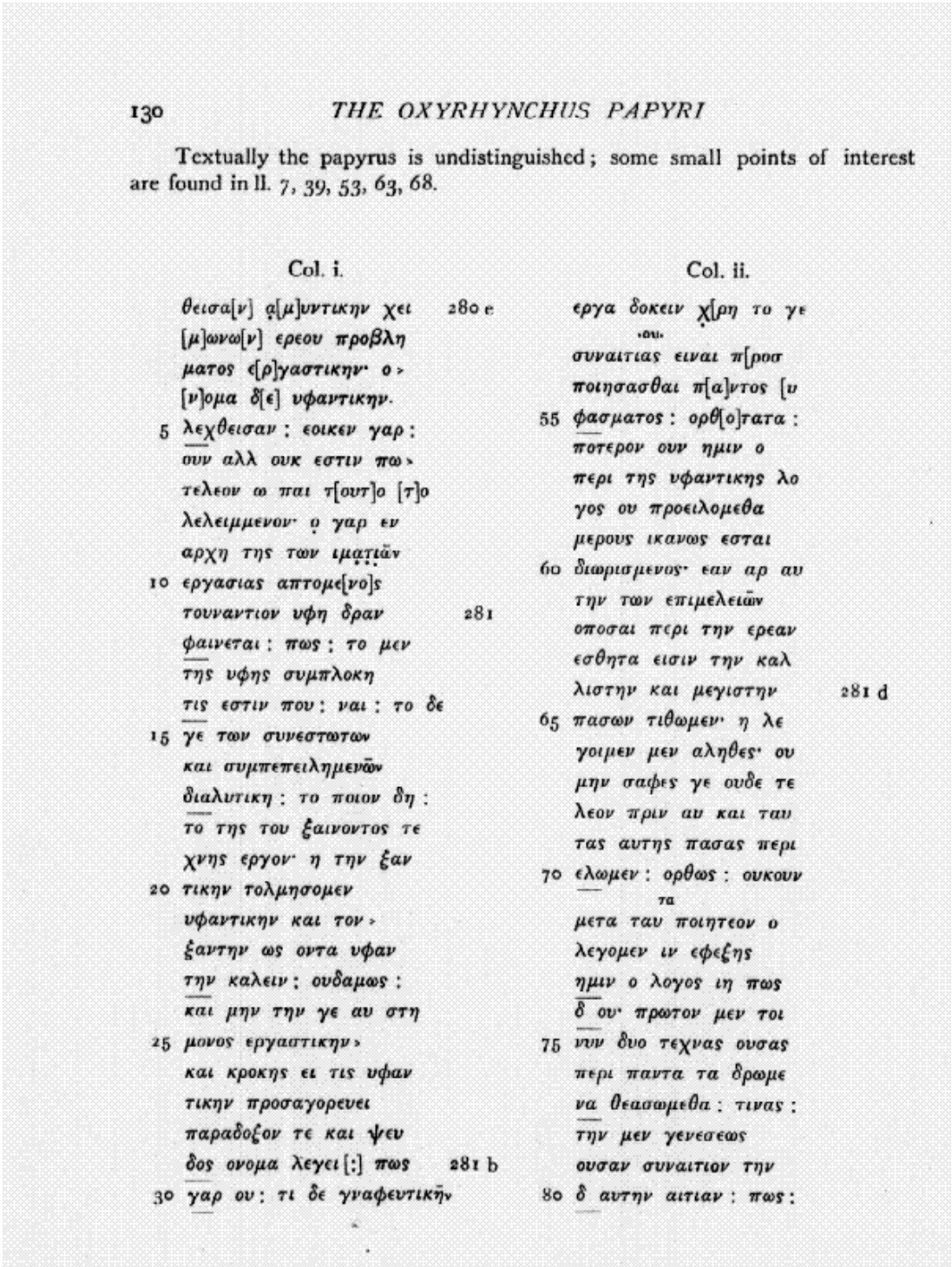
Col. x. Plate VII.

ραδειγμα ποι[η]σασα πρω
τη γαρ και νομους εθε
ν̄
το· και πολιτειας κατε
στησ[ατ]ο· δηλον δ ε > § 40
κειθεν· οι γαρ εν αρχη
περι των φονικων >
εγκαλε[σ]αντες και βο[υ
ληθεντες μετα λογ[ου
και μη μετα βιας δι
αλυεσθαι τας προς αλ
ληλους εχθρας εν τοις
νομοις τοις ημετε
ροις τας κρισεις επ[οι
ησαντο περι αυτω[ν
και μεν δη και τω[ν τε
τε
χνων τας προς ταναγ
[κ]αια του βιου χρησι >
[μ]ας και τας προς ηδο
νην μεμηχανημε
νας τας μεν ευρουσα
τας δε [δ]οκιμασασα. >
λ̄
χρησθαι τοις α[[νθρω]]
[λ]
[[π]]οις παρ[ε]δωκε· την § 41
τοινυν αλλην διοικη
σιν ουτως φιλοξενως
κατεσκευασατο και
προς απαντας οικει
ως· ωστε και τοις χρη
ματων δεομενο[ι]ς
και τοις απολαυσαι των
υπαρχοντων επιθυμου
σιν αμφοτεροις αρμοτ
τειν· και μητε τοις ευ
δαιμονουσι· μητε τοις
δυστυχουσιν εν ταις ε
αυτων αχρηστως εχειν
αλλ εκατεροις αυτων
ειναι παρ ημιν τοις μεν
ηδιστας διατριβα[ς] τοις
δε ασφαλεστατην κατα

Grenfell, B.P.., & Hunt, A.S. *The Oxyrhynchus Papyri V* (London, 1908) 296-7

Greek Dicolon: Example 2

Oxyrhynchus Papyri 1248, Col. 1 lines 1-30, Col. 2 lines 52-80



130 THE OXYRHYNCHUS PAPYRI

Textually the papyrus is undistinguished; some small points of interest are found in ll. 7, 39, 53, 63, 68.

Col. i.

θεισα[ν] ą[μ]υντικην χει 280 e
[μ]ωνω[ν] ερεου προβλη
ματος ϲ[ρ]γαστικην· ο›
[ν]ομα δ[ϵ] υφαντικην.
λεχθεισαν : εοικεν γαρ :
ουν αλλ ουκ εστιν πω›
τελεον ω παι τ[ουτ]ο [τ]ο
λελειμμενον· ọ γαρ εν
αρχη της των ιμą̇τιą̃ν
εργασιας απτομε[νο]ς
τουναντιον υφη δραν 281
φαινεται : πως : το μεν
της υφης συμπλοκη
τις εστιν που : ναι : το δε
γε των συνεστωτων
και συμπεπειλημενω̃ν
διαλυτικη : το ποιον δη :
το της του ξαινοντος τε
χνης εργον· η την ξαν
τικην τολμησομεν
υφαντικην και τον›
ξαντην ως οντα υφαν
την καλειν : ουδαμως :
και μην την γε αυ στη
μονος εργαστικην›
και κροκης ει τις υφαν
τικην προσαγορευει
παραδοξον τε και ψευ
δος ονομα λεγει[:] πως 281 b
γαρ ου : τι δε γναφευτικη̃ν

Col. ii.

εργα δοκειν χ̣[ρη το γε
συναιτιας ειναι π[ροσ
ποιησασθαι π[α]ντος [υ
φασματος : ορθ[ο]τατα :
ποτερον ουν ημιν ο
περι της υφαντικης λο
γος ου προειλομεθα
μερους ικανως εσται
διωρισμενος· εαν αρ αυ
την των επιμελειω̃ν
οποσαι περι την ερεαν
εσθητα εισιν την καλ
λιστην και μεγιστην 281 d
πασων τιθωμεν· η λε
γοιμεν μεν αληθες· ου
μην σαφες γε ουδε τε
λεον πριν αν και παν
τας αυτης πασας περι
ελωμεν : ορθως : ουκουν
τα
μετα ταυ ποιητεον ο
λεγομεν ιν εφεξης
ημιν ο λογος ιη πως
δ ου· πρωτον μεν τοι
νυν δυο τεχνας ουσας
περι παντα τα δρωμε
να θεασωμεθα : τινας :
την μεν γενεσεως
ουσαν συναιτιον την
δ αυτην αιτιαν : πως :

Grenfell, B.P. & Hunt, A.S., *The Oxyrhynchus Papyri,* Part 10 (London, 1914) 130

Appendix 2: Cross Reference to TLG Author-Work Numbers

For purposes of cross reference, we here give the Author-Work numbers of works referred to in this proposal (If they only appear in papyri or inscriptions, they are omitted from this list). Please see the online canon (url: http://www.tlg.uci.edu/) or Berkowitz and Squitier (1990) for more information.

Aeschylus Trag. Atheniensis, *Fragmenta (Mette).* 0085.008
Aëtius Med., *Iatricosum liber i.* 0718.001
Iatricorum liber xi. 0718.011
Alcaeus Lyr., *Fragmenta (Lobel & Page).* 0383.001
Alcmaeonis, *Alcmaeonis.* 0696.002
Anonyma de musica scripta Bellermanniana, *Anonyma de musica scripta Bellermanniana.* 1127.001
Anonymi Commentarius in Platonis Theaetetum, *Commentarius in Platonis Theaetetum* 1128.001
Anonymi Grammatici Gramm., *Supplementa artis Dionysianae vetusta.* 0072.001
Anonymus Londinensis Med., *Iatrica.* 0643.001
Antimachus Eleg. et Epic., *Fragmenta (Wyss).* 0239.002
Antiphon Soph. *Fragmenta (Diels & Kranz)* 1147.003
Archilochus Eleg. et Iamb., *Fragmenta lyrica.* 0232.002
Aristides Quintilianus Mus., *De musica.* 2054.001
Aristophanes Comic., *Fragmenta (Austin).* 0019.016
Aritoxenus Mus. 0088
Athenaeus Soph. 0008
Bucolicum, *Fragmenttum bucolicum* 1559.001
Callimachus Philol. 0533
Choliambica Adespota (ALG), *Anonymus in turpilucrum.* 1797.001
Cleopatra Alchem., *De ponderibus et mensuris.* 4335.001
Cratinus Comic., *Fragmenta (Austin).* 0434.004
Demosthenes Orat, *De Falsa Legatione* ..... {014.019
Didymus Caecus Scr. Eccl., *Commentarii in Job (1-4).* 2102.001
Didymus Gramm., *In Demosthenem.* 1312.003
Diogenes Phil. *Oenoandensis, Fragmenta.* 1321.011
Diophantus Math., *Arithmeticorum libri sex.* 2039.001
Doctrina patrum, *Doctrina patrum* 7051.001
Epicharmus Comic. et Pseudepicharmea 0521
Eupolis Comic. *Fragmenta (Austin).* 0461.004
Euripides Trag., *Fragmenta papyracea.* 0006.021
Bacchae. 0006.050
Fragmenta Alchemica, *Tractatus alchemicus* (fragmenta) (P. Holm.). 1379.002
Fragmenta Anonyma (PsVTGr), *Fragmenta.* 1817.001
Galenus 0057
Georgius Syncellus Chronogr., *Ecloga chronographica.* 3045.001
Heron Mech., *Geometrica.* 0559.009
Hierocles Phil., *In aureum carmen* 1429.001
Hippiatrica, *Appendices ad hippiatrica Berolinensia* 0738.002
*Excerpta Lugdunensi*a. 0738.008

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