

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

Doc Type: Working Group Document
Title: Proposal to encode Latin Letter Reversed Half H
Source: Andrew West and Michael Everson
Status: Individual Contribution
Action: For consideration by JTC1/SC2/WG2 and UTC
Date: 2019-03-25

1. Introduction

This is a proposal to encode a Latin epigraphic letter used in Roman inscriptions from the Roman provinces of Gaul, particularly the areas around the cities of Lyon (Lugdunum) and Nîmes (Nemausus) in modern France. The proposed character is a form of the capital letter H with no vertical stem on the left side (𐌺 𐌻), which is known in French epigraphic works as *H dimidiée* (“halved H”). The glyph is a mirror image of U+2C75/U+2C76 LATIN LETTER HALF H (𐌶 𐌷), and so we refer to it as REVERSED HALF H.

Although the inscriptions themselves show only a capital letter, it is not unreasonable that specialists may wish to cite words in title-case or lower-case forms, and since HALF H and REVERSED HALF H have parallel glyph forms, it is sensible to encode a casing pair for REVERSED HALF H.

Other letters used for Latin epigraphy (A7F7 and A7FB..A7FF) have been encoded as caseless (gc = Lo), but the relationship between 𐌺 𐌻 and 𐌶 𐌷 is quite different from that of letters like 𐌲 and 𐌳. The letters 𐌲 and 𐌳 are used as standalone abbreviations for whole words (F = *filius* “son”; 𐌲 = *filia* “daughter”; P = *puer* “boy”; 𐌳 = *puella* “girl”), so it makes no sense to lower case these two letters. In contrast, 𐌺 is used as a letter within words, so it is reasonable to expect that a name such as P̄ILOPATER in all capitals would title case to P̄ilopat̄er in headings or discussion.

We therefore propose to encode the Reversed Half H as a casing pair of characters in the Latin Extended-D block at U+A7F5 and U+A7F6, with the names LATIN CAPITAL LETTER REVERSED HALF H and LATIN SMALL LETTER REVERSED HALF H.

2. Unicode Properties

Block: Latin Extended-D

Script: Latin

UCD properties:

```
A7F5;LATIN CAPITAL LETTER REVERSED HALF H;Lu;0;L;;;;N;;;A7F6;  
A7F6;LATIN SMALL LETTER REVERSED HALF H;Ll;0;L;;;;N;;; A7F5;;A7F5
```

Code chart annotations for A7F5:

= H dimidiée

x latin capital letter half h - 2C75

Code Point	Glyph	Character Name
A7F5	ᨡ	LATIN CAPITAL LETTER REVERSED HALF H
A7F6	ᨢ	LATIN SMALL LETTER REVERSED HALF H

3. Discussion

The purpose of the Reversed Half H character appears to be to indicate aspirate *h* or rough breathing. It is found in word-initial position, and following *c*, *p*, and *t*, in words which have an original Greek χ , φ , and θ . Because of this it is reasonable to assume that this letter has the same kind of origin (whether directly or in parallel invention) as do the original *spiritus asper* (┌) and *spiritus lenis* (┐) characters devised by the Alexandrian grammarian Aristophanes in c. 200 BC. See the discussions of the origin of the Greek breathings by Carl Faulmann and Edward Maude Thompson in Fig. 1 and Fig. 2.

Fig. 1: Carl Faulmann, *Das Buch der Schrift enthaltened die Schriftzeichen und Alphabete aller Zeiten und aller Volker des Erdkreises* (1880) p. 179

Der *Spiritus lenis* ist ein leichter Hauch am Anfange der Wörter vor Vokalen, der *Spiritus asper* der starke Hauch (*h*), er steht auch bei *r* (ξ), Doppel-*r* hat beide Zeichen ςϑ. Die Spirituszeichen wurden vom alexandrinischen Grammatiker ARISTOPHANES (200 v. Ch.) aus dem H gebildet, indem er ┌ für den *Spiritus asper* und ┐ für den *Spiritus lenis* nahm, daraus wurde ς und endlich ϑ. Ein anderer Hauch, welcher sich besonders im äolischen Dialekte lange erhielt, war der *f*-Laut, dessen Zeichen Ϝ wegen seiner Ähnlichkeit mit Γ *Digamma*, d. h. Doppelgamma, genannt wurde, er ging später in υ, β und φ über, sein Zeichen erhielt sich als Zahlwert für 6 mit dem ursprünglichen Namen *Bau*.

Über die wichtige Bedeutung der Wörter

Fig. 2: E. M. Thompson, *An introduction to Greek and Latin palaeography* (1912) p. 61

Breathings and Accents and other Signs.—Greek

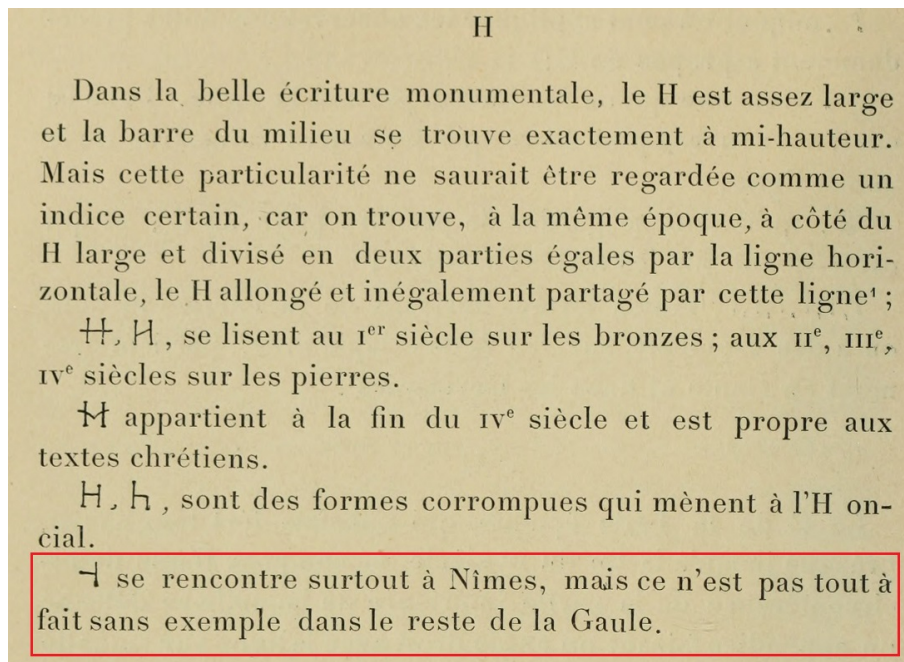
Breathings and accents, like the Greek system of punctuation by points noticed above, are also attributed to Aristophanes of Byzantium, as part of the *δέκα προσφθίαι*, of which he is called the inventor.

The rough (┌) and the smooth (┐) breathings (*πνεύματα*) at first represented the left and the right half of the letter H, which itself was originally the aspirate. They were soon worn down to ς and ϑ, in which shapes they are found in early MSS.; and eventually these square forms became the rounded ς and ϑ, the period at which they definitely arrived at this last stage being the twelfth century. Only occasionally are marks of breathing found in the more ancient MSS., and then it is generally the rough breathing that is distinguished.

The Reversed Half H is commonly found in Roman inscriptions from the Roman provinces of Gaul, particularly the areas of Lyon and Nîmes in modern France, but was not normally used in inscriptions from other parts of the Roman empire.

Cagnat's *Cours d'épigraphie latine* (1898) lists the various forms of the letter H found in Roman inscriptions, of which the Reversed Half H is the only form of the letter which is commonly distinguished from the ordinary H in diplomatic transcriptions.

Fig. 3: Cagnat, *Cours d'épigraphie latine* (1898) p. 21



A few authors have considered the Reversed Half H to be a ligature of H with the preceding letter, but the standard catalogues of Roman epigraphic inscriptions (*Corpus Inscriptionum Latinarum* vols. XII [1888] and XIII [1899]; *Inscriptions antiques du musée de la ville de Lyon* 5 vols. [1888–1893]; *Inscriptions antiques de Nîmes* [1893]) all treat the Reversed Half H as a distinct letter. See Fig. 5 and Fig. 7, where the Reversed Half H is described as *H dimidiée* (“halved H”), in contrast to ligatured letters which are specified as *liés en monogramme*.

There are some inscriptions where H does physically ligate with a preceding letter, and in doing so loses its left stem, and these examples should be represented at the character level as ligatures, e.g. <P zwj H> for the PH ligature (PH), and <N zwj T zwj H> for the NTH ligature (NTH) in the Epitaph of Crispia Aphrodisia given in *Inscriptions antiques de Nîmes* (1893) p. 664. However, in all cases where the epigraphic catalogues show an isolated Reversed Half H letterform, the Reversed Half H is not conjoined with the preceding letter in the actual inscription, and there is clear space between the two letters, so they cannot be considered to be ligatures. See Figs. 2–3 and Figs. 4–5 for comparisons of two actual inscriptions and their diplomatic transcriptions.

Fig. 4: Funerary inscription for M. Curvelius at the Musée Gallo-Romain in Lyon

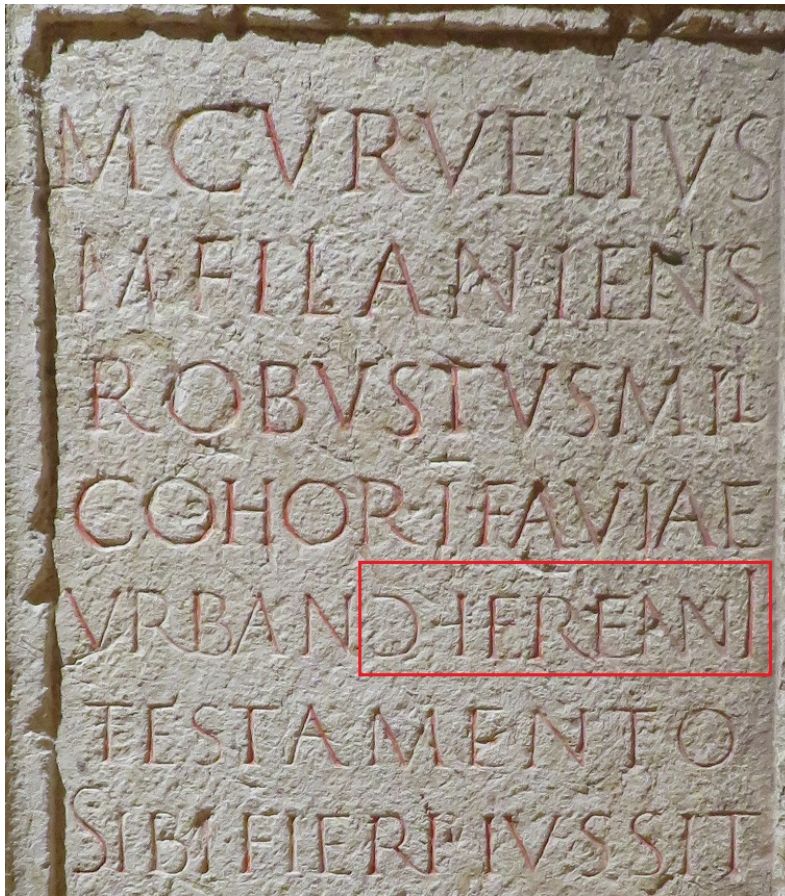
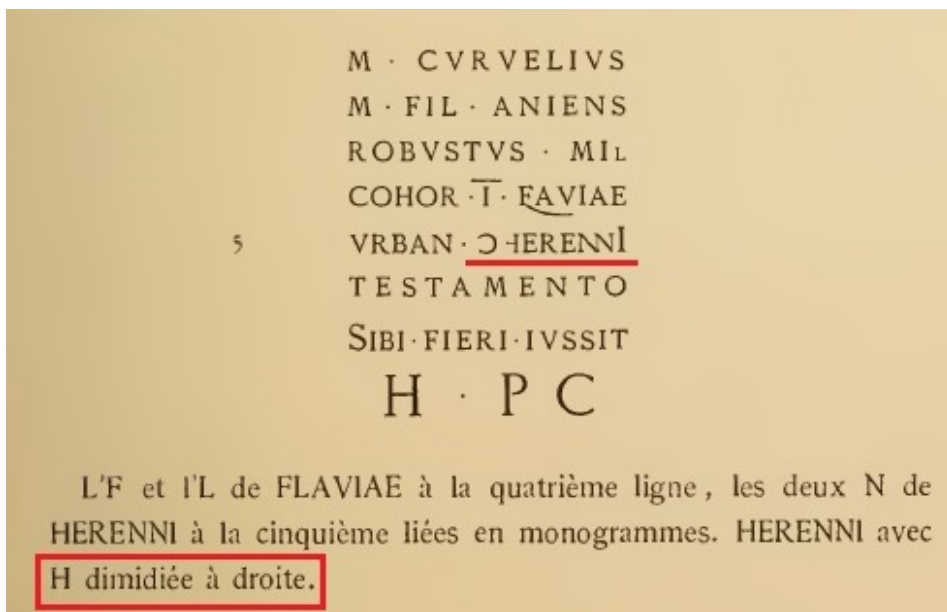


Fig. 5: *Inscriptions antiques du musée de la ville de Lyon* vol. 1 (1888) p. 447



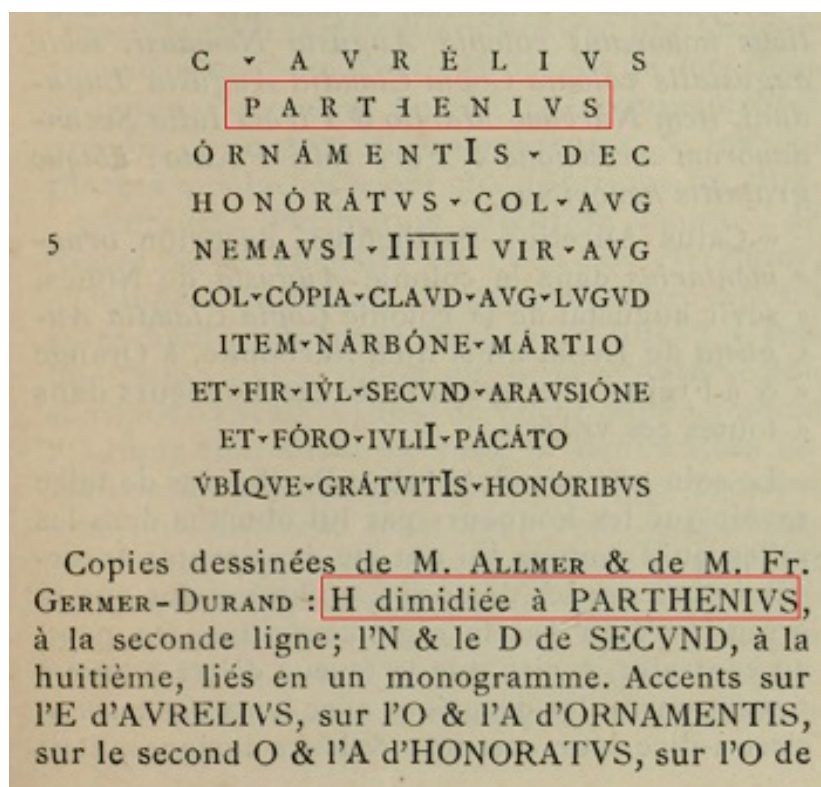
C · HERENNI = *centuria Herennii*

Fig. 6: Funerary inscription for C. Aurelius Parthenius at the Musée Archéologique de Nîmes



Wikimedia Commons: [Scriptura_con_apices_Nimes_1750.jpg](https://commons.wikimedia.org/wiki/File:Scriptura_con_apices_Nimes_1750.jpg) © ⓘ ⓘ QuartierLatin1968

Fig. 7: *Inscriptions antiques de Nîmes* (1893) p. 277



The Reversed Half H commonly occurs after the letters C, P or T, in the middle of a word, but it may also occur as the first letter of a word, and in such cases the diplomatic transcriptions separate the Reversed Half H from the preceding word by a word space or by a word separator point (see Fig. 8 “OB ·HONOREM” and Fig. 9 “IVLIA ·HELENE”).

Fig. 8: *Recherche des antiquités et curiosités de la ville de Lyon* (1673) p. 25

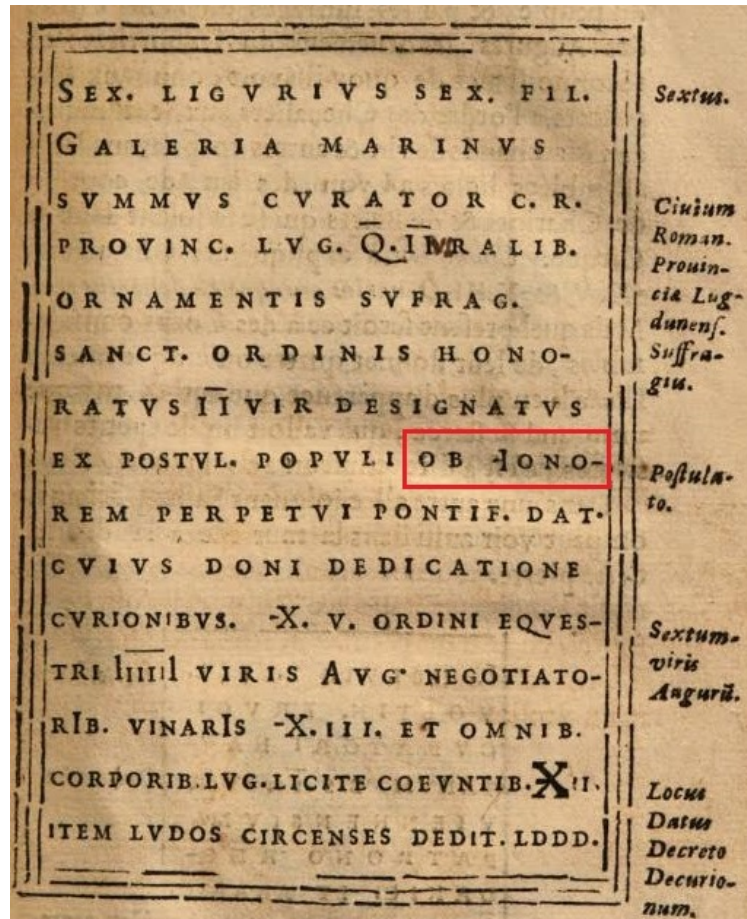
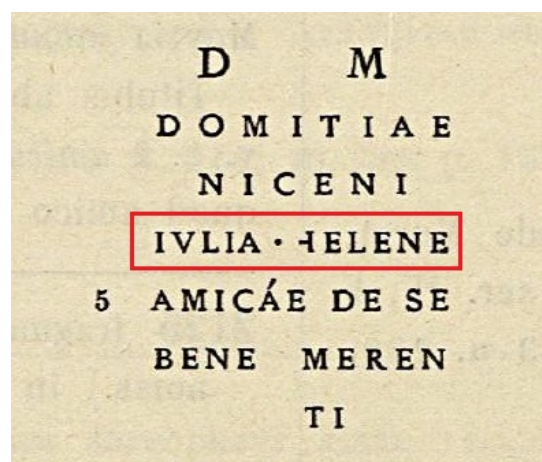


Fig. 9: *Corpus Inscriptionum Latinarum* (1899) Vol. XIII p. 334



There is one example where the Reversed Half H occurs at the start of a word at the start of a line, where it is impossible to be considered a ligature, i.e. the epitaph for the *flaminique* Julia Titullina where the word “HONORATVS” occupies a complete line (see Fig. 10 for the original inscription, and Fig. 11, Fig. 12 and Fig. 13 for diplomatic transcriptions).

Fig. 10: Epitaph for the *flaminique* Julia Titullina



<http://www.maisoncarree.eu/monument/archeologie/culte-imperial/epitaphe-dune-flaminique-dimperatrice/>

Fig. 11: *Catalogue du Musée de Nîmes* (1853) p. 121

N° 121.

<p>D. & M. IVLIAE L. FIL. TITVLLINAE FLAM. AVG. CABEI L. LVCRETIVS HONORATVS VXOR OPTIMAE E Q. LVCRETIVS HONOR MATRI PISSIMAE</p>	<p>Aux dieux Mânes de Julia Titullina, fille de Lucius, flaminique augustale de Cavailon: L. Lucretius Honoratus à la meilleure des épouses, et Q. Lucretius Honoratus à sa vénérable mère.</p> <p>(Inédite.) Hauteur, 0^m,70; largeur, 0^m,67.</p>
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Ce cippe en forme d'autel n'a qu'une partie de sa base de restaurée; la frise de feuillage qui entoure l'inscription est d'un bon goût et bien exécutée; une certaine élégance dans les proportions et les caractères,

Fig. 12: *Corpus Inscriptionum Latinarum* (1888) Vol. XII p. 419

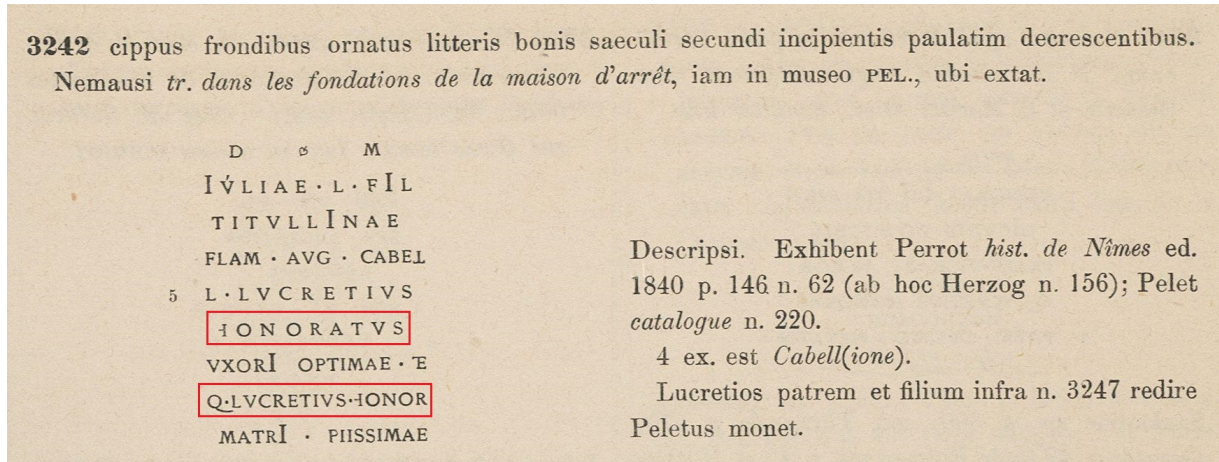
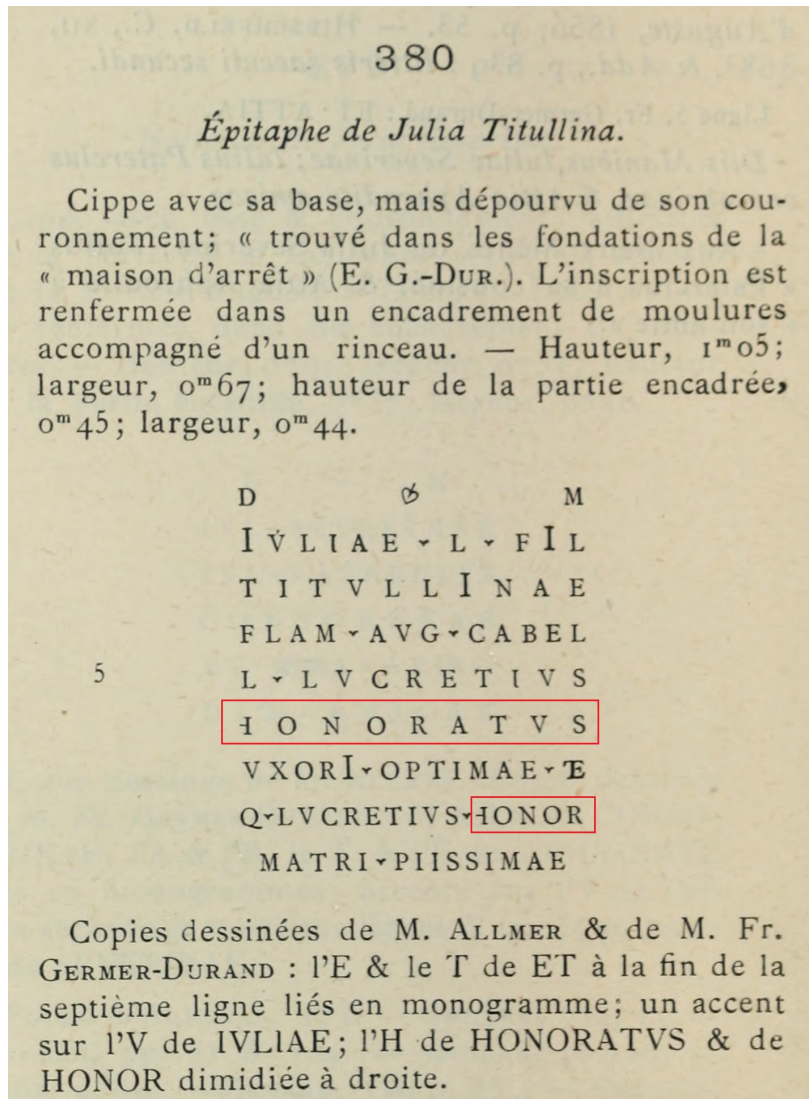
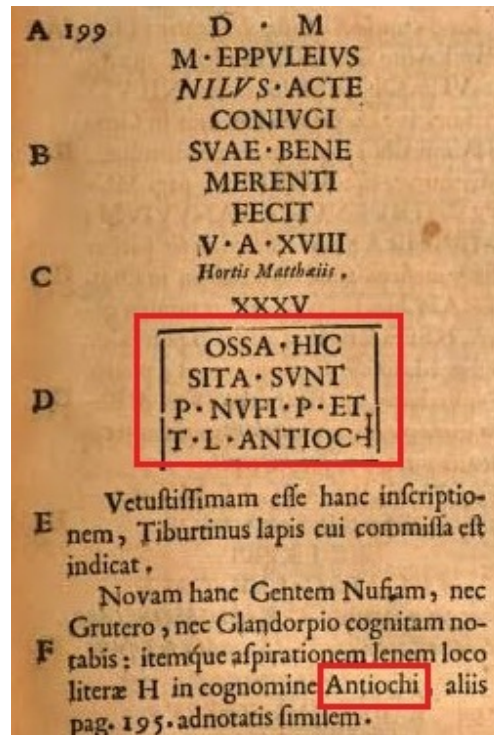


Fig. 13: *Inscriptions antiques de Nîmes* (1893) p. 745



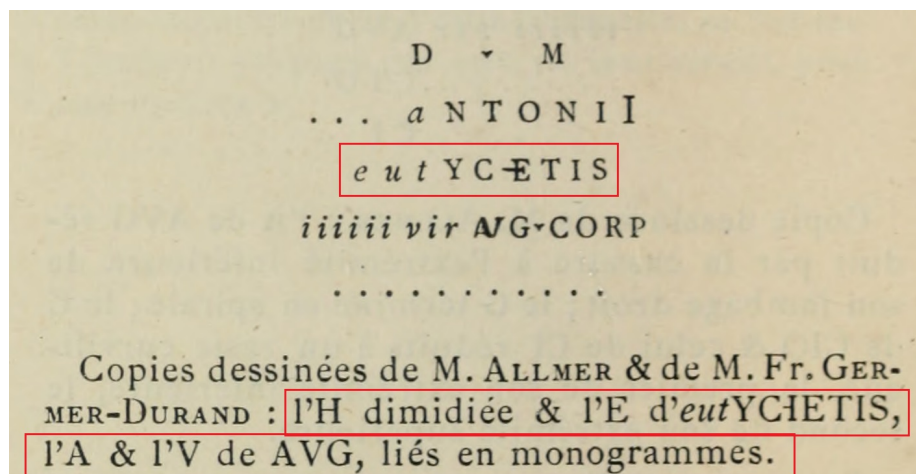
The Reversed Half H letter may form a ligature with the following letter, which should be represented at the encoding level as a ZWJ ligature. See Fig. 14, Fig. 15 and Fig. 16 for examples of Reversed Half H ligatured to the right with I (⌋), E (⌚) and R (⌘) respectively.

Fig. 14: *Inscriptionum Antiquarum Explicatio* (1699) p. 381



ANTIOC⌋ = *Antiochi* [⌋ = <H zwj I>]

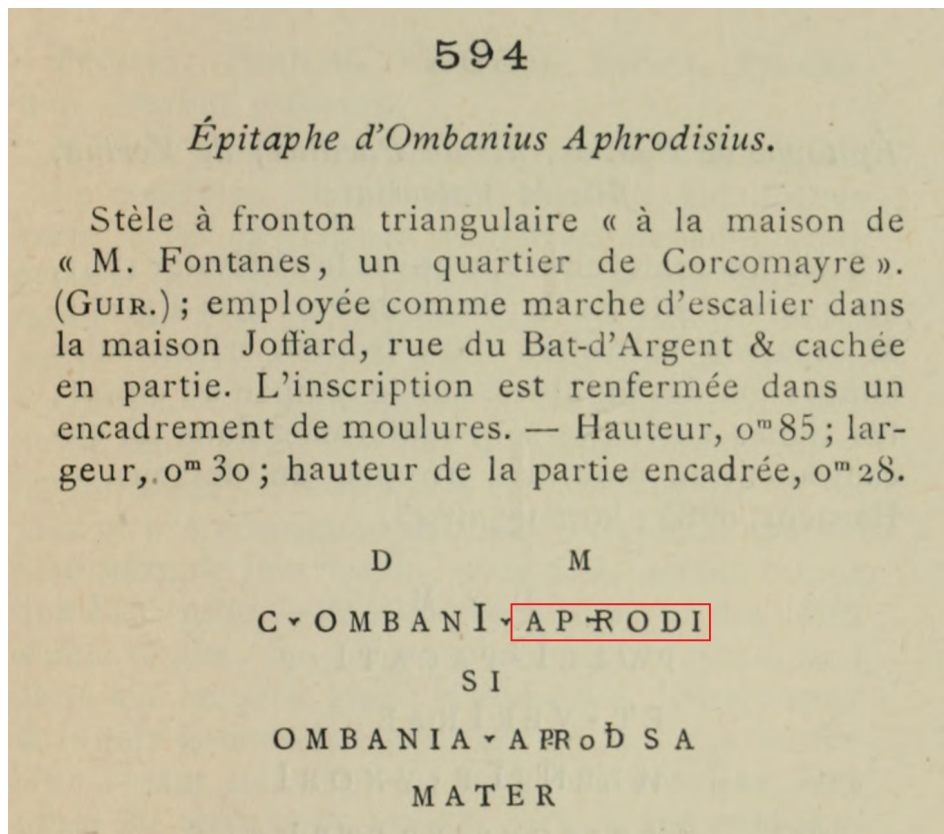
Fig. 15: *Inscriptions antiques de Nîmes* (1893) p. 410



[EVT]YC⌚TIS = *Eutychetis* [⌚ = <H zwj E>]

Cf. *Inscriptions antiques de Nîmes* (1893) p. 411 where the same name is written "EVTYCHES" with a standard HE ligature

Fig. 16: *Inscriptions antiques de Nîmes* (1893) p. 1015



APRODI|SI = *Aphrodisi* [R = <I zwj R>]

Fig. 17: *Inscriptions antiques de Nîmes* (1893) p. 886

Remarquer la formule *hic sepultus est*, fréquente sur les plus anciennes inscriptions de Narbonne & le mot *hic* écrit sans *h*. M. Fr. Germer-Durand croit toutefois apercevoir sur la pierre une légère trace qu'il suppose pouvoir être la partie supérieure de la haste droite d'une H dimidiée, ainsi : ⋮.

Fig. 18: *Inscriptions chrétiennes de la Gaule antérieures au VIII^e siècle* (1856) vol. 1 p. 100

HAEC OMNIA SVB ASCIA DEDICAVIT.

4. Appendix: Index of Reversed Half H Occurrences

Table 1 lists all the examples of Reversed Half H letters in inscriptions catalogued in *Inscriptions antiques du musée de la ville de Lyon* (1888–1893) and *Inscriptions antiques de Nîmes* (1893).

Table 1: Index of Half H letters in the Lyon and Nîmes corpora

Transcription	Cased transcription	Reading	Source
...C̄HO·LICTORI	...c̄ho lictori	<i>...cho lictori</i>	<i>Lyon</i> v. 1 p. 200
⊔̄ HERENNĪ	...c̄ herennī	<i>centuria Herennii</i>	<i>Lyon</i> v. 1 p. 447
ANTIOC̄VS	Antioc̄vs	<i>Antiochus</i>	<i>Lyon</i> v. 2 p. 345
OB̄ HONOREM	ob̄ honorem	<i>ob honorem</i>	<i>Lyon</i> v. 2 p. 362
R̄HODANIC	R̄hodanic	<i>Rhodanic</i>	<i>Lyon</i> v. 2 p. 424
OMNIB̄HONORIB	omnib̄ honolib	<i>omnib honorib</i>	<i>Lyon</i> v. 2 p. 426
EVSTOC̄VS	Evstoc̄vs	<i>Eustochus</i>	<i>Lyon</i> v. 2 p. 440
...HŌ·ĀPER[VS]	...hō apter[vs]	<i>...ho apterus</i>	<i>Lyon</i> v. 2 p. 459
P̄HLE@N	P̄legon	<i>Phlegon</i>	<i>Lyon</i> v. 3 p. 15
ANC̄IARI	Anc̄iari	<i>Anchari</i>	<i>Lyon</i> v. 3 p. 163
L·AN̄THICO	L. Ant̄ioco	<i>L. Anthioco</i>	<i>Lyon</i> v. 3 p. 241
IVLIA·HELENE	Ivliā h̄elene	<i>Julia Helene</i>	<i>Lyon</i> v. 3 p. 250
...HIDĪ·VXORĪ	...hidī vxorī	<i>...hidii uxori</i>	<i>Lyon</i> v. 3 p. 427
ATROP̄HILI	Atrop̄hili	<i>Atrophili</i>	<i>Lyon</i> v. 3 p. 467
PHILOCALVS	Ph̄ilocalvs	<i>Philocalus</i>	<i>Lyon</i> v. 3 p. 472
PART̄HENIVS	Part̄henivs	<i>Parthenius</i>	<i>Nîmes</i> p. 277
EPITYNC̄IANVS	Epitync̄ianvs	<i>Epitynchanus</i>	<i>Nîmes</i> p. 282
MARIA·C̄HRESIME	Maria C̄hresime	<i>Maria Chresime</i>	<i>Nîmes</i> p. 297
T·KARI·SŌTERIC̄HI	T. Kari Soteric̄hi	<i>T. Kari Soterichi</i>	<i>Nîmes</i> p. 392
[EVT]YC̄ETIS	[Evt]yc̄etis	<i>Eutychetis</i>	<i>Nîmes</i> p. 410
P̄HARNACES	P̄harnaces	<i>Pharnaces</i>	<i>Nîmes</i> p. 601

Transcription	Cased transcription	Reading	Source
P̄ILETE	P̄ilete	<i>Philete</i>	<i>Nîmes</i> p. 646
CINTIAE · HONORAT	Cintiae Honorat	<i>Cintiae Honorat</i>	<i>Nîmes</i> p. 649
P̄ILOPATER	P̄ilopater	<i>Philopater</i>	<i>Nîmes</i> p. 676
EVTYCÆS TYCÆ	Evtycæs Tycæ	<i>Eutyches</i> <i>Tyche</i>	<i>Nîmes</i> p. 682
P̄ILETE	P̄ilete	<i>Philete</i>	<i>Nîmes</i> p. 704
AGATHANGEL	Atat̄angel	<i>Agathangel</i>	<i>Nîmes</i> p. 710
HONORATVS HONOR	Honoratvs Honor	<i>Honoratus</i> <i>Honor</i>	<i>Nîmes</i> p. 745
SOTERICHI	Soterici	<i>Soterichi</i>	<i>Nîmes</i> p. 752
BATHYLLIDI	Bat̄yllidi	<i>Bathyllidii</i>	<i>Nîmes</i> p. 754
SEXTILIA · ATT̄IS	Sextilia Att̄is	<i>Sextilia Atthis</i>	<i>Nîmes</i> p. 795
FAB · EVHODVS	Fab Ev̄hodus	<i>Fab Euhodus</i>	<i>Nîmes</i> p. 946
P̄ILENIDIS	P̄ilenidis	<i>Philenidis</i>	<i>Nîmes</i> p. 1001
NYMPÆ	Nymp̄æ	<i>Nymphe</i>	<i>Nîmes</i> p. 1004
TROP̄HIMVS	Trop̄himvs	<i>Trophimus</i>	<i>Nîmes</i> p. 1012
AP̄RODISI	Ap̄hrodisi	<i>Aphrodisi</i>	<i>Nîmes</i> p. 1015

5. Bibliography

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6. Proposal Summary Form

SO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹ Please fill all the sections A, B and C below. Please read Principles and Procedures Document (P & P) from http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html for guidelines and details before filling this form. Please ensure you are using the latest Form from http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html . See also http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest Roadmaps.
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A. Administrative

1. Title:	Proposal to encode Latin Letter Reversed Half H
2. Requester's name:	<i>Andrew West and Michael Everson</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual contribution</i>
4. Submission date:	<i>2019-03-25</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<input type="checkbox"/> YES
(or) More information will be provided later:	<input type="checkbox"/>

B. Technical – General

1. Choose one of the following:		
a. This proposal is for a new script (set of characters):	<input type="checkbox"/> NO	
Proposed name of script:		
b. The proposal is for addition of character(s) to an existing block:	<input type="checkbox"/> YES	
Name of the existing block:	<i>LATIN EXTENDED-D</i>	
2. Number of characters in proposal:	<input type="checkbox"/> 2	
3. Proposed category (select one from below - see section 2.2 of P&P document):		
A-Contemporary <input type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>	B.2-Specialized (large collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input checked="" type="checkbox"/>	E-Minor extinct <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	<input type="checkbox"/> YES	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<input type="checkbox"/> YES	
b. Are the character shapes attached in a legible form suitable for review?	<input type="checkbox"/> YES	
5. Fonts related:		
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Andrew West</i>	
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>Andrew West</i>	
6. References:		
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<input type="checkbox"/> YES	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<input type="checkbox"/> YES	
7. Special encoding issues:		
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	<input type="checkbox"/> YES	
8. Additional Information:		
Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.		

¹ Form number: N4102-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain		NO
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)? If YES, with whom? If YES, available relevant documents:		NO
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:		NO
4. The context of use for the proposed characters (type of use; common or rare) Reference:		Rare
5. Are the proposed characters in current use by the user community? If YES, where? Reference:		YES
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:		YES YES <i>Latin script is all in the BMP</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?		N/A
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:		YES YES <i>See proposal</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:		NO
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:		NO
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:		NO
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)		NO
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:		NO