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 (Ⱶ ⱶ), 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 (Ⱶ ⱶ), 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 Ⱶ ⱶ and Ⱶ ⱶ is quite different from that of letters like Ⅎ and ꟽ. The letters Ⅎ and ꟼ are used as standalone abbreviations for whole words (F = *filius* "son"; Ⅎ = *filia* "daughter"; P = *puer* "boy"; ꟼ = *puella* "girl"), so it makes no sense to lower case these two letters. In contrast, Ⱶ is used as a letter within words, so it is reasonable to expect that a name such as PⱵILOPATER in all capits would title case to Pⱶilopater 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	Ⱶ	LATIN CAPITAL LETTER REVERSED HALF H
A7F6	ⱶ	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* (*ῥ*), Doppel-*r* hat beide Zeichen *ῤῥ*. 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 ⌐ und endlich ( ). 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*.

Um die richtige Betonung 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 προσῳδίαι, 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 ⌐ and ⌐, in which shapes they are found in early MSS.; and eventually these square forms became the rounded ' and ', 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
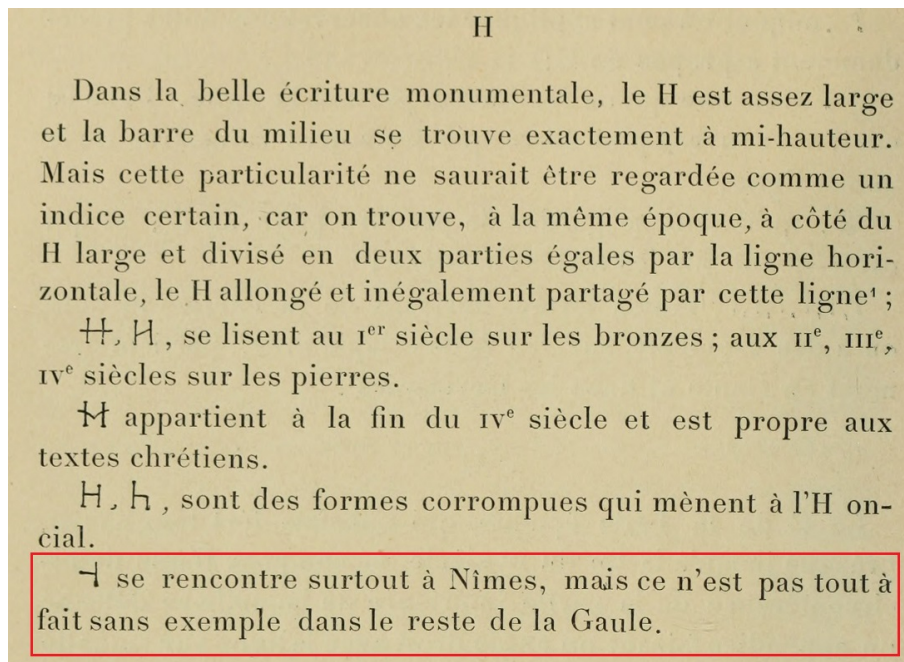
A few authors have considered the Reversed Half H to be a ligature of H with the preceding letter, but the standard catalogues of Roman epigraphic inscriptions (*Corpus Inscriptionum Latinarum* vols. XII [1888] and XIII [1899]; *Inscriptions antiques du musée de la ville de Lyon* 5 vols. [1888–1893]; *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 (PᴴI), 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
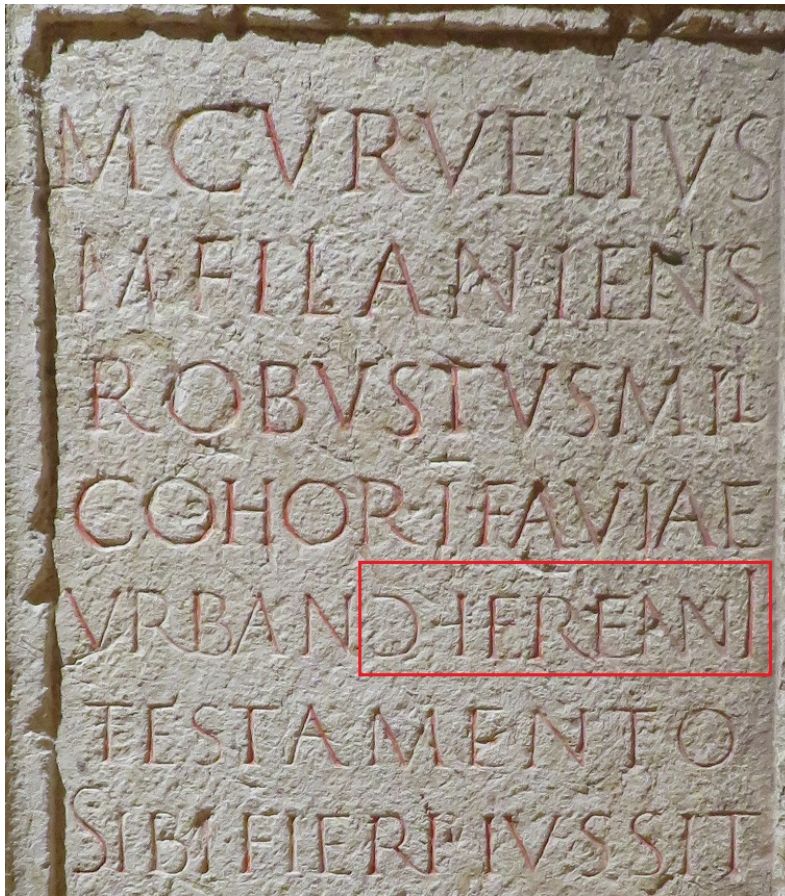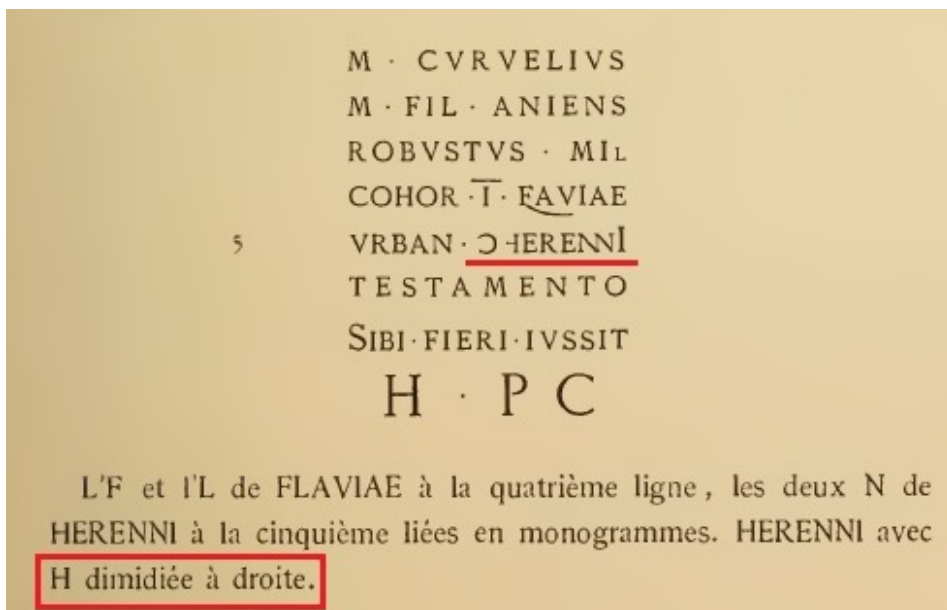

**Fig. 5: *Inscriptions antiques du musée de la ville de Lyon* vol. 1 (1888) p. 447**

M · CVRVELIVS
M · FIL · ANIENS
ROBVSTVS · MIL
COHOR · T· FAVIAE
5   VRBAN · Ɔ ҺERENNİ
TESTAMENTO
SIBI · FIERI · IVSSIT
H · P C

L'F et l'L de FLAVIAE à la quatrième ligne, les deux N de HERENNI à la cinquième liées en monogrammes. HERENNI avec H dimidiée à droite.

Ɔ ҺERENNİ = *centuria Herennii*

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

Wikimedia Commons: Scriptura_con_apices_Nimes_1750.jpg ©①◎ QuartierLatin1968

Fig. 7: *Inscriptions antiques de Nîmes* (1893) p. 277
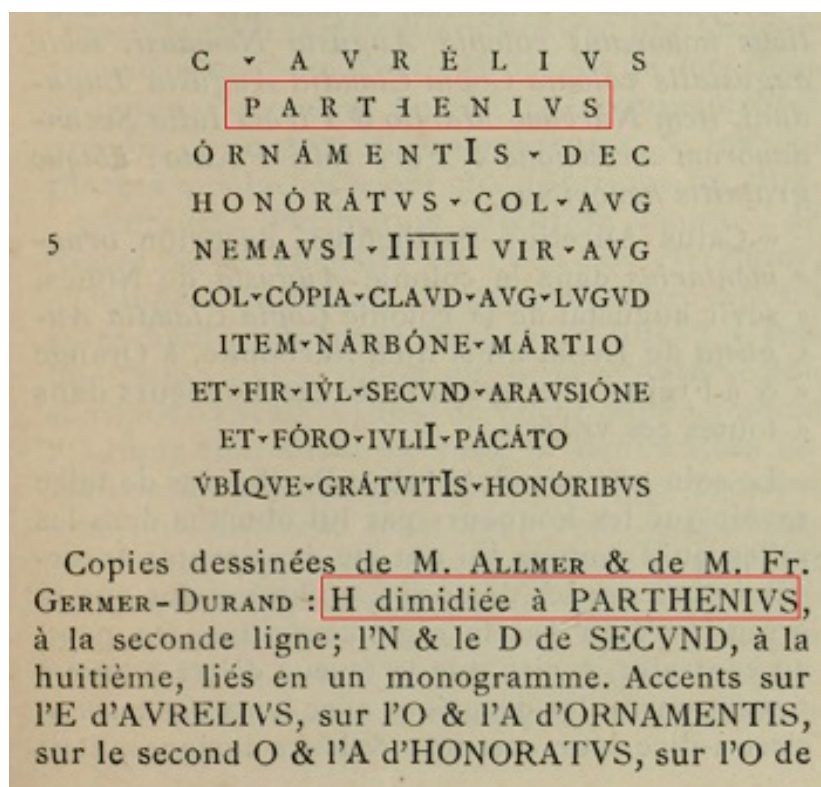
The Reversed Half H commonly occurs after the letters C, P or T, in the middle of a word, but it may also occur as the first letter of a word, and in such cases the diplomatic transcriptions separate the Reversed Half H from the preceding word by a word space or by a word separator point (see Fig. 8 "OB ꓧONOREM" and Fig. 9 "IVLIA · ꓧELENE").

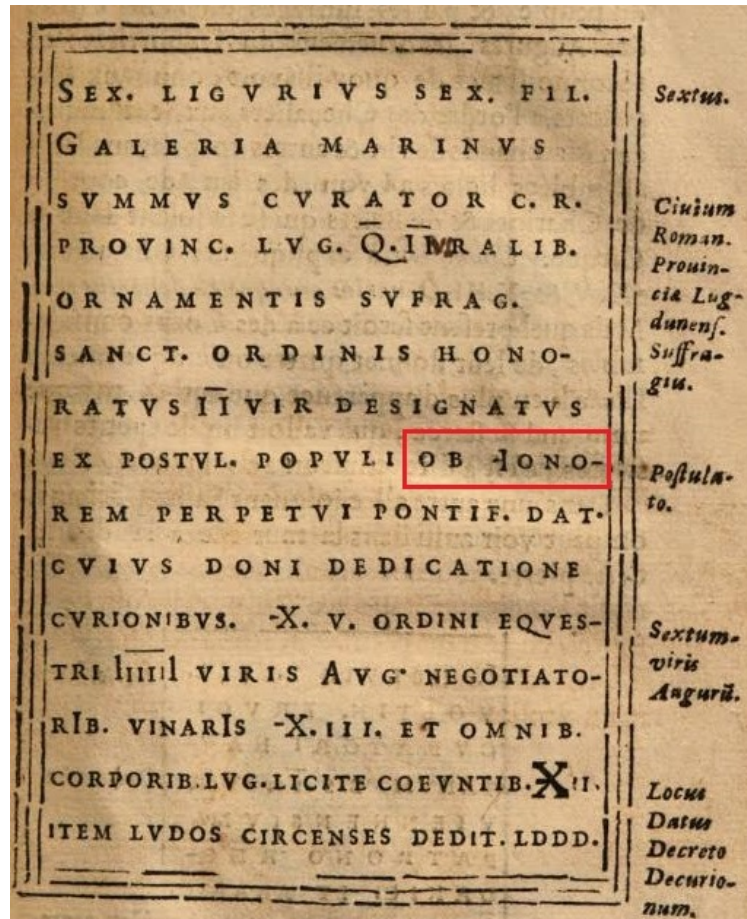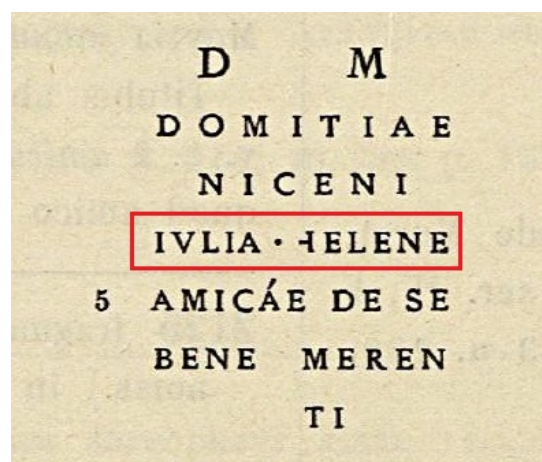**Fig. 8:** *Recherche des antiquités et curiosités de la ville de Lyon* **(1673) p. 25**

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 "ꟸONORATVS" 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

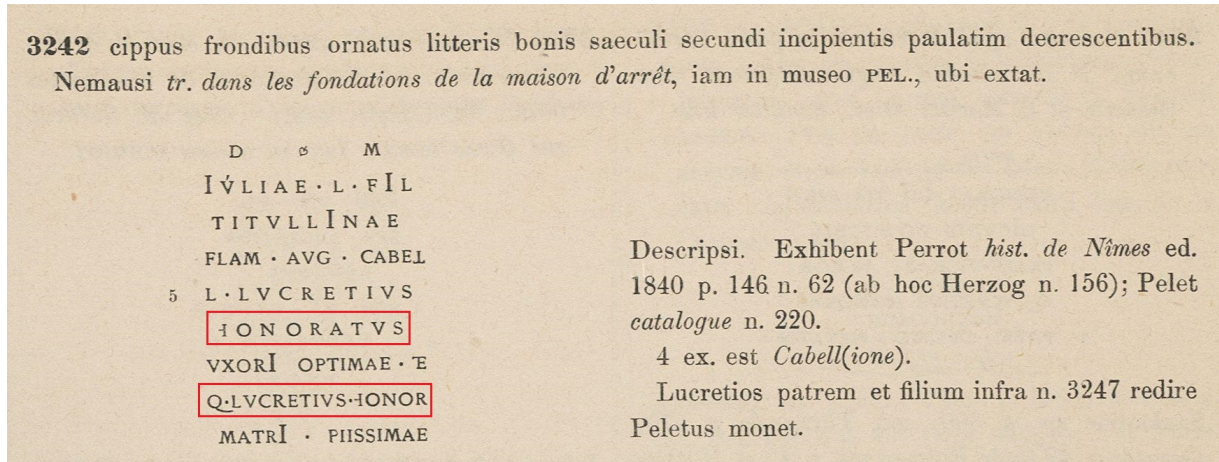**Fig. 12:** *Corpus Inscriptionum Latinarum* **(1888) Vol. XII p. 419**

Fig. 13: *Inscriptions antiques de Nîmes* **(1893) p. 745**
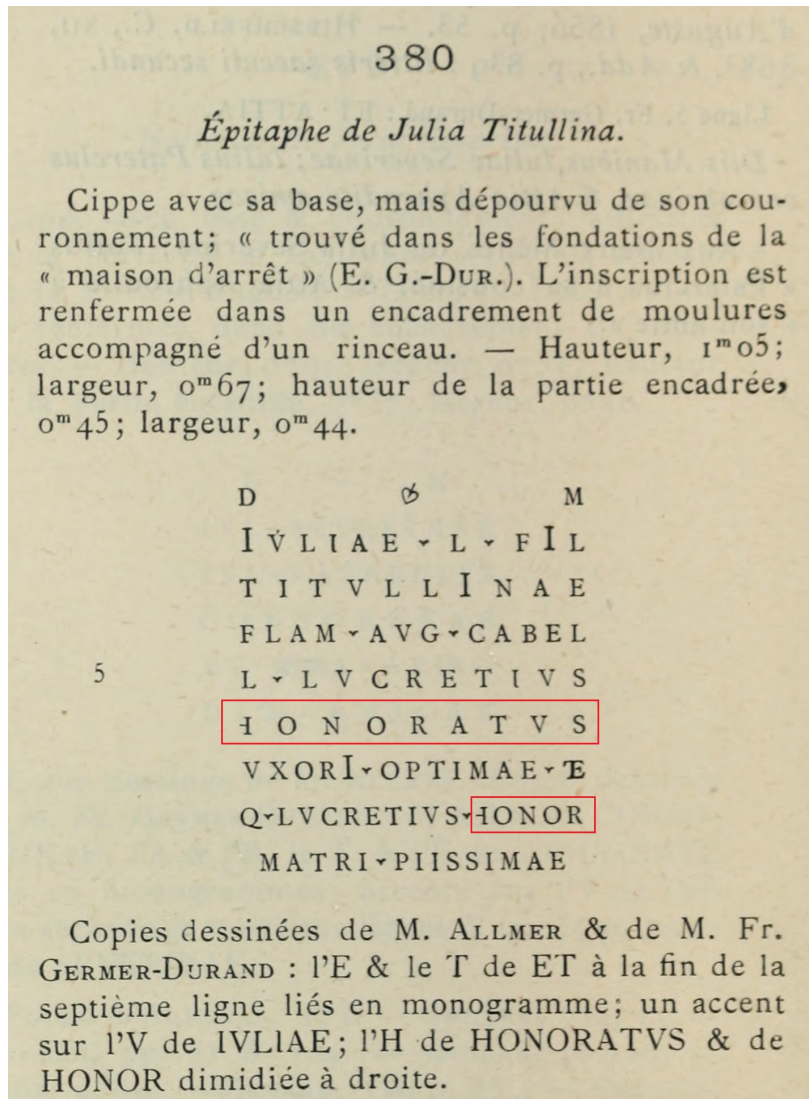
The Reversed Half H letter may form a ligature with the following letter, which should be represented at the encoding level as a ZWJ ligature. See Fig. 14, Fig. 15 and Fig. 16 for examples of Reversed Half H ligatured to the right with I (Ⱶ), E (Ⱶ) and R (Ⱶ) respectively.

Fig. 14: *Inscriptionum Antiquarum Explicatio* (1699) p. 381
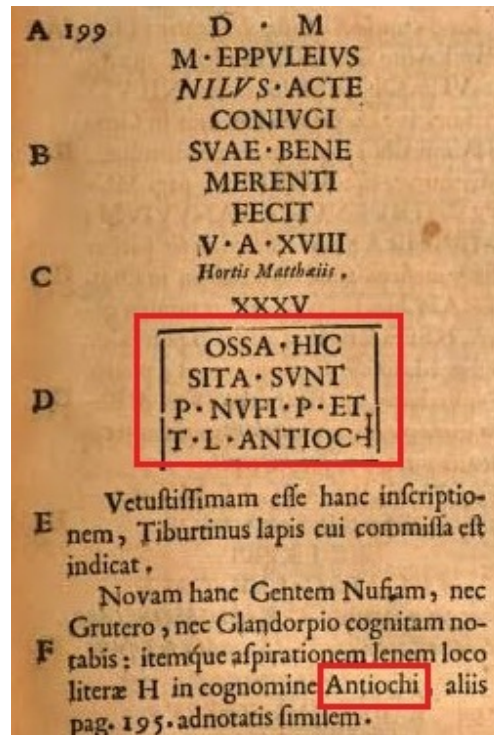
ANTIOCⱵ = *Antiochi* [Ⱶ = <Ⱶ zwj I>]

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

[EVT]YCⱵETIS = *Eutychetis* [Ⱶ = <Ⱶ zwj E>]

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

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

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Épitaphe d'Ombanius Aphrodisius.

Stèle à fronton triangulaire « à la maison de « M. Fontanes, un quartier de Corcomayre ». (GUIR.) ; employée comme marche d'escalier dans la maison Joffard, rue du Bat-d'Argent & cachée en partie. L'inscription est renfermée dans un encadrement de moulures. — Hauteur, 0ᵐ85 ; largeur, 0ᵐ30 ; hauteur de la partie encadrée, 0ᵐ28.

D   M

C · OMBAN I · AP·RODI

S I

OMBANIA · APRoD S A

MATER

AP·RODI|SI = *Aphrodisi* [·R = <·I zwj R>]
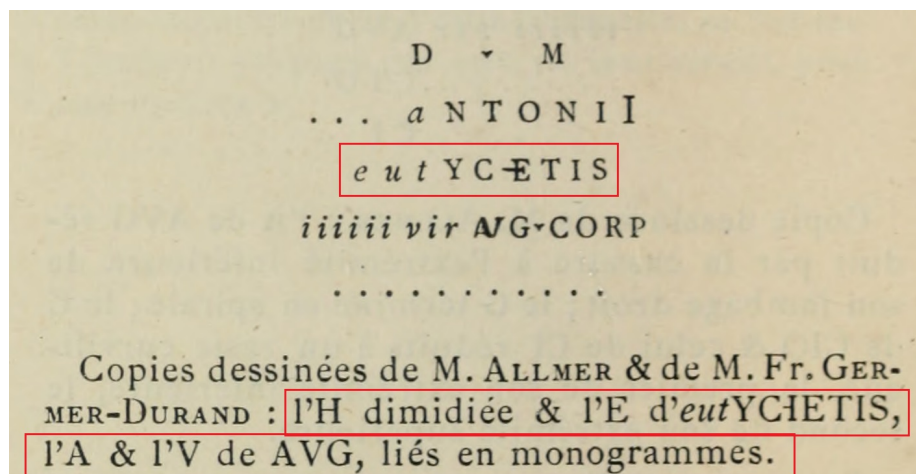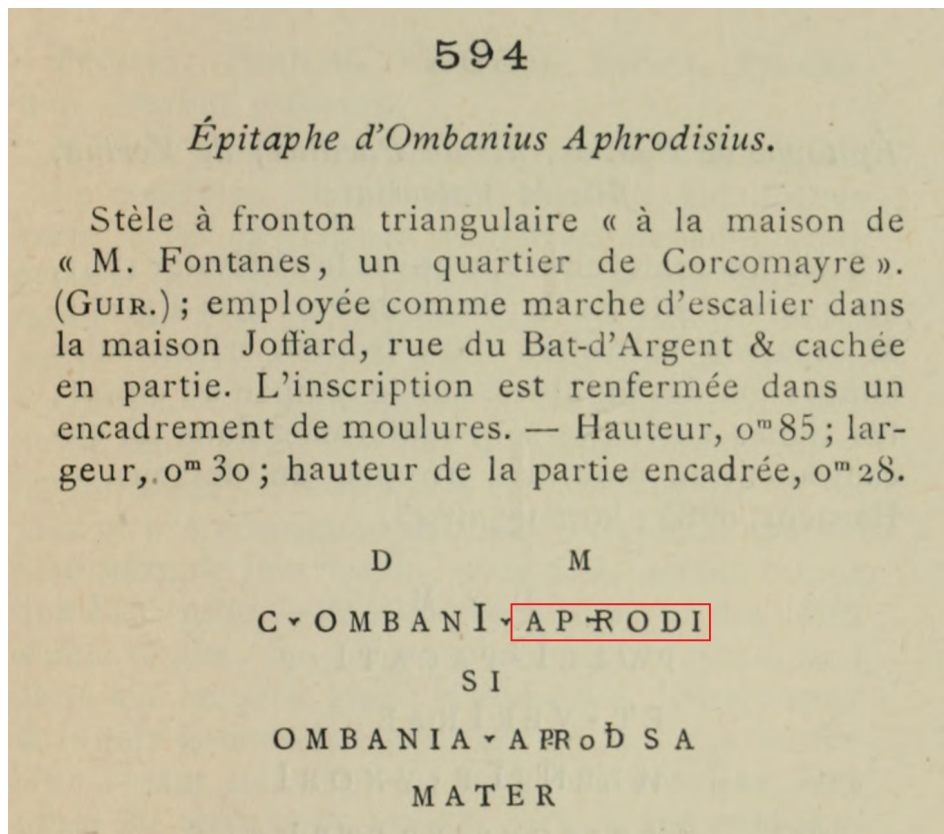
Fig. 17: *Inscriptions antiques de Nîmes* (1893) p. 886

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 : ·I.

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

·IAEC OMNIA SVB ASCIA DEDI-CAVIT.

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
…CꟼO·LICTORI	…cꟼo lictori	*…cho lictori*	*Lyon* v. 1 p. 200
Ɔ ꟼERENNİ	…ɔ ꟼerennI	*centuria Herennii*	*Lyon* v. 1 p. 447
ANTIOCꟼVS	Antiocꟼvs	*Antiochus*	*Lyon* v. 2 p. 345
OB ꟼONOREM	ob ꟼonorem	*ob honorem*	*Lyon* v. 2 p. 362
RꟼODANIC	Rꟼodanic	*Rhodanic*	*Lyon* v. 2 p. 424
OMNIBꟼONORIB	omnib ꟼonorib	*omnib honorib*	*Lyon* v. 2 p. 426
EVSTOCꟼVS	Evstocꟼvs	*Eustochus*	*Lyon* v. 2 p. 440
…ꟼO·APER[VS]	…ꟼo apter[vs]	*…ho apterus*	*Lyon* v. 2 p. 459
PꟼLEGN	Pꟼlegon	*Phlegon*	*Lyon* v. 3 p. 15
ANCꟼARI	Ancꟼari	*Anchari*	*Lyon* v. 3 p. 163
L·ANꟼIOCO	L. Antꟼioco	*L. Anthioco*	*Lyon* v. 3 p. 241
IVLIA·ꟼELENE	Ivlia ꟼelene	*Julia Helene*	*Lyon* v. 3 p. 250
…ꟼIDİ·VXORI	…ꟼidI vxorI	*…hidii uxori*	*Lyon* v. 3 p. 427
ATROPꟼILI	Atropꟼili	*Atrophili*	*Lyon* v. 3 p. 467
PꟼILOCALVS	Pꟼilocalvs	*Philocalus*	*Lyon* v. 3 p. 472
PARTꟼENIVS	Partꟼenivs	*Parthenius*	*Nîmes* p. 277
EPITYNCꟼANVS	Epityncꟼanvs	*Epitynchanus*	*Nîmes* p. 282
MARIA·CꟼRESIME	Maria Cꟼresime	*Maria Chresime*	*Nîmes* p. 297
T·KARI·SOꟼERICꟼI	T. Kari Sotericꟼi	*T. Kari Soterichi*	*Nîmes* p. 392
[EVT]YCꟼETIS	[Evt]ycꟼetis	*Eutychetis*	*Nîmes* p. 410
PꟼARNACES	Pꟼarnaces	*Pharnaces*	*Nîmes* p. 601

Transcription	Cased transcription	Reading	Source
PⱵLETE	Pⱶilete	*Philete*	*Nîmes* p. 646
CINTIAE·ⱵONORAT	Cintiae ⱶonorat	*Cintiae Honorat*	*Nîmes* p. 649
PⱵILOPATER	Pⱶilopater	*Philopater*	*Nîmes* p. 676
EVTYCⱵES TYCⱵE	Evtycⱶes Tycⱶe	*Eutyches* *Tyche*	*Nîmes* p. 682
PⱵILEⱵE	Pⱶilete	*Philete*	*Nîmes* p. 704
AGATⱵANGEL	Atatⱶangel	*Agathangel*	*Nîmes* p. 710
ⱵONORATVS ⱵONOR	ⱶonoratvs ⱶonor	*Honoratus* *Honor*	*Nîmes* p. 745
SOTERICⱵI	Sotericⱶi	*Soterichi*	*Nîmes* p. 752
BATⱵYLLIDİ	BatⱶyllidI	*Bathyllidii*	*Nîmes* p. 754
SEXTILIA·ATTⱵIS	Sextilia Attⱶis	*Sextilia Atthis*	*Nîmes* p. 795
FAB·EVⱵODVS	Fab Evⱶodus	*Fab Euhodus*	*Nîmes* p. 946
PⱵILENIDIS	Pⱶilenidis	*Philenidis*	*Nîmes* p. 1001
NYMPⱵE	Nympⱶe	*Nymphe*	*Nîmes* p. 1004
TROPⱵIMVS	Tropⱶimvs	*Trophimus*	*Nîmes* p. 1012
APⱵRODISI	Apⱶrodisi	*Aphrodisi*	*Nîmes* p. 1015

5. Bibliography

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Germer-Durand, Eugène, F. Germer-Durand, and A. Allmer. 1893. *Inscriptions antiques de Nîmes.* Toulouse.

Hirschfeld, Otto. 1888. *Corpus Inscriptionum Latinarum* Vol. XII: *Inscriptiones Galliae Narbonensis Latinae*. Berlin.

Hirschfeld, Otto. 1899. *Corpus Inscriptionum Latinarum* Vol. XIII: *Inscriptiones trium Galliarum et Germaniarum Latinae*, Part 1: *Inscriptiones Aquitaniae et Lugudunensis*. Berlin.

Le Blant, Edmond. 1856. *Inscriptions chrétiennes de la Gaule antérieures au VIIIe siècle*. Paris.

Pelet, Auguste. 1853. *Catalogue du Musée de Nîmes*. Nîmes.

Spon, Jacob. 1673. *Recherche des antiquités et curiosités de la ville de Lyon*. Lyon.

Thompson, Edward Maunde. 1912. *An introduction to Greek and Latin palaeography*. Oxford: Clarendon Press.

6. *Proposal Summary Form*

<table>
<tr><td colspan="2" align="center">

SO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
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*.**

</td></tr>
</table>

A. Administrative

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

B. Technical – General

1. Choose one of the following:
    a. This proposal is for a new script (set of characters):   *NO*
        Proposed name of script:
    b. The proposal is for addition of character(s) to an existing block: *YES*
        Name of the existing block: *LATIN EXTENDED-D*
2. Number of characters in proposal: *2*
3. Proposed category (select one from below - see section 2.2 of P&P document):
    A-Contemporary   B.1-Specialized (small collection)   B.2-Specialized (large collection)
    C-Major extinct   D-Attested extinct   *X*   E-Minor extinct
    F-Archaic Hieroglyphic or Ideographic   G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided?   *YES*
    a. If YES, are the names in accordance with the "character naming guidelines"
        in Annex L of P&P document?   *YES*
    b. Are the character shapes attached in a legible form suitable for review?   *YES*
5. Fonts related:
    a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?
        Andrew West
    b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
        Andrew West
6. References:
    a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?   *YES*
    b. Are published examples of use (such as samples from newspapers, magazines, or other sources)
    of proposed characters attached?   *YES*
7. Special encoding issues:
    Does the proposal address other aspects of character data processing (if applicable) such as input,
    presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?   *YES*

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

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[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?	*NO*
If YES explain	
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.)?	*NO*
If YES, with whom?	
If YES, available relevant documents:	
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?	*NO*
Reference:	
4. The context of use for the proposed characters (type of use; common or rare)	*Rare*
Reference:	
5. Are the proposed characters in current use by the user community?	*YES*
If YES, where? Reference:	
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?	*YES*
If YES, is a rationale provided?	*YES*
If YES, reference:	*Latin script is all in the BMP*
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?	*YES*
If YES, is a rationale for its inclusion provided?	*YES*
If YES, reference:	*See proposal*
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?	*NO*
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character?	*NO*
If YES, is a rationale for its inclusion provided?	
If YES, reference:	
11. Does the proposal include use of combining characters and/or use of composite sequences?	*NO*
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:	
12. Does the proposal contain characters with any special properties such as control function or similar semantics?	*NO*
If YES, describe in detail (include attachment if necessary)	
13. Does the proposal contain any Ideographic compatibility characters?	*NO*
If YES, are the equivalent corresponding unified ideographic characters identified?	
If YES, reference:	