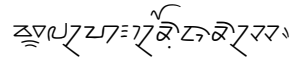


Wrong Identities of Three Historical Sundanese Character

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1 Introduction

This document provides a report to identify three historical Sundanese characters provided in the [Proposal for encoding additional Sundanese characters for Old Sundanese in the UCS \(L2/09-251R\)](#). The three characters are U+1BBA SUNDANESE AVAGRAHA, U+1BBD SUNDANESE LETTER BHA and U+1BBF SUNDANESE LETTER FINAL M. The description of the three characters according to the original proposal are:

7 1BBA SUNDANESE AVAGRAHA
Historically the avagraha deleted an initial vowel, but in older Sundanese orthography it came to have a different function: it kills the vowel of a preceding consonant but introduces a hiatus before an initial *a*-. An example is the word **ᮘᮞ᮪ᮒ᮪ᮒ** *alun-agung* ‘tidal wave’; this could also be written as two words **ᮘᮞ᮪ᮒ ᮘᮞ᮪ᮒ** *alun agung*; **ᮘᮞ᮪ᮒ᮪ᮒ** reads *alungung*.

ᮘᮞ᮪ᮒ 1BBD SUNDANESE LETTER BHA
Found on the Prasasta Kawali.

[\(L2/09-251R page 2\)](#)

ᮘᮞ᮪ᮒ 1BBF SUNDANESE LETTER FINAL M
The letter **ᮘᮞ᮪ᮒ** is found in palm leaf manuscripts. Note that the explicit killer U+1BAA **ᮘᮞ᮪ᮒ** SUNDANESE SIGN PAMAAEH, can be used to produce a phonetic final *-m*, as in **ᮘᮞ᮪ᮒ**. The letter **ᮘᮞ᮪ᮒ**, however, is not a presentation form of **ᮘᮞ᮪ᮒ** MA + **ᮘᮞ᮪ᮒ** PAMAAEH. Although the archaic glyph shape of conjunct *-ma* (modern **ᮘᮞ᮪ᮒ** *mpa*, archaic **ᮘᮞ᮪ᮒ** *mpa*) is similar to this, there is no corresponding modern form of the character FINAL M.

[\(L2/09-251R page 3\)](#)



However, the description provided in the Unicode standard does not reflect actual usage of these characters in primary sources. The discrepancy seems to stem from faulty interpretation from previous proposals which this proposal will try to amend.

2 Proposal

I propose to clarify the properties of the three historical characters mentioned above in the Unicode Standard, in order to fit their nature based on the evidences found on the primary old Sundanese palm-leaf manuscripts and stone inscriptions. The clarification should be made on their code chart and the core specification.





2.1 Glyph replacement

A glyph replacement is needed for 1BBF SUNDANESE LETTER FINAL M. The character in question is a scribal error misattributed as distinct character in secondary source from 21st century (see Figure 7 & 8). However, the glyph provided in Unicode does not match neither primary or secondary source which need to be replaced. This will also provide a clearer and unambiguous distinction with the shape of old Sundanese *ma* (see Table 6 & 7).

Former	Replacement
	
1BBF	1BBF

2.2 Annotation adjustment

Annotation for the three characters need to be adjusted as follow:

1BBA		SUNDANESE AVAGRAHA = gemination mark
1BBD		SUNDANESE LETTER BHA * SUNDANESE LETTER ARCHAIC I
1BBF		SUNDANESE LETTER FINAL M • used in a 21st century document • for actual final m, use 1B99 1BAA 

2.3 Core specification update

The Section 17.7 Sundanese of the [The Unicode® Standard Version 13.0 – Core Specification](#) needs to be updated.

Final Consonants. Sundanese historical texts employ ~~two~~ **one** final consonant, U+1BBE SUNDANESE LETTER FINAL K. **U+1BBF SUNDANESE LETTER FINAL M** was used in a 21st century

document based on a scribal error in an old Sundanese manuscript and shouldn't be used in practice. Both old and modern representations of *final m* use the U+1B99 SUNDANESE LETTER MA with explicit killer U+1BAA SUNDANESE SIGN PAMAAEH (ᮘ_ᮞ).

Historic Characters. Additional historic consonants appear only in old texts: *reu*, *leu*, and ~~*bha*~~ *archaic i* (the latter was interpreted as *bha* in early transcriptions). Another historic character, U+1BBA SUNDANESE AVAGRAHA has two functions, 1) kills the inherent vowel of the preceding consonant, and causes hiatus before an initial *a*, 2) doubles the preceding consonant, from which it may be separated in writing by a dependent vowel.

3 Transliteration

Scholars have transliterated manuscripts using the old Sundanese script in several different ways. In this document, I use the transliteration method as described in a document from the [DHARMA transliteration guide](#) (Balogh and Griffiths 2020).

4 Fonts

The three characters discussed in this document are historical and found from old Sundanese manuscripts and inscriptions. The model of modern Sundanese script is not sufficient to represent the situation of the old characters. Other fonts are needed to show a close approximation of the original artifacts. For this reason, in this document I used three Sundanese fonts:

- 1) Noto Sans Sundanese (ᮘᮞᮧᮦᮧᮦᮧᮦ) is used to represent the modern Sundanese script (created by Google Noto Project),
- 2) Resiguru (ᮘᮞᮧᮦᮧᮦᮧᮦ) is used to represent the old Sundanese characters written on palm-leaf (created by Ilham Nurwansah),
- 3) Kawali (ᮘᮞᮧᮦ) is used to represent the characters on stone inscriptions (created by Ilham Nurwansah).

The Charis SIL font is used for Latin script.

5 Discussion

5.1 7 U+1BBA SUNDANESE AVAGRAHA

The description of the function of 7 1BBA SUNDANESE AVAGRAHA in document L2/09-251R does not appear to match the usage in primary source manuscripts. I believe that the document's author based his analysis on the description shown in Figure 7 and taken from the book [Direktori Aksara Sunda untuk Unicode](#) (Baidilah et.al 2008, 56). The description states that the symbol ᮘ is a "separator between consonant and vowel in one syllable" without mentioning a name for this symbol. In L2/09-251R (page 2), the symbol is slightly modified to be 7 with the statement that "it kills the vowel of a preceding consonant but introduces a hiatus before an initial a-".

Naming this character 'Sundanese avagraha' in the Unicode Standard may be inappropriate. From cursory gleaning of in Wikipedia¹, the “avagraha (ऽ) is understood as a symbol used to indicate prodelision of an अ a in many Nepali and Indian languages. It is usually transliterated with apostrophe in roman script,” in wich prodelision “is a form of elision in which the latter word loses its first vowels”. This ‘avagraha’ function does not match the evidence in the old Sundanese manuscripts which will be discussed in the following .

5.2 Stylistic variations

A wide range of shapes for the sign discussed in this section can be found in old Sundanese palm-leaf manuscripts. In general, the shape consists of two curved line elements that stand vertically, where one curved line is longer, while the other is shorter and sometimes the bottom end intersects with the upper part of the longer curve, reminiscent of somewhat mirrored Latin letter [f].


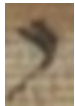


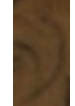
				
L 623	L 624	L 626	BL.BuiM	EAP 1

Table 1 Shape variations of 'avagraha'

5.3 Consonant reduplicator or gemination mark

In the introduction of *Three Old Sundanese Poem*, Teeuw (2006, 22) mentioned the fact that Noorduynd has transliterated the same symbol as "digit 2" in the old Sundanese manuscript *Bujangga Manik*. Teeuw considered that this graphic symbol functions as a multiplier of a consonant. The symbol ୨ also found in a *Bhima Swarga* manuscript that was written on *lontar*² leaf. According to Gunawan (2019, 27) the *Bhima Swarga* manuscripts were written in several scripts including the Old West Javanese Quadrat³ script, Old West Javanese (Old Sundanese) script, and Balinese script. He discussed about similarity of the symbol ୨ with the symbol ୨ in *gebang*⁴ manuscripts of *Bhima Swarga*⁵.

If we rely on the grapheme form, it is likely that the sign is repurposed long -aa vowel sign used in contemporaneous scripts such as Kawi, which does retain this function in certain cases in the text, such as *ajñāna*, in accordance to the original language of the word, Sanskrit. The use of this sign as mentioned by Teeuw is also found in the *lontar* manuscript of *Bhima Swarga*. Gunawan noted that the very frequent occurrence of duplication is considered to be a special characteristic of the manuscript tradition in the Sunda Region.

1 <https://en.wikipedia.org/wiki/Avagraha>

2 *Borassus flabellifer* - https://en.wikipedia.org/wiki/Borassus_flabellifer

3 This document uses the term "Kawi " for this kind of script. The name of this script model varies, see the *Proposal to encode Kawi* (L2/20-284r) for further explanation

4 *Corypha* (*gebang* palm, *buri* palm or *talipot* palm) - <https://en.wikipedia.org/wiki/Corypha>

5 This is also what is found in the behavior of the Late Kawi script originating in the other *gebang* manuscripts from West Java as described in the *Proposal to encode Kawi* (L2/20-284r) §5.3.2.

Gunawan himself mentioned this phenomenon as geminasi, and transliterated the symbol 𑄢 with a colon ":" into Roman characters, for example in the cluster *añela:wan* (transcription: *añel lawan*, 3v.4), *awaka:dipusuḥ* (transcription: *awak kadi pusuh*, 4r.2), *capa:wabima* (transcription: *capa pwa bima*, 21v.3).

Geminasi

Rasanya penting untuk melihat secara detil beberapa tanda grafis dalam naskah B karena sifat ambiguitasnya. Di antaranya adalah tanda 𑄢 yang fungsinya mirip dengan tanda 𑄣 dalam naskah A di atas, yang memunculkan beberapa persoalan. Tanda ini tidak hanya digunakan dalam naskah-naskah dengan teks Jawa Kuna, tetapi juga dalam beberapa naskah Sunda Kuna. Jika kita bersandar pada bentuk grafem, maka kesimpulan yang akan diajukan segera mengarah bahwa tanda tersebut adalah sebuah tanda untuk vokal panjang, yang memang berfungsi dalam kasus-kasus tertentu dalam teks, seperti *ajñāna* (6v.1), yang setia pada ejaan bahasa asalnya, Sanskerta. Bagaimanapun juga, dalam pengantar atas karyanya *Three Old Sundanese Poems* (2006: 22), Teeuw menyebutkan fakta bahwa Noorduyn telah men-transliterasikan simbol yang sama dengan "angka 2" bagi simbol yang sama yang muncul dalam naskah yang mengandung teks *Bhujañga Manik*. Teeuw menganggap simbol tersebut adalah simbol grafis yang merepresentasikan penggandaan sebuah kononon.

Penggunaannya dalam fungsi ini juga muncul dalam naskah B, seperti dalam gugusan *añela:van* (baca: *añel lavan*, 3v.4), *sañhyañmanik:əmbañ* (baca: *sañ hyañ manik kəmbañ*, 14r.3), *avaka:dipusuḥ* (baca: *avak kadi pusuh*, 4r.2), *ucapu:capa:va bima* (baca: *ucap ucap pwa bhima*, 21v.3). Saya mencatat bahwa kasus-kasus yang muncul menunjukkan fenomena penggandaan etimologis. Terkait dengan geminasi anetimologis, terdapat kasus-kasus sebagai berikut, tidak pernah ditulis dengan tanda yang kita bahas: *mñ* (119x), *ḥh* (67x) dan *ṛr* (24x). Jika kita bandingkan jumlah kemunculan geminasi naskah A dengan naskah B, jelaslah bahwa dalam naskah A kasus ini lebih banyak ditemukan. Fakta ini memperkuat pendapat Aciri (2011a: 58) yang menganggap kemunculan penggandaan yang sangat sering merupakan karakteristik khusus dari tradisi naskah di wilayah Sunda.

Figure 2 Discussion of gemination mark by Gunawan (2019, 27)

This symbol was also identified by Ruhimat (2019, 106) "as having a function as a consonant phoneme multiplier and is comparable to the *tasdid* (*shadda*)⁶ character in Arabic script".

Kasus adisi yang masih tergolong ditografi dan paling banyak ditemukan adalah penggandaan fonem konsonan yang terjadi pada kata-kata memiliki sufiks *-an*, *-eun*, dan alomorf *-ana*. Seperti pada kata: *susuhunan* – *susuhunnan*, *tinggaleun* – *tinggalleun*, *dayeuhannana*, dan kata-kata yang serupa dengan itu. Kasus ini memiliki keunikan tersendiri karena aksara yang diulang bukan dalam bentuk aksara *ngalagena* melainkan dengan tanda khusus (𑄢) yang berfungsi seperti *tasdid* pada aksara Arab.

Figure 3 Discussion of doubling consonant mark by Ruhimat (2019, 106)

Later, the DHARMA transliteration guide (§3.3.6) suggests to use colon (:) for the doubling of the consonant component for the old Sundanese manuscript, whether written in old Sundanese script or in the Kawi script. The transliteration guide suggests colon in two places for two purposes: for a long vowel *ka:* and for gemination *k:a*.

⁶ <https://en.wikipedia.org/wiki/Shadda>

To get clearer insight into the nature of the character, below are examples of a comparison of ᮊ based on the old Sundanese manuscripts with transliteration and the transcription. The attestations were taken from old Sundanese *lontar* manuscripts in the collection of the National Library of Indonesia, Jakarta: *Bhima Swarga* (L 623), *Saṅhyaṅ Siksa Kandaṅ Karāsian* (L 624), *Saṅhyaṅ Swawar Cinta* (L 626); and the *Bujaṅga Manik* (MS. Jav. b. 3 (R)) from Bodleian Library, Oxford University.

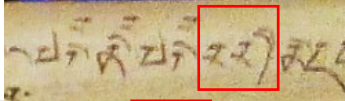
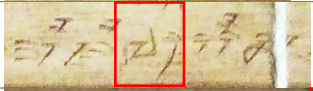

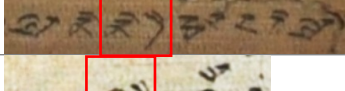


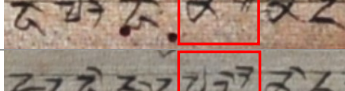
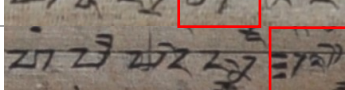

No.	Attestations	Transliteration	Transcription	Sources
①		<i>tinitis:an</i>	<i>tinitisan</i>	L 623
②		<i>apan:aku</i>	<i>apan aku</i>	L 623
③		<i>mijil:akən</i>	<i>mijilakən</i>	L 623
④		<i>Eta kaṅkən:a</i>	<i>eta kaṅkənna</i>	L 624
⑤		<i>pa(m)gihkən:ən</i>	<i>pa(n)gihkənən</i>	L 624
⑥		<i>lamun:a Itu</i>	<i>lamunna itu</i>	L 624
⑦		<i>manan:a Agama</i>	<i>mananna agama</i>	L 624
⑧		<i>ṅaran:a, wənaṅ</i>	<i>ṅaranna, wənaṅ</i>	L 624
⑨		<i>lamun:urut</i>	<i>lamun nurut</i>	L 624
⑩		<i>ditə(n)dən:an</i>	<i>ditə(n)dənan</i>	L 626
⑪		<i>paUIta:n</i>	<i>pauitan</i>	L 626
⑫		<i>hapit ṽm:ah</i>	<i>hapit ləmah</i>	L 626
⑬		<i>mətas:aiṅ</i>	<i>məntas aiṅ</i>	BL.BujM
⑭		<i>cuduk:apətəy</i>	<i>cunduk ka pətəy</i>	BL.BujM
⑮		<i>səṅḥ taṅkay:an</i> ,	<i>səṅḥ taṅkayan</i> ,	BL.BujM

Table 2 Various attestation of symbol ᮊ in old Sundanese manuscripts.

From the attestation examples above, we can get some behaviors of symbol ᮊ as follows:

- It can be used to double the initial consonant of the last syllable before the closed consonant. Example: ① *tinitis:an* (*tinitisan*), ⑩ *ditə(n)dən:an* (*ditə(n)dənan*), ⑪ *paUIt:an* (*pauitan*), ⑫ *ʔm:ah* (*ləmah*), ⑮ *sərəh tamkay:an* (*sərəh taŋkayan*)
- It can be used to double the consonant of the last syllable. Example: ④ *kaŋkən:a* (*kaŋkəna*), ⑧ *ŋaran:a* (*ŋaranna*)
- It can be used to double a consonant which has vocalization diacritics. Example: ⑤ *pa(ŋ)gihkən:ən* (*pa(ŋ)gihkənən*), ⑨ *lamun:urut* (*lamun nurut*)
- It can be used at the end of a syllable and simultaneously indicate the initial vowel of the next syllable. Example: ② *apan:aku* (*apan aku*), ⑬ *mətas:aim* (*məntas ain*)
- It can be used to double the end of a syllable with its inherent vowel to show the initial consonant of the next syllable. Example: ⑭ *cuduk:apətəy* (*cunduk ka pətəy*)
- It can be used to double the last syllable and followed by an independent vowels of the next word. Example: ⑥ *lamun:a Itu* (*lamunna itu*), ⑦ *manan:a Agama* (*mananna agama*)
- It can be used to double last syllable and followed by a dividing 'dot' marks. Example: ③ *ŋaran:a*, *wənaŋ* (*ŋaranna, wənaŋ*), ⑮ *sərəh tamkay:an* (*sərəh taŋkayan*)

By looking at the behaviors of the symbol above, we get an idea that the prodelision (sample ② and ③) is only one of the function that can be identified after being given a transcription from its transliteration. The more common function of the symbol ʔ is consonant reduplicator or gemination mark.

5.4 Transliteration vs. transcription

In the various old Sundanese text publications, transliteration and transcription are known. In the transliteration the Latin characters as much as possible represents each character in the source text without intervention, while in the transcription (often used in the critical edition) the interventions have been made in the form of spelling improvements, normalization to the modern standard spelling, and so on, so that the text can be more easily read by modern readers.

In my opinion, the information obtained by the author L2/09-251R from its reference sources is not complete. The problem, I think, lies in the method of transcription or the Latin edition presented in the example that the document refers to. I strongly suspect that the example given in the *Direktori Aksara Sunda* page 58 was a transcription, rather than transliteration. ᮘᮞ᮪ᮒᮒᮒ was transcribed into *alun-agung*, which should be *alun:agung* in the transliteration.

6 1BBD SUNDANESE LETTER BHA

The ᮒ 1BBD SUNDANESE LETTER BHA character mentioned in document L2/09-251R only provided a single attestation source, the Kawali inscription. To be more precise, the Kawali I inscription. Through re-reading of reference sources that discuss the reading of the inscriptions in the Kawali site, it turns out that several reading variations for the character has been proposed by different authors.

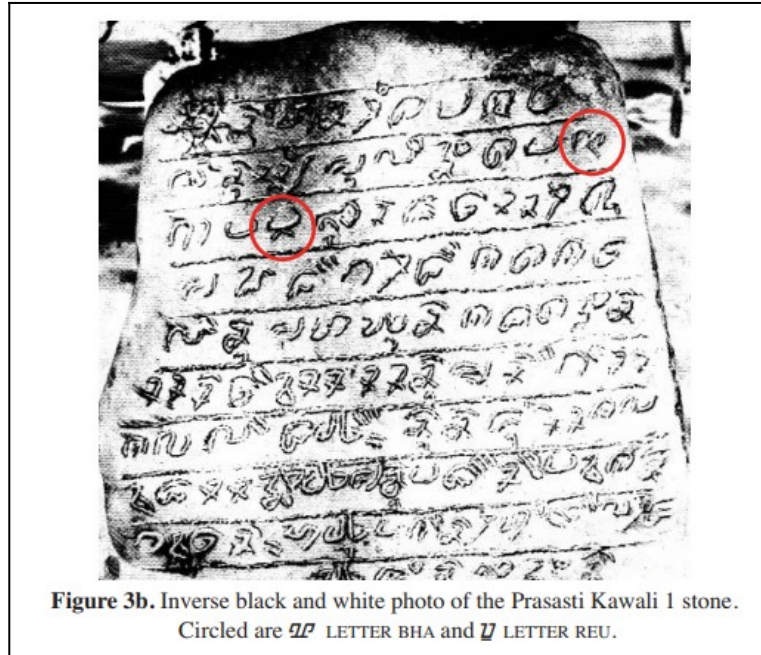


Figure 3b. Inverse black and white photo of the Prasasti Kawali 1 stone.
 Circled are **𑌨** LETTER BHA and **𑌩** LETTER REU.

Figure 4 Property of **𑌨** 1BBD SUNDANESE LETTER BHA
 and its attestation as mentioned in L2/09-251R (page 10).

6.1 Previous readings

The reading of this character is quite diverse, as has been shown in Nastiti's work (1996) several people have read these inscriptions, including F. Friederich (1855), K.F. Holle (1867), Pleyte (1911), J. Noordyun (1976), Saleh Danasasmita (1984), Atja (1940), Hasan Djafar (1991), Adeng (1995), Rosyadi (1995/1996) and Titi Surti Nastiti (1996). The most recent reading of the six Kawali inscriptions was carried out by Nastiti and Djafar (2016), and Gunawan and Griffiths (2021). Other readings of Kawali inscriptions generally relied to the readings of previous scholars⁷, including Ekadjati & Darsa (1997), Kartakusumama (2006), Munandar et. al. (2007), and Suryani (2011).

The character **𑌨** (more precisely it looks like this: **𑌨**) was found in the Kawali Inscription I (appeared 5×), the Kawali 2 (appeared 2×) and the Inscription Kawali 6 (appeared 2×). From the comparison of the Kawali inscription reading by many scholars, in general there are two readings of **𑌨**, namely **bha** and **i**.

⁷ Particularly from the Holle's and Friederich's readings.





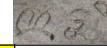
Authors	Year	Kawali I					Kawali II		Kawali VI ⁸	
		1	2	3	4	5	1	2	1	2
Script Cluster										
R. Friederich	1855	<i>bhagya</i>	-	-	-	-	<i>bhagya</i>	<i>bari</i>	-	-
Holle	1867	<i>bhagya</i>	-	-	-	-	<i>bhagya</i>	<i>bari</i>	-	-
Pleyte	1911	<i>bhagya</i>	-	-	-	-	-	-	-	-
J. Noorduynd	1976	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	-	-
Danasasmita	1984	<i>bhagya</i>	-	-	-	-	-	-	-	-
Aca et al.	1990	<i>iña</i>	-	-	-	-	<i>iña</i>	<i>ini</i>	-	-
Hasan Djafar	1991	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	-	-
Adeng	1995	<i>bhagya</i>	-	-	-	-	<i>bhagya</i>	<i>bari</i>	-	-
Rosyadi	1995 /6	<i>bhagya</i>					<i>bhagya</i>	<i>bari</i>	-	-
Titi S. Nastiti	1996	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	<i>ini</i>	<i>iwə</i>
Ekadjati & Darsa	1997	-	-	-	-	-	-	-	<i>ini</i>	<i>iwə</i>
(Kartakusuma, 2006)	2006	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>bani</i>	<i>bani</i>	<i>bawə</i>
Munandar et. al. (2007)	2007	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	<i>ini</i>	<i>iwə</i>
Suryani	2010	<i>bhagya</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>bhagya</i>	<i>bhari</i>	<i>ini</i>	<i>bawə</i>
Nastiti & Djafar (2016)	2016	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	<i>ini</i>	<i>iwə</i>
Gunawan & Griffiths	2021	<i>iña</i>	<i>ia</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>iña</i>	<i>ini</i>	<i>ini</i>	<i>iwə</i>

Table 3 Reading variation of character 𑀓𑀭

6.2 BHA vs. I

The character 𑀓𑀭 appeared (5×) on the Kawali I inscription and was used in two words namely *bhagya* (or *iña*⁹) and *ia*. Character 𑀓𑀭 was read as *bha* consistently by R. Friederich (1855), Holle (1867), Adeng (1995), and Rosyadi (1995/6) against the Kawali I Inscription (side 1 [main surface]). Inconsistency appeared in their reading of the Kawali II Inscription, where the character 𑀓𑀭 was read as *bha* in the cluster 𑀓𑀭𑀭𑀭 (*bhagya*) and *ba* in the cluster 𑀓𑀭𑀭𑀭 (*bani*) at the same time. Pleyte (1911) and Danasasmita (1984) read only the main side of the Kawali I Inscription, where the 𑀓𑀭𑀭𑀭 cluster was read as *bhagya*.

More complete and consistent readings were done by Noorduynd (1976), Djafar (1991), Nastiti (1996), Munandar (2007), Nastiti & Djafar (2016), and Gunawan and Griffiths (2021) on 5 character clusters in the Kawali 1 inscription (all sides) and two character clusters on the Kawali II Inscription. They read the cluster 𑀓𑀭𑀭𑀭 as *iña*, the cluster 𑀓𑀭𑀭𑀭 as *ia*, and the cluster 𑀓𑀭𑀭𑀭 as *ini*. Likewise the reading of Aca et.al. (1990) on the Kawali I (main surface) and Kawali II inscription.

⁸ The numbering of the inscriptions in this paper follows Nastiti & Djafar; Munandar recorded it as the Kawali IV Inscription, while Kartakusuma recorded it as the Kawali III Inscription.

⁹ In the original publication the character *ñ* was written using the *ny* digraph. The character *ñ* is used in this document to make it easier to distinguish between them.

Meanwhile, the readings (or reproductions?) from Kartakusuma (2006) and Suryani (2010) seem inconsistent.

For the Kawali 6 inscription, consistent readings of the $\Omega\tilde{a}$ cluster as *ini* and the $\Omega\tilde{G}$ cluster as *iwa* were carried out by Nastiti (1996), Ekadjati & Darsa (1997), Munandar et.al. (2007), Nastiti & Djafar (2016), and Gunawan and Griffiths (2021). In contrast, Kartakusuma (2006) reads $\Omega\tilde{a}$ as *bani* and Suryani (2010) reads it as *ini*. For the $\Omega\tilde{G}$ cluster, both read it as *bawə*.

I would recommend to take the latest identification by Nastiti (1996) and Gunawan & Griffiths (2021)¹⁰ about this character on its §4.4.1. Palaeography section. They mentioned that character Ω should be read as *I* with its unique palaeographical features:

"...Very unique forms are found in the word *Iña* (fig.13d) which was misread as *bhagya* by early scholars. We can recognize this type of *I* by a slanted line under a double arch. By contrast, the independent vowel *I* is normally formed by writing *b* and adding a slanting stroke below (as illustrated in fig. 4c and appendix, table 2). The aksara *ña* can also be recognized by the separate parenthesis-shaped stroke to the right of a *ga* shape. In manuscripts, *ña* is formed by adding such a stroke to the shapes of *ba* and *ya*. As such, these two features are unique and only exist in the Kawali inscription..."

Transliteration	BaTu	Keba	HuDa	LiWa	Kawa	Gebang SKK	Lontar SMG
A							
I							
U							
E							
O							
qa							
R*							
l**							

a
b

Figure 5 The reading of character Ω as *i*;

a. Appendix (fig. 4c and appendix, table 2) from Gunawan & Griffiths (2021), b. Appendix from Nastiti (1996)

6.3 Existence of *bha* in manuscripts

There is no report that character *bha* in any philological work on old Sundanese manuscripts so far. A comprehensive pleographical analysis of old Sundanese manuscript collection from a scriptorium in West Java by Sopian (2020)¹¹ also reports nothing about the existence of *bha*, as well as Noviana's work (2020, 161) on visual analysis of the Sundanese script that found no evidence of *bha* ever used in old Sundanese script. The only existence of *bha* so far recorded in West Java is on *gebang* which used the Kawi script (distinct from Old Sundanese).

10 <https://journals.openedition.org/archipel/2365>

11 <http://repository.tufs.ac.jp/bitstream/10108/94310/1/lacs026008.pdf>

The most possible attestation of the character *bha* is probably in the form of *aksara pasangan* or subjoined letter (Table 4). However, this character is always transliterated as *ba* by scholars (Gunawan 2009, 2019; Nurwansah 2019; Sopian 2020; Wartini et al. 2010)



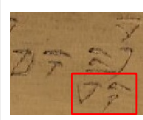
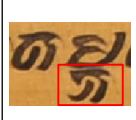

				
a	b	c	d	e

Table 4 Comparison of subjoined *ba* in various *lontar* manuscripts (abc), in contrast with subjoined *ba* (d) and consonant *bha* (e) in *gebang* manuscript with Kawi script. a. *kembang* (L 624), b. *mba* (Ciburuy), c. *tambi* (Bujangga Manik), *tamba* (L 630), *bhvana* (L 630)

The shape of subjoined *ba* in the Old Sundanese script looks similar to its cognate subjoined *ba* and consonant *bha* in the Kawi script. The shape of old Sundanese consonant *bha* is hypothetically derived from the Kawi script, but unfortunately, up until this document written I haven't found the attestation of character *bha* so far. Instead, there are indications that the *bha* (𑊛𑊚) in Kawi script most likely replaced with *ba* (𑊛𑊚) in the old Sundanese script. Table 5 shows the same word "*bhaṭara*" (Devanagari: भटार; *bhaṭāra*) in Old Javanese *Bhima Svarga* text with old Sundanese script (L 623) rendered as *baṭara*, while Kawi script (L 455) rendered it as *bhaṭara* (Gunawan 2019). The other Old Sundanese *Sanghyang Siksa Kandang Karesian* manuscript (L 624) rendered it as *batara* in old Sundanese script, while the Old Javanese *Dharma Patanjala* (DhPat) rendered it as *bhaṭara* in Buda-Gunung script.

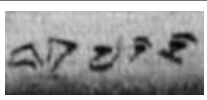
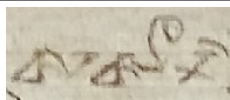
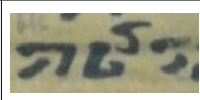

			
L 624	L 623	L 455	DhPat

Table 5 Writing variation of word "*bhaṭara*"

7 1BBF SUNDANESE LETTER FINAL M

The L2/09-251R document did not provide sufficient evidence of attestation for the character 1BBF SUNDANESE LETTER FINAL M. This caused a misinterpretation of the intended character. The evidence found in old Sundanese manuscripts provides other information than what has been conveyed in the document.


	<p>1BBF SUNDANESE LETTER FINAL M</p> <p>The letter 𑊛𑊚 is found in palm leaf manuscripts. Note that the explicit killer U+1BAA 𑊛 SUNDANESE SIGN PAMAAEH, can be used to produce a phonetic final <i>-m</i>, as in 𑊛𑊚. The letter 𑊛𑊚, however, is not a presentation form of 𑊛 MA + 𑊛 PAMAAEH. Although the archaic glyph shape of conjunct <i>-ma</i> (modern 𑊛 <i>mpa</i>, archaic 𑊛 <i>mpa</i>) is similar to this, there is no corresponding modern form of the character FINAL M.</p>
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Figure 6 Property of 𑊛 1BBD SUNDANESE LETTER FINAL M










Disamping itu, ada 2 cara penanda *patén* khusus, yaitu (a)  berfungsi untuk menambah bunyi konsonan /k/ pada akhir aksara yang didahuluinya, contoh:  = anak 'anak'; dan (b)  berfungsi untuk menambah bunyi konsonan /m/ pada akhir aksara yang didahuluinya, contoh:  = banem 'hutan'.

Figure 7 Discussion of *final m* in the *Direktori Aksara Sunda* page 56¹²

The document does not even provide accurate representation from the source it cited, changing the form of the glyph from  (with a loop at the bottom) to  (without loop). The form of the character  as the *final m* is different when compared to the modern Sundanese script *ma* () but this creates serious confusion, because in general, the form is identified in old Sundanese orthography as consonant *ma*  with inherent vowel *a* (see tables below).




Modern Sundanese <i>ma</i>	<i>Final m</i> (?)	Old Sundanese <i>ma</i>
		

Table 6 *final m* vs. *ma*















						
L 406	L 263	L 624	L 626	BL.BujM	EAP 1	CWG

Table 7 Shape variation of old Sundanese *ma*

It is clear that the character *ma* has three lines on the left and the 'seven-shaped' (7) line on the right. Therefore the shape () in the Unicode standard should be clarified.

7.1 Existence of *final m* in manuscripts

The existence of the final character *m* in the form of an  is doubtful in the primary manuscript sources. I see that the attestation used by author L2/09-251R was a secondary source, in the form of character reproduction through rewriting in  shape. From a more in-depth examination of the references, I found that the example of character *final m* was taken from the *Carita Parahiyangan* manuscript (L 406). In the appendix of the Sundanese script workshop report document dated

12 Loose translation: “Beside that, there are to ways of special killer, (a)  which used to add the sound of consonant /k/ at the end of the preceding letter, example:  = anak ‘child’; and (b)  used to add the sound of consonant /m/ at the end of the preceding letter, example:  = banem ‘forest’.”

October 21, 1997, there were two variants of the form of several script characters which were grouped into vocalization signs (*rarangken*) (Pelaksana 1997).

Based on the re-observation of the list of old Sundanese manuscript publications that have been carried out (at least until 1997), the two variants of the character form of the script were derived from the compilation of characters found in the *Sewaka Darma* (L 408), *Kawih Paningkes* (L 420), *Carita Ratu Pakuan* (L 410) and *Carita Parahiyangan* (L 406). The three manuscripts mentioned earlier have the same character form and features with each other, this is very likely due to the manuscripts being copied or written by the same person, which is most likely Kai Raga¹³.

In the philological research of the three manuscripts as has been done by Atja (1970), Danasasmita et. al. (1987), Ayatrohaedi et. al. (1987), there were no reports of the appearance of the *final m* or *final k* characters. The later researches conducted by Gunawan (2009), Wartini et. al. (2010), Ruhimat et.al. (2014), Nurwansah (2019), dan Sopian (2020) the *final k* character was found in some old Sundanese manuscripts, but not with *final m*. From all the studies that have been carried out, the most common way for forming '*final m*' is to add a *killer* marker after the *ma* character.

**TABEL
MODEL ANGKA DAN RARANGKEN
AKSARA SUNDA KUNO**

No.	R a r a n g k e n			A n g k a		
	Wangun	Ngaran	Ajen	Wangun	Ngaran	Ajen
1.	⋯⋯	Panghulu	robah sora jadi <u>i</u>	0	Ḃnol	0
2.	⋯⋯	Panyuku	robah sora jadi <u>u</u>	Ḃ	Hiji	1
3.	⋯⋯	Paneleng	robah sora jadi <u>e</u>	Ḃ	Dua	2
4.	⋯⋯	Panelong	robah sora jadi <u>o</u>	Ḃ	Tilu	3
5.	⋯⋯	Pamépat/ Paneuleung	robah sora jadi <u>é/eu</u>	Ḃ	Opat	4
6.	⋯⋯	Pangwisad	<u>h</u> di tungtung	Ḃ	Lima	5
7.	⋯⋯	Panyócök	<u>ng</u> di tungtung	Ḃ	Génép	6
8.	⋯⋯	Panglayar	<u>r</u> di tungtung	Ḃ	Tujuh	7
9.	Ḃ	(?)	<u>k</u> di tungtung	Ḃ	Dalapan	8
10.	Ḃ	(?)	<u>m</u> di tungtung	Ḃ	Salapan	9
11.	Ḃ	Pamaeh	ngaleungitkeun sora			
12.	Ḃ	Pada leu- tik	eureun sakeudeung (koma)			
13.	Ḃ	Pada gēde	tanda pamuka			
14.	Ḃ	Pada gēde	tanda pungkas			

Figure 8 Attestation of *final k* (row 9), *final m* (row 10), compare it with *killer* (row 11) (Pelaksana 1997)

Judging from the shape of the *final k* (Ḃ) and *final m* (Ḃ) characters shown in Figure 8, I can determine that the character model comes from the *Carita Parahiyangan* manuscript (L 406) of the

¹³ https://id.wikipedia.org/wiki/Kai_Raga

National Library of Indonesia collection. I also compare its form with other characters in Figure 9. From that guide, I specifically re-examined *Carita Parahiyangan* manuscript to get the image of the original *final m* character and get a clearer context.

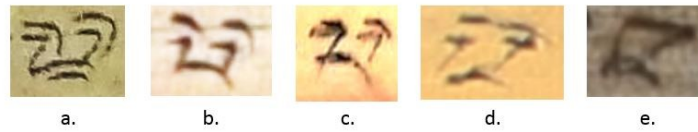


Figure 9 Variation of *final k* in old Sundanese manuscripts. a. *Carita Parahyangan* (L 406) b. *Sanghyang Swawar Cinta* (L 626) c. *Jati Suda* (L 632b) d. *Para Putra Rama & Rahwana (Pantun Ramayana)*, e. *Sanghyang Siksa Kandang Karesian* (L 624)

The results of a careful examination of the *Carita Parahyangan* manuscript show several possibilities for the existence of '*final m*', as follows:

No.	Attestation	Transliteration	Page
①		sum·bālehan·	24.a
②		tām·bāy·	28.a
③		lum·mākas·	28.b
④		madum·dum·	28.b
⑤		momogana	34.a
⑥		tum·bak	46.b

Table 8 Possible attestation of *final m*

- In examples ①, ②, ③, and ④ we find variations of the *killer* that follow the character *ma*.
- In example ⑤, it appears that the *ma* character is 'integrated' with the vocalization of *panolong* (o), in contrast it can be seen in comparison with the *ma* + *panolong* cluster beside it.
- The image on ⑥ is the only attestation found in the *Carita Parahiyangan* manuscript out of 47 leaves!

Cases number ⑤ and ⑥ were strongly identified as scribal errors where the author or copyist most likely accidentally missed a line feature of the character *ma* (𑌓). As can be seen in the attestation, the scribe of this manuscript only did it twice! while the rest 'final *m*' were formed by adding a *killer* after the character *ma* (see Table 9).

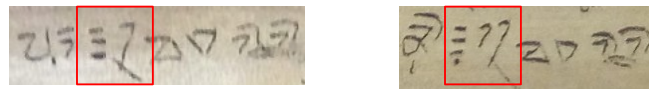


Figure 10 Left 𑌓𑌓𑌓𑌓𑌓 (tumbak), right 𑌓𑌓𑌓𑌓𑌓 (numbak)

The mistake in determining the character *ma* (𑌓) as the *final m* (𑌓), is very likely due to the reading that relies on the transcription, but not based on the transliteration. A case like this, for example, occurs in the *Carita Parahiyangan* (L 406) manuscript from the National Library of Indonesia collection, which has been edited and published several times (Atja 1968; Atja and Danasasmita 1981; Darsa and Ekadjati 1995). In this manuscript, the characters *ma* and "final *m*" are used simultaneously on the same page. In the image below is a good example of *ma* behavior in old Sundanese manuscript with comparison of transliteration and transcription.

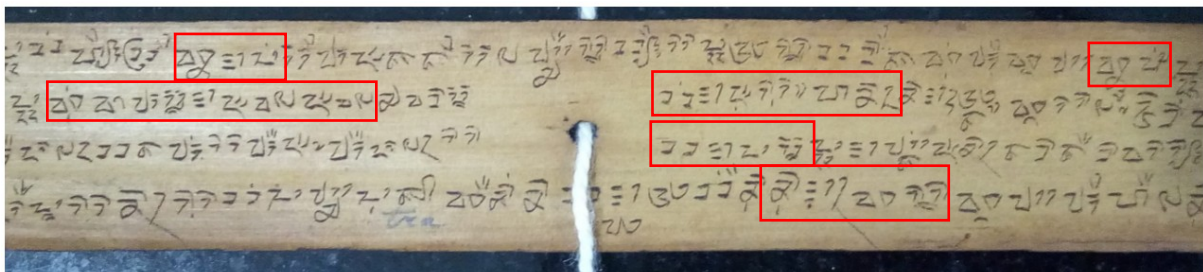


Figure 11 *Carita Parahiyangan* (L 406)

No.	Attestation	Transliteration	Transcription	Meaning
①		<i>l̕mpañ</i>	<i>l̕mpañ</i>	to walk
②		<i>l̕pañ</i>	<i>l̕mpañ</i>	to walk
③		<i>l̕mpañ</i>	<i>l̕mpañ</i>	to walk
④		<i>l̕mpañ</i>	<i>l̕mpañ</i>	to walk
⑤		<i>jam:pañ</i>	<i>jampañ</i>	place name
⑥		<i>bunñatak- mañaleñale</i>	<i>bunñatak mañale- ñale</i>	personal name

- Ayatrohaedi, Tien Wartini, and Undang Ahmad Darsa. 1987. *Kawih Paningkes Dan Jatiniskala*. Bandung: Bagian Proyek Penelitian dan Pengkajian Kebudayaan Sunda, Direktorat Jenderal Kebudayaan, Departemen Pendidikan dan Kebudayaan.
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- Titi Surti Nastiti. 1996. "Prasasti Kawali." *Jurnal Penelitian Balai Arkeologi Bandung* 4 (November 1996): 19–37.
- Wartini, Tien, Ruhaliah, Rahmat Sopian, and Aditia Gunawan, eds. 2010. *Tutur Bwana Dan Empat Mantra Sunda Kuna*. Jakarta: Kerjasama Perpustakaan Nasional RI dan Pusat Studi Sunda.

Source of manuscripts and inscriptions

Object	Alias	Documentation/Current Location	Ref. Number
<i>Carita Parahiyangan</i>		National Library of the Republic of Indonesia, Jakarta	L 406
<i>Sewaka Darma</i>	<i>Kawih</i> <i>Panyaraman</i>	National Library of the Republic of Indonesia, Jakarta	L 408
<i>Carita Ratu Pakuan</i>		National Library of the Republic of Indonesia, Jakarta	L 410
<i>Bhima Swarga</i>		National Library of the Republic of Indonesia, Jakarta	L 623
<u><i>Sañhyañ Siksa Kandañ Karāsian</i></u>		National Library of the Republic of Indonesia, Jakarta	L 624
<i>Sañhyañ Swawar Cinta</i>		National Library of the Republic of Indonesia, Jakarta	L 626
<i>Bhima Swarga</i>		National Library of the Republic of Indonesia, Jakarta	L 455
<u><i>Sañhyañ Siksa Kandañ Karāsian</i></u>		National Library of the Republic of Indonesia, Jakarta	L 630
<i>Carita Parahiyañan</i>		National Library of the Republic of Indonesia, Jakarta	L 406
<i>Kawih Paningkās</i>	<i>Kosmologi Sunda</i>	National Library of the Republic of Indonesia, Jakarta	L 420
<i>Jati Suda</i>		National Library of the Republic of Indonesia, Jakarta	L 632b
<u><i>Carita Waruga Guru</i></u>		National Library of the Republic of Indonesia, Jakarta	KBG 74
<u><i>Fragmen Kisah Putra Rama & Rawana, Kropak 18 [15th century-16th century]</i></u>	EAP 1	Digitised by EAP Project, British Library. The manuscript is still kept in Ciburuy scriptorium site, in Garut, West Java	EAP280/1/1/2
<u><i>Bujanga Manik</i></u>		Bodleian Library, Oxford University.	MS. Jav. b. 3 (R)
<i>Dharma Pātañjala</i>		Staatsbibliothek Berlin	
<i>Para Putra Rama dan Rahwana</i>	<i>Pantun Ramayana</i>	Museum Sribaduga, West Java	L 1102
<u><i>Prasasti Kawali I (inscription)</i></u>		Astana Gede Kawali site, Ciamis, West Java	
<u><i>Prasasti Kawali II (inscription)</i></u>		Astana Gede Kawali site, Ciamis, West Java	
<u><i>Prasasti Kawali VI (inscription)</i></u>		Astana Gede Kawali site, Ciamis, West Java	

Abbreviations

CWG	: <i>Carita Waruga Guru</i>
EAP	: Endangered Archive Programme
BLBujM	: British Library, Bujangga Manik
DhPat	: <i>Dharma Pātañjala</i>