

Comments on TABLE 240 - Row 17: BURMESE

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A. Consonant Letters/Symbols (1700-1721)

1. Table 240 - Row 17 does not assign codepoints to medial consonant symbols, and consonant letters to transcribe non-initial elements in consonant clusters appearing in words borrowed from Pali. Since the rate of such borrowed words in Burmese is unignorable, the code system which cannot write these words properly has no practical use. Therefore some or other option must be chosen for the purpose. The choices are as follows:

a) Assign to the "non-initial" form of a consonantal element the different codepoint from the corresponding "basic" form of it.

b) Make no difference in codepoint between "basic" and "non-initial" form. Instead, equip the code system with a kind of font-database, which enables automatically select "non-initial" form after another consonantal element. In this case, for dealing with so-called "meta-usages", often found in dictionaries, grammars, course books etc., it is necessary to assign a codepoint to some special device to characterize "non-initial" usage (for example, special dash used as a substitute for a basic form of consonant letter.)

In my proposal I choose a).

Basic form	"Non-initial" form	Usage
က (1700)	ၵ	စက္ကူ တက္ကသိုလ် ဥက္ကဋ္ဌ သက္ကရာဇ်
ခ (1701)	ၶ	ဒုက္ခ ရိက္ခာ လက္ခဏာ
ဂ (1702)	ၷ	ပုဂ္ဂိုလ် မဂ္ဂဇင်း
ဃ (1703)	ၸ	အဋ္ဌ
စ (1705)	ၹ	ကိုစွာ ပစ္စည်း ပဉ္စမ ပဉ္စင်း
ဆ (1706)	ၺ	ပုဆွာ တိရစ္ဆာန်
ဇ (1707)	ၻ	ဝိဇ္ဇာ မဉ္ဇူ
ဈ (1708)	ၼ	မဇ္ဈိမဒေသ
ဋ (170B)	ၽ	ပဋုဏ္ဏရစ်
ဌ (170C)	ၾ	သဏ္ဍာန်
ဍ (170D)	ၿ	ဘဏ္ဍာ မဏ္ဍပ် အဉ္စ
ဎ (170F)	ၾ	ပုဏ္ဏား ဝဏ္ဏ
တ (1710)	ၿ	သေတ္တာ သတ္တမ မန္တလေး အန္တရာယ်
ထ (1711)	ၾ	ဝတ္ထု စတုတ္ထ အတ္ထုပ္ပတ္တိ ဂန္ထဝင်
ဒ (1712)	ၿ	သဒ္ဒါ စန္ဒာ ကုဋေ
ဓ (1713)	ၾ	ဗုဒ္ဓ ဓန္ဒာ
န (1714)	ၿ	ဝိနည်း ကိနုရာ
ပ (1715)	ၾ	သိပ္ပံ အဓိပ္ပာယ် ကုမ္ပဏီ သမ္ပရာသီး
ဖ (1716)	ၿ	ပုပ္ဖ
ဗ (1717)	ၾ	နိဗ္ဗာန် ဇမ္ဗူဒီပါ
ဘ (1718)	ၿ	ကမ္ဘာ
မ (1719)	ၾ	ဓမ္မ လိမ္မော်သီး သမ္မတ ဗြဟ္မ
လ (171C)	ၿ	ပလ္လင်
အ (1721)	ၾ	ရဟန်း နှင်း မိန့် စိယ့် etc. in Ancient Burmese epigraphs

Basic form	Medial consonant form	Basic form	Medial consonant form
ဝ (171A)	၍	ဝ (171D)	ဝ
ရ (171B)	၍	ဟ (171F)	၍

*All medial consonant forms are also used as transcribe consonant cluster in borrowed words.

*Burmese writing system has several single letters for particular consonant clusters. To deal with these letters properly, it is advisable to assign codepoints to the second member of such consonant clusters, and make each single letter in question as a realization of basic form of the first member + "non-initial" form of the second member.

Letter	as a realization of	Usage
သ	သ (171E) + putative "non-initial" form of သ	ပြဿနာ ၊ ပိဿာ
ဃ	ဃ (170D) + putative "non-initial" form of ဃ (170E)	အဃာသကမ္ပိ

similar case:

ဋ	ဋ (170B) + "non-initial" form of ဋ (170C)	ဥက္ကဋ္ဌ ၊ ဆဋ္ဌမ
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*Consonant letter င (1704) has a variational form ၵ, which appears mainly in the *first* element of consonant cluster in Pali.

*ရ also has a similar variational form ၶ, which appears only in epigraphs.(e.g. ပုဟိာ)

B. Vowel Letters(1722-172A)

2. The table improperly assigns codepoints to combination of a consonant letter and a vowel sign. They must be deleted from the table.

အာ (1722) အဲ (1728)

3. Conversely, the table does not assign a codepoint to an structurally indecomposable unit.

ဧည့်	Burmese Vowel Letter <i>ai</i> . It is unreasonable to consider it as the combination of vowel letter ဧ, final consonant letter ည့် and tone mark ၵ.
ဧည့်	Burmese Vowel Letter <i>o</i> .

C. Vowel/Tone signs(172B-1739)

4. Some of vowel signs take allographic form, according to cooccurring consonant letter. Take into consideration "meta-usages" found in course book etc., it is advisable to assign codepoint to each allographic forms. Incidentally, 172b is not basic form but allographic form.

ၵ	Burmese Vowel Sign <i>-aa</i> (wai' hca)	ၵ (172B)	allograph of <i>-aa</i> (mau' hca)
ၵ (172E)	Burmese Vowel Sign <i>-u</i> (tahcaun ngin)	ၵ	allograph of <i>-u</i>
ၵ (172F)	Burmese Vowel Sign <i>-uu</i> (hnahcaun ngin)	ၵ	allograph of <i>-uu</i>
ၵ (1732)	Burmese Vowel Sign <i>-o</i> (thawei htou wai' hca)	ၵ	allograph of <i>-o</i> (thawei htou mau' hca)
ၵ (1733)	Burmese Vowel Sign <i>-o'</i> (thawei htou wai' hca hyei htou)	ၵ	allograph of <i>-o'</i> (thawei htou mau' hca hyei htou)

5. ၆-၁ (1732) is an example of vowel sign which is graphically discontinuous. Burmese has another example of this case, namely $\frac{0}{1}$, with its own value neither -i ($\frac{0}{-}$) nor -u ($\frac{0}{1}$), just as the case of ၆-၁. It is unreasonable to deal with these two cases unequally; If one is assigned its codepoint, the other should be assigned its codepoint equally.

$\frac{0}{1}$ Burmese Vowel Sign -V $\frac{0}{-}$ allograph of -V
 (lounji tin tahcaun ngin)

6. 1737(VIRAMA, hyei htou) and 1738(KILLER, atha') have graphically indistinguishable form $\frac{0}{-}$. VIRAMA appears only as a part of 1733 above, and KILLER is only attached to consonant letters to make final consonant letter. Hence these two make an opposition only in "meta-usage". I think it is unnecessary to make distinction between the two signs, because 1733 is assigned its own codepoint.

7. Two vowel sign should be introduced for transcribing the form in epigraphs.

$\frac{0}{-}$ Burmese Vowel Sign -aW $\frac{0}{-}$ Burmese Vowel Sign -AW

D. Numerics, Punctuations, Logographic Letters etc. (1740-1759)

8. င (174f) is a part of logographic letter ငငံး, never used in isolation. Codepoint 174f should be assigned to the whole letter, not the part of it.

င (174f) → ငငံး (174f) Burmese Symbol Aforementioned (lagaun)

9. 1750-1759 are not used in Burmese. (I think these letters rather should be contained into Mon code system, not Burmese.) Therefore they are deleted from the table.

	170	171	172	173	174	175	176	177
0	space	က	ခ	ဂ	ဃ	ဒ	ဇ	ဇ
1	delimiter	စ	ဆ	ဇ	ဇ	(ဇ)	ဇ	ဇ
2	-	စ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ
3		စ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ
4		က	ခ	ဂ	ဃ	ဒ	ဇ	ဇ
5		က	ခ	ဂ	ဃ	ဒ	ဇ	ဇ
6	o	ဇ	ဇ	ဇ	(ဇ)	ဇ	ဇ	ဇ
7	o	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ
8	J	က	ခ	ဂ	ဃ	ဒ	ဇ	ဇ
9	၃	က	ခ	ဂ	ဃ	ဒ	ဇ	ဇ
A	၄	စ	ဆ	ဇ	ဇ	ဇ	ဇ	ဇ
B	၅	စ	*	ဇ	ဇ	ဇ	ဇ	ဇ
C	၆	ဇ	ဇ	ဇ	**	ဇ	ဇ	ဇ
D	၇	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ
E	၈	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ
F	၉	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ	ဇ

* putative Non-final form of 172A
 ** putative Non-final form of 174C

dec	hex	Name	dec	hex	Name
000	00	(space)	066	42	Burmese Consonant Letter <i>ya</i>
001	01	syllable delimiter	067	43	ibid, Medial Consonant Symbol form
002	02	dash (substitute for letter)	068	44	Burmese Consonant Letter <i>ra</i>
003	03	Burmese Punctuation II	069	45	ibid, Medial Consonant Symbol form
004	04	Burmese Punctuation I	070	46	ibid, Subscript Letter form
005	05		071	47	Burmese Consonant Letter <i>la</i>
006	06	Burmese Digit Zero	072	48	ibid, Non-initial form
007	07	Burmese Digit One	073	49	Burmese Consonant Letter <i>wa</i>
008	08	Burmese Digit Two	074	4A	ibid, Medial Consonant Symbol form
009	09	Burmese Digit Three	075	4B	Burmese Consonant Letter <i>sa</i>
010	0A	Burmese Digit Four	076	4C	ibid, putative Non-initial form
011	0B	Burmese Digit Five	077	4D	Burmese Consonant Letter <i>ha</i>
012	0C	Burmese Digit Six	078	4E	ibid, Medial Consonant Symbol form
013	0D	Burmese Digit Seven	079	4F	Burmese Consonant Letter <i>La</i>
014	0E	Burmese Digit Eight	080	50	Burmese Consonant Letter @ <i>a</i>
015	0F	Burmese Digit Nine	081	51	ibid, Non-initial form
016	10	Burmese Consonant Letter <i>ka</i>	082	52	Burmese Vowel Letter <i>i</i>
017	11	ibid, Non-initial form	083	53	Burmese Vowel Letter <i>ii</i>
018	12	Burmese Consonant Letter <i>kha</i>	084	54	Burmese Vowel Letter <i>u</i>
019	13	ibid, Non-initial form	085	55	Burmese Vowel Letter <i>uu</i>
020	14	Burmese Consonant Letter <i>ga</i>	086	56	Burmese Vowel Letter <i>e</i>
021	15	ibid, Non-initial form	087	57	Burmese Vowel Letter <i>ai</i>
022	16	Burmese Consonant Letter <i>gha</i>	088	58	Burmese Vowel Letter <i>o</i>
023	17	ibid, Non-initial form	089	59	Burmese Vowel Letter <i>o</i> .
024	18	Burmese Consonant Letter <i>nga</i>	090	5A	Burmese Vowel Letter <i>o'</i>
025	19	ibid, Superscript form	091	5B	
026	1A	Burmese Consonant Letter <i>ca</i>	092	5C	
027	1B	ibid, Non-initial form	093	5D	
028	1C	Burmese Consonant Letter <i>cha</i>	094	5E	
029	1D	ibid, Non-initial form	095	5F	
030	1E	Burmese Consonant Letter <i>ja</i>	096	60	Burmese Vowel Sign - <i>a</i>
031	1F	ibid, Non-initial form	097	61	ibid, Allographic form
032	20	Burmese Consonant Letter <i>jha</i>	098	62	Burmese Vowel Sign - <i>i</i>
033	21	ibid, Non-initial form	099	63	Burmese Vowel Sign - <i>ii</i>
034	22	Burmese Consonant Letter <i>nya</i>	100	64	Burmese Vowel Sign - <i>u</i>
035	23	Burmese Consonant Letter <i>Nya</i>	101	65	ibid, Allographic form
036	24	Burmese Consonant Letter <i>Ta</i>	102	66	Burmese Vowel Sign - <i>uu</i>
037	25	ibid, Non-initial form	103	67	ibid, Allographic form
038	26	Burmese Consonant Letter <i>Tha</i>	104	68	Burmese Vowel Sign - <i>e</i>
039	27	ibid, Non-initial form	105	69	Burmese Vowel Sign - <i>aY</i>
040	28	Burmese Consonant Letter <i>Da</i>	106	6A	Burmese Vowel Sign - <i>o</i>
041	29	ibid, putative Non-initial form	107	6B	ibid, Allographic form
042	2A	Burmese Consonant Letter <i>Dha</i>	108	6C	Burmese Vowel Sign - <i>o'</i>
043	2B	ibid, Non-initial form	109	6D	ibid, Allographic form
044	2C	Burmese Consonant Letter <i>Na</i>	110	6E	Burmese Vowel Sign - <i>aW</i>
045	2D	ibid, Non-initial form	111	6F	Burmese Vowel Sign - <i>AW</i>
046	2E	Burmese Consonant Letter <i>ta</i>	112	70	Burmese Vowel Sign - <i>V</i>
047	2G	ibid, Non-initial form	113	71	ibid, Allographic form
048	30	Burmese Consonant Letter <i>tha</i>	114	72	Burmese Vowel Sign - <i>aM</i>
049	31	ibid, Non-initial form			(ANUSVARA)
050	32	Burmese Consonant Letter <i>da</i>	115	73	Burmese Finalizing Sign -' (KILLER)
051	33	ibid, Non-initial form	116	74	Burmese Tone Sign - (DOT BELOW)
052	34	Burmese Consonant Letter <i>dha</i>	117	75	Burmese Tone Sign - (VISARGA)
053	35	ibid, Non-initial form	118	76	
054	36	Burmese Consonant Letter <i>na</i>	119	77	
055	37	ibid, Non-initial form	120	78	Burmese Logographic Letter
056	38	Burmese Consonant Letter <i>pa</i>			LOCATIVE
057	39	ibid, Non-initial form	121	79	Burmese Logographic Letter
058	3A	Burmese Consonant Letter <i>pha</i>			CONJUNCTIVE
059	3B	ibid, Non-initial form	122	7A	Burmese Logographic Letter
060	3C	Burmese Consonant Letter <i>ba</i>			AFOREMENTIONED
061	3D	ibid, Non-initial form	123	7B	Burmese Logographic Letter
062	3E	Burmese Consonant Letter <i>bha</i>			GENITIVE
063	3F	ibid, Non-initial form	124	7C	
064	40	Burmese Consonant Letter <i>ma</i>	125	7D	
065	41	ibid, Non-initial form	126	7E	
			127	7F	