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Manual for e-Velvi

© Elmar Kniprath 2016

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Note

This Manual deals with the special requirements for installation and use of the fonts e-Velvi, e-Vatteluttu and e-Pandya.

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1. About Vaṭṭeḻuttu and Pāṇḍya scripts

The glyphs contained in these fonts belong to two different scripts belonging to two different languages: Vaṭṭeḻuttu for the Dravidian language Tamiḻ and Pāṇḍya for the Indoarian language Sanskrit. Both occurred together in old south Indian copper plate inscriptions (e.g. the Vēḷvikkuṭi copper plates).

Vaṭṭeḻuttu is a precursor of modern Tamiḻ script. It's glyphs look more rounded than the Tamiḻ glyphs (hence its name வட்டெழுத்து meaning "rounded script"). The glyph inventory of both scripts fits perfectly into the phoneme system of Tamiḻ. But it is not suitable to render Sanskrit words as e.g. proper names contained in the copper plates. For this purpose another script was used. Some people name it "Pāṇḍya Grantha". I use the short form "Pāṇḍya".

Typologically both Vaṭṭeḻuttu and Pāṇḍya are Abugidas like all other descendents of the Brahmi script.

The fonts "e-Vatteluttu", "e-Velvi" and "e-Pandya" are the first in history to offer the possibility of typing and printing these two old scripts.

2. Sources

2.1 Vēḷvikkuṭi copper plates

2.2 Various Tamiḻ, Devanāgarī and Latin transliterations of 2.1

2.3 Śrīvaramaṅgalam copper plates

2.4 Latin transliteration of 2.3

2.5 Tharissappalli copper plates

2.6 Joseph Rabban śāsanam

2.7 Gift Siromoney: Vattezhuthil Thirukkural, Madras 1976

2.8 Appendices to 2.7: Script charts (established by different authors)

2.9 Ulrich Stiehl: Liste der 807 tatsächlich belegten Sanskrit-Ligaturen;
     page 4 of (www.sanskritweb.net/sansdocs/mathe.pdf)

> ➢ *Many thanks to Valérie Gillet and Jean-Luc Chevillard who provided me with most of this material!*

3. Encoding

There is no Unicode encoding for the basic glyphs of these complex scripts and accordingly operating systems like Microsoft's Windows cannot treat them. To overcome this problem Vaṭṭeḻuttu was encoded as Tamiḻ Unicode, Pāṇḍya as Malayāḷam Unicode. This way Vaṭṭeḻuttu can be typed with any Tamiḻ keyboard, Pāṇḍya with any Malayāḷam keyboard, provided that they are Unicode based. (To change the script when using e-Velvi.ttf only the keyboard has to be changed, not the font.)

4. Glyph inventory

4.1 Vaṭṭeḻuttu Alphabet

The Vaṭṭeḻuttu Alphabet comprizes all signs needed to write pure Tamiḻ texts. It does not contain equivalents of the "Grantha" letters ஜ ஸ ஷ க்ஷ ஹ which are used to render Sanskrit words in modern Tamiḻ. (As there is no instance of the diphthong "au" in the sources cited above under 2. I've used a length mark glyph ◌Ᵽ "borrowed" from Pāṇḍya instead.)

4.1.1 Vowels and Āytam

Vaṭṭeḻuttu													
Tamiḻ	அ	ஆ	இ	ஈ	உ	ஊ	எ	ஏ	ஐ	ஒ	ஓ	ஔ	ஃ
ISO	a	ā	i	ī	u	ū	e	ē	ai	o	ō	au	ḥ

4.1.2 Consonants

Vaṭṭeḻuttu										
Tamiḻ	க	ங	ச	ஞ	ட	ண	த	ந	ப	ம
ISO	k	ṅ	c	ñ	ṭ	ṇ	t	n	p	m

Vaṭṭeḻuttu							
Tamiḻ	ய	ர	ல	வ	ள	ழ	ற	ன
ISO	y	r	l	v	ḷ	ḻ	ṟ	ṉ

4.1.3 Vowel ligatures

Table 2 "Vaṭṭeḻuttu Vowel ligatures" at the end of this manual shows the consonant-vowel ligatures formed automatically when a text is being typed.

4.2 Pāṇḍya Alphabet

The Pāṇḍya glyphs of e-Velvi are based on their occurrence in the Vēḷvikkuṭi and Śrīvaramaṅgalam plates. The Pāṇḍya portions in these plates occur only in proper names, which means that the glyph inventory of these sources is insufficient to render all possible Sanskrit ligatures. This fact led me to make many extrapolations and even my own "inventions", e.g. some initial forms of vowels and a great number of both consonant and vowel ligatures. So my Pāṇḍya font is a kind of pseudo-reconstruction of something which maybe never existed in its entirety.

As to consonant ligatures, my guide has been Ulrich Stiehl's list of 807 ligatures (in Latin transliteration) which he himself had collected from Sanskrit texts.

4.2.1 Vowels

Pāṇḍya	अा	अाु	ಜ	·|·	୯	୯୨	ಜಿ	ಜಿ?	ണ	ണ?	ധ	ധ	౭	౭?
	–	○?	◌	◌	◌୬	◌୬	◌୨	◌୨	ണ	ണ?	~	~	~?	~?
ISO	a	ā	i	ī	u	ū	ṛ	ṝ	ḷ	ḹ	e	ai	o	au

4.2.2 Consonants

Pāṇḍya	क	ಎ	೧	ಎ	ಜ
ISO	k	kh	g	gh	ṅ

Pāṇḍya	৬	ৠ	৪	৫	৪
ISO	c	ch	j	jh	ñ

Pāṇḍya	ৎ	○	ಎ	ಎ	ৱ
ISO	ṭ	ṭh	ḍ	ḍh	ṇ

Pāṇḍya	৬	೧	ৎ	৬	ħ
ISO	t	th	d	dh	n

Pāṇḍya	೮	೮	৪	৮	✗
ISO	p	ph	b	bh	m

Pāṇḍya	೮	∏	೨	೮	
ISO	y	r	l	v	

Pāṇḍya	೮	೮	೨	ৎ
ISO	ś	ṣ	s	h

4.2.3 Ligatures

Ligatures of vowels with simple consonants are given in table 3 "Pāṇḍya Vowel ligatures" at the end of this manual.

Beyond that e-Velvi contains hundreds of Pāṇḍya consonant ligatures and their corresponding vowel ligatures.

5. Pāṇḍya encoding

The Pāṇḍya glyphs are encoded as Malayāḷam Unicode (see Table 1 below) with the following exceptions:

- Upadhmanīya ⊕ is encoded as ന
- ⊕ᴗ is encoded as ഴ
- ⌐ is encoded as ഩ

To prevent ligature formation with following initial consonants word final chillu � and ൎ (e.g. in proper names) are encoded as ൻ and ൔ respectively.

Encoding of other virāma ligatures is as follows:

- ⌠ as �
- ⌐ as �
- ⌐ as ൈ
- ൠ as ൂ

The **punctuation marks** are encoded in the Private Use Area and must be entered as "symbols":

6. Text sample from the Vēḷvikkuṭi plates

7. Contents of the Package

This package contains the following files:

- e-Velvi.ttf (Open Type mixed font for Tami<u>l</u> language written with Vaṭṭe<u>l</u>uttu script and for Sanskrit language written with Pāṇḍya script)

- e-Vatteluttu OT.ttf (extract from e-Velvi.ttf for Tami<u>l</u> language written with Vaṭṭe<u>l</u>uttu script)

- e-Pandya.ttf (extract from e-Velvi.ttf for Sanskrit written with Pāṇḍya script)

- e-Tami<u>l</u> 100.ttf (Open Type font for Tami<u>l</u> with classical spelling): This font has the same font hight as the above ones, so that the line distance remains the same when mixing up all these scripts in one text. e-Tamil 100 has the classical vowel ligatures. It additionally contains a lot of old fraction and abbreviation signs most of which must be inserted as "symbols".

- e-Velvi Manual.pdf (this file).

8. Installation and use of the fonts

- ➢ **Make sure that "complex scripts" are enabled in Windows!**

1. Install the fonts under Windows.
2. For typing Tami<u>l</u> texts a Tami<u>l</u> keyboard must be installed on your computer, for Sanskrit a Malayāḷam keyboard. Both must be Unicode based!

9. Tami<u>l</u> transliteration of Vaṭṭe<u>l</u>uttu

As the Vaṭṭe<u>l</u>uttu glyphs of e-Velvi.ttf and e-Vatteluttu.ttf have Tami<u>l</u> Unicode encoding, you may just select the portion of text to be transliterated and change the font (as you may switch e.g. in Roman script between "Times New Roman" and "Arial").

10. Improvements

These Vaṭṭe<u>l</u>uttu and Pāṇḍya fonts have no "predecessors" which they could be compared with. They are based on the epigraphical sources enumerated above (see 2.), each of which is important, but each of which differs more or less from the others, as all of them are written (i.e. scratched!) by hand. So the 21st century font designer had to establish a "standard" and it often was up to him to decide, which variant of a sign had to be accepted as "standard". Others might have found other, perhaps better, solutions.

All critical remarks and suggestions will be welcome, especially epigraphical evidence for the verification or falsification of my "inventions".

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Table 1: Concordance of Unicode encoding for Pāṇḍya script (font "e-Velvi") vs. Malayāḷam script (font "Kartika")

Unicode	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039
Kartika	1	2	3	4	5	6	7	8	9	0
Pāṇḍya	1	2	3	4	5	6	7	8	9	0

Unicode	0D00	0D01	0D02	0D03	0D04	0D05	0D06	0D07	0D08	0D09	0D0A	0D0B
Kartika	□	◌ഁ	◌ം	◌ഃ	□	അ	ആ	ഇ	ഈ	ഉ	ഊ	ഋ
Pāṇḍya	□	□	◌	◌	□	◌	◌	◌	◌	◌	◌	◌

Unicode	0D0C	0D0D	0D0E	0D0F	0D10	0D11	0D12	0D13	0D14	0D15	0D16	0D17
Kartika	ഌ	□	എ	ഏ	ഐ	□	ഒ	ഓ	ഔ	ക	ഖ	ഗ
Pāṇḍya	◌	□	◌	◌	◌	□	◌	◌	◌	◌	◌	◌

Unicode	0D18	0D19	0D1A	0D1B	0D1C	0D1D	0D1E	0D1F	0D20	0D21	0D22	0D23
Kartika	ഘ	ങ	ച	ഛ	ജ	ഝ	ഞ	ട	ഠ	ഡ	ഢ	ണ
Pāṇḍya	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌

Unicode	0D24	0D25	0D26	0D27	0D28	0D29	0D2A	0D2B	0D2C	0D2D	0D2E	0D2F
Kartika	ത	ഥ	ദ	ധ	ന	ഩ	പ	ഫ	ബ	ഭ	മ	യ
Pāṇḍya	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌	◌

Unicode	0D30	0D31	0D32	0D33	0D34	0D35	0D36	0D37	0D38	0D39	0D3A	0D3B
Kartika	ര	റ	ല	ള	ഴ	വ	ശ	ഷ	സ	ഹ	ഺ	□
Pāṇḍya	◌	□	◌	◌	◌	◌	◌	◌	◌	◌	□	□

Unicode	0D3C	0D3D	0D3E	0D3F	0D40	0D41	0D42	0D43	0D44	0D45	0D46	0D47
Kartika	□	ഽ	◌ാ	◌ി	◌ീ	◌ു	◌ൂ	◌ൃ	◌ൄ	□	◌െ	◌േ
Pāṇḍya	□	◌	◌	◌	◌	◌	◌	◌	◌	□	◌	◌

Unicode	0D48	0D49	0D4A	0D4B	0D4C	0D4D	0D4E	0D4F	0D50	0D51	0D52	0D53
Kartika	ൈ	☐	ൊ	ോ	ൌ	്	☐	☐	☐	☐	☐	☐
Pāṇḍya	ൈ	☐	ൊ	ോ	ൌ	്	☐	☐	☐	☐	☐	☐

Unicode	0D54	0D55	0D56	0D57	0D58	0D59	0D5A	0D5B	0D5C	0D5D	0D5E	0D5F
Kartika	☐	☐	☐	ൗ	☐	☐	☐	☐	☐	☐	☐	ൟ
Pāṇḍya	☐	☐	☐	ൗ	☐	☐	☐	☐	☐	☐	☐	☐

Unicode	0D60	0D61	0D62	0D63	0D64	0D65	0D66	0D67	0D68	0D69	0D6A	0D6B
Kartika	ൠ	ൡ	ൢ	ൣ	☐	☐	൦	൧	൨	൩	൪	൫
Pāṇḍya	ൠ	ൡ	ൢ	ൣ	☐	☐	൦	൧	൨	൩	൪	൫

Unicode	0D6C	0D6D	0D6E	0D6F	0D70	0D71	0D72	0D73	0D74	0D75	0D76	0D77
Kartika	൬	൭	൮	൯	൰	൱	൲	൳	൴	൵	☐	☐
Pāṇḍya	൬	൭	൮	൯	൰	൱	൲	☐	☐	☐	☐	☐

Unicode	0D78	0D79	0D7A	0D7B	0D7C	0D7D	0D7E	0D7F
Kartika	☐	൹	ൺ	ൻ	ർ	ൽ	ൾ	ൿ
Pāṇḍya	☐	൹	ൺ	ൻ	ർ	ൽ	ൾ	ൿ

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Table 2: **Vaṭṭeḻuttu Vowel ligatures**

		a	ā	i	ī	u	ū	e	ē	ai	o	ō	(au)
k													
ṅ													
c													
ñ													
ṭ													
ṇ													
t													
n													
p													
m													
y													
r													
l													
v													
ḷ													
ḻ													
ṟ													
ṉ													

Table 3: **Pāṇḍya Vowel ligatures**

	a	ā	i	ī	u	ū	ṛ	ṝ	ḷ	ḹ	e	ai	o	au
k														
kh														
g														
gh														
ṅ														
c														
ch														
j														
jh														
ñ														
ṭ														
ṭh														
ḍ														
ḍh														
ṇ														
t														
th														

d	ᘔ	ᘔ	ᘔ	ᘔ	ᘔ	ᘔ	ᘔ	ᘔ	ᘔ	ᘔண	ᘔண:	ᘔ	ᘔ	ᘔ	ᘔ
dh										ண	ண:				
n										ண	ண:				
p										ண	ண:				
ph										ண	ண:				
b										ண	ண:				
bh										ண	ண:				
m										ண	ண:				
y										ண	ண:				
r								–	–	ண	ண:				
l										–	–				
v										ண	ண:				
ś										ண	ண:				
ṣ										ண	ண:				
s										ண	ண:				
h										ண	ண:				