ISO/IEC JTC 1/SC 2/WG 2
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Title: Introducing the Goyakanadi Alphabet
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1. Introduction

There is a script called 'Goyakanadi' or 'Kandevi' (Devanāgarī : गोंयकानडी/ काण्डेवी, Kannada : ಗೊಂಯ್ಕನಡೀ/ಕಾಂಡವೀ) that is reported to have been used by the Konkani community from the 16th-19th century. It was used for writing Konkani(ISO 639:gom & ISO 639-3) and Goan Marathi(ISO 639-2). Devanagari is now the regular script to write Konkani. The purpose of this document is to bring to the notice of the Unicode Technical Committee (UTC) ,the Goyakanadi script which was used by the Konkani community.

2. Background

Konkani is a language spoken by Two and a half million people in the western coast of India in the states of Goa,

Karnataka, Kerala and Maharashtra[1]. It belongs to the south-western group of the Indo-aryan language family closely allied to Marathi and Gujarati. It is recognised as the State Language of the state of Goa and a minority language in the states of Karnataka, Kerala and Maharashtra.[2]

The Goyakanadi script is known indigenously as 'Kāṇḍēvī' which means 'brought by the Kannadas (Kadambas)' . This name was also used by the Portuguese missionaries who studied the script .The name 'Goyakanadi is an exonym used by Marathi speakers to refer to the script wherein 'Goy' means Goa and 'kanadi' refers to its kadamba origins. This name was popularised by Gajanana Ghantkar in his research book - History of Goa through the Gõykanadi script . This script was developed from the Local variety of the Kadamba script in 11th -15th centuries and was continued to be used till the late 19th century[3].

Lack of recognition and Standardisation has left the script in neglect by native Konkanis themselves. Limited recognition has come in the recent years but due to the Digraphic situation of Konkani language no serious work has been done on it [4]. The scope of Goyakanadi script seems to be limited for now.

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[1] https://censusindia.gov.in/2011Census/Language-2011/Statement-1.pdf

[2] https://www.indiacode.nic.in/bitstream/123456789/6809/1/official_language_act.pdf

[3] https://en.wikipedia.org/wiki/Goykanadi#cite_ref-onqui_7-0

[4] https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwijq8X-tZfqAhUj4zgGHZRSDbkQFjAAegQIARAB&url=https%3A%2F%2Fwww.epw.in%2Fjournal%2F2013%2F31%2Fweb-exclusives%2Fkonkani-script-controversy.html&usg=AOvVaw1Yt2ro_zmqqcNhJdXJwstm
Bhembre, Uday (September 2009). Konkani bhashetalo paylo sahityakar:Krishnadas Shama. Sunaparant Goa. pp. 55–57.

Since Goyakanadi was never used in a printed format, it gradually fell into disuse and was a forgotten script.

Goyakanadi has not been formally standardised in the past as the missionaries chose to use the Latin script or Devanagari script instead. The glyphs referred to in this document are based on: hand written samples found largely on paper manuscripts and the works of some scholars who have studied this script closely.The Goyakanadi samples studied are largely from libraries and private collections found in the states of Goa and Karnataka .

Any genetic relationship between Goyakanadi script and other scripts is superficial. A cursory glance at Goyakanadi will reveal its similarities with Kannada script but the glyphs , Diacritics and Conjunct consonants are significantly different.

Some historians have opined that Goyakanadi was a specialised variant of the Ha<u>l</u>agannaḍa Alphabet , developed as a contact variant between Nāgari and Ha<u>l</u>agannaḍa Alphabet. Whatever the origin might have been Goyakanadi is definitely a descendant of the Kadamba Alphabet belonging to the Southern Brahmi scripts.

Many Konkani manuscripts which are now found in museums in Portugal are Latin transliterations of Goyakanadi manuscripts of Hindu epics [56]. The earliest

[5] Bhembre, Uday (September 2009). Konkani bhashetalo paylo sahityakar:Krishnadas Shama. Sunaparant Goa. pp. 55–57.

[6] South Asian language review, Volumes 1-2. Creative Publishers. 1991. p. 12.

document written in this script is found in a petition addressed by Ravala Seti, of Caraim in the islands of Goa to the King of Portugal. It carries his

signature 'Ravala Seti Baraha' which means 'writings of Ravala Seti' in Konkani Language.

3. Writing system

3.1 Structure

Goyakanadi is an Abugida(Alphasyllabary). It is written left-to-right.

3.2 Character Repertoire

A stable character set for Goyakanadi will be determined once additional information is obtained. The available script chart suggest a repertoire of 109 characters which consists of 6 Vowels, 30 Basic Consonants, 54 Conjunct consonants, 7 Diacritic vowel signs , 9 numbers, 2 punctuation marks and 1 space filler sign. Character names are based on those given in Script charts.

3.3 Considerations for Encoding

Goyakanadi should be encoded as a separate script for the purpose of encoding as there might be need to represent it in plain text independently. Given that there are several records written in Goyakanadi and identity of a community at stake it may be looked at as a separate script and encoded separately to use for plain text purposes.

3.4 The Issue of Representing Goyakanadi in Unicode

The primary issue facing the representation of Goyakanadi in UCS is its close affinity to the Kannada script and Cursive varieties of Kannada script(Kannada moḍī).

Goyakanadi has a lot of similar or identical forms to those already encoded for Kannada. However the two scripts differ in character repertoires, orthographic features,conjunct behaviours and rendering behaviours.
Although Goykannadi and Kannada possess corresponding characters, unification of the two suggests that they are one and the same script. The Goyakanadi script was never at any point associated with the Kannada language, nor has the script ever been used for Kannada.
The correspondences between Goyakanadi and Kannada are much less than between Telugu and Kannada.Due to difference of top line between Kannada and Telugu(KANNADA LETTER DA ಡ (U+0CA6) and TELUGU LETTER DA డ(U+0C26))

[GOYAKANADI LETTER DA  - This glyph has a distinctive top line different from both Kannada and Telugu]
and a variety of other minor differences Telugu was allocated a separate block. A similar consideration can be done with Goyakanadi by allocating a separate block for Goyakanadi script.

3.4.1 Brief Assessment of the Models for Representing Goyakanadi-

There are two alternatives to allocating a separate block for Goykannadi-

a) Representing Goyakanadi as an extension of Kannada script-Managing Goyakanadi as an extension to Kannada will entail not only the addition of a large number of characters to an existing script, but also require the development of new rendering rules for an already complex script.

b) Complete Unification of Goyakanadi with Kannada script-Complete unification mandates that the representation and display of Goyakanadi be bound to font control, ie. Goyakanadi glyphs will be designed and assigned to the code points of corresponding Kannada characters in Kannada fonts. Thus, when users create or view Goyakanadi content, the text will be represented in Kannada script; the user must chose a Kannada font designed to accommodate Goyakanadi glyph in order to display Goyakanadi properly. Complete unification of Goyakanadi with Kannada does not provide a means for representing the script in plain text.

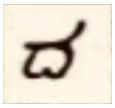
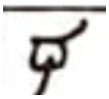
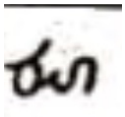
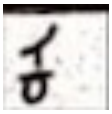
3.5 Comparison of Goyakanadi with Kannada script

An analysis of the Goyakanadi character repertoire indicates that it has several characters that are identical to Kannada, but it also has several character that are distinct from analogues in Kannada.

Most of the Goyakanadi vowels are similar to their Kannada Counterparts. There are only a few minor glyph variations and design changes between Goyakanadi vowels and Kannada script vowels. Here is a chart of Goyakanadi vowels-

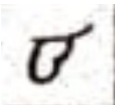
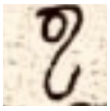
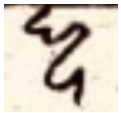
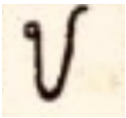
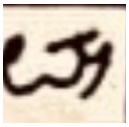
ಅ	ಆ	ಇ	ಉ	ಎ	ಐ	ಒ	ಔ	ಅಂ	ಅಃ
अ	आ	इ	उ	ए	ऐ	ओ	औ	अं	अः

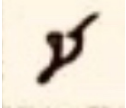
Here are some consonant glyphs which are similar or identical with Kannada script-

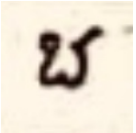
Goyakanadi	Kannada	Transliteration
	ದ	DA
	ಧ	DHA
	ಝ	JHA
	ಖ	KHA
	ಕ	KA

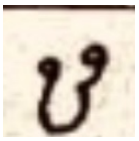
	ರ	RA
	ಲ	LA
	ಹ	HA

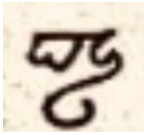
Here are some consonant glyphs which are different compared to Kannada script -

Goyakanadi	Kannada	Transliteration
	ಡ	DDA
	ಠ	TTHA
	ಟ	TTA
	ಬ	BA
	ಯ	YA

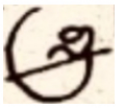
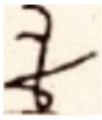
 ಭ BHA

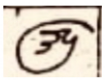
 ಚ CA

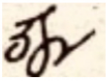
 ಜ JA

 ಥ THA

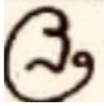
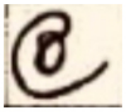
Most of the Goyakanadi Conjunct consonants are ligatures as opposed to kannada where they are Below-base forms. Some Conjuncts in Goyakanadi follow the Below-base form but by and large conjuncts are ligatures .
Here are some examples of Conjunct consonants in Goyakanadi and their comparison with their Kannada counterparts-

	SPRA	JYA	SKA	NRA
Goyakanadi				
Kannada	ಸ್ಪ್ರ	ಜ್ಯ	ಸ್ಕ	ನ್ರ

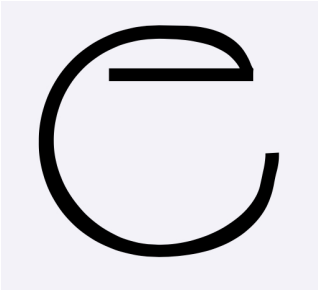
	DRA	CYA	TRA	DYA	KRA
Goyakanadi					
Kannada	ದ್ರ	ಚ್ಯ	ತ್ರ	ದ್ಯ	ಕ್ರ

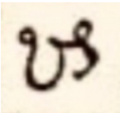
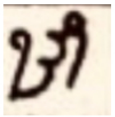
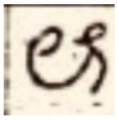
	TMA	TKA	VRA	STTA
Goyakanadi				
Kannada	ತ್ಮ	ತ್ಕ	ವ್ರ	ಸ್ಟ

The diacritics in Goyakanadi are remarkably different compared to kannada script. The diacritics in Goyakanadi are ligatures and some glyphs have contextual forms with respect to certain diacritics.

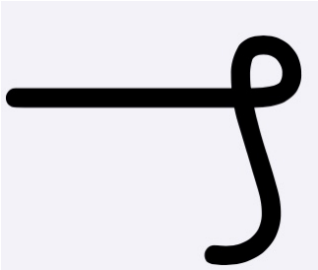
	CE	JE	NE	DE	RE
Goyakanadi					
Kannada	ಚೆ	ಜೆ	ನೆ	ದೆ	ರೆ

Preliminary design of the above diacritic mark (Vowel sign E)-



	CO	BO	JO	SHO	YO
Goyakanadi					
Kannada	ಚೋ	ಬೋ	ಜೋ	ಶೋ	ಯೋ

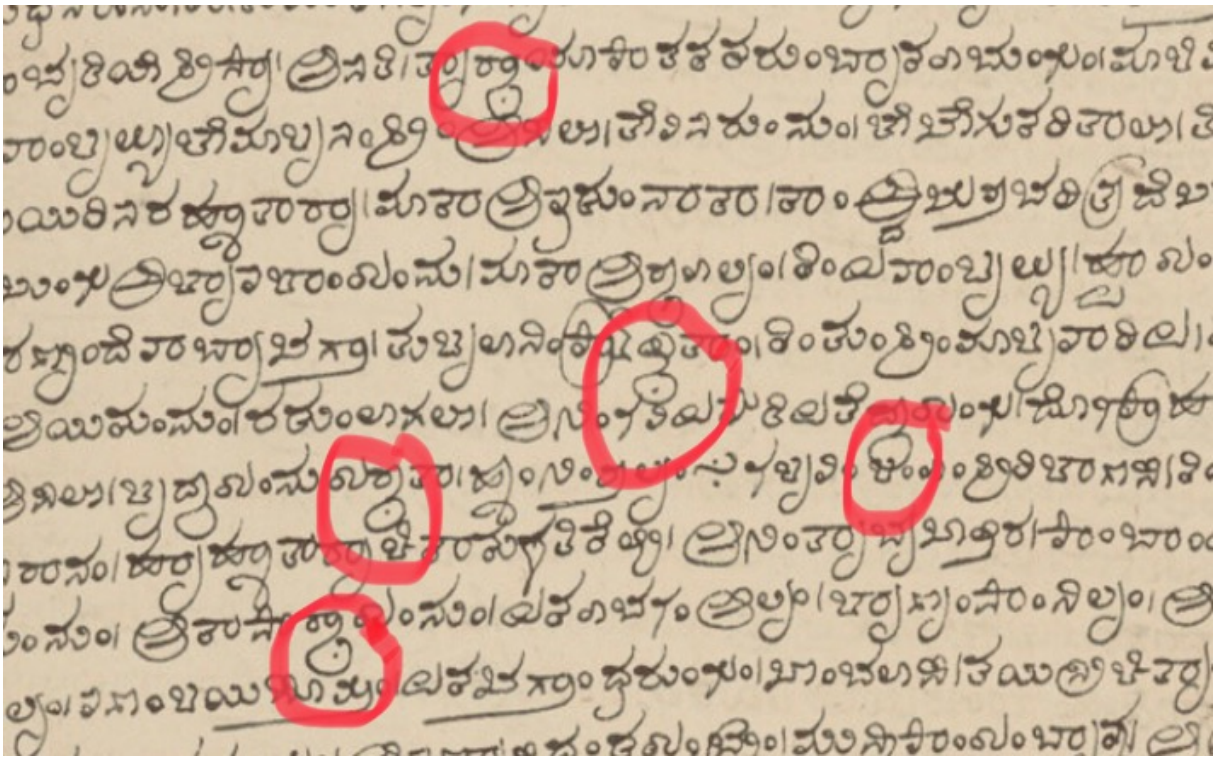
Preliminary design of the above diacritic mark (Vowel sign O)-



<u>Presence of a gemination symbol in Goyakanadi</u>

The gemination symbol is very distinct among the southern Brahmi scripts. This gemination is not found in both the allied Kannada and Telugu scripts. This symbol of

Goyakanadi has been attested in many documents written in the script.
This symbol is circular in shape with a dot in the centre usually written below the Consonants.



Above is an attestation of the gemination symbol in Goyakanadi.

These are enough evidences to assign a separate block for Goyakanadi in order to encode it effectively and enable representation of the script in plain text.

4. References

• Gajanana Ghantkar, History of Goa through the Gõykanadi script, Rajahauns Vitaran 1993 [original: University of Michigan]
• National Archives of India (1985). Indian archives, Volume 34. National Archives of India. p. 4.
• Saradesāya, Manohararāya (2000). A history of Konkani literature: from 1500 to 1992. Sahitya Akademi. p. 317
• Bhembre, Uday (September 2009). Konkani bhashetalo paylo sahityakar:Krishnadas Shama. Sunaparant Goa. pp. 55–57.
• South Asian language review, Volumes 1-2. Creative Publishers. 1991. p. 12.
• Flos Santorum , Padre Frey Amador & Padre S. Francisco Goa, 1607 .

Acknowledgements

Endangered archives programme, British library

Gallica French manuscript collection

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Figures

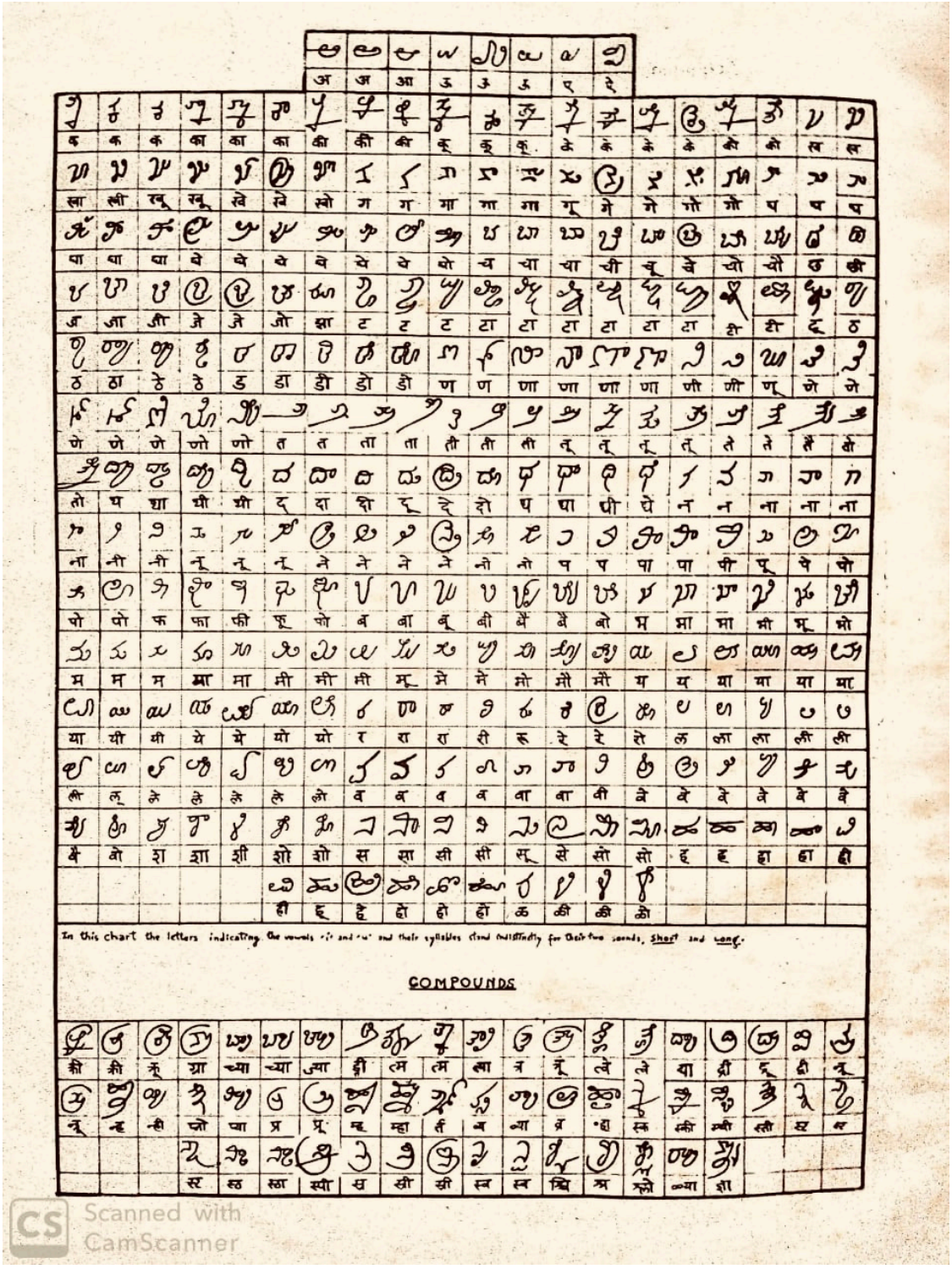


Fig. 1 : Goyakanadi Alphabet Chart , by Gajanana Ghantkar

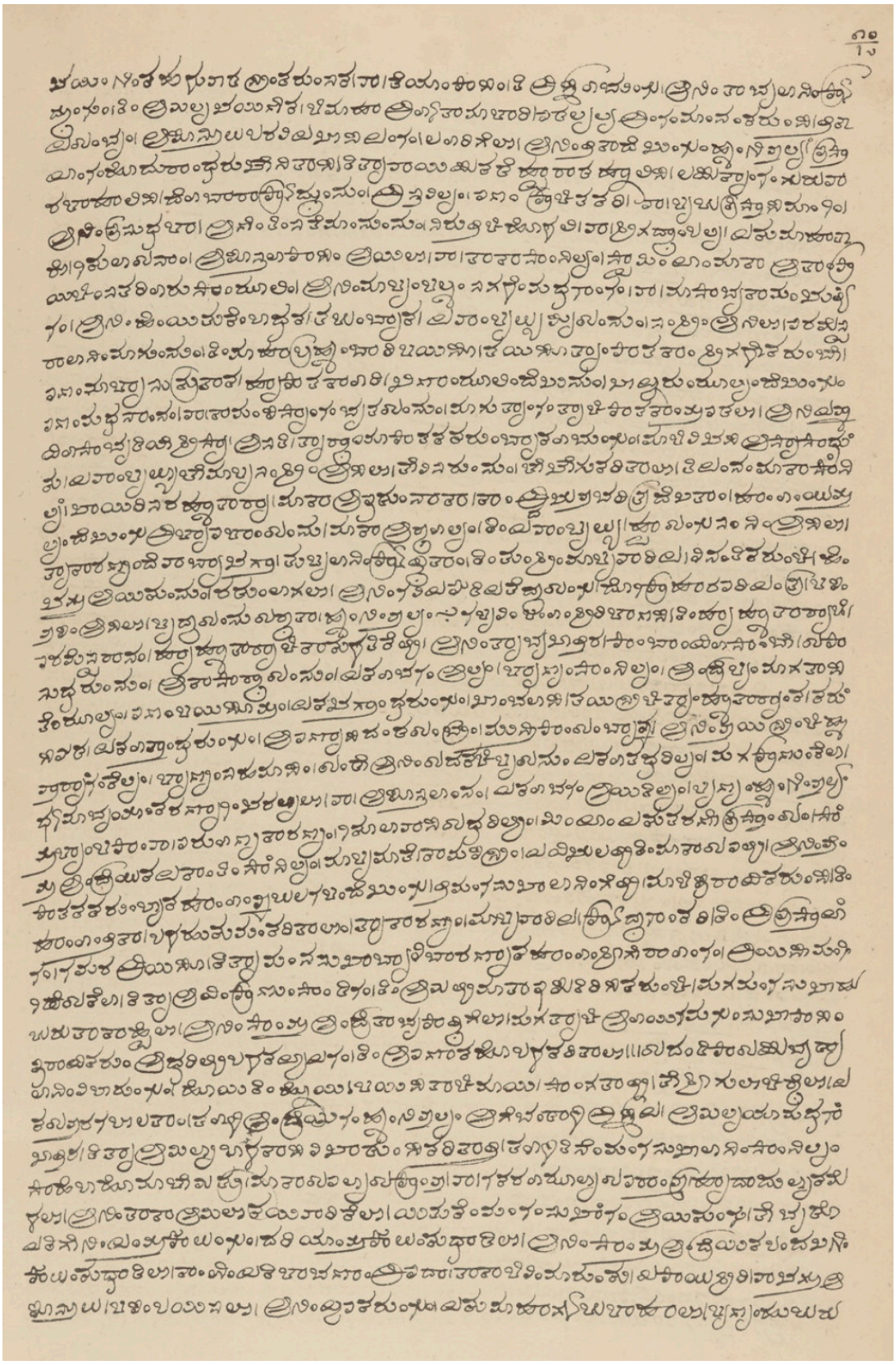


Fig. 2 : Folio from the Manuscript ‘Flos Santorum' of 1607

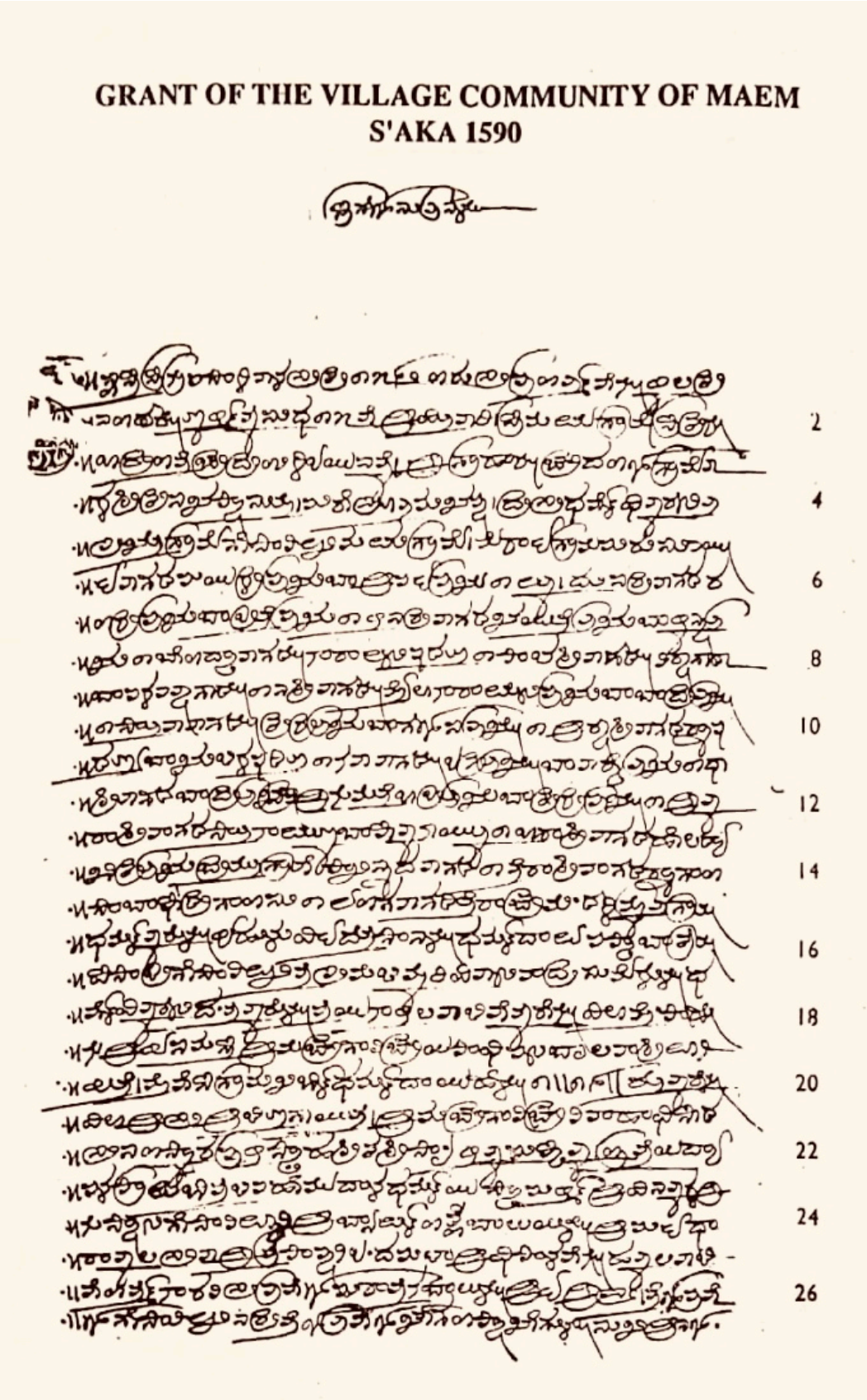


Fig. 3 : Grant of the Village Community of Maem(Near Bicholim in North Goa) in the year 1590.

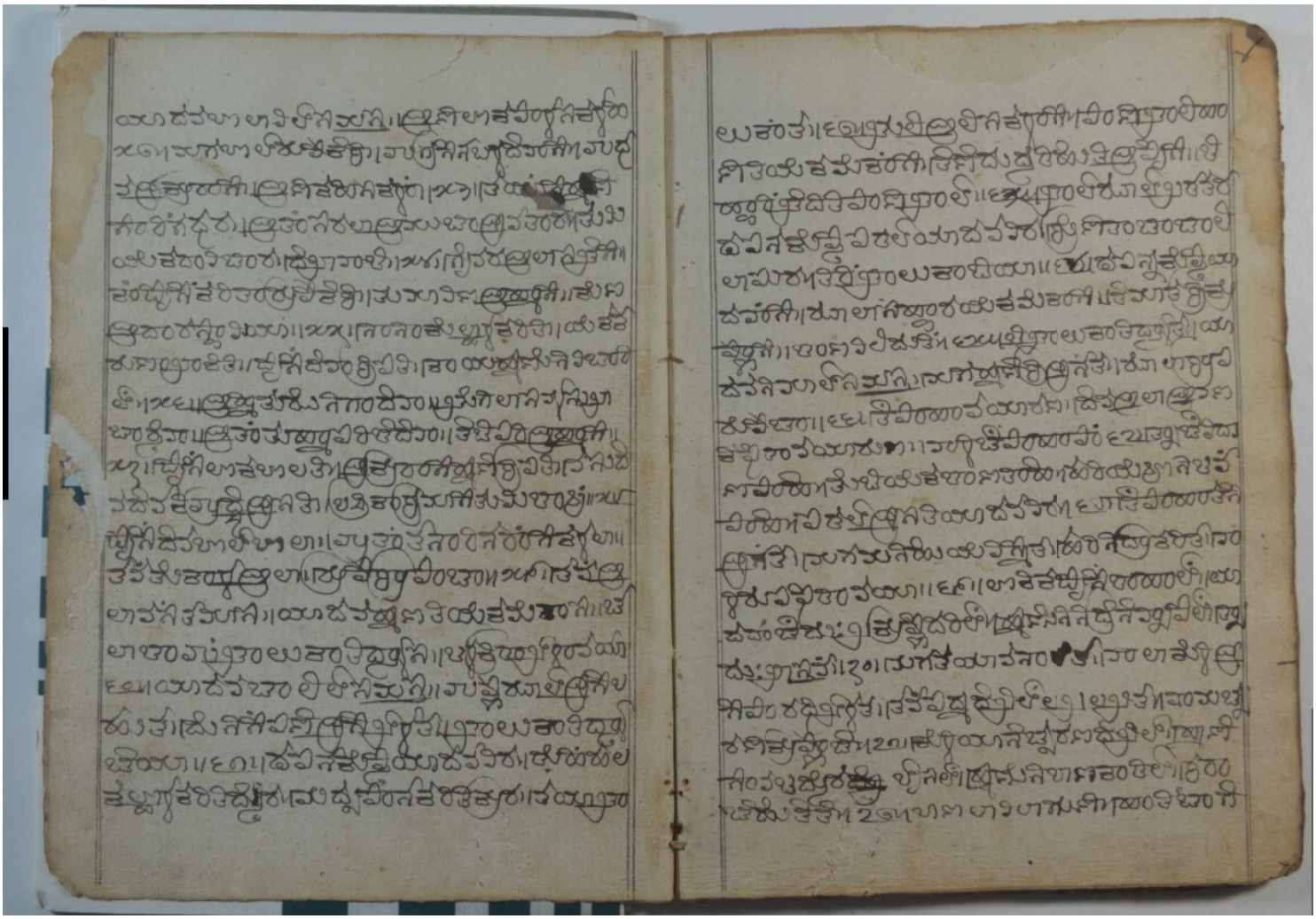
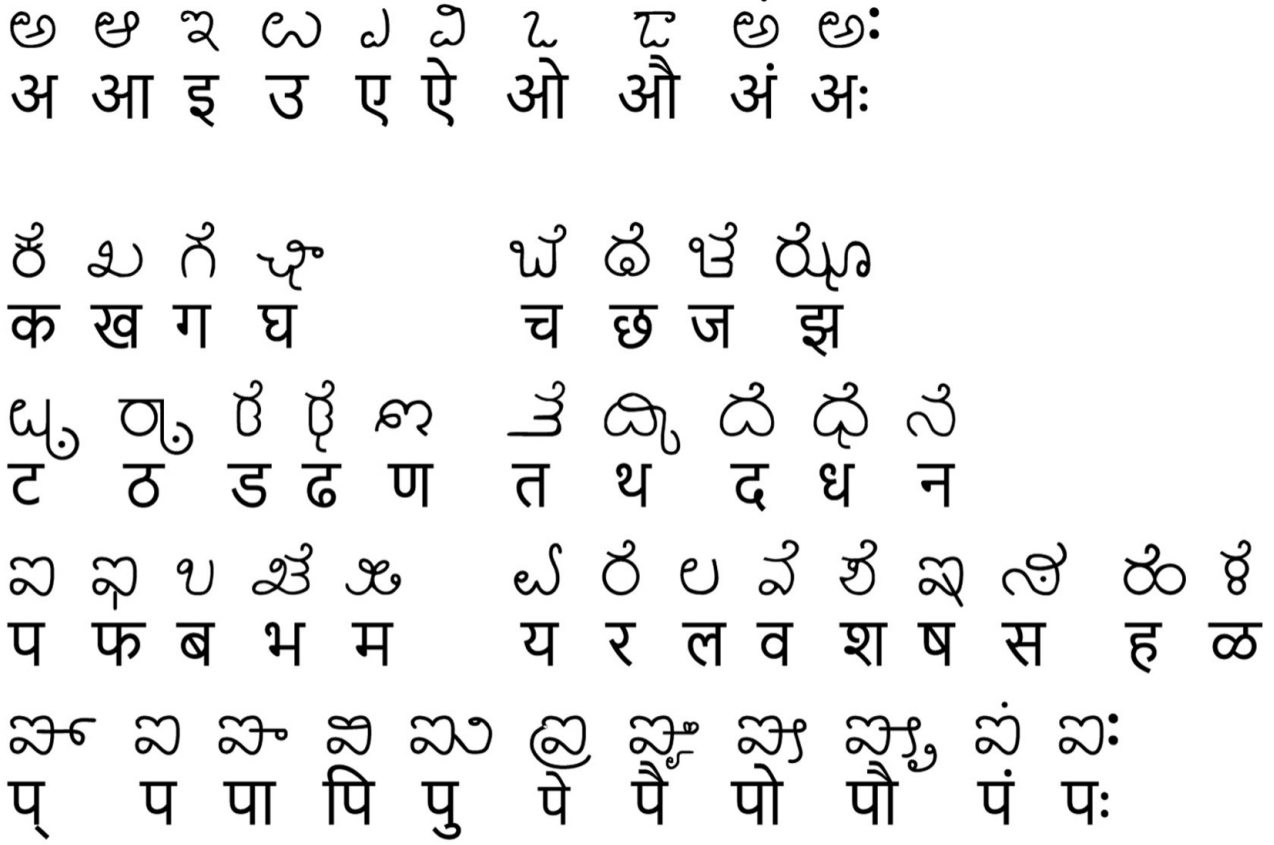
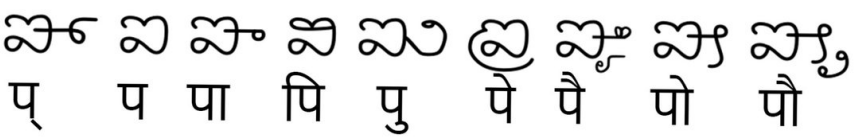


Fig. 4 : Goyakanadi Folio from the 17th century from the Pandurang Pissurlencar collection donated to the Goa University





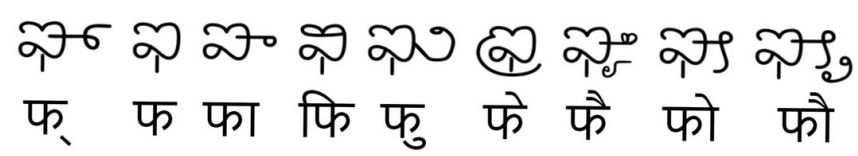
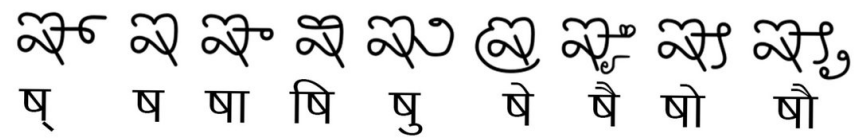


Fig. 5 (Top) : Elementary design of Goyakanadi Glyphs



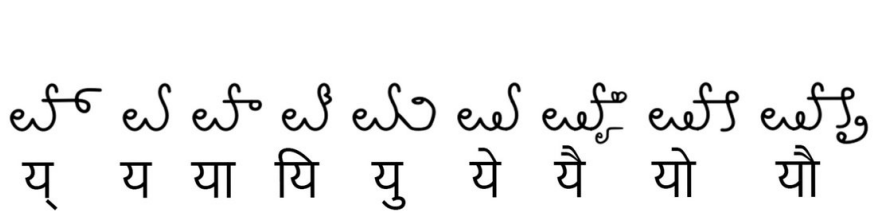
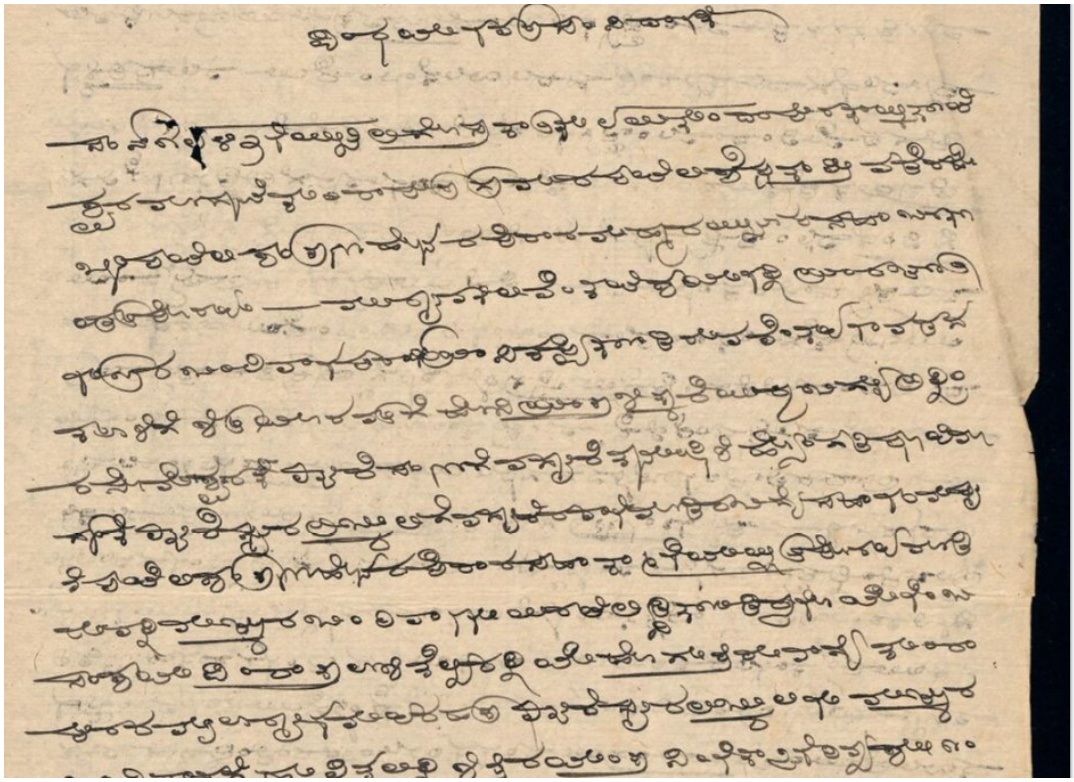


Fig. 6 (Left): Elementary design for Goyakanadi diacritics



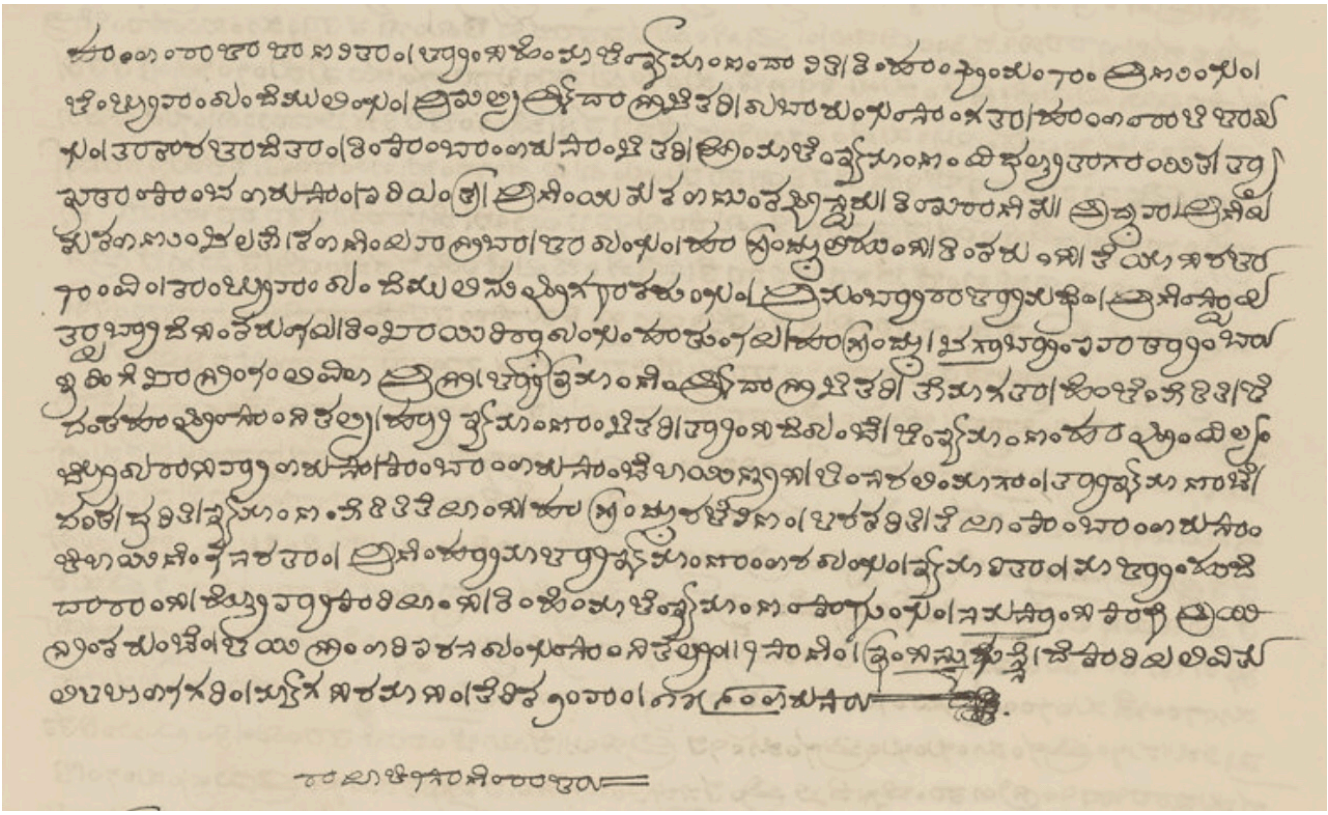


Fig. 7 : Comparison between Cursive Kannada writing (Moḍī baraha) [Top] and Goyakanadi [Bottom] - The glyphs of Goyakanadi are more clearer than the cursive Kannada writing. Hence the style of Cursive Kannada and Goyakanadi are different.

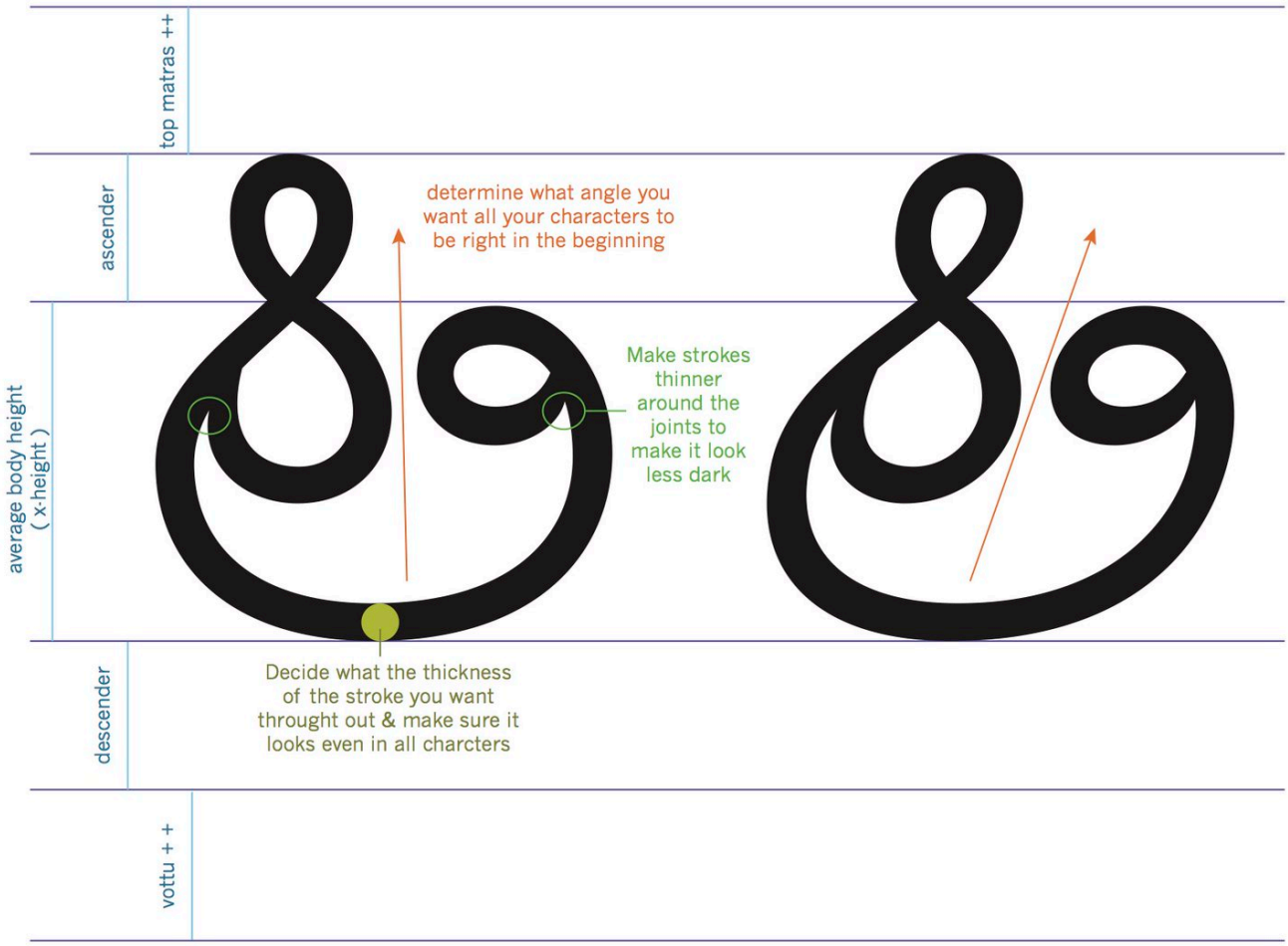
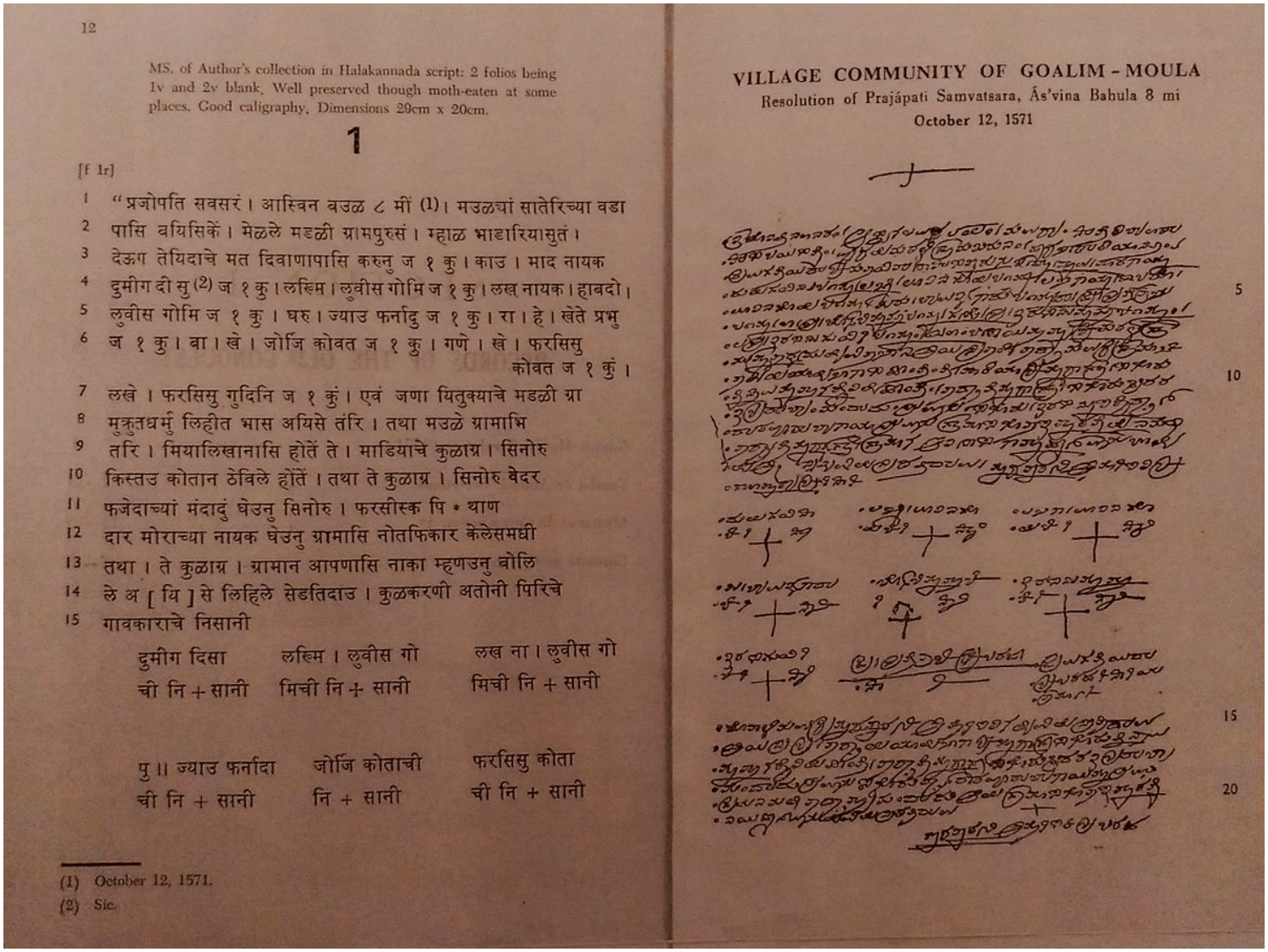


Fig. 8 : Goyakanadi character Anatomy



12

MS. of Author's collection in Halakannada script: 2 folios being 1v and 2v blank. Well preserved though moth-eaten at some places. Good caligraphy. Dimensions 29cm x 20cm.

1

[f 1r]

1 "प्रजोपति सवसरं । आस्विन बउळ ८ मीं (1)। मउळचां सातेरिच्या वडा
2 पासि वयिसिकें । मेळले मडळी ग्रामपुरुसं । म्हाळ भाडारियासुतं ।
3 देऊग तेयिदाचे मत दिवाणापासि करुनु ज १ कु । काउ । माद नायक
4 दुमीग दी सु (2) ज १ कु । लख्मि । लुवीस गोमि ज १ कु । लख नायक । हावदो ।
5 लुवीस गोमि ज १ कु । घरु । ज्याउ फर्नादु ज १ कु । रा । हे । खेते प्रभु
6 ज १ कु । बा । खे । जोजि कोवत ज १ कु । गणे । खे । फरसिसु
कोवत ज १ कुं ।
7 लखे । फरसिसु गुदिनि ज १ कुं । एवं जणा यितुक्याचे मडळी ग्रा
8 मुकुतधर्मु लिहीत भास अयिसे तंरि । तथा मउळे ग्रामाभि
9 तरि । मियालिखानासि होतें ते । माडियाचे कुळाग्र । सिनोरु
10 किस्तउ कोतान ठेविले होंतें । तथा ते कुळाग्र । सिनोरु वेदर
11 फजेदाच्यां मंदादुं घेउनु सिनोरु । फरसीस्क पि • थाण
12 दार मोराच्या नायक घेउनु ग्रामासि नोतफिकार केलेसमधी
13 तथा । ते कुळाग्र । ग्रामान आपणासि नाका म्हणउनु बोलि
14 ले अ [यि] से लिहिले सेडतिदाउ । कुळकरणी अतोनी पिरिचे
15 गावकाराचे निसानी

दुमीग दिसा	लख्मि । लुवीस गो	लख ना । लुवीस गो
ची नि + सानी	मिची नि + सानी	मिची नि + सानी
पु ।। ज्याउ फर्नादा	जोजि कोताची	फरसिसु कोता
ची नि + सानी	नि + सानी	ची नि + सानी

(1) October 12, 1571.
(2) Sic.

VILLAGE COMMUNITY OF GOALIM - MOULA
Resolution of Prajápati Samvatsara, Ás'vina Bahula 8 mi
October 12, 1571

Fig. 9 : Village Resolution of Goalim-Moula of the Year 1571

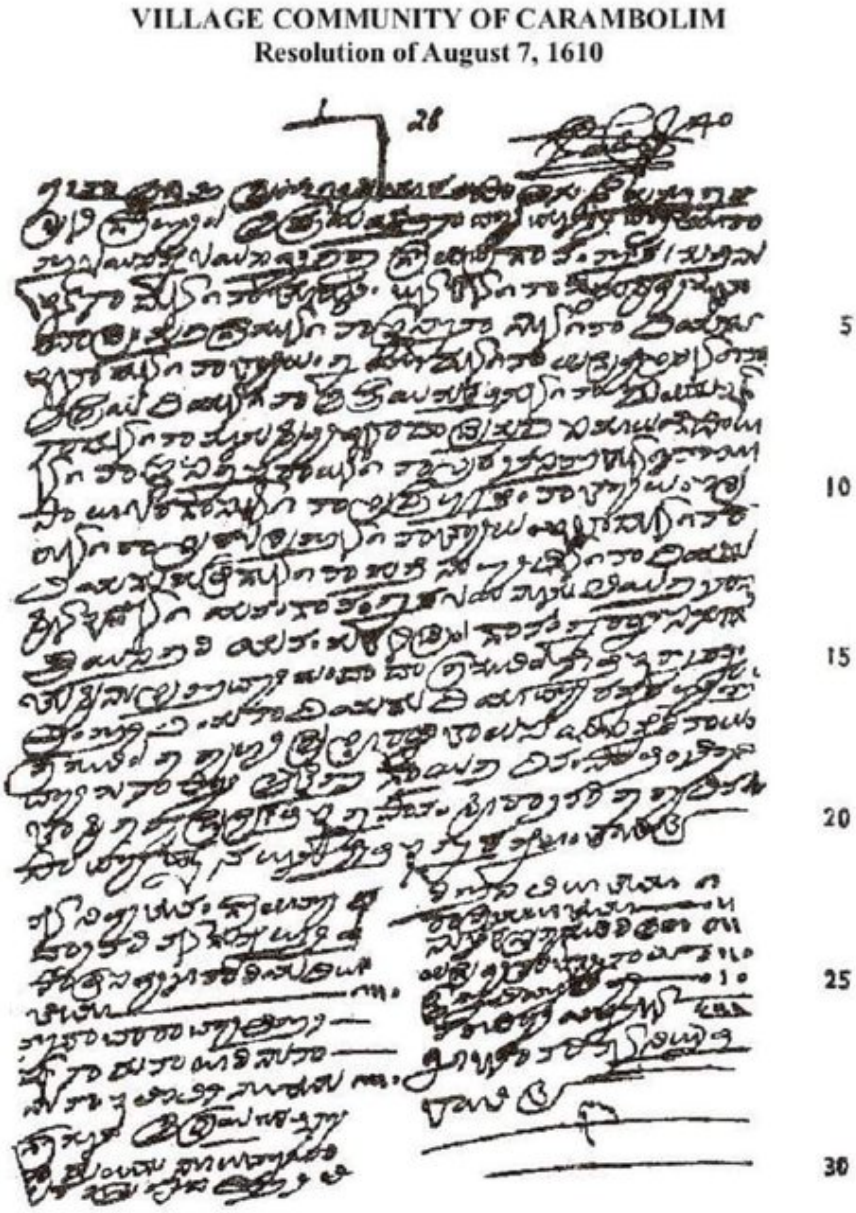

VILLAGE COMMUNITY OF CARAMBOLIM
Resolution of August 7, 1610

Fig. 10 : Village resolution of Carambolim of the year 1610

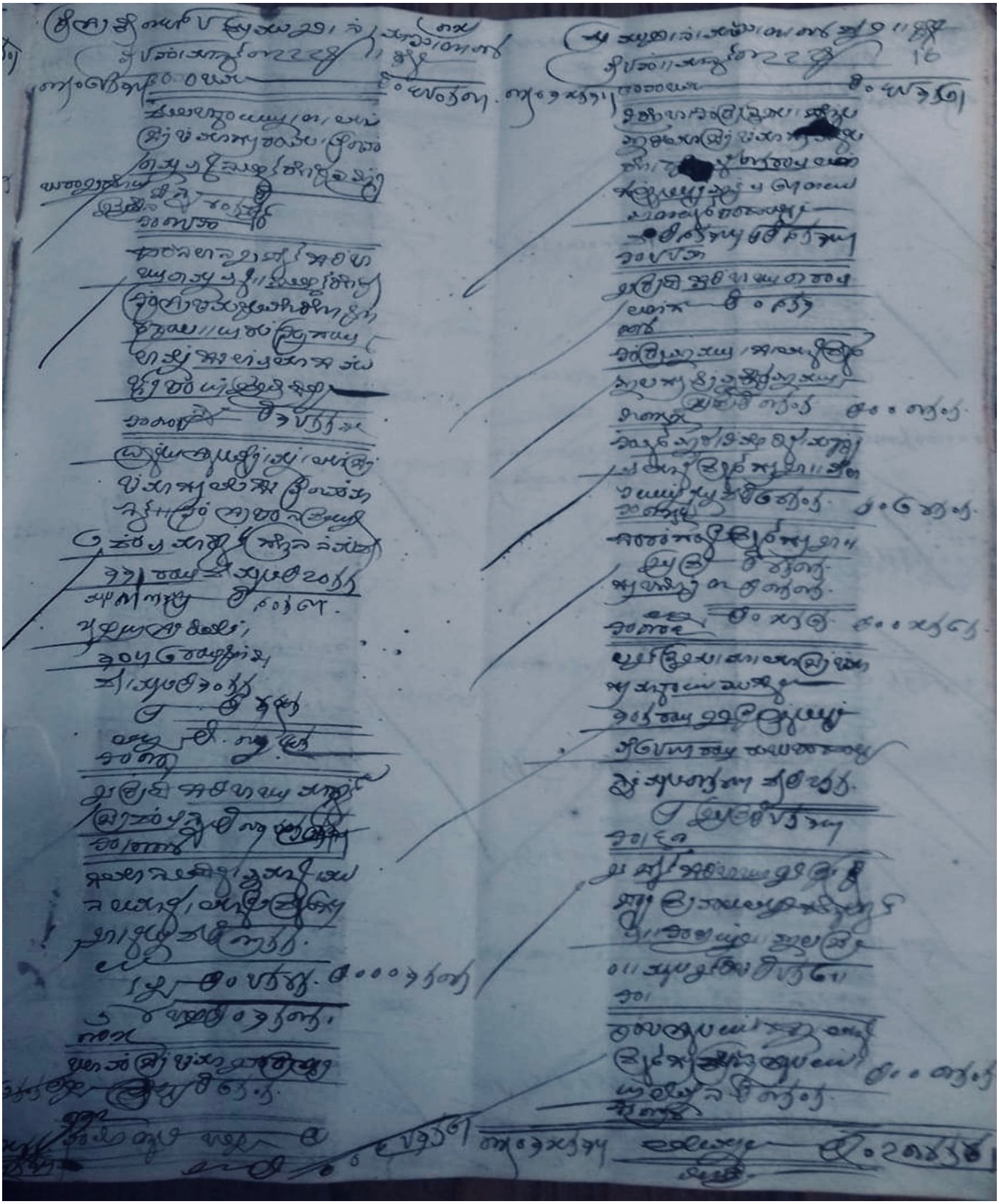
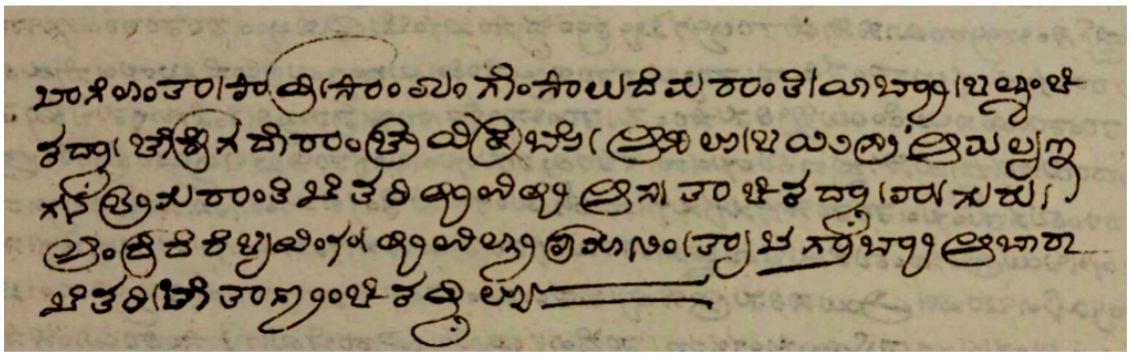


Fig. 11 : Household Accounts written in the Goyakanadi Alphabet from Goa (17th -18th century)

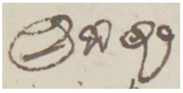
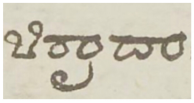
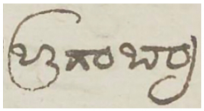


ಭಾಗೇವಂತಾ | ಪವ್ರಿಸಾಂವುಂಗೋಂಸಾಉದೇವುರಾಂತಿ | ವುಚ್ಯಾ | ಜಲ್ಮಾಂಚಿ
ಕಥಾ | ಜೋ ಪ್ರಿಗ ದೋರಾಂ ಜೇ ವಿ ಕ್ರಿಚೋ | ಆಸಿಲೋ | ಜಯಿಸೇಂ ಆಪುಲ್ಯ ಇ
ರ್ಗಾ ಜೇ ಮರಾಂತಿ ಭಿತರಿ ಲೇಂವಿಲೇ ಆಸ | ತಾ ಚಿ ಕಥಾ | ವ್ಯಾಗುರು |
ಆಂದ್ರೇದೇರೇ ಜ್ಯ ವಿಂನಂ | ಲೇಂವಿಲ್ಯೇ | ಪ್ರಮಾಣಿಂ | ತ್ಯಾ ಭಗ್ತಾಚ್ಯಾ ಆಚಾರಾ
ಭಿತರಿ | ಜೋ ತಾಣೇಂ ಚಿ ಕಥಾಲ್ಯ =

भागेवंता । पव्रिंसांवुंगोंसाउदेवुरांति । वुच्या । जल्मांचि
कथा । जो प्रिग दोरां जे वि क्रिचो । आसिलो । जयिसें आपुल्य इ
र्गा जे मरांति भितरि लेंविले आस । ता चि कथा । व्यागुरु ।
आंद्रेदेरे ज्य विंनं । लेंविल्ये । प्रमाणिं । त्या भग्ताच्या आचारा
भितरि । जो ताणें चि कथाल्य =

Bhāgēvantā . Pavriṁsāṃvuṅgōṃsāudēvurānti . Vucyā . Jalmāñci
Kathā . Jō priga dōrāṃ jē vi kricō . Āsilō . Jayisēṁ āpulya i
Rgā jē marānti bhitari lēṁvilē āsa . Tā ci kathā . Vyāguru .
Āndrēdērē jya viṃnaṃ . Lēṁvilyē . Pramāṇiṃ . Tyā bhagtācyā ācārā
Bhitari . Jō tāṇēṃ ci kathālya =

Fig . 12 : Transliteration of a piece of Goyakanadi writing into Kannada script, Devanagari and ISO 15919

Goyakanadi	Kannada	Telugu	Transliteration
	ಆಸಿಲೇ	ఆసిలే	āsilē
	ಜಿರ್ಲಾದಾ	జిర్లాదా	jirlādā
	ಬ್ರಾಗಾಚ್ಯಾ	బ్రాగాచ్యా	brāgācyā

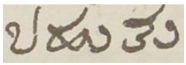
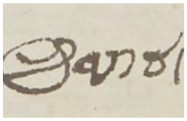
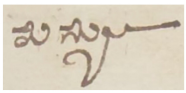
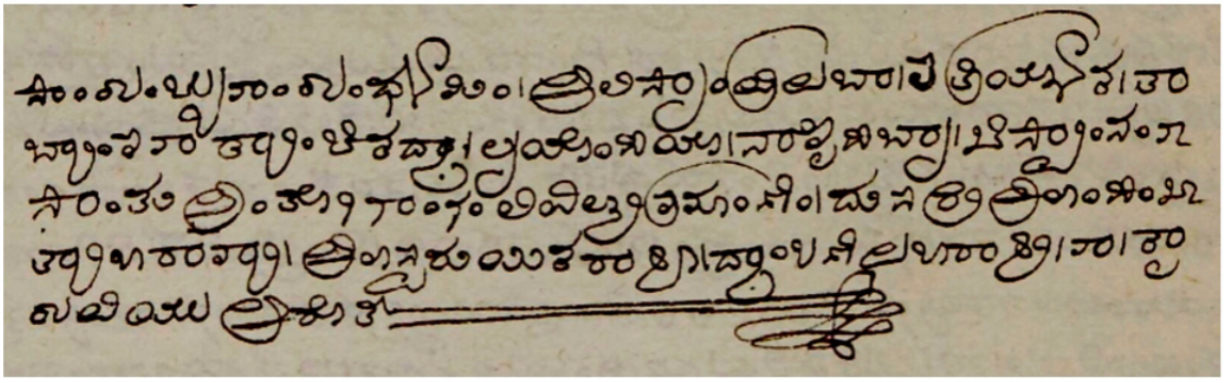
Goyakanadi	Kannada	Telugu	Transliteration
	ಬಹುತು	బహుతు	bahutu
	ಆಬಾರ	ఆబార	ābār
	ಪುಸ್ಯು	పుస్యు	pusyu

Fig. 13 : Transliteration of a few Goyakanadi words into Kannada script, Devanagari and ISO 15919



ಸಾಂವಂಜ್ಯುವಾಂವುಂರ್ಧಾಮಿಂ । ಆಲಿಸ್ಯಾಂವ್ರಿವಚಾ । ಪತ್ರಿರ್ಯಕ । ತಾ
ಚ್ಯಾಂಪವಾಡ್ಯಾಂಜಿಕಥಾ । ಲ್ಯಯೇಂಸಿಯಾ । ನಾಪ್ಲಸಿಚ್ಯಾ । ಭಿಸ್ವಾಂನಂವಾ
ಸಾಂತು ಅಂತೋನಿನಾಂವಂ ಲಿವಿಲ್ಯೇ ಪ್ರವಾಂಣಿ । ದುಸರೇ ಅವಾಂಸಿಂಭಾ
ತ್ಯಾ ಬಾರಾಪ್ಯಾ । ಅವಾನ್ವರುಯಿತ ರಾ ವೇ । ಥಾಂಬಿಣಿ ಯ ಬಾರಾವೇ । ವಾ । ಕ್ಲಾ
ಕುವಿಯು ಆರೋತು = §

सांवंज्युवांवुंर्धामिं । आलिस्यांव्रिवचा । पत्रिर्यक । ता
च्यांपवाड्यांजिकथा । ल्ययेंसिया । नाप्लसिच्या । भिस्वांनंवा
सांतु अंतोनिनांवं लिविल्ये प्रवांणि । दुसरे अवांसिंभा
त्या बाराप्या । अवान्वरुयित रा वे । थांबिणि य बारावे । वा । क्ला
कुवियु आरोतु = §

Sāṃvañjyuvāṃvuṃrdhāmiṃ । Ālisyāṃvrivacā । Patriryaka । Tā
Cyāmpavāḍyāñjikathā । Lyayēṃsiyā । Nāplasicyā । Bhisvāṃnaṃvā
Sāntu antōnināṃvaṃ livilyē pravāṃṇi । Dusarē avāṃsimbhā
Tyā bārāpyā । Avānvaruyita rā vē । Thāmbiṇi ya bārāvē । Vā । Klā
Kuviyu ārōtu = §

Fig. 14 : Transliteration of a piece of Goyakanadi writing into Kannada script, Devanagari and ISO 15919