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## Proposals from the Script Encoding Initiative

### Title

Proposal to Encode the Sharada Script in ISO/IEC 10646

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# Proposal to Encode the Sharada Script in ISO/IEC 10646

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ISO/IEC JTC 1/SC 2/WG 2  
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS  
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646<sup>1</sup>

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.

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**A. Administrative**

1. Title: **Proposal to Encode the Sharada Script in ISO/IEC 10646**
2. Requester's name: **University of California, Berkeley Script Encoding Initiative (Universal Scripts Project); author: Anshuman Pandey (pandey@umich.edu)**
3. Requester type (Member Body/Liaison/Individual contribution): **Liaison contribution**
4. Submission date: **August 5, 2009**
5. Requester's reference (if applicable): **N/A**
6. Choose one of the following:
  - (a) This is a complete proposal: **Yes**
  - (b) or, More information will be provided later: **As required**

**B. Technical - General**

1. Choose one of the following:
  - (a) This proposal is for a new script (set of characters): **Yes**
    - i. Proposed name of script: **Sharada**
  - (b) The proposal is for addition of character(s) to an existing block: **No**
    - i. Name of the existing block: **N/A**
2. Number of characters in proposal: **83**
3. Proposed category: **C - Major extinct**
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. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?: **Anshuman Pandey; True Type format**
  - (a) If available now, identify source(s) for the font and indicate the tools used: **The letters of the digitized Sharada font are based on normalized forms of written Sharada found in manuscripts. The font was drawn by Anshuman Pandey with Metafont and converted to True Type with FontForge.**
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:
  - (a) 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; see proposal for additional details..**
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 <http://www.unicode.org/Public/UNIDATA/UCD.html> and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard. **Character properties and numeric information are included.**

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<sup>1</sup> Form number: N3102-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)



### C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before?: **No**
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.)? **Yes**
  - (a) If Yes, with whom?:
    - **Dr. Jürgen Hanneder (hanneder@staff.uni-marburg.de), Philipps-Universität, Marburg, Germany**
    - **Dr. Walter Slaje (walter.slaje@indologie.uni-halle.de), Martin-Luther-Universität, Halle, Germany**
  - i. If Yes, available relevant documents: **N/A**
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? **Yes**
  - (a) Reference: **Linguists, historians, epigraphists, and manuscriptologists working with ancient and medieval India; scholars from the Kashmiri-speaking community of South Asia and those from the Kashmiri Pandit community.**
4. The context of use for the proposed characters (type of use; common or rare): **Common**
  - (a) Reference: **Inscriptions, coins, and manuscripts in Sanskrit, Kashmiri, and the regional languages of northern South Asia.**
5. Are the proposed characters in current use by the user community?: **The script is in very limited use by the Kashmiri Pandit community. However, there is a scholarly community engaged in the study of Sharada manuscripts.**
  - (a) If Yes, where? Reference: **In India, Germany, and the United States.**
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?: **No**
  - (a) If Yes, is a rationale provided?: **N/A**
    - i. If Yes, reference: **N/A**
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? **Yes**
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? **No**
  - (a) If Yes, is a rationale for its inclusion provided?: **N/A**
    - i. If Yes, reference: **N/A**
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? **No**
  - (a) If Yes, is a rationale provided?: **N/A**
    - i. If Yes, reference: **N/A**
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character? **Yes**
  - (a) If Yes, is a rationale for its inclusion provided? **Yes**
    - i. If Yes, reference: **See text of proposal**
11. Does the proposal include use of combining characters and/or use of composite sequences? **Yes**
  - (a) If Yes, is a rationale for such use provided? **Yes**
    - i. If Yes, reference: **See text of proposal**
  - (b) Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? **Yes**
    - i. If Yes, reference: **See text of proposal**
12. Does the proposal contain characters with any special properties such as control function or similar semantics? **Yes**
  - (a) If Yes, describe in detail (include attachment if necessary): **Virama**
13. Does the proposal contain any Ideographic compatibility character(s)? **No**
  - (a) If Yes, is the equivalent corresponding unified ideographic character(s) identified? **N/A**
    - i. If Yes, reference: **N/A**

## 1 Introduction

**Purpose** This is a proposal to encode the Sharada script in the Universal Character Set (ISO/IEC 10646). The present proposal (N3595 L2/09-074R2) replaces the following documents:

- L2/09-074R: “Proposal to Encode the Sharada Script in ISO/IEC 10646”, March 2009
- L2/09-074: “Proposal to Encode the Sharada Script in ISO/IEC 10646”, January 2009
- L2/08-200: “Draft Proposal to Encode the Sharada Script in ISO/IEC 10646”, May 2008
- L2/08-017: “Draft Proposal to Encode the Sharada Script in ISO/IEC 10646”, January 2008
- N3245 L2/05-377: “Request to Allocate the Sharada Script in the Unicode Roadmap”, November 2005

**Acknowledgments** The proposal author is indebted to Prof. Dr. Jürgen Hanneder (Philipps-Universität, Marburg, Germany) for sharing his knowledge of Sharada, for providing Sharada specimens, for offering detailed comments on the forms of Sharada characters, and for his patience with the author’s ignorance.

This project was made possible in part by a grant from the United States National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at the University of California, Berkeley). Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment of the Humanities.

## 2 Background

**Overview** Sharada is a major historical Brahmi-based script of South Asia. It is the progenitor of a major sub-family of Brahmi and is a sibling of the Nagari and Proto-Bengali families. Sharada was the principal inscriptional and literary script of Kashmir from the 8th century CE until the 20th century. The script was used to write Sanskrit, Kashmiri, and other languages of northern South Asia, first as inscriptions on stone, copper, and other media through to the 19th century. From the 12th century, Sharada was used to write manuscripts of Vedic and classical Sanskrit texts. In the 19th century, the expanded use of the Persian script for writing Kashmiri and the growth of Devanagari, contributed to the marginalization of Sharada as a medium of education and literary production.

**Name** The name of the script in the UCS is Sharada (𑆯𑆳𑆯𑆳 *śāradā*). It is believed that the term refers to a traditional Sanskrit name for the Kashmir region, Śāradādeśa or Śāradāmaṇḍala.<sup>1</sup> Another tradition states that the name is derived from that of the tutelary deity of Kashmir, Śāradā, the goddess of knowledge and the arts, and another name of the Hindu goddess Sarasvatī.<sup>2</sup> Yet, another anecdote holds that the name refers to one Śāradānandan, who first developed a writing system for the Kashmiri language.<sup>3</sup> The name is not found in early sources and is believed to be of relatively later origin. The script is also referred to as ‘Kashmiri’ in several European sources (see Figure 31), which is a geographical appellation of the script. The name Sharada appears in several English sources as ‘Sarada’ and ‘Sharda’, but the preferred form is ‘Sharada’.

**Geographic Distribution** The historical geographic distribution of Sharada is shown in Figure 1. The core geography of Sharada is roughly the area between longitudes 72° and 78° east and latitudes 32° and 36° north.<sup>4</sup> Sharada inscriptions, coins, and manuscripts have been found as far west as Afghanistan (Gandhara and Bamiyan);<sup>5</sup> as far south as in the village of Palam, south-west of Delhi; and on account of the migrations of Kashmiri Pandits, as far east as Benares in Uttar Pradesh.<sup>6</sup>

<sup>1</sup> Bühler 1877: 31. <sup>2</sup> Upadhyay 1998: 2. <sup>3</sup> Elmslie 1872: 219. <sup>4</sup> Kaye 1927: 3. <sup>5</sup> Allchin and Hammond 1978: 244.

<sup>6</sup> Bühler 1904: 76.

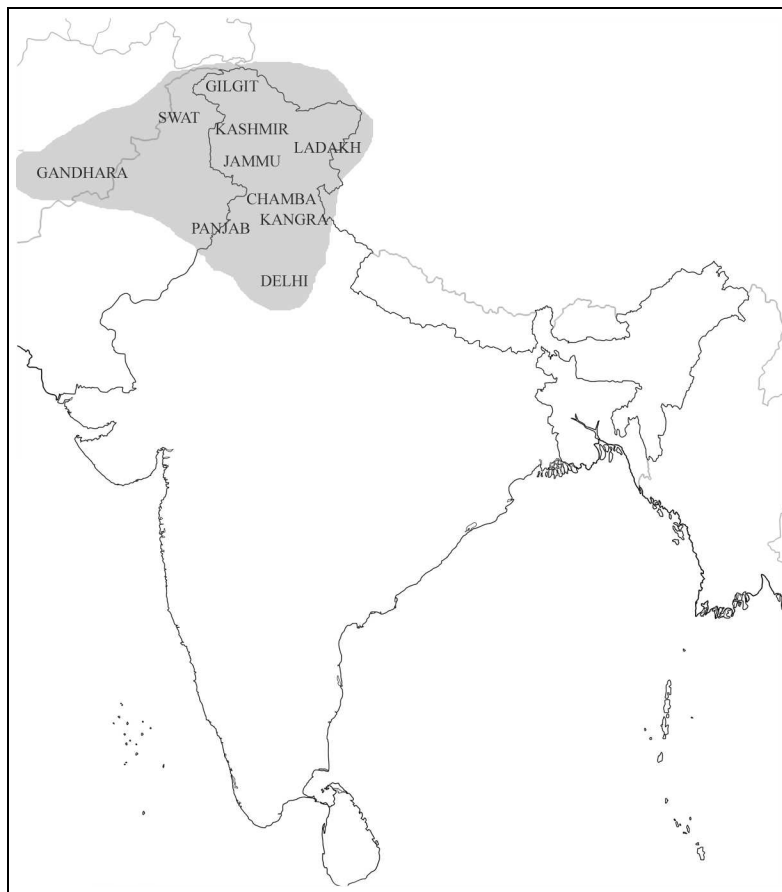


Figure 1: Historical geographic distribution of Sharada

**Origins and Development** Sharada is descended from Gupta Brahmi through the Kutila script. Specialists agree that the script evolved into its present form through three distinct stages of development. The earliest phase is a transition from the Kutila form to ‘Sharada proper’ during the 8th–9th century.<sup>7</sup> This was followed by another period of development during the 9th–10th centuries. Then a stage of final development during the 11th–13th centuries.<sup>8</sup> This timeline is supported by inscriptional evidence. The form of Sharada of the earliest period is attested through the inscriptions and coins of the 8th through 10th centuries. The middle phase is evidenced by inscriptions and coins of the 11th through 14th centuries. The last phase is represented by inscriptional and manuscript records of the 15th and 16th centuries.<sup>9</sup>

The earliest-known record in Sharada is considered to be found on the coins struck by rulers of the Utpala dynasty (9–10th centuries), founded by Avanti Varman.<sup>10</sup> Some specialists attest that the stone-slab inscription (774–775 CE) found at the village Hund (Attock District) of northern Punjab in Pakistan is the oldest record;<sup>11</sup> although, others suggest that the Hund inscriptions resemble Sharada forms of the 10th or 11th century.<sup>12</sup> The latest inscriptional record in Sharada is dated at 1789 and was found at Digom (Kapal Mochan, Shopian district) of southern Kashmir in India.<sup>13</sup>

The earliest manuscript in Sharada is the Bakhshali manuscript, dated to the 12th century, and named after the village in the Peshawar district of North-West Frontier Province in Pakistan where it was found.<sup>14</sup> The manuscript is a significant mathematical treatise written in Sanskrit (Figure 3). Another birch-bark

<sup>7</sup> Archaeological Survey of India 2007; Kaul Deambi 1982: 60; Upadhyay 1998: 22. <sup>8</sup> Upadhyay 1998: 28, 32, 44; Harmata and Litvinsky 1992: 388. <sup>9</sup> Kaul Deambi 1982: 4. <sup>10</sup> Kaul Deambi 1982: 25; Upadhyay 1998: 3. <sup>11</sup> Kaul Deambi 1982: 24. <sup>12</sup> Upadhyay 1998: 3. <sup>13</sup> Kaul Deambi 1982: 62. <sup>14</sup> Kaul Deambi 1982: 67.

manuscript, the *Muni-mata-maṇi-mālā*, from the 14th century is significant as it is representative of middle Sharada and it the oldest Sharada manuscript found in Kashmir. The final stages of the development of Sharada are evidenced in the forms that appear in the 16th century birch-bark manuscripts of the Kashmiri recension of Kālidāsa's *Śakuntalā*, the *Mahābhārata*, and other classical Sanskrit texts.<sup>15</sup> The most famous Sharada manuscript, however, is the Kashmiri Atharvaveda, which contains one of the only two known texts of the Paippalāda recension of the Atharvaveda (Figure 2).

The 13th century marks a milestone in the development of Sharada. With the inscriptions of the Baijnath *praśastis* (1204 CE),<sup>16</sup> “the history of the Śāradā proper comes practically to an end.”<sup>17</sup> By this time the development of Sharada may be separated into two major palaeographical periods:<sup>18</sup> ‘Sharada proper’ and ‘modern Sharada’<sup>19</sup> (see Figure 21, Figure 22, and Figure 23). Further development of Sharada resulted in the emergence of new scripts such as Takri, Landa, and Gurmukhi (a comparison of these scripts is given in Table 10, Table 11, Table 12, and Table 13). By the 15th century Sharada evolved “so considerably from [the script] of the pre-Muhammadan documents that it seems desirable to denote it by a special name.”<sup>20</sup> The term ‘*devāṣeṣa*’ was used for this new form, particularly in Chamba (in modern day Himachal Pradesh) and the surrounding areas from the 14–18th centuries (see Figure 26). In particular, *devāṣeṣa* was the intermediate script between Sharada and Takri.<sup>21</sup>

While the Sharada literary tradition is one based predominantly on the medium of manuscripts, Sharada entered the world of print in the 19th century. In 1821, the Serampore Missionaries of Calcutta published a Kashmiri translation of the New Testament printed in Sharada (Figure 5).<sup>22</sup> However, the Sharada print tradition was short-lived. In the *Linguistic Survey of India*, Sir George A. Grierson writes that a metal font for Sharada had been cut at Serampore;<sup>23</sup> however, he discovered that the font “and the punches, had long disappeared, having been sold as waste metal.”<sup>24</sup> It is interesting to note that the appearance of printed Sharada as shown in Figure 5 highly resembles the inventory of Sharada letter printed in Carl Faulmann's *Das Buch der Schrift* (1880), shown in Figure 8.

By the 19th century, the growing influence of the Persian and Takri scripts contributed to the decline of Sharada to the margins. The use of Sharada for education and literary production, however, is attested through the first quarter of the 20th century.<sup>25</sup> Today, Sharada is not used, except in a very limited capacity by Kashmiri Pandits, who employ the script for ritual purposes and for writing horoscopes. The Kashmiri language itself is now written in the Persian script, to which new signs have been added in order to represent Kashmiri vowels.<sup>26</sup> Sharada itself was not well-suited for writing modern Kashmiri because it could not adequately represent these sounds using its vowel signs. Despite its current obsolescence the fact that Serampore missionaries decided to print bibles in Sharada suggests that there was a significant number of Kashmiri speakers who were proficient in Sharada in the middle 19th century.

Interest in Sharada continues to grow in the scholarly community. In India, the Indira Gandhi National Centre for the Arts (IGNCA) has organized workshops on manuscriptology and palaeography in order to train specialists to read Sharada for the purpose of preserving Kashmiri manuscripts and producing critical editions of the texts.<sup>27</sup> In Germany, specialists such as Prof. Dr. Walter Slaje (Martin-Luther-Universität, Halle) and Prof. Dr. Jürgen Hanneder (Philipps-Universität, Marburg) are actively engaged in research on Kashmiri manuscripts in Sharada, and digital projects such as Indoskript, managed by Prof. Dr. Harry Falk (Freie Universität Berlin) continue to advance the study of Sharada.

<sup>15</sup> Kaul Deambi 1982: 76. <sup>16</sup> Upadhyay 1998: 3–4. <sup>17</sup> Vogel 1911: 47. <sup>18</sup> Vogel 1911: 47. <sup>19</sup> Kaye 1927: 10. <sup>20</sup> Vogel 1911: 47. <sup>21</sup> Chhabra 1957: 3. <sup>22</sup> American Bible Society 1938: 190. <sup>23</sup> Grierson 1919: 236. <sup>24</sup> Grierson 1919: 235fn1. <sup>25</sup> Grierson 1919: 254. <sup>26</sup> Wali et al. 1997: xix. <sup>27</sup> Government of India. Indira Gandhi National Centre for the Arts 1994.

	1118	1119	111A	111B	111C	111D
0	ॠ 11180	ॡ 11190	ॢ 111A0	ॣ 111B0	। 111C0	॥ 111D0
1	० 11181	ॠ 11191	ॡ 111A1	ॢ 111B1	ॣ 111C1	। 111D1
2	॥ 11182	० 11192	ॠ 111A2	ॡ 111B2	ॢ 111C2	ॣ 111D2
3	। 11183	॥ 11193	ॠ 111A3	ॡ 111B3	ॢ 111C3	ॣ 111D3
4	॥ 11184	ॠ 11194	ॡ 111A4	ॢ 111B4	ॣ 111C4	। 111D4
5	ॢ 11185	ॣ 11195	। 111A5	॥ 111B5	० 111C5	ॠ 111D5
6	ॠ 11186	ॡ 11196	ॢ 111A6	ॣ 111B6	। 111C6	॥ 111D6
7	ॡ 11187	ॢ 11197	ॣ 111A7	। 111B7	॥ 111C7	० 111D7
8	ॢ 11188	ॣ 11198	। 111A8	॥ 111B8	० 111C8	ॠ 111D8
9	ॣ 11189	। 11199	॥ 111A9	० 111B9		ॠ 111D9
A	। 1118A	॥ 1119A	ॠ 111AA	ॡ 111BA		
B	॥ 1118B	ॠ 1119B	ॡ 111AB	ॢ 111BB		
C	ॢ 1118C	ॣ 1119C	। 111AC	॥ 111BC		
D	ॣ 1118D	। 1119D	॥ 111AD	० 111BD		
E	। 1118E	॥ 1119E	ॠ 111AE	ॡ 111BE		
F	॥ 1118F	ॠ 1119F	ॡ 111AF	ॢ 111BF		

Table 1: Glyph chart for Sharada

**Various signs**

11180	◌ं	SHARADA SIGN CANDRABINDU
11181	◌◌	SHARADA SIGN ANUSVARA
11182	◌ः	SHARADA SIGN VISARGA

**Independent vowels**

11183	अ	SHARADA LETTER A
11184	आ	SHARADA LETTER AA
11185	इ	SHARADA LETTER I
11186	ई	SHARADA LETTER II
11187	उ	SHARADA LETTER U
11188	ऊ	SHARADA LETTER UU
11189	ऋ	SHARADA LETTER VOCALIC R
1118A	ॠ	SHARADA LETTER VOCALIC RR
1118B	ऌ	SHARADA LETTER VOCALIC L
1118C	ॡ	SHARADA LETTER VOCALIC LL
1118D	ए	SHARADA LETTER E
1118E	ऐ	SHARADA LETTER AI
1118F	ओ	SHARADA LETTER O
11190	औ	SHARADA LETTER AU

**Consonants**

11191	क	SHARADA LETTER KA
11192	ख	SHARADA LETTER KHA
11193	ग	SHARADA LETTER GA
11194	घ	SHARADA LETTER GH
11195	ङ	SHARADA LETTER NGA
11196	च	SHARADA LETTER CA
11197	छ	SHARADA LETTER CHA
11198	ज	SHARADA LETTER JA
11199	झ	SHARADA LETTER JHA
1119A	ण	SHARADA LETTER NYA
1119B	ट	SHARADA LETTER TTA
1119C	ठ	SHARADA LETTER TTHA
1119D	ड	SHARADA LETTER DDA
1119E	ढ	SHARADA LETTER DDHA
1119F	न	SHARADA LETTER NNA
111A0	त	SHARADA LETTER TA
111A1	थ	SHARADA LETTER THA
111A2	द	SHARADA LETTER DA
111A3	ध	SHARADA LETTER DHA
111A4	न	SHARADA LETTER NA
111A5	प	SHARADA LETTER PA
111A6	फ	SHARADA LETTER PHA
111A7	ब	SHARADA LETTER BA
111A8	भ	SHARADA LETTER BHA
111A9	म	SHARADA LETTER MA
111AA	य	SHARADA LETTER YA
111AB	र	SHARADA LETTER RA
111AC	ल	SHARADA LETTER LA
111AD	ळ	SHARADA LETTER LLA
111AE	व	SHARADA LETTER VA
111AF	श	SHARADA LETTER SHA
111B0	ष	SHARADA LETTER SSA
111B1	स	SHARADA LETTER SA
111B2	ह	SHARADA LETTER HA

**Dependent vowel signs**

111B3	◌ा	SHARADA VOWEL SIGN AA
111B4	◌ि	SHARADA VOWEL SIGN I
111B5	◌ी	SHARADA VOWEL SIGN II
111B6	◌ु	SHARADA VOWEL SIGN U
111B7	◌ू	SHARADA VOWEL SIGN UU
111B8	◌ृ	SHARADA VOWEL SIGN VOCALIC R
111B9	◌ॠ	SHARADA VOWEL SIGN VOCALIC RR
111BA	◌ॡ	SHARADA VOWEL SIGN VOCALIC L
111BB	◌ॢ	SHARADA VOWEL SIGN VOCALIC LL
111BC	◌े	SHARADA VOWEL SIGN E

111BD	◌ी	SHARADA VOWEL SIGN AI
111BE	◌ो	SHARADA VOWEL SIGN O
111BF	◌ौ	SHARADA VOWEL SIGN AU

**Various signs**

111C0	◌ा	SHARADA SIGN VIRAMA
111C1	◌ा	SHARADA SIGN AVAGRAHA
111C2	◌ा	SHARADA SIGN JIHVAMULIYA
111C3	◌ा	SHARADA SIGN UPADHMANIYA
111C4	ॐ	SHARADA OM

**Punctuation**

111C5	।	SHARADA DANDA
111C6	॥	SHARADA DOUBLE DANDA
111C7	·	SHARADA ABBREVIATION SIGN
111C8	,	SHARADA SEPARATOR

**Digits**

111D0	०	SHARADA DIGIT ZERO
111D1	१	SHARADA DIGIT ONE
111D2	२	SHARADA DIGIT TWO
111D3	३	SHARADA DIGIT THREE
111D4	४	SHARADA DIGIT FOUR
111D5	५	SHARADA DIGIT FIVE
111D6	६	SHARADA DIGIT SIX
111D7	७	SHARADA DIGIT SEVEN
111D8	८	SHARADA DIGIT EIGHT
111D9	९	SHARADA DIGIT NINE

Table 2: Names list for Sharada

### 3 Characters Proposed

**Number of Characters** The 83 letters proposed here comprise the core Sharada character set.

**Character Names** The convention used for naming Sharada characters in the UCS follows that used for Devanagari. However, there are traditional Kashmiri names for each Sharada character, given in Table 8 (consonants) and Table 9 (vowels and signs). For example, **𑆑** SHARADA LETTER A is known as *ādaṭ a*, **𑆑** SHARADA LETTER KA is known as *kov ka*, etc. This is similar to traditional character names in Gurmukhi, eg. **𑆐** U+0A05 GURMUKHI LETTER A is called *airā*, **𑆕** U+0A15 GURMUKHI LETTER KA is called *kakka*, etc.

**Allocation** Sharada is currently allocated six columns in the Supplementary Multilingual Plane (SMP) (Plane 1) of the UCS at the range U+11180..U+111DF.<sup>28</sup> The character assignments are shown in the glyph chart (Table 1) and in the names list (Table 2). The code-points for individual characters are not referenced in this proposal in order to accommodate possible changes to the present allocation.

#### 3.1 Character Inventory

**Consonants** There are 34 consonant letters:

𑆑	SHARADA LETTER KA	𑆑	SHARADA LETTER DDA	𑆑	SHARADA LETTER MA
𑆒	SHARADA LETTER KHA	𑆒	SHARADA LETTER DDHA	𑆒	SHARADA LETTER YA
𑆓	SHARADA LETTER GA	𑆓	SHARADA LETTER NNA	𑆓	SHARADA LETTER RA
𑆔	SHARADA LETTER GHA	𑆔	SHARADA LETTER TA	𑆔	SHARADA LETTER LA
𑆕	SHARADA LETTER NGA	𑆕	SHARADA LETTER THA	𑆕	SHARADA LETTER LLA
𑆖	SHARADA LETTER CA	𑆖	SHARADA LETTER DA	𑆖	SHARADA LETTER VA
𑆗	SHARADA LETTER CHA	𑆗	SHARADA LETTER DHA	𑆗	SHARADA LETTER SHA
𑆘	SHARADA LETTER JA	𑆘	SHARADA LETTER NA	𑆘	SHARADA LETTER SSA
𑆙	SHARADA LETTER JHA	𑆙	SHARADA LETTER PA	𑆙	SHARADA LETTER SA
𑆚	SHARADA LETTER NYA	𑆚	SHARADA LETTER PHA	𑆚	SHARADA LETTER HA
𑆛	SHARADA LETTER TTA	𑆛	SHARADA LETTER BA		
𑆜	SHARADA LETTER TTHA	𑆜	SHARADA LETTER BHA		

**Vowels** There are 14 independent vowels:

𑆑	SHARADA LETTER A	𑆑	SHARADA LETTER VOCALIC RR
𑆒	SHARADA LETTER AA	𑆒	SHARADA LETTER VOCALIC L
𑆓	SHARADA LETTER I	𑆓	SHARADA LETTER VOCALIC LL
𑆔	SHARADA LETTER II	𑆔	SHARADA LETTER E
𑆕	SHARADA LETTER U	𑆕	SHARADA LETTER AI
𑆖	SHARADA LETTER UU	𑆖	SHARADA LETTER O
𑆗	SHARADA LETTER VOCALIC R	𑆗	SHARADA LETTER AU

<sup>28</sup> Unicode Roadmap Committee 2009.

**Vowel Signs** There are 13 dependent vowel signs:

◉	SHARADA VOWEL SIGN AA	◉	SHARADA VOWEL SIGN VOCALIC L
◌̆	SHARADA VOWEL SIGN I	◌̆◌̆	SHARADA VOWEL SIGN VOCALIC LL
◌̇	SHARADA VOWEL SIGN II	◌̇	SHARADA VOWEL SIGN E
◌̈	SHARADA VOWEL SIGN U	◌̈	SHARADA VOWEL SIGN AI
◌̉	SHARADA VOWEL SIGN UU	◌̉	SHARADA VOWEL SIGN O
◌̊	SHARADA VOWEL SIGN VOCALIC R	◌̊	SHARADA VOWEL SIGN AU
◌̋	SHARADA VOWEL SIGN VOCALIC RR		

**Various Signs** There are 8 various signs:

◌̌	SHARADA SIGN CANDRABINDU	◌̍	SHARADA AVAGRAHA
◌̎	SHARADA SIGN ANUSVARA	◌̏	SHARADA SIGN JIHVAMULIYA
◌̐	SHARADA SIGN VISARGA	◌̑	SHARADA SIGN UPADHMANIYA
◌̒	SHARADA SIGN VIRAMA	◌̓	SHARADA OM

**Punctuation Signs** There are 4 punctuation signs:

	SHARADA DANDA	◌̔	SHARADA ABBREVIATION SIGN
	SHARADA DOUBLE DANDA	◌̕	SHARADA SEPARATOR

**Digits** There are 10 digits:

◌̖	SHARADA DIGIT ZERO	◌̗	SHARADA DIGIT FOUR	◌̘	SHARADA DIGIT EIGHT
◌̙	SHARADA DIGIT ONE	◌̚	SHARADA DIGIT FIVE	◌̛	SHARADA DIGIT NINE
◌̜	SHARADA DIGIT TWO	◌̝	SHARADA DIGIT SIX		
◌̞	SHARADA DIGIT THREE	◌̟	SHARADA DIGIT SEVEN		

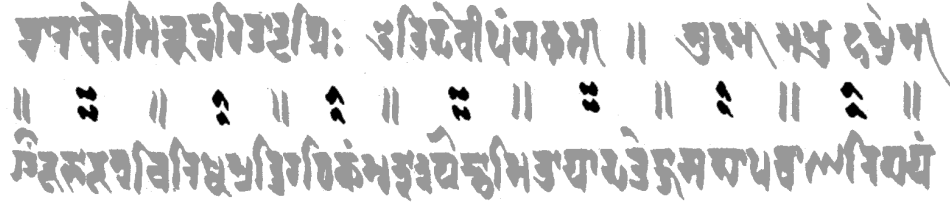
### 3.2 Characters Not Proposed

The intent of this proposal is to encode a core set of Sharada characters. There are several signs and symbols found in Sharada manuscripts, which are supplementary characters. Some of these characters are described below, along with the rationale for excluding them from encoding at present.

1. **The sacred sign *ekam*** The sign 𑖬 *ekam* is a sacred sign in Kashmiri Shaivism. It is described by George A. Grierson in his article “On the Sharada Alphabet” (1916). There is insufficient information to determine if this character is used specifically in Sharada documents, on account of being a sign associated with Kashmiri Shaivism, if it occurs in documents in Devanagari and other scripts. This character is, therefore, not proposed for encoding at present.
2. **Miscellaneous Punctuation** Several punctuation marks have been identified in Sharada manuscripts. Signs such as 𑖬 and 𑖭 are used as section marks (as shown below). Additional investigation is needed



in order to ensure that these marks are not idiosyncratic. Therefore, these characters are not proposed for encoding at this point.

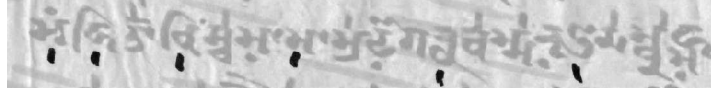


3. **Signs for Representing Vedic Sanskrit** Sharada has signs for representing Vedic tones. It may be possible to unify these with existing Devanagari characters and Vedic tone characters proposed by Michael Everson and Peter Scharf (2007) as part of the Vedic Extensions block (U+1CD0..1CFF). Three such signs found in the Kashmirian *Paippalāda Atharvaveda* (Figure 2) are:

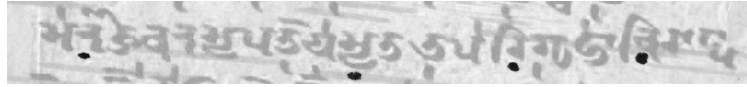
(a) *Bar above* Could be unified with ◌ U+0951 DEVANAGARI STRESS SIGN UDATTA.



(b) *Bar below* Could be unified with ◌ U+1CE0 VEDIC TONE KATHAKA ANUDATTA.



(c) *Dot below* Could be unified with ◌ U+1CDF VEDIC TONE DOT BELOW.



4. **Signs for Representing Kashmiri** Diacritic signs were introduced to modern Sharada for the purpose of representing vowels of the Kashmiri language, which could not be expressed using the regular Sharada vowel signs. Three signs have been identified:

(a) *Below-base slash* Sign similar to ◌ U+094D DEVANAGARI SIGN VIRAMA.

भैरुया मन पञ्चाना । यलि उंमि भैरुया मन पंञ्च

(b) *Underdot* Sign similar to ◌ U+093C DEVANAGARI SIGN NUKTA.

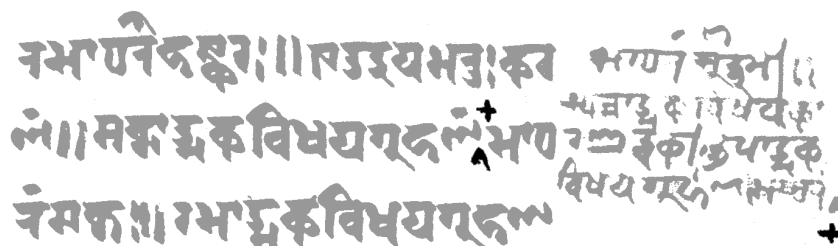
मृपा उया कला मृ-उि घेग्रा पृसा गकना उद्ग-

(c) *Above-base bar* Sign similar to ◌ U+0951 DEVANAGARI STRESS SIGN UDATTA.

मला मननेवना । उंमि भालिभा ळिगिषा वंरना,

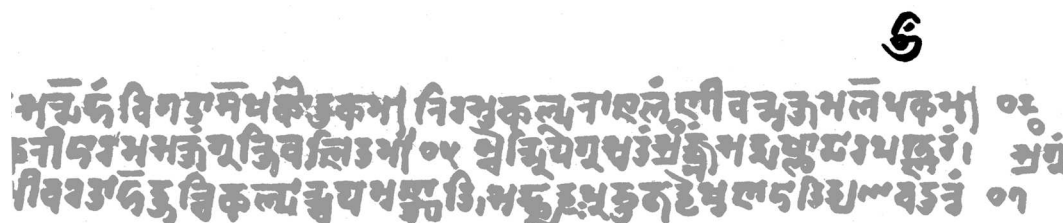
It is possible that Grierson developed these characters in order to document the phonetic repertoire of the Kashmiri language in both Sharada and Devanagari for the *Linguistic Survey of India*. These signs appear in the hand-written specimen of Sharada (Figure 4) and also in the printed Devanagari examples of Kashmiri in the *Survey*. Additional investigation is needed in order to ensure that these marks are not idiosyncratic. Therefore, they are not proposed for encoding at present.

5. **Revision Marks** Sharada manuscripts contain numerous signs used for purposes of annotation and revision, such as the ‘plus’ and ‘caret’ signs shown in the specimen below:

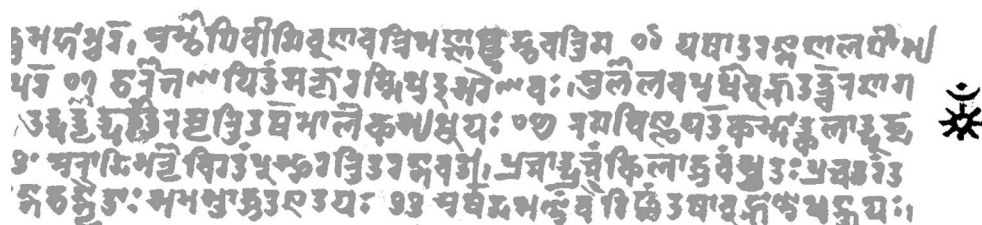


These signs are quite common. Several of these signs have been identified and documented. However, a complete inventory of these characters has yet to be produced and their function has yet to be determined. It is also possible that these characters may be represented with existing characters of similar or equal function. Therefore, these characters are not proposed for encoding at present.

6. **Various Character-Like Signs** Several character-like signs have been identified in a Sharada manuscript of the *Yoga Vāsishtha*. One of these signs resembles 9 SHARADA DIGIT NINE written with SHARADA SIGN CANDRABINDU, as shown below. There is insufficient information regarding the semantics, function, and properties of these characters to propose them for encoding at present.

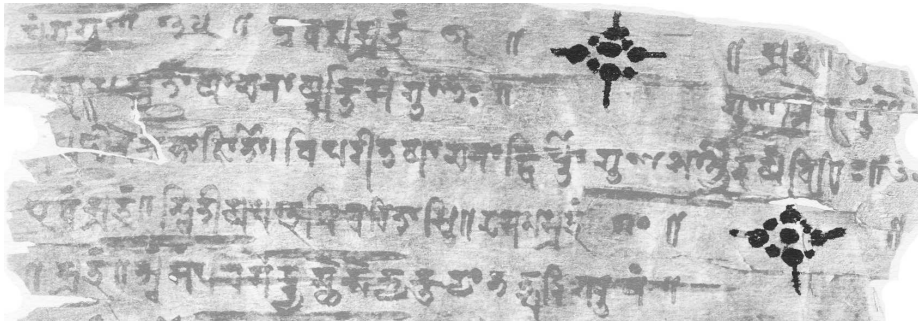


7. **Various Symbols** Several symbols have been identified in a Sharada manuscript of the *Yoga Vāsishtha*. One of these is shown below. There is insufficient information regarding the semantics, function, and properties of these characters to propose them for encoding at present.



8. **Decorative Marks** Sharada manuscripts contain various decorative marks. These marks are used to mark text divisions, such as end of verse, end of section, end of text. The specimen below from the Bakhshali manuscript (Figure 3) highlights the use of such decorations. These marks are similar to flourishes used in other scripts. Further research is required in order to understand the function of

various Sharada decorative marks and to determine the potential for unifying such marks. Therefore, these characters are not proposed for encoding at present.



### 3.3 Basis for Character Shapes

When attempting to develop a standard encoding for a script such as Sharada, it is difficult to determine which form of the script along its millenium-long history should serve as the representative of its ancestors and descendants. An analysis of Sharada specimens from the 8th through the 20th century indicates that Sharada evolved significantly throughout its history, but that the forms of the script from the 13th century onwards display marked uniformity in the appearance of characters (compare the forms in the Bakhshali manuscript of the 12th century (Figure 3) with those of the specimen in the *Linguistic Survey of India* from the late 19th century (Figure 4), and also see the comparison of manuscript forms in Figure 18, Figure 19, and Figure 20). Such uniformity coincides with the emergence of ‘modern Sharada’ after the 13th century, which is distinguished from ‘Sharada proper’.<sup>29</sup> The distinction between ‘proper’ and ‘modern’ Sharada may be understood as the difference between inscriptional and hand-written Sharada, respectively (see Section 2). The uniformity of ‘modern Sharada’ forms suggests that the essential typology of the script was best captured with the fluidity of reed pen and ink on birch bark than through the relative stocicism of stylus on copper or chisel on stone.

Given this, the form of Sharada proposed for encoding in the UCS is modern Sharada. Modern Sharada is the script of Sharada manuscripts, which are the most plentiful of extant Sharada records. Thus, the Sharada characters proposed here are digitized forms that were designed from a comparative analysis of the typology of each character across various hand-written sources (Table 3, Table 4, and Table 5). Comparison was also made with printed (Table 6) and digitized (Table 7) forms. The resulting digitized typeface, therefore, represents an idealized form of Sharada glyphs that seeks to complement an idealized character set that encompasses characters from the various periods of the history of Sharada.

Ultimately, the principle that guides this proposal is not so much the decision to base Unicode Sharada upon modern Sharada, but the establishing of a standard character set for the script. The most important aspect of any proposal to encode a script in the UCS is adherence to the character-glyph model, or distinguishing between the semantics of a character and the appearance of that character. Applying the principle of encoding characters, not glyphs in developing a standard character set for Sharada ensures that not only modern Sharada, but any historical incarnation of the script may be ultimately represented using the UCS standard for Sharada, be it the Sharada of the coins struck by Rāja Avanti Varman of the Utpala dynasty of the 9th century or the script of the Kashmiri documents written by Mahāmahopādhyāy Paṇḍit Mukund Rām Śāstrī in the 19th century.

<sup>29</sup> Kaye 1927: 10; Upadhyay 1998: 3–4; Vogel 1911: 47.

	A	B	C	D		A	B	C	D
KA	क	क	क	क	DA	ड	ड	ड	ड
KHA	ख	ख	ख	ख	DHA	ढ	ढ	ढ	ढ
GA	ग	ग	ग	ग	NA	न	न	न	न
GHA	घ	घ	घ	घ	PA	प	प	प	प
NGA	ङ	ङ	ङ	ङ	PHA	फ	फ	फ	फ
CA	च	च	च	च	BA	ब	ब	ब	ब
CHA	छ	छ	छ	छ	BHA	भ	भ	भ	भ
JA	ज	ज	ज	ज	MA	म	म	म	म
JHA	झ	झ	झ	झ	YA	य	य	य	य
NYA	ण	ण	ण	ण	RA	र	र	र	र
TTA	ट	ट	ट	ट	LA	ल	ल	ल	ल
TTHA	ठ	ठ	ठ	ठ	LLA	—	—	ॠ	ॠ
DDA	ड	ड	ड	ड	VA	व	व	व	व
DDHA	ढ	ढ	ढ	ढ	SHA	श	श	श	श
NNA	ॠ	ॠ	ॠ	ॠ	SSA	ष	ष	ष	ष
TA	उ	उ	उ	उ	SA	स	स	स	स
THA	थ	थ	थ	थ	HA	ह	ह	ह	ह

Table 3: Comparison of hand-written Sharada consonants shown in Slaje and Hanneder (column ‘A’), Ojhā (column ‘B’), and Grierson (column ‘C’) with digitized forms designed by Pandey (column ‘D’).

	A	B	C	D		A	B	C	D
A					RR				
AA					L				
I					LL				
II					E				
U					AI				
UU					O				
R					AU				

Table 4: Comparison of hand-written Sharada vowels shown in Slaje and Hanneder (column ‘A’), Ojhā (column ‘B’), and Grierson (column ‘C’) with digitized forms designed by Pandey (column ‘D’).

	A	B	C	D	E		A	B	C	D	E
0						5					
1						6					
2						7					
3						8					
4						9					

Table 5: Comparison of hand-written Sharada digits shown in Slaje and Hanneder (column ‘A’), Ojhā (column ‘B’), and Grierson (column ‘C’) with metal forms shown in Pihan (column ‘D’) and digitized forms designed by Pandey (column ‘E’).

	CONSONANTS				VOWELS		DIGITS			
	A	B	A	B	A	B	A	B		
KA	क	क	DA	क	A	अ	अ	0	.	.
KHA	ख	ख	DHA	ख	AA	आ	आ	1	१	०
GA	ग	ग	NA	ग	I	इ	इ	2	३	३
GHA	घ	घ	PA	घ	II	ई	ई	3	७	३
NGA	ङ	ङ	PHA	ङ	U	उ	उ	4	१	५
CA	च	च	BA	च	UU	ऊ	ऊ	5	५	५
CHA	छ	छ	BHA	छ	R	र	र	6	२	७
JA	ज	ज	MA	ज	RR	र	र	7	५	१
JHA	झ	झ	YA	ज	L	ल	ल	8	५	३
NYA	ञ	ञ	RA	ज	LL	ल	ल	9	७	७
TTA	ट	ट	LA	ल	E	ए	ए			
TTHA	ठ	ठ	LLA	ल	AI	ऐ	ऐ			
DDA	ड	ड	VA	व	O	ओ	ओ			
DDHA	ढ	ढ	SHA	स	AU	आ	आ			
NNA	न	न	SSA	ष						
TA	त	त	SA	थ						
THA	थ	थ	HA	द						

Table 6: Comparison of Sharada characters from the metal fonts produced at Serampore (column 'A') and Pandey (column 'B'). The metal fonts were used to print the Kashmiri bible shown in Figure 5.

CONSONANTS		CONSONANTS		VOWELS		DIGITS		
	A	B		A	B		A	B
KA	क	क	DA	म	ड	A	अ	अ
KHA	ख	ख	DHA	ढ	ण	AA	आ	आ
GA	ग	ग	NA	न	न	I	इ	इ
GHA	घ	घ	PA	प	प	II	ई	ई
NGA	ए	ए	PHA	फ	फ	U	उ	उ
CA	च	च	BA	ब	ब	UU	ऊ	ऊ
CHA	छ	छ	BHA	भ	भ	R	र	र
JA	ज	ज	MA	म	म	RR	—	र
JHA	झ	झ	YA	य	य	L	—	ल
NYA	न	न	RA	र	र	LL	—	ल
TTA	ट	ट	LA	ल	ल	E	ए	ए
TTHA	ठ	ठ	LLA	—	ल	AI	ऐ	ऐ
DDA	ड	ड	VA	व	व	O	ओ	ओ
DDHA	ढ	ढ	SHA	श	श	AU	औ	औ
NNA	ॠ	ॠ	SSA	ष	ष			
TA	उ	उ	SA	स	स			
THA	थ	थ	HA	ह	ह			

Table 7: Comparison of Sharada characters from digitized fonts designed by Raman Kaul (column 'A') and Pandey (column 'B').

CONSONANTS			
क	<i>ka</i>	<i>kov ka</i>	SHARADA LETTER KA
ख	<i>kha</i>	<i>khōñī kha</i>	SHARADA LETTER KHA
ग	<i>ga</i>	<i>gagar ga</i>	SHARADA LETTER GA
घ	<i>gha</i>	<i>gōsī ga</i>	SHARADA LETTER GHA
ङ	<i>ṅa</i>	<i>nārug na</i>	SHARADA LETTER NGA
च	<i>ca</i>	<i>tsaṭuv tsa</i>	SHARADA LETTER CA
छ	<i>cha</i>	<i>tshvōtiñ tsha</i>	SHARADA LETTER CHA
ज	<i>ja</i>	<i>zāyī za</i>	SHARADA LETTER JA
झ	<i>jha</i>	<i>zōsīñ za</i>	SHARADA LETTER JHA
ण	<i>ṅa</i>	<i>khōna phuṭī ñē</i>	SHARADA LETTER NYA
ट	<i>ṭa</i>	<i>ar māñṭa</i>	SHARADA LETTER TTA
ठ	<i>ṭha</i>	<i>sar māñṭha</i>	SHARADA LETTER TTHA
ड	<i>ḍa</i>	<i>ḍuḍ ḍa</i>	SHARADA LETTER DDA
ढ	<i>ḍha</i>	<i>ḍaka ḍa</i>	SHARADA LETTER DDHA
न	<i>ṇa</i>	<i>nānagurī na</i>	SHARADA LETTER NNA
त	<i>ta</i>	<i>toṽ ta</i>	SHARADA LETTER TA
थ	<i>tha</i>	<i>thōshī tha</i>	SHARADA LETTER THA
द	<i>da</i>	<i>dadav da</i>	SHARADA LETTER DA
ध	<i>dha</i>	<i>dūñ da</i>	SHARADA LETTER DHA
न	<i>na</i>	<i>nastuv na</i>	SHARADA LETTER NA
प	<i>pa</i>	<i>paḍurī pa</i>	SHARADA LETTER PA
फ	<i>pha</i>	<i>phariñ pha</i>	SHARADA LETTER PHA
ब	<i>ba</i>	<i>bub ba</i>	SHARADA LETTER BA
भ	<i>bha</i>	<i>bōyī ba</i>	SHARADA LETTER BHA
म	<i>ma</i>	<i>mov ma</i>	SHARADA LETTER MA
य	<i>ya</i>	<i>yāva yē</i>	SHARADA LETTER YA
र	<i>ra</i>	<i>raka ra</i>	SHARADA LETTER RA
ल	<i>la</i>	<i>lāva la</i>	SHARADA LETTER LA
ळ	<i>ḷa</i>	<i>bodu dud da</i>	SHARADA LETTER LLA
व	<i>va</i>	<i>vashē va</i>	SHARADA LETTER VA
श	<i>śa</i>	<i>śēkar śē</i>	SHARADA LETTER SHA
ष	<i>ṣa</i>	<i>phōrī śē</i>	SHARADA LETTER SSA
स	<i>sa</i>	<i>sus sa</i>	SHARADA LETTER SA
ह	<i>ha</i>	<i>hāla ha</i>	SHARADA LETTER HA

Table 8: Transliteration and traditional Kashmiri names of Sharada consonants



INDEPENDENT VOWELS			
अ	<i>a</i>	<i>ādaṁ a</i>	SHARADA LETTER A
आ	<i>ā</i>	<i>aitav ā</i>	SHARADA LETTER AA
इ	<i>i</i>	<i>yēyēv ye</i>	SHARADA LETTER I
ई	<i>ī</i>	<i>yishērav yī</i>	SHARADA LETTER II
उ	<i>u</i>	<i>vōpal vō</i>	SHARADA LETTER U
ऊ	<i>ū</i>	<i>vōpal bā ū</i>	SHARADA LETTER UU
ऋ	<i>r̥</i>	<i>ṛṇav ṛ</i>	SHARADA LETTER VOCALIC R
ॠ	<i>r̄</i>	<i>rakhav ṛṅ</i>	SHARADA LETTER VOCALIC RR
ऌ	<i>l̥</i>	<i>lēyēv lē</i>	SHARADA LETTER VOCALIC L
ॡ	<i>l̄</i>	<i>lisav</i>	SHARADA LETTER VOCALIC LL
ए	<i>e</i>	<i>talavy ye</i>	SHARADA LETTER E
ऐ	<i>ai</i>	<i>tōlī ai</i>	SHARADA LETTER AI
ओ	<i>o</i>	<i>vūṭho o</i>	SHARADA LETTER O
औ	<i>au</i>	<i>aśidī au</i>	SHARADA LETTER AU
DEPENDENT VOWEL SIGNS			
◌ā	<i>-ā</i>	<i>vahāy</i>	SHARADA VOWEL SIGN AA
◌i	<i>-i</i>	<i>mūnthār</i>	SHARADA VOWEL SIGN I
◌ī	<i>-ī</i>	<i>ar mūnthār</i>	SHARADA VOWEL SIGN II
◌u	<i>-u</i>	<i>khūrū</i>	SHARADA VOWEL SIGN U
◌ū	<i>-ū</i>	<i>ar khūrū</i>	SHARADA VOWEL SIGN UU
◌r̥	<i>-r̥</i>	<i>ṛṇav ṛ</i>	SHARADA LETTER VOCALIC R
◌r̄	<i>-r̄</i>	<i>rakhav ṛṅ</i>	SHARADA LETTER VOCALIC RR
◌l̥	<i>-l̥</i>	<i>lēyēv lē</i>	SHARADA LETTER VOCALIC L
◌l̄	<i>-l̄</i>	<i>lisav la</i>	SHARADA LETTER VOCALIC LL
◌e	<i>-e</i>	<i>hōṃḍū</i>	SHARADA VOWEL SIGN E
◌ai	<i>-ai</i>	<i>hōṃjor</i>	SHARADA VOWEL SIGN AI
◌o	<i>-o</i>	<i>okū shyūrū</i>	SHARADA VOWEL SIGN O
◌au	<i>-au</i>	<i>okūśī vahāy</i>	SHARADA VOWEL SIGN AU
VARIOUS SIGNS			
◌ṁ	<i>ṁ</i>	<i>adī tsandra phyorū</i>	SHARADA SIGN CANDRABINDU
◌ṃ	<i>ṃ</i>	<i>mas phērī aṃ</i>	SHARADA SIGN ANUSVARA
◌ḥ	<i>ḥ</i>	<i>do phērī aḥ</i>	SHARADA SIGN VISARGA
◌ḥ	<i>ḥ</i>	<i>mōrith</i>	SHARADA SIGN VIRAMA
◌ḥ	<i>ḥ</i>	<i>zihvāmūlīya</i>	SHARADA SIGN JIHVAMULIYA
◌ḥ	<i>ḥ</i>	<i>upadhmānīya</i>	SHARADA SIGN UPADHMANIYA
◌,	<i>,</i>	<i>oḍī ādaṁ a</i>	SHARADA AVAGRAHA

Table 9: Transliteration and traditional Kashmiri names of Sharada vowels and signs

## 4 The Writing System

### 4.1 General Features

**Classification** The Sharada script is an abugida of the Brahmic type and is written from left to right.

**Structure** The structure of Sharada is identical to that of Devanagari. Consonant letters bear the inherent vowel *a* when unaccompanied by a vowel sign. The inherent vowel is suppressed by the *virāma* to produce the bare form of the consonant. A bare consonant followed by another consonant results in a consonant conjunct. The inherent vowel is changed by applying a dependent vowel sign to the consonant.

### 4.2 Distinguishing Features

**Appearance** Georg Bühler states that “[a] general characteristic of the Śāradā of all periods is found in the stiff, thick strokes which give the characters an uncouth appearance and a certain resemblance to those of the Kuṣāna period.”<sup>30</sup> The specimen below embodies such a description:

Compared to a more cursive style:

**Headstroke** The joining properties of the headstroke of Sharada characters is a rendering and font design issue. There is no rule governing the joining of the headstrokes of characters to other characters. In the example below, the headstrokes of characters connect only to dependent vowel signs, not to other characters:

<sup>30</sup> Bühler 1904: 76.

# दृगुलिठवडिमकयभभ्रिः भभपमञ्चकरी

The following example shows the headstrokes of all characters joined, as is the practice in modern Devanagari:

गिहृगनेगविरुहूरुवमडुनभफल

Another common practice is the joining of headstrokes in an arbitrary manner:

भभ्रिः, नीहृ, धडिः, झैः, पूषभं, भांपी, पूडवकी॥

Such variations in the writing of headstrokes may be ultimately attributed to scribal preference. The headstroke is most important as a structural feature of a character's glyph; not for its joining properties.

**Virama** The sign ो SHARADA SIGN VIRAMA is written to the right of the consonant letter it modifies. This practice differs from the usual mode in Indic scripts of writing *virāma* beneath consonants, eg. Sharada क् and Devanagari क् k:

यदुदभा॥ सुहृगलंरददं  
परुडुनभठवनड॥ परपूयडै

The *virāma* is also written as a curved or S-shaped sign:

दृगुलिठवडिमकयभभ्रिः भभपमञ्चकरी

The form of Sharada *virāma* ो may resemble ो U+093E DEVANAGARI VOWEL SIGN AA, but is it distinct from ो SHARADA VOWEL SIGN AA. Although both are vertical signs, there is significant difference in length of the vertical stroke, and therefore little confusion as to which character is being represented. The specimen below highlights AA and VIRAMA:

रसिगंपूयकैरडुवेणरड॥ परु

While the Sharada *virāma* is a spacing mark, it is semantically identical to *virāma* of Devanagari and similar Indic scripts.

### 4.3 Consonant-Vowel Ligatures

In Sharada, consonant-vowel combinations are often written as consonant-vowel ligatures. This is most commonly the case with the non-spacing vowel signs.

**SHARADA VOWEL SIGN U** The basic shape of the dependent sign for the vowel u is ು. This shape changes when the sign is combined with certain consonants:

कु ku, गु gu, जु ju, ङु ङु, उ du,  
तु tu, भु bhū, रु ru, सु sū.

**SHARADA VOWEL SIGN UU** The basic shape of the dependent sign for the vowel uu is ೂ. This shape changes when the sign is combined with certain consonants:

कु kū, गु gū, जु jhū, ङु ङū, उ dū,  
तु tū, भु bhū, रु rū, सु sū.

### 4.4 Consonant Conjuncts

Sharada has an extensive set of consonant conjuncts. See Figure 11, Figure 12, Figure 13, and Figure 14 for a list of Sharada conjuncts in comparison with those of Devanagari.

### 4.5 Nasalization

Nasalization in Sharada is indicated by use of ೀ SHARADA SIGN CANDRABINDU and ು SHARADA SIGN ANUSVARA:

उलेभि यागसाङ्ककठसुपडयभसभृरुत्रेपुपधभयः  
उंचेपदेवीभैकगएएभेयभगवस्रसभैरुयः

The Sharada *candrabindu* resembles an inverted ೀ U+0901 DEVANAGARI SIGN CANDRABINDU. The form ೀ is the common shape of *candrabindu* as found in Sharada manuscripts. It is semantically identical to the *candrabindu* of other Indic scripts. The Sharada form is distinct from the character ೀ U+0900 DEVANAGARI SIGN INVERTED CANDRABINDU proposed by Michael Everson and Peter Scharf (2007), which is “used to mark *anusvāra* before spirants in [Leopold von] Schröder’s edition of the *Kṛṣṇayajurveda Kāṭhaka-Saṁhitā*.”<sup>31</sup>


The *candrabindu* appears in the character SHARADA OM, which is written as ೀ, as shown in the specimen below:

<sup>31</sup> Everson and Scharf 2007: 9.


नडि इदरे पद्म मीडे भुपुः कवडि यम्न कुभुभिस्तु  
 मधन कुवडेड कन पुजे नभरभाडुभुभिस्तु मकु॥  
 सुसा गैकुसा न मभिभानभा कुडा येभवा  
 इवडिभा नयापमेसा मभुा वैरुमि यम





#### 4.6 Special Characters

**AVAGRAHA** The sign  SHARADA AVAGRAHA is used for representing the elision of word-initial अ a. It is written at or below the baseline. This practice differs from the usual practice in Devanagari (U+09D3 DEVANAGARI SIGN AVAGRAHA) and other scripts of writing *avagraha* at the normal letter height, attaching to the top stroke of the following character; eg. Sharada क्क 'ka and Devanagari क्क 'ka.


दिगयभल्लमे, प्रिल्लमे पुपल्लमे वीरल्लमे ल्पणयल्लमे



**JIHVAMULIYA** The sign  SHARADA SIGN JIHVAMULIYA represents a velar fricative [x] that occurs only before the unvoiced velar stops क KA and ख KHA. In contrast to the practice in Devanagari (eg. क्क *hka*), JIHVAMULIYA is written as a stacked conjunct in Sharada, eg. क्क. The conjunct should be represented as <JIHVAMULIYA, VIRAMA, KA> and <JIHVAMULIYA, VIRAMA, KHA>

Jihvāmūliya    h        >    hka    

For line-breaking purposes, JIHVAMULIYA is retained with the consonant character it precedes. It is never written as a bare character with explicit VIRAMA, eg. \*क्क.

Although the existing character U+0CF1 KANNADA SIGN JIHVAMULIYA is intended for use with all Indic script, the encoding of an independent JIHVAMULIYA for Sharada is motivated by the different rendering behavior of the character in Sharada.

**UPADHMANIYA** The sign  SHARADA SIGN UPADHMANIYA is used for representing a bilabial fricative [ɸ] that occurs only before the unvoiced labial stops प PA and फ PHA. In contrast to the practice in Devanagari (eg. क्फ *hpa*), UPADHMANIYA is written as a stacked conjunct in Sharada, eg. फ़. The conjunct should be represented as <UPADHMANIYA, VIRAMA, PA> and <UPADHMANIYA, VIRAMA, PHA>

Upadhmaniya    h        >    hpa    

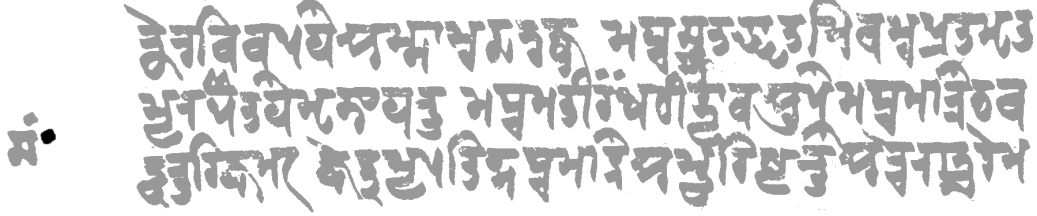
For line-breaking purposes, UPADHMANIYA is retained with the consonant character it precedes. It is never written as a bare character with explicit VIRAMA, eg. \*क्फ.

Although the existing character U+0CF2 KANNADA SIGN UPADHMANIYA is intended for use with all Indic script, the encoding of an independent UPADHMANIYA for Sharada is motivated by the different rendering behavior of the character in Sharada.

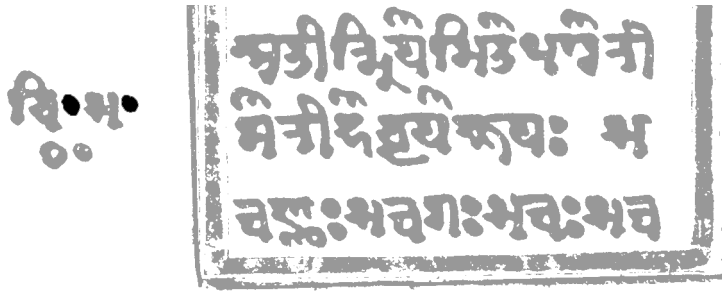
## 4.7 Punctuation

**Abbreviation** The character • SHARADA ABBREVIATION SIGN appears commonly in manuscripts. It is written after the point at which a word is abbreviated. For line-breaking purposes, it is retained with the sequence of letters it is written after and cannot appear at the beginning of a line.

The following specimen shows the use of ABBREVIATION SIGN with CA + ANUSVARA to indicate the abbreviation of the name of the text:

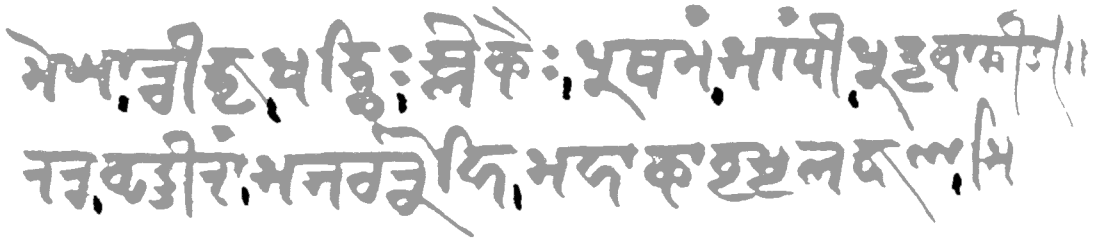


The specimen below also shows the abbreviation of the name of the text. The dot in the second line of the colophon is not ABBREVIATION SIGN, but • SHARADA DIGIT ZERO. The colophon text reads “वि.१.००”, which is the abbreviation for “*Viṣṇunāma Sahasram* [folio] 10”.



**Separator** Manuscripts contain signs used to mark word and other boundaries. The character , SHARADA SEPARATOR is proposed to represent such signs. For line-breaking purposes, it is retained with the word it is written after and does appear at the beginning of a line.

The following specimen shows the use of separator to mark word boundaries. The specimen also shows SHARADA SEPARATOR as not marking all word boundaries,



*megā-* | *-nvikṣya* | *ṣaḍbhiḥ* | *ślokaiḥ* | *prathamam* | *sakhīm* | *pratyavādīt*  
*nanu* | *vṛtīnām* | *sargabandho hi* | *mahākāvyaśya lakṣaṇa-* | *-mi*

## 4.8 Digits

Sharada digits represent values of the decimal system. The notation system of Sharada is unique among Brahmi-based systems in that a dot represents zero (• SHARADA DIGIT ZERO) and a circle, used in other notation systems to represent 0, is used to represent the digit one (◦ SHARADA DIGIT ONE). See Figure 27, Figure 28, and Figure 29 for examples of Sharada numerals.

## 4.9 Variant Forms of Characters

**VOWEL SIGN E** The VOWEL SIGN E is found in manuscripts written in two different ways: horizontally and diagonally (as in Devanagari). Both forms may occur within the same document, at times in the same line. Both forms are semantically identical. The horizontal form is proposed for encoding.

ॐ श्रुति ॥ ॥ श्रीगणेशाय नमः ॥ ॥ ॐ उधुमे वं नम

**VOWEL SIGN AI** The VOWEL SIGN AI is found in manuscripts written in two different ways: horizontally and diagonally (as in Devanagari). Both forms may occur within the same document, at times in the same line. Both forms are semantically identical. The horizontal form is proposed for encoding.

भरुणिकेन उजः सुदं यमकैः मैकैः १३ रणीय र्मैक

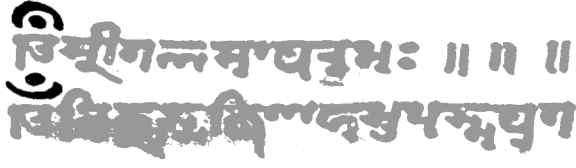
**CANDRABINDU** The ◌ SHARADA SIGN CANDRABINDU often appears in manuscripts in an inverted form, which resembles the appearance of ◌ U+0901 DEVANAGARI SIGN CANDRABINDU. Both the regular and inverted forms may appear within the same document and are semantically identical. The inverted CANDRABINDU appears in the specimen below as a sign and as part of OM:

कैधनिरडा नम कुवासा सुकललिडा था कुन  
नकिने कुलि कुला डा था कुला न के का ॐ ॥ ॥ ॐ  
इ उं भनिव कि भम न कु धं डि र धु उं  
कप नं उं वि क डि वि न ग उं भ व वि क र

**OM** A variant form of ॐ SHARADA OM occurs with an inverted CANDRABINDU. The specimen below shows this inverted OM, while CANDRABINDU is written in the regular manner:

ॐ सुप्रियं श्रु लीति सुउ ह्रु मने श्रु लः ॐ सुप्रियं श्रु लीति  
इ उं सुकि न धु वि व ष्ट व भ भि सुः सु र उ फ उः उं भे भ भि  
इ ति भुं क ले ति व र द उं ग र्म सु उ उः सु प्र यं य ष्ट म सु ति

The specimen below shows both forms of CANDRABINDU used to write SHARADA OM within the same document.



#### 4.10 Homoglyphic Characters

There are several homoglyphic characters in Sharada: 𑀓 SHARADA LETTER MA and 𑀔 SHARADA LETTER SA; 𑀕 SHARADA LETTER U and 𑀖 SHARADA LETTER TA, etc. These, however, are distinguished through subtle features. In the case of MA and SA, the difference lies in the shape of the lower-left loop: that of MA is rounded, while that of SA is angular. Other homoglyphs such as 𑀗 SHARADA ABBREVIATION SIGN and 𑀘 SHARADA DIGIT ZERO are distinguishable through context. A list of homoglyphs (and near-homoglyphs) is presented in Figure 16.

## 5 Implementation

### 5.1 Encoding Model

The encoding model for Sharada should be based on the model implemented for Devanagari.

### 5.2 Collation

The collating order for Sharada is based on Sanskrit and follows the pattern for Devanagari. Independent vowel letters are sorted before consonant letters. The signs *candrabindu*, *anusvāra*, and *visarga* appear at the head of the vowel order and are written in combination with SHARADA LETTER A.

The collating order for *candrabindu*, *anusvāra*, *visarga*, and independent vowels in Sharada is:

𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣
<i>aṁ</i>	<i>aṁ</i>	<i>aḥ</i>	<i>a</i>	<i>ā</i>	<i>i</i>	<i>ī</i>	<i>u</i>	<i>ū</i>	<i>ṛ</i>	<i>ṝ</i>	<i>ḷ</i>	<i>ḹ</i>	<i>e</i>	<i>ai</i>	<i>o</i>	<i>au</i>

Dependent vowel signs are sorted in the same position as their independent shape. Consonants with dependent vowels are sorted first by consonant letter and then by the vowel sign (including *candrabindu*, *anusvāra*, and *visarga*) attached to the letter. A consonant with *virāma* is sorted last.

𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣
<i>paṁ</i>	<i>paṁ</i>	<i>paḥ</i>	<i>pa</i>	<i>pā</i>	<i>pi</i>	<i>pī</i>	<i>pu</i>	<i>pū</i>								
𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣
<i>pṛ</i>	<i>pṝ</i>	<i>pḷ</i>	<i>pḹ</i>	<i>pe</i>	<i>pai</i>	<i>po</i>	<i>pau</i>	<i>p</i>								



The pattern for consonants is identical to the suggested encoding order, as follows:

क	ख	ग	घ	ङ	च	छ	ज	झ	ञ	ट	ठ	ड	ढ	ण	त	थ
<i>ka</i>	<i>kha</i>	<i>ga</i>	<i>gha</i>	<i>ṅa</i>	<i>ca</i>	<i>cha</i>	<i>ja</i>	<i>jha</i>	<i>ña</i>	<i>ṭa</i>	<i>ṭha</i>	<i>ḍa</i>	<i>ḍha</i>	<i>ṇa</i>	<i>ta</i>	<i>tha</i>
ड	ढ	न	प	फ	ब	भ	म	य	र	ल	ळ	व	स	ष	म	ह
<i>ḍa</i>	<i>ḍha</i>	<i>na</i>	<i>pa</i>	<i>pha</i>	<i>ba</i>	<i>bha</i>	<i>ma</i>	<i>ya</i>	<i>ra</i>	<i>la</i>	<i>ḷa</i>	<i>va</i>	<i>śa</i>	<i>ṣa</i>	<i>sa</i>	<i>ha</i>

### 5.3 Character Properties

The properties for Sharada characters in the Unicode Character Database format are:

```

11180;SHARADA SIGN CANDRABINDU;Mn;0;NSM;;;;;N;;;;;
11181;SHARADA SIGN ANUSVARA;Mn;0;NSM;;;;;N;;;;;
11182;SHARADA SIGN VISARGA;Mc;0;L;;;;;N;;;;;
11183;SHARADA LETTER A;Lo;0;L;;;;;N;;;;;
11184;SHARADA LETTER AA;Lo;0;L;;;;;N;;;;;
11185;SHARADA LETTER I;Lo;0;L;;;;;N;;;;;
11186;SHARADA LETTER II;Lo;0;L;;;;;N;;;;;
11187;SHARADA LETTER U;Lo;0;L;;;;;N;;;;;
11188;SHARADA LETTER UU;Lo;0;L;;;;;N;;;;;
11189;SHARADA LETTER VOCALIC R;Lo;0;L;;;;;N;;;;;
1118A;SHARADA LETTER VOCALIC RR;Lo;0;L;;;;;N;;;;;
1118B;SHARADA LETTER VOCALIC L;Lo;0;L;;;;;N;;;;;
1118C;SHARADA LETTER VOCALIC LL;Lo;0;L;;;;;N;;;;;
1118D;SHARADA LETTER E;Lo;0;L;;;;;N;;;;;
1118E;SHARADA LETTER AI;Lo;0;L;;;;;N;;;;;
1118F;SHARADA LETTER O;Lo;0;L;;;;;N;;;;;
11190;SHARADA LETTER AU;Lo;0;L;;;;;N;;;;;
11191;SHARADA LETTER KA;Lo;0;L;;;;;N;;;;;
11192;SHARADA LETTER KHA;Lo;0;L;;;;;N;;;;;
11193;SHARADA LETTER GA;Lo;0;L;;;;;N;;;;;
11194;SHARADA LETTER GHA;Lo;0;L;;;;;N;;;;;
11195;SHARADA LETTER NGA;Lo;0;L;;;;;N;;;;;
11196;SHARADA LETTER CA;Lo;0;L;;;;;N;;;;;
11197;SHARADA LETTER CHA;Lo;0;L;;;;;N;;;;;
11198;SHARADA LETTER JA;Lo;0;L;;;;;N;;;;;
11199;SHARADA LETTER JHA;Lo;0;L;;;;;N;;;;;
1119A;SHARADA LETTER NYA;Lo;0;L;;;;;N;;;;;
1119B;SHARADA LETTER TTA;Lo;0;L;;;;;N;;;;;
1119C;SHARADA LETTER TTHA;Lo;0;L;;;;;N;;;;;
1119D;SHARADA LETTER DDA;Lo;0;L;;;;;N;;;;;
1119E;SHARADA LETTER DDHA;Lo;0;L;;;;;N;;;;;
1119F;SHARADA LETTER NNA;Lo;0;L;;;;;N;;;;;
111A0;SHARADA LETTER TA;Lo;0;L;;;;;N;;;;;
111A1;SHARADA LETTER THA;Lo;0;L;;;;;N;;;;;
111A2;SHARADA LETTER DA;Lo;0;L;;;;;N;;;;;
111A3;SHARADA LETTER DHA;Lo;0;L;;;;;N;;;;;
111A4;SHARADA LETTER NA;Lo;0;L;;;;;N;;;;;
111A5;SHARADA LETTER PA;Lo;0;L;;;;;N;;;;;
111A6;SHARADA LETTER PHA;Lo;0;L;;;;;N;;;;;
111A7;SHARADA LETTER BA;Lo;0;L;;;;;N;;;;;
111A8;SHARADA LETTER BHA;Lo;0;L;;;;;N;;;;;
111A9;SHARADA LETTER MA;Lo;0;L;;;;;N;;;;;
111AA;SHARADA LETTER YA;Lo;0;L;;;;;N;;;;;
111AB;SHARADA LETTER RA;Lo;0;L;;;;;N;;;;;
111AC;SHARADA LETTER LA;Lo;0;L;;;;;N;;;;;

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111AD;SHARADA LETTER LLA;Lo;0;L; ; ; ;N; ; ; ;
111AE;SHARADA LETTER VA;Lo;0;L; ; ; ;N; ; ; ;
111AF;SHARADA LETTER SHA;Lo;0;L; ; ; ;N; ; ; ;
111B0;SHARADA LETTER SSA;Lo;0;L; ; ; ;N; ; ; ;
111B1;SHARADA LETTER SA;Lo;0;L; ; ; ;N; ; ; ;
111B2;SHARADA LETTER HA;Lo;0;L; ; ; ;N; ; ; ;
111B3;SHARADA VOWEL SIGN AA;Mc;0;L; ; ; ;N; ; ; ;
111B4;SHARADA VOWEL SIGN I;Mc;0;L; ; ; ;N; ; ; ;
111B5;SHARADA VOWEL SIGN II;Mc;0;L; ; ; ;N; ; ; ;
111B6;SHARADA VOWEL SIGN U;Mn;0;NSM; ; ; ;N; ; ; ;
111B7;SHARADA VOWEL SIGN UU;Mn;0;NSM; ; ; ;N; ; ; ;
111B8;SHARADA VOWEL SIGN VOCALIC R;Mn;0;NSM; ; ; ;N; ; ; ;
111B9;SHARADA VOWEL SIGN VOCALIC RR;Mn;0;NSM; ; ; ;N; ; ; ;
111BA;SHARADA VOWEL SIGN VOCALIC L;Mn;0;NSM; ; ; ;N; ; ; ;
111BB;SHARADA VOWEL SIGN VOCALIC LL;Mn;0;NSM; ; ; ;N; ; ; ;
111BC;SHARADA VOWEL SIGN E;Mn;0;NSM; ; ; ;N; ; ; ;
111BD;SHARADA VOWEL SIGN AI;Mn;0;NSM; ; ; ;N; ; ; ;
111BE;SHARADA VOWEL SIGN O;Mn;0;NSM; ; ; ;N; ; ; ;
111BF;SHARADA VOWEL SIGN AU;Mc;0;L; ; ; ;N; ; ; ;
111C0;SHARADA SIGN VIRAMA;Mc;9;L; ; ; ;N; ; ; ;
111C1;SHARADA SIGN AVAGRAHA;Lo;0;L; ; ; ;N; ; ; ;
111C2;SHARADA SIGN JIHVAMULIYA;Lo;0;L; ; ; ;N; ; ; ;
111C3;SHARADA SIGN UPADHMANIYA;Lo;0;L; ; ; ;N; ; ; ;
111C4;SHARADA OM;Lo;0;L; ; ; ;N; ; ; ;
111C5;SHARADA DANDA;Po;0;L; ; ; ;N; ; ; ;
111C6;SHARADA DOUBLE DANDA;Po;0;L; ; ; ;N; ; ; ;
111C7;SHARADA ABBREVIATION SIGN;Po;0;L; ; ; ;N; ; ; ;
111C8;SHARADA SEPARATOR;Po;0;L; ; ; ;N; ; ; ;
111D0;SHARADA DIGIT ZERO;Nd;0;L; ; ;0;0;0;N; ; ; ;
111D1;SHARADA DIGIT ONE;Nd;0;L; ; ;1;1;1;N; ; ; ;
111D2;SHARADA DIGIT TWO;Nd;0;L; ; ;2;2;2;N; ; ; ;
111D3;SHARADA DIGIT THREE;Nd;0;L; ; ;3;3;3;N; ; ; ;
111D4;SHARADA DIGIT FOUR;Nd;0;L; ; ;4;4;4;N; ; ; ;
111D5;SHARADA DIGIT FIVE;Nd;0;L; ; ;5;5;5;N; ; ; ;
111D6;SHARADA DIGIT SIX;Nd;0;L; ; ;6;6;6;N; ; ; ;
111D7;SHARADA DIGIT SEVEN;Nd;0;L; ; ;7;7;7;N; ; ; ;
111D8;SHARADA DIGIT EIGHT;Nd;0;L; ; ;8;8;8;N; ; ; ;
111D9;SHARADA DIGIT NINE;Nd;0;L; ; ;9;9;9;N; ; ; ;

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	SHARADA	TAKRI	GURMUKHI	DEVANAGARI		SHARADA	TAKRI	GURMUKHI	DEVANAGARI
<i>ka</i>	क	𑆕	ਕ	क	<i>tha</i>	थ	थ	थ	थ
<i>kha</i>	ख	𑆖	ਖ	ख	<i>da</i>	द	द	ਦ	द
<i>ga</i>	ग	𑆗	ਗ	ग	<i>dha</i>	ध	ध	ਧ	ध
<i>gha</i>	घ	𑆘	ਘ	घ	<i>na</i>	न	न	ਨ	न
<i>ña</i>	𑆙	𑆙	ਙ	ङ	<i>pa</i>	प	प	ਪ	प
<i>ca</i>	च	𑆚	ਚ	च	<i>pha</i>	फ	फ	ਫ	फ
<i>cha</i>	छ	𑆛	ਛ	छ	<i>ba</i>	ब	ब	ਬ	ब
<i>ja</i>	ज	𑆜	ਜ	ज	<i>bha</i>	भ	भ	ਭ	भ
<i>jha</i>	झ	𑆝	ਝ	झ	<i>ma</i>	म	म	ਮ	म
<i>ña</i>	ञ	𑆞	ਞ	ञ	<i>ya</i>	य	य	ਯ	य
<i>ṭa</i>	ट	𑆟	ਟ	ट	<i>ra</i>	र	र	ਰ	र
<i>ṭha</i>	ठ	𑆠	ਠ	ठ	<i>la</i>	ल	ल	ਲ	ल
<i>ḍa</i>	ड	𑆡	ਡ	ड	<i>ḷa</i>	ळ	ळ	ਲ਼	ळ
<i>ṛa</i>	—	𑆢	ੜ	ड़	<i>va</i>	व	व	ਵ	व
<i>ḍha</i>	ढ	𑆣	ਢ	ढ	<i>śa</i>	श	श	ਸ਼	श
<i>ṛha</i>	—	𑆤	ੜ	ढ़	<i>ṣa</i>	ष	ष	—	ष
<i>ṇa</i>	ॢ	𑆥	ਣ	ण	<i>sa</i>	स	स	ਸ	स
<i>ta</i>	उ	उ	ਤ	त	<i>ha</i>	ह	ह	ਹ	ह

Table 10: A comparison of digitized consonant letters of Sharada, Takri, Gurmukhi, and Devanagari.

	INDEPENDENT VOWELS				DEPENDENT VOWEL SIGNS			
	SHARADA	TAKRI	GURMUKHI	DEVANAGARI	SHARADA	TAKRI	GURMUKHI	DEVANAGARI
<i>a</i>	अ	ਅ	ਅ	अ	-a	—	—	—
<i>ā</i>	आ	ਆ	ਆ	आ	-ā	ा	ा	ा
<i>i</i>	इ	ਇ	ਇ	इ	-i	ि	ि	ि
<i>ī</i>	ई	ਈ	ਈ	ई	-ī	ी	ी	ी
<i>u</i>	उ	ਉ	ਉ	उ	-u	ु	ु	ु
<i>ū</i>	ऊ	ਊ	ਊ	ऊ	-ū	ू	ू	ू
<i>r̥</i>	ऋ	—	—	ऋ	-r̥	ृ	—	ृ
<i>r̄</i>	ॠ	—	—	ॠ	-r̄	ॠ	—	ॠ
<i>l̥</i>	ऌ	—	—	ऌ	-l̥	ॡ	—	ॡ
<i>l̄</i>	ॡ	—	—	ॡ	-l̄	ॢ	—	ॢ
<i>e</i>	ए	ਏ	ਏ	ए	-e	े	ੇ	ੇ
<i>ai</i>	ऐ	ਐ	ਐ	ऐ	-ai	ै	ै	ै
<i>o</i>	ओ	ਓ	ਓ	ओ	-o	ो	ो	ो
<i>au</i>	औ	ਔ	ਔ	औ	-au	ौ	ौ	ौ

Table 11: A comparison of digitized vowel letters and signs of Sharada, Takri, Gurmukhi, and Devanagari.

	SHARADA	TAKRI	GURMUKHI	DEVANAGARI		SHARADA	TAKRI	GURMUKHI	DEVANAGARI
0	•	•	○	०	5	५	५	५	५
1	◦	ॠ	ॡ	१	6	६	६	६	६
2	ॢ	ॣ	।	२	7	७	७	७	७
3	॥	॥	॥	३	8	८	८	८	८
4	०	०	०	४	9	९	९	९	९

Table 12: A comparison of digitized digits of Sharada, Takri, Gurmukhi, and Devanagari.

	SHARADA	TAKRI	GURMUKHI	DEVANAGARI
<i>om</i>	ॐ	—	ॐ	ॐ
<i>virāma</i>	◌̣	◌̣	◌̣	◌̣
<i>avagraha</i>	◌̆	—	—	◌̆
<i>jihvāmūlīya</i>	◌̇	—	—	◌̇
<i>upadhmānīya</i>	◌̈	—	—	◌̈

Table 13: A comparison of various signs of Sharada, Takri, Gurmukhi, and Devanagari.

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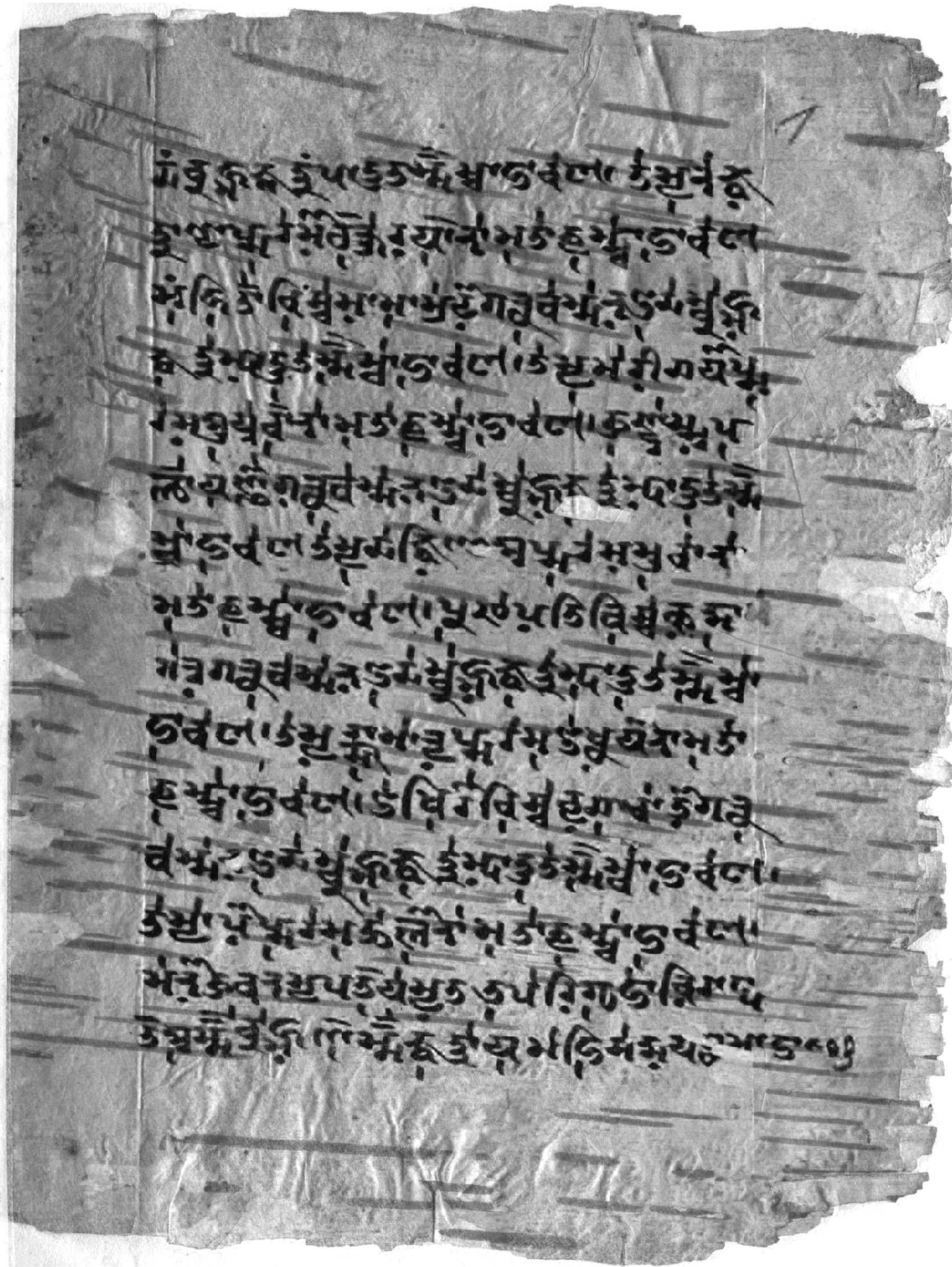


Figure 2: Folio 1 (verso) of a birch-bark manuscript of the Kashmirian Paippalāda recension of the Atharvaveda. Text is Sanskrit written in the Sharada script. (From digitized version produced by Anthos Imprint, 2001.)



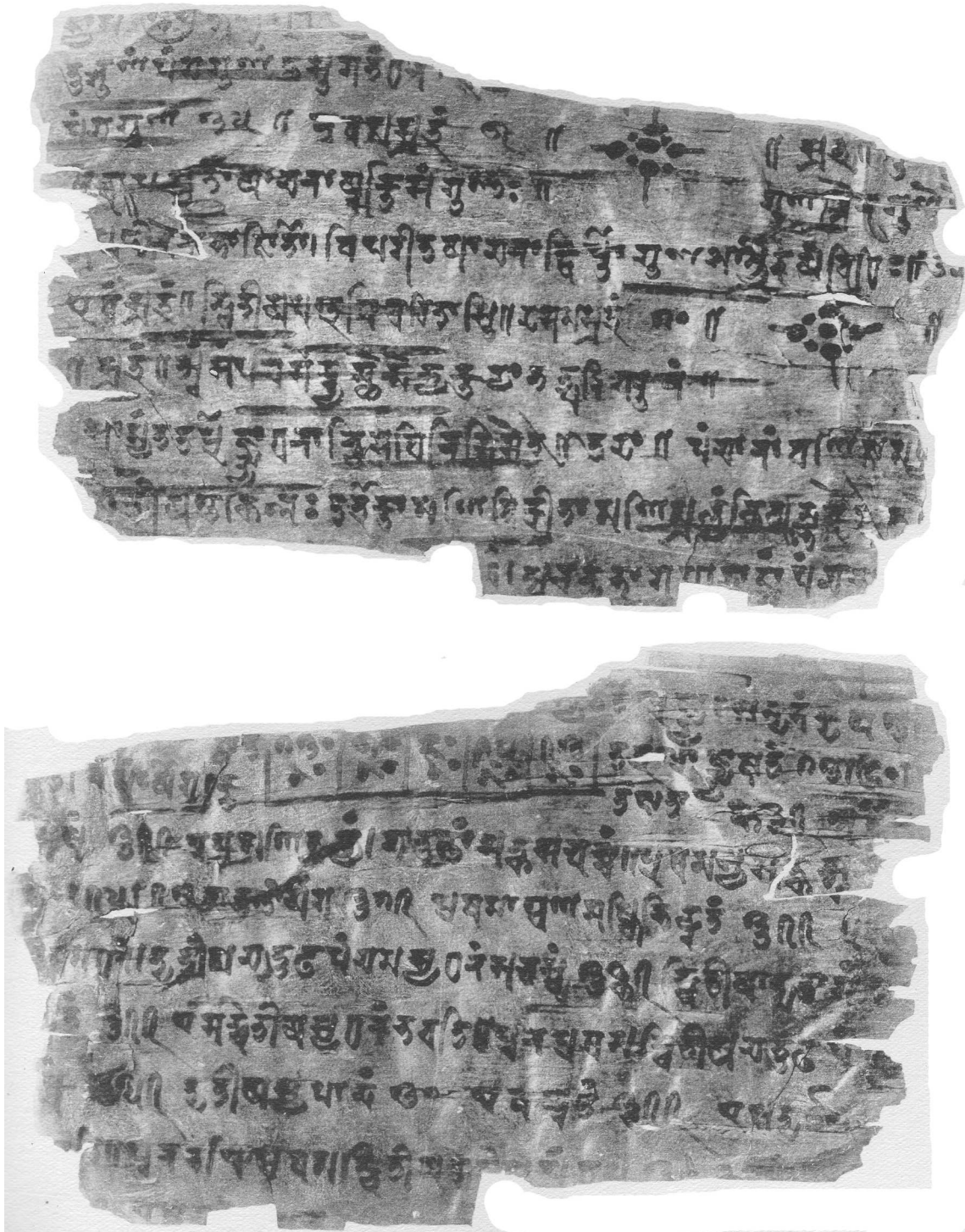


Figure 3: Folio 1 (verso) of the Bakhshali manuscript. Text is Sanskrit written in the Sharada script (from Kaye 1927: Plate II).

## DARDIC SUB-FAMILY.

## DARD GROUP

KASHMIRI.

SPECIMEN I.

(ŚARADĀ CHARACTER.)

(Mahāmahāpādhyāya Paṇḍit Mukund Rām Śāstrī, 1896.)

मकिभा मरुनिविभा सुंभि स्र्णना वृषिर्वि । उभवा  
 मज्ञ मंपु कुंभि दिदि मंलिभा, कि दे मलि मृ मिजा  
 मरुङ्ग डिभु यभा मृ वाडि । उव पउ उंभि डिदन्नि  
 णांउर मन रंगारिवृना । केंसि सुदवा पउ मला  
 कुंम् वैयु भेरुया रटिषा सुकिभा मुग मीमभा माय-  
 दावा । उडि उंभि नकार वृमनभा पषा लगिषा पत्रु  
 भेरुया मन णज्ञाना । यलि उंभि भेरुया मन णंम्  
 उषा मीमभा वृष् कृना मृगा मृदा-डि हृमाना मुना  
 मपमुना । उव पउ मृदा गळिषा उभि मीमकिभा  
 ठमवनिभा निम रुम्, उंभि पननि गभङ्गना णवना  
 भेग रकनि भेरुना । उडि उंभि भेगना-दन्नि

सुगणा मरु-हृमवा मुंडा घना वंगला डकना  
 केंभि-डि केंडा उभिभा मिस्वान । उभि पउ  
 मीनिषा वारुना कि मुंनिभा मंलिभा किजा  
 कुंडि नेकग सुष्टुवा मुंडिना इषा मपमना ।  
 वृदा कृभा वृकि मुंडिना मरुना । वृदा वृदा  
 वृषिषा पननिभा मंलिभा निम गळ, उभिभा  
 वन, कि दे मलिजा मृ कंरु परलेऊङ्ग उ  
 मुंरु विरुङ्ग णादा, वृदा उषा वननभा येणा कृभा  
 न, कि मुंरु वृमि व् कृभा वृदा मंजा मृ पनवृना  
 नेकरना मज्ञ सुषादा गळ्णागवाड । डिदा वनि-  
 वा मृदा वृकृवा उ पननिभा मंलिभा निमगषवा ।  
 मंलि याना मृदा मुरिया धिवाना वृकृना लेल  
 मुंडा मुरिषा नलभडि रटिषा उभिभा मीं डिम  
 ना । उव पउ वंरु वृषिर्वि उभा, कि दे मलिजा

Figure 4: Specimens of Kashmiri in hand-written modern Sharada from 1896 (from Grierson 1919: 317–318). The text contains idiosyncratic diacritics for the purposes of representing the vowel sounds of Kashmiri, which cannot be fully expressed natively in Sharada.

KAREN: Sgau dialect 453  
Burmese characters

ကညီဖိခွါအံ၊ ကဘာ်တံာ်ယုာ်ထီၣ်အိၣ်န့ၣ်အသိး၊- န်သိးကယံၣ်  
ပုၤလၢအစုၢ်က့ၤန့ၣ်က့ၤအိၣ်တၢ်လၢလံာ်လၢန့ၣ်၊ ကန့ၣ်ဘာ်တံာ်မုၢ်လီၤ  
ထုၤလီၤယံာ်လၢအိၣ်လီၤ.- အဂ့ၢ်ဒ်အံ၊ ယုၤအဲၣ်ဟီၣ်ခိၣ်ဖိ တုၤအ  
ဟ့ၣ်လီၤကွံာ်အဖိခွါအိၣ်တၢ်လၢလံာ်၊ န်သိးကယံၣ်ပုၤလၢအစုၢ်က့ၤန့ၣ်  
က့ၤအိၣ်တၢ်လၢလံာ်လၢန့ၣ်၊ အသုတဟးဂီၤတဂ့ၢ်ဒ်၊ ကန့ၣ်ဘာ်တံာ်မုၢ်  
အထုၤအယီၣ်လီၤ.- အဂ့ၢ်ဒ်အံ၊ တမ့ၢ်ဘာ် ယုၤမၤလီၤ အဖိခွါဆူ  
ဟီၣ်ခိၣ်အံ၊ န်သိးအကစံၣ်ညီၣ်ဟီၣ်ခိၣ်ဖိဘာ်. မ့ၢ်န်သိးဟီၣ်ခိၣ်ဖိ  
ကဘာ် တံာ်အဂ့ၢ်က့ၤန့ၣ်က့ၤလၢအိၣ်လီၤ.- ပုၤလၢအစုၢ်က့ၤန့ၣ်က့ၤ  
အိၣ်န့ၣ်၊ တဘာ်ဘာ်တံာ်စံၣ်ညီၣ်ဘာ်. မ့ၢ်ပုၤလၢအစုၢ်တန့ၣ်  
ဘာ်အိၣ်န့ၣ်၊ ဘာ်တံာ်စံၣ်ညီၣ်ခဲကန့ၣ်အံလီၤ. အဂ့ၢ်ဒ်အံ၊ တန့ၣ်  
ဘာ်ယုၤအဖိခွါတၢ်လၢလံာ်အမံၤဘာ်လီၤ.- ဒီးတံာ်စံၣ်ညီၣ်မ့ၢ်အအံ၊  
တံာ်ကပီၤလံာ်လၢဟီၣ်ခိၣ်၊ ဒီးပုၤကညီအဲၣ်တံာ်ခဲအိၣ်တံာ်က  
ပီၤတက့ၢ်လီၤ. အဂ့ၢ်ဒ်အံ၊ အတံာ်မၤမ့ၢ်အအံအိၣ်လီၤ.- အဂ့ၢ်ဒ်  
အံ၊ ကယံၣ်ပုၤလၢအမၤတံာ်အတံာ်သီတၢ်လၢလံာ်လၢန့ၣ်၊ သးဟ့  
တံာ်ကပီၤ၊ ဒီးန်သိးအတံာ်မၤ သုတဘာ်တံာ်သိၣ်စီၣ်တဂ့ၢ်ဒ်၊ တ  
ဟဲဘာ်ဆူ တံာ်ကပီၤအအိၣ်ဘာ်.- မ့ၢ်ပုၤလၢအစုၢ်တန့ၣ်  
န့ၣ်. န်သိးအတံာ်မၤကအိၣ်ဖျါလၢအမံၤဝဲလၢယုၤအပူၤဒီး၊ ဟဲဝဲဆူ  
တံာ်ကပီၤအအိၣ်လီၤ.

တံာ်န့ၣ်တဖၣ်အလီၢ်ခဲဒီး၊ ယုၤဂ့ၢ်လဲၤဒီးအပျါအဘီၣ် ဆူယုၤ  
အကီၢ်ပုၤ၊ ဒီးအိၣ်ဝဲဒီးအိၣ်ဖဲန့ၣ်၊ ဒီး\*ဘျါတံာ်လီၤ.- ဒီးစီၤယီၤဟ့ၣ်  
\*ဘျါတံာ်လၢ အဲၣ်န့ၣ်ဘူးဒီးရှ့ၤလ့ၣ်လီၤ. အဂ့ၢ်ဒ်အံ၊ ထံအိၣ်ဖဲန့ၣ်

Jn. 3:15-23; 1937  
Spoken in the Province of Pegu and Tenasserim, Burma. Reduced to written form by Jonathan Wade, of the American Baptist Missionary Union, about 1830, using the Burmese characters with new values and some diacritical marks. First publication, the New Testament in 1843 at Tavoy by the American and Foreign Bible Society; tr. by Francis Mason, Mr. Wade and San Quala, a native Christian. Bible, 1853. Other versions of note: Revised version: St. Luke's Gospel and 1 Peter, ABMU, Rangoon, 1874; revised by E. B. Cross; New Testament, 1880; Bible, 1896. Conti version: St. Matthew's Gospel, Roman Catholic Mission, Toungoo, 1888; tr. by G. Conti. CP: BFBS.

KARRÉ 454

Ouone chi hang joukouli ta, mi ko ke hi poumboui.  
Goune a me, joukou ko tousaou a me, ke ma lime-na  
ya, yé ke yana kambelè.

Spoken in the mountains of French Equatorial Africa. First publication, St. John's Gospel in 1931 by the BFBS; tr. by Miss Estelle Myers, of the Ubangi-Chari Mission, with two natives; the Acts, 1934; St. Luke's Gospel, 1935; St. Mark's Gospel, 1936; St. Matthew's Gospel, 1937. Selections, by the Mission Oubangui-Chari Evangélique at Bassai, 1934.

KASHMIRI 455  
Sarada characters

ठिय घिषपाणि उट्टवा भेमदि वनभंण अजिगर  
उघिषपाणि पाषे मचधमक्रिभा गवुरभच्य उलिषा नि  
चउे उाणुत्त । कि उमृणं घुभुघ दक्काका मचध्वा पा  
षे पका कगना उभा भभने न एणय न नाम पणु अउ  
गभुग सुय लठे । कवणे गंसग्गि पाषे ठवभरभृणं  
उघिष्य खेद ककभउ कि उमि मिउव पनच उभउठभ  
उ कुव गवरु कि उमृणं घुघ दक्काका मचध्वा वरे पका  
उभा भभने न एणउे नाम पणु अउरभुघ सुय लठे ।  
कवणे ठवभरभा दग्गलगा कगन उमाउ भेषुव न  
गंसग्गि पनच गवरु पणु ठवभर गघ लठे उभक्रिषि  
डाणा ।

Jn. 3:14-17; 1821

Persian characters

مَنْ يَشْرِكْ بِاللهِ فَقَدْ كَفَرَ بِهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ  
فَيُكْفَرُ بِاللهِ وَهُوَ كُفْرٌ عَظِيمٌ

Jn. 3:16-20; 1929

Spoken by more than 1,000,000 people in Kashmir, Northern India.  
First publication, New Testament in 1821 at the Mission Press, Serampore; tr. by the Serampore missionaries (see No. 87). Pentateuch, 1827; Joshua-2 Kings, 1832. Old Testament, BFBS, Lahore, 1899; tr. by J. H. Knowles, CMS. Other versions: Wade version (Persian character): the Gospels, BFBS, Lahore, 1882; tr. by T. R. Wade, CMS; Acts, 1883; New Testament, 1884. Revised by J. H. Knowles: Gospels, 1899; St. Luke's Gospel, 1912; tr. by E. F. Clive. St. Matthew's and St. Mark's Gospels, 1913; St. John's Gospel, 1914. CP: BFBS.

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Figure 5: Entry for the Kashmiri languages in The Book of a Thousand Tongues showing a specimen of a bible printed in Sharada type (from American Bible Society 1938: 190).

Roman.	Nāgarī.	Śāradā.	Kāshmirī name in Nāgarī.	Kāshmirī name in Śāradā.	Kāshmirī name in Roman.	Remarks.
<i>ōm</i>	ओं	ॐ	ओंकारा ओं	ॐकार ॐ	<i>ōmkārā ōm</i>	Read as <i>ēkaṁ</i> .  There are no sonant aspirates in Kāshmirī.
<i>sva</i>	स्व	सु	स्वयं सो	सुयं भे	<i>sōyam sō</i>	
<i>sti</i>	स्ति	भु	त्यविस ते	तु विभाउ	<i>tēvis tē</i>	
<i>ekaṁ</i>		ॐ	अंकु सं गोर (एकं)	संकुभंगेग (एकभ)	<i>okṁ saṁ gōr</i>	
<i>si</i>	सि	भि	स्वदिव् से	सुभिव भे	<i>sēdiv sē</i>	
<i>ddhaṁ</i>	दं	दं	दमर् दं	दमर् दं	<i>damar daṁ</i>	
<i>a</i>	अ	अ	आदौ अ	अदौ अ	<i>ādar a</i>	
<i>ā</i>	आ	आ	ऐतव् आ	ऐतव् आ	<i>aitav ā</i>	
<i>-ā</i>	ा	ा	वहाय्	वहाय्	<i>wahāy</i>	
<i>i</i>	इ	इ	ययव् ये	ययव् ये	<i>yēyēv yē</i>	
<i>-i</i>	ि	ि	मून्थर्	मून्थर्	<i>mūnthar</i>	
<i>ī</i>	ई	ई	इशरव् ई	इशरव् ई	<i>yishērav yī</i>	

Roman.	Nāgarī.	Śāradā.	Kāshmirī name in Nāgarī.	Kāshmirī name in Śāradā.	Kāshmirī name in Roman.	Remarks.
<i>-ī</i>	ी	ी	अर् मून्थर्	अर् मून्थर्	<i>ar mūnthar</i>	Same name as for the initial form. Thus, <b>क</b> <i>kṛ</i> is called <i>kōv kahās tal ṛēnav ṛē</i> , or <i>ṛēnav ṛē</i> under <i>kōv ka</i> , i.e. <i>ṛ</i> under <i>ka</i> .
<i>u</i>	उ	उ	वपल् वो	वपल् वो	<i>wōpal wō</i>	
<i>-u</i>	ु	ु	खूर्	खूर्	<i>khūru</i>	
<i>ū</i>	ऊ	ऊ	वपल् बा ऊ	वपल् बा ऊ	<i>wōpal bā ū</i>	
<i>-ū</i>	ू	ू	अर् खूर्	अर् खूर्	<i>ar khūrū</i>	
<i>ṛ</i>	ऋ	ऋ	ऋनव् ऋ	ऋनव् ऋ	<i>ṛēnav ṛē</i>	
<i>-ṛ</i>	ृ	ृ	Same name as for the initial form.	Same name as for the initial form.	Thus, <b>क</b> <i>kṛ</i> is called <i>kōv kahās tal ṛakhav rū</i> .	
<i>ṝ</i>	ऋ	ऋ	रखव् ऋ [ऋ]	रखव् ऋ [ऋ]	<i>rakhav rū</i>	Same name as for the initial form. Thus, <b>क</b> <i>kṛ</i> is called <i>kōv kahās tal ṛēyēv ṛē</i> .
<i>-ṝ</i>	ृ	ृ	Same name as for the initial form.	Same name as for the initial form.	Thus, <b>क</b> <i>kṛ</i> is called <i>kōv kahās tal ṛēyēv ṛē</i> .	
<i>ḷ</i>	ळ	ळ	ल्ययव् लृ	ल्ययव् लृ	<i>lēyēv ḷē</i>	
<i>-ḷ</i>	ळ	ळ	Same name as for the initial form.	Same name as for the initial form.	Thus, <b>क</b> <i>kṛ</i> is called <i>kōv kahās tal ṛēyēv ḷē</i> .	
<i>ḹ</i>	ळ	ळ	लीसव् लृ	लीसव् लृ	<i>līsav ḹ</i>	
<i>-ḹ</i>	ळ	ळ	Same name as for the initial form, as above.	Same name as for the initial form, as above.		

Figure 6: Table showing Sharada vowels, various signs, and Kashmiri names (from Grierson 1916: 681–682).

ē	ए	८	तालव् ए	उलव् ए	talavy yē	
-ē	८	८	ह्रं	ह्रं	hōṅḍū	
ai	ऐ	९	ताली ऐ	ताली ऐ	tōlī ai	
-ai	९	९	ह्रंजोर्	ह्रंजोर्	hōṅjōr	
ō	ओ	१०	वुठी ओ	वुठी ओ	wuṭhō ō	
-ō	१०	१०	अकु श्यूर्	अकु श्यूर्	aku shyūr	
au	औ	११	अशिदी औ	अशिदी औ	ashidī au	
-au	११	११	अकुशि वहाय्	अकुमिवहाय्	akushi wahāy	
m̄	१२	१२	मस् फ्यरि अं	मभा ह्रंति अं	mas phēri aṁ	
m̄	१३	१३	अडि चन्द्र फ्यर्	अडि मद्रु ह्रं	adī tsandra phyor	
h̄	:	:	दो फ्यरि अः [दो फ्योर् अः]	दो ह्रंति अः [दो ह्रंति अः]	dō phēri aḥ	Also called <i>dō phyor aḥ</i> .
χ	१४	१४	जिह्मामूलीय	जिह्मामूलीय	jihwāmālīyē	
φ	१५	१५	उपध्मानीय	उपध्मानीय	wupadhmānīyē	Thus, <b>उ</b> <i>φpa</i> , <b>उ</b> <i>φpha</i> .
	१६	१६	मोरिथ्	मोरिथ्	mōrith (“having killed”)	Thus, <b>क</b> <i>k</i> is called <i>kōv ka mōrith</i> .
’	१७	१७	अदु आदौ अ	अदु अदौ अ	oḍu ādau a (“half a”)	<i>Avagraha</i> .

Figure 7: Table showing Sharada vowels, various signs, and Kashmiri names (from Grierson 1916: 683).

KAŠMIRISCH.

Zeichen	Wert	Zeichen	Wert	Zeichen	Wert	Zeichen	Wert	Zeichen	Wert	Zeichen	Wert
अ	a	इ	i	ग	ga	ए	ṭa	उ	dha	र	ra
आ	ā	ई	ī	घ	gha	ओ	ṭha	न	na	ल	la
उ	i	ए	e	ण	ṅa	ऊ	ḍa	प	pa	व	va
अ	ī	ऐ	ai	ट	tṣa	म	ḍha	ठ	pha,fa	भ	sa
उ	u	ओ	o	ड	tṣha	न	ṅa	ब	ba	ष	ṣa
ऊ	ū	आ	au	ण	dṣa,za	उ	ta	ठ	bha	स	ṣa
ए	ṛ	क	ka	ण	dṣha	ष	tha	भ	ma	द	ha
ए	ṛ	ख	kha	ण	ṅa	ळ	da	य	ya		

Ligaturen.

क	kya	क	tma	न	nu	म	mpa	म	sma	स	tṣya
ख	tṣu	उ	tu	ह	nya	ल	rdṣa	ष	swa	ह	tṣhya
ड	dṣya	म	ntṣu	प	pra	म	ṣu	ह	hya		

Vokalverbindung: का k̄ā, कि k̄i, कु k̄u, के k̄e, कं k̄ā, क् k̄.

Ziffern: १ 1, ३ 2, ३ 3, १ 4, ५ 5, २ 6, ५ 7, ३ 8, ७ 9, ० 0.

Figure 8: Inventory of Sharada letters from a German compendium of writing systems (from Faulmann 1880: 139).

VOKALE UND DIPHTONGE

a	अ	ā	आ	i	इ	ī	ई	u	उ
ū	ऊ	ī	ऀ	ī	ँ	!	ः	!	ऄ
e	ए	ai	ऐ	o	ओ	au	औ	om̐	ॐ

KONSONANTEN

ka	क	kha	ख	ga	ग	gha	घ	ṅa	ङ
ca	च	cha	छ	ja	ज	jha	झ	ṅa	ञ
ṭa	ट	ṭha	ठ	ḍa	ड	dha	ढ	ṇa	ण
ta	त	tha	थ	da	द	dha	ध	na	न
pa	प	pha	फ	ba	ब	bha	भ	ma	म
ya	य	ra	र	la	ल	va	व		
śa	श	ṣa	ष	sa	स	ha	ह		

VISARGA ETC.

Visarga	ḥ	:	>	kaḥ	कः	Jihvāmūliya	ḥ	ˆ	>	hka	क̣
Upadhmaniya	ḥ	ḥ	>	hpa	पि	Anusvāra	m	˙	>	kaṃ	कं
Anunāsika	m̐	ḥ	>	kaṃ	कै	Avagraha	ˆ	ˆ	>	ˆja	ज
Virāma	ˆ		>	m	मी						

Figure 9: Inventory of Sharada letters from a primer of the script (from Slaje and Hanneder 2005: 3).

SHARADA SCRIPT										६२
शारदा लिपि										
स्वर , व्यञ्जन										
										VOWEL , CONSONANT
अ	आ	इ	ई	उ	ऊ	ऋ	ॠ	ऌ		
A	Ā	I	Ī	U	Ū	RĪ	RĪ	LRI		
ए	ऐ	ऒ	ण	ऐ	ऑ					
E	AI	O	AU	AM	AH					
क	ख	ग	घ	ङ	च	छ	ज	झ	ञ	
KA	KHA	GA	GHA	ŅA	CHA	CHHA	JA	JHA	ÑA	
ट	ठ	ड	ढ	ण	त	थ	द	ध	न	
TA	THA	DA	DHA	NA	TA	THA	DA	DHA	NA	
प	फ	ब	भ	म	य	र	ल	व		
PA	PHA	BA	BHA	MA	YA	RA	LA	VA		
श	ष	स	ह							
SHA	ṢA	SA	HA							

Figure 10: Inventory of Sharada letters from a Nepali book on scripts (from Śākyaavaṃśa 1974: 62).

Roman.	Nāgarī.	Śaradā.	Kāshmirī name in Nāgarī.	Kāshmirī name in Śaradā.	Kāshmirī name in Roman.	Remarks.
<i>ka</i> <i>kha</i> <i>ga</i> <i>gha</i> <i>na</i>	क ख ग घ ङ	क ख ग घ ङ	कोव् क खुनि ख गगर् ग गांसि ग [घ] नारुग न	केवा क खुनि ख गगर् ग गांसि ग [घ] नारुग न	<i>kōv ka</i> <i>khōni kha</i> <i>gugar ga</i> <i>gōsi ga [gha]</i> <i>nārug na</i>	The Kāshmirī language does not possess the letter <i>gha</i> .
<i>ca</i> <i>cha</i> <i>ja</i> <i>jha</i> <i>ña</i>	च छ ज झ ञ	च छ ज झ ञ	चाटुव च छुटि च छ जायि ज जाशि च ज [झ] खुन फुटि च	चाटुव च छुटि च छ जायि ज जाशि च ज [झ] खुन फुटि च	<i>tsātuv tsa</i> <i>tshōṭiñ tsha</i> <i>zāyi za</i> <i>zōshiñ za [jha]</i> <i>khōna phuṭi ñe</i>	The Kāshmirī language does not possess the letter <i>jha</i> .
<i>ṭa</i> <i>ṭha</i> <i>ḍa</i> <i>ḍha</i> <i>ṇa</i>	ट ठ ड ढ ण	ट ठ ड ढ ण	अर-माँट सर-माँट डुड ड डक ड [ढ] नानगुरि न [ण]	अर-माँट सर-माँट डुड ड डक ड [ढ] नानगुरि न [ण]	<i>ar-māṭa</i> <i>sar-māṭha</i> <i>ḍuḍ ḍa</i> <i>ḍaka ḍa [ḍha]</i> <i>nānaguri na [ṇa]</i>	The Kāshmirī language does not possess the letters <i>ḍha</i> or <i>ṇa</i> .
<i>ta</i> <i>tha</i> <i>da</i> <i>dha</i> <i>na</i>	त थ द ध न	त थ द ध न	तोव त थांशि थ ददव द दूत्र द [ध] नस्तुव न	तोव त थांशि थ ददव द दूत्र द [ध] नस्तुव न	<i>tōv ta</i> <i>thōshi tha</i> <i>dadav da</i> <i>dūñ da [dha]</i> <i>nastuv na</i>	The Kāshmirī language does not possess the letter <i>dha</i> .
<i>pa</i> <i>pha</i> <i>ba</i> <i>bha</i> <i>ma</i>	प फ ब भ म	प फ ब भ म	पडुरि प फरि च फ बुब ब बांघि ब [भ] मोव म	पडुरि प फरि च फ बुब ब बांघि ब [भ] मोव म	<i>paḍuri pa</i> <i>phariñ pha</i> <i>bub ba</i> <i>bōyi ba [bha]</i> <i>mōv ma</i>	The Kāshmirī language does not possess the letter <i>bha</i> .

Figure 11: Table showing Sharada consonants and Kashmiri names for letters: *ka* to *ma* (from Grierson 1916: 684–685).



Roman.	Nāgarī.	Śāradā.	Kāshmirī name in Nāgarī.	Kāshmirī name in Śāradā.	Kāshmirī name in Roman.	Remarks.
<i>ya</i>	य	य	याव य	यव य	<i>yāwa yě</i>	
<i>ra</i>	र	र	रक र	रक र	<i>raka ra</i>	
<i>la</i>	ल	ल	लाव ल	लव ल	<i>lāwa la</i>	
<i>va</i>	व	व	वश व	वम व	<i>washě wa</i>	
<i>śa</i>	श	श	शकर श	मकग म	<i>shēkar shě</i>	
<i>ṣa</i>	ष	ष	फारि श [ष]	ठरि म [ध]	<i>phōri shě [ṣa]</i>	The Kāshmirī language does not possess the letter <i>ṣa</i> .
<i>sa</i>	स	स	सुस स	मुभा म	<i>sus sa</i>	
<i>ha</i>	ह	ह	हाल ह	हल ह	<i>hāla ha</i>	
<i>kṣa</i>	क्ष	क्ष	कलि व्ठि क	कलि व्ठि क	<i>kōli vēṭhi kshě</i>	
<i>tra</i>	त्र	त्र	तुक तोव त्र	तुक तोव त्र	<i>truka tov tra</i>	
<i>jña</i>	ज्ञ	ज्ञ	(ज़यि ज़हस तल् खुन फुटि ज़)	(ज़यि ज़हस तल् खुन फुटि ज़)	( <i>zāyī zahas tal khōna phuṭi ñě</i> )	This compound has no special name, and is simply spelt out, <i>khōna phuṭi ñě</i> (= <i>ña</i> ) under <i>zāyī za</i> (= <i>ja</i> ).
<i>ḷa</i>	ळ	ळ	बडु डुड ड (वा बडु रक र)	बडु डुड ड (वा बडु रक र)	<i>boḍu ḍuḍ ḍa</i> (or <i>boḍu raka ra</i> )	
<i>ḷha</i>	ऌ	There is no equivalent for this letter in Śāradā.				

Figure 12: Table showing Sharada consonants and Kashmiri names for letters: *ya* to *ḷha* (from Grierson 1916: 686–687).

Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.
kka	कक	कक	khya	ख	ख	ñkha	ख	ख	jjha	झ	झ	dgha	झ	झ	nmaru	झ	झ
kkha	कख	कख	khra	ख	ख	ñkhya	ख	ख	jña	ञ	ञ	dghra	ञ	ञ	nma	ञ	ञ
kña	कण	कण	gna	गण	गण	ñkhyā	ख	ख	jñā	ञ	ञ	dja	ञ	ञ	nmā	ञ	ञ
kea	कए	कए	gda	गद	गद	ñga	ख	ख	jñya	ञ	ञ	djā	ञ	ञ	nya	ञ	ञ
kṇa	कण	कण	gdha	गध	गध	ñgya	ख	ख	jma	जम	जम	ḍdha	ञ	ञ	nva	ञ	ञ
kta	कत	कत	gna	गन	गन	ñgyā	ख	ख	jya	जय	जय	ḍda	ञ	ञ	tka	क	क
ktya	कय	कय	gba	गब	गब	ñgha	ख	ख	jra	ज्र	ज्र	ḍdha	ञ	ञ	tkra	क	क
ktra	कत्र	कत्र	gma	गम	गम	ñghya	ख	ख	jva	जव	जव	ḍma	ञ	ञ	ttra	क	क
ktrya	कय	कय	gya	गय	गय	ñghra	ख	ख	ñca	ञ	ञ	dya	ञ	ञ	ttya	क	क
kva	कव	कव	gra	गय	गय	ñghrā	ख	ख	ñcma	ञ	ञ	dra	ञ	ञ	tttra	क	क
ktha	कथ	कथ	grya	गय	गय	ñghrau	ख	ख	ñcya	ञ	ञ	dhya	ञ	ञ	ttna	क	क
kthya	कथ	कथ	gva	गव	गव	ñna	ख	ख	ñcha	ञ	ञ	dhra	ञ	ञ	tnya	क	क
kna	कन	कन	ghna	घन	घन	ñma	ख	ख	ñja	ञ	ञ	nta	न	न	tpa	क	क
kenya	कय	कय	ghnya	घय	घय	ñya	ख	ख	ñña	ञ	ञ	ntā	न	न	tpra	क	क
kpa	कप	कप	ghma	घम	घम	cca	च	च	ñya	ञ	ञ	ntha	न	न	tma	क	क
kma	कम	कम	ghya	घय	घय	ccha	च	च	tta	त	त	nthya	न	न	tmya	क	क
kya	कय	कय	ghra	घर	घर	cñra	च	च	tṭa	त	त	nthyau	न	न	tya	क	क
kra	कर	कर	ñka	क	क	cma	च	च	tṭā	त	त	nd	न	न	tra	क	क
krya	कय	कय	ñkta	क	क	cya	च	च	tṭha	त	त	ndya	न	न	trya	क	क
kla	कल	कल	ñktya	क	क	cra	च	च	tpa	त	त	ndra	न	न	tva	क	क
kva	कव	कव	ñktyā	क	क	chya	च	च	tya	त	त	ndrya	न	न	tsa	क	क
kvya	कव	कव	ñkṭaru	क	क	chra	च	च	thya	थ	थ	ndha	न	न	tsna	क	क
kṣa	कष	कष	ñkya	क	क	jga	ज	ज	ṭhra	थ	थ	ndhā	न	न	tsnya	क	क
kṣma	कष	कष	ñkṣa	क	क	jjā	ज	ज	dga	ड	ड	nna	न	न	tsya	क	क
kṣya	कष	कष	ñkṣva	क	क	jjā	ज	ज	dgya	ड	ड	nnā	न	न			

Figure 13: Sharada conjuncts from kka to tsya (from Grierson 1916: 694–695).

Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.	Roman.	Nāgarī.	Śāradā.
thna	थ	𑖦	nka	क	𑖕	pva	व	𑖩	mra	म	𑖕	rbha	भ	𑖦
thya	थ	𑖦	nta	त	𑖦	psa	स	𑖦	m̄la	ल	𑖦	rma	म	𑖦
dga	ग	𑖦	ntyā	य	𑖦	psva	स्व	𑖦	m̄va	व	𑖦	rya	य	𑖦
dgha	घ	𑖦	ntra	त्र	𑖦	bḡha	भ	𑖦	yya	य	𑖦	rla	ल	𑖦
dghra	घ्र	𑖦	ntha	थ	𑖦	bja	ज	𑖦	yva	य	𑖦	rva	व	𑖦
dda	द	𑖦	nda	न	𑖦	bda	द	𑖦	rr̄	र	𑖦	r̄sa	स	𑖦
ddyā	दय	𑖦	ndra	द्र	𑖦	bdha	ध	𑖦	rka	क	𑖦	r̄sa	स	𑖦
ddhā	दध	𑖦	ndha	ध	𑖦	bna	न	𑖦	rka	क	𑖦	r̄sa	स	𑖦
ddhya	दधय	𑖦	ndhra	ध्र	𑖦	bna	न	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dna	न	𑖦	nna	न	𑖦	bb̄a	ब	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dba	ड	𑖦	npa	प	𑖦	bb̄hya	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
db̄ha	डभ	𑖦	np̄ra	प्र	𑖦	bya	य	𑖦	rka	क	𑖦	r̄sa	स	𑖦
db̄hya	डभय	𑖦	npha	फ	𑖦	bra	ब	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dma	म	𑖦	nma	म	𑖦	bva	व	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dya	य	𑖦	nyā	य	𑖦	b̄hna	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dra	ड	𑖦	nra	र	𑖦	b̄hya	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dryā	डय	𑖦	n̄sa	स	𑖦	b̄hra	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dva	व	𑖦	nsa	स	𑖦	b̄hva	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dvya	वय	𑖦	pta	प	𑖦	mna	म	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dhna	ध	𑖦	ptya	य	𑖦	mpa	म	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄nyā	धन्य	𑖦	pna	न	𑖦	mp̄ra	प्र	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄ma	धम	𑖦	ppa	प	𑖦	m̄ba	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄yā	धय	𑖦	p̄ma	म	𑖦	m̄bha	भ	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄rā	धर	𑖦	pya	य	𑖦	m̄ma	म	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄ryā	धरय	𑖦	pra	प	𑖦	m̄ya	य	𑖦	rka	क	𑖦	r̄sa	स	𑖦
dh̄vā	धव	𑖦	pla	प	𑖦				rka	क	𑖦	r̄sa	स	𑖦

Figure 14: Sharada conjuncts from thna to stya (from Grierson 1916: 696–697).

Rom.	Nāg.	Śār.	Rom.	Nāg.	Śār.	Rom.	Nāg.	Śār.
stra	स्र	𑖦	sma	स	𑖦	h̄ya	ह	𑖦
st̄va	स्रव	𑖦	smyā	स्य	𑖦	h̄na	ह	𑖦
sth̄a	स्रथ	𑖦	sya	स	𑖦	h̄ma	ह	𑖦
sna	स	𑖦	sra	स	𑖦	h̄ya	ह	𑖦
snyā	सय	𑖦	sva	स	𑖦	h̄ra	ह	𑖦
spa	स	𑖦	ssa	स	𑖦	h̄la	ह	𑖦
spha	स	𑖦	sha	स	𑖦	h̄va	ह	𑖦

Figure 15: Sharada conjuncts from stra to hva (from Grierson 1916: 698).

SEMI-HOMOGRAPHE

a/ya : ञ ण ju/jva : ङ ञ u/ta उ उ  
 ku/kta : क क ङka/tka : क क ङa/ta/ru : उ उ उ  
 ca/da/śa : ञ ञ ञ cya/dya/mya/śya/sya : ञ ञ ञ ञ ञ  
 tu / ta / nta / rta : उ उ उ उ t-(ya) / tt-(ya) / n-(ya) : उ उ उ  
 tya / dya / bhya : उ उ उ tya / ṭṛ : उ उ tva / dva : उ उ  
 tha / śa : ञ ञ dya / dhya / pya / yya / śya : उ उ उ उ उ  
 dhva / śva : ञ ञ pha / ha : ञ ञ ba/rdhva : उ उ उ उ  
 bdha/bva : उ उ bya/bva : उ उ bra/vra : उ उ  
 ma/sa : ञ ञ ya/śa : ञ ञ  
 rū/rtha : उ उ ṛṛ/hya : उ उ

Figure 16: Inventory of homoglyphic characters (from Slaje and Hanneder 2005: 5).

लं कं मं घं मं वं लं उं यं मं कं रं ङं पं  
 नं षं षं उं लं ङं ङं उं ङं ङं ङं  
 मं एं अं नं षं कं षः षं षं षं षं  
 षं षं षं उं उं उं उं उं उं उं उं उं  
 उं उं यं यं मं ॥ ॥ ॥ ॥  
 षं षं उं उं उं उं उं उं उं उं उं उं  
 षं षः कं षं नं एं मं कं षं षं उं  
 ङं ङं लं उं षं मं षं नं षं षं षं मं यं  
 षं लं वं मं यं मं षं लं ॥ ॥ ॥

Figure 17: An inventory of Sharada characters typically found in manuscripts (from Lokesh Chandra 1982a: 761).

TABLE 5 (a)  
ŚĀRADĀ ALPHABET IN MANUSCRIPTS  
(12<sup>th</sup> - 20<sup>th</sup> Centuries)

	M O D E R N Ś Ā R A D Ā									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Roman letters in transcription	Bhakshali Manuscript c. 12 <sup>th</sup> Century	Manuscript of Muni-matamāṅgi-māli c. 14 <sup>th</sup> Century	Manuscript of Sakuntalā c. 17 <sup>th</sup> Century	Manuscript of Ādi & Sabhāparvan of Mahābhārata c. 16 <sup>th</sup> century	Manuscript of Kathā-Sarit-Sāgara c. 16 <sup>th</sup> Century	Manuscript of Bālabodhini H.1158, (CE 1745)	Manuscript of C. Brāhmaṇa c. 18 <sup>th</sup> Century	Manuscript of A Ritual Text 1905 CE	Manuscript of Śiva-Mahimnastota 1933 CE	Śāradā Horoscope 1963 CE
a	𑆑 𑆒	𑆓𑆔	𑆕	𑆖	𑆗	𑆘	𑆙𑆚	𑆛	𑆜	𑆝
ā	𑆞𑆟	𑆠	𑆡	𑆢	𑆣	𑆤	𑆥	𑆦	𑆧	𑆨
i	𑆩 𑆪	𑆫	𑆬	𑆭	𑆮	𑆯𑆰	𑆱𑆲	𑆳𑆴	𑆵	𑆶
ī			𑆷		𑆸	𑆹	𑆺			𑆻
u	𑆼 𑆽	𑆾	𑆿	𑇀	𑇁	𑇂	𑇃	𑇄	𑇅	𑇆
ū	𑇇𑇈		𑇉		𑇊	𑇋	𑇌			
r!	𑇍		𑇎		𑇏	𑇐𑇑	𑇒	𑇓	𑇔	
e	𑇕 𑇖	𑇗𑇘	𑇙	𑇚	𑇛	𑇜	𑇝	𑇞	𑇟	𑇠
ai		𑇡	𑇢	𑇣	𑇤	𑇥	𑇦	𑇧		
o		𑇨	𑇩	𑇪	𑇫	𑇬	𑇭			𑇮
au		𑇯	𑇰	𑇱	𑇲	𑇳	𑇴			
k	𑇵 𑇶	𑇷	𑇸	𑇹	𑇺	𑇻	𑇼	𑇽	𑇾	𑇿
kh	𑈀	𑈁	𑈂	𑈃	𑈄	𑈅	𑈆		𑈇	𑈈
g	𑈉 𑈊	𑈋	𑈌	𑈍	𑈎	𑈏	𑈐	𑈑	𑈒	𑈓
gh	𑈔	𑈕	𑈖	𑈗	𑈘	𑈙	𑈚	𑈛	𑈜	𑈝

Figure 18: Comparison of historical and modern forms of Sharada from manuscripts: a to gha (from Kaul Deambi 2008: Table 5a).

TABLE 5 (b)  
ŚĀRADĀ ALPHABET IN MANUSCRIPTS  
(12<sup>th</sup> - 20<sup>th</sup> Centuries)

Roman letters in transcription	M O D E R N Ś Ā R A D Ā									
	I	II	III	IV	V	VI	VII	VIII	IX	X
	Bhaskali Manuscript c. 12 <sup>th</sup> Century	Manuscript of Muni-mata-māṅgi-māli c. 14 <sup>th</sup> Century	Manuscript of Śakuntalā c. 17 <sup>th</sup> Century	Manuscript of Ādi & Sabhāparvan of Mahābhārata c. 16 <sup>th</sup> Century	Manuscript of Kathā-Sarit-Sāgara c. 16 <sup>th</sup> Century	Manuscript of Bālabodhini H.1158, (CE 1745)	Manuscript of C. Brāhmaṇa c. 18 <sup>th</sup> Century	Manuscript of A Ritual Text 1905 CE	Manuscript of Śiva-Mahimnastota 1933 CE	Śāradā Horoscope 1963 CE
ṅ	𑆑	𑆒	𑆓	𑆔	𑆕	𑆖	𑆗	𑆘	𑆙	𑆚
c	𑆛	𑆜	𑆝	𑆞	𑆟	𑆠	𑆡	𑆢	𑆣	𑆤
ch	𑆥		𑆦	𑆧	𑆨	𑆩		𑆪		𑆫
j	𑆬	𑆭	𑆮	𑆯	𑆰	𑆱	𑆲	𑆳	𑆴	𑆵
jh	𑆶		𑆷		𑆸	𑆹				
ñ		𑆺	𑆻	𑆼	𑆽	𑆾	𑆿	𑇀		𑇁
t	𑇂	𑇃	𑇄	𑇅	𑇆	𑇇	𑇈	𑇉	𑇊	𑇋
th		𑇌	𑇍	𑇎	𑇏	𑇐	𑇑	𑇒	𑇓	𑇔
d	𑇕	𑇖	𑇗	𑇘	𑇙	𑇚	𑇛	𑇜	𑇝	𑇞
dh	𑇟	𑇠	𑇡	𑇢	𑇣	𑇤	𑇥		𑇦	
ṇ	𑇧	𑇨	𑇩	𑇪	𑇫	𑇬	𑇭	𑇮	𑇯	𑇰
t	𑇱	𑇲	𑇳	𑇴	𑇵	𑇶	𑇷	𑇸	𑇹	𑇺
th	𑇻	𑇼	𑇽	𑇾	𑇿	𑈀	𑈁	𑈂	𑈃	𑈄
d	𑈅	𑈆	𑈇	𑈈	𑈉	𑈊	𑈋	𑈌	𑈍	𑈎
dh	𑈏	𑈐	𑈑	𑈒	𑈓	𑈔	𑈕	𑈖	𑈗	𑈘
n	𑈙	𑈚	𑈛	𑈜	𑈝	𑈞	𑈟	𑈠	𑈡	𑈢

Figure 19: Comparison of historical and modern forms of Sharada from manuscripts: *ṅa* to *ṅa* (from Kaul Deambi 2008: Table 5b).

TABLE 5 (c)  
ŚĀRADĀ ALPHABET IN MANUSCRIPTS  
(12<sup>th</sup> - 20<sup>th</sup> Centuries)

Roman letters in transcription	M O D E R N Ś Ā R A D Ā									
	I	II	III	IV	V	VI	VII	VIII	IX	X
	Bhaskali Manuscript c. 12 <sup>th</sup> Century	Manuscript of Muni-mata-mānī-mālā c. 14 <sup>th</sup> Century	Manuscript of Śakuntalā c. 17 <sup>th</sup> Century	Manuscript of Ādi & Sabhāparvan of Mahābhārata c. 16 <sup>th</sup> Century	Manuscript of Kathā-Sarīt-Sāgara c. 16 <sup>th</sup> Century	Manuscript of Bīlabodhinī H.1158, (CE 1745)	Manuscript of C. Brāhmaṇa c. 18 <sup>th</sup> Century	Manuscript of A Ritual Text 1905 CE	Manuscript of Śiva-Mahimnastota 1933 CE	Śāradā Horoscope 1963 CE
p	प	प	प	प	प	प	प	प	प	प
ph	फ़	फ़	फ़	फ़	फ़	फ़	फ़	फ़	फ़	फ़
b	ब	ब	ब	ब	ब	ब		ब	ब	ब
bh	भ	भ	भ	भ	भ	भ	भ	भ	भ	भ
m	म	म	म	म	म	म	म	म	म	म
y	य	य	य	य	य	य	य	य	य	य
r	र	र	र	र	र	र	र	र	र	र
l	ल	ल	ल	ल	ल	ल	ल	ल	ल	ल
v	व	व	व	व	व	व	व	व	व	व
ś	श	श	श	श	श	श	श	श	श	श
ṣ	ष	ष	ष	ष	ष	ष	ष	ष	ष	ष
s	स	स	स	स	स	स	स	स	स	स
h	ह	ह	ह	ह	ह	ह	ह	ह	ह	ह
jih.	झ	झ			झ		झ			
up.	ञ	ञ		ञ	ञ		ञ			
halant	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ

Figure 20: Comparison of historical and modern forms of Sharada from manuscripts: *pa* to *virāma* (from Kaul Deambi 2008: Table 5c).

	a	ā	i	u	e	ka	kha	ga	gha	na	cha	chha	ja	jha	ṅa	ṭa	ṭha	ḍa	ḍha	ṣa	ṭa	ṭha	da	dha	na	ṅa	ṅha	ba	bha	ma	ya	ra	la	va	ḷa	ḷha	sa	ha				
BRĀHMĪ	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	
BOWER MS	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
ACUTE-ANGLED	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
SARĀHAN	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
BAKSHĀLĪ MS	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
BALJNĀTH	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
ŚĀRADĀ (Modern)	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭
NĀGARĪ	𑀅	𑀅̄	𑀆	𑀇	𑀈	𑀉	𑀊	𑀋	𑀌	𑀍	𑀎	𑀏	𑀐	𑀑	𑀒	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘	𑀙	𑀚	𑀛	𑀜	𑀝	𑀞	𑀟	𑀠	𑀡	𑀢	𑀣	𑀤	𑀥	𑀦	𑀧	𑀨	𑀩	𑀪	𑀫	𑀬	𑀭

Figure 21: Comparison of Sharada forms found in major records (from Kaye 1927: Table 1)



	HUND INSCRIPTION	COINS OF UTPALS	SARAHAN PRASASTI	DEWAI INSCRIPTION	BARIKOT INSCRIPTION	S.P.S. MUSEUM IMAGE INSC.	SRINAGAR INSC.	BRAHMOR COPPER PLATE	SUNGAL COPPER PLATE
k	क	क	क	क क	क	क	क	क	क
kh			ख				ख	ख	ख
g	ग		ग			ग	ग	ग	गग
gh									घ
n		ङ	ङ			ङ	ङ	ङ	ङ
c	च		च			च	च	च	च
ch							छ	छ	
j	ज		ज	ज		ज	ज	ज	ज
jh			झ						
ñ			ञ	ञ					
t			ट	ट	ट	ट	ट	ट	ट
th			ठ				ठ	ठ	
d								ड	ड
dh	ढ								
n	न		न				न	न	न
t	त		त		त	त	त	त	त
th			थ						
d			द						
dh	ढ								
n	न		न						
t	त		त		त	त	त	त	त

क	ख	ग	घ	ङ	च	छ	ज	झ	ञ	ट	ठ	ड	ढ	न	त	थ	द	ध	न	त	
क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क	क
ख			ख				ख	ख	ख	ख	ख	ख	ख	ख	ख	ख	ख	ख	ख	ख	ख
ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग	ग
घ			घ				घ	घ	घ	घ	घ	घ	घ	घ	घ	घ	घ	घ	घ	घ	घ
ङ			ङ				ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ	ङ
च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च	च
छ			छ				छ	छ	छ	छ	छ	छ	छ	छ	छ	छ	छ	छ	छ	छ	छ
ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज	ज
झ			झ				झ	झ	झ	झ	झ	झ	झ	झ	झ	झ	झ	झ	झ	झ	झ
ञ			ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ	ञ
ट			ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट	ट
ठ			ठ				ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ	ठ
ड								ड	ड	ड	ड	ड	ड	ड	ड	ड	ड	ड	ड	ड	ड
ढ	ढ																				
न	न		न				न	न	न	न	न	न	न	न	न	न	न	न	न	न	न
त	त		त		त	त	त	त	त	त	त	त	त	त	त	त	त	त	त	त	त
थ			थ																		
द			द																		
ध																					
न	न		न				न	न	न	न	न	न	न	न	न	न	न	न	न	न	न
त	त		त		त	त	त	त	त	त	त	त	त	त	त	त	त	त	त	त	त

Figure 22: Comparison of Sharada forms found in inscriptions from 8th–10th century (from Kaul Deambi 1982: Table 2b). Compare with forms found in inscriptions from 14th–16th century, as shown in Figure 23.

	KOTIHER INSCRIPTION	KHONAMIJH INSC. KALI	PESHAWAR MUSEUM INSCRIPTION	HARI PARBAT GRAVE STONE INSC.	USHKUR RELIEF INSC.	S.P.S. MUSEUM STORAGE VESSEL INSC.	WULAR - HAMA INSCRIPTION	ZAJI - NAI INSCRIPTION
क	क	क	क	क	कक		क	क
ख	ख	खख	ख	ख	खख		ख	
ग	ग	ग	ग	ग	ग		गग	ग
ङ	ङ		ङ		ङ	ङ		ङ
च	च	च	च		च		च	
छ		छ	छ					
ज	ज	ज	ज	ज			ज	
झ		झ	झ					
ट	ट	ट				ट		ट
ठ	ठ	ठ						
ड	ड	ड	ड					
ढ		ढ						
न	न	न	न					
त	त	त	त	त	त		तत	त

थ	थ	थ						थ	थ
द	द	द	द	द	द			द	द
ध	ध	ध						ध	ध
न	न	न	न	न				न	न
प	प	प	प	प	प			प	प
फ						फ			फ
ब		ब			ब				
भ	भ	भ	भ					भ	
म	म	म	म	म	म	म	म	म	म
य	य	य	य		य			य	य
र	र	र	र	र	र			र	र
ल	ल	ल	ल	ल	ल			ल	ल
व	व	व	व	व	व	व	व	व	व
श	श	श	श	श	श			श	श
ष		ष	ष		ष				
स	स	स	स	स	स			स	स
ह	ह	ह	ह	ह			ह		
ख	ख	ख							
Var.		व	व		व				

Figure 23: Comparison of Sharada forms found in inscriptions from 14th–16th century (from Kaul Deambi 1982: Table 4b). Compare with forms found in manuscripts from 12th–16th century, as shown in Figure 24.

	BAKSHALI MS. c. 12TH CENT.	MS. OF MUNI-MATA MANI-MĀLĀ c. 14TH CENT.	MS. OF ŚAKUNTALĀ c. 16TH CENT.	MS. OF ĀDI-SABHĀ PARVAN OF MAHĀBHĀRATA c. 16TH CENT.	MS. OF KATHA- SARIT-SĀGARA c. 16TH CENT.	MS. OF BĀLA- BODHINI H. 1158 (A.D. 1745)
k	क	क	क	क	क	क
kh	ख	ख	ख	ख	ख	ख
g	ग	ग	ग	ग	ग	ग
gh	घ		घ	घ	घ	घ
ng	ङ	ङ	ङ	ङ	ङ	ङ
c	च	च	च	च	च	च
ch	छ		छ	छ	छ	छ
j	ज	ज	ज	ज	ज	ज
jh	झ		झ		झ	झ
ñ	ञ	ञ	ञ	ञ	ञ	ञ
t	ट	ट	ट	ट	ट	ट
th		०	०	०	०	०
d	ड	ड	ड	ड	ड	ड
dh	ढ	ढ	ढ ढ	ढ	ढ	ढ ढ
n	न	न	न	न	न	न
t	त	त	त	त	त	त
th	थ	थ	थ	थ	थ	थ
d	द	द	द	द	द	द
dh	ध		ध		ध	
v	व	व	व	व	व	व
s'	श	श	श	श	श	श
ś	ष	ष	ष	ष	ष	ष
s	स	स	स	स	स	स
h	ह	ह	ह	ह	ह	ह
hh	ह्र	ह्र			ह्र	
hp	ह्र	ह्र			ह्र	
vir	ॠ	ॠ	ॠ	ॠ	ॠ	ॠ

Figure 24: Comparison of Sharada forms found in manuscripts from 12th–16th century (from Kaul Deambi 1982: Table 5b). Compare with forms found in inscriptions from 14th–16 century, as shown in Figure 23.

शारदा (कश्मीरी) लिपि की उत्पत्ति.

अ = 𑀅 𑀆 𑀇 𑀈 𑀉	आ = 𑀊 𑀋 𑀌 𑀍 𑀎	इ = 𑀏 𑀐 𑀑 𑀒 𑀓	ई = 𑀔 𑀕 𑀖 𑀗 𑀘	उ = 𑀙 𑀚 𑀛 𑀜 𑀝	ऊ = 𑀞 𑀟 𑀠 𑀡 𑀢	ऋ = 𑀣 𑀤 𑀥 𑀦 𑀧	ॠ = 𑀨 𑀩 𑀪 𑀫 𑀬	ऌ = 𑀭 𑀮 𑀯 𑀰 𑀱	ॡ = 𑀲 𑀳 𑀴 𑀵 𑀶	ऋ = 𑀷 𑀸 𑀹 𑀺 𑀻	ॠ = 𑀼 𑀽 𑀾 𑀿 𑀿	ऌ = 𑀿 𑀿 𑀿 𑀿 𑀿	ॡ = 𑀿 𑀿 𑀿 𑀿 𑀿
क = 𑀀 𑀁 𑀂 𑀃 𑀄	ख = 𑀅 𑀆 𑀇 𑀈 𑀉	ग = 𑀊 𑀋 𑀌 𑀍 𑀎	घ = 𑀏 𑀐 𑀑 𑀒 𑀓	ङ = 𑀔 𑀕 𑀖 𑀗 𑀘	च = 𑀙 𑀚 𑀛 𑀜 𑀝	छ = 𑀞 𑀟 𑀠 𑀡 𑀢	ज = 𑀣 𑀤 𑀥 𑀦 𑀧	झ = 𑀨 𑀩 𑀪 𑀫 𑀬	ञ = 𑀭 𑀮 𑀯 𑀰 𑀱	ट = 𑀲 𑀳 𑀴 𑀵 𑀶	ठ = 𑀷 𑀸 𑀹 𑀺 𑀻	ड = 𑀼 𑀽 𑀾 𑀿 𑀿	ढ = 𑀿 𑀿 𑀿 𑀿 𑀿
त = 𑀀 𑀁 𑀂 𑀃 𑀄	थ = 𑀅 𑀆 𑀇 𑀈 𑀉	द = 𑀊 𑀋 𑀌 𑀍 𑀎	ध = 𑀏 𑀐 𑀑 𑀒 𑀓	न = 𑀔 𑀕 𑀖 𑀗 𑀘	प = 𑀙 𑀚 𑀛 𑀜 𑀝	फ = 𑀞 𑀟 𑀠 𑀡 𑀢	ब = 𑀣 𑀤 𑀥 𑀦 𑀧	भ = 𑀨 𑀩 𑀪 𑀫 𑀬	म = 𑀭 𑀮 𑀯 𑀰 𑀱	य = 𑀲 𑀳 𑀴 𑀵 𑀶	र = 𑀷 𑀸 𑀹 𑀺 𑀻	ल = 𑀼 𑀽 𑀾 𑀿 𑀿	व = 𑀿 𑀿 𑀿 𑀿 𑀿
श = 𑀀 𑀁 𑀂 𑀃 𑀄	ष = 𑀅 𑀆 𑀇 𑀈 𑀉	स = 𑀊 𑀋 𑀌 𑀍 𑀎	ह = 𑀏 𑀐 𑀑 𑀒 𑀓	ळ = 𑀔 𑀕 𑀖 𑀗 𑀘	व = 𑀙 𑀚 𑀛 𑀜 𑀝	श = 𑀞 𑀟 𑀠 𑀡 𑀢	ष = 𑀣 𑀤 𑀥 𑀦 𑀧	स = 𑀨 𑀩 𑀪 𑀫 𑀬	ह = 𑀭 𑀮 𑀯 𑀰 𑀱	ळ = 𑀲 𑀳 𑀴 𑀵 𑀶	व = 𑀷 𑀸 𑀹 𑀺 𑀻	श = 𑀼 𑀽 𑀾 𑀿 𑀿	ष = 𑀿 𑀿 𑀿 𑀿 𑀿

Figure 25: Stages of development of Sharada characters from Brahmi (from Ojhā 1971: Plate LXXXII).

DEVĀŚEṢA

<sup>a</sup> 𑀅	<sup>ā</sup> 𑀆	<sup>i</sup> 𑀏	<sup>ī</sup> 𑀔	<sup>u</sup> 𑀙	<sup>ū</sup> 𑀞	<sup>e</sup> 𑀛	<sup>ai</sup> 𑀣	<sup>o</sup> 𑀠	<sup>au</sup> 𑀤		
<sup>k</sup> 𑀀	<sup>kh</sup> 𑀁	<sup>g</sup> 𑀊	<sup>gh</sup> 𑀏	<sup>ṅ</sup> 𑀔	<sup>c</sup> 𑀙	<sup>ch</sup> 𑀛	<sup>j</sup> 𑀣	<sup>ṭ</sup> 𑀠	<sup>ṭh</sup> 𑀡		
<sup>ḍ</sup> 𑀕	<sup>ḍh</sup> 𑀖	<sup>n</sup> 𑀔	<sup>t</sup> 𑀙	<sup>ṭh</sup> 𑀛	<sup>d</sup> 𑀛	<sup>dh</sup> 𑀜	<sup>n</sup> 𑀛	<sup>p</sup> 𑀙	<sup>ph</sup> 𑀚		
<sup>bh</sup> 𑀕	<sup>m</sup> 𑀛	<sup>y</sup> 𑀜	<sup>r</sup> 𑀛	<sup>l</sup> 𑀛	<sup>v</sup> 𑀜	<sup>ś</sup> 𑀛	<sup>ṣ</sup> 𑀜	<sup>s</sup> 𑀛	<sup>h</sup> 𑀛		
<sup>tā</sup> 𑀕	<sup>nā</sup> 𑀛	<sup>bhi</sup> 𑀛	<sup>sī</sup> 𑀛	<sup>pu</sup> 𑀛	<sup>śu</sup> 𑀛	<sup>pū</sup> 𑀛	<sup>ur</sup> 𑀛	<sup>se</sup> 𑀛	<sup>śai</sup> 𑀛	<sup>so</sup> 𑀛	
<sup>kṣ</sup> 𑀕	<sup>tr</sup> 𑀕	<sup>jñ</sup> 𑀛	<sup>rkam</sup> 𑀛	<sup>ṭā</sup> 𑀛	<sup>lp</sup> 𑀛	<sup>nm</sup> 𑀛	<sup>ṇḍ</sup> 𑀛	<sup>kr</sup> 𑀛	<sup>ṣṭ</sup> 𑀛	<sup>stu</sup> 𑀛	

ṬĀKARĪ

<sup>a</sup> 𑀅	<sup>ā</sup> 𑀆	<sup>i</sup> 𑀏	<sup>ī</sup> 𑀔	<sup>u</sup> 𑀙	<sup>ū</sup> 𑀞	<sup>e</sup> 𑀛	<sup>ai</sup> 𑀣	<sup>o</sup> 𑀠	<sup>au</sup> 𑀤		
<sup>k</sup> 𑀀	<sup>kh</sup> 𑀁	<sup>g</sup> 𑀊	<sup>gh</sup> 𑀏	<sup>ṅ</sup> 𑀔	<sup>c</sup> 𑀙	<sup>ch</sup> 𑀛	<sup>j</sup> 𑀣	<sup>jh</sup> 𑀛	<sup>ñ</sup> 𑀛		
<sup>ṭ</sup> 𑀠	<sup>ṭh</sup> 𑀡	<sup>ḍ</sup> 𑀛	<sup>ḍh</sup> 𑀜	<sup>n</sup> 𑀛	<sup>t</sup> 𑀙	<sup>ṭh</sup> 𑀛	<sup>d</sup> 𑀛	<sup>dh</sup> 𑀜	<sup>n</sup> 𑀛		
<sup>p</sup> 𑀙	<sup>ph</sup> 𑀚	<sup>ph</sup> 𑀛	<sup>bh</sup> 𑀕	<sup>m</sup> 𑀛	<sup>y</sup> 𑀜	<sup>r</sup> 𑀛	<sup>l</sup> 𑀛	<sup>v</sup> 𑀜	<sup>ś</sup> 𑀛		
<sup>ṣ</sup> 𑀛	<sup>s</sup> 𑀛	<sup>h</sup> 𑀛	<sup>kā</sup> 𑀛	<sup>ki</sup> 𑀛	<sup>kī</sup> 𑀛	<sup>ku</sup> 𑀛	<sup>kū</sup> 𑀛	<sup>ke</sup> 𑀛	<sup>kai</sup> 𑀛	<sup>ko</sup> 𑀛	<sup>kau</sup> 𑀛

Figure 26: The Devaśeṣa and Ṭākārī descendents of Sharada (from Kaul Deambi 2008: 134).

CHIFFRES.	VALEURS.	NOMS DE NOMBRES.	CHIFFRES.	VALEURS.	NOMS DE NOMBRES.
०	1	akh.	३०	30	vouh.
३	2	dzouh (pour douh).	३०	31	akavouh.
३३	3	tré.	३३	32	dzitavouh.
न	4	tsór, tchór.	३३	33	trouvouh.
५	5	páñts, páñtch.	३न	34	tsouh, tchouh.
४	6	chek.	३५	35	páñtsouh, páñtchouh.
१	7	sat.	३४	36	chouvoouh.
३	8	aét.	३१	37	satávouh.
७	9	nouñ.	३३	38	dtávouh.
००	10	dah.	३७	39	kounatrouh.
००	11	kéh.	३०	30	trouh.
०३	12	bouah.	३०	31	akatrouh.
०३	13	tourva.	३३	32	doitrouh.
०न	14	tsóda, tchóda.	३३	33	tétrouh.
०५	15	páñda.	३न	34	tsouitrouh.
०४	16	choura.	३५	35	páñtsatrouh.
०१	17	sada.	३४	36	chéitrouh.
०३	18	arada.	३१	37	satatrouh.
०७	19	kounavouh.	३३	38	aratrouh.
३७	39	kounatádji.	४०	40	tsatádji.
न०	40	tsatádji.	४३	43	tséitádji.
न३	41	akátádji.	४न	44	tsouitádji.
न३	42	douitádji.	४५	45	páñtsatádji.
न३	43	tséitádji.	४४	46	chéitádji.
नन	44	tsouitádji.	४१	47	satatádji.
न५	45	páñtsatádji.	४३	48	aratádji.
न४	46	chéitádji.	४३	49	kounavandzah.
न१	47	satatádji.	५०	50	páñtsah, páñtchah.
न३	48	aratádji.	५०	51	akavandzah.
न७	49	kounavandzah.	५३	52	douvandzah.
५०	50	páñtsah, páñtchah.	५३	53	trouvandzah.
५०	51	akavandzah.	५न	54	tsouvandzah.
५३	52	douvandzah.	५३	55	páñtsouvandzah.
५३	53	trouvandzah.	५५	56	chavandzah.
५न	54	tsouvandzah.	५१	57	satavandzah.
५५	55	páñtsouvandzah.	५३	58	aravandzah.
५४	56	chavandzah.	५७	59	kounahdt.
५१	57	satavandzah.	५०	60	chdhdt.
५३	58	aravandzah.	६१	61	akahdt.
५७	59	kounahdt.	६३	62	douhdt.
५०	60	chdhdt.	६३	63	tréihdt.
६१	61	akahdt.	६न	64	tsouhdt.
६३	62	douhdt.	६५	65	páñtsahdt.
६३	63	tréihdt.	६४	66	chihdt.
६न	64	tsouhdt.	६५	67	satahdt.
६५	65	páñtsahdt.	६३	68	arahdt.
६४	66	chihdt.	६७	69	kounasatat.
६५	67	satahdt.	१०	70	satat.
६३	68	arahdt.	१०	71	akasatat.
६७	69	kounasatat.	१३	72	dousatat.
१०	70	satat.	१३	73	trésatat.
१०	71	akasatat.	१न	74	tsosatat.
१३	72	dousatat.	१५	75	páñtsasatat.
१३	73	trésatat.	१४	76	chehsatat.
१न	74	tsosatat.	११	77	satasatat.
१५	75	páñtsasatat.	१३	78	arasatat.
१४	76	chehsatat.	१७	79	kounachdt.
११	77	satasatat.	३०	80	chdt.
१३	78	arasatat.	३०	81	akachdt.
१७	79	kounachdt.	३३	82	doichdt.
३०	80	chdt.			
३०	81	akachdt.			
३३	82	doichdt.			

CHIFFRES.	VALEURS.	NOMS DE NOMBRES.	CHIFFRES.	VALEURS.	NOMS DE NOMBRES.
३३	83	tréichdt.	७३	93	trénamat.
३न	84	tsouichdt.	७न	94	tsouamat.
३५	85	páñtsachdt.	७५	95	páñtsanamat.
३४	86	chéichdt.	७४	96	chehnamat.
३१	87	satachdt.	७१	97	satanamat.
३३	88	arachdt.	७३	98	aranamat.
३७	89	kounanamat.	७७	99	naménamat.
७०	90	namat.	०००	100	kat.
७०	91	akanamat.	०००	1,000	sds.
७३	92	dounamat.			

Figure 27: Sharada numbers 1 to 100 printed using a metal font in a French book on numeration systems (from Pihan 1860: 86–88).

## NUMERALS

Roman.	Nāgarī.	Śāradā.	Kāshmirī (Nāgarī).	Kāshmirī (Śāradā).	Trans- literation.
1	१	०	अख्	श्याण	<i>akh</i>
2	२	७	झह्	झाण	<i>zah</i>
3	३	३	त्र्य	त्र्य	<i>trē</i>
4	४	५	चौर	चौर	<i>tsōr</i>
5	५	५	पाँक्	पाँक्	<i>pōtsh</i>
6	६	६	षह्	षाण	<i>shēh</i>
7	७	७	सथ्	साण	<i>sath</i>
8	८	८	ऐठ	ऐठ	<i>aith</i>
9	९	९	नव्	नाण	<i>nav</i>
10	१०	००	दह्	दाण	<i>dah</i>
11	११	००	काह्	काण	<i>kāh</i>
20	२०	७०	बुह्	बाण	<i>wuh</i>
30	३०	३०	त्रह्	त्राण	<i>trah</i>
100	१००	०००	हथ्	हाण	<i>hath</i>
1000	१०००	००००	सास	सास	<i>sās</i>

Figure 28: Sharada numerals (from Grierson 1916: 698).

शारदा	सुरुमुक्ती	कैथि	बंगला	भैथिली	उत्कल	गुजराती	देव नागरी
७ 1	१ 1	१ 1	१ 1	१ 1	१ 1	१ 1	१ 1
७ 2	२ 2	२ 2	२ 2	२ 2	२ 2	२ 2	२ 2
७ 3	३ 3	३ 3	३ 3	३ 3	३ 3	३ 3	३ 3
७ 4	४ 4	४ 4	४ 4	४ 4	४ 4	४ 4	४ 4
७ 5	५ 5	५ 5	५ 5	५ 5	५ 5	५ 5	५ 5
७ 6	६ 6	६ 6	६ 6	६ 6	६ 6	६ 6	६ 6
७ 7	७ 7	७ 7	७ 7	७ 7	७ 7	७ 7	७ 7
७ 8	८ 8	८ 8	८ 8	८ 8	८ 8	८ 8	८ 8
७ 9	९ 9	९ 9	९ 9	९ 9	९ 9	९ 9	९ 9
७० 10	१० 10	१० 10	१० 10	१० 10	१० 10	१० 10	१० 10

Figure 29: Inventory of Sharada numerals from a Nepali book on scripts (from Śākyavaṃśa 1974: 76).

Plate LXXVII.

### लिपिपत्र ७७वां.

वर्तमान शारदा (कश्मीरी), टाकरी और गुरमुखी (पंजाबी) लिपियां.

शारदा (कश्मीरी) लिपि.

अ आ इ ई उ ऊ ऋ ॠ ए ऐ ओ औ अं अः क ख ग  
 घ ङ च छ ज झ ञ ट ठ ड ढ ण त थ द ध न प  
 फ ब म म य र ल व श ष स ह का कि की कु कू  
 के कै को कौ कं कः १ २ ३ ४ ५ ६ ७ ८ ९ ०  
 के कै केँ केँँ कं कः ० ३ ३ २ ५ ७ १ ५ ७ ०

टाकरी लिपि.

अ आ इ ई उ ऊ ऋ ॠ ए ऐ ओ औ अं अः क ख ग घ ङ च  
 छ ज झ ञ ट ठ ड ढ ण त थ द ध न प फ ब म  
 य र ल व श ष स ह का कि की कु कू के कै  
 को कौ कं कः १ २ ३ ४ ५ ६ ७ ८ ९ ०  
 केँ केँँ केँँँ ० ३ ३ २ ४ ५ ७ १ ५ ७ ०

गुरमुखी (पंजाबी) लिपि.

अ आ इ ई उ ऊ ऋ ए ऐ ओ औ अं अः क ख ग घ  
 ङ च छ ज झ ञ ट ठ ड ढ ण त थ द ध न प  
 फ ब म म य र ल व श ष स ह ख ग ज फ का  
 कि की कु कू के कै को कौ कं कः १ २ ३ ४ ५ ६ ७ ८ ९ ०  
 रि री रु रू रे रै रेँ रेँँ रं रः १ २ ३ ४ ५ ६ ७ ८ ९ ०

Figure 30: Comparison of Sharada, Takri, and Gurmukhi (from Ojhā 1971: Plate LXXVII).

Lautwert	Śāradā 804	Kasch- mirī	Ṭākri		Laṇḍā		Multani	Gur- mukhi
			Jaun- sari	Cha- meāli	Khu- dāwādi	Sindhi- Schrift		
a	𑆑	𑆑	𑆑	𑆑	𑆑	𑆑	𑆑	𑆑
i	𑆒	𑆒	𑆒	𑆒	𑆒	𑆒	𑆒	𑆒
u	𑆓	𑆓	𑆓	𑆓	𑆓	𑆓	𑆓	𑆓
e	𑆔	𑆔	𑆔	𑆔	𑆔	𑆔	𑆔	𑆔
o	𑆕	𑆕	𑆕	𑆕	𑆕	𑆕	𑆕	𑆕
ā	𑆖	𑆖	𑆖	𑆖	𑆖	𑆖	𑆖	𑆖
ka	𑆗	𑆗	𑆗	𑆗	𑆗	𑆗	𑆗	𑆗
kha	𑆘	𑆘	𑆘	𑆘	𑆘	𑆘	𑆘	𑆘
ga	𑆙	𑆙	𑆙	𑆙	𑆙	𑆙	𑆙	𑆙
gha	𑆚	𑆚	𑆚	𑆚	𑆚	𑆚	𑆚	𑆚
ṅa	𑆛	𑆛	𑆛	𑆛	𑆛	𑆛	𑆛	𑆛
ḥa	𑆜	𑆜	𑆜	𑆜	𑆜	𑆜	𑆜	𑆜
ḡa	𑆝	𑆝	𑆝	𑆝	𑆝	𑆝	𑆝	𑆝
ḥa	𑆞	𑆞	𑆞	𑆞	𑆞	𑆞	𑆞	𑆞
ḡa	𑆟	𑆟	𑆟	𑆟	𑆟	𑆟	𑆟	𑆟
ṅa	𑆠	𑆠	𑆠	𑆠	𑆠	𑆠	𑆠	𑆠
ṭa	𑆡	𑆡	𑆡	𑆡	𑆡	𑆡	𑆡	𑆡
ṭha	𑆢	𑆢	𑆢	𑆢	𑆢	𑆢	𑆢	𑆢
ḍa	𑆣	𑆣	𑆣	𑆣	𑆣	𑆣	𑆣	𑆣
ḍha	𑆤	𑆤	𑆤	𑆤	𑆤	𑆤	𑆤	𑆤
ṇa	𑆥	𑆥	𑆥	𑆥	𑆥	𑆥	𑆥	𑆥
ṇa	𑆦	𑆦	𑆦	𑆦	𑆦	𑆦	𑆦	𑆦
ṭa	𑆧	𑆧	𑆧	𑆧	𑆧	𑆧	𑆧	𑆧
ṭha	𑆨	𑆨	𑆨	𑆨	𑆨	𑆨	𑆨	𑆨
ḍa	𑆩	𑆩	𑆩	𑆩	𑆩	𑆩	𑆩	𑆩
ḍha	𑆪	𑆪	𑆪	𑆪	𑆪	𑆪	𑆪	𑆪
ṇa	𑆫	𑆫	𑆫	𑆫	𑆫	𑆫	𑆫	𑆫
ṇa	𑆬	𑆬	𑆬	𑆬	𑆬	𑆬	𑆬	𑆬
pa	𑆭	𑆭	𑆭	𑆭	𑆭	𑆭	𑆭	𑆭
pha	𑆮	𑆮	𑆮	𑆮	𑆮	𑆮	𑆮	𑆮
ba	𑆯	𑆯	𑆯	𑆯	𑆯	𑆯	𑆯	𑆯
bha	𑆰	𑆰	𑆰	𑆰	𑆰	𑆰	𑆰	𑆰
ma	𑆱	𑆱	𑆱	𑆱	𑆱	𑆱	𑆱	𑆱
ya	𑆲	𑆲	𑆲	𑆲	𑆲	𑆲	𑆲	𑆲
ra	𑆳	𑆳	𑆳	𑆳	𑆳	𑆳	𑆳	𑆳
la	𑆴	𑆴	𑆴	𑆴	𑆴	𑆴	𑆴	𑆴
va	𑆵	𑆵	𑆵	𑆵	𑆵	𑆵	𑆵	𑆵
śa	𑆶	𑆶	𑆶	𑆶	𑆶	𑆶	𑆶	𑆶
ṣa	𑆷	𑆷	𑆷	𑆷	𑆷	𑆷	𑆷	𑆷
sa	𑆸	𑆸	𑆸	𑆸	𑆸	𑆸	𑆸	𑆸
ha	𑆹	𑆹	𑆹	𑆹	𑆹	𑆹	𑆹	𑆹

Figure 31: Comparison of Sharada, Takri, Landa, and related scripts (from Jensen 1969: 366).



नागरी	ब्राह्मी	शारदा	टाकरी	लंडा	महाजनी	गुरुमुखी	नागरी	ब्राह्मी	शारदा	टाकरी	लंडा	महाजनी	गुरुमुखी	नागरी	ब्राह्मी	शारदा	टाकरी	लंडा	महाजनी	गुरुमुखी
अ	𑀅	𑀓	𑀔	𑀕	𑀖	𑀗	क	𑀅	𑀓	𑀔	𑀕	𑀖	𑀗	प	𑀅	𑀓	𑀔	𑀕	𑀖	𑀗
आ	𑀆	𑀔	𑀕	𑀖	𑀗	𑀘	ख	𑀆	𑀔	𑀕	𑀖	𑀗	𑀘	फ	𑀆	𑀔	𑀕	𑀖	𑀗	𑀘
इ	𑀇	𑀕	𑀖	𑀗	𑀘	𑀙	ग	𑀇	𑀕	𑀖	𑀗	𑀘	𑀙	ब	𑀇	𑀕	𑀖	𑀗	𑀘	𑀙
ई	𑀈	𑀖	𑀗	𑀘	𑀙	𑀚	घ	𑀈	𑀖	𑀗	𑀘	𑀙	𑀚	भ	𑀈	𑀖	𑀗	𑀘	𑀙	𑀚
उ	𑀉	𑀗	𑀘	𑀙	𑀚	𑀛	ङ	𑀉	𑀗	𑀘	𑀙	𑀚	𑀛	म	𑀉	𑀗	𑀘	𑀙	𑀚	𑀛
ऊ	𑀊	𑀘	𑀙	𑀚	𑀛	𑀜	च	𑀊	𑀘	𑀙	𑀚	𑀛	𑀜	य	𑀊	𑀘	𑀙	𑀚	𑀛	𑀜
ऋ	𑀋	𑀙	𑀚	𑀛	𑀜	𑀝	छ	𑀋	𑀙	𑀚	𑀛	𑀜	𑀝	र	𑀋	𑀙	𑀚	𑀛	𑀜	𑀝
ॠ	𑀌	𑀚	𑀛	𑀜	𑀝	𑀞	ज	𑀌	𑀚	𑀛	𑀜	𑀝	𑀞	ल	𑀌	𑀚	𑀛	𑀜	𑀝	𑀞
ऌ	𑀍	𑀛	𑀜	𑀝	𑀞	𑀟	झ	𑀍	𑀛	𑀜	𑀝	𑀞	𑀟	व	𑀍	𑀛	𑀜	𑀝	𑀞	𑀟
ॡ	𑀎	𑀜	𑀝	𑀞	𑀟	𑀠	ञ	𑀎	𑀜	𑀝	𑀞	𑀟	𑀠	श	𑀎	𑀜	𑀝	𑀞	𑀟	𑀠
ॢ	𑀏	𑀝	𑀞	𑀟	𑀠	𑀡	ट	𑀏	𑀝	𑀞	𑀟	𑀠	𑀡	ष	𑀏	𑀝	𑀞	𑀟	𑀠	𑀡
ॣ	𑀐	𑀞	𑀟	𑀠	𑀡	𑀢	ठ	𑀐	𑀞	𑀟	𑀠	𑀡	𑀢	स	𑀐	𑀞	𑀟	𑀠	𑀡	𑀢
।	𑀑	𑀟	𑀠	𑀡	𑀢	𑀣	ड	𑀑	𑀟	𑀠	𑀡	𑀢	𑀣	ह	𑀑	𑀟	𑀠	𑀡	𑀢	𑀣
॥	𑀒	𑀠	𑀡	𑀢	𑀣	𑀤	ढ	𑀒	𑀠	𑀡	𑀢	𑀣	𑀤	ॠ	𑀒	𑀠	𑀡	𑀢	𑀣	𑀤
०	𑀓	𑀡	𑀢	𑀣	𑀤	𑀥	ण	𑀓	𑀡	𑀢	𑀣	𑀤	𑀥	ॡ	𑀓	𑀡	𑀢	𑀣	𑀤	𑀥
१	𑀔	𑀢	𑀣	𑀤	𑀥	𑀦	त	𑀔	𑀢	𑀣	𑀤	𑀥	𑀦	ॢ	𑀔	𑀢	𑀣	𑀤	𑀥	𑀦
२	𑀕	𑀣	𑀤	𑀥	𑀦	𑀧	थ	𑀕	𑀣	𑀤	𑀥	𑀦	𑀧	ॣ	𑀕	𑀣	𑀤	𑀥	𑀦	𑀧
३	𑀖	𑀤	𑀥	𑀦	𑀧	𑀨	द	𑀖	𑀤	𑀥	𑀦	𑀧	𑀨	।	𑀖	𑀤	𑀥	𑀦	𑀧	𑀨
४	𑀗	𑀥	𑀦	𑀧	𑀨	𑀩	ध	𑀗	𑀥	𑀦	𑀧	𑀨	𑀩	॥	𑀗	𑀥	𑀦	𑀧	𑀨	𑀩
५	𑀘	𑀦	𑀧	𑀨	𑀩	𑀪	न	𑀘	𑀦	𑀧	𑀨	𑀩	𑀪	०	𑀘	𑀦	𑀧	𑀨	𑀩	𑀪
६	𑀙	𑀧	𑀨	𑀩	𑀪	𑀫	प	𑀙	𑀧	𑀨	𑀩	𑀪	𑀫	१	𑀙	𑀧	𑀨	𑀩	𑀪	𑀫
७	𑀚	𑀨	𑀩	𑀪	𑀫	𑀬	फ	𑀚	𑀨	𑀩	𑀪	𑀫	𑀬	२	𑀚	𑀨	𑀩	𑀪	𑀫	𑀬
८	𑀛	𑀩	𑀪	𑀫	𑀬	𑀭	ब	𑀛	𑀩	𑀪	𑀫	𑀬	𑀭	३	𑀛	𑀩	𑀪	𑀫	𑀬	𑀭
९	𑀜	𑀪	𑀫	𑀬	𑀭	𑀮	भ	𑀜	𑀪	𑀫	𑀬	𑀭	𑀮	४	𑀜	𑀪	𑀫	𑀬	𑀭	𑀮
१०	𑀝	𑀫	𑀬	𑀭	𑀮	𑀯	म	𑀝	𑀫	𑀬	𑀭	𑀮	𑀯	५	𑀝	𑀫	𑀬	𑀭	𑀮	𑀯
११	𑀞	𑀬	𑀭	𑀮	𑀯	𑀰	य	𑀞	𑀬	𑀭	𑀮	𑀯	𑀰	६	𑀞	𑀬	𑀭	𑀮	𑀯	𑀰
१२	𑀟	𑀭	𑀮	𑀯	𑀰	𑀱	र	𑀟	𑀭	𑀮	𑀯	𑀰	𑀱	७	𑀟	𑀭	𑀮	𑀯	𑀰	𑀱
१३	𑀠	𑀮	𑀯	𑀰	𑀱	𑀲	ल	𑀠	𑀮	𑀯	𑀰	𑀱	𑀲	८	𑀠	𑀮	𑀯	𑀰	𑀱	𑀲
१४	𑀡	𑀯	𑀰	𑀱	𑀲	𑀳	व	𑀡	𑀯	𑀰	𑀱	𑀲	𑀳	९	𑀡	𑀯	𑀰	𑀱	𑀲	𑀳
१५	𑀢	𑀰	𑀱	𑀲	𑀳	𑀴	श	𑀢	𑀰	𑀱	𑀲	𑀳	𑀴	१०	𑀢	𑀰	𑀱	𑀲	𑀳	𑀴
१६	𑀣	𑀱	𑀲	𑀳	𑀴	𑀵	ष	𑀣	𑀱	𑀲	𑀳	𑀴	𑀵	११	𑀣	𑀱	𑀲	𑀳	𑀴	𑀵
१७	𑀤	𑀲	𑀳	𑀴	𑀵	𑀶	स	𑀤	𑀲	𑀳	𑀴	𑀵	𑀶	१२	𑀤	𑀲	𑀳	𑀴	𑀵	𑀶
१८	𑀥	𑀳	𑀴	𑀵	𑀶	𑀷	ह	𑀥	𑀳	𑀴	𑀵	𑀶	𑀷	१३	𑀥	𑀳	𑀴	𑀵	𑀶	𑀷
१९	𑀦	𑀴	𑀵	𑀶	𑀷	𑀸	ॠ	𑀦	𑀴	𑀵	𑀶	𑀷	𑀸	१४	𑀦	𑀴	𑀵	𑀶	𑀷	𑀸
२०	𑀧	𑀵	𑀶	𑀷	𑀸	𑀹	ॢ	𑀧	𑀵	𑀶	𑀷	𑀸	𑀹	१५	𑀧	𑀵	𑀶	𑀷	𑀸	𑀹
२१	𑀨	𑀶	𑀷	𑀸	𑀹	𑀺	ॣ	𑀨	𑀶	𑀷	𑀸	𑀹	𑀺	१६	𑀨	𑀶	𑀷	𑀸	𑀹	𑀺
२२	𑀩	𑀷	𑀸	𑀹	𑀺	𑀻	॥	𑀩	𑀷	𑀸	𑀹	𑀺	𑀻	१७	𑀩	𑀷	𑀸	𑀹	𑀺	𑀻
२३	𑀪	𑀸	𑀹	𑀺	𑀻	𑀼	०	𑀪	𑀸	𑀹	𑀺	𑀻	𑀼	१८	𑀪	𑀸	𑀹	𑀺	𑀻	𑀼
२४	𑀫	𑀹	𑀺	𑀻	𑀼	𑀽	१	𑀫	𑀹	𑀺	𑀻	𑀼	𑀽	१९	𑀫	𑀹	𑀺	𑀻	𑀼	𑀽
२५	𑀬	𑀺	𑀻	𑀼	𑀽	𑀾	२	𑀬	𑀺	𑀻	𑀼	𑀽	𑀾	२०	𑀬	𑀺	𑀻	𑀼	𑀽	𑀾
२६	𑀭	𑀻	𑀼	𑀽	𑀾	𑀿	३	𑀭	𑀻	𑀼	𑀽	𑀾	𑀿	२१	𑀭	𑀻	𑀼	𑀽	𑀾	𑀿
२७	𑀮	𑀼	𑀽	𑀾	𑀿	𑀿	४	𑀮	𑀼	𑀽	𑀾	𑀿	𑀿	२२	𑀮	𑀼	𑀽	𑀾	𑀿	𑀿
२८	𑀯	𑀽	𑀾	𑀿	𑀿	𑀿	५	𑀯	𑀽	𑀾	𑀿	𑀿	𑀿	२३	𑀯	𑀽	𑀾	𑀿	𑀿	𑀿
२९	𑀰	𑀾	𑀿	𑀿	𑀿	𑀿	६	𑀰	𑀾	𑀿	𑀿	𑀿	𑀿	२४	𑀰	𑀾	𑀿	𑀿	𑀿	𑀿
३०	𑀱	𑀿	𑀿	𑀿	𑀿	𑀿	७	𑀱	𑀿	𑀿	𑀿	𑀿	𑀿	२५	𑀱	𑀿	𑀿	𑀿	𑀿	𑀿

Figure 32: Comparison of Sharada with other north-western Indic scripts (from Mule 1974: 160–162).