

**Title:** Preliminary Proposal to Encode the Xawtaa Dorboljin Script in ISO/IEC 10646  
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**Action:** For consideration by UTC and WG2  
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## 1 Introduction

This is a preliminary proposal to encode the Xawtaa Dorboljin script in the Universal Character Set (ISO/IEC 10646). Tentative versions of a code chart, names list, and character properties are included. Research on the script is ongoing and additional details will be provided later. Comments are requested and may be submitted to the author at the email address given above. Any information regarding Soyombo is welcome.

The Xawtaa Dorboljin font used here is based upon the font developed by Oliver Corff in November 2001 for his “Xäwtää Dörböljin for L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>” package. Some modifications have been made to Corff’s font and new glyphs added by the present author. A new font is being developed to accompany the formal proposal to encode Xawtaa Dorboljin.

## 2 Background

The Xawtaa Dorboljin or ‘Horizontal Square’ (Mongolian: Хэвтээ Дөрвөлжин *Xäwtää Dörböljin*) script is an alphasyllabary based upon the Brahmi model. It was used for writing Mongolian, as well as Sanskrit and Tibetan. The script was developed by Zanabazar, the first spiritual leader of Tibetan Buddhism in Mongolia, who also developed the Soyombo script.<sup>1</sup> Xawtaa Dorboljin was inspired by the Tibetan script and has graphical similarities to Phags-pa and its variant forms (see tables 1 and 2).

## 3 Writing System

### 3.1 Vowels

The basic set of vowels is:

A	AA	I	II	U	UU	UE	UUE	E	EE	O	OO	OE	OOE	AI	AU

These letters are composed of the vowel letter A and a unique vowel sign:

-A	-AA	-I	-II	-U	-UU	-UE	-UUE	-E	-EE	-O	-OO	-OE	-OOE	-AI	-AU

As shown, vowel length is indicated by writing the mark ◌ (AA) with the basic vowel sign.

There are additional vowel letters used for writing Sanskrit. These are the vocalic letters:

<sup>1</sup> See Pandey 2010 (N3949 L2/10-399)

𑖀	𑖁	𑖂	𑖃
R	RR	L	LL

These letters are not unique; they are composed using 𑖀 RA + ◌ VOWEL SIGN I and 𑖂 LA + ◌ VOWEL SIGN I, respectively. The ◌ is added to distinguish length.

There are variant forms of some vowel letters:

Regular	𑖄	𑖅
Variant	𑖆	𑖇
	OE	OOE

There is an additional vowel letter used for writing Tibetan:

𑖈  
-A

### 3.2 Consonant Letters

Basic consonant letters:

𑖉	𑖊	𑖋	𑖌	𑖍	𑖎	𑖏	𑖐	𑖑	𑖒
KA	KHA	NGA	CA	CHA	NYA	TA	THA	NA	PA
𑖓	𑖔	𑖕	𑖖	𑖗	𑖘	𑖙	𑖚	𑖛	𑖜
PHA	MA	YA	RA	LA	SHA	SA	HA	KSSA	

Although it is a conjunct, the letter 𑖛 KSSA appears in Xawtaa Dorboljin charts at the end of the basic consonants.

Additional consonant letters presumably used for writing Sanskrit, Tibetan, Chinese, or other languages:

𑖝	𑖞	𑖟	𑖠	𑖡	𑖢	𑖣	𑖤	𑖥	𑖦
GA	GHA	JA	JHA	VA	TTA	TTHA	DDA	DDHA	NNA
𑖧	𑖨	𑖩	𑖪	𑖫	𑖬	𑖭	𑖮	𑖯	𑖰
DA	DHA	BA	BHA	ZHA	ZA	TSA	TSHA	DZA	

The letter 𑖩 BA is shown in charts as also representing VA, which has the distinct glyph 𑖡.

There appear to be variant forms for some consonant letters:

Regular	𑖱	𑖲	𑖳
Variant	𑖴	𑖵	𑖶
	GHA	DHA	VA

### 3.3 Consonant Conjuncts

Consonant conjuncts are represented using atomic ligatures and stacking. Certain ligatures are given as part of the regular character inventory in charts of Xawtaa Dorboljin:



  
 KYA KHYA GLA RGA SGA LGA

Other conjuncts are representing by stacking the consonant letters, in a manner similar to Tibetan:




  
 NYA + DZA

### 3.4 Final Consonants

Coda consonants are represented using ◌ NULL VOWEL. The following consonants may appear as codas:


  
 -g -k -ng -d -n -b -m -r -l -sh -s

### 3.5 Various Signs

- ANUSVARA: 
- NASAL MARK: 

### 3.6 Punctuation

- DANDA: |

### 3.7 Symbols

- SYMBOL: 

## 4 Encoding Model

It may be suitable to implement Xawtaa Dorboljin using the model for Tibetan or Phags-pa.

## 5 Character Names

Character names are based upon those given in charts. Some characters are shown with two names or phonetic values. Some character names may require revisions.

## 6 Character Properties

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11B80;XAWTAA DORBOLJIN LETTER A;Lo;0;L;;;;N;;;;;
11B81;XAWTAA DORBOLJIN LETTER AA;Lo;0;L;;;;N;;;;;
11B82;XAWTAA DORBOLJIN LETTER I;Lo;0;L;;;;N;;;;;
11B83;XAWTAA DORBOLJIN LETTER II;Lo;0;L;;;;N;;;;;
11B84;XAWTAA DORBOLJIN LETTER E;Lo;0;L;;;;N;;;;;
    
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11B85;XAWTAA DORBOLJIN LETTER EE;Lo;0;L;;;;;N;;;;;
11B86;XAWTAA DORBOLJIN LETTER U;Lo;0;L;;;;;N;;;;;
11B87;XAWTAA DORBOLJIN LETTER UU;Lo;0;L;;;;;N;;;;;
11B88;XAWTAA DORBOLJIN LETTER UE;Lo;0;L;;;;;N;;;;;
11B89;XAWTAA DORBOLJIN LETTER UUE;Lo;0;L;;;;;N;;;;;
11B8A;XAWTAA DORBOLJIN LETTER O;Lo;0;L;;;;;N;;;;;
11B8B;XAWTAA DORBOLJIN LETTER OO;Lo;0;L;;;;;N;;;;;
11B8C;XAWTAA DORBOLJIN LETTER OE;Lo;0;L;;;;;N;;;;;
11B8D;XAWTAA DORBOLJIN LETTER OOE;Lo;0;L;;;;;N;;;;;
11B8E;XAWTAA DORBOLJIN LETTER AI;Lo;0;L;;;;;N;;;;;
11B8F;XAWTAA DORBOLJIN LETTER AU;Lo;0;L;;;;;N;;;;;
11B90;XAWTAA DORBOLJIN LETTER KA;Lo;0;L;;;;;N;;;;;
11B91;XAWTAA DORBOLJIN LETTER KHA;Lo;0;L;;;;;N;;;;;
11B92;XAWTAA DORBOLJIN LETTER NGA;Lo;0;L;;;;;N;;;;;
11B93;XAWTAA DORBOLJIN LETTER CA;Lo;0;L;;;;;N;;;;;
11B94;XAWTAA DORBOLJIN LETTER CHA;Lo;0;L;;;;;N;;;;;
11B95;XAWTAA DORBOLJIN LETTER NYA;Lo;0;L;;;;;N;;;;;
11B96;XAWTAA DORBOLJIN LETTER TA;Lo;0;L;;;;;N;;;;;
11B97;XAWTAA DORBOLJIN LETTER THA;Lo;0;L;;;;;N;;;;;
11B98;XAWTAA DORBOLJIN LETTER NA;Lo;0;L;;;;;N;;;;;
11B99;XAWTAA DORBOLJIN LETTER PA;Lo;0;L;;;;;N;;;;;
11B9A;XAWTAA DORBOLJIN LETTER PHA;Lo;0;L;;;;;N;;;;;
11B9B;XAWTAA DORBOLJIN LETTER MA;Lo;0;L;;;;;N;;;;;
11B9C;XAWTAA DORBOLJIN LETTER YA;Lo;0;L;;;;;N;;;;;
11B9D;XAWTAA DORBOLJIN LETTER RA;Lo;0;L;;;;;N;;;;;
11B9E;XAWTAA DORBOLJIN LETTER LA;Lo;0;L;;;;;N;;;;;
11B9F:<reserved>
11BA0;XAWTAA DORBOLJIN LETTER SHA;Lo;0;L;;;;;N;;;;;
11BA1;XAWTAA DORBOLJIN LETTER SA;Lo;0;L;;;;;N;;;;;
11BA2;XAWTAA DORBOLJIN LETTER HA;Lo;0;L;;;;;N;;;;;
11BA3;XAWTAA DORBOLJIN LETTER KSSA;Lo;0;L;;;;;N;;;;;
11BA4;XAWTAA DORBOLJIN VOWEL SIGN AA;Mn;0;NSM;;;;;N;;;;;
11BA5;XAWTAA DORBOLJIN VOWEL SIGN I;Mn;0;NSM;;;;;N;;;;;
11BA6;XAWTAA DORBOLJIN VOWEL SIGN II;Mn;0;NSM;;;;;N;;;;;
11BA7;XAWTAA DORBOLJIN VOWEL SIGN U;Mn;0;NSM;;;;;N;;;;;
11BA8;XAWTAA DORBOLJIN VOWEL SIGN UU;Mn;0;NSM;;;;;N;;;;;
11BA9;XAWTAA DORBOLJIN VOWEL SIGN UE;Mn;0;NSM;;;;;N;;;;;
11BAA;XAWTAA DORBOLJIN VOWEL SIGN UUE;Mn;0;NSM;;;;;N;;;;;
11BAB;XAWTAA DORBOLJIN VOWEL SIGN E;Mn;0;NSM;;;;;N;;;;;
11BAC;XAWTAA DORBOLJIN VOWEL SIGN EE;Mn;0;NSM;;;;;N;;;;;
11BAD;XAWTAA DORBOLJIN VOWEL SIGN O;Mn;0;NSM;;;;;N;;;;;
11BAE;XAWTAA DORBOLJIN VOWEL SIGN OO;Mn;0;NSM;;;;;N;;;;;
11BAF;XAWTAA DORBOLJIN VOWEL SIGN OE;Mn;0;NSM;;;;;N;;;;;
11BB0;XAWTAA DORBOLJIN VOWEL SIGN OOE;Mn;0;NSM;;;;;N;;;;;
11BB1;XAWTAA DORBOLJIN VOWEL SIGN AI;Mn;0;NSM;;;;;N;;;;;
11BB2;XAWTAA DORBOLJIN VOWEL SIGN AU;Mn;0;NSM;;;;;N;;;;;
11BB3;XAWTAA DORBOLJIN LETTER TTA;Lo;0;L;;;;;N;;;;;
11BB4;XAWTAA DORBOLJIN LETTER TTHA;Lo;0;L;;;;;N;;;;;
11BB5;XAWTAA DORBOLJIN LETTER DDA;Lo;0;L;;;;;N;;;;;
11BB6;XAWTAA DORBOLJIN LETTER DDHA;Lo;0;L;;;;;N;;;;;
11BB7;XAWTAA DORBOLJIN LETTER NNA;Lo;0;L;;;;;N;;;;;
11BB8;XAWTAA DORBOLJIN LETTER ZHA;Lo;0;L;;;;;N;;;;;
11BB9;XAWTAA DORBOLJIN LETTER ZA;Lo;0;L;;;;;N;;;;;
11BBA;XAWTAA DORBOLJIN LETTER GA;Lo;0;L;;;;;N;;;;;
11BBB;XAWTAA DORBOLJIN LETTER GHA;Lo;0;L;;;;;N;;;;;
11BBC;XAWTAA DORBOLJIN LETTER JA;Lo;0;L;;;;;N;;;;;
11BBD;XAWTAA DORBOLJIN LETTER JHA;Lo;0;L;;;;;N;;;;;
11BBE;XAWTAA DORBOLJIN LETTER VA;Lo;0;L;;;;;N;;;;;
11BBF;XAWTAA DORBOLJIN LETTER DA;Lo;0;L;;;;;N;;;;;
11BC0;XAWTAA DORBOLJIN LETTER DHA;Lo;0;L;;;;;N;;;;;
11BC1;XAWTAA DORBOLJIN LETTER BA;Lo;0;L;;;;;N;;;;;

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11BC2;XAWTAA DORBOLJIN LETTER BHA;Lo;0;L;;;;N;;;;;
11BC3;XAWTAA DORBOLJIN LETTER -A;Lo;0;L;;;;N;;;;;
11BC4;XAWTAA DORBOLJIN LETTER TSA;Lo;0;L;;;;N;;;;;
11BC5;XAWTAA DORBOLJIN LETTER TSHA;Lo;0;L;;;;N;;;;;
11BC6;XAWTAA DORBOLJIN LETTER DZA;Lo;0;L;;;;N;;;;;
11BC7;XAWTAA DORBOLJIN LIGATURE KRA;Lo;0;L;;;;N;;;;;
11BC8;XAWTAA DORBOLJIN LIGATURE KHYA;Lo;0;L;;;;N;;;;;
11BC9;XAWTAA DORBOLJIN LIGATURE GLA;Lo;0;L;;;;N;;;;;
11BCA;XAWTAA DORBOLJIN LIGATURE RGA;Lo;0;L;;;;N;;;;;
11BCB;XAWTAA DORBOLJIN LIGATURE SGA;Lo;0;L;;;;N;;;;;
11BCC;XAWTAA DORBOLJIN LIGATURE LGA;Lo;0;L;;;;N;;;;;
11BCD;XAWTAA DORBOLJIN ANUSVARA;Mn;0;NSM;;;;N;;;;;
11BCE;XAWTAA DORBOLJIN NULL VOWEL;Mn;0;NSM;;;;N;;;;;
11BCF;XAWTAA DORBOLJIN NASAL MARK;Mn;0;NSM;;;;N;;;;;
11BD0;XAWTAA DORBOLJIN DANDA;Po;0;L;;;;N;;;;;
11BD1;XAWTAA DORBOLJIN SYMBOL;Lo;0;L;;;;N;;;;;

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## 7 References

- Corff, Oliver. Xäwtää Dörböljin, or The Mongolian Horizontal Square Alphabet for L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, Release 0.4 alpha. November 5, 2001. <http://www.tex.ac.uk/CTAN/languages/mongolian/mxd/>
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	11B8	11B9	11BA	11BB	11BC	11BD
0	 11B80	 11B90	 11BA0	 11BB0	 11BC0	 11BD0
1	 11B81	 11B91	 11BA1	 11BB1	 11BC1	 11BD1
2	 11B82	 11B92	 11BA2	 11BB2	 11BC2	
3	 11B83	 11B93	 11BA3	 11BB3	 11BC3	
4	 11B84	 11B94	 11BA4	 11BB4	 11BC4	
5	 11B85	 11B95	 11BA5	 11BB5	 11BC5	
6	 11B86	 11B96	 11BA6	 11BB6	 11BC6	
7	 11B87	 11B97	 11BA7	 11BB7	 11BC7	
8	 11B88	 11B98	 11BA8	 11BB8	 11BC8	
9	 11B89	 11B99	 11BA9	 11BB9	 11BC9	
A	 11B8A	 11B9A	 11BAA	 11BBA	 11BCA	
B	 11B8B	 11B9B	 11BAB	 11BBB	 11BCB	
C	 11B8C	 11B9C	 11BAC	 11BBC	 11BCC	
D	 11B8D	 11B9D	 11BAD	 11BBD	 11BCD	
E	 11B8E	 11B9E	 11BAE	 11BBE	 11BCE	
F	 11B8F		 11BAF	 11BBF	 11BCF	

Figure 1: Proposed code chart for Xawtaa Dorboljin.

**Vowels**

11B80	𑄀	XAWTAA DORBOLJIN LETTER A
11B81	𑄁	XAWTAA DORBOLJIN LETTER AA
11B82	𑄂	XAWTAA DORBOLJIN LETTER I
11B83	𑄃	XAWTAA DORBOLJIN LETTER II
11B84	𑄄	XAWTAA DORBOLJIN LETTER E
11B85	𑄅	XAWTAA DORBOLJIN LETTER EE
11B86	𑄆	XAWTAA DORBOLJIN LETTER U
11B87	𑄇	XAWTAA DORBOLJIN LETTER UU
11B88	𑄈	XAWTAA DORBOLJIN LETTER UE
11B89	𑄉	XAWTAA DORBOLJIN LETTER UUE
11B8A	𑄊	XAWTAA DORBOLJIN LETTER O
11B8B	𑄋	XAWTAA DORBOLJIN LETTER OO
11B8C	𑄌	XAWTAA DORBOLJIN LETTER OE
11B8D	𑄍	XAWTAA DORBOLJIN LETTER OOE
11B8E	𑄎	XAWTAA DORBOLJIN LETTER AI
11B8F	𑄏	XAWTAA DORBOLJIN LETTER AU

**Consonants**

11B90	𑄐	XAWTAA DORBOLJIN LETTER KA
11B91	𑄑	XAWTAA DORBOLJIN LETTER KHA
11B92	𑄒	XAWTAA DORBOLJIN LETTER NGA
11B93	𑄓	XAWTAA DORBOLJIN LETTER CA
11B94	𑄔	XAWTAA DORBOLJIN LETTER CHA
11B95	𑄕	XAWTAA DORBOLJIN LETTER NYA
11B96	𑄖	XAWTAA DORBOLJIN LETTER TA
11B97	𑄗	XAWTAA DORBOLJIN LETTER THA
11B98	𑄘	XAWTAA DORBOLJIN LETTER NA
11B99	𑄙	XAWTAA DORBOLJIN LETTER PA
11B9A	𑄚	XAWTAA DORBOLJIN LETTER PHA
11B9B	𑄛	XAWTAA DORBOLJIN LETTER MA
11B9C	𑄜	XAWTAA DORBOLJIN LETTER YA
11B9D	𑄝	XAWTAA DORBOLJIN LETTER RA
11B9E	𑄞	XAWTAA DORBOLJIN LETTER LA
11B9F	𑄟	<reserved>
11BA0	𑄠	XAWTAA DORBOLJIN LETTER SHA
11BA1	𑄡	XAWTAA DORBOLJIN LETTER SA
11BA2	𑄢	XAWTAA DORBOLJIN LETTER HA
11BA3	𑄣	XAWTAA DORBOLJIN LETTER KSSA

**Vowel signs**

11BA4	𑄤	XAWTAA DORBOLJIN VOWEL SIGN AA
11BA5	𑄥	XAWTAA DORBOLJIN VOWEL SIGN I
11BA6	𑄦	XAWTAA DORBOLJIN VOWEL SIGN II
11BA7	𑄧	XAWTAA DORBOLJIN VOWEL SIGN U
11BA8	𑄨	XAWTAA DORBOLJIN VOWEL SIGN UU
11BA9	𑄩	XAWTAA DORBOLJIN VOWEL SIGN UE
11BAA	𑄪	XAWTAA DORBOLJIN VOWEL SIGN UUE
11BAB	𑄫	XAWTAA DORBOLJIN VOWEL SIGN E
11BAC	𑄬	XAWTAA DORBOLJIN VOWEL SIGN EE
11BAD	𑄭	XAWTAA DORBOLJIN VOWEL SIGN O
11BAE	𑄮	XAWTAA DORBOLJIN VOWEL SIGN OO
11BAF	𑄯	XAWTAA DORBOLJIN VOWEL SIGN OE
11BB0	𑄰	XAWTAA DORBOLJIN VOWEL SIGN OOE
11BB1	𑄱	XAWTAA DORBOLJIN VOWEL SIGN AI
11BB2	𑄲	XAWTAA DORBOLJIN VOWEL SIGN AU

**Consonants**

11BB3	𑄳	XAWTAA DORBOLJIN LETTER TTA
11BB4	𑄴	XAWTAA DORBOLJIN LETTER TTHA
11BB5	𑄵	XAWTAA DORBOLJIN LETTER DDA
11BB6	𑄶	XAWTAA DORBOLJIN LETTER DDHA
11BB7	𑄷	XAWTAA DORBOLJIN LETTER NNA
11BB8	𑄸	XAWTAA DORBOLJIN LETTER ZHA
11BB9	𑄹	XAWTAA DORBOLJIN LETTER ZA
11BBA	𑄺	XAWTAA DORBOLJIN LETTER GA
11BBB	𑄻	XAWTAA DORBOLJIN LETTER GHA
11BBC	𑄼	XAWTAA DORBOLJIN LETTER JA
11BBD	𑄽	XAWTAA DORBOLJIN LETTER JHA

11BBE	𑄾	XAWTAA DORBOLJIN LETTER VA
11BBF	𑄿	XAWTAA DORBOLJIN LETTER DA
11BC0	𑅀	XAWTAA DORBOLJIN LETTER DHA
11BC1	𑅁	XAWTAA DORBOLJIN LETTER BA
11BC2	𑅂	XAWTAA DORBOLJIN LETTER BHA

**Additions for Tibetan**

11BC3	𑅃	XAWTAA DORBOLJIN LETTER -A
11BC4	𑅄	XAWTAA DORBOLJIN LETTER TSA
11BC5	𑅅	XAWTAA DORBOLJIN LETTER TSHA
11BC6	𑅆	XAWTAA DORBOLJIN LETTER DZA

**Ligatures**

11BC7	𑅇	XAWTAA DORBOLJIN LIGATURE KRA
11BC8	𑅈	XAWTAA DORBOLJIN LIGATURE KHYA
11BC9	𑅉	XAWTAA DORBOLJIN LIGATURE GLA
11BCA	𑅊	XAWTAA DORBOLJIN LIGATURE RGA
11BCB	𑅋	XAWTAA DORBOLJIN LIGATURE SGA
11BCC	𑅌	XAWTAA DORBOLJIN LIGATURE LGA

**Various Symbols**

11BCD	𑅍	XAWTAA DORBOLJIN ANUSVARA
11BCE	𑅎	XAWTAA DORBOLJIN NULL VOWEL
11BCF	𑅏	XAWTAA DORBOLJIN NASAL MARK

**Punctuation**

11BD0	𑅐	XAWTAA DORBOLJIN DANDA
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**Symbols**

11BD1	𑅑	XAWTAA DORBOLJIN SYMBOL
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Figure 2: Proposed names list for Xawtaa Dorboljin.

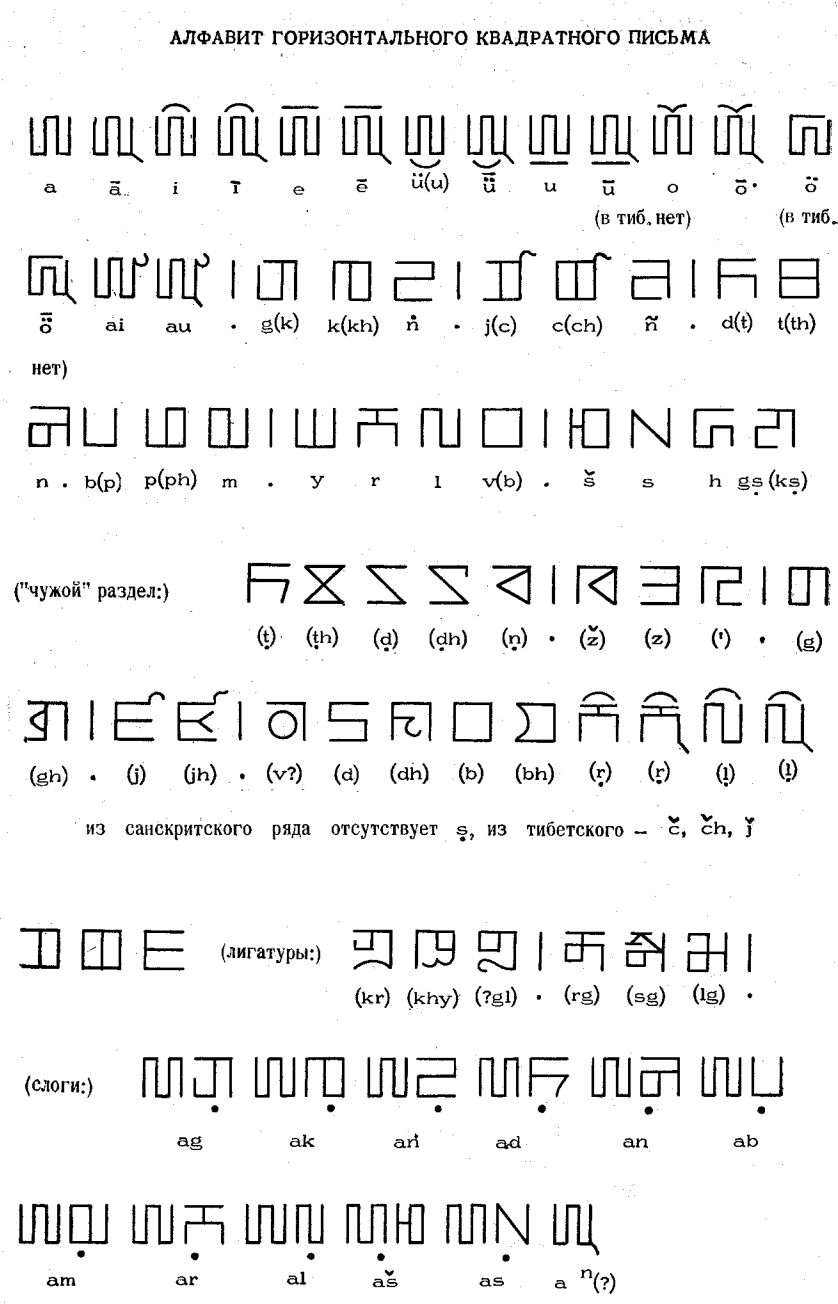


Figure 3: Characters of the Xawtaa Dorboljin script (from Kara 1972: 96).



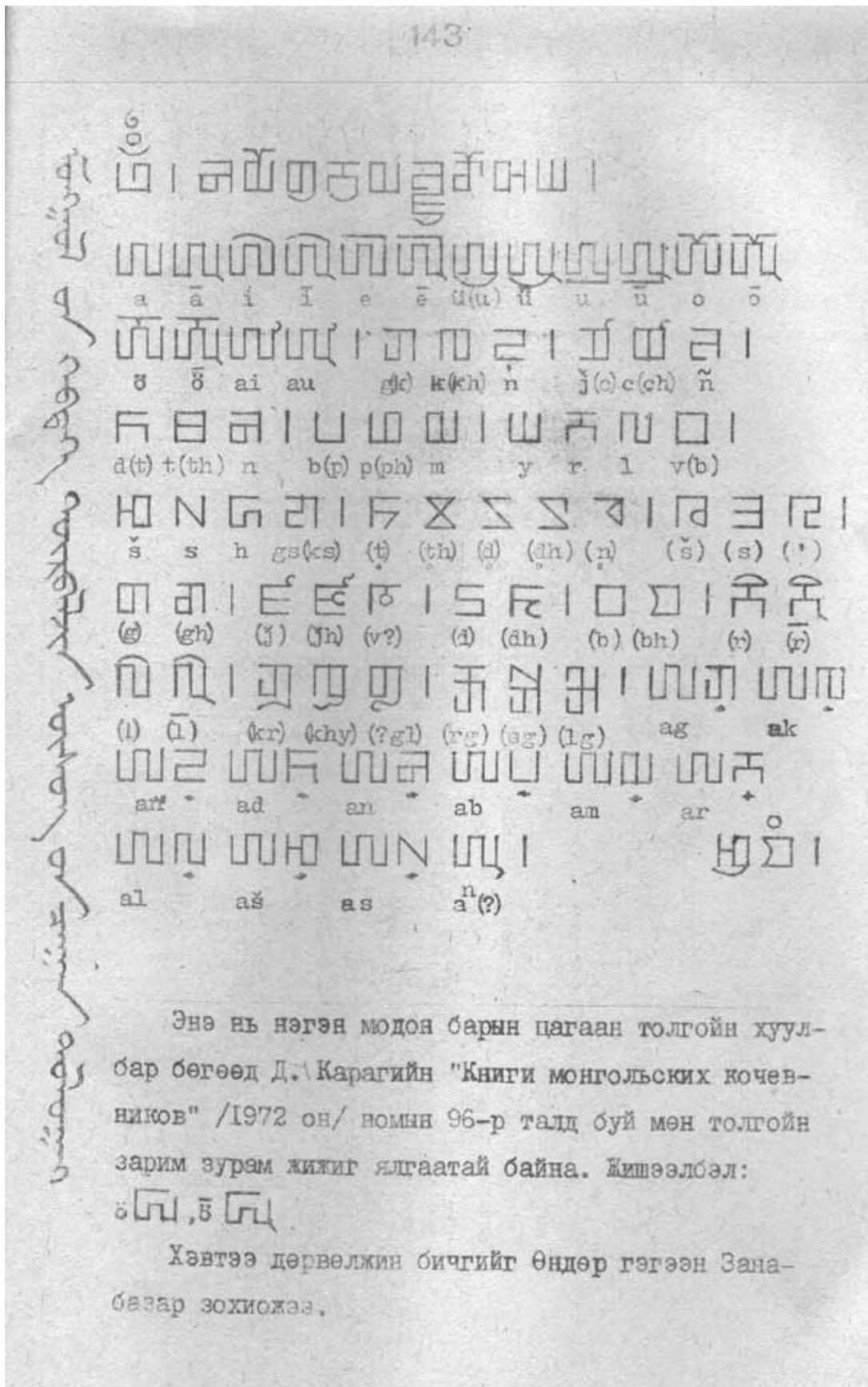


Figure 4: Characters of the Xawtaa Dorboljin script (from Kapaj 2002).

	A	B	C		A	B	C
KA	᠎ᠠ	᠎ᠠ	᠎ᠠ	TSHA	ᠰᠢ	ᠰᠢ	ᠰᠢ
KHA	᠎ᠠ	᠎ᠠ	᠎ᠠ	DZA	ᠳᠵᠠ	ᠳᠵᠠ	ᠳᠵᠠ
GA	᠎ᠠ	᠎ᠠ	᠎ᠠ	VA	ᠶᠠ	ᠶᠠ	ᠶᠠ
GHA	᠎ᠠ	—	—	ZHA	ᠵᠠ	ᠵᠠ	ᠵᠠ
NGA	ᠨᠠ	ᠨᠠ	ᠨᠠ	ZA	ᠵᠠ	ᠵᠠ	ᠵᠠ
CA	ᠴᠠ	ᠴᠠ	ᠴᠠ	-A	ᠠ	ᠠ	ᠠ
CHA	ᠴᠠ	ᠴᠠ	ᠴᠠ	YA	ᠶᠠ	ᠶᠠ	ᠶᠠ
JA	ᠵᠠ	ᠵᠠ	ᠵᠠ	RA	ᠷᠠ	ᠷᠠ	ᠷᠠ
JHA	ᠵᠠ	—	—	LA	ᠯᠠ	ᠯᠠ	ᠯᠠ
NYA	ᠨᠠ	ᠨᠠ	ᠨᠠ	SHA	ᠰᠢ	ᠰᠢ	ᠰᠢ
TA	ᠲᠠ	ᠲᠠ	ᠲᠠ	SA	ᠰᠢ	ᠰᠢ	ᠰᠢ
THA	ᠲᠠ	ᠲᠠ	ᠲᠠ	HA	ᠬᠠ	ᠬᠠ	ᠬᠠ
DA	ᠳᠠ	ᠳᠠ	ᠳᠠ	QA	—	ᠶᠠ	ᠶᠠ
DHA	ᠳᠠ	—	—	XA	—	ᠶᠠ	ᠶᠠ
NA	ᠨᠠ	ᠨᠠ	ᠨᠠ	FA	—	ᠶᠠ	ᠶᠠ
PA	ᠯᠠ	ᠯᠠ	ᠯᠠ	GGA	—	ᠶᠠ	ᠶᠠ
PHA	ᠯᠠ	ᠯᠠ	ᠯᠠ	TTA	ᠲᠠ	ᠲᠠ	ᠲᠠ
BA	ᠪᠠ	ᠪᠠ	ᠪᠠ	TTHA	ᠲᠠ	ᠲᠠ	ᠲᠠ
BHA	ᠪᠠ	—	—	DDA	ᠳᠠ	ᠳᠠ	ᠳᠠ
MA	ᠮᠠ	ᠮᠠ	ᠮᠠ	DDHA	ᠳᠠ	—	—
TSA	ᠲᠠ	ᠲᠠ	ᠲᠠ	NNA	ᠨᠠ	ᠨᠠ	ᠨᠠ

Table 1: Comparison of consonant letters of (A) Xawtaa Dorboljin, (B) Phags-pa seal script, and (C) Phags-pa book script.

	A	B	C
A	ᠠ	ᠠ	ᠠ
AA	ᠠᠠ	—	—
I	ᠢ	ᠢ	ᠢ
II	ᠢᠢ	—	—
E	ᠡ	ᠡ	ᠡ
EE	ᠡᠡ	—	—
U	ᠤ	ᠤ	ᠤ
UU	ᠤᠤ	—	—
UE	ᠤᠡ	ᠤᠡ	ᠤᠡ
UUE	ᠤᠡᠡ	—	—
O	ᠣ	ᠣ	ᠣ
OO	ᠣᠣ	—	—
OE	ᠣᠡ	—	—
OOE	ᠣᠡᠡ	—	—
AU	ᠠᠤ	—	—
AI	ᠠᠢ	—	—

Table 2: Comparison of vowel letters of (A) Xawtaa Dorboljin, (B) Phags-pa seal script, and (C) Phags-pa book script.