

The Consonant System of Middle-Old Tibetan
and the Tonogenesis of Tibetan

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**THE CONSONANT SYSTEM OF MIDDLE-OLD TIBETAN
AND THE TONOGENESIS OF TIBETAN**

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ABSTRACT

Lian Sheng Zhang

This study not only tries to reconstruct the consonant system of Middle-Old Tibetan, but also provides proof for my proposition that the period of Middle-Old Tibetan (from the middle of the 7th century to the second half of the 9th century, A.D.) was the time when the original Tibetan voiced consonants were devoiced and tonogenesis occurred.

I have used three kinds of source materials: 1. extant old Tibetan documents and books, as well as wooden slips and bronze or stone tablets dating from the 7th century to the 9th century; 2. 7th to 9th century transcribed (translated or transliterated) materials between Tibetan and other languages, especially Chinese transcriptions of Tibetan documents and Tibetan transcriptions of Chinese documents; 3. linguistic data from various dialects of Modern Tibetan.

The present study also tries to raise two important points in regard to the evolution of the Tibetan language: 1. During the process by which the ancient voiced consonants were changing to modern voiceless aspirated consonants, there was a stage when those consonants were voiceless unaspirated, e.g., Early-Old Tibetan *b > Middle-Old Tibetan *p > Modern Tibetan *ph. Tibetan tones began to take shape during this intermediate stage. 2. Tibetan writing represents the phonological system of Early Old Tibetan, not that of Middle-Old Tibetan. In the latter period the spoken language was already different from its written language.

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TABLE OF CONTENTS

Chapter One: The Historical Periodization and Phonological Characteristics of Middle-Old Tibetan

	1
1.1. The historical periodization of Tibetan	1
1.2. The basis for the reconstruction	5
1.3. A general view of the historical evolution of Tibetan consonants	11
1.3.1. The consonant system of Modern Tibetan	12
1.3.1.1. The consonant system of Lhasa dialect (Central group)	12
1.3.1.2. The consonant system of Labrang dialect (Amdo group)	13
1.3.1.3. The consonant system in Dege dialect (Khams group)	15
1.3.2. The phonological correspondence between Modern Tibetan (Lhasa dialect) and Tibetan writing	17
1.3.2.1. The modern pronunciation of Tibetan letters	18
1.3.2.2. Correspondences between the consonant letters of written Tibetan and their Modern Tibetan pronunciations in the various parts of the syllable	20
1.4. Notes	27

Chapter Two: The Reconstruction of the Middle-Old Tibetan Consonant System

	31
2.1. Stops	31
2.1.1. Voiceless stops	34

2.1.2.	Voiced stops	43
2.2.	Affricates	59
2.2.1.	Voiceless affricates	59
2.2.2.	Voiced affricates	64
2.3.	Fricatives	68
2.3.1.	Voiceless fricatives	69
2.3.2.	Voiced fricatives	71
2.4.	Nasals	75
2.5.	Lateral	80
2.6.	Semi-vowels	81
2.7.	Reconstruction of the consonant system of Middle-Old Tibetan	84
2.8.	Notes	86

Chapter Three: Tonogenesis in Tibetan

		87
3.1.	Special characteristics of Tibetan orthography	88
3.2.	The relationship between the Modern Tibetan tonal system (Lhasa dialect) and the consonantal elements in Tibetan writing	92
3.2.1.	The Modern Tibetan tonal system and the initial consonants of written Tibetan	92
3.2.2.	The Modern Tibetan tonal system and the final consonants of written Tibetan	96
3.3.	The devoicing of Middle-Old Tibetan consonants and the rise of tonal distinctive features	100
3.4.	The intermediate stage of consonantal evolution and Tibetan tonogenesis	107

3.5.	Notes	114
4.	Appendix	115
5.	Bibliography	242

Chapter One

The Historical Periodization and Phonological Characteristics of Middle-Old Tibetan

The historical periodization of the Tibetan language is not yet settled, in sharp contrast to Chinese, where the various stages of the language's evolution have already been agreed upon and named by scholars. For convenience of discussion, I must therefore suggest my own historical periodization of the Tibetan language. I hope that the evidence I provide in this dissertation will justify these suggestions.

1.1. The historical periodization of Tibetan

Middle-Old Tibetan is defined as the period from the creation of Tibetan writing in the middle of 7th century¹, to the standardization² of Tibetan orthography in the second half of the 9th century. This standardization is motivated in several Tibetan historical documents (Wang, 1982), as follows: "..... to abolish those archaic words which are difficult to read and understand, and replace them with new words easy to read and understand, to keep them (Tibetan letters) in accordance with the time and the place". The word "to read" here (klog³ རྒྱུག་ in Tibetan) should be understood as "to read, to pronounce", and "place" means the central area in which the Tibetan king made his residence⁴. From those documents we may also clearly see at that period the actual pronunciation of those elements in

Tibetan speech was already very different from the Tibetan writing. So that it was important for the king to try to establish his own "standard" spelling.

The chief phonological developments in the Tibetan of this period were the devoicing of originally voiced consonants (which became voiceless unaspirated consonants) (below 2.1, 2.2.), and, towards the end of this time, the development of contrastive tone (below 3.2, 3.3.).

Nishida (1964) and Miller (1976) named the period from the 7th century to the early 9th century Old Tibetan; Wang Yao (1982) called the period from the 7th century to the 9th century Middle-Old Tibetan (中古藏语). Róna-Tas has recently (1985) suggested that Middle-Old Tibetan extended between 650 A.D. and 814 A.D. My own historical periodization of Tibetan differs somewhat from that of any of the above scholars. I agree with Róna-Tas as to the beginning of this period, but I can hardly agree with him on the terminating date. I prefer to place it broadly in the second half of the 9th century rather than fixing an definite date like 814 A.D. since the characteristics of the extant materials are so similar throughout this period (below 1.2.).

I suggest that the evolution of the Tibetan language before the period of Early-New Tibetan be divided into the following four periods:

- 1) Pre-Tibetan, before the 5th century⁵;
- 2) Early-Old Tibetan (hereafter EOT in the charts), from the 5th century to the creation of Tibetan writing;

3) Middle-Old Tibetan (hereafter MOT in the charts), from the mid-7th century (when Tibetan writing was created) to the second half of the 9th century (after Tibetan received its standardization);

4) Late-Old Tibetan (hereafter LOT in the charts), from the standardization of Tibetan to the 10th century.

Tibetan writing was created in the mid-7th century. Since it is an phonetic script, the letters used in the system, and the syllables spelled with those letters must represent the actual pronunciation at that time. The writing system could hardly have been invented arbitrarily, nor is it likely it would have been preserved as an effective means for written communication if it did not reflect closely the pronunciation of the time. Nevertheless, the relationship between the writing system and the speech of a nation is bound to be complex. Writing is supposed to record language, but not all aspects of language can be recorded by writing.

There is much evidence that the creator of Tibetan writing had a good phonological knowledge. What he recorded was the status of the Tibetan language of the period immediately before the time of creation, that is to say, the situation of Early-Old Tibetan. This is the basic starting point of the present reconstruction project.

First, let us examine the consonant system of Early-Old Tibetan as recorded in Written Tibetan (hereafter WT in the charts). Scholars do not doubt that the actual pronunciation of the Early-Old Tibetan consonant system corresponded with the consonant letters in Tibetan writing. Its validity is supported by evidence from ancient Sanskrit⁶, ancient Chinese and the various Modern Tibetan dialects. The Sum-cu-pa (Sum-rtags-tsa-ba dang devi-vgrel-pa Situvi-zhal-lung, Thirty

Rhymes of Tibetan Grammar, Thon-mi, 632), written by the creator of Tibetan writing Thon-mi Sambhota listed 30 consonant letters and four vowel signs, as follows:

TABLE 1

Thirty consonant letters:

ཀ'	ཁ'	ག'	ང'	ཅ'	ཆ'	ཇ'	ཉ'
k	kh	g	ng	c	ch	j	ny
*k ⁷	*kh	*g	*ng	*tc	*tch	*j	*ny
ཏ'	ཐ'	ད'	ན'	པ'	ཕ'	བ'	མ'
t	th	d	n	p	ph	b	m
*t	*th	*d	*n	*p	*ph	*b	*m
ཚ'	ཛ'	ཅ'	མ'	ཞ'	ཟ'	འ'	ཡ'
ts	tsh	dz	w	zh	z	v	y
*ts	*tsh	*dz	*w	*zh	*z	*n ⁸	*y
ར'	ལ'	ཤ'	ས'	ཧ'	ཨ'		
r	l	sh	s	h	a		
*r	*l	*sh	*s	*h	*?		

Four overt vowel signs:

i u e o

*i *u *e *o

The inherent vowel:

□

*a

a

The problems I am going to discuss in this dissertation are how to determine the time frame in which this consonant system began to change, and how the consonant system gradually evolved into its present-day form.

1.2. The documentary basis for the reconstruction

To find support for the reconstruction I have investigated three kinds of source materials:

1) Extant Old Tibetan documents, books, wooden slips, and bronze or stone tablets dating from the 7th to the 9th century;

2) Extant old bilingual materials, especially Chinese-transcribed Tibetan documents or Tibetan-transcribed Chinese documents. Some of the documents used in this dissertation were discovered in the Dunhuang Caves at the end of the 19th century. Some are wooden slips of ancient Tibetan materials which were unearthed in recent years in Xinjiang in North-West China.

In Chinese historiographical works, we can find quite a few Tibetan proper names transliterated into Chinese. Many of those names can also be found in Tibetan bronze and stone tablets. That is

why some Chinese historiographical works are used in this reconstruction project.

3) Linguistic data from various dialects of Modern Tibetan.

The following is a list of the titles and dates of composition of the documents often cited in this dissertation. For information on the authors and editions I have used, please refer to the Bibliography.

TABLE 2

Title of document	direction ⁹ of transcription	year of composition	abbr.
Li shi wen shu ¹⁰	TC, CT	650-744 A.D.	ls
En-lan stag-sgra-klu-khong ji gong bei (Wang, 1982)	TC	736 A.D.	tz
Tang fan hei meng bei (Li, 1956; Wang, 1982)	TC, CT	821 A.D.	tf
Tong dian (Du, 735-812)	TC, CT	735-812 A.D.	td
Jiu Tang shu. Tubo zhuan (Liu, 887-946)	TC, CT	887-946 A.D.	jt

Che fu yuan gui (Wang, 1005-1013)	TC,CT	1005-1013	cf
Qian zi wen (Luo, 1933)	CT	8th-9th C.	qz
Da cheng zhong zong jian jie (Luo, 1933)	CT	8th-9th C.	dc
Zang han dui zhao chi yu (Huang, 1984)	CT, TC	8th-9th C.	cy
Panropolomiduoxin jin (Zhou, 1984)	CT	8th-9th C.	pr
Folk-literature (Thomas, 1957)	CT	8th-9th C.	xp
Feng qhin shi fang fo (Richardson, 1956)	CT	8th-9th C.	fq
Jiu jiu biao (Zhang, L, 1986)	CT	8th-9th C.	jj
Jingang jin (Luo, 1933)	CT	8th-9th C.	jg

Amito jin (Luo, 1933)	CT	8th-9th C.	am
Xinjiang mu jian (Wang, 1986)	CT	8th-9th C.	xj
Yiliao wenxian (Luo and Huang, 1983)	CT	8th-9th C.	yl
Xianyu yinyuan jin (Peillot, 1915)	CT	8th-9th C.	xy
Zizhi tongjian (Sima, 1019-1086)	CT	1019-1086	zz

The earliest of the Tibetan documents is Tubo da shi ji nian (the record of the main events of Tibetan kingdoms) which started its records in 650 A.D (Wang, 1980). The earliest extant Tibetan stone tablet is En-lan stag-sgra-klu-khong ji gong bei dated 763 A.D. (Wang, 1982). The earliest Chinese document is Tong dian dated 735-812 A.D. (Du, 735-812). Though most of these documents date from the mid-8th century, what they recorded are events as early as the 5th century. Correspondences in the events or names described can be found between Tibetan and Chinese sources. There exists a large body of transliterated texts where Chinese words are transcribed into Tibetan letters or vice versa. This wealth of material comprises

documents with a wide range of subject matter. For many of them, the originals are also available and can be compared word by word. No materials can compare with these in their significance for the study of historical phonology of both Chinese and Tibetan.

Most precious for my purpose are those transcribed documents dated since the mid-7th century for which the originals are also available.

The Tibetans began to be in contact with the Chinese Tang Dynasty in 634 A.D.. In the three hundred years from the 7th to the 10th century, they had close connections (including interracial imperial marriages as well as wars) with the Tang Empire and the succeeding dynasties. Those events were recorded in details in both Chinese and Tibetan historical texts, and many proper names can be compared phonetically. For instance, the second emperor of Tang dynasty Tang Taizhong married his daughter Wencheng Gongzhu 文成公主 was married to a Tibetan King in 641 A.D.. This event was recorded in the official history of the Tang Dynasty in Chinese (td, jt, cf, zz) as well as in Tibetan documents (tf, ls). In those Chinese historiographical works, the written form of her title remains constant though some of the documents (jt, cf and zz, tf) were compiled in the 8th century or after the fall of the Tang Dynasty. However, the pronunciation of the title of the Princess was recorded in earlier Tibetan documents as mun-shin-kung-cu (མུན་ཤིན་ཀུང་ཚུ). This should give us some hint as to the Chinese pronunciation of her name in the dialect of her people at that time, provided that we can interpret the Tibetan letters correctly. Also, the Tibetan word for king, btsan-po (བཙན་པོ་), is known in Chinese historical texts as

贊普 . which furnishes a useful hint to the pronunciation of the Tibetan of that period, on the condition that we can reconstruct the Chinese pronunciation correctly.

Nevertheless, none of the above materials can be used directly. Neither Chinese nor Tibetan writing is a reliable representation of actual pronunciation. Before we can make any serious reference to those documents, we first have to reconstruct the phonetic systems of the languages at the specific historical moment, and in the specific dialect area. This sounds like a vicious circle, since what I want to do with the help of those documents is precisely to reconstruct the Tibetan phonetic system of that time by referring to the Tibetan-Chinese transcriptions. Yet Chinese phonologists have been using those same documents to reconstruct the North-Western dialect of Middle-Old Chinese dialect by referring to the same transcriptions. Since Pelliot (1915) published his first paper on the reconstruction of the ancient Chinese phonological system using the Tibetan transcriptions, many sinologists have followed him. Their supposition has been that since Tibetan writing is phonetic the Tibetan transcription must be more reliable than reconstructions of the contemporary Chinese pronunciation. However, through my study I have found that Tibetan writing was already quite far from being a reliable representation of the Tibetan of the Middle-Old Tibetan period, the very period in which those sinologist are most interested. So our reconstructive projects precondition each other. It will be misleading for my project if I use the reconstructions of previous scholars blindly.

There is no easy way out of this vicious circle. Only by a careful comparison which relies heavily on the interlingual Sino/Tibetan texts as well as the other material usable for reconstruction can we arrive gradually at a more or less reliable interpretation of either ancient Chinese or Tibetan.

Those who did research in the early decades of this century (Pelliot 1915, Luo 1933 etc.) did not have enough modern language materials for either Chinese or Tibetan. As Luo (1933) said, "Unfortunately I can not get any modern North-West Chinese fieldwork materials. I hope I can finally complete my reconstruction work if I can get them". This, of course, caused great difficulty for their study. It is hoped that my reconstructive effort for the Middle-Old Tibetan consonant system can overcome those difficulties with more diversified source materials and a more meticulous attitude toward them. If my study can prove to be of some use not only to Tibetan historical linguistics but also to Chinese historical linguistics, I shall feel great satisfaction.

1.3. A general view of the historical evolution of Tibetan consonants

Essentially, Modern Tibetan has three dialect regions (inside China): the Dbusgtsang དབང་སྐད་ dialect region (the Central dialect), the Amdo ཨ་མདོ་ dialect region (the Northern dialect), and the Khams ཁམས་ dialect region (the Eastern dialect). Representative dialects for the three regions are the Lhasa, Labrang¹¹

and Dege dialects, respectively. The consonant systems of these three dialects are described below.

1.3.1. The consonant system of Modern Tibetan

1.3.1.1. The consonant system of Lhasa dialect (Central group)

TABLE 3 The consonant system of the Lhasa dialect¹²

	bi- labial	dental flex	retr flex	alv. pal.	pal.	velar	glottal
stops	p	t			c	k	ʔ
[-voiced]	ph	th			ch	kh	
affricates		ts	tʂ	tɕ			
[-voiced]		tsh	tʂh	tɕh			
nasals	m	n		ɳ		ŋ	
laterals		l					
		ɭ					
fricatives		s	ʂ	ʃ	c		h
[-voiced]			z̥				
semivowels	w				j		

The 29 consonants shown in Table 3 all occur as initial consonants. If we count the zero initial¹³, there are 30 one-consonant initials. Generally speaking there are no initial consonant clusters in the Lhasa dialect, but when a syllable undergoes tone sandhi in a disyllabic word whose first syllable ends in -m, -n, -ŋ, -v, or the syllable has a initial consonant m-, n-, v- preceeds the root-initial, then the initial consonants sometimes become prenasalized and seven initial consonant clusters may occur: [mp-], [nt-], [nts-], [ntʂ-], [ndʒ-], [ɲy-], and [ŋk-]. We can use the morphophonemic symbol "N" to stand for a nasal at the same position as homorganic to the following consonant.

The two stops [-p] and [-k], are unreleased in final position. [-k] and [-ŋ] finals appear only in a very few monosyllabic words. The final consonant [-r] is an approximant.

1.3.1.2. The consonant system of Labrang dialect (Amdo group)

In Labrang, the representative dialect in the Amdo dialect region, there are 36 single consonant phonemes and 18 consonant clusters. All of them can be used as initial consonants.

TABLE 3 Consonant system in Labrang dialect (Amdo group)¹⁴

	bi-	dental	retr	alv	pal.	velar	uvular	glottal
	labial		flex	pal.				
stops	p	t			k			ʔ

[-voiced]	ph	th			kh
[+voiced]	b	d			g
affricates		ts	tʃ	tʂ	
[-voiced]		tsh	tʃh	tʂh	
[+voiced]		dz	dʒ	dʐ	
nasals	m	n	ɳ		ŋ
laterals		l			
		ɭ			
fricatives		s	ʂ	ʃ	x
h					
[-voiced]		z	ʐ	ʃ	ɣ
semi-vowels	w			j	

From the above table we see that the Amdo dialect preserves voiced consonants. What is especially noteworthy is that for each of its stops, fricatives, and affricates, there are three different consonant phonemes: voiceless unaspirated, voiceless aspirated, and voiced unaspirated. This set of contrasts is not found in the Lhasa dialect. Please see Table 5.

TABLE 5 Manners of Amdo obstruents

	voiceless unaspirated			voiceless aspirated			voiced unaspirated		
stops	p	t	k	ph	th	kh	b	d	g
affricates	ts	tʃ	tɕ	tsh	tʃh	tɕh	dz	dʒ	dʑ
fricatives	s	ɬ		sh	zh		z	ʐ	

Among those 36 single consonants, six can be used as final consonants: -m, -n, -p, -t, -k, and -r. There are no final consonant clusters in this dialect.

There are 18 consonant clusters, all composed of the single consonants listed in Table 4. These include the prenasalized consonants [mb-], [nd-], [ŋg-], [ndz-], [ŋdz-], [ŋdʑ-]; consonants preceded by [x]: [xm-], [xn-], [xŋ-], [xts-], [xts-], [xtɕ-], [xt-], [xk-], [xl-], [xɬ-], [xw-], and [kw-].

1.3.1.3. The consonant system of Dege dialect (Khams group)

There are 43 consonants and 13 consonant clusters.

TABLE 6 Consonants in Dege dialect (Khams group)¹⁵

	bi- labial	dental retr flex	alv pal.	pal. velar	glottal
stop	p	t		c	k
[-voiced]	ph	th		ch	kh
[+voiced]	b	d			g
affricate		ts	ts	tc	
[-voiced]		tsh	tsh	tch	
[+voiced]		dz	dz	dz	
nasal	m	n	n		n
	m	n	n		n
lateral		l			
		l			
fricative		s	s	c	x
[-voiced]		c		ch	xh
[+voiced]		z	z	z	
semi-vowel	w			j	
				jh	

The original proto-Tibetan consonant system is preserved even more completely here than in the Amdo dialect. For instance, Dege has a complete set of voiced consonants: voiced stops [b-], [d-], [g-]; voiced affricates [dz-], [dʒ-], [dʒʰ-]; and voiced fricatives [z-], [ʒ-], [r-]. (the position of articulation of the latter is different from the Amdo dialect).

There are eight single final consonants: nasals [-m], [-n], [-ŋ]; stops [-p], [-t], [-k], [-ʔ], and a glide [-r]. There are no final consonant clusters in this dialect. There are twelve initial consonant clusters, as shown in Table 7.

TABLE 7 Initial consonant clusters in the Dege dialect

voiced	mb-	nd-	ng-	ndz-	ndʒ-	ndʒʰ-
prenasalised						
voiceless	mp-	nth-	ŋkh-	ntsh-	ntʃh-	ntʃʰ-
prenasalised						

1.3.2. The phonological correspondence between modern Tibetan (Lhasa dialect) and Tibetan writing

1.3.2.1. The modern pronunciation of Tibetan letters

The Tibetan writing system has not changed since it was created in the first half of the 7th century A.D. There are 30 consonant letters and four overt vowel symbols in Tibetan. As I stated in the last chapter, Tibetan writing represented the actual pronunciation of spoken Tibetan at a certain period just before the time it was created. I call that period Early-Old Tibetan. Therefore, this divergence between the older Tibetan writing and the Modern Tibetan pronunciation is the starting point for our historical reconstruction.

Since in the modern Lhasa dialect the names of Tibetan letters all carry the vowel [a], (i.e. the vowel *a* is unmarked in the writing system, then, ཀ =ka, ཏ =ta, ལ =pa) those 30 consonant letters are read in isolation as shown in Table 8 (all are in IPA, H= high tone, L = low tone):

TABLE 8

ཀ་	ཁ་	ག་	ང་	ཅ་	ཆ་	ཇ་	ཉ་
ka	kha	kha	ŋa	tɕa	tɕha	tɕha	pa
H	H	L	L	H	H	L	L
ཏ་	ཐ་	ད་	ན་	པ་	ཕ་	བ་	མ་
ta	tha	tha	na	pa	pha	pha	ma
H	H	L	L	H	H	L	L
ཚ་	ཛ་	ཌྷ་	ཡ་	ཞ་	ཟ་	ར་	ལ་

tsa	tsha	tsha	wa	ca	sa	N/(?)a	ya
H	H	L	L	L	L	L	L

ར་	ལ་	ཀ་	ས།	ཏ་	ཨ།
ra	la	ca	sa	ha	(?)a
L	L	H	H	H	H

ཨ ཨ ཨ ཨ

i u e o

Their actual pronunciation in syllables, however, is quite complex, because the consonants in Tibetan syllables occur in many different combinations:

CVC	CVCC
CCVC	CCVCC
CCCVC	CCCVCC
CCCCVC	CCCCVCC

Thus an orthographic syllable is formed by from two to six consonant letters and one vowel sign including the inherent vowel. At a minimum one consonant is required:

(C₁) (C₂) C₃ (C₄) V (C₅) (C₆)

Structurally speaking, the canonical shape of the Tibetan syllable may be given as follows, if we use P for prefix, C_i for root-initial consonant, G for glide (r, y, l, w) and F for final consonant:

(P₁) (P₂) C_i (G) V (F₁) (F₂)

Only in syllables of the simplest structure C₁V, is the consonant pronounced strictly in accordance with its name . Otherwise, the pronunciation of consonants depends on their position in the various syllabic combinations.

1.3.2.2. Correspondences between the consonant letters of written Tibetan and their Modern Tibetan pronunciations in the various parts of the syllable

The consonant letters m, v, b, d, g, r, l and s can function as prefixed consonant letters (C₁ and/or C₂) before the root initial (C₃); the glide consonant letters (G) r, y, l and w can be used as suffixed consonant letters after the root initial. Their modern pronunciations as initials are shown in the following table:

TABLE 9 Comparison between WT and MOT (Lhasa)

manner of pronunciation	WT	letters As initials	MOT
	*k- [-voiced] [-aspirated]	dk-, bk-, rk-, lk-, sk-, brk-, bsk-, k-, kw-, kv-	[k]
		ky-	[ɕ]
		kr-	[ts]

stop	-21-	
	*kh- [-voiced] [-aspirated]	mkh-, vkh-, khw- [kh] kh-
		khy- [øh]
		khr- [tʃh]
	*g- [+voiced] [-aspirated]	dg-, bg-, rg-, sg-, [k] brg-, bsg- g-
		gw- [kh]
		gr- [tʃa]
		gy- [ə]
		gv- [kh]
	*t- [+voiced] [-aspirated]	gt-, bt-, rt-, lt-, brt-, blt-, bst- [t] t-
	*th- [+voiced] [-aspirated]	mtth-, vth-, [th] th-
	*d-	gd-, bd-, rd-, sd-,

	[+voiced] [-aspirated]	brd-,bsd-,	[t]
		ld-, md-, vd-,	[nt]
		d-, dw-	[th]
	*p- [+voiced] [-aspirated]	dp-, lp-, sp-, p-	[p]
		py-	[tə]
		pr-	[tʃ]
	*ph- [+voiced] [-aspirated]	mph-, vph-, ph-	[ph]
		phy-	[təh]
		phr-	[tʃh]
	*b- [+voiced] [-aspirated]	rb-, sb-,	[p]
		b-	[ph]
		by-	[təh]
		br-	[tʃh]
africate	*ts- [+voiced] [-aspirated]	gts-, bts-, rts-, sts-, vrts-, bstts-,	[ts]
		ts-	[tsh]
	*tsh-	mtsh-, vtsh-	

fricative	[+voiced] [-aspirated]	tshw- tsh-	[tsh]
	*dz- [+voiced] [-aspirated]	rdz-, brdz-	[ts]
		dz-	[tsh]
		mdz-, vdz-	[nts]
	*c [+voiced] [-aspirated]	gc-, bc-, ic- c-	[tʃ]
	*ch- [+voiced] [-aspirated]	mch-, vch-	[tʃh]
		ch-	
	*j- [+voiced] [-aspirated]	rj-, brj-	[tʃ]
		lj-, mj-, vj-	[ntʃ]
		j-	[tʃh]
	*s- [+voiced] [-aspirated]	gs-, bs- sr- s-	[s]
	*z-		

	[+voice] [-aspirated]	gz-, bz- z-	[s]
nasal	*m- [+labial]	mr-, m-, rm-, sm- m-	[m]
		my-	[ŋ]
	*n-	rn-, sn- n-	[n]
	*ny-	rny-, sny- n-	[n]
	*ng	rng-, lng-, sng- ng-	[ŋ]
liquid	*r-	rw- r-	[r]
	*l-	l-	[l-]
	*lh-	lh-	[lh]
semi-vowel	*w-	w-	[w]
	*y-	gy- y-	[c] [j]

The correspondences between the finals of written Tibetan and their pronunciation in modern spoken Tibetan are shown in Table 10:

TABLE 10 Post-vocalic letters and their MOT pronunciation

single consonants	g	ng	d	n	b	m	v	r	l	s
clusters with -d	/	/	/	nd	/	/	/	rd	ld	/
clusters with -s	gs	ngs	/	/	bs	ms	/	/	/	/
Modern Tibetan	-g	0	0	0	-p	-m	0	0	0	0
	-ʔ	-ŋ		-n			-n	-r		

The close correspondences between the writing system and the modern pronunciation indicate that the writing system was once a fairly reliable representation of the spoken language. However, the letters are no longer pronounced as written.

As Table 10 shows, the following correspondence rules may be formulated for the pronunciation of written Tibetan consonants in the modern Lhasa dialect:

1) There are no initial consonant clusters. Consonant letters before the root initial (C_1) are not pronounced at all, though they have left effects on the pronunciation of the main consonant.

2) The prefixed consonant letters (C_1 and/or C_2) can alter the aspiration of the root-initial (C_1) but not its position of articulation.

3). The consonant letter G is not usually pronounced. However, it can alter the position of articulation (but not the aspiration) of the root-initial (C_1), as follows:

(a) the initial consonants kh, g, t, d, p, ph, b followed by the consonant letter r are all retroflexed [ts-], [tsh-], [ʃ-].

(b) k, kh, g followed by the consonant letter y are pronounced as palatals [c-], [ch-].

(c) p, ph, b, m, followed by the consonant letter y are pronounced as palatoalveolars [tʃ-], [tʃh-], [ɲ-].

(d). The letters k, g, b, r, s followed by the consonant letter l are all pronounced [l-]. However, the letter dz followed by the consonant letter l is pronounced [t-].

(e). The consonants m s followed by letter r are still pronounced as [m-] and [s-].

1.4. Notes

1) There are several Tibetan historical works extant that mention the creating of Tibetan writing. Among them, Rgyal-rabs gsal-bavi-me-long (Sa-skya Bsod-nam-rgyal-mtshan, "Mirror of Dynasties" 1388, for the transcribing system of Tibetan letters used in this dissertation, see Note 3 below) and the Historical documents of Tibet from Dunhuang. (Dunhuang documents P. 252 and S. 103, in Wang, 1980) are considered more dependable. But all the Tibetan traditional historical works have the similar record: During the reign of Tibetan king Srong-btsan-sgam-po the wise man Thon-mi Sambhota was sent to study in India. He created Tibetan writing after the Sanskrit.

Many scholars in modern days doubted the truthfulness of the record (see Laufer 1918, Uray 1955, Miller 1963, Wang 1982). The author of the present dissertation also has doubt about it, and suggests that there might have quite possibly been a writing system before Thon-mi's (see Chapter 3, Section 1)

2) There are two contending views about the exact time of the standardization, some books maintaining that it took place at the beginning of the 9th century, while others think it occurred later, in the middle of the 9th century. According to Rgyal-rabs-gsal-bavi-me-long (Sa-skya Bsod-nam-rgyal-mtshan, 1388) written during the period of the Tibetan king Khri-gtsug-lde-btsan (815-836), Tibetan writing had just been given an official authorized standardization: "skab-gsar-bcad". This royally authorized standardization abolished (a) the letter -ḡ after other syllable-final consonants "da-drag", (see

the discussion of da-drag below 3.2.), as well as (b) the final letter y which had been used to indicate the position of root-initial which brings no pre-initial, and (c) the subscript y of root-initial m in some words, e.g., myig "eye" > mig. (Wang 1983, p13)

3) The transcription of written Tibetan used in this dissertation follows Yu Daochuan's system (Yu, 1983):

ཀ་ ཁ་ ག་ ང་ ཅ་ ཆ་ ཇ་ ཉ་

k kh g ng c ch j ny

ཏ་ ཐ་ ད་ ད་ པ་ ཕ་ བ་ མ་

t th d n p ph b m

ཚ་ ལ་ ཌྷ་ ཡ་ ལ་ ཟ་ འ་ ལ་

ts tsh dz w zh z v y

ར་ ལ་ ཤ་ ས་ ཨ་ ཨ་ ཨ་ ཨ་ ཨ་ ཨ་

r l sh s h a i u e o a

In this transcribing system, the letter y that stands for Tibetan letter ལ་ has received much criticism for being misleading. In the other Tibetan literary transcribing systems more commonly used among western scholars, letter ལ་ has different transcriptoins: l (Wylie, 1959) and h (Thomas, 1957). Because the dictionaries or textbooks published in China in recent years all use Yu's transcribing system, and also because of the convenience of typing, I keep to Yu's transcription.

4) According to the historical texts of both Tibetan and Chinese, the capital was in Central Tibet around Lho-kha and Ra-sa (today's Lha-sa).

5) The earliest information about Tibet we can find in Chinese historical works is Tong dian (通典, Du, 735-812), in which it is mentioned that the origin of the Tibetans was Boxiye 勃悉野. It corresponds well to Tibetan bshi-ye.

6) See the chart comparing the letters of Sanskrit and Tibetan in 1.3.2.2.

7) In this paper, IPA symbols will be put between square brackets [] except in the tables. The reconstructed Old Tibetan phonemes will use IPA symbols preceded by an asterisk*, e.g. *p, *t, *s are the reconstructed phoneme [p], [t] and [s]. However, *j is used for [dʒ], *zh for [z], and *sh for [ʃ].

8) It might have been *ʔN- in the pre-Tibetan period (see Matisoff 1975). Evidence for both *ʔ- and *n- can be found in Modern Lhasa Tibetan. For *ʔ-, we have examples like vo-ma [ʔo ma] "milk", va-tsi [ʔv tsi] "Oh!, Wow!" (below 2.1.2.). As for *N-, almost all the bisyllabic words whose second syllable begins with orthographic y (ཡ) are now pronounced with [n] in that position.

9) The direction of transcriptions is symbolized as follows: TC = from Tibetan into Chinese; CT = from Chinese into Tibetan.

10) All the historical documents quoted in this dissertation are dated from the mid-7th century to the second half of the 9th century. The earliest one is Dunhuang ben Tubo Lishi Wenshu (Wang, 1980). This is one of the thousands of documents discovered in the Dunhuang Caves in 1899, and is now numbered P. 252 Paris, and S. 8212.

London. It is a chronicle recording all the important events concerning every Tibetan king between 650 A.D. to 746 A.D.. Those events can be double-checked with the Chinese historical works Chefu Yuangue, (冊府元龜) Jiu Tang Shu, (旧唐书) Tong Dian, (通典) or Zizhi Tongjian (资治通鑑).

11. The geographical names Labrang and Dege used in this dissertation follow the contemporary maps recently published on Mainland China.

12. Zangyu jianzhi (An introduction to the language of Tibet), ed Jin Peng. Beijing: Nationality Press.1983, p.9.

13. In a high tone syllable, the zero initial is pronounced as a glottal stop [ʔ].

14. Zangyu fangyan gaiyao, (Essentials of Tibetan dialects), is an unpublished textbook for internal use, compiled by the Central Institute of Nationality Studies. Beijing. 1964, p.24, p.76.

15. Ibid.

Chapter two: The Reconstruction of the Middle-Old Tibetan Consonant System

2.1. Stops.

The Tibetan writing suggests that in Early-Old Tibetan there must have been three sets of stops: three voiceless unaspirated stops *p, *t, *k; three voiceless aspirated stops *ph, *th, *kh; and three voiced unaspirated stops *b, *d, *g. Additionally, I suggest adding a glottal stop *ʔ to this reconstructed consonant system.

2.1.1. Voiceless stops.

The three voiceless unaspirated stops *p, *t, *k and the three voiceless aspirated stops *ph, *th, *kh retain their original Early-Old Tibetan pronunciation in Modern Tibetan. There is no exception in any of the Tibetan dialects. Furthermore, from Tibetan-transcribed Chinese documents or Chinese-transcribed Tibetan documents we find a sufficient number of examples to prove this retention:

voiceless unaspirated			
E O T	MOT	MOC ¹	MT
*p	po	波, 帮	[p]
	pa	破, 帮	
	pa	八, 帮	
	par	八, 帮	
	pu	不, 帮	
	pu	布, 帮	

pa
pe
pye
pye
pi
pavi
peg
pig
pvu
pevu
pyan

The first example above po is the second syllable of the word btsan-po, the title for Tibetan kings in the Old Tibetan historical text Tubo dashi jinian (Wang, 1980, pp.15-100) which recorded the main events of the Tibetan kingdoms since 650 A.D. (It exists in two parts, both of which were discovered in Dunhuang cave (but not at the same time or in the same storage place). We can verify this in the Chinese historiographical works of the corresponding period of time. In the Chapter "Official Names" of the Waichen Bu in Chefu yuangui (Wang, Vol.962), it is recorded: 吐蕃号其王赞普 So the Tibetan word btsan-po was transcribed into the characters 赞普 (in MOC tsan po). Therefore the correspondence between the Tibetan *tsan-po and the Chinese characters 赞普 becomes very valuable for our reconstruction. Then we can try to find the initial consonant category (shengbu)³ of the corresponding Chinese characters 赞普 from the traditional Chinese phonology book Qieyun (切韵). We find that the

initial of the Chinese character po (普) was in the initial category pang (幫母) which means the initial was *p-. It was the same as the initial of the Tibetan word po. After carefully checking all of the above examples we found that the Middle-Old Tibetan *p- corresponds regularly to Middle-Old Chinese *p-. At the same time we see the Early-Old Tibetan *p- has remained [p] in Modern Tibetan. Therefore we are sure that the Tibetan letter p པ had the value of *p- in Middle-Old Tibetan.

EOT	MOT	MOC	MT
*t	ti	帝, 端	[t]
	siong	東, 端	
	ta	多, 端	
	twavi	對, 端	
	tam	耽, 端	
	ton	敦, 端	
	tyan	典, 端	
	tong	東, 端	
	tig	的, 端	
	tab	答, 端	

EOT	MOT	MOC	MT
*k	kong	恭, 見	[k]
	ka	歌, 見	
	ken	間, 見	
	keng	更, 見	
	kim	金, 見	

kye	雞, 見
kevi	階, 見
kun	軍, 見
ka	歌, 見
kwan	觀, 見
kuo	姑, 見
kyan	堅, 見

EOT

MOT

MOC

MT

*Ph

pha

頗, 滂

[ph]

phyi

譬, 滂

phun

分, 非

phyi

非, 非

phab

法, 非

phar

髮, 非

phyau

票風, 滂

phovo

紂, 敷

phe

飛, 非

phu

否, 非

phur

佛, 奉

EOT

MOT

MOC

MT

*th

thar

脫, 透

[th]

then

天, 透

tho

土, 透

the

體, 透

than

莫, 透

	thwa	退, 透	
	tha	塔, 透	
EOT	MOT	MOC	MT
*kh	kha	剎, 溪	[kh]
	khong	恐, 溪	
	kho	空, 溪	
	khwag	曲, 溪	
	kho	曠, 溪	
	kheng	慶, 溪	
	khye	輕, 溪	
	khwe	傾, 溪	
	khi	綺, 溪	
	khi	去, 溪	
	khi	起, 溪	
	kha	可, 溪	
	kham	倉, 溪	
	khong	空, 溪	
	khong	恐, 溪	
	kho	苦, 溪	
	khwev	傾, 溪	
	khan	康, 溪	
EOT	MOT	MOC	MT
*ʔ	aa	阿, 影	[ʔ/0]
	a	汚, 影	
	aaɣ	惡, 影	

an	阿, 影
ae	嬰, 影
au	於, 影
ae	英, 影
ai	伊, 影
ai	意, 影
aig	億, 影
ain	因, 影
air	一, 影

The major problem in this kind of historical comparison lies in the fact that Chinese writing is not alphabetic, and the reconstruction of its ancient phonological systems is far from accomplished. In fact, many scholars have been trying to reconstruct the phonetic system of the ancient Chinese Northwestern dialect based on the Tibetan transcribed Chinese documents. In those projects there is a common difficulty which most scholars prefer to ignore: How were the Tibetan letters pronounced at that time? They hold, without necessary proof, that Tibetan writing exactly represented the actual pronunciation of the time since Tibetan writing is alphabetic. Yet they have neglected to verify whether or not the sound systems of Early-Old Tibetan and Middle-Old Tibetan were the same. Their reconstruction of Middle-Old Chinese is completely valid only if the sound systems of Early-Old Tibetan and Middle-Old Tibetan were identical. They must first determine what the Middle-Old Tibetan sound system was. If they do not, then some aspects of their reconstruction may be erroneous.

Some scholars are aware of this problem. Luo Changpei who made abundant use of those documents and produced probably the greatest contribution on this topic, acknowledged in his book (Luo, 1933): "As for the Tibetan alphabets used for transcribing Chinese, we have to be very careful to distinguish between the actual Chinese pronunciation and the closest Tibetan approximations of Chinese sounds". But neither he nor his successors in the study of Chinese phonetic systems using Tibetan transcribed documents have made any serious effort to determine the actual pronunciation of the Tibetan writing of the Middle-Old Tibetan period.

For example, Luo Changpei said: "In Qian Zi wen and Da cheng Zhong zong jian jie part of the characters of Quan qing Shang qu Sheng (金清上去聲) were mixed into Quan zhuo (金濁). They can be considered special variations" (Luo, 1933, p59). Neither was Luo aware of the fact that the voiced stops in the Tibetan writing were used for transcribing Chinese final stops. That was why he asked in his book, "Are they telling us the true pronunciation of the (North-Western Chinese) Dialect? Or are they only their Tibetan approximations?" Concerning the use of Tibetan voiced stops to transcribe the Middle-old Chinese final stops, Karlgren (1931) also said that we can never determine whether those Tibetan voiced final stops represent voiced or voiceless Chinese final stops. He also pointed out that there is no evidence to make us think that the Chinese stops *-p, *-t and *-k were voiced.

Part of the frustration in previous Chinese reconstructive projects came from the failure to realize that the sound value of the Tibetan voiced consonant letters used for transcribing Chinese had

changed. Though originally representing voiced sounds, this voiced series was now well along in the process of devoicing. That was why, in the initial position, Chinese had the voiceless unaspirated quan qing (全清) words mixed into the voiced quan zhuo category (全濁). That is to say, the issue is not simply as Luo claimed that, voiceless unaspirated quan qing (全清) was mixed into voiced quan zhuo (全濁), i.e. the transcribers used voiceless stops to transcribe the Chinese voiceless stops, while sometimes they used voiced stops too. After a careful investigation, I found that all of the tone categories of Chinese voiceless stops transcribed into Tibetan voiced stops are shang sheng (上聲) tone or qu sheng (去聲) tone⁵, so this phenomenon is closely related to the development of tones in Tibetan (see 2.1.2.). In the Tibetan documents of the time, Tibetans themselves were mixing voiced consonant letters with voiceless ones (see 2.1.2.). The complex situation with respect to the Tibetan consonant letters of that time could baffle anyone who was trying to reconstruct the ancient Chinese phonological system based on the Tibetan transcriptions. As for the final stops, perhaps Tibetan did not have voiced final stops, even though the unreleased final stops [p,t,k] were written with the same letters that were used for voiced stops in initial positions (see 2.1.2.). Meanwhile, in transcribing Chinese or other languages, Tibetan transcribers followed strictly the rules of Tibetan writing. Therefore, there was no way to use voiceless stop letters in the final position. Within the 23 documents from the 7th century to 9th century which were listed in the last chapter, I can not find even a single Chinese final stop transcribed by a Tibetan voiceless stop letter.

The most important ground on which I build my reconstruction is Tibetan documents themselves. In Dunhuang ben Tubo lishi wenshu (Wang, 1980), the same word can be spelled differently. It seems that sometimes aspirated consonants were interchangeable with unaspirated ones (e.g., *k- *kh-; *t- *th-; *p- *ph-; *ts- *tsh), and voiced consonants are interchangeable with voiceless ones (e.g., *g- *k-; *d- *t-; *b- *p-; *z- *s-; *dz- *ts-), for instance:

cog	ཙག	--	chog	ཙག	"Your Majesty"
chen-po	ཆེན་པོ	--	chen-pho	ཆེན་པོ	"big "
ta	ཏ	--	tha	ཏ	"horse"
dang	དང་	--	tang	དང་	"and"

Sometimes, it seems, a syllable which should carry a prefix or suffix could appear without it. For instance:

pags-pa	པག་པ་	-	pag-pa	པག་པ་	(Luo and Huang, 1983)
---------	-------	---	--------	-------	-----------------------

Many scholars have tried to give an explanation of this strange phenomenon of "chaotic spelling", e.g. Luo (1933), An (1982) and Wang Yao (1982). But they generally follow Thomas's suggestion of "ignorance on part of the transcribers" (Thomas, 1957) which he expounded in a clear statement: "The irregularities occurring in the documents and MSS. cannot therefore be regarded as pre-

orthographic: they must be due to liberty or laxity, resulting from the expanded employment of writing for ordinary purposes".

We might also suppose that it might be because the transcribers were speaking different dialects of Middle-Old Tibetan.

Both suppositions, however, are actually saying that it was the interchangeability that caused spelling mistakes. But after a careful investigation, I have discovered that those supposed "mistakes" are quite regular. They are not interchangeable with the "correct" spelling. They were following certain patterns, and could provide us the most important source of information for the evolution of the consonant system and the development of contrastive tone in Tibetan (See Chapter III).

The reconstruction of voiceless consonants seems to pose no difficulty. In the Chinese-Tibetan or Tibetan-Chinese transcribed documents all the Chinese voiceless stops are spelled with Tibetan voiceless stops. No matter whether those Tibetan consonants are single initial consonants or the root initial of the consonant clusters, they correspond well with the voiceless consonants in Chinese. We have already seen many examples for the single initial stops. Let us now look at some examples of voiceless stops as the root initial of the consonant clusters:

	Middle-Old Tibetan	MOC
bkav	*k-	伽
mthong	*th-	適
vkhyevu	*khy-	丘
rtag	*t-	泰

stang	*t-	悉當
phyi	*ph-	紕
gtogs	*t-	篤
pyir	*p-	畢

In my reconstruction there is a glottal stop *ʔ representing by the Tibetan letter a ཨ, which can be used only in the initial position. I can prove the validity of the reconstruction through two approaches: the historical and the synchronic.

Historically, I have discovered that the Chinese characters transcribed with the Tibetan letter a ཨ had *m- initial (yin mu 影母.....). Examples:

Chinese	Tibetan transcription
依	ai
一	ayi
一	ayir
惡	aag
因	ain
應	aing
英	ae
於	ai

Among the examples cited above, the case of the Chinese character 一 is most interesting. It was transcribed as ayir (ཨར). The transcriber did not use y (ཡ) as the initial consonant, which raises two points. First, with letter a (ཨ) placed before letter y (ཡ), an

initial consonant cluster is formed since the character is to be read as [ʔ]. Also the tone of the is different from that of the letter y (ཡ) and cannot be replaced by that letter. In Chinese, they are different in tone (声调) too.

The existence of this sound -- a "tension of the larynx" -- has received discussion from Jaschke (1899) and Yoshitake (1929, quoted in Luo, 1933, p11). I agree with their interpretation of this ancient consonant. I have found in Tibetan linguistic classics strong proof to confirm their interpretation. In the Tibetan classical grammar book Sum-cu-pa (Thirty rhymes for Tibetan grammar, Thon-mi, 632 A.D.), Thon-mi, the creator of Tibetan writing cited letter a (ཨ) as one of the thirty Tibetan consonants. In the 10th century, the great Tibetan grammarian Gser-tog sum-rtogs (Gser-tog, 1957) offered a detailed description of the pronunciation each Tibetan letter stood for. He pointed out that when pronouncing the sound a, the middle part of the tongue should be lifted near the palate. This is in agreement with what modern phonetics says about the position of articulation for a glottal stop [ʔ].

This letter a (ཨ), which we can now assume was pronounced as [ʔ] in Middle-Old Tibetan, has not "totally disappeared" as Luo declared. It is still observable in Modern Tibetan Lhasa dialect, where the letter is not a zero initial consonant. Examples:

MT	Tibetan writing	
[ʔa]	aa	"What?", "How?"
[ʔe yin]	ae-yin	"Is it true?"
[ʔu sug]	au-sug	socks

[ʔu tsuʔ]	au-tsug	half-heartedly
[ʔa ni]	aa-ne	aunty, nun
[ʔam tce]	aam-je	(medical) doctor

2.1.2. Voiced stops

In the Middle-Old Tibetan period the voiced stops continued to become devoiced, and were almost completely devoiced by the end of that period. I use the word "continued" because those voiced stops had started devoicing much earlier, at the end of the Early-Old Tibetan period, when the Tibetan writing system was being created. However, my supposition is that the devoicing took place at that time only among people of certain dialect groups, and had not yet influenced the official tongue, the Middle-Old Tibetan sound system. That was why when the Tibetan writing was created, a complete set of letters were provided for the voiced consonants, including the voiced stops, the voiced fricatives and the voiced affricates. But the fact is, right at the time of the creation of Tibetan writing the devoicing had already started. I shall discuss these matters in the next chapter.

The voiced stops were unaspirated in Early-Old Tibetan. This can be proved by the Tibetan transcription of Sanskrit writing. The following table shows the correspondences between Sanskrit and Early-Old Tibetan.

Table 11 Table of Sanskrit letters with Tibetan-transcriptions²

Manner of artic.	Phonetic value	Sanskrit	Tibetan transcription
velars	vl, unasp k	क	ཀ
	vl, asp kh	ख	ཁ
	vc, unasp g	ग	ག
	vc, asp gh	घ	ཁྱ
	nasal ṅ	ङ	ང
affricate	vl, unasp ts	च	ཅ
	vl, asp tsh	छ	ཅཱ
	vc, unasp dz	ज	ཇ
	vc, asp dzh	झ	ཇཱ
	nasal ṭ	ञ	ཉ
retroflex	vl, unaspt ṭ	ट	ཌ
	vl, asp ṭh	ठ	ཌཱ
	vc, unasp ḍ	ड	ཎ
	vc,asp ḍh	ढ	ཎཱ
	nasal ṇ	ण	ཎ
dental	vl, unasp t	त	ཌ
	vl, asp th	थ	ཌཱ
	vc, unasp d	द	ཌ
	vc, asp dh	ध	ཌཱ
	nasal n	न	བ

labial	vl, unasp	p	प	པ
	vl, asp	ph	फ	ཕ
	vc, unasp	b	ब	བ
	vc, asp	bh	भ	བྱ
	nasal	m	म	མ
semi-vowel or glide		y	य	ཡ
		r	र	ར
		l	ल	ལ
		w	व	འ
fricative		sh	श	ཤ
		ṣh	ष	ཤྱ
		s	स	ས
		h	ह	ཧ

The Sanskrit aspirated voiced velar stop gh- was transcribed with two Tibetan letters g (པ) and h (ཧ). Furthermore the positions of those letters were special: the letter h (ཧ) for the aspirated glottal fricative *h- was written under (པ) the letter for the voiced stop *g-, with the latter piled upon the former (ཧྱ). The same treatment can be found for the Tibetan transcription of the other Sanskrit voiced aspirates dh- (ཧྲ), bh- (ཧྱ), and dzh- (ཧྲྱ).

The Sanskrit writing system with its two complete sets of voiced and voiceless letters definitely influenced the creating of Tibetan writing. Meanwhile, we can see that one thing is very clear: the voiced aspirated stops and affricates of Sanskrit were not

pronounced as such in Tibetan. Otherwise the Tibetan transcription of Sanskrit would not add an aspirative symbol to those sounds.

As I mentioned in the first chapter the Early-Old Tibetan voiced stops were devoicing during the Middle-Old Tibetan period. Some of the voiced stops remained voiced while some did not. Let us first look at the examples of voiced consonant letters which remained voiced in Middle-Old Tibetan:

The labial stop as initial *b- :

EOT	MOT	MOC	MT
*b	bav	杷, 並	[ph]
	bo	傍, 並	
	bu	菩, 並	
	big	白, 並	
	bad	跋, 並	
	ban	蕃, 並	
	bevi	陛, 並	
	bevi	弊, 並	
	bavi	陪, 並	
	be	枇, 並	
	be	疲, 並	
	byan	弁, 並	

The voiced dental stop *d-:

EOT	MOT	MOC	MT
*d	do	途, 定	[th]
	duo	图, 定	
	do	杜, 定	

de	庭, 定
davi	岱, 定
davi	殆, 定
devu	投, 定
dong	動, 定
dong	洞, 定
dar	達, 定
dog	讀, 定

The voiced velar stop *g-:

EOT	MOT	MOC	MT
*g	gib	及, 群	[kh]
	gang	狂, 群	
	gu	具, 群	
	gi	其, 群	
	gig	極, 群	
	gun	羣, 群	
	gim	禽, 群	
	givu	舊, 群	
	givu	求, 群	
	gu	渠, 群	
	gyi	祇, 群	
	gi	鉅, 群	

Nevertheless, in Tibetan-transcribed Chinese documents not all the Chinese voiced initial consonants were spelled with Tibetan voiced stops. In many cases they were transcribed with voiceless stops. And

Chinese voiceless stops were often transcribed with Tibetan letters for voiced stops. Luo (1933) provided us with the complete texts of the Tibetan transcribed Chinese documents qz, jg, am, and dc (Notes to Chapter I). In all four documents, the Tibetan letters for voiced stops *b, *d, and *g were used sometimes for Chinese voiced consonants, and sometimes for voiceless consonants. For instance,

MOC	MOT
本	pon in qz
	bon in dc
对	twavi in qz
	dwe in dc
家	cung in dc
	jung in dc
作	tsag in dc
	dzag in dc
解	ka in qz
	ga in dc
舉	kuvu in qz
	gu in dc
故	ko in dc
	gu in qz

The number of cases of the two different treatments are as follows:

Table 12

	Tibetan transcribed letters		
	b	d	g
Chinese voiced initials	27	32	18
	77%	82%	47%
Chinese voiceless initials	8	7	20
	33%	18%	53%

From the above table we can see that frequently the Tibetan letters for voiced stops were used for transcribing Chinese voiceless consonants. The cause for this was not arbitrary misspelling or mispronouncing, or more scribal errors as Thomas or other scholars have held (see 2.1.), but instead it was because Tibetan voiced stops at that time were in the process of devoicing. Those Tibetans who transcribed the Chinese characters for the purpose of learning Chinese used voiced consonant letters to transcribe the Chinese voiceless consonants, and used voiced letters indicating voiceless consonants to transcribe Chinese voiceless phonemes because those consonants were already devoiced. They thought they just corresponded to each other. Meanwhile, they did not feel that those Chinese voiceless consonants could be transcribed with Tibetan voiceless consonants. This is quite interesting. There must have been something other than the expression of the voicedness (a word I coined to denote the quality of consonants being voiced or voiceless, and which, I suggest should replace the word voicing, the term currently in use for this meaning,

as it is misleading and confusing since it may be understood as the opposite of the process of devoicing) involved, such as suprasegmental features. This needs to be studied further (see 3.2.). As Ding (1986) noted the Chinese characters with voiceless initials spelled by Tibetan voiced letters are all shang qu sheng (上 去 声) I checked the modern north-west Xian dialect, and was so excited to find that the shang qu sheng (上 去 声) of that dialect are rising tones: shang sheng (上 声) is 453 tone and qu sheng (去 声) is 45 tone. Both these two tones are from low to high. Therefore I think we could consider the reason for using Tibetan voiced letters to transcribe Chinese voiceless phonemes was because they included in their consideration the tonal (or pitch) effect of those Tibetan voiced consonants. By that time, Chinese was already a tonal language (Wang, L, 1980), while the tonal system for Tibetan had not yet taken shape completely. (I shall discuss Tibetan tonogenesis in the following chapter). Tibetans were not aware of the existence of the "natural tone" of the Tibetan voiced consonants --- the low pitch (see 3.3.). Therefore, they naturally used voiced consonants to stand for voiceless consonants in low tone syllables. After discovering this explanation, I postulate that the above Chinese voiced initials transcribed as Tibetan voiced initials were reasonable. e.g.,

本 (shang sheng) --> bun

对 (qu sheng) --> dwe

界 (qu sheng) --> jung

作 (qu sheng) --> dzag

解 (shang sheng) --> ga

举 (shang sheng) --> gu

故 (qu sheng) --> gu

In different documents, this phenomenon occurred with different frequencies. The following is a table showing the numbers of cases of the use of Tibetan voiced stop letters to transcribe Chinese voiceless consonants in several Tibetan-transcribed Chinese documents; e.g.,

TABLE 13

name of document in Chinese	to transcribe Chinese voiced stops			to transcribe Chinese voiceless stops		
	b	d	g	p	t	k
qz	15	16	10	3	1	8
dc	2	8	4	5	6	12
am	6	3	3	0	2	0
jg	6	7	5	0	0	0

Also, I have noticed that there are quite a few Chinese voiced stops that were spelled with Tibetan voiceless stop letters. For instance in dc documents, none of the "b- initial of bing sheng (並聲) Chinese characters were spelled with Tibetan voiced initial b-

but rather with the Tibetan voiceless p-. For example, the Chinese character 𑖑𑖓 had a voiceless stop as the initial consonant and it was read with a tone category shang sheng (上声), the low-pitch tone in modern North-Western dialect.⁵ (Ding, 1981). But we see that not all of the Chinese characters (𑖑𑖓) were transcribed into voiceless initial *p-. Following is a chart to show the transcriptions of this character 𑖑𑖓 in the different documents:

in dc:	pi
in qz:	pi
in jg:	bi
in am:	bi

All these different spellings point to the fact that: (1) the Chinese voiced initials were devoicing at the same time. Just like Luo (1933) and Ding (1986) pointed out that Chinese "voiced initial quan zhuo (全濁) with the tone category peng sheng (平声) was already starting to change into ci qing (次清); and the voiced initial quan zhuo (全濁) with the tone category ze sheng (仄声) was already starting to change into quan qing (去声)". From the study of these paragraphs, we know that the transcribers from the Middle-Old Tibetan period were not careless, but rather worked quite carefully. (Even the stone tablet of it had this testimonial written on it). (2) The Tibetan voiced stops were in the process of devoicing. Otherwise we could not find such a large number of Chinese voiceless initials transcribed in many different documents with Tibetan voiced initials (Note that the tone category of all these words is shang 上 or

qu 吐 sheng). The Tibetan voiced consonants at that time were changing, and they not only carried the voicedness but also indicated the tone-pitch (also see 3.2.).

All the examples discussed above were Tibetan transcriptions of Chinese documents. Chinese transcriptions of Tibetan original materials, much fewer in quantity, are even more valuable for the reconstruction, since Chinese has never been an alphabetic writing system and the transcriptions can hardly be said to be accurate. Still I have discovered dependable characteristics in the transcriptions of Tibetan original words such as place names and officers' or kings' names in the great wealth of Chinese historical writings.

A well-known and much-discussed example is the transcription of the name of ancient Tibet. This is the word Tubo (in Modern Chinese) 吐蕃 which appears frequently in Chinese historical texts, and is the transcription of Tibetan bod, the name ancient Tibetans gave themselves, which is still used now though pronounced differently in different dialects. However, the name was recorded as Tubo in Chinese. Scholars differ on the source of the first syllable tu 吐.

I found Document P.T.2762 in the Bibliotheque Nationale in Paris. This piece of material had not received any attention previously because it is only several lines written on the back of a Tibetan Buddhist text. This is a Tibetan document with transcribed Chinese characters written beside the Tibetan words to indicate the Tibetan pronunciation. Beside the Tibetan word bod there are two Chinese characters Tebo 吐蕃. The second character (MOC: pot) seems to correspond very well to the Tibetan bod. I will discuss the initial of the second Chinese character in next paragraph. But why did they add

a character te 特 before bo 蕃? This extra character 特 could not be a carelessly added letter by the transcriber. It must have had something to do with the pronunciation of this Tibetan word bod in earlier times. It must be the original source of the term Tubo 吐蕃 in Chinese history books. I have already mentioned in the previous section that the Tibetan writing only recorded the standard speech which was perhaps used in the area around the capital. The various dialects at that time retained to different degrees the Proto-Tibetan pronunciation. This is a situation common to any language. So we can perhaps suppose that the Tibetan word bod had a prefix *t- in earlier times. Hence the strange Chinese transcription Tebo 特蕃 in Dunhuang P.T.2762 or Tubo in most Chinese historiographical works.

This hypothesis regarding the origin of the first syllable of Tubo is not yet completely proved, but one thing is certain. In the Middle-Old Tibetan period the Tibetans around the capital already called their nation bod. That was why in Chinese historiography we found the alternatives bo 蕃 and Tubo 吐蕃 for example in the historical works Tong dian (Du, 766-801) and Ce fu yuan gui (Wang, 1005-1013). In these two documents, bo seems to be exchangeable with Tubo. But in the Chinese text on Tang fan huimeng bei (Wang, 1982) of the early 9th century the name Tibet appeared nine times, and every time it was written as bo 蕃 but not Tubo 吐蕃. According to Qieyun (切韻), the initial of this Chinese character was bang mu (幫母) i.e. initial *p-. If the initial *t- of the first Chinese character Tu 吐 and the initial *p- of the second Chinese character bo 蕃 formed a consonant cluster *tp-, then how could the Chinese historical texts just ignore the prefix *t- but only keep the *p- ? I

think it is clear that the initial of Tibetan word bod was not a cluster *tp-, it was *p-. My discussion above is to eliminate the possibility that the initial consonant in bod might be a consonant cluster. The answer is that at least in the Middle-Old Tibetan period it was not. After that, we can go a step further to discuss how this single Chinese consonant was actually used to transcribe the initial of Tibetan bod.

In Early-Old Tibetan the letter b in Tibetan stood for a voiced sound. If the letter b in Middle-Old Tibetan was still a voiced consonant, the Chinese transcription should use a character with a voiced initial consonant. But actually, the ancient Chinese used a character of bang mu (幫 母) which is a voiceless labial stop initial category. In Zhongyuan Yinyun the pronunciation of the character was explained as (山合三平元非) and po pan qie (南煩切). That means the initial was also in the voiceless labial stop category. In Qiyinlue, it is also said to be of bang mu (幫 母). That is to say, in the period of Middle-Old Chinese this character was pronounced with a tone category of ping sheng (平聲). Therefore the Chinese character which was used to transcribe the Tibetan word bod had a voiceless, unaspirated labial stop initial *p-. I have found many similar examples (below 2.1.). As for the tone category ping sheng (平聲), I have found an exciting correspondence in Modern Tibetan dialects: the North-West MOC's ping sheng evolved into yin peng (陰平) and yang ping (陽平) two tone categories in Modern Chinese. These are low-falling tone 21 and low-rising tone 24. This is compatible with the fact that, Tibetan bod in east dialect and west dialect have two tone categories also: low-rising in Lhasa dialect and low-falling in Khams dialect.

From this we can see two things. First, by that time the Tibetan consonant *b was already devoiced; second, it still retained its unaspiratedness. This is the characteristic of the important intermediate stage in the process of devoicing of Tibetan voiced consonants --- the voiceless unaspirated stage. This is one of the two key points in my reconstructive scheme for the Middle-Old Tibetan consonant system. It played a most important role in the Tibetan tonogenesis. Apparently, no scholar has recognized the existence of this voiceless unaspirated stage in the devoicing process of Tibetan voiced consonants, and its relation with tonogenesis (below 3.2., 3.3.).

As we mentioned, the Tibetan syllables may comprise two or more of the seven elements (P1) (P2) C (G) V (F1) (F2), but not necessarily all of them. Those elements in brackets are optional. The following is a table showing how the voiced stop consonant letters were actually pronounced when they appeared in positions other than single initial position.

TABLE 14

positions in the syllable	voiced stop letters					
	*-b-		*-d-		*-g-	
[+p ₁ /p ₂]	vbug	目	vdar	達	vgig	迭
	vbun	門	vdab	納	vgeb	業
	vbur	勿	vding	能	vgen	眼
	vban	晚	vdav	那	vgen	言

	byer	滅	dwan	暖	gyi	記
[+G]	vbyi	微			gwam	感
	vbyevu	妙			gwan	觀
as p ₁ /p ₂	btsan	贊	--		gtsug	可足

From the above table 14, (also see Appendix) we see that there is no difference for Tibetan voiced stops in the different positions of the syllable except when *g- has a prefix *v-, it will be *m initial ming mu (明母) in Chinese (see 2.4.)

Finally, let us examine the sound value of Tibetan voiced stop letters b, d, g as they are used in the final two positions. Basically, they correspond with the final stop ru sheng (入聲), the stopped tonal category in Chinese, e.g.,

*-g	*-b
vdog	shib
gtsug	shab
dog	gib
zhug	jib
lug	khib

Of the three final stops, the dental *-d was lost first. Nevertheless, post suffix letter d (or da-drag) was abolished in the first half of the 9th century. It was not pronounced when the

voiced stop letter d is used in both the final two positions in Middle-Old Tibetan. We can not find even one example where that voiced stop letter d was pronounced, e.g., bod --> 蕃; khod --> 窟; skyid --> 釋. For both of them, the Chinese transcriptions had ru sheng (入 聲) a final glottal stop *-ʔ. There was not even one Tibetan letter d used to transcribe Chinese final *-t.

In such cases, ɽ was substituted for the dental consonant t, e.g., vbyar --> 滅; hyar --> 血; vder --> 惶; phur --> 花; air --> 一

Since ɽ was used to transcribe the final t in Chinese, it indicates that the Tibetan -d was already silent. But if the -d were still being used to indicate the final stop, the vowel in the syllable would be changed (e.g., ad --> ɛ; od --> ɔ; ud --> y), as observable in Modern Tibetan. That was why letter ɽ was used instead of letter d to transcribe the dental final stop. So, in my view, the Tibetan voiced consonant letters b, d and g were never pronounced as voiced consonants when used as final consonants. Tibetan writing only has one series of final stops; typologically, it is almost always true that when a language has only one series of final stops, this series is voiceless and unreleased.

2.2. Affricates

2.2.1. Voiceless affricates:

There were four voiceless affricates in Old Tibetan: the dental unaspirated *c, the dental aspirated *ch, the palatal unaspirated *ts and the palatal aspirated *tsh, which are represented by the letters c (ཅ), ch (ཆ), ts (ཇ) and tsh (ཉ). In Modern Tibetan those letters are still read as voiceless aspirated or unaspirated dental or palatal sounds. Even in the various Modern Tibetan dialects, they are treated in the same way. They seem to retain the ancient pronunciation, only with specific tonal pattern added. (see Chapter 3). e.g.,

voiceless unaspirated palatal affricates:

EOT	MOT	MOC	MT
*c	ci	祇, 照	[tʃ]
	cu	諸, 照	
	cim	箴, 照	
	cung	鍾, 照	
	ca	者, 照	
	civu	照, 照	
	cang	障, 照	
	ci	知, 照	
	cwag	燭, 照	

cung	中, 照
ca	者, 照
ci	支, 照

voiceless unaspirated dental affricates:

EOT	MOT	MOC	MT
*ts	tsyó	將, 精	[ts]
	tsye	精, 精	
	tsi	茲, 精	
	tsi	子, 精	
	tsavo	糟, 精	
	tsun	遵, 精	
	tsyan	翦, 精	
	tsug	足, 精	
	tsyag	爵, 精	
	tseng	增, 精	
	tsong	宗, 精	
	tsi	資, 精	
	tsin	津, 精	

tsing	憎, 精
tse	子, 精
tsan	讚, 精
tson	尊, 精
tsig	則, 精

voiceless aspirated palatal affricates:

EOT	MOT	MOC	MT
*ch	chi	楚, 穿	[tʃh]
	char	察, 穿	
	cheg	策, 穿	
	chovo	唱, 穿	
	chi	處, 穿	
	chu	初, 穿	
	chung	充, 穿	
	chur	出, 穿	
	chin	瞋, 穿	
	chi	侈, 穿	
	ching	稱, 穿	

voiceless aspirated dental affricates:

EOT	MOT	MOC	MT
*tsh	tshya	且, 清	[tsh]
	tshve	青, 清	
	tshwe	翠, 清	
	tshi	次, 清	
	tshavi	緣, 清	
	tshavu	操, 清	
	tshin	親, 清	
	tshe	切, 清	
	tshi	此, 清	
	tshu	取, 清	
	vtshvi	此, 清	
	tshir	七, 清	
	tshen	千, 清	

There seems to be no problem if we give Middle-Old Tibetan affricates a reconstruction such as *c, *ch, and *t, *tsh. However, special attention is called for when Chinese characters are being

transcribed into Tibetan using c or ch. the two parts of the initial category zheng chi yin (正齒音)⁷ are mixed. Those are found between the er deng (二等) and the san deng (三等) of initials zhao (照) and chuang (床). Those two pairs were separated strictly in Qieyun (切韻). This distinction has left a significant trace in Modern Chinese. In Putonghua (standard Chinese) there are many zhao xi er deng (照系二等) that are read with [tʂ-] or [tʂh-], while zhao xi san deng (照系三等) characters are read with [ts-]. For instance, in the zhao xi (照系):

er deng (二等)		san deng (三等)	
initial category		initial category	
阻	[tsu]	煮	[tʂu]
鄒	[tsou]	周	[tʂou]
搜	[sou]	收	[ʂou]
森	[sen]	深	[ʂen]

A similar situation exists with zhao xi with the fricative shen xi (申系). For instance, in Modern Putonghua, 森 [sen] is read as shen er deng (二等), and 深 [ʂen] is shen san deng (三等). But in the Chinese-Tibetan transcribed documents of the Middle-Old Tibetan period the er deng (二等) and san deng (三等) characters of zhao xi were transcribed with the same Tibetan dental affricates or fricatives. This fact shows that the Tibetan consonant system at that time was not able to distinguish between the zhao xi san deng (三等) characters and the san deng (三等) characters, because the Chinese zhao xi san deng (三等) was

already retroflex. But there were no retroflexes in Middle-Old Tibetan. Modern Tibetan (Lhasa dialect), has retroflexes [ts], [tsh], and [s]. They have evolved from the ancient consonant clusters *kr-, *khr-, *gr-, *hr-, or *pr-, *phr-, *br-, *tr-, *thr-, *dr-. But in the period of Middle-Old Tibetan, they had not yet evolved into retroflexes. If this were not so, the zhao xi san teng (照系三等) characters in buddhist sutras could have been transcribed with a combination of the Tibetan letters k and r. (Today, we can use kr [ts] to transcribe the Chinese [tʂ-]. For instance, the Tibetan name Bkra-shis is written as 扎西 in Modern Chinese.)

Also, this point can be strongly supported by examples from the Chinese transcription of Tibetan words in the Middle-Old Tibetan period. The name for the Tibetan king Khri-gtsug was written as 可黎可足 in Chinese historical texts. If by that time the initial consonant cluster *khr- had already evolved into a retroflex like its Modern Tibetan pronunciation [tsh], the two syllables should not have been transcribed into Chinese characters 可 and 黎.

Similar support can also be gained from the Middle-Old Tibetan transcription of Sanskrit. For instance, the phoneme s of the Sanskrit word bhikṣu was transcribed into Tibetan བྱི་ཤ་ with a sh (ཤ) [ʂ] but not a retroflex hr (ཧ) (MT [ʂ]).

2.2.2. Voiced Affricates

In Early-Old Tibetan there were two voiced affricates --- the unaspirated palatal *j and the unaspirated dental *dz. Their letters in Tibetan writing system were respectively j (ཇ) and dz (ཇ). As with the voiced stops in Middle-Old Tibetan, they were in the middle of the

devoicing process. Let us examine first how they retained their voicedness:

voiced unaspirated palatal,

EOT	MOT	MOC	MC
*j	jeg	宅, 澄	[ts]
	jo	腸, 澄	
	ji	持, 澄	
	jivi	馳, 澄	
	jig	直, 澄	
	jag	着, 澄	
	ji	值, 澄	
	jwag	濁, 澄	
	ju	住, 澄	
	jang	長, 澄	
	jag	著, 澄	

voiced unaspirated dental,

EOT	MOT	MOC	MC
*dz	dzyo	牆, 從	[dz]
	dze	情, 從	
	dzi	自, 從	
	dzyan	踐, 從	
	dzib	集, 從	
	dzig	寂, 從	
	dze	在, 從	
	dzeng	淨, 從	
	vdzivu	就, 從	

dzevi	在, 從
dzwevi	罪, 從
dzen	前, 從
dzen	賤, 從

In the above table, we can see that the voiced initial of the Chinese characters 情 and 寂 were transcribed into Tibetan by using the voiceless initial *tsh-. These two Chinese characters are tsheng and tshing in Tibetan transliteration. The Chinese character 住 was ju in the above chart, but in dc the same character was used for chu. This shows that the Tibetan voiced and voiceless initials *j- ཇ and *ch- ཇ and voiced and voiceless initials *dz- ཇ and *tsh- ཇ were once interchangeable. I also note that the interchangeability here does not mean that the Chinese voiceless initial can be transcribed with a Tibetan voiced initial, but that a Chinese voiced initial could be transcribed with a Tibetan voiceless initial. This situation is in agreement with the recognized general tendency in the evolution of East and South-East languages, i.e., that voiced consonants develop into voiceless. A similar case is the transcription of the Chinese character 值 which was transcribed into ji in jq and chi in dc.

So let us sum up the frequency of those patterns in the four texts of jq qz dc and am:

TABLE 15

	Tibetan transcribed letters			
	j		dz	
Chinese voiced initial	15	52%	14	48%
Chinese voiceless initial	1	50%	11	50%

The Chinese voiced initials *dz- of the cong category (從) and *dz- of cheng category (澄) should have been transcribed with Tibetan letters dz and j. But that was not always the case. In the four documents, the frequencies of the Chinese voiced initials being transcribed into Tibetan voiced and voiceless initials is shown in the following table:

TABLE 17

	Chinese voiced initials			
	by Tib voiced initials		by Tib voiceless initials	
j	15	94%	1	6%
dz	14	54%	12	46%

We also find in the four documents that there were eleven cases when Tibetan voiced consonant letters were used to transcribe Chinese voiceless consonants.

Again, with Tibetan voiced affricates we have a similar situation as with the voiced stops. In dc, the interchangeability between the Tibetan voiced consonant letters and the voiceless consonants was most frequent. Examples of using Tibetan voiced or voiceless consonant letters to transcribe Chinese voiced initial *dz-cheng mu (澄 母) follow:

voiced Tib. *j	voiceless Tib. *c
5	1

Almost all unusual Chinese cheng xi (澄 系) characters were transcribed with the voiceless letter ch. And among zhao xi or san teng initial category characters, five of thirteen were transcribed with Tibetan dz, amounting to 28% of the total.

It is clear that these facts indicate the devoicing tendency of Tibetan voiced affricates at that time, and it is very similar to the case of voiced stops.

2.3. Fricatives

In Early-Old Tibetan there were five fricatives: *z-, *z-, *s-, *c-, and *h-. In Tibetan writing they were respectively represented by the five letters z (ཟ), zh (ཞ), s (ས), sh (ཤ), and h (ཧ).

2.3.1. Voiceless fricatives

First let us examine the three voiceless fricatives: dental *s, palatal *c and the glottal *h representing Tibetan consonant letters s, sh and h. The same situation exists as with the voiceless consonants we discussed before: they retain their Early-Old Tibetan sound value in Modern Tibetan, and had no changes in the period of Middle-Old Tibetan. For example,

voiceless dental fricative:

EOT	MOT	MOC	MT
*s	so	素, 心	[s]
	so	桑, 心	
	syo	廂, 心	
	si	長, 心	
	savi	塞, 心	
	sim	心, 心	
	sin	新, 心	
	so	素, 心	
	si	思, 心	
	su	須, 心	
	sam	三, 心	
	sa	姿, 心	
	sug	宿, 心	
	sir	悉, 心	
	sevu	消, 心	
	sar	薩, 心	
	san	散, 心	

When ṣ was used as the superscript, sometimes it was pronounced, e.g., the two Tibetan kings' names:

btsan-snya --> 贊悉若
khri-srong --> 乞犁悉籠

But most often the superscript ṣ was not pronounced.

voiceless palatal fricative:

EOT	MOT	MOC	MT
sh	sha	沙, 審	[ç]
	she	笙, 審	
	shi	疎, 審	
	shig	穉, 審	
	sho	觴, 審	
	sho	賞, 審	
	shi	師, 審	
	shu	所, 審	
	sheng	生, 審	
	shar	殺, 審	
	sheg	色, 審	
	shi	施, 審	
	shan	山, 審	
	shuvi	所, 審	
	shevi	所, 審	
	shwar	舍, 審	

voiceless glottal fricative:

EOT	MOT	MOC	MT
*h	havu	好, 曉	[h]
	han	漢, 曉	
	hwan	歡, 曉	
	hwa	火, 曉	
	hi	喜, 曉	
	hu	虛, 曉	
	hivu	休, 曉	
	hong	香, 曉	
	hyar	血, 曉	
	hi	希, 曉	
	hwa	化, 曉	
	han	香, 曉	
	hwan	歡, 曉	
	hang	香, 曉	
	hevi	虛, 曉	

2.3.2. Voiced fricatives

In Early-Old Tibetan there were two voiced fricatives *zh and *z, which were represented in Tibetan writing by zh (𑄎) and z (𑄏) respectively. In Modern Tibetan these two voiced fricatives have already turned into voiceless aspirated fricatives. In my reconstruction system, they both had two pronunciations: voiced unaspirated *z, *zh, and voiceless unaspirated *s, *sh, in Middle-Old Tibetan. For example:

voiced palatal fricative:

EOT	MOT	MOC	MT
*zh	zhi	兒, 日	[ɕ]
	zhi	耳, 日	
	zhi	二, 日	
	zhag	弱, 日	
	zhwag	辱, 日	
	zhu	如, 日	
	zham	染, 日	
	zhin	人, 日	
	zhun	潤, 日	
	zhib	入, 日	
	zhir	日, 日	
	zhag	若, 日	
	zhug	肉, 日	
	zhen	然, 日	

The Tibetan letter ṣ was used to transcribe the Chinese xie sheng (邪聲) characters with a voiced fricative initial *z- (Luo, p23). But in the four documents of Luo's book (1933) cited, there is not a single voiced fricative initial of Chinese character transcribed into Tibetan with the letter ṣ. Without exception, all of the Chinese characters with voiced initial *z- of xie sheng (邪聲) were transcribed with the Tibetan voiceless letter ṣ, e.g.,

EOT	MOT	MOC	MT
*z	sun	誦, 邪	[s]
	syig	席, 邪	

swag	續, 邪
syim	尋, 邪
sivu	岫, 邪
suvi	隨, 邪
si	祀, 邪
si	嗣, 邪
syovo	象, 邪
sya	謝, 邪

Nevertheless, in the transcribed multiplication table the Chinese character 𠄎 which belonged to the voiceless xin sheng (邪聲) was once transcribed as zi.

Similarly, in the four documents cited by Luo (1933), among all the Chinese voiced palatal fricatives chan sheng (禪聲) I found only one character 禪 that was transcribed into Tibetan zhan with the letter zh. By count, there were forty Chinese characters of Chan sheng (禪聲), and all but the one exception were transcribed with the voiceless letter. Even that one, in the same document, dc, has a voiceless transcription -- shan instead of zhan. It would seem that the message of this phoneme is that the Chinese voiced fricatives were very much devoiced by that time.

In addition, there is a very interesting transcription in the multiplication table P.T. 1256 (Zhang 1986), where the Chinese words 二 "two" and 亦 "is" were transcribed in the same way -- zhi. Luo's reconstructions of the two consonants differ only in the nasalization: for "two" it was *nzh-; For "is" it was *zh-. This is in

agreement with the Tibetan transcription. In sentences 3 and 4 of line 8 of that document we have;

?yi - zhi - zhi - zhi (one two is two)

|

(a)

?yir - ?yir - zhi - ?yir (one one is one)

|

(b)

We can see that the Chinese character 一 "one" is transcribed in two different ways. The only explanation for this is that they precede two different initials. My suggestion is that the Chinese characters 二 "two" and 是 "is", contrary to Luo's reconstruction, were not identical in pronunciation. Thus the two combinations should be read as

(a) *?i - *nzhi (one two)

(b) *?ir - *zhi (one is)

The pronunciation of the Chinese character 二 "two" should have had a prenasalized initial, thus accounting for the dropping of the final *-r in the Tibetan transcription. The actual phonetic value of *-r in Tibetan was palatal-dental approximant and the position for producing it is similar to *n. When the two consonants occur together as in this combination, the sound *r assimilated to the following consonant n. That is why the Tibetan transcriber omitted the *r.

In the multiplication table the Chinese characters 七 "seven" and 八 "eight" are both transcribed in two different but similar ways. When they are followed by zhi 是 "is" they are transcribed with *r,

otherwise not. This *r corresponds with the final consonant *-t in the North-Western dialects of Chinese.

Now we can proceed to solve the riddle of how the same transcription **zhi** was used for two different characters *nzhi = "two" and *zhi གི "is". The same Tibetan letter could be read in two different ways: when pronouncing "two" it should be read as *nzh-, whereas it should be read as *zh- when pronouncing གི "is".

All these complexities resulted from the Tibetan writing conventions of the time, that there should be no nasal n or y before the letter **zh**. Those transcribers were both learned and dogmatic people. They would not leave their traditional spelling rules even if they were transcribing another language's documents. We have to bear this in mind when we are involved in reconstruction.

2.4. Nasals

In Early-Old Tibetan there were four nasals which we later find in Middle-Old Tibetan. They were labial nasal *m-, dental nasal *n-, palatal nasal *ɲ-, and velar nasal *ŋ-. In Tibetan writing they were represented respectively by m (མ), n (ན), ny (ཡ), and ng (ང). Letter v (འ) was also pronounced as the palatal nasal *ɲ-, as well as ng, but it only appeared before the basic consonant letters as the indicator of a prenasal sound.

labial nasal:

EOT	MOT	MOC	MT
*m	me	銘, 明	[m]
	mo	邛, 明	
	myan	眠, 明	

myan	勉, 明
myen	綿, 明
meng	明, 明
meng	盟, 明
ma	謨, 明
ma	沒, 明
me	命, 明
mye	名, 明
mon	明, 明
meng	盲, 明
me	銘, 明
myag	藐, 明

dental nasal:

EOT	MOT	MOC	MT
*n	no	梟, 泥	[n]
	ne	寧, 泥	
	nam	南, 泥	
	nong	農, 泥	
	nyam	念, 泥	
	ning	能, 泥	
	<u>nem</u>	念, 泥	
	nog	耨, 泥	
	nam	男, 泥	
	nam	念, 泥	

The above two nasals are used for transcribing Chinese, but the palatal and velar nasals can never be found in transcriptions. There are a few examples that we can find from Tibetan original documents transcribed into Chinese: nyakhri 鼻尺; nyam 娘; nga 五 mngan 岸.

In my system, I reconstruct a prenasal consonant *n-. I hold that this consonant was indispensable in the Tibetan transcribed Chinese documents as we can see that a great number (almost half) of the Zhongchun (重唇) Min mu (明母) character's initials were spelled not by the Tibetan labial nasal m (མ) but by two letters y (ཡ) and b (བ). Three points demand our attention. First, the labial stop b of course cannot transcribe the Chinese labial initial m in Min mu (明母) without the prenasal letter y preceeding it. (Actually the character 明 was transcribed as mon in dc but as ybun in qz). The letter y should play a role to justify its presence in this consonant cluster. That is why I hold that y must have been a prenasal element at that time. Second, we can see that letter b stood for an unaspirated sound. If it were aspirated, letter m (མ) would have been preferable. Third, the nasals in Chinese Min mu (明母) must have been more emphatic than those in Tibetan. Therefore the transcriber used a pre-nasal *n- plus a labial *b- as a cluster. That was why in the four Chinese documents qz, am, dc and jg, the Chinese consonants *m, *n, and *ŋ were almost all transcribed as vb, vd, and vg instead m, n and ng. Compare the following:

MOT

MOC

*n-

vdei

内.泥

vde	惱, 泥
vdwe	內, 泥
vdab	納, 泥
vder	涅, 泥
vdevu	乃, 泥
vdan	難, 泥
vdav	那, 泥
vding	能, 泥
vdog	耨, 泥

MOT

MOC

*m-

vba	磨, 明
vbi	寐, 明
vbu	茂, 明
vbun	門, 明
vbir	蜜, 明
vbyar	滅, 明
vbag	漠, 明
vbug	賸, 明
vbug	牧, 明
vbe	摩, 明
vbyeuv	妙, 明
vbyer	滅, 明
vbu	牟, 明

MOT

MOC

*n-

vgi	疑, 疑
vgevi	儀, 疑
vgam	嚴, 疑
vgin	雁, 疑
vgan	雅, 疑
vga	雅, 疑
vgo	五, 疑
vgo	悟, 疑
vgig	逆, 疑
vgem	嚴, 疑
vgeb	業, 疑
vgi	語, 疑
vgu	語, 疑
vgu	愚, 疑

From the above we see the letter y represented an homorganic prenasal *N-. Its position of articulation depended on what kind of homorganic nasal consonant it followed. Therefore, I consider the *N- as a allo-phone of nasal *n-, *m- or *-n in the MOT period.

The nasal letter m could also be used either as a prefix or a final consonant. Letter n and letter ng could also be used as the final consonant for a syllable. For instance, in both of the Tibetan original syllables mngan --> 岸.....(Middle-Old Chinese: ngan); mgar --> 噶.....(Middle-Old Chinese: gar), the prefix m was silent.

However, when used as a final consonant, the three nasal letters m, n, and ng were all pronounced, e.g.,

*-n	btsan	贊
	gan	感
	blon	論
	snam	悉 南
	brtan	旦
*n	chung	羌
	mang	芒
	stong	東
	srong	悉 籠
	wang	王
	peng	平
*m		
	kem	金
	sam	三
	sum	心
	mchims	琛

2.5. Laterals

In Early-Old Tibetan there was a lateral, and it still existed in Middle-Old Tibetan. The lateral *l- was represented by the Tibetan letter ལ (l). There was no change in this and it retained its Early-Old Tibetan sound value when in the initial position. For example,

EOT	MOT	MOC	MC
*l-			[l]

lo	羅, 來
lyo	路, 來
lyo	糧, 來
lye	兩, 來
li	離, 來
lu	累, 來
levi	隸, 來
la	羅, 來
le	來, 來
lug	六, 來
lag	樂, 來
lywr	劣, 來
lyong	兩, 來
lyong	量, 來
leng	令, 來
leng	領, 來

Othographically, this lateral is found in the final position and was pronounced in the Early-Old Tibetan period. But by the time of Middle-Old Tibetan, it is silent. For example "vbal" was transcribed into Chinese as 𑖃𑖅; rgyal which appeared in the 11 stone tablet four times and was transcribed into Chinese as 𑖃𑖅. (Those Chinese transcriptions suggest that the final letter l was not pronounced).

2.6. Semi-vowels

In Early-Old Tibetan there were three semi-vowels. They still existed in Middle-Old Tibetan. They were *y, *w and *r, represented respectively by y (𑖙), w (𑖚) and r (𑖛).

The Tibetan letter *y* could be used both as the initial consonant and as non-initial elements in consonant clusters (the subscript). For example, the transcription of the Chinese character 王 was ayir (ཡིར). The actual Chinese character -- is a zero initial in the Qieyun (切韻) but a glottal initial in the North-West Chinese of the Middle-Old Chinese period. Therefore the Tibetan transcription should have had the letter *a* as a glottal stop initial plus the letter *y* as part of the initial cluster. The *w and *y are both used as glides within the words as transcribed in Chinese documents. As initials, *w and *y had did not change and retained their Early-Old Tibetan sound value, e.g.,

EOT	MOT	MOC	MT
*w	wang	王, 喻	[w]
	wen	遠, 喻	
	wu	違, 喻	
	ywam	緣, 喻	
	cwag	燭, 照	
	jwen	轉, 知	
	jwag	濁, 澄	
	dwa	墮, 定	
	thwavi	退, 透	
	twavi	對, 端	

EOT	MOT	MOC	MT
*y	ya	野, 喻	[j]
	yi	貼, 喻	

yi	譽, 喻
yu	猶, 喻
yu	遊, 喻
yivo	輶, 喻
ya	也, 喻
yam	燄, 喻
yig	易, 喻
yog	欲, 喻
yang	楹, 喻
yivu	由, 喻
hyen	現, 匣
gyi	記, 見
khyevu	丘, 溪
kyan	堅, 見

EOT	MOT	MOC	MC
*r-	khri	可 黎	[r]
	khri	乞 犁	
	ra	邏	
	brod	婆	

As we mentioned in 2.1.1., all Chinese characters ending with -t were transcribed into Tibetan *ṛ*. This shows that, first, *ṛ* was a dental consonant which, when used as the final consonant was stopped but unreleased; and second, there was no final consonant -t in Middle-Old Tibetan. It must have been pronounced in the Early-Old Tibetan period. Otherwise it would not be in the Tibetan writing system. The

transcription of Chinese documents into Tibetan still had to follow the writing conventions of Tibetan itself, e.g., y was not allowed to be preceded by zh (see 2.3.). Therefore we can conclude that at that time there was no final consonant -t in Tibetan. Letter l was used as a postscript because, I surmise, the creator of Tibetan writing wanted to consider the need of the dialects that still had -t as the final consonant. Also this letter -t could serve as the tone-mark not only when used as the final consonant, but also when used as prescript or superscript. That is why this -t was retained in the Tibetan writing system.

2.7. Reconstruction of the consonant system of Middle-Old Tibetan

From above study we may now give a complete reconstruction of the Middle-Old Tibetan consonant system as follows:

TABLE 16

		bi- labial	dental	pal. alv.	pal. velar	glottal
stop	[-voiced]	p	t		k	ʔ
		ph	th		kh	
	[+voiced]	b	d		g	
affricate			ts	tʃ		
	[-voiced]		tsh	tʃh		
	[+voiced]		dz	dʒ		

nasal	m	n	ŋ	ŋ
lateral		l		
fricative[-voiced]		s	ʃ	h
[+voiced]		z	ʒ	
semivowel	w	r		j

From the table above we can see that, phonologically, the Middle-Old Tibetan consonant system is the same as the Early-Old Tibetan consonant system, but the spoken language of Middle-Old Tibetan was already different from their literary written language.

2.8. Notes.

1) There are two Chinese characters in the Middle-Old Chinese column. The first Chinese character is the Chinese transcription of the Tibetan word. The second Chinese character indicates the initial category sheng lei 声类 according to Chinese phonological work Qieyun.

2) These examples are taken from A Textbook of Sanskrit, published in 1976 as an inner-circulated book by the Institute of Nationalities, Beijing.

3) "Shengbu" is the term Ancient Chinese phonology used to indicate the initial categories. They are denoted by different characters, e.g., bang sheng bu 帮声部 means the initial *p- category; pang sheng bu 帮声部 means the initial *ph- category; ming sheng bu 明声部 means the initial *m- category, etc.

4) The traditional Chinese phonology divided consonants into four categories: quan qing 全清 (unaspirated voiceless); ci qing 次清 (aspirated voiceless); quan zhuo 全浊 (voiced, including voiced stops, voiced fricatives and voiced affricates); ci zhuo 次浊 (sonorant, including nasals, liquids and semi-vowels);

5) The traditional Chinese phonology divided tones into four categories: ping sheng 平声 tone category; shang sheng 上声 tone category; qu sheng 去声 tone category; ru sheng 入声 tone category.

6) Refer to Note 2 of Chapter I.

7) Zheng chi yin 正齿音 in Chinese phonology means the dental affricates and the dental fricatives.

Chapter three: Tonogenesis in Tibetan

There are no apparent tone-marks in Tibetan writing. We can find no reason to suppose that Early-Old Tibetan, for which Tibetan writing was designed was a tonal language. By the time Tibetan writing was being created, the language was not yet tonal. But many dialects of Modern Tibetan (e.g. Lhasa, Khams) are tonal. Many scholars have worked on the comparison between the Tibetan writing and Modern Tibetan. Nishida (1964), Wang Yao (1956), Kun Chang (1964), Sedláček (1959) and Hu Tan (1980) have all provided us with detailed synchronic descriptions of Modern Tibetan. Among them, Nishida (1964) and Sedlacek (1960) mentioned very briefly in their works that the Tibetan tonogenesis might have taken place in the 8th-9th centuries. Their historical study, however, was based on a simple comparison between Tibetan writing and Modern Tibetan. But their discussion gives no real clue as to the actual process of how and why Tibetan tones came into being. Their historical study, in my opinion, skipped an important stage when Tibetan tones were embryonic. In this period, as the prefixes and final consonants of Tibetan syllables gradually dropped, resulting in large numbers of homonyms, the innate natural pitches in the syllables gradually assumed a greater role in distinguishing meaning. That is to say, pitch, as a natural feature, developed into a distinctive feature -- tone. An inevitable result was the apparent "chaos" in writing. However, if we examine carefully this free variation in spelling, we find that this was not random but a reasonable process governed by certain rules. This is

what is discussed in this chapter: the course of the phonological development of Tibetan, channelled by this process. Tibetan tonogenesis was a gradual process occurring over a period of time, the whole Middle-Old Tibetan period. It covers the stretch of time between the mid-7th century to the end of the 9th century; that is to say, from the creation of Tibetan writing to the Standardization of Tibetan writing.

3.1. Special characteristics of Tibetan orthography

The spelling of Tibetan syllables has direct relevance to my interpretation of the Middle-Old Tibetan pronunciation of Tibetan phonemes. Tibetan writing is to be read from the left to the right, but the Tibetan syllable is not just spelled from left to right. There are prefixes, superscripts, subscripts and suffixes added from four different sides to the root initial letter. According to the Tibetan traditional grammar works from the 7th century,¹ this root initial is called ming-gzhi (མིང་གཞི), i.e. the root of the syllable.

Many linguists mistook those added elements along with the root-initial for consonant clusters in Middle-Old Tibetan.² Not all of those elements, however, were pronounced in Middle-Old Tibetan. In certain combinations some letters were silent.

Examine the following Middle-Old Tibetan words and the Chinese characters they were used to transcribe:

MOT	MOC
brtsan	贊
bzher	執

dgra

khri-lde-gtsug-brtsan

棄隸縮贊

The above words are all names of high-ranking officials on the stone tablets of tz and tf. According to the Qieyun, those Chinese characters did not have initial consonant clusters. Then why did the Tibetan words have some of the letters surrounding the root initial that were not pronounced? They must be playing some other role than indicating a consonantal phoneme.

Meanwhile, we see that of all of the consonant letters (P1, P2, or F1, F2) of the syllable some were not pronounced. Let us look at another word of interest, the name of a Tibetan king of the 8th century Khri-gtsug. The Chinese transliteration for this Tibetan word was 可黎可足 (kha li kha tsug in Middle-Old Chinese) The name of another Tibetan king khri-lde-gtsug-brtsan was transcribed into Chinese characters as 棄隸縮贊 or 棄隸踰贊 (khi li sug tsug in MOC). This shows that the initial consonant cluster *khr- of the first syllable in both of the two names were all pronounced. This root-initial kh which carried a subscript r was not pronounced as one unit as in retroflex initial [tsh] of Modern Tibetan. In the second syllable of the word khri-gtsug there also an initial consonant cluster. Thus the root-initial plus the subscript formed a consonant cluster in Middle-Old Tibetan syllables, while the prefix or the superscript did not form a part of consonant clusters because they were already almost silent in Middle-Old Tibetan.

Let us return to the second syllable of the king's name, khri-gtsug. The initial consonant *g- was transliterated into the same

Chinese character 𑄎 as the initial consonant of the first syllable "kh-", that is to say, "g-" in this position was pronounced in the same way as the voiceless "kh-" in that position. But as a final consonant in the above, the same syllable was read as the glottal stop [ʔ] since the Chinese character 𑄎 was a rusheng zi (stopped syllables) with this glottal stop. This example shows that those consonant letters have to be treated differently when they appear in different positions.

We may further assume that the creator of Tibetan writing put those consonant letters in the different positions intentionally so that they could represent or play different roles in determining the voicedness, the aspiration and the pitch of the syllable.

Immediately after the creation of Tibetan writing, Middle-Old Tibetan had already lost the sound of some consonant letters. An alphabetic writing at the time of its creation must be consistent with the speech of the time and the place for effective communication, but it is clear that many of the consonants of Tibetan were already starting to change in the period of Middle-Old Tibetan regardless of their position in the syllable.

Although all the consonant letters of Middle-Old Tibetan cannot be completely accounted for yet, two hypotheses may help our understanding.

First, there might have been a kind of writing system before the present Tibetan writing was created. Therefore, some outdated phonological elements were amalgamated into the new writing system, including those consonants which were already silent. Uray (1955) and Nishida (1964) have already raised this question without a definite conclusion. Also Tibetan writing may have retained those

consonantal elements because other Tibetan dialect speakers were still pronouncing them in their speech. For instance, the retention might have been for the convenience of speakers of other Tibetan dialects in which all the consonants of the Tibetan writing might still have been pronounced, as in the Amdo dialect of today (see 1.3.1.2.).

Second, the positions of initial consonant letters do not serve the same function in the pronunciation of a syllable in Middle-Old Tibetan as they did in Early-Old Tibetan. They play different roles in the phonetic structure of the syllable. In my view, only the root-initial and the subscript together can form a consonant cluster. The prefix and the superscript can only indicate the aspiration, the voicedness, or possibly pitch. The use of so many different additional marks are either necessary to distinguish the homonyms in the writing system, or perhaps those letters had already been there before the present Tibetan writing was created. Comparative evidence in Tibeto-Burma language family shows that the Written Tibetan pre-initial consonants were once definitely pronounced. When the Middle-Old Tibetan phonological system took shape the old Tibetan orthographic rules required their retention. For instance, the voiceless aspirated stops and affricates never carry superscripts in Tibetan writing. All the discussion in this paragraph shows that in the process of devoicing of voiced stops and affricates, the single initial will become aspirated but the other prefixed initials will not (see 1.3.1.1. and 3.4.).

In the documents of Xixia (a nation east of Tibet during the 8th to 11th centuries) language transcribed into Tibetan, we can find

the same indicators of voicedness and tones indicated by the prefixes and the superscripts³

The present Tibetan writing was patterned after the Sanskrit model, but a careful comparison with Sanskrit shows that the prefixes, the superscripts, and the subscripts in Tibetan do not serve the same roles as in Sanskrit.

3.2. The relationship between the Modern Tibetan tonal system (Lhasa dialect) and the consonantal elements in Tibetan writing.

3.2.1. Modern Tibetan tonal system and the initial consonants of Written Tibetan

The following two tables will illustrate the relationship between the Tibetan tones, the single consonant letters (table 17), and consonant cluster letters (table 18).

TABLE 17

high tone	low tone
p, t, k, ph, th, kh	b, d, g,
c, ch, ts, tsh	j, dz, z
sh, s, h, a	m, n, ny, ng, v
	r, l, w, y

The above table actually shows the following rules:

C_i [+ voice] = low tone

C_i [- voice] = high tone

TABLE 18

	high tone	low tone
stops	lp, sp,dp,py,dpj, spr,pr,spy,dpr, ph,phy,phyw,vphy, vph,phr,vphr	rb,sb,bj,vbj,sbj,br,vbr sbr,vb,lb
	gt, bt, rt, lt, st, brt, blt, bst, tr mth, vth	dw, gd, bd, rd, ld, bld, sd, brd, bsd, dr, vdr md, vd
	kw, dk, bk, rk, lk, sk, brk, bsk, ky, dky, bky, rky, sky,brky, kr, bsky, dkr, bkr, skr, bskr	gw, bg, dg, rg, sg, brg, bdg, lg, mg, vg, gy, dgy, bgy, rgy, sgy, brgy, bsgy, mgy, vgy, gr, grw, dgr, bgr, sgr, bsgr, mgr, vgr

khw, mkh, vkh, khy,
mkhy, vkhr, vkhr

gts, bts, rts, rtsw, sts, dz, rdz, brdz, mdz, vdz
brts, bstts

tsh, tshw, mtsh, vtsh,

gc, bc, lc rj, brj, lj, mj, vj
mch, vch

sw, gs, bs, sr, bsr zw, gz, bz

shw, gsh, bsh zhw, gzh, bzh

lh, hr, hw

dm, rm, sm, smr, my, mr
dmy, rmy, smy,

gn, mn, rn, sn, brn, bsn

gn, mn, rn, sn, brn, bsn nw

dn, mn, rn, ln, sn, brn,
bsn

g-y, dby	
dbr	rw
bl, kl, gl, rl, sl, bkl, brl, bsl	lw, zl

Table 18 above can be summed up in the following three tone rules which depend on syllable structure: -- (P₁) (P₂) C_i (G) :

rule one:

(P ₁)	(P ₂)	C _i	(G)	=	high tone
[+/- prefix]	[+prefix]	[+sonorant]			

rule two:

(P ₁)	(P ₂)	C _i	(G)	=	high tone
[+/- prefix]	[+/-prefix]	[-sonorant]			
		[-voiced]			

rule three:

(P ₁)	(P ₂)	C _i	(G)	=	low tone
[+/- prefix]	[+/-prefix]	[-sonorant]			
		[+voiced]			

These brief rules can be used as rules of thumb to simplify determination of Tibetan tones.

3.2.2. Modern Tibetan tonal system and the final consonants of Written Tibetan.

Numerous scholars (Handricourt 1954; Matisoff 1975; Ohala 1973) have pointed out that the pitch height of tones is determined by the initial consonants whereas the contour of tones is determined by final consonants. Tibetan tones follow these generalizations without an exception. The effect of initials has been discussed above. As finals, stops make the tone fall while nasals and glides do not.

TABLE 19

falling tone	non-falling tone
1) -b, -d, -g	1) -v
2) -s	2) -r
3) -bs, -gs	3) -l
4) -ms, -ns	4) -m, -n, -ŋ

By examining the correlations between the Tibetan writing and the actual pronunciation of Modern Tibetan we have enough evidence to say that the now mute consonants had much to do with the formation of the tones. However, in order to determine exactly how and at what time these changes began to take place and how long the process lasted before its completion, we have to go to the various

Tibetan historical documents and try to reconstruct the pronunciation of Tibetan at the crucial historical periods.

I have studied the relationship between the post-suffix *da-drag* in Early-Old Tibetan and the falling tone (Zhang, 1986). The postsuffix letter *d* of the Early-Old Tibetan was abolished by the standardization. That means the final stop *-d* of final consonant clusters, which must have been pronounced before the Standardization was already missing. We do not find the postsuffix letters *-d* in written documents or dictionaries after the 9th century. In the pronunciation of modern Tibetan (any dialect) we do not find this *-d* as a final consonant either. However, in certain cases the tones of those words which historically ended with this post final *-d* are different from the tones of those words which historically did not end in *-d* despite the other conditions of their tone formation being similar. Many of the words which had the postsuffix *-d* have a falling tone in Modern Tibetan (Lhasa dialect). e.g.,

MOT		EOT
phyin	↘ to go (past tense)	phyind
thon	↘ to start to leave (past tense)	thond
bstan	↘ to show (imperative)	bstand
bskyon	↘ to support (on the horse, impr)	bskyond
nyon	↘ to listen (imperative)	nyond

Therefore, the following formula sums up the relationship between the various consonantal elements in Tibetan writing and Modern Tibetan tones.

For syllables without prefix the rules are:

rule one a

C_i (F) = low rising
[+voiced] [+sonorant]

rule one b

C_i (F) = low falling
[+voiced] [-sonorant]

rule two a

C_i (F) = high level
[+voiced] [-sonorant]

rule two b

C_i (F) = high falling
[-voiced] [+sonorant]

But for syllables with prefix, the rules are:

rule one. a.

(P₁) (P₂) C_i (G) (F) = high level
[+/-prefix] [+prefix] [+sonorant] [+sonorant]

rule one. b:

(P₁) (P₂) C_i (G) (F) = high falling

[+/-prefix] [+prefix] [+sonorant] [-sonorant]

rule two. a:

(P₁) (P₂) C_i (G) (F) = high level
[+/-prefix] [+/-prefix] [-sonorant] [+sonorant]
[-voiced]

rule two. a:

(P₁) (P₂) C_i (G) (F) = high falling
[+/-prefix] [+/-prefix] [-sonorant] [-sonorant]
[-voiced]

rule three. a:

(P₁) (P₂) C_i (G) (F) = low rising
[+/-prefix] [+/-prefix] [-sonorant] [+sonorant]
[+voiced]

rule three. b:

(P₁) (P₂) C_i (G) (F) = low falling
[+/-prefix] [+/-prefix] [-sonorant] [-sonorant]
[+voiced]

3.3. The devoicing of Middle-Old Tibetan consonants and the rise of the tonal distinctive feature

Voicedness is the central issue in my interpretation of the consonant system of Middle-Old Tibetan and in the study of Tibetan tonogenesis. Most scholars stopped at describing what the voicedness was in Old Tibetan and what the present situation of tones is in Modern Tibetan. No one has tried to make clear enough through what steps the changes came about and when each step took place. Nishida summed up the genesis of Tibetan tones in the following chart (1979, v.3, p185)

Period 1	(change of phonetic value)	Period 2
I.		
voiceless stops (voiceless ---> voiceless)		voiceless stops with <u>high tone</u>
II.		
C,voiced stops (voiced ---> voiceless and fricatives	and aspirated)	C, voiceless aspirated stops and fricatives <u>Low tone</u>
CC,voiceless stops(voiced --> voiceless and fricatives	and unaspirated)	C, voiceless un- aspirated stops and fricatives <u>Low tone</u>
III.		
C, voiceless and (voiceless--> voiced) aspirated nasals		C, voiced nasals <u>High tone</u>

Nishida's "summary" cited above is simply a listing of the ancient written form and present written form of the voiced consonant, he failed to include in his scheme many other factors.

My hypothesis is that for the second group of consonants in the above table, the Old Tibetan voiced stops and fricatives first became voiceless unaspirated, (notice: many homonyms will occur!) and only afterward became voiceless aspirated, so Nishida's chart for the second group of stops and fricatives should be changed in the following way:

TABLE 20

Period 1	Period 2	Period 3
EOT	MOT	MT
voiced	voiceless and unaspirated	voiceless and aspirated

For example, the stops:

Period 1	Period 2	Period 3
b	p	ph
d	t	th
g	k	kh
[+voiced]	[-voiced]	[-voiced]
[-aspirated]	[-aspirated]	[+aspirated]

As shown above, there were numerous variants in the written form of the words. Many scholars hold that there was "chaos in spelling regulations", which I have already discussed in Chapter Two. Here, however, I shall argue from a different angle for my disagreement with their explanation.

In the Tibetan documents from the 8th to 9th centuries, there were many voiced stops or fricatives or affricates written as voiceless unaspirated (e. g., b --> p, d --> t, g --> k, etc.); voiceless unaspirated stops or fricatives or affricates written as voiceless aspirated (e.g., p--> ph, t --> th, k --> kh, etc.); or voiceless aspirated stops or affricates written as voiceless unaspirated stops (e.g., ph --> p, th --> t, kh --> k, etc.).

From the first group (voiced consonants written as voiceless unaspirated) come the following examples:

Orthographic form	Middle-old variant	Meaning
ded	ted	chase
jo-bo	co-bo	master
du-ma	tu-ma	many
rdo-rje	rto-rje	vajra
bzhes	bshes	fetch
zhi'u	shi'u	guard
dang	tang	and
[+voiced]	[-voiced]	
[-aspirated]	[-aspirated]	

Among the above examples, the word with a voiced initial *d-: dang ང་ "and" was very often written as voiceless initial *t-: tang ཏ་. In the P.T. 1042 document there were 46 "and's" altogether. 36 of them (76%) were written as dang ང་; 12 of them (14%) were written as tang ཏ་. The significance of this phenomenon will be discussed later.

For the second group (the voiceless unaspirated stops or affricates written as voiceless aspirated) the following words serve as examples:

Orthographic form	Middle-old variant	Meaning
btcu	btchu	ten
bkur	bkhur	respect
btags	bthags	bound
bkra-cis	bkhru-cis	auspicious
btshan	btshan	stubborn
dpyang	dphyang	sag
gtogs	gthogs	belong
gtse	gtshe	harm
d'pya	dphya'	tax
gtum	gthum	vicious
ltcags	ltchags	iron
lkag	lkhag	attract
sko	skho	collect

[-voiced]	[-voiced]
[-aspirated]	[+aspirated]

In the third group (the voiceless aspirated stops or affricates written as voiceless unaspirated) there are the following examples:

Orthographic form	Middle-old variant	Meaning
mkhos	mkos	need
m'chod	m'cod	suppiy
mtshungs	mtsungs	equal
vphags-ps	vpags-pa	sage
mt hong	mtong	see
phul	pul	devote
phag	pag	pig
tcung	tcung	small
chen-po	cen-po	big
thos	tos	smell
tha-ba	ta-ba	solid
khyed	kyed	you
khong-co	kong-co	princess
[-voiced]	[-voiced]	
[+aspirated]	[-aspirated]	

The three groups are hardly spelled chaotically. In fact, I have found only three cases of voiceless aspirated stops, affricates or fricatives written as voiced, and two cases of voiceless unaspirated stops or affricates or fricatives written as voiced. I have not found a single case of voiced stops, fricatives or affricates written as voiceless aspirated.

This regularity is a powerful rebuttal of the opinion that these variants popped out due to ignorance or negligence on the part of the transcribers. There is, however, another opinion which argues that these variants were the result of the divergence between dialects. I do not think this opinion is well-grounded since those variants may appear on the same page, or even in the same line. The following line is taken from Dunhuang Zangwen xuanbian I (Wang, Y, 1980)

kha chu dang sna cu dang mchi ma da ci'i chu yin nam?
mouth water & nose water & tear & what water yes ptcl.

(Is that saliva, snivel, tears or what else?)

The underlined words are different written forms of the same word "water". It is, of course, hardly imaginable for the same transcriber to use different dialects in the same line.

The only possible explanation, I think, is that those forms were interchangeable at that time, because the voiced unaspirated stops and affricates by that time had already become voiceless unaspirated stops. That is to say, the second step I described in Table 20 had been completed. A similar process can be seen in many South-east Asian

languages, for instance in the evolution of Thai and Vietnamese Standard Siamese is actually like Tibetan in that its *b changed into ph. etc.(Matisoff,1975). Also, in the Changsha dialect and Min dialect of Chinese, the ancient voiced obstruents have changed into unaspirated voiceless consonants (Yun Jiahua, 1960, p.102).

Traces of this historical change can be found in Modern Tibetan dialects. In the Lhasa dialect all consonant letters representing voiced stops or affricates in Old Tibetan are read as unaspirated voiceless if they are preceded by a prefix (r. Chapter Two). In bisyllabic words, initials at the beginning of the second syllable representing voiced stops or affricates are also pronounced as unaspirated voiceless (with some aspirated exceptions). In some words of the Labrang dialect (the Amdo Tibetan dialect), the stops and fricatives that were voiced in Old Tibetan are also pronounced as voiceless aspirated:

Old Tibetan	Modern LabrangTibetan	
dom	tom	(a bear)
go	ko	(to hear)

Also, in Dege dialect, the voiced initial letter b in all words is still pronounced as a voiceless unaspirated [p], not an aspirated [ph] (while in Lhasa dialect it should be pronounced with an aspirated [ph]). For instance:

Old Tibetan	Modern Dege Tibetan	meaning
bal	pe ʌ	wool

bug

pu? ㄥ

rift

This passage from Early-Old Tibetan voiced stops, affricates and fricatives to unaspirated voiceless consonants was crucial in the tonogenesis of Tibetan.

Voiceless-high and voiced-low is held by most contemporary phonologists as a general tendency for tones. Matisoff (1973), Karlgren (1931), Wang Li (1981) and Trubetzkoy (1958) have all discussed this from the point of view of historical comparative linguistics. Even more, support is provided by the technique of experimental examination, e.g. Ohala (1973), Hall and Stevens (1971), Hirose, Lisker and Abramson (1973). Since there is no orthographic indication of tones in Tibetan writing, we assume that there were no tones in the 6th century when Tibetan writing was created. We can imagine, however, that there were natural non-distinctive pitch patterns in Old Tibetan. Voiceless consonants would have higher pitch and voiced consonants would have lower pitch. A similar phenomenon can be observed in the toneless Amdo Dialect.

3.4. The intermediate stage of consonantal and the Tibetan tonogenesis.

In the last chapter I discussed the devoicing stage of the voiced stops and affricates in Middle-Old Tibetan. The suggestion was that during this stage tones had already come into being. The natural pitch had already developed into distinctive tones.

stage 1

stage 2

stage 3

*C₁-	*C-	Ch-
[+voiced]	[-voiced]	[-voiced]
[-aspirated]	[-aspirated]	[+aspirated]
\	/	\
devoicing		becoming aspirated
tones developed		

The above diagram is a summarization of all the synchronic and diachronic phenomena for the voiced consonants from Early-Old Tibetan through Middle-Old Tibetan to Late-Old Tibetan. A middle-Old Tibetan synchronic analysis, however, would show the situation of the set of stops, fricatives and affricates of the same position as follows:

stage 1 Early-Old Tibetan	stage 2 Middle-Old Tibetan	stage 3 Modern Tibetan
*C₁-	*C₂-	Ch₂-
*C₁-	*C₃-	C₃-
*Ch₁-	*Ch₃-	Ch₃-
[+voiced]	[-voiced]	[-voiced]
[-aspirated]	[-aspirated]	[+aspirated]
For example,		
*d-	*t-	th-
*t-	*t-	t-
*th-	*th-	th-

From the above chart we can see the reasons why in the transcribed documents of the period we find that the original Early-Old Tibetan voiced initials $^*C_v$ - could be written as voiceless C- (hereafter C_2), and the original Early-Old Tibetan voiceless unaspirated $^*C_1$ - written as Ch- (hereafter Ch_2), and the original Early-Old Tibetan voiceless aspirated initials $^*Ch_2$ - written as C- (hereafter C_3).

The first three phonemes existed simultaneously: $^*C_{[vc]}$, $^*C_1$ - and $^*Ch_2$ -. (For example dental stops: $^*C_{[vc]}$ = d, $^*C_1$ = t, and $^*Ch_2$ = th). Because the voicing disappeared first, the voiced initial $^*C_{[vc]}$ became a voiceless initial $^*C_2$ -, and the two possible written forms $^*C_{[vc]}$ and $^*C_1$ - merged together. Just like we mentioned in the last section, dang ང "and" was written as tang ཏ . That is why the voiced initial $^*C_{[vc]}$ could be written as a voiceless unaspirated initial $^*C_1$ -. And the homonyms between the same position's voiced and voiceless initials appeared. Thus, the devoiced dang "and" changed into tang, and would merge into another originally voiceless word tang "to do".

It is possible that $^*Ch_1$ - could be losing aspiration at the same time, since language changes in so many possible ways. We can hardly suppose that there was only devoicing occurring in Early-Old Tibetan. There is much evidence that the voiceless aspirated initials were becoming unaspirated (e.g., all the voiceless unaspirated initials may be pronounced as voiceless unaspirated initials in the second syllable of bi-syllabic words in modern Lhasa Tibetan: [ngantsho] <--> [ngantso] "we", etc.). This has been a continuing process to the present

day. Therefore, at that time (Middle-Old Tibetan), Tibetan language had another problem which appeared again. The voiceless aspirated initial ***Ch₁-** has become unaspirated initial **C-**. So, another kind of homonym has appeared, too. And the two written forms for voiceless unaspirated **C-** (from ***Ch₁-**) and voiceless unaspirated **C₃-** have merged together as well. These mergers led to "chaotic writings" (but not due to "lack of education", "mistakes", etc.). That is why we find **Ch₁-** written as unaspirated **C-** at the same time, and the Early-old Tibetan voiceless aspirated initial ***Ch₁-** was written as voiceless unaspirated initial **C-** in Middle-Old Tibetan. The above effort to resolve this chaos was but one step in the ongoing process of the development of tonogenesis.

Perhaps significantly, I have found very few "irregular spellings" in the opposite way, that is ***C₁-** written as **C_[vc]-** (e.g., with **p-** written as **b-**, or **ph-** as **b**). I can not find a single case with **Cv-** written as **Ch-** (e.g. **b-** written as **ph-**). This random mixing of voiced initials and voiceless initials was actually like a one-way street; you can only go in one direction instead of in both:

***C_[vc]-** can be written as **C-**, but not the opposite direction.

***C₁-** can be written as **Ch-**, but not the opposite direction.

When ***C_[vc]-** was written as ***C₂-**, there would be confusion between ***C₂-** and ***C₁-**. If ***Ch₁-** also was merging with ***C₁-**, the reduction in contrasts would be even more serious. By that time, however, both ***C₁-** and ***C₂-** had to find a way to develop an additional phonemic distinctive feature. Tibetan now had two

possible paths of development: either to have more aspiration or to turn the natural pitch into tones. As we have just mentioned, the aspiration could not help, because *Ch₁- and *Ch₂- would be merged together immediately.

Since all three contemporaneously co-existing consonants concurred with different natural pitches, tones acquired distinctiveness very naturally to meet the need for semantic distinctions. Between the two paths, the tones were the only path that Tibetan language could follow. That was when and how Tibetan became a tonal language.

Of course we could ask the question why the devoiced stops and the affricates *C₂- continued to evolve into aspirated *Ch₃- (as showed in the diagram on p108) since the unaspirated voiceless stops or affricates had already acquired distinctiveness from other phonemes? Why did the devoiced stops and the affricates *C₂- continued to evolve into voiceless aspirated *Ch₃-, since the distinctive feature of tone had already come into being? And why did the devoiced stops and the affricates *C₂- continue to evolve into voiceless aspirated *Ch₃-, since there was no problem for any kind of merger among each set of the same position's consonants?

To answer this question we should first look at the whole situation of devoiced consonants *C₂-s before their devoicing. And then look at the whole situation of devoiced consonants *C₂-s before they changed into aspirated. After a study of these two problems, I find that not all of the devoiced consonants changed into aspirated but only those devoiced consonants which were not preceded by a prefix (or prefixes) in Early-Old Tibetan and changed into aspirated.

Otherwise they did not change into aspirated consonants. For instance, the initial of the syllable dar of glang-dar-ma was voiced *d- in Early-Old Tibetan, was unvoiced unaspirated *t- in Middle-Old Tibetan (...), and now is th- in modern Tibetan. But the initial of the lde-btsan was voiced *d- in Early-Old Tibetan, was voiceless unaspirated *t- in Middle-Old Tibetan (.....), and now is still unvoiced unaspirated t- in modern Tibetan. We could draw a formula for the evolution of the voiced initials as follows:

Rule one:

Early Old Tibetan		Middle-Old Tibetan		Modern Tibetan
* C _[vc] -	-->	*C-	-->	Ch-
[+voiced]		[-voiced]		[-voiced]
[-aspirated]		[-aspirated]		[+aspirated]
[-prefix]		[-prefix]		[-prefix]
[-tone]		[+low tone]		[+low tone]

Rule two:

Early Old Tibetan		Middle-Old Tibetan		Modern Tibetan
* PC _[vc] -	-->	*(P)C-	-->	Ch-
[+voiced]		[-voiced]		[-voiced]
[-aspirated]		[-aspirated]		[+aspirated]
[+prefix]		[+/-prefix]		[-prefix]
[-tone]		[+low tone]		[+low tone]

This formula and its examples support the contention that this is the most probable reason that in the Early-Old Tibetan period some

This formula and its examples support the contention that this is the most probable reason that in the Early-Old Tibetan period some voiced initials were, and some were not preceded by a prefix. Since the loss of the prefix (or prefixes), words with initials which were preceded by prefix (or prefixes) would merge with the words with non-prefixed initials. In order to distinguish the voiced root initial consonants preceded with a prefix from those voiced root consonants without prefixes the latter became aspirated. Otherwise homonyms would arise again. That is why in the modern Lhasa dialect the Early-Old Tibetan voiced consonants preceded with a prefix are, without exception, changed into unaspirated consonants. The compilers of the textbooks currently in use (Kun Chang 1964, Goldstein 1978) and the authors of some monographs on Tibetan phonology (Hu Tan 1980, Nishida 1964, Zhou Jiwen 1984, Qu Aitang 1965) all hold that it was the prefix which made the Old Tibetan voiced consonant change from aspirated into unaspirated. This is exactly the opposite of the historical facts --- only those Early-Old Tibetan voiced root initial consonants without prefixes turned from unaspirated into aspirated.

3.5. Notes

1. Sum-rtags-tsa-ba dang devi-vgrl-pa si-tuvi-zhal-lung is the original Tibetan grammar book by the creator of Tibetan writing Thon-mi (Thon-mi, 632A.D.).

2. It is common among scholars (e.g. Hu,1980; Wang,1956; Zhou,1984) to use the term "initial consonant cluster" for the initial consonant letters other than a single initial letter.

3. Many scholars have discussed on this problem. They have different opinions on the function of the Tibetan prefix letters used in the transcription of Xixia texts. (see Nie, 1986).

APPENDIX *

Part I

aa	1679	aa	269	aag	2156
aa	2014	aa	388	aan	2015
aa	2149	aa	451	aan	2150
aa	294	aa	461	aan	884
aa	300	aa	480	aar	2016
aa	303	aa	483	ae	1680
aa	319	aa	493	ae	1681
aa	322	aa	495	aeg	723
aa	368	aa	528	ag	1908
aa	412	aa	551	ai	1847
aa	435	aa	604	ai	1848
aa	441	aa	650	ai	1849
aa	449	aag	1859	ai	1850

* The entries included in this appendix are Tibetan-transcribed Chinese words (or vice versa) extracted from documents of the 7th-9th centuries. The two parts of this appendix are as follows:

(1) Part I is an alphabetically arranged quick search table which contains written Tibetan and its paired series number which are used to locate that word in part II of the Appendix.

(2) Part II is the main part of this appendix which contains the written Tibetan, the abbreviation of the source document, the direction of transcription and the Chinese Character. The abbreviations in the "source" column are consistent with the text of the dissertation (see. Chapter One). TC means transcription from the original Tibetan documents into Chinese while CT stands for the opposite direction of transcription.

ai	2017	blon	133	ayi	842
ai	2018	blon	140	ayi	875
ai	2151	blon	143	ayi	919
ai	2152	blon	153	ayig	372
ai	2154	blon	159	ayir	659
ai	256	blon	168	ba	315
aig	2157	blon	173	ba	318
aim	1687	blon	60	bad	1091
aim	1688	blon	87	bag	485
aim	1853	blon	94	bam	1045
aim	2020	bo	165	bam	1046
ain	1854	bo	2264	bam	1092
ain	1904	bo	2276	bam	17
ain	2021	bo	2287	ban	257
aing	2153	bo	2344	ban	260
air	1858	bo	252	ban	580
air	2155	bo	976	ban	638
air	452	bod	2184	ban	982
aivu	1899	bod	2185	ban	986
aivu	1917	bod	41	ban	987
aivu	245	bod	42	bang	541
aivu	369	bod	5	bang	594
ao	1846	bod	92	bav	975
ao	510	bog	2261	bavi	2256
aon	1855	bong	1050	bavi	979
aong	596	bong	1062	bavi	991
aovu	242	bong	1063	bavu	992
aovu	635	bong	547	be	977
au	1682	bran	141	be	978
au	1851	brod	9	beng	416
au	1852	brtan	120	beng	419
au	2019	brtsan	101	beng	420
au	2280	brtsan	14	beve	333
aun	1856	brtsan	166	bevi	980
auvi	1684	brtsan	181	bevi	981
auvi	1685	btsan	111	bi	984
ayan	1689	btsan	185	bi	990
ayan	202	btsan	25	big	1119
ayavo	492	btsan	33	bkav	104
aye	720	btsan	6	bkavi	138
ayevi	1686	btsan	62	bla	131
ayi	1683	btsan	78	blon	103
ayi	658	btsan	8	blon	110

bu	1118	bzher	63	chi	1430
bu	18	bzher	84	chl	1431
bu	2321	bzher	98	chi	1449
bu	7	ca	1143	chi	398
bu	702	ca	1164	chig	1391
bu	819	ca	1439	chig	1421
bu	838	cag	2336	chin	1418
bu	860	cag	326	chin	1419
bu	890	cag	606	chin	1433
bu	951	can	218	chin	270
bu	985	can	353	chin	380
bug	1121	can	609	chin	534
bun	1049	cang	1148	ching	1154
bun	1060	cang	1444	ching	1175
bun	1061	cang	281	cho	1392
bun	350	cang	685	chog	129
bun	644	cang	687	chog	1422
bun	66	cang	689	chovo	1384
bun	674	cavu	1374	chovu	440
bun	988	cavu	2307	chovu	593
bun	989	ceg	624	chu	1386
bur	1064	cen	676	chu	1417
bur	1120	ceng	2358	chu	1432
bur	587	cevu	2327	chun	1411
buv	348	cevu	2395	chun	499
bvevi	2320	cevu	713	chung	1387
bvo	2216	cha	344	chung	1390
bvo	2315	cha	423	chung	1445
bvog	2241	chang	192	chung	35
bvog	2301	char	1382	chur	1155
byai	39	chavo	198	chur	1420
byan	983	ched	37	ci	1144
bye	334	cheg	1383	ci	1145
byevu	1048	cheg	1410	ci	1151
byi	1047	chen	150	ci	1152
byi	1059	chevu	1389	ci	1165
byi	785	chevu	1427	ci	1166
bzang	135	chi	1153	ci	1167
bzang	163	chi	1174	ci	1172
bzang	89	chi	1381	ci	1372
bzher	112	chi	1385	ci	1402
bzher	121	chi	1425	ci	1404
bzher	145	chi	1429	ci	1413

ci	1414	cung	2380	de	1536
ci	1440	cung	2384	de	51
ci	1441	cvung	2201	deng	1530
ci	1447	cvung	2210	devi	1355
ci	1448	cwag	1379	devi	1356
ci	1955	cwan	1162	devi	901
ci	205	da	244	devi	905
ci	618	da	356	devu	1357
ci	755	dan	1486	devu	1479
ci	873	dang	622	devu	1528
cig	1236	dar	1483	devu	1529
cig	934	dar	1531	devu	1538
cii	893	dar	20	devu	1539
cim	1375	dave	2188	devu	827
cim	608	dave	2194	devu	864
cin	1376	dave	2202	di	1527
cin	922	dave	2224	ding	1360
cing	1377	dave	2236	ding	1541
cing	1405	dave	2284	ding	914
cing	1408	dave	2296	ding	915
civu	1146	dave	2324	do	1351
civu	1442	dave	2332	do	1353
co	194	dave	2341	do	1472
co	55	dave	2359	do	1474
cog	108	davi	1476	do	1522
cog	1156	davi	1477	dog	1358
con	1380	davi	220	dog	1361
cu	1373	davi	2211	dog	1484
cu	1406	davi	2273	dog	1485
cug	523	davi	2312	don	238
cug	563	davi	2352	don	393
cung	1147	davi	2361	don	631
cung	1168	davi	2367	dong	1481
cung	1173	davi	338	dong	1482
cung	1378	davi	572	dovu	293
cung	1409	davo	387	dovu	556
cung	1415	davo	389	du	719
cung	1443	de	1126	duo	1473
cung	2196	de	1354	dvo	2219
cung	2204	de	1475	dwa	1352
cung	2250	de	1524	dwan	1540
cung	2255	de	1525	dwe	1537
cung	2311	de	1526	dyan	1480

dyavu	1478	gang	1664	gu	2137
dza	1249	gang	2138	gu	772
dza	2240	gang	235	gu	837
dza	2377	gang	628	gu	848
dzag	1816	gavu	1663	gu	856
dzav	1250	ge	1982	gu	882
dzavi	1253	gem	327	gu	892
dzavi	1254	gen	170	gu	921
dze	1963	gevi	798	gu	926
dzen	2095	gevi	804	gun	1654
dzen	2096	gevu	764	gur	1690
dzeng	1964	gi	130	guvu	1660
dzevi	1255	gi	1335	gwa	1334
dzevi	2092	gi	1336	gwa	851
dzevi	701	gi	1337	gwa	854
dzevu	1256	gi	1647	gwam	1827
dzhe	766	gi	1648	gwan	1828
dzi	700	gi	1662	gwan	533
dzib	825	gi	2001	gwin	1655
dzim	359	gi	2135	gye	868
dzin	1257	gi	314	gyen	714
dzin	1817	gi	500	gyi	1338
dzin	812	gib	2002	gyi	1992
dzin	822	gib	2139	gyi	2136
dzivu	2094	gib	317	gyiuvu	669
dzo	361	gig	1656	gyivu	190
dzo	478	gig	2003	gyivu	867
dzovo	1251	gim	1653	gzig	178
dzuvu	1252	gin	390	ha	1694
dzwa	453	give	479	ha	1695
dzwav	262	givu	1651	ha	1868
dzwav	415	givu	1652	ha	2027
dzwav	508	givu	1826	ha	2028
dzwe	433	go	1659	ha	2162
dzwevi	2093	gong	114	ha	2163
dzyang	259	gtogs	106	ha	2191
ga	1332	gtsug	13	hab	146
ga	1333	gtsug	16	ham	1875
ga	1657	gu	1649	han	1692
ga	1658	gu	1650	han	1706
ga	648	gu	1661	han	1707
gab	1995	gu	1824	han	2024
gam	770	gu	1825	han	2243

han	286	hov	1700	hyan	1879
han	489	hovu	362	hyan	565
hang	2026	hovu	410	hyar	1867
hang	2160	hu	1863	hye	1703
hav	1696	hu	2183	hyen	2032
hav	2161	hun	2039	hyeng	1881
hav	653	hun	2182	hywan	75
havu	1691	hung	1149	ja	1434
he	1297	hung	222	jag	1182
he	1870	hung	574	jag	1428
he	1871	hva	954	jang	1159
he	341	hvevi	780	jang	1180
he	470	hwa	1697	jang	436
he	474	hwa	1698	javu	1397
he	518	hwa	1860	jeg	1393
heng	1710	hwa	1861	jeng	1438
heng	1880	hwa	1869	jeng	2186
heng	2169	hwa	2030	jeng	2222
hevi	2159	hwa	2164	jeng	2322
hevi	2166	hwa	352	jev	298
hevi	704	hwab	1883	jevu	1401
hevi	745	hwan	1693	jevu	2245
hevu	2167	hwan	1708	jevu	2357
hevu	48	hwan	1877	jevu	2372
hevu	68	hwan	1878	jevu	2391
hi	1862	hwan	2025	jevu	584
hi	2022	hwan	529	ji	1157
hi	2023	hwan	552	ji	1177
hi	925	hwang	239	ji	1179
hing	2170	hwang	632	ji	1395
hivu	1864	hwang	64	ji	829
hivu	1874	hwang	683	ji	918
hivu	2168	hwavi	1704	jig	1398
ho	1699	hwavi	1705	jik	1163
ho	2029	hwe	1701	jing	1435
ho	2165	hwe	1872	jivi	1396
ho	2215	hwe	1873	jivu	525
ho	2275	hwe	2031	jivu	903
ho	792	hweve	1702	jivu	907
hog	1884	hwong	1882	jivu	911
hog	2171	hyab	1711	jivu	916
hong	1865	hyan	1709	jivu	936
hong	1866	hyan	1876	jo	1394

ju	1178	keng	1315	kheng	1324
jung	1436	keng	1608	kheng	503
jung	1437	keng	1610	khevu	616
juvo	299	keng	2306	khi	1320
juvo	302	keng	2319	khi	1321
jwag	1158	keng	2326	khi	1328
jwan	1160	keng	2363	khi	1637
jwen	1400	keng	2394	khi	1638
ka	142	keng	43	khi	1999
ka	1593	keng	607	khi	2133
ka	1595	keng	680	khi	402
ka	1597	keng	686	khib	1331
ka	1599	keng	688	kho	1319
ka	2112	keng	690	kho	1326
ka	2115	kevi	1615	kho	1629
ka	520	kevi	2117	kho	1631
kab	1616	kevi	2118	kho	241
kab	1994	kevi	717	kho	340
kab	240	kevu	1303	kho	634
kab	329	kevu	1304	khod	79
kab	633	kevu	1623	khod	99
kag	1317	kevu	2119	khong	1325
kag	1996	kevu	216	khong	1327
kavu	1617	kevu	561	khong	1628
kavu	1619	kha	1318	khong	2134
kavu	1621	kha	1627	khong	718
kavu	2244	kha	1998	khri	12
ke	1295	kha	2132	khri	15
ke	1298	kha	421	khri	179
ke	1299	kha	496	khri	182
ke	1300	khab	126	khri	22
ke	1603	khag	531	khri	26
ke	1981	khag	548	khri	29
ke	1983	khal	157	khri	31
keb	1618	kham	1323	khri	57
keg	219	khan	246	khri	77
keg	571	khang	1645	khri	83
keing	2128	khang	1646	khu	1329
kem	52	khe	542	khu	1639
ken	1306	khe	581	khu	1829
ken	147	khe	678	khu	722
ken	1985	kheg	1632	khu	824
keng	1314	kheg	427	khung	1330

khung	730	klam	509	kwang	1990
khung	731	klu	134	kwang	2124
khung	738	klu	162	kwang	2234
khung	739	ko	1296	kwang	2271
khung	757	ko	1979	kwang	2294
khung	773	ko	2116	kwang	2339
khung	859	kog	1626	kwang	45
khuvu	501	kog	1997	kwat	1620
khwag	1630	kog	385	kwav	263
khwan	1643	kong	1614	kweg	1624
khwan	536	kong	193	kwon	1312
khwe	1636	kong	1993	kwon	1988
khwe	592	kong	2129	kyam	2303
khwev	230	kong	2335	kyam	2318
khwev	395	kong	2343	kyam	2329
khyam	1642	kong	505	kyam	2347
khyan	1644	kong	54	kyam	2364
khyavi	1640	kong	614	kyam	2381
khye	1633	kong	91	kyan	1307
khye	1634	kovu	335	kyan	1309
khye	1635	ku	1302	kyan	1604
khyevu	1322	ku	1980	kyan	1606
khying	1424	kun	1596	kyang	2125
ki	1607	kun	1598	kyar	1622
ki	1609	kun	2354	kye	1301
ki	1611	kung	1612	kye	355
ki	1613	kung	2130	kye	1605
kim	1984	kung	2131	kye	698
kim	2120	kung	564	kyei	1991
kim	2232	kuo	1601	kyen	1308
kim	2349	kur	1316	kyen	1310
kim	406	kvang	2268	kyen	1986
kim	463	kvavu	1641	kyen	1987
kim	476	kwa	1294	kyen	2122
kim	681	kwa	2113	kyen	2123
kin	1305	kwa	2114	kyeng	1313
kin	1594	kwa	454	kyeng	2126
kin	1625	kwag	2355	kying	2127
kin	2121	kwan	1311	la	105
kin	215	kwan	1600	la	1552
kin	481	kwan	1602	la	1554
kin	562	kwan	699	la	346
king	524	kwang	1989	la	530

la	589	lem	1506	log	2235
la	600	leng	1553	log	2272
la	694	leng	1555	log	2295
la	709	leng	560	log	2340
la	845	leve	349	log	337
la	879	levi	1367	lon	1508
la	886	levi	1501	lovu	204
la	897	levi	2314	lovu	345
la	931	levu	1503	lovu	516
lab	234	levu	1504	lu	1499
lab	626	levu	1562	lu	1500
lag	1141	levu	1564	lug	1142
lag	1511	levu	307	lug	1565
lag	1563	levu	816	lug	664
lag	253	levu	820	lun	1567
lam	1505	lha	164	lvevi	2286
lang	2193	lha	85	lwan	1139
lang	2199	lho	113	lwan	1370
lang	2207	li	1140	lwan	1568
lang	2218	li	1399	lyan	1509
lang	2247	li	1498	lyang	1371
lang	2374	li	1558	lye	1497
lang	2379	li	1560	lyo	1495
lang	2393	li	2263	lyo	1496
lav	1136	li	2267	lyong	1557
lav	1366	li	2362	lyong	1559
lav	1493	li	296	lywr	1561
lavu	1502	li	324	ma	1065
lavu	2388	li	414	ma	1066
lda	514	li	507	ma	21
lde	174	li	725	ma	250
lde	183	li	752	ma	366
lde	24	li	862	ma	371
ldem	213	lim	1507	ma	383
le	1137	lin	1566	ma	392
le	1138	ling	1510	ma	394
le	1368	ling	2281	ma	397
le	1369	livu	2334	ma	400
le	1556	livu	2369	ma	432
le	554	livu	2386	ma	467
le	639	lo	1494	ma	586
legs	171	log	1135	mag	540
lehu	304	log	1512	mang	30

mchims	118	mye	811	pa	896
mchims	95	mye	906	pa	930
me	1010	myen	1015	pa	942
me	1067	myes	136	pa	946
me	1098	myi	1102	pag	237
me	357	myi	1455	pan	577
meg	1456	na	295	pang	605
meng	1016	na	323	par	1024
meng	1017	na	413	par	1112
meng	1018	nam	1364	par	512
meng	1072	nam	1365	par	668
meng	1073	nam	1491	par	870
meng	1099	nang	93	pavi	959
meng	1103	ne	100	pe	1075
meng	207	ne	1490	pe	491
meng	408	ne	80	pe	502
ngar	2	nem	1133	pe	615
mi	1100	nen	403	pe	955
ming	1101	nen	405	peg	627
ming	1104	nen	407	peg	961
mngan	124	nen	409	peg	962
mo	1011	nen	411	peng	2226
mo	229	nga	417	peng	46
mo	442	ni	462	pevu	1022
mo	591	ning	1551	pevu	1078
mon	1071	ning	917	pha	2209
mtiong	86	no	1489	pha	964
mun	191	nob	34	phab	1032
mun	2190	nob	36	phab	1086
mun	677	nog	1134	phab	375
mung	865	nog	1362	phab	379
myag	1105	nong	1492	phab	756
myag	1457	nwan	490	phab	795
myan	1012	nyam	1550	phab	971
myan	1013	pa	1019	phad	1087
myan	1014	pa	1026	phan	1036
myang	1	pa	107	phan	1040
myang	167	pa	117	phan	221
mye	1068	pa	149	phan	227
mye	1069	pa	667	phan	573
mye	1070	pa	693	phang	325
mye	1454	pa	708	phar	1033
mye	807	pa	878	phar	1042

phar	1043	phyi	116	pu	894
phar	1116	phyi	158	pu	924
phar	1117	pi	1074	pu	928
phe	965	pi	958	pug	1081
phe	968	pig	1107	pug	1090
phég	1044	pig	963	pug	201
pheng	1041	po	151	pvu	2212
phevu	343	pon	125	pvu	2285
phovo	967	pon	960	pvu	2313
phrin	139	pu	1021	pvu	2325
phu	1027	pu	1077	pvu	2333
phu	1029	pu	1106	pvu	2342
phu	1035	pu	1109	pvu	2368
phu	1038	pu	2189	pvu	973
phu	1082	pu	2195	pyan	1023
phu	1108	pu	2203	pyan	1079
phu	1110	pu	2225	pyan	1080
phu	212	pu	2257	pyan	1111
phu	2237	pu	2297	pye	956
phu	254	pu	236	pye	957
phu	437	pu	2360	pyi	1020
phu	969	pu	273	pyi	1076
phu	970	pu	289	pyi	569
phu	974	pu	306	pyir	1025
phug	748	pu	312	pyir	613
phui	1039	pu	316	q	1586
phun	1030	pu	377	q	1589
phun	1115	pu	418	ra	10
phung	1031	pu	422	ra	188
phung	310	pu	472	ra	251
phung	313	pu	582	ra	267
phung	488	pu	691	ra	342
phur	1037	pu	706	ra	376
phur	1089	pu	728	ra	384
phur	874	pu	732	ra	444
phur	972	pu	759	ra	468
phvu	2274	pu	761	ra	943
phyau	966	pu	763	ra	947
phyi	102	pu	765	rdzi	19
phyi	1028	pu	767	re	643
phyi	1084	pu	769	rgal	97
phyi	1113	pu	843	rgan	156
phyi	1114	pu	876	rgyal	169

rgyal	176	se	791	she	513
rgyal	61	sen	1823	she	590
rgyal	88	sev	434	shég	1744
rib	197	sevu	2101	shég	232
rje	59	sevu	2102	sheng	1196
rma	137	sevu	2230	sheng	1742
rngegs	152	sevu	646	sheng	1751
ro	109	sha	1183	sheng	1768
ro	268	sha	1745	sheng	1929
ro	367	sha	1774	sheng	1930
ro	494	sha	1924	sheng	1936
ro	550	sha	1926	sheng	2048
ro	649	sha	2041	sheng	2062
rtag	187	sha	2047	sheng	53
rtsan	4	sha	724	sheng	679
rtsis	148	sha	751	sheve	599
sa	11	shab	1753	shevi	2046
sa	189	shag	727	shevi	2052
sa	1967	shag	734	shevi	760
sa	840	shag	735	shevu	1194
sag	1581	shag	742	shevu	1750
sam	1819	shag	776	shevu	641
sam	1973	shag	790	shi	1185
sam	2103	shan	1205	shi	1190
sam	661	shan	1206	shi	1191
sam	871	shan	1764	shi	1202
sam	887	shang	1207	shi	1203
sam	889	shang	1766	shi	1211
san	1271	shang	2061	shi	1740
san	2106	shang	2305	shi	1747
san	2392	shar	1197	shi	1757
sang	948	shar	1743	shi	1758
sar	1278	shar	1754	shi	1759
sar	1925	shar	1779	shi	1771
sar	2109	shar	1940	shi	1775
sar	703	shavng	2060	shi	1919
savi	1266	shavo	1193	shi	1920
schur	209	she	1184	shi	2043
se	1811	she	1212	shi	2050
se	196	she	1746	shi	2051
se	1968	she	1921	shi	2055
se	445	she	1927	shi	2056
se	448	she	1932	shi	2064

shi	2249	shing	1752	shu	2266
shi	2331	shing	1778	shu	2278
shi	2366	shing	1931	shu	2289
shi	2383	shing	2063	shu	2299
shi	2387	shing	2065	shu	2317
shi	249	shing	2251	shu	2346
shi	271	shing	2385	shu	2376
shi	365	shing	360	shu	2390
shi	370	shir	1214	shu	276
shi	382	shir	1939	shu	320
shi	391	shir	1941	shu	74
shi	396	shir	2069	shug	1198
shi	399	shir	459	shug	1209
shi	431	shivi	1201	shug	1210
shi	466	shivi	44	shug	1388
shi	477	shivu	1195	shun	1777
shi	504	shivu	1928	shuvi	2045
shi	517	shivu	1934	shvu	1761
shi	585	shivu	2057	shvu	621
shib	1769	shivu	2058	shwar	1755
shib	1937	shivu	2059	shwar	2054
shib	670	shivu	424	shwar	927
shig	1186	shan	1763	shwar	935
shig	1199	sho	1188	shwevi	1192
shig	1208	sho	1189	shwi	1204
shig	1756	sho	1200	shwog	261
shig	275	sho	1923	shya	1187
shig	602	shog	597	shyim	1762
shig	781	shon	1772	shywang	487
shig	803	shong	1767	si	1265
shim	1770	shu	1741	si	1280
shim	1935	shu	1748	si	1585
shim	339	shu	1760	si	1812
shim	705	shu	1922	si	1813
shim	746	shu	1933	si	1814
shin	1213	shu	2042	si	1969
shin	1749	shu	2044	si	1970
shin	1776	shu	2197	si	2097
shin	2053	shu	2205	si	2098
shin	330	shu	2214	si	647
shin	426	shu	2229	sig	233
shin	787	shu	2239	sig	625
shin	902	shu	2259	sim	1268

sim	1820	su	1971	ta	711
sim	1974	su	2099	ta	847
sim	2104	su	620	ta	881
sim	697	sug	1279	ta	885
sim	849	sug	1978	ta	899
sin	1269	sum	58	ta	933
sin	1277	sun	1270	tab	1514
sin	1821	sung	2111	tam	1341
sin	1975	suvi	1587	tam	1461
sin	2105	svi	2378	tan	1464
sing	1276	swa	953	tan	1571
sing	2108	swag	1590	tan	284
sing	2252	swan	1582	tan	287
sir	2110	swan	1976	tang	1343
sivu	1588	swan	2107	tang	373
sivu	1818	swan	651	te	363
sivu	1972	swog	1282	te	65
sivu	2100	sya	1258	te	684
skyid	186	sya	1583	te	839
snam	115	syang	1272	te	891
sanya	7	syang	1273	tem	545
so	1259	syang	1822	ten	1342
so	1260	syang	1977	ten	282
so	127	syang	1275	ten	863
so	1815	syang	1281	teng	1573
sog	40	syavu	1267	teng	2371
song	278	syé	1263	tevu	1340
spu	175	syé	1264	tha	506
srong	180	syig	1591	thab	1350
srong	184	syig	1592	tham	1519
srong	23	syo	1261	than	1533
srong	28	syo	1262	than	1579
srong	32	syon	1274	thar	1521
stag	122	syovo	1584	thar	511
stag	144	sywar	484	thav	1348
stag	154	ta	1339	thav	1516
stag	177	ta	1459	thave	675
stang	81	ta	1513	thavi	2200
stong	3	ta	1569	thavi	2254
stshe	70	ta	1570	thavi	2304
su	1293	ta	640	thavi	2310
su	1809	ta	652	the	1517
su	1810	ta	696	the	443

then	1349	ton	1463	tseng	255
then	1578	tong	1467	tser	1231
then	206	tong	497	tsevi	2090
then	291	tovu	521	tsevu	224
ther	272	tsa	2260	tsevu	425
ther	274	tsa	2300	tsevu	576
thevi	1518	tsa	2348	tsevu	637
thevu	231	tsab	123	tsha	1423
thevu	623	tsag	1796	tsha	1426
tho	1577	tsag	1958	tsha	301
thog	1534	tsag	2083	tsha	654
thog	1535	tsan	172	tshal	38
thong	1532	tsan	1956	tshavi	1235
thong	2282	tsang	1150	tshavi	1241
thovu	331	tsang	1170	tshavu	1242
thovu	447	tsang	1446	tshe	1238
thovu	570	tsang	2353	tshe	1801
thung	1520	tsang	553	tshe	1960
thuo	1470	tsang	655	tshe	636
thwa	1580	tsavo	1225	tshe	721
thwavi	1471	tse	1953	tshe	920
ti	601	tse	199	tsheg	72
ti	939	tse	203	tshen	1961
ti	941	tse	2079	tshen	2091
ti	945	tse	228	tshen	404
ti	950	tse	243	tsheng	1287
ti	952	tse	292	tsheng	1288
tig	1346	tse	328	tsheng	1806
tig	1347	tse	351	tsheng	2270
tig	1468	tse	486	tsheng	2293
tig	1469	tse	515	tsheng	2338
tig	1515	tse	522	tsheng	73
tig	1575	tse	526	tsher	1246
tig	1576	tse	537	tsheu	1285
tig	69	tse	539	tshevi	2089
tig	832	tse	578	tshevu	579
tig	836	tse	595	tshi	1240
tig	883	tseb	1230	tshi	1283
ting	1344	tseg	429	tshi	1284
ting	1345	tsen	214	tshi	1802
ting	1572	tsen	557	tshi	2087
ting	1574	tsen	559	tshi	2088
ton	1462	tseng	1228	tshi	248

tshi	814	tsi	753	va	309
tshib	1290	tsi	800	va	471
tshig	1247	tsig	1233	vam	305
tshig	1248	tsig	1416	vba	1052
tshig	1292	tsig	1797	vba	1095
tshig	438	tsig	1798	vba	993
tshin	1243	tsig	2084	vba	994
tshing	1289	tsig	2085	vbag	1000
tshing	1799	tsig	588	vbag	265
tshir	1962	tsig	736	vbag	555
tshir	401	tsig	740	vbal	132
tshir	665	tsin	1790	vban	1008
tshivu	498	tsin	1957	vban	1093
tshog	794	tsin	2082	vban	1450
tshu	1803	tsing	1791	vbar	1453
tshu	1804	tsing	1793	vbav	200
tshung	2356	tsing	2086	vbav	217
tshung	774	tsing	768	vbav	223
tshve	1807	tso	457	vbav	519
tshve	1808	tsog	558	vbav	567
tshwar	1291	tson	2081	vbav	575
tshwe	1239	tsong	1176	vbe	1053
tshya	1237	tsong	1229	vber	1055
tshya	1800	tsong	1792	vbevi	583
tshyab	1245	tsong	1794	vbevu	527
tshyan	1244	tsong	2308	vbi	995
tshyan	1286	tsug	1234	vbir	998
tshyan	1805	tsun	1171	vbo	2227
tshyang	225	tsun	1226	vbo	332
tshyang	336	tsuvo	439	vbovu	544
tsi	1222	tsvi	2233	vbovu	612
tsi	1223	tsvong	1773	vbrog	160
tsi	1224	tsvong	1795	vbu	1007
tsi	1403	tswevi	2080	vhu	1034
tsi	1412	tsyag	1232	vbu	1057
tsi	1789	tsyan	1227	vbu	1058
tsi	1954	tsye	1221	vbu	1124
tsi	364	tsyoy	1220	vbu	1452
tsi	381	tua	841	vbu	450
tsi	465	twa	211	vbu	996
tsi	619	twavi	1460	vbug	1002
tsi	666	tyan	1465	vbug	1003
tsi	726	tyan	1466	vbug	1004

vbug	1005	vdevu	1129	vgi	2006
vbug	1123	vdi	2078	vgi	2007
vbun	1122	vdo	280	vgi	2008
vbun	1451	vdus	27	vgi	2009
vbun	997	vdus	90	vgi	2141
vbur	1009	vdwan	1545	vgi	2142
vbur	1094	vdwe	1544	vgi	2143
vbven	2231	vdzivu	1965	vgi	2187
vbwang	1097	vga	1665	vgi	2223
vbwang	2040	vga	1830	vgi	2246
vby	611	vga	2004	vgi	2323
vbyag	1001	vga	938	vgi	2373
vbyar	762	vga	940	vgi	49
vbyar	826	vga	944	vgig	1845
vbyar	999	vga	949	vgig	2148
vbyer	1125	vgag	1678	vgin	1675
vbyeve	1054	vgam	1674	vgin	2269
vbyeve	1096	vgan	1676	vgin	2292
vbyi	1006	vgan	610	vgin	2337
vbyi	1051	vgan	783	vgin	535
vbyi	568	vgan	797	vgivu	532
vbyi	695	vgav	2140	vgo	1831
vbyi	710	vgav	617	vgo	1832
vbyi	846	vge	1833	vgo	2005
vbyi	898	vge	1840	vgo	2350
vbyi	932	vge	358	vgu	1669
vbyil	880	vgeb	1844	vgu	1670
vbyir	1056	vgeb	2147	vgu	1671
vcu	1407	vgem	2010	vgu	1673
vda	1127	vgem	2144	vgu	1836
vdab	1487	vgen	1839	vgu	1837
vdab	1546	vgen	1841	vgu	2248
vdan	1130	vgen	2011	vgu	2330
vdar	1128	vgen	2145	vgu	2365
vdav	1359	vgen	2146	vgu	2382
vde	1523	vgevi	1672	vgu	663
vde	1542	vgevi	852	vgu	715
vde	1543	vgevi	855	vgvi	2283
vdei	1488	vgevu	1838	vgwan	1677
vder	1547	vgi	1666	vgwan	1843
vder	869	vgi	1667	vgwan	2012
vdevi	799	vgi	1668	vgwan	2220
vdevi	813	vgi	1835	vgwan	2370

vgwave	266	vwe	1733	ya	354
vgwe	1834	vwen	1736	ya	428
vgyan	1842	vwen	1737	ya	446
vgyar	1788	vwevi	2351	ya	455
vhad	1088	vwin	1730	ya	460
vi	1888	vwuvi	2290	ya	543
viu	1738	wan	2037	ya	549
vjab	538	wang	47	ya	598
vji	1951	wang	50	yab	1727
vji	1952	wen	1914	yag	888
vji	2077	wen	2013	yam	2033
vkhyevu	2000	wen	386	yan	1724
vmeg	1458	wi	793	yang	2178
vnan	1549	wu	1912	yang	2279
vneng	1131	wu	775	yavi	2242
vnevi	1363	wu	777	yavu	1722
vnevi	1548	wu	782	yeng	1725
vning	1132	wu	789	yevu	1723
vo	128	wu	796	yevu	2158
vpag	546	wu	801	yi	1713
vphu	1083	wu	805	yi	1714
vphye	566	wu	806	yi	1715
vphyi	1085	wu	809	yi	1887
vtisa	1169	wu	810	yi	1889
vtsang	656	wu	815	yi	1890
vtshang	657	wu	823	yi	1891
vtshi	1959	wu	828	yi	1892
vu	1910	wu	831	yi	1898
vu	1911	wu	834	yi	2173
vu	1913	wu	850	yi	2174
vu	2179	wu	853	yi	2175
vu	2180	wu	857	yi	729
vu	482	wu	909	yi	733
vu	603	wu	913	yi	788
vun	1734	ya	264	yi	802
vun	1857	ya	1712	yi	833
vun	1915	ya	1885	yig	1729
vun	2181	ya	1886	yig	1893
vwan	1735	ya	2172	yig	2035
vwan	2038	ya	2262	yig	277
vwang	2208	ya	2302	yig	747
vwar	1732	ya	297	yig	808
vwe	1731	ya	311	yig	818

yig	830	zha	877	zher	786
yim	1902	zha	895	zhevu	2072
yin	1903	zha	929	zhi	1215
yir	1728	zhag	1218	zhi	1216
yivo	1720	zhag	1950	zhi	1217
yivo	1721	zhag	2075	zhi	1780
yivu	1894	zhag	347	zhi	1781
yivu	1900	zham	1784	zhi	1942
yivu	1901	zhan	1181	zhi	1944
yivu	1916	zhan	1765	zhi	1945
yivu	2177	zhan	1938	zhi	1947
yivu	858	zhang	119	zhi	2068
yog	1909	zhang	161	zhi	2192
yog	2036	zhang	2213	zhi	2198
yong	1906	zhang	2228	zhi	2206
yong	1907	zhang	2238	zhi	2217
yong	247	zhang	2258	zhi	458
yong	321	zhang	2265	zhi	660
yong	642	zhang	2277	zhi	673
yu	1716	zhang	2288	zhi	712
yu	1717	zhang	2298	zhi	737
yu	1718	zhang	2316	zhi	741
yu	1719	zhang	2345	zhi	749
yu	1739	zhang	2375	zhi	754
yu	1895	zhang	2389	zhi	771
yu	1896	zhang	430	zhi	784
yu	1897	zhang	456	zhi	835
yu	2176	zhang	56	zhi	900
yun	2328	zhang	76	zhi	904
yun	469	zhang	82	zhi	908
yun	473	zhang	96	zhi	912
yun	716	zhe	2066	zhib	1787
yung	1726	zhe	2070	zhib	671
ywan	1905	zhe	2071	zhim	645
ywan	2034	zhe	374	zhim	672
ywan	861	zhe	378	zhin	1785
ywar	937	zhe	475	zhin	1948
yweng	2221	zhe	750	zhin	2074
yyam	1918	zhe	872	zhin	226
zab	1966	zhen	2073	zhin	258
zha	692	zheng	2049	zhin	279
zha	707	zheng	2396	zhin	283
zha	844	zheng	682	zhin	285

zhin	288
zhin	290
zhir	1949
zhir	208
zhir	210
zhir	464
zhir	923
zhivi	2291
zhivu	308
zhivu	743
zhivu	778
zho	910
zhu	1782
zhu	1783
zhu	1943
zhu	1946
zhu	2253
zhu	2309
zhug	2076
zhun	1786
zhung	71
zhwag	1219
zi	662
zi	817
zi	821
zigs	155
zo	744
zo	758
zo	779
zo	866
zrid	195
zwang	1161

Part II

No.	WT	Source	Direction of transcription	Corresponding Chinese char.
1	myang	mj	TC	娘
2	ngar	ls	TC	噶
3	stong	ls	TC	东
4	rtsan	ls	TC	贊
5	bod	ls	TC	蕃
6	btsan	ls	TC	贊
7	snya	ls	TC	悉 若
8	btsan	ls	TC	贊
9	brod	ls	TC	婆
10	ra	ls	TC	還
11	sa	ls	TC	些
12	khri	ls	TC	可 黎
13	gtsug	ls	TC	可 足
14	brtsan	ls	TC	贊
15	khri	js	TC	弃 隶
16	gtsug	js	TC	缩 (蹙)
17	bam	mj	TC	莽
18	bu	mj	TC	布
19	rdzi	mj	TC	支
20	dar	zz	TC	達
21	ma	zz	TC	磨
22	khri	td	TC	乞 犁

23	srong	td	TC	悉 笼
24	lde	td	TC	纳
25	btsan	td	TC	贊
26	khri	td	TC	乞 犁
27	vdus	td	TC	弩
28	srong	td	TC	悉 笼
29	khri	td	TC	乞 犁
30	mang	td	TC	跋
31	khri	cf	TC	器
32	srong	cf	TC	采 弄
33	btsan	cf	TC	贊
34	nob	mj	TC	姥
35	chung	mj	TC	羌
36	nob	mj	TC	纳
37	ched	mj	TC	耿
38	tshal	mj	TC	薩
39	byai	mj	TC	毗
40	sog	mj	TC	栗
41	bod	tf	TC	蕃
42	bod	tf	TC	蕃
43	keng	tf	TC	京
44	shivi	tf	TC	師
45	kwang	tz	TC	廣
46	peng	tz	TC	平
47	wang	tz	TC	王
48	hevu	tz	TC	孝
49	vgi	tz	TC	感

50	wang	tz	TC	皇
51	de	tz	TC	帝
52	kem	tz	TC	金
53	sheng	tz	TC	城
54	kong	tz	TC	公
55	co	tz	TC	主
56	zhang	tf	TC	尚
57	khri	tf	TC	綺
58	sum	tf	TC	心
59	rje	tf	TC	兒
60	blon	tf	TC	論
61	rgyal	tf	TC	結
62	btsan	tf	TC	贊
63	bzher	tf	TC	巨熱
64	hwang	tf	TC	皇
65	te	tf	TC	帝
66	bun	tf	TC	文
67	bu	tf	TC	武
68	hevu	tf	TC	孝
69	tig	tf	TC	德
70	stshe	tf	TC	綏
71	zhung	tf	TC	成
72	tsheg	tf	TC	柵
73	tsheng	tf	CT	清
74	shu	tf	CT	水
75	hywan	tf	CT	县
76	zhang	tf	TC	尚

77	khri	tf	TC	綺立
78	btsan	tf	TC	贊
79	khod	tf	TC	窟
80	ne	tf	TC	寧
81	stang	tf	TC	悉當
82	zhang	tf	TC	尚
83	khri	tf	TC	綺立
84	bzher	tf	TC	熱
85	lha	tf	TC	貪
86	mtshong	tf	TC	通
87	blon	tf	TC	論
88	rgyal	tf	TC	煩
89	bzang	tf	TC	藏
90	vdus	tf	TC	努悉
91	kong	tf	TC	恭
92	bod	tf	TC	蕃
93	nang	tf	TC	曩
94	blon	tf	TC	論
95	mchims	tf	TC	琛
96	zhang	tf	TC	尚
97	rgal	tf	TC	煩
98	bzher	tf	TC	熱
99	khod	tf	TC	窟
100	ne	tf	TC	寧
101	brtsan	tf	TC	贊
102	phyi	tf	TC	訛
103	blon	tf	TC	論

104 bkav	tf	TC	伽
105 la	tf	TC	羅
106 gtogs	tf	TC	篤
107 pa	tf	TC	波
108 cog	tf	TC	屬
109 ro	tf	TC	盧
110 blon	tf	TC	論
111 btsan	tf	TC	贊
112 bzher	tf	TC	熱
113 lho	tf	TC	土
114 gong	tf	TC	公
115 snam	tf	TC	悉南
116 phyi	tf	TC	紐
117 pa	tf	TC	波
118 mchims	tf	TC	琛
119 zhang	tf	TC	尚
120 brtan	tf	TC	旦
121 bzher	tf	TC	熱
122 stag	tf	TC	悉諾
123 tsab	tf	TC	帛
124 mngan	tf	TC	岸
125 pon	tf	TC	奔
126 khab	tf	TC	榼
127 so	tf	TC	蘇
128 vo	tf	TC	戶
129 chog	tf	TC	屬
130 gi	tf	TC	劫

131 bla	tf	TC	羅
132 vbal	tf	TC	末
133 blon	tf	TC	論
134 klu	tf	TC	矩 立
135 bzang	tf	TC	藏
136 myes	tf	TC	名
137 rma	tf	TC	摩
138 bkavi	tf	TC	給
139 vo	tf	TC	鵲
140 blon	tf	TC	論
141 bran	tf	TC	勃 闌
142 ka	tf	TC	伽
143 blon	tf	TC	論
144 stag	tf	TC	卷 諾
145 bzher	tf	TC	熟
146 hab	tf	TC	合
147 ken	tf	TC	乾
148 rtsis	tf	TC	資 卷
149 pa	tf	TC	波
150 chen	tf	TC	折
151 po	tf	TC	通
152 rngags	tf	TC	額
153 blon	tf	TC	論
154 stag	tf	TC	卷 諾
155 zigs	tf	TC	昔
156 rgan	tf	TC	乾
157 khal	tf	TC	賓

158	phyi	tf	TC	紕
159	blon	tf	TC	論
160	vbro	tf	TC	沒 虛
161	zhang	tf	TC	尚
162	klu	tf	TC	劫 樓
163	bzang	tf	TC	藏
164	lha	tf	TC	他
165	bo	tf	TC	譜
166	brtsan	tf	TC	贊
167	myang	tf	TC	明
168	blon	tf	TC	論
169	rgyal	tf	TC	結
170	gen	tf	TC	研
171	legs	tf	TC	歷
172	tsan	tf	TC	贊
173	blon	tf	CT	論
174	lde	tf	TC	提
175	spu	tf	TC	悉 补
176	rgyal	tf	TC	野
177	stag	tf	TC	大
178	gzig	tf	TC	食
179	khri	tf	TC	弃
180	srong	tf	TC	松 弄
181	brtsan	tf	TC	贊
182	khri	tf	TC	弃
183	lde	tf	TC	猎
184	srong	tf	TC	松

185 btsan	tf	TC	賢
186 skyid	tf	TC	釋
187 rtag	tf	TC	泰
188 ra	tf	TC	邏
189 sa	tf	TC	些
190 gyivu	ls	CT	九
191 mun	ls	CT	文
192 chang	ls	CT	成
193 kong	ls	CT	公
194 co	ls	CT	立
195 zrid	ls	TC	卷立
196 se	ls	TC	卷
197 rib	ls	TC	立
198 chavo	cy	CT	簪
199 tse	cy	CT	子
200 vbav	cy	CT	麻
201 pug	cy	CT	蝠
202 ayan	cy	CT	燕
203 tse	cy	CT	子
204 lovu	cy	CT	老
205 ci	cy	CT	鴉
206 then	cy	CT	天
207 meng	cy	CT	明
208 zhir	cy	CT	日
209 schur	cy	CT	出
210 zhir	cy	CT	日
211 twa	cy	CT	火

212	phu	cy	CT	斧
213	ldem	cy	CT	鏃
214	tsen	cy	CT	箭
215	kin	cy	CT	筋
216	kevu	cy	CT	胶
217	vbav	cy	CT	馬
218	can	cy	CT	毡
219	keg	cy	CT	桶
220	davi	cy	CT	袋
221	phan	cy	CT	攀
222	hung	cy	CT	胸
223	vbav	cy	CT	馬
224	tsevu	cy	CT	韉
225	tshyang	cy	CT	槍
226	zhin	cy	CT	刃
227	phan	cy	CT	幡
228	tse	cy	CT	子
229	mo	cy	CT	木
230	khwev	cy	CT	盞
231	thevu	cy	CT	鍬
232	sheg	cy	CT	石
233	sig	cy	CT	錫
234	lab	cy	CT	鐵
235	gang	cy	CT	鋼
236	vbwar	cy	CT	沒
237	shi	cy	CT	使
238	don	cy	CT	通

239	hwang		cy		CT	串
240	kab	cy		CT		歇
241	kho	cy		CT		腳
242	aovu	cy		CT		穀
243	tse	cy		CT		子
244	da	cy		CT		大
245	aivu	cy		CT		有
246	khan	cy		CT		看
247	yong	cy		CT		用
248	tshi	cy		CT		者
249	shi	cy		CT		什
250	ma	cy		CT		么
251	ra	cy		CT		了
252	bo	cy		CT		部
253	lag	cy		CT		落
254	phu	cy		CT		付
255	tseng	cy		CT		將
256	ai	cy		CT		一
257	ban	cy		CT		万
258	zhin	cy		CT		人
259	dzyang		cy		CT	將
260	ban	cy		CT		絆
261	shwog	cy		CT		鎖
262	dzwav		cy		CT	罪
263	kwav	cy		CT		過
264	ya	cy		CT		也
265	vbag	cy		CT		莫

266	vgwave		cy	CT	怪
267	ra	cy		CT	了
268	ro	cy		CT	罗
269	aa	cy		CT	啊
270	chin	cy		CT	紧
271	shi	cy		CT	些
272	ther	cy		CT	得
273	pu	cy		CT	不
274	ther	cy		CT	得
275	shig	cy		CT	司
276	shu	cy		CT	厨
277	yig	cy		CT	役
278	song	cy		CT	送
279	zhin	cy		CT	人
280	vdo	cy		CT	奴
281	cang	cy		CT	庄
282	ten	cy		CT	田
283	zhin	cy		CT	人
284	tan	cy		CT	單
285	zhin	cy		CT	身
286	han	cy		CT	漢
287	tan	cy		CT	單
288	zhin	cy		CT	身
289	pu	cy		CT	妇
290	zhin	cy		CT	人
291	then	cy		CT	天
292	tse	cy		CT	子

293 dovü	cy	CT	到
294 aa	cy	CT	啊
295 na	cy	CT	那
296 li	cy	CT	里
297 ya	cy	CT	耶
298 jev	cy	CT	紙
299 juvo	cy	CT	坐
300 aa	cy	CT	啊
301 tsha	cy	CT	請
302 juvo	cy	CT	坐
303 aa	cy	CT	啊
304 lehu	cy	CT	了
305 vam	cy	CT	啊
306 pu	cy	CT	不
307 levu	cy	CT	了
308 zhivu	cy	CT	揉
309 va	cy	CT	啊
310 phung	cy	CT	縫
311 ya	cy	CT	耶
312 pu	cy	CT	不
313 phung	cy	CT	縫
314 gi	cy	CT	給
315 ba	cy	CT	啊
316 pu	cy	CT	不
317 gib	cy	CT	給
318 ba	cy	CT	阿
319 aa	cy	CT	阿

320 shu	cy	CT	誰
321 yong	cy	CT	用
322 aa	cy	CT	阿
323 na	cy	CT	那
324 li	cy	CT	里
325 phang	cy	CT	放
326 cag	cy	CT	着
327 gem	cy	CT	劍
328 tse	cy	CT	子
329 kab	cy	CT	甲
330 shin	cy	CT	身
331 thovu	cy	CT	兜
332 vbo	cy	CT	整
333 beve	cy	CT	牌
334 bye	cy	CT	鼻
335 kovu	cy	CT	垢
336 tshyang	cy	CT	槍
337 log	cy	CT	勒
338 davi	cy	CT	帶
339 shim	cy	CT	甚
340 kho	cy	CT	珂
341 he	cy	CT	曉
342 ra	cy	CT	了
343 phevu	cy	CT	砲
344 cha	cy	CT	車
345 lovü	cy	CT	婁
346 la	cy	CT	羅

347 zhag	cy	CT	邪
348 buv	cy	CT	不
349 leve	cy	CT	賴
350 bun	cy	CT	蚊
351 tse	cy	CT	子
352 hwa	cy	CT	花
353 can	cy	CT	毡
354 ya	cy	CT	野
355 kye	cy	CT	鷄
356 da	cy	CT	打
357 me	cy	CT	麼
358 vge	cy	CT	語
359 dzim	cy	CT	怎
360 shing	cy	CT	生
361 dzo	cy	CT	做
362 hovu	cy	CT	好
363 te	cy	CT	的
364 tsi	cy	CT	做
365 shi	cy	CT	什
366 ma	cy	CT	么
367 ro	cy	CT	罗
368 aa	cy	CT	啊
369 aivu	cy	CT	有
370 shi	cy	CT	什
371 ma	cy	CT	么
372 ayig	cy	CT	益
373 tang	cy	CT	當

374 zhe	cy	CT	是
375 phab	cy	CT	法
376 ra	cy	CT	了
377 pu	cy	CT	不
378 zhe	cy	CT	是
379 phab	cy	CT	法
380 chin	cy	CT	嗔
381 tsi	cy	CT	做
382 shi	cy	CT	什
383 ma	cy	CT	麼
384 ra	cy	CT	了
385 kog	cy	CT	國
386 wen	cy	CT	远
387 davo	cy	CT	道
388 aa	cy	CT	阿
389 davo	cy	CT	道
390 gin	cy	CT	近
391 shi	cy	CT	时
392 ma	cy	CT	麼
393 don	cy	CT	純
394 ma	cy	CT	麼
395 khwev	cy	CT	映
396 shi	cy	CT	时
397 ma	cy	CT	麼
398 chi	cy	CT	遲
399 shi	cy	CT	时
400 ma	cy	CT	麼

401 tshir	cy	CT	疾
402 khi	cy	CT	去
403 nen	cy	CT	年
404 tshen	cy	CT	前
405 nen	cy	CT	年
406 kim	cy	CT	今
407 nen	cy	CT	年
408 meng	cy	CT	明
409 nen	cy	CT	年
410 hovu	cy	CT	後
411 nen	cy	CT	年
412 aa	cy	CT	阿
413 na	cy	CT	那
414 li	cy	CT	里
415 dzwav	cy	CT	坐
416 beng	cy	CT	病
417 nga	cy	CT	阿
418 pu	cy	CT	不
419 beng	cy	CT	病
420 beng	cy	CT	病
421 kha	cy	CT	治
422 pu	cy	CT	不
423 cha	cy	CT	治
424 shivu	cy	CT	出
425 tsevu	cy	CT	去
426 shin	cy	CT	乎
427 kheg	cy	CT	行
			迹

428 ya	cy	CT	也
429 tseg	cy	CT	賊
430 zhang	cy	CT	尚
431 shi	cy	CT	什
432 ma	cy	CT	麼
433 dzwe	cy	CT	罪
434 sev	cy	CT	婿
435 aa	cy	CT	阿
436 jang	cy	CT	丈
437 phu	cy	CT	夫
438 tshig	cy	CT	賊
439 tsuvo	cy	CT	作
440 chovu	cy	CT	鍾
441 aa	cy	CT	阿
442 mo	cy	CT	麼
443 the	cy	CT	切
444 ra	cy	CT	了
445 se	cy	CT	洗
446 ya	cy	CT	也
447 thovu	cy	CT	頭
448 se	cy	CT	洗
449 aa	cy	CT	阿
450 vbu	cy	CT	某
451 aa	cy	CT	阿
452 air	cy	CT	一
453 dzwa	cy	CT	罪
454 kwa	cy	CT	過

455 ya	cy	CT	也
456 zhang	cy	CT	尚
457 tso	cy	CT	做
458 zhi	cy	CT	如
459 shir	cy	CT	突
460 ya	cy	CT	也
461 aa	cy	CT	阿
462 ni	cy	CT	你
463 kim	cy	CT	今
464 zhir	cy	CT	日
465 tsi	cy	CT	做
466 shi	cy	CT	什
467 ma	cy	CT	麼
468 ra	cy	CT	了
469 yun	cy	CT	允
470 he	cy	CT	許
471 va	cy	CT	還
472 pu	cy	CT	不
473 yun	cy	CT	允
474 he	cy	CT	許
475 zhe	cy	CT	而
476 kim	cy	CT	今
477 shi	cy	CT	始
478 dzo	cy	CT	做
479 give	cy	CT	鋸
480 aa	cy	CT	阿
481 kin	cy	CT	斤

482 vu	cy	CT	雨
483 aa	cy	CT	阿
484 sywar	cy	CT	雪
485 bag	cy	CT	雹
486 tse	cy	CT	子
487 shywang	cy	CT	霜
488 phung	cy	CT	風
489 han	cy	CT	寒
490 nwan	cy	CT	暖
491 pe	cy	CT	非
492 ayavo	cy	CT	要
493 aa	cy	CT	阿
494 ro	cy	CT	罗
495 aa	cy	CT	阿
496 kha	cy	CT	夏
497 tong	cy	CT	冬
498 tshivu	cy	CT	秋
499 chun	cy	CT	春
500 gi	cy	CT	鳴
501 khuvu	cy	CT	鳩
502 pe	cy	CT	非
503 kheng	cy	CT	耕
504 shi	cy	CT	師
505 kong	cy	CT	公
506 tha	cy	CT	他
507 li	cy	CT	里
508 dzwav	cy	CT	坐

509	klam	cy	CT	笠
510	ao	cy	CT	鳥
511	thar	cy	CT	獺
512	par	cy	CT	褐
513	she	cy	CT	挾
514	lda	cy	CT	拉
515	tse	cy	CT	子
516	lovu	cy	CT	老
517	shi	cy	CT	鼠
518	he	cy	CT	蛤
519	vbav	cy	CT	蟊
520	ka	cy	CT	蚪
521	tovu	cy	CT	蚪
522	tse	cy	CT	子
523	cug	cy	CT	粥
524	king	cy	CT	羹
525	jivu	cy	CT	綢
526	tse	cy	CT	子
527	vbevu	cy	CT	豹
528	aa	cy	CT	阿
529	hwan	cy	CT	換
530	la	cy	CT	了
531	khag	cy	CT	南
532	vgivu	cy	CT	牛
533	gwan	cy	CT	圈
534	chin	cy	CT	紉
535	vgin	cy	CT	銀

536 khwan	cy	CT	園
537 tse	cy	CT	子
538 vjab	cy	CT	鋏
539 tse	cy	CT	子
540 mag	cy	CT	莫忘
541 bang	cy	CT	去也
542 khe	cy	CT	也
543 ya	cy	CT	毛
544 vbovu	cy	CT	顛
545 tem	cy	CT	莫
546 vpag	cy	CT	放
547 bong	cy	CT	開
548 khag	cy	CT	也
549 ya	cy	CT	羅
550 ro	cy	CT	阿
551 aa	cy	CT	喚
552 hwan	cy	CT	將
553 tsang	cy	CT	來
554 le	cy	CT	來
555 vbag	cy	CT	莫
556 dovu	cy	CT	道
557 tsen	cy	CT	箭
558 tsog	cy	CT	簇
559 tsen	cy	CT	箭
560 leng	cy	CT	箭
561 kevu	cy	CT	翎
562 kin	cy	CT	肢
			筋

563	cug	cy	CT	弓
564	kung	cy	CT	弦
565	hyan	cy	CT	位
566	vphye	cy	CT	馬
567	vbav	cy	CT	毡
568	vbyi	cy	CT	皮
569	pyi	cy	CT	轡
570	thovu	cy	CT	頭
571	keg	cy	CT	桶
572	davi	cy	CT	袋
573	phan	cy	CT	褂
574	hung	cy	CT	手
575	vbav	cy	CT	胸
576	tsevu	cy	CT	馬
577	pan	cy	CT	鞢
578	tse	cy	CT	幡
579	tshevu	cy	CT	子
580	ban	cy	CT	早
581	khe	cy	CT	晚
582	pu	cy	CT	去
583	vbevi	cy	CT	不
584	jevu	cy	CT	買
585	shi	cy	CT	要
586	ma	cy	CT	什
587	bur	cy	CT	麼
588	tsig	cy	CT	物
589	la	cy	CT	借
				了

590 she	cy	CT
591 mo	cy	CT
592 khwe	cy	CT
593 chovu	cy	CT
594 bang	cy	CT
595 tse	cy	CT
596 aong	cy	CT
597 shog	cy	CT
598 ya	cy	CT
599 sheve	cy	CT
600 la	cy	CT
601 ti	cy	CT
602 shig	cy	CT
603 vu	cy	CT
604 aa	cy	CT
605 pang	cy	CT
606 cag	cy	CT
607 keng	cy	CT
608 cim	cy	CT
609 can	cy	CT
610 vgan	cy	CT
611 vby	cy	CT
612 vbovu	cy	CT
613 pyir	cy	CT
614 kong	cy	CT
615 pe	cy	CT
616 khevu	cy	CT

梳
木
盆
鏟
棒
子
盆
勺
也
節
了
砥
石
雨
阿
放
着
鏡
針
毡
眼
眉
毛
鼻
孔
閉
口

617	vgav	cy	CT	牙
618	ci	cy	CT	齒
619	tsi	cy	CT	髭
620	su	cy	CT	須
621	shvu	cy	CT	手
622	dang	cy	CT	鐙
623	thevu	cy	CT	鎗
624	ceg	cy	CT	石
625	sig	cy	CT	錫
626	lab	cy	CT	鐵
627	peg	cy	CT	白
628	gang	cy	CT	鋼
629	pu	cy	CT	
630	pag	cy	CT	
631	don	cy	CT	通
632	hwang	cy	CT	串
633	kab	cy	CT	歇
634	kho	cy	CT	腳
635	aovu	cy	CT	袂
636	tshe	cy	CT	子
637	tsevu	cy	CT	早
638	ban	cy	CT	晚
639	le	cy	CT	來
640	ta	cy	CT	多
641	shevu	cy	CT	少
642	yong	cy	CT	用
643	re	cy	CT	了

644 bun	cy	CT		祀
645 zhim	cy	CT		禁
646 sevu	cy	CT		休
647 si	cy	CT		施
648 ga	cy	CT		夏
649 ro	cy	CT		羅
650 aa	cy	CT		阿
651 swan	cy	CT		迺
652 ta	ls	CT		大
653 hav	ls	CT		夏
654 tsha	ls	CT		差
655 tsang	ls	CT		莊
656 vtsang		is	CT	莊
657 vtshang		ls	CT	莊
658 ayi	jj	CT		一
659 ayir	jj	CT		一
660 zhi	jj	CT		二
661 sam	jj	CT		三
662 zi	jj	CT		四
663 vgu	jj	CT		五
664 lug	jj	CT		六
665 tshir	jj	CT		七
666 tsi	jj	CT		七
667 pa	jj	CT		八
668 par	jj	CT		八
669 gyiuvu		jj	CT	九
670 shib	jj	CT		十

671 zhib	jj	CT	十
672 zhim	jj	CT	十
673 zhi	jj	CT	亦
674 bun	tf	CT	文
675 thave	tf	CT	太
676 cen	tf	CT	貞
677 mun	tf	CT	文
678 khe	tf	CT	開
679 sheng	tf	CT	神
680 keng	tf	CT	景
681 kim	tf	CT	金
682 zheng	tf	CT	聖
683 hwang	tf	CT	皇
684 te	tf	CT	帝
685 cang	tf	CT	長
686 keng	tf	CT	慶
687 cang	tf	CT	長
688 keng	tf	CT	慶
689 cang	tf	CT	長
690 keng	tf	CT	慶
691 pu	pr	CT	般
692 zha	pr	CT	若
693 pa	pr	CT	波
694 la	pī	CT	羅
695 vbyi	pr	CT	蜜
696 ta	pr	CT	多
697 sim	pr	CT	心

698 kye	pr	CT	經
699 kwan	pr	CT	觀
700 dzi	pr	CT	自
701 dzevi	pr	CT	在
702 bu	pr	CT	菩
703 sar	pr	CT	薩
704 hevi	pr	CT	行
705 shim	pr	CT	深
706 pu	pr	CT	般
707 zha	pr	CT	若
708 pa	pr	CT	波
709 la	pr	CT	羅
710 vbyi	pr	CT	蜜
711 ta	pr	CT	多
712 zhi	pr	CT	時
713 cevü	pr	CT	照
714 gyen	pr	CT	見
715 vgu	pr	CT	五
716 yun	pr	CT	蘊
717 kevi	pr	CT	皆
718 khong	pr	CT	空
719 du	pr	CT	度
720 aye	pr	CT	一
721 tshe	pr	CT	切
722 khu	pr	CT	苦
723 aeg	pr	CT	厄
724 sha	pr	CT	金

725 li	pr	CT
726 tsi	pr	CT
727 shag	pr	CT
728 pu	pr	CT
729 yi	pr	CT
730 khung	pr	CT
731 khung	pr	CT
732 pu	pr	CT
733 yi	pr	CT
734 shag	pr	CT
735 shag	pr	CT
736 tsig	pr	CT
737 zhi	pr	CT
738 khung	pr	CT
739 khung	pr	CT
740 tsig	pr	CT
741 zhi	pr	CT
742 shag	pr	CT
743 zhivu	pr	CT
744 zo	pr	CT
745 hevi	pr	CT
746 shim	pr	CT
747 yig	pr	CT
748 phug	pr	CT
749 zhi	pr	CT
750 zhe	pr	CT
751 sha	pr	CT

利
子
色
不
异
空
空
不
异
色
色
即
是
空
空
即
是
色
受
想
行
识
亦
复
如
是
舍

752 li	pr	CT	
753 tsi	pr	CT	
754 zhi	pr	CT	
755 ci	pr	CT	
756 phab	pr	CT	
757 khung	pr	CT	
758 zo	pr	CT	
759 pu	pr	CT	
760 shevi	pr	CT	
761 pu	pr	CT	
762 vbyar	pr	CT	
763 pu	pr	CT	
764 gevu	pr	CT	
765 pu	pr	CT	
766 dzhe	pr	CT	
767 pu	pr	CT	
768 tsing	pr	CT	
769 pu	pr	CT	
770 gam	pr	CT	
771 zhi	pr	CT	
772 gu	pr	CT	
773 khung	pr	CT	
774 tshung		pr	CT
775 wu	pr	CT	
776 shag	pr	CT	
777 wu	pr	CT	
778 zhivu	pr	CT	

利
子
是
諸
法
空
相
不
生
不
灭
不
垢
不
淨
不
增
不
減
是
故
空
中
無
色
無
受

779 zo	pr	CT
780 hvevi	pr	CT
781 shig	pr	CT
782 wu	pr	CT
783 vgan	pr	CT
784 zhi	pr	CT
785 byi	pr	CT
786 zher	pr	CT
787 shin	pr	CT
788 yi	pr	CT
789 wu	pr	CT
790 shag	pr	CT
791 se	pr	CT
792 ho	pr	CT
793 wi	pr	CT
794 tshog	pr	CT
795 phab	pr	CT
796 wu	pr	CT
797 vgan	pr	CT
798 gevi	pr	CT
799 vdevi	pr	CT
800 tsi	pr	CT
801 wu	pr	CT
802 yi	pr	CT
803 shig	pr	CT
804 gevi	pr	CT
805 wu	pr	CT

想
行
識
無
眼
耳
鼻
舌
身
意
無
色
聲
香
味
觸
法
無
眼
界
乃
至
無
意
識
界
無

806 wu	pr	CT
807 mye	pr	CT
808 yig	pr	CT
809 wu	pr	CT
810 wu	pr	CT
811 mye	pr	CT
812 dzin	pr	CT
813 vdevi	pr	CT
814 tshi	pr	CT
815 wu	pr	CT
816 levu	pr	CT
817 zi	pr	CT
818 yig	pr	CT
819 bu	pr	CT
820 levu	pr	CT
821 zi	pr	CT
822 dzin	pr	CT
823 wu	pr	CT
824 khu	pr	CT
825 dzib	pr	CT
826 vbyar	pr	CT
827 devu	pr	CT
828 wu	pr	CT
829 ji	pr	CT
830 yig	pr	CT
831 wu	pr	CT
832 tig	pr	CT

無明亦無、無明盡、乃至無老死亦無、老死盡、無苦集滅道、無智亦無德

833 yi	pr	CT	以
834 wu	pr	CT	無
835 zhi	pr	CT	所
836 tig	pr	CT	得
837 gu	pr	CT	故
838 bu	pr	CT	菩
839 te	pr	CT	提
840 sa	pr	CT	薩
841 tua	pr	CT	埵
842 ayi	pr	CT	依
843 pu	pr	CT	般
844 zha	pr	CT	若
845 la	pr	CT	羅
846 vbyi	pr	CT	蜜
847 la	pr	CT	多
848 gu	pr	CT	故
849 sim	pr	CT	心
850 wu	pr	CT	無
851 gwa	pr	CT	罣
852 vgevi	pr	CT	碍
853 wu	pr	CT	無
854 gwa	pr	CT	罣
855 vgevi	pr	CT	碍
856 gu	pr	CT	故
857 wu	pr	CT	無
858 yivu	pr	CT	有
859 khung	pr	CT	恐

860 bu	pr	CT
861 ywan	pr	CT
862 li	pr	CT
863 ten	pr	CT
864 devu	pr	CT
865 mung	pr	CT
866 zo	pr	CT
867 gyivu	pr	CT
868 gye	pr	CT
869 vder	pr	CT
870 par	pr	CT
871 sam	pr	CT
872 zhe	pr	CT
873 ci	pr	CT
874 phur	pr	CT
875 ayi	pr	CT
876 pu	pr	CT
877 zha	pr	CT
878 pa	pr	CT
879 la	pr	CT
880 vbyil	pr	CT
881 ta	pr	CT
882 gu	pr	CT
883 tig	pr	CT
884 aan	pr	CT
885 ta	pr	CT
886 la	pr	CT

怖
遠
離
顛
倒
夢
想
究
竟
涅
槃
三
世
諸
佛
依
般
若
波
羅
蜜
多
故
得
阿
多
羅

887 sam	pr	CT
888 yag	pr	CT
889 sam	pr	CT
890 bu	pr	CT
891 te	pr	CT
892 gu	pr	CT
893 cii	pr	CT
894 pu	pr	CT
895 zha	pr	CT
896 pa	pr	CT
897 la	pr	CT
898 vbyi	pr	CT
899 ta	pr	CT
900 zhi	pr	CT
901 devi	pr	CT
902 shin	pr	CT
903 jivu	pr	CT
904 zhi	pr	CT
905 devi	pr	CT
906 mye	pr	CT
907 jivu	pr	CT
908 zhi	pr	CT
909 wu	pr	CT
910 zho	pr	CT
911 jivu	pr	CT
912 zhi	pr	CT
913 wu	pr	CT

三藐三菩提故知般若波羅蜜多是大神咒是大明咒是無上咒是無

914 ding	pr	CT
915 ding	pr	CT
916 jivu	pr	CT
917 ning	pr	CT
918 ji	pr	CT
919 ayi	pr	CT
920 tshe	pr	CT
921 gu	pr	CT
922 cin	pr	CT
923 zhir	pr	CT
924 pu	pr	CT
925 hi	pr	CT
926 gu	pr	CT
927 shwar	pr	CT
928 pu	pr	CT
929 zha	pr	CT
930 pa	pr	CT
931 ia	pr	CT
932 vbyi	pr	CT
933 ta	pr	CT
934 cig	pr	CT
935 shwar	pr	CT
936 jivu	pr	CT
937 ywar	pr	CT
938 vga	pr	CT
939 ti	pr	CT
940 vga	pr	CT

等
等
咒
能
除
一
切
苦
真
實
不
虛
故
說
般
若
波
羅
蜜
多
即
說
咒
曰
揭
帝
揭

941 ti	pr	CT
942 pa	pr	CT
943 ra	pr	CT
944 vga	pr	CT
945 ti	pr	CT
946 pa	pr	CT
947 ra	pr	CT
948 sang	pr	CT
949 vga	pr	CT
950 ti	pr	CT
951 bu	pr	CT
952 ti	pr	CT
953 swa	pr	CT
954 hva	pr	CT
955 pe	qz	CT
956 pye	qz	CT
957 pye	qz	CT
958 pi	qz	CT
959 pavi	qz	CT
960 pon	qz	CT
961 peg	qz	CT
962 peg	qz	CT
963 pig	qz	CT
964 pha	qz	CT
965 phe	qz	CT
966 phyau	qz	CT
967 phovo	qz	CT

帝般羅揭帝般羅僧揭帝菩提莎訶
兵象並碑杯本伯百逼頗烹飄紡

968 phe	qz	CT	飛
969 phu	qz	CT	夫
970 phu	qz	CT	富
971 phab	qz	CT	法
972 phur	qz	CT	佛
973 pvu	qz	CT	扶
974 phu	qz	CT	阜
975 bav	qz	CT	杷
976 bo	qz	CT	傍
977 be	qz	CT	枇
978 be	qz	CT	疲
979 bavi	qz	CT	陪
980 bevi	qz	CT	陴
981 bevi	qz	CT	弊
982 ban	qz	CT	璠
983 byan	qz	CT	弁
984 bi	qz	CT	肥
985 bu	qz	CT	婦
986 ban	qz	CT	煩
987 ban	qz	CT	飯
988 bun	qz	CT	墳
989 bun	qz	CT	分
990 bi	qz	CT	比
991 bavi	qz	CT	背
992 bavu	qz	CT	飽
993 vba	qz	CT	磨
994 vba	qz	CT	摩

995	vbi	qz	CT	寐
996	vbu	qz	CT	茂
997	vbun	qz	CT	門
998	vbir	qz	CT	蜜
999	vbyar	qz	CT	滅
1000	vbag	qz	CT	漠
1001	vbyag	qz	CT	邈
1002	vbug	qz	CT	睦
1003	vbug	qz	CT	牧
1004	vbug	qz	CT	默
1005	vbug	qz	CT	目
1006	vbyi	qz	CT	微
1007	vbu	qz	CT	物
1008	vban	qz	CT	晚
1009	vbur	qz	CT	勿
1010	me	qz	CT	銘
1011	mo	qz	CT	邛
1012	myan	qz	CT	眠
1013	myan	qz	CT	勉
1014	myan	qz	CT	面
1015	myen	qz	CT	綿
1016	meng	qz	CT	明
1017	meng	qz	CT	盟
1018	meng	qz	CT	孟
1019	pa	dc	CT	波
1020	pyi	dc	CT	悲
1021	pu	dc	CT	布

1022	pevu	dc	CT
1023	pyan	dc	CT
1024	par	dc	CT
1025	pyir	dc	CT
1026	pa	dc	CT
1027	phu	dc	CT
1028	phyi	dc	CT
1029	phu	dc	CT
1030	phun	dc	CT
1031	phung	dc	CT
1032	phab	dc	CT
1033	phar	dc	CT
1034	vbu	dc	CT
1035	phu	dc	CT
1036	phan	dc	CT
1037	phur	dc	CT
1038	phu	dc	CT
1039	phui	dc	CT
1040	phan	dc	CT
1041	pheng	dc	CT
1042	phar	dc	CT
1043	phar	dc	CT
1044	pheg	dc	CT
1045	bam	dc	CT
1046	bam	dc	CT
1047	byi	dc	CT
1048	byevu	dc	CT

寶
邊
八
畢
破
覆
非
否
分
風
法
髮
不
夫
煩
佛
菩
鼻
般
平
拔
別
帛
凡
梵
彼
表

1049	bun	dc	CT	本
1050	bong	dc	CT	謗
1051	vbyi	dc	CT	比
1052	vba	dc	CT	摩
1053	vbe	dc	CT	每
1054	vbyevu	dc	CT	妙
1055	vber	dc	CT	滅
1056	vbyir	dc	CT	蜜
1057	vbu	dc	CT	無
1058	vbu	dc	CT	元
1059	byi	dc	CT	味
1060	bun	dc	CT	聞
1061	bun	dc	CT	問
1062	bong	dc	CT	忘
1063	bong	dc	CT	妄
1064	bur	dc	CT	物
1065	ma	dc	CT	謨
1066	ma	dc	CT	沒
1067	me	dc	CT	命
1068	mye	dc	CT	名
1069	mye	dc	CT	明
1070	mye	dc	CT	免
1071	mon	dc	CT	門
1072	meng	dc	CT	盲
1073	meng	dc	CT	夢
1074	pi	am	CT	彼
1075	pe	am	CT	彼

1076	pyi	am	CT	韓
1077	pu	am	CT	不
1078	pevu	am	CT	寶
1079	pyan	am	CT	邊
1080	pyan	am	CT	偏
1081	pug	am	CT	北
1082	phu	am	CT	補
1083	vphu	am	CT	覆
1084	phyi	am	CT	非
1085	vphyi	am	CT	非
1086	phab	am	CT	法
1087	phad	am	CT	發
1088	vhad	am	CT	發
1089	phur	am	CT	弗
1090	pug	am	CT	福
1091	bad	am	CT	跋
1092	bam	am	CT	梵
1093	vban	am	CT	煩
1094	vbur	am	CT	佛
1095	vba	am	CT	摩
1096	vbyevu	am	CT	妙
1097	vbwang	am	CT	網
1098	me	am	CT	名
1099	meng	am	CT	名
1100	mi	am	CT	名
1101	ming	am	CT	名
1102	myi	am	CT	名

1103	meng	am	CT	命
1104	ming	am	CT	命
1105	myag	am	CT	藐
1106	pu	am	CT	布
1107	pig	am	CT	白
1108	phu	am	CT	布
1109	pu	am	CT	不
1110	phu	am	CT	不
1111	pyan	am	CT	邊
1112	par	am	CT	八
1113	phyi	am	CT	壁
1114	phyi	am	CT	非
1115	phun	am	CT	分
1116	phar	am	CT	發
1117	phar	am	CT	法
1118	bu	ig	CT	菩
1119	big	ig	CT	白
1120	bur	ig	CT	佛
1121	bug	ig	CT	伏
1122	vbun	ig	CT	分
1123	vbug	ig	CT	復
1124	vbu	ig	CT	牟
1125	vbyer	ig	CT	滅
1126	de	am	CT	弟
1127	vda	am	CT	陀
1128	vdar	am	CT	達
1129	vdevu	am	CT	腦

1130	vdan	am	CT	難
1131	vneng	am	CT	能
1132	vning	am	CT	能
1133	nem	am	CT	念
1134	nog	am	CT	轉
1135	log	am	CT	轉
1136	lav	am	CT	羅
1137	le	am	CT	來
1138	le	am	CT	禮
1139	lwan	am	CT	亂
1140	li	am	CT	利
1141	lag	am	CT	樂
1142	lug	am	CT	六
1143	ca	am	CT	者
1144	ci	am	CT	之
1145	ci	am	CT	諸
1146	civu	am	CT	照
1147	cung	am	CT	衆
1148	cang	am	CT	障
1149	chung	am	CT	終
1150	tsang	am	CT	莊
1151	ci	am	CT	知
1152	ci	am	CT	致
1153	chi	am	CT	處
1154	ching	am	CT	稱
1155	chur	am	CT	出
1156	cog	am	CT	閱

1157	ji	am	CT	持
1158	jwag	am	CT	濁
1159	jang	am	CT	長
1160	jwan	am	CT	幢
1161	zwang	am	CT	幢
1162	cwan	am	CT	轉
1163	jik	am	CT	執
1164	ca	jg	CT	者
1165	ci	jg	CT	之
1166	ci	jg	CT	至
1167	ci	jg	CT	諸
1168	cung	jg	CT	象
1169	vtla	jg	CT	莊
1170	tsang	jg	CT	莊
1171	tsun	jg	CT	真
1172	ci	jg	CT	知
1173	cung	jg	CT	中
1174	chi	jg	CT	處
1175	ching	jg	CT	稱
1176	tsong	jg	CT	稱
1177	ji	jg	CT	持
1178	ju	jg	CT	住
1179	ji	jg	CT	值
1180	jang	jg	CT	長
1181	zhan	jg	CT	長
1182	jag	jg	CT	著
1183	sha	qz	CT	沙

1184	she	qz	CT		笙
1185	shi	qz	CT		疎
1186	shig	qz	CT		穡
1187	shya	qz	CT		穡
1188	sho	qz	CT		金
1189	sho	qz	CT		觴
1190	shi	qz	CT		賞
1191	shi	qz	CT		黍
1192	shwevi	qz	CT	CT	庶
1193	shavo	qz	CT		稅
1194	shevu	qz	CT		少
1195	shivu	qz	CT		手
1196	sheng	qz	CT		守
1197	shar	qz	CT		昇
1198	shug	qz	CT		設
1199	shig	qz	CT		叔
1200	sho	qz	CT		適
1201	shivi	qz	CT		嘗
1202	shi	qz	CT		時
1203	shi	qz	CT		市
1204	shwi	qz	CT		侍
1205	shan	qz	CT		誰
1206	shan	qz	CT		禪
1207	shang	qz	CT		膳
1208	shig	qz	CT		承
1209	shug	qz	CT		實
1210	shug	qz	CT		熟
					孰

1211	shi	qz	CT	士
1212	she	qz	CT	事
1213	shin	qz	CT	神
1214	shir	qz	CT	實
1215	zhi	qz	CT	兒
1216	zhi	qz	CT	耳
1217	zhi	qz	CT	二
1218	zhag	qz	CT	弱
1219	zhwag	qz	CT	辱
1220	tsyo	qz	CT	將
1221	tsye	qz	CT	精
1222	tsi	qz	CT	茲
1223	tsi	qz	CT	子
1224	tsi	qz	CT	紫
1225	tsavo	qz	CT	糟
1226	tsun	qz	CT	遵
1227	tsyan	qz	CT	翦
1228	tseng	qz	CT	增
1229	tsong	qz	CT	桑
1230	tseb	qz	CT	接
1231	tser	qz	CT	節
1232	tsyag	qz	CT	節
1233	tsig	qz	CT	稷
1234	tsug	qz	CT	足
1235	tshavi	qz	CT	再
1236	cig	qz	CT	續
1237	tshya	qz	CT	且

1238	tshe	qz	CT	青
1239	tshwe	qz	CT	翠
1240	tshi	qz	CT	次
1241	tshavi	qz	CT	綵
1242	tshavu	qz	CT	操
1243	tshin	qz	CT	親
1244	tshyan	qz	CT	千
1245	tshyab	qz	CT	妻
1246	tsher	qz	CT	切
1247	tshig	qz	CT	慼
1248	tshig	qz	CT	戚
1249	dza	qz	CT	左
1250	dzav	qz	CT	佐
1251	dzovo	qz	CT	組
1252	dzuvu	qz	CT	酒
1253	dzavi	qz	CT	載
1254	dzavi	qz	CT	宰
1255	dzevi	qz	CT	祭
1256	dzevu	qz	CT	奏
1257	dzin	qz	CT	晉
1258	sya	qz	CT	寫
1259	so	qz	CT	素
1260	so	qz	CT	願
1261	syo	qz	CT	相
1262	syo	qz	CT	廂
1263	sye	qz	CT	西
1264	sye	qz	CT	星

1265	si	qz	CT		肆
1266	savi	qz	CT		塞
1267	syavu	qz	CT		道
1268	sim	qz	CT		心
1269	sin	qz	CT		新
1270	sun	qz	CT		筍
1271	san	qz	CT		散
1272	syau	qz	CT		仙
1273	syau	dc	TC		相
1274	syon	dc	TC		相
1275	syang	dc	TC		想
1276	sing	dc	TC		僧
1277	sin	dc	TC		性
1278	sar	dc	TC		薩
1279	sig	dc	TC		息
1280	si	dc	TC		似
1281	syang	dc	TC		像
1282	swog	dc	TC		俗
1283	tshi	dc	TC		慈
1284	tshi	dc	TC		自
1285	tsheu	dc	TC		造
1286	tshyan		dc	TC	前
1287	tsheng		dc	TC	淨
1288	tsheng		dc	TC	情
1289	tshing	dc		TC	曾
1290	tshib	dc		TC	集
1291	tshwar		dc	TC	絕

1292	tshig	dc	TC
1293	su	dc	TC
1294	kwa	dc	TC
1295	ke	dc	TC
1296	ko	dc	TC
1297	he	dc	TC
1298	ke	dc	TC
1299	ke	dc	TC
1300	ke	dc	TC
1301	kye	dc	TC
1302	ku	dc	TC
1303	kevu	dc	TC
1304	kevu	dc	TC
1305	kin	dc	TC
1306	ken	dc	TC
1307	kyan	dc	TC
1308	kyen	dc	TC
1309	kyan	dc	TC
1310	kyen	dc	TC
1311	kwan	dc	TC
1312	kwon	dc	TC
1313	kyeng	dc	TC
1314	keng	dc	TC
1315	keng	dc	TC
1316	kur	dc	TC
1317	kag	dc	TC
1318	kha	dc	TC

寂聚過皆過皆蓋界戒計歸文教根間堅堅見見觀卷經竟境骨覺可

1319	kho	dc	TC		苦
1320	khi	dc	TC		綺
1321	khi	dc	TC		起
1322	khyevu		dc	TC	丘
1323	kham	dc	TC		龕
1324	kheng	dc	TC		慶
1325	khong	dc	TC		空
1326	kho	dc	TC		空
1327	khong	dc	TC		恐
1328	khi	dc	TC		其
1329	khu	dc	TC		具
1330	khung	dc	TC		共
1331	khib	dc	TC		及
1332	ga	dc	TC		假
1333	ga	dc	TC		解
1334	gwa	dc	TC		果
1335	gi	dc	TC		幾
1336	gi	dc	TC		既
1337	gi	dc	TC		據
1338	gyi	dc	TC		記
1339	ta	jg	CT		多
1340	tevu	jg	CT		倒
1341	tam	jg	CT		擔
1342	ten	jg	CT		典
1343	tang	jg	CT		當
1344	ting	jg	CT		等
1345	ting	jg	CT		燈

1346	tig	jg	CT	德
1347	tig	jg	CT	得
1348	thav	jg	CT	他
1349	then	jg	CT	天
1350	thab	jg	CT	塔
1351	do	jg	CT	土
1352	dwa	jg	CT	墮
1353	do	jg	CT	度
1354	de	jg	CT	提
1355	devi	jg	CT	提
1356	devi	jg	CT	大
1357	devu	jg	CT	道
1358	dog	jg	CT	讀
1359	vdav	jg	CT	那
1360	ding	jg	CT	能
1361	dog	jg	CT	轉
1362	nog	jg	CT	轉
1363	vnevi	jg	CT	乃
1364	nam	jg	CT	男
1365	nam	jg	CT	念
1366	lav	jg	CT	羅
1367	levi	jg	CT	來
1368	le	jg	CT	來
1369	le	jg	CT	禮
1370	lwan	jg	CT	亂
1371	lyang	jg	CT	量
1372	ci	qz	CT	祇

1373	cu	qz	CT	諸
1374	cavu	qz	CT	招
1375	cim	qz	CT	箴
1376	cin	qz	CT	振
1377	cing	qz	CT	蒸
1378	cung	qz	CT	鍾
1379	cwag	qz	CT	燭
1380	con	qz	CT	帳
1381	chi	qz	CT	楚
1382	char	qz	CT	察
1383	cheg	qz	CT	策
1384	chovo	qz	CT	唱
1385	chi	qz	CT	侈
1386	chu	qz	CT	吹
1387	chung	qz	CT	充
1388	shug	qz	CT	倣
1389	chevu	qz	CT	抽
1390	chung	qz	CT	寵
1391	chig	qz	CT	勅
1392	cho	qz	CT	床
1393	jeg	qz	CT	宅
1394	jo	qz	CT	腸
1395	ji	qz	CT	持
1396	jivi	qz	CT	馳
1397	javu	qz	CT	趙
1398	jig	qz	CT	直
1399	li	qz	CT	治

1400	jwen	qz	CT	轉
1401	jevu	qz	CT	畫
1402	ci	dc	CT	之
1403	tsi	dc	CT	之
1404	ci	dc	CT	支
1405	cing	dc	CT	只
1406	cu	dc	CT	諸
1407	vcu	dc	CT	諸
1408	cing	dc	CT	證
1409	cung	dc	CT	象
1410	cheg	dc	CT	側
1411	chun	dc	CT	終
1412	tsi	dc	CT	紙
1413	ci	dc	CT	知
1414	ci	dc	CT	智
1415	cung	dc	CT	中
1416	tsig	dc	CT	竹
1417	chu	dc	CT	初
1418	chin	dc	CT	噴
1419	chin	dc	CT	瞋
1420	chur	dc	CT	出
1421	chig	dc	CT	赤
1422	chog	dc	CT	触
1423	tsha	dc	CT	差
1424	khying	dc	CT	稱
1425	chi	dc	CT	凝
1426	tsha	dc	CT	癡

1427	chevu	dc	CT	超
1428	jag	dc	CT	著
1429	chi	dc	CT	持
1430	chi	dc	CT	治
1431	chi	dc	CT	值
1432	chu	dc	CT	住
1433	chin	dc	CT	塵
1434	ja	dc	CT	者
1435	jing	dc	CT	證
1436	jung	dc	CT	種
1437	jung	dc	CT	象
1438	jeng	dc	CT	爭
1439	ca	am	CT	者
1440	ci	am	CT	之
1441	ci	am	CT	諸
1442	civu	am	CT	照
1443	cung	am	CT	象
1444	cang	am	CT	障
1445	chung	am	CT	終
1446	tsang	am	CT	莊
1447	ci	am	CT	知
1448	ci	am	CT	致
1449	chi	am	CT	處
1450	vban	jg	CT	萬
1451	vbun	jg	CT	萬
1452	vbu	jg	CT	無
1453	vbar	jg	CT	末

1454	mye	jq	CT	名
1455	myi	jq	CT	名
1456	meg	jq	CT	貌
1457	myag	jq	CT	貌
1458	vmeg	jq	CT	貌
1459	ta	qz	CT	貌
1460	twavi	qz	CT	多
1461	tam	qz	CT	對
1462	ton	qz	CT	躬
1463	ton	qz	CT	敦
1464	tan	qz	CT	頓
1465	tyan	qz	CT	丹
1466	tyan	qz	CT	顛
1467	long	qz	CT	典
1468	tig	qz	CT	東
1469	tig	qz	CT	的
1470	thuo	qz	CT	嫡
1471	thwavi	qz	CT	土
1472	do	qz	CT	退
1473	duo	qz	CT	途
1474	do	qz	CT	圖
1475	de	qz	CT	杜
1476	davi	qz	CT	庭
1477	davi	qz	CT	岱
1478	dyavu	qz	CT	殆
1479	devu	qz	CT	條
1480	dyan	qz	CT	投
				田

1481	dong	qz	CT
1482	dong	qz	CT
1483	dar	qz	CT
1484	dog	qz	CT
1485	dog	qz	CT
1486	dan	qz	CT
1487	vdab	qz	CT
1488	vdei	qz	CT
1489	no	qz	CT
1490	ne	qz	CT
1491	nam	qz	CT
1492	nong	qz	CT
1493	lav	qz	CT
1494	lo	qz	CT
1495	lyo	qz	CT
1496	lyo	qz	CT
1497	lye	qz	CT
1498	li	qz	CT
1499	lu	qz	CT
1500	lu	qz	CT
1501	levi	qz	CT
1502	lavu	qz	CT
1503	levu	qz	CT
1504	levu	qz	CT
1505	lam	qz	CT
1506	lem	qz	CT
1507	lim	qz	CT

動洞
達獨
讀旦
納內
囊寧
南農
羅路
糧兩
聆離
累
盧
隸
勞樓
寥
籃
廉
林

1508	lon	qz	CT	論
1509	lyan	qz	CT	輦
1510	ling	qz	CT	凌
1511	lag	qz	CT	落
1512	log	qz	CT	祿
1513	ta	dc	CT	多
1514	tab	dc	CT	答
1515	tig	dc	CT	得
1516	thav	dc	CT	他
1517	the	dc	CT	體
1518	thevi	dc	CT	剃
1519	tham	dc	CT	貪
1520	thung	dc	CT	通
1521	thar	dc	CT	脫
1522	do	dc	CT	土
1523	vde	dc	CT	天
1524	de	dc	CT	急
1525	de	dc	CT	第
1526	de	dc	CT	大
1527	di	dc	CT	地
1528	devu	dc	CT	道
1529	devu	dc	CT	盜
1530	deng	dc	CT	定
1531	dar	dc	CT	建
1532	thong	dc	CT	同
1533	than	dc	CT	檀
1534	thog	dc	CT	獨

1535	thog	dc	CT		毒
1536	de	dc	CT		諦
1537	dwe	dc	CT		對
1538	devu	dc	CT		到
1539	devu	dc	CT		倒
1540	dwan	dc	CT		斷
1541	ding	dc	CT		等
1542	vde	dc	CT		泥
1543	vde	dc	CT		惱
1544	vdwe	dc	CT		內
1545	vdwan	dc	CT		暖
1546	vdab	dc	CT		納
1547	vder	dc	CT		涅
1548	vnevi	dc	CT		乃
1549	vnan	dc	CT		難
1550	nyam	dc	CT		念
1551	ning	dc	CT		能
1552	la	dc	CT		羅
1553	leng	dc	CT		領
1554	la	dc	CT		流
1555	leng	dc	CT		令
1556	le	dc	CT		來
1557	lyong	dc	CT		量
1558	li	dc	CT		離
1559	lyong	dc	CT		兩
1560	li	dc	CT		理
1561	lywr	dc	CT		劣

1562	levu	dc	CT	老
1563	lag	dc	CT	樂
1564	levu	dc	CT	了
1565	lug	dc	CT	六
1566	lin	dc	CT	倫
1567	lun	dc	CT	輪
1568	lwan	dc	CT	亂
1569	ta	am	CT	多
1570	ta	am	CT	多
1571	tan	am	CT	但
1572	ting	am	CT	等
1573	teng	am	CT	燈
1574	ting	am	CT	燈
1575	tig	am	CT	德
1576	tig	am	CT	得
1577	tho	am	CT	土
1578	then	am	CT	天
1579	than	am	CT	歎
1580	thwa	am	CT	退
1581	sag	qz	CT	索
1582	swan	qz	CT	萱
1583	sya	qz	CT	謝
1584	syovo	qz	CT	象
1585	si	qz	CT	嗣
1586	si	qz	CT	祀
1587	suvi	qz	CT	隨
1588	sivu	qz	CT	岫

1589	syim	qz	CT	尋
1590	swag	qz	CT	續
1591	syig	qz	CT	席
1592	syig	qz	CT	夕
1593	ka	qz	CT	歌
1594	kin	qz	CT	巾
1595	ka	qz	CT	嘉
1596	kun	qz	CT	軍
1597	ka	qz	CT	稼
1598	kun	qz	CT	鶻
1599	ka	qz	CT	解
1600	kwan	qz	CT	解見
1601	kuo	qz	CT	姑
1602	kwan	qz	CT	冠
1603	ke	qz	CT	京
1604	kyan	qz	CT	堅
1605	ye	qz	CT	雞
1606	kyan	qz	CT	見
1607	ki	qz	CT	飢
1608	keng	qz	CT	驚
1609	ki	qz	CT	驚
1610	keng	qz	CT	機
1611	ki	qz	CT	更
1612	kung	qz	CT	車
1613	ki	qz	CT	功
1614	kong	qz	CT	居
1615	kevi	qz	CT	公
				階

1616	kab	qz	CT		甲
1617	kavu	qz	CT		交
1618	keb	qz	CT		給
1619	kavu	qz	CT		高
1620	kwar	qz	CT		厥
1621	kavu	qz	CT		鼻
1622	kyar	qz	CT		繫
1623	kevu	qz	CT		橐
1624	kweg	qz	CT		號
1625	kin	qz	CT		謹
1626	kog	qz	CT		轂
1627	kha	qz	CT		阿
1628	khong	qz	CT		孔
1629	kho	qz	CT		曠
1630	khwag		qz	CT	曲
1631	kho	qz	CT		抗
1632	kheg	qz	CT		刻
1633	khye	qz	CT		啓
1634	khye	qz	CT		輕
1635	khye	qz	CT		稽
1636	khwe	qz	CT		傾
1637	khi	qz	CT		綺
1638	khi	qz	CT		起
1639	khu	qz	CT		驅
1640	khyavi		qz	CT	溪
1641	kvavu	qz	CT		口
1642	khyam		qz	CT	謙

1643	khwan	qz	CT	勸
1644	khyan	qz	CT	遺
1645	khang	qz	CT	糠
1646	khang	qz	CT	康
1647	gi	qz	CT	其
1648	gi	qz	CT	鉅
1649	gu	qz	CT	渠
1650	gu	qz	CT	具
1651	givu	qz	CT	求
1652	givu	qz	CT	舊
1653	gim	qz	CT	禽
1654	gun	qz	CT	群
1655	gwin	qz	CT	郡
1656	gig	qz	CT	極
1657	ga	qz	CT	假
1658	ga	qz	CT	駕
1659	go	qz	CT	古
1660	guvu	qz	CT	九
1661	gu	qz	CT	故
1662	gi	qz	CT	既
1663	gavu	qz	CT	矯
1664	gang	qz	CT	絳
1665	vga	qz	CT	推
1666	vgi	qz	CT	疑
1667	vgi	qz	CT	儀
1668	vgi	qz	CT	義
1669	vgu	qz	CT	梧

1670	vgu	qz	CT	寓
1671	vgu	qz	CT	御
1672	vgevi	qz	CT	藝
1673	vgu	qz	CT	外
1674	vgam	qz	CT	巖
1675	vgin	qz	CT	銀
1676	vgan	qz	CT	雁
1677	vgwan	qz	CT	翫
1678	vgag	qz	CT	嶽
1679	aa	qz	CT	阿
1680	ae	qz	CT	英
1681	ae	qz	CT	嬰
1682	au	qz	CT	於
1683	ayi	qz	CT	伊
1684	auvi	qz	CT	威
1685	auvi	qz	CT	畏
1686	ayevi	qz	CT	醫
1687	aim	qz	CT	厭
1688	aim	qz	CT	音
1689	ayan	qz	CT	譙
1690	gur	qz	CT	鬱
1691	havu	qz	CT	尉
1692	han	qz	CT	好
1693	hwan	qz	CT	漢
1694	ha	qz	CT	歡
1695	ha	qz	CT	何
1696	hav	qz	CT	河

下

1697	hwa	qz	CT		和
1698	hwa	qz	CT		畫
1699	ho	qz	CT		煌
1700	hov	qz	CT		後
1701	hwe	qz	CT		槐
1702	hweve		qz	CT	橫
1703	hye	qz	CT		刑
1704	hwavi	qz	CT		迴
1705	hwavi	qz	CT		會
1706	han	qz	CT		韓
1707	han	qz	CT		閑
1708	hwan	qz	CT		桓
1709	hyan	qz	CT		絃
1710	heng	qz	CT		恆
1711	hyab	qz	CT		俠
1712	ya	qz	CT		野
1713	yi	qz	CT		貽
1714	yi	qz	CT		譽
1715	yi	qz	CT		異
1716	yu	qz	CT		猶
1717	yu	qz	CT		猷
1718	yu	qz	CT		遊
1719	yu	qz	CT		豫
1720	yivo	qz	CT		輜
1721	yivo	qz	CT		攸
1722	yavu	qz	CT		遙
1723	yevu	qz	CT		鉞

1724	yan	qz	CT
1725	yeng	qz	CT
1726	yung	qz	CT
1727	yab	qz	CT
1728	yir	qz	CT
1729	yig	qz	CT
1730	vwin	qz	CT
1731	vwe	qz	CT
1732	vwar	qz	CT
1733	vwe	qz	CT
1734	vun	qz	CT
1735	vwan	qz	CT
1736	vwen	qz	CT
1737	vwen	qz	CT
1738	viu	qz	CT
1739	yu	qz	CT
1740	shi	dc	CT
1741	shu	dc	CT
1742	sheng	dc	CT
1743	shar	dc	CT
1744	sheg	dc	CT
1745	sha	dc	CT
1746	she	dc	CT
1747	shi	dc	CT
1748	shu	dc	CT
1749	shin	dc	CT
1750	shevu	dc	CT

筵
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少

1751	sheng	dc	CT	聲
1752	shing	dc	CT	勝
1753	shab	dc	CT	攝
1754	shar	dc	CT	設
1755	shwar	dc	CT	說
1756	shig	dc	CT	識
1757	shi	dc	CT	時
1758	shi	dc	CT	視
1759	shi	dc	CT	是
1760	shu	dc	CT	殊
1761	shvu	dc	CT	受
1762	shyim	dc	CT	甚
1763	sha.n	dc	CT	善
1764	shan	dc	CT	禪
1765	zhan	dc	CT	禪
1766	shang	dc	CT	上
1767	shong	dc	CT	常
1768	sheng	dc	CT	成
1769	shib	dc	CT	十
1770	shim	dc	CT	十
1771	shi	dc	CT	士
1772	shon	dc	CT	狀
1773	tsvong	dc	CT	狀
1774	sha	dc	CT	蛇
1775	shi	dc	CT	事
1776	shin	dc	CT	神
1777	shun	dc	CT	順

1778	shing	dc	CT		乘
1779	shar	dc	CT		舌
1780	zhi	dc	CT		耳
1781	zhi	dc	CT		二
1782	zhu	dc	CT		如
1783	zhu	dc	CT		汝
1784	zham	dc	CT		染
1785	zhin	dc	CT		人
1786	zhun	dc	CT		潤
1787	zhib	dc	CT		入
1788	vgyar	dc	CT		而
1789	tsi	dc	CT		資
1790	tsin	dc	CT		津
1791	tsing	dc	CT		精
1792	tsong	dc	CT		精
1793	tsing	dc	CT		僧
1794	tsong	dc	CT		宗
1795	tsvong	dc	CT	CT	宗
1796	tsag	dc	CT		作
1797	tsig	dc	CT		則
1798	tsig	dc	CT		節
1799	tshing	dc	CT		增
1800	tshya	dc	CT		且
1801	tshe	dc	CT		切
1802	tshi	dc	CT		此
1803	tshu	dc	CT		底
1804	tshu	dc	CT		底
					取

1805	tshyan	dc	CT	遷
1806	tsheng	dc	CT	青
1807	tshve	dc	CT	財
1808	tshve	dc	CT	在
1809	su	dc	CT	髓
1810	su	dc	CT	須
1811	se	dc	CT	細
1812	si	dc	CT	死
1813	si	dc	CT	四
1814	si	dc	CT	思
1815	so	dc	CT	素
1816	dzag	dc	CT	作
1817	dzin	dc	CT	進
1818	sivu	dc	CT	修
1819	sam	dc	CT	三
1820	sim	dc	CT	心
1821	sin	dc	CT	信
1822	syan	dc	CT	先
1823	sen	dc	CT	先
1824	gu	dc	CT	舉
1825	gu	dc	CT	軌
1826	givu	dc	CT	久
1827	gwam	dc	CT	感
1828	gwan	dc	CT	觀
1829	khu	dc	CT	俱
1830	vga	dc	CT	我
1831	vgo	dc	CT	五

1832	vgo	dc	CT	悟
1833	vge	dc	CT	礙
1834	vgwe	dc	CT	外
1835	vgi	dc	CT	義
1836	vgu	dc	CT	愚
1837	vgu	dc	CT	語
1838	vgevu	dc	CT	硬
1839	vgen	dc	CT	言
1840	vge	dc	CT	言
1841	vgen	dc	CT	眼
1842	vgyan	dc	CT	眼
1843	vgwan	dc	CT	眼
1844	vgeb	dc	CT	業
1845	vgig	dc	CT	逆
1846	ao	dc	CT	汚
1847	ai	dc	CT	依
1848	ai	dc	CT	意
1849	ai	dc	CT	愛
1850	ai	dc	CT	於
1851	au	dc	CT	畏
1852	au	dc	CT	於
1853	aim	dc	CT	蔭
1854	ain	dc	CT	因
1855	aon	dc	CT	溫
1856	aun	dc	CT	蘊
1857	vun	dc	CT	蘊
1858	air	dc	CT	一

1859	aag	dc	CT	惡
1860	hwa	dc	CT	久
1861	hwa	dc	CT	化
1862	hi	dc	CT	喜
1863	hu	dc	CT	虛
1864	hivu	dc	CT	休
1865	hong	dc	CT	香
1866	hong	dc	CT	向
1867	hyar	dc	CT	血
1868	ha	dc	CT	何
1869	hwa	dc	CT	和
1870	he	dc	CT	害
1871	he	dc	CT	解
1872	hwe	dc	CT	解
1873	hwe	dc	CT	惠
1874	hivu	dc	CT	後
1875	ham	dc	CT	咸
1876	hyan	dc	CT	現
1877	hwan	dc	CT	還
1878	hwan	dc	CT	喚
1879	hyan	dc	CT	幻
1880	heng	dc	CT	行
1881	hyeng	dc	CT	形
1882	hwong	dc	CT	黃
1883	hwab	dc	CT	合
1884	hog	dc	CT	惑
1885	ya	dc	CT	耶

1886	ya	dc	CT	也
1887	yi	dc	CT	以
1888	vi	dc	CT	以
1889	yi	dc	CT	已
1890	yi	dc	CT	異
1891	yi	dc	CT	與
1892	yi	dc	CT	亦
1893	yig	dc	CT	亦
1894	yivu	dc	CT	亦
1895	yu	dc	CT	維
1896	yu	dc	CT	唯
1897	yu	dc	CT	惟
1898	yi	dc	CT	油
1899	aivu	dc	CT	由
1900	yivu	dc	CT	由
1901	yivu	dc	CT	猶
1902	yim	dc	CT	媼
1903	yin	dc	CT	引
1904	ain	dc	CT	引
1905	ywan	dc	CT	緣
1906	yong	dc	CT	陽
1907	yong	dc	CT	用
1908	ag	dc	CT	藥
1909	yog	dc	CT	欲
1910	vu	dc	CT	為
1911	vu	dc	CT	謂
1912	wu	dc	CT	違

1913	vu	dc	CT
1914	wen	dc	CT
1915	vun	dc	CT
1916	yivu	dc	CT
1917	aivu	dc	CT
1918	yyam	dc	CT
1919	shi	am	CT
1920	shi	am	CT
1921	she	am	CT
1922	shu	am	CT
1923	sho	am	CT
1924	sha	am	CT
1925	sar	am	CT
1926	sha	am	CT
1927	she	am	CT
1928	shivu	am	CT
1929	sheng	am	CT
1930	sheng	am	CT
1931	shing	am	CT
1932	she	am	CT
1933	shu	am	CT
1934	shivu	am	CT
1935	shim	am	CT
1936	sheng	am	CT
1937	shib	am	CT
1938	zhan	am	CT
1939	shir	am	CT

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甚
成
十
善
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1940	shar	am	CT	舌
1941	shir	am	CT	舌
1942	zhi	am	CT	汝
1943	zhu	am	CT	汝
1944	zhi	am	CT	如
1945	zhi	am	CT	而
1946	zhu	am	CT	而
1947	zhi	am	CT	二
1948	zhin	am	CT	人
1949	zhir	am	CT	日
1950	zhag	am	CT	若
1951	vji	am	CT	女
1952	vji	am	CT	尼
1953	tse	am	CT	子
1954	tsi	am	CT	子
1955	ci	am	CT	子
1956	tsan	am	CT	讚
1957	tsin	am	CT	進
1958	tsag	am	CT	作
1959	vtshi	am	CT	此
1960	tshe	am	CT	切
1961	tshen	am	CT	千
1962	tshir	am	CT	七
1963	dze	am	CT	在
1964	dzeng	am	CT	進
1965	vdzivu	am	CT	就
1966	zab	am	CT	雜

1967	sa	am	CT	娑
1968	se	am	CT	西
1969	si	am	CT	思
1970	si	am	CT	四
1971	su	am	CT	須
1972	sivu	am	CT	修
1973	sam	am	CT	三
1974	sim	am	CT	心
1975	sin	am	CT	信
1976	swan	am	CT	算
1977	syau	am	CT	相
1978	sug	am	CT	宿
1979	ko	am	CT	故
1980	ku	am	CT	俱
1981	ke	am	CT	皆
1982	ge	am	CT	皆
1983	ke	am	CT	界
1984	kim	am	CT	今
1985	ken	am	CT	間
1986	kyen	am	CT	肩
1987	kyen	am	CT	見
1988	kwon	am	CT	卷
1989	kwang	am	CT	廣
1990	kwang	am	CT	光
1991	kyei	am	CT	經
1992	gyi	am	CT	經
1993	kong	am	CT	’

1994	kab	am	CT		劫
1995	gab	am	CT		劫
1996	kag	am	CT		各國
1997	kog	am	CT		可
1998	kha	am	CT		去
1999	khi	am	CT		丘
2000	vkhyevu		am	CT	其
2001	gi	am	CT		及
2002	gib	am	CT		極
2003	gig	am	CT		我
2004	vga	am	CT		五
2005	vgo	am	CT		義
2006	vgi	am	CT		義
2007	vgi	am	CT		言
2008	vgi	am	CT		疑
2009	vgi	am	CT		語
2010	vgem	am	CT		嚴
2011	vgen	am	CT		言
2012	vgwan		am	CT	願
2013	wen	am	CT		願
2014	aa	am	CT		阿
2015	aan	am	CT		阿
2016	aar	am	CT		阿
2017	ai	am	CT		意
2018	ai	am	CT		於
2019	au	am	CT		於
2020	aim	am	CT		音

2021	ain	am	CT		因
2022	hi	am	CT		帝
2023	hi	am	CT		喜
2024	han	am	CT		漢
2025	hwan	am	CT		歡
2026	hang	am	CT		香
2027	ha	am	CT		何
2028	ha	am	CT		下
2029	ho	am	CT		護
2030	hwa	am	CT		華
2031	hwe	am	CT		會
2032	hyen	am	CT		現
2033	yam	am	CT		行
2034	ywan	am	CT		恆
2035	yig	am	CT		亦
2036	yog	am	CT		欲
2037	wan	am	CT		王
2038	vwan	am	CT		王
2039	hun	am	CT		云
2040	vbwang		am	CT	往
2041	sha	jg	CT		沙
2042	shu	jg	CT		數
2043	shi	jg	CT		所
2044	shu	jg	CT		所
2045	shuvi	jg	CT		所
2046	shevi	jg	CT		所
2047	sha	jg	CT		所

2048	sheng	jg	CT	生
2049	zheng	jg	CT	生
2050	shi	jg	CT	施
2051	shi	jg	CT	釋
2052	shevi	jg	CT	世
2053	shin	jg	CT	身
2054	shwar	jg	CT	說
2055	shi	jg	CT	時
2056	shi	jg	CT	是
2057	shivu	jg	CT	授
2058	shivu	jg	CT	受
2059	shivu	jg	CT	壽
2060	shavng	jg	CT	善
2061	shang	jg	CT	上
2062	sheng	jg	CT	成
2063	shing	jg	CT	承
2064	shi	jg	CT	事
2065	shing	jg	CT	乘
2066	zhe	jg	CT	實
2067	zhe	jg	CT	汝
2068	zhi	jg	CT	如
2069	shir	jg	CT	如
2070	zhe	jg	CT	而
2071	zhe	jg	CT	爾
2072	zhevu	jg	CT	繞
2073	zhen	jg	CT	然
2074	zhin	jg	CT	人

2075	zhag	jg	CT	
2076	zhug	jg	CT	肉
2077	vji	jg	CT	女
2078	vdi	jg	CT	尼
2079	tse	jg	CT	子
2080	tswevi	jg	CT	最
2081	tson	jg	CT	尊
2082	tsin	jg	CT	尊
2083	tsag	jg	CT	作
2084	tsig	jg	CT	則
2085	tsig	jg	CT	即
2086	tsing	jg	CT	即
2087	tshi	jg	CT	此
2088	tshi	jg	CT	次
2089	tshevi	jg	CT	切
2090	tsevi	jg	CT	切
2091	tshen	jg	CT	午
2092	dzevi	jg	CT	在
2093	dzwevi	jg	CT	罪
2094	dzivu	jg	CT	就
2095	dzen	jg	CT	前
2096	dzen	jg	CT	賤
2097	si	jg	CT	思
2098	si	jg	CT	四
2099	su	jg	CT	須
2100	sivu	jg	CT	修
2101	sevu	jg	CT	消

2102	sevu	jg	CT	小
2103	sam	jg	CT	三
2104	sim	jg	CT	心
2105	sin	jg	CT	信
2106	san	jg	CT	散
2107	swan	jg	CT	算
2108	sing	jg	CT	僧
2109	sar	jg	CT	薩
2110	sir	jg	CT	悉
2111	sung	jg	CT	誦
2112	ka	jg	CT	迦
2113	kwa	jg	CT	果
2114	kwa	jg	CT	過
2115	ka	jg	CT	解
2116	ko	jg	CT	敵
2117	kevi	jg	CT	記
2118	kevi	jg	CT	皆
2119	kevu	jg	CT	告
2120	kim	jg	CT	今
2121	kin	jg	CT	根
2122	kyen	jg	CT	問
2123	kyen	jg	CT	見
2124	kwang	jg	CT	廣
2125	kyang	jg	CT	經
2126	kyeng	jg	CT	經
2127	kying	jg	CT	經
2128	keing	jg	CT	敬

2129	kong	ig	CT
2130	kung	ig	CT
2131	kung	ig	CT
2132	kha	ig	CT
2133	khi	ig	CT
2134	khong	ig	CT
2135	gi	ig	CT
2136	gyi	ig	CT
2137	gu	ig	CT
2138	gang	ig	CT
2139	gib	ig	CT
2140	vgav	ig	CT
2141	vgi	ig	CT
2142	vgi	ig	CT
2143	vgi	ig	CT
2144	vgem	ig	CT
2145	vgen	ig	CT
2146	vgen	ig	CT
2147	vgeb	ig	CT
2148	vgig	ig	CT
2149	aa	ig	CT
2150	aan	ig	CT
2151	ai	ig	CT
2152	ai	ig	CT
2153	aing	ig	CT
2154	ai	ig	CT
2155	air	ig	CT

功
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2156	aag	ig	CT
2157	aig	ig	CT
2158	yevu	ig	CT
2159	hevi	ig	CT
2160	hang	ig	CT
2161	hav	ig	CT
2162	ha	ig	CT
2163	ha	ig	CT
2164	hwa	ig	CT
2165	ho	ig	CT
2166	hevi	ig	CT
2167	hevu	ig	CT
2168	hivu	ig	CT
2169	heng	ig	CT
2170	hing	ig	CT
2171	hog	ig	CT
2172	ya	ig	CT
2173	yi	ig	CT
2174	yi	ig	CT
2175	yi	ig	CT
2176	yu	ig	CT
2177	yivu	ig	CT
2178	yang	ig	CT
2179	vu	ig	CT
2180	vu	ig	CT
2181	vun	ig	CT
2182	hun	ig	CT

惡億要虛看何河荷華狐解號後降恆或也已以與喻由養園爲云云

2183	hu	je	CT	云 藩 藩 正 議 大 夫 門 下 侍 郎 大 夫 中 書 侍 郎 太 中 大 夫 中 書 侍 郎 王 播
2184	bod	tf	CT	
2185	bod	tf	CT	
2186	jeng	tf	CT	
2187	vgi	tf	CT	
2188	dave	tf	CT	
2189	pu	tf	CT	
2190	mun	tf	CT	
2191	ha	tf	CT	
2192	zhi	tf	CT	
2193	lang	tf	CT	
2194	dave	tf	CT	
2195	pu	tf	CT	
2196	cung	tf	CT	
2197	shu	tf	CT	
2198	zhi	tf	CT	
2199	lang	tf	CT	
2200	thavi	tf	CT	
2201	cvung	tf	CT	
2202	dave	tf	CT	
2203	pu	tf	CT	
2204	cung	tf	CT	
2205	shu	tf	CT	
2206	zhi	tf	CT	
2207	lang	tf	CT	
2208	vwang	tf	CT	
2209	pha	tf	CT	

2210	cvung	tf	CT	中 大 夫 尚 書 戶 部 侍 郎 杜 元 穎 正 議 大 夫 兵 部 尚 書 蘇 儁 金 紫 光 祿 大
2211	davi	tf	CT	
2212	pvu	tf	CT	
2213	zhang	tf	CT	
2214	shu	tf	CT	
2215	ho	tf	CT	
2216	bvo	tf	CT	
2217	zhi	tf	CT	
2218	lang	tf	CT	
2219	dvo	tf	CT	
2220	vgwan	tf	CT	
2221	yweng	tf	CT	
2222	jeng	tf	CT	
2223	vgi	tf	CT	
2224	dave	tf	CT	
2225	pu	tf	CT	
2226	peng	tf	CT	大 夫 兵 部 尚 書 蘇 儁 金 紫 光 祿 大
2227	vbo	tf	CT	
2228	zhang	tf	CT	
2229	shu	tf	CT	
2230	sevu	tf	CT	
2231	vbven	tf	CT	
2232	kim	tf	CT	
2233	tsvi	tf	CT	
2234	kwang	tf	CT	
2235	log	tf	CT	
2236	dave	tf	CT	

2237	phu	tf	CT
2238	zhang	tf	CT
2239	shu	tf	CT
2240	dza	tf	CT
2241	bvog	tf	CT
2242	yavi	tf	CT
2243	han	tf	CT
2244	kavu	tf	CT
2245	jevu	tf	CT
2246	vgi	tf	CT
2247	lang	tf	CT
2248	vgu	tf	CT
2249	shi	tf	CT
2250	cung	tf	CT
2251	shing	tf	CT
2252	sing	tf	CT
2253	zhu	tf	CT
2254	thavi	tf	CT
2255	cung	tf	CT
2256	bavi	tf	CT
2257	pu	tf	CT
2258	zhang	tf	CT
2259	shu	tf	CT
2260	tsa	tf	CT
2261	bog	tf	CT
2262	ya	tf	CT
2263	li	tf	CT

夫
尚書
左
什射
韓
泉
朝議
郎
御史
中
丞
僧
孺
太
中
大
夫
尚
書
右
什射
史

2264	bo	tf	CT	
2265	zhang	tf	CT	
2266	shu	tf	CT	
2267	li	tf	CT	
2268	kvang	tf	CT	
2269	vgin	tf	CT	
2270	tsheng	tf	CT	
2271	kwang	tf	CT	
2272	log	tf	CT	
2273	davi	tf	CT	
2274	phvu	tf	CT	
2275	ho	tf	CT	
2276	bo	tf	CT	
2277	zhang	tf	CT	
2278	shu	tf	CT	
2279	yang	tf	CT	
2280	au	tf	CT	
2281	ling	tf	CT	
2282	thong	tf	CT	
2283	vgvi	tf	CT	
2284	dave	tf	CT	
2285	pvu	tf	CT	
2286	lvevi	tf	CT	
2287	bo	tf	CT	
2288	zhang	tf	CT	
2289	shu	tf	CT	
2290	vwuvi	tf	CT	

部
尚書
李絳
銀青
光祿
大夫
戶部
尚書
楊於
陵
通議
大夫
禮部
尚書
章

2291	zhivi	tf	CT	綬 銀 青 光 祿 大 夫 尚 書 右 什 射 兼 太 常 卿 趙 崇 儒 太 中 大 夫 禮 部 尚 書
2292	vgin	tf	CT	
2293	tsheng		tf CT	
2294	kwang		tf CT	
2295	iog	tf	CT	
2296	dave	tf	CT	
2297	pu	tf	CT	
2298	zhang	tf	CT	
2299	shu	tf	CT	
2300	isa	tf	CT	
2301	bvog	tf	CT	
2302	ya	tf	CT	
2303	kyam	tf	CT	
2304	thavi	tf	CT	
2305	shang	tf	CT	
2306	keng	tf	CT	
2307	cavu	tf	CT	
2308	tsong	tf	CT	
2309	zhu	tf	CT	
2310	thavi	tf	CT	
2311	cung	tf	CT	
2312	davi	tf	CT	
2313	pvu	tf	CT	
2314	levi	tf	CT	
2315	bvo	tf	CT	
2316	zhang	tf	CT	
2317	shu	tf	CT	

2318	kyam	tf	CT
2319	keng	tf	CT
2320	bvevi	tf	CT
2321	bu	tf	CT
2322	jeng	tf	CT
2323	vgi	tf	CT
2324	dave	tf	CT
2325	pvu	tf	CT
2326	keng	tf	CT
2327	cevu	tf	CT
2328	yun	tf	CT
2329	kyam	tf	CT
2330	vgu	tf	CT
2331	shi	tf	CT
2332	dave	tf	CT
2333	pvu	tf	CT
2334	livu	tf	CT
2335	kong	tf	CT
2336	cag	tf	CT
2337	vgin	tf	CT
2338	tsheng	tf	CT
2339	kwang	tf	CT
2340	log	tf	CT
2341	dave	tf	CT
2342	pvu	tf	CT
2343	kong	tf	CT
2344	bo	tf	CT

兼
 卿
 裴
 武
 正
 議
 大
 夫
 京
 北
 尹
 兼
 御
 史
 大
 夫
 柳
 公
 綽
 銀
 青
 光
 祿
 大
 夫
 工
 部

2345	zhang	tf	CT		尚
2346	shu	tf	CT		書
2347	kyam	tf	CT		兼
2348	tsa	tf	CT		右
2349	kim	tf	CT		金
2350	vgo	tf	CT		吾
2351	vwevi	tf	CT		衛
2352	davi	tf	CT		大
2353	tsang	tf	CT		將
2354	kun	tf	CT		軍
2355	kwag	tf	CT		郭
2356	tshung		tf	CT	鉉
2357	jevu	tf	CT		朝
2358	ceng	tf	CT		正
2359	dave	tf	CT		丈
2360	pu	tf	CT		夫
2361	davi	tf	CT		大
2362	li	tf	CT		理
2363	keng	tf	CT		卿
2364	kyam	tf	CT		兼
2365	vgu	tf	CT		御
2366	shi	tf	CT		史
2367	davi	tf	CT		大
2368	pvu	tf	CT		夫
2369	livu	tf	CT		劉
2370	vgwan		tf	CT	元
2371	teng	tf	CT		鼎

2372	jevu	tf	CT
2373	vgi	tf	CT
2374	lang	tf	CT
2375	zhang	tf	CT
2376	shu	tf	CT
2377	dza	tf	CT
2378	svi	tf	CT
2379	lang	tf	CT
2380	cung	tf	CT
2381	kyam	tf	CT
2382	vgu	tf	CT
2383	shi	tf	CT
2384	cung	tf	CT
2385	shing	tf	CT
2386	livu	tf	CT
2387	shi	tf	CT
2388	lavu	tf	CT
2389	zhang	tf	CT
2390	shu	tf	CT
2391	jevu	tf	CT
2392	san	tf	CT
2393	lang	tf	CT
2394	keng	tf	CT
2395	cevu	tf	CT
2396	zheng	tf	CT

朝議郎尚書左司郎中兼御史中丞劉師老尚書朝散郎東北先

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