

# The Varnamala in China

Saroj Kumar Chaudhuri

---

## 〈Key Words〉

- Varnamala
- plosive letters
- non-plosive letters
- oral letters
- consonantal ligatures
- compound letters
- vocalic combinations
- fourteen sounds
- velars
- *hansetsu*

## I . Introduction

Sanskrit was introduced to the Chinese by the Indian and Central Asian Buddhist monks through their translation activities. It came at a time when the Chinese were trying hard to evolve some suitable means to record the readings of the Chinese characters.

Being ideographic, the readings of the characters changed with time and place. A point was reached when recording the readings of the characters became a necessity. Sanskrit came on the scene right at that time. Sanskrit used a phonetic script for writing. Moreover, the science of phonetics constituted an important area of study in Sanskrit. The Chinese scholars were attracted to the Sanskrit script and its phonetical concepts as an answer to their problem. In certain Buddhist rituals, chanting esoteric formulas called **mantras** constituted an integral part. This was because the **mantras** were supposed to bring supernatural effects. These had to be pronounced correctly for achieving the desired results. In short, the need in both the cases was restricted to the phonetical concepts of Sanskrit. Having no practical use, the other areas of Sanskrit grammar were totally ignored. Instead the Varnamala or traditional arrangement of letters was highlighted as it embodied the phonetical concepts. The introduction of Varnamala and its phonetical concepts in China will be the topic of this paper. Sanskrit script had regional variations, and the script form that came into standard use in China was known as Siddham. The word Siddham acquired the meaning of both Sanskrit language and script in China. The Bunyu Nanjyo catalog has been used for the Sanskrit names of the sutras. The Japanese way of reading the Chinese words has been adopted in this study. The Sanskrit words have been given here in bold type and Japanese words in italic.

## II. Sanskrit Script in Translated Sutras

The arrangement of the Sanskrit letters was standardised

fairly early in India, and this arrangement was popularly known as Varnamala. In China many translated Buddhist texts and their commentaries carried the Varnamala along with the Chinese transcriptions of the letters. Some carried just the transcriptions. The transcriptions, however, were not standardised. In most cases the authors transcribed the letters in their own way. Sometimes the same author used different transcriptions for the same letter in different works. One of the reasons for this, perhaps, was that the readings of the Chinese characters were not standardised. The readings varied from region to region, and also with the passing of time. The authors tried to reproduce the sounds of the letters as best as they could. Another factor that aggravated the problem was that the pronunciation of the letters varied from region to region in India. The Chinese works persistently mention of Central Indian, North Indian and South Indian ways of pronouncing. The non-standardisation of transcriptions produced some peculiar problems for the modern readers. That is to say, if the transcription of a letter creates problem, it can be guessed if the letter is also given there. But when a letter appears only in transcription along with, say, its religious interpretation, it becomes difficult to identify it with certainty when doubt arises. Table 1 shows the Varnamala along with the philological information relevant to this study.

Table 1: Varnamala

a) Vowels

a ā i ī u ū r ṛ ḷ ṹ  
e ai o au aṁ aḥ  
◡ : chandravindu ◡ : visarga

b) Consonants

i) Plosives

ka	kha	ga	gha	ṅa	Velars	Tongue-root sound	Molar or velars
ca	cha	ja	jha	ña	Palatals	Molar-tooth sound	Tooth or dentals
ṭa	ṭha	ḍa	ḍha	ṇa	Retro-flexes	Tongue-tip sound	Tongue or linguals
ta	tha	da	dha	na	Dentals	Tongue-top sound	Throat or gutturals
pa	pha	ba	bha	ma	Labials	Lip sound	Lip or labials
Unaspi-rated	Aspi-rated	Unaspi-rated	Aspi-rated		Sanskrit	Sha Reiuṇ	Chiko
Unvoiced		Voiced		Nasals	Consonant classification		
Orals							

ii) Non-plosives

ya ra la va sa ṣa sa ha kṣa llaṁ

c) Siddham Varnamala

llam	ksa	va	bha	dha	ḍha	jha	gha	aṁ	ū	a
	r	śa	ma	na	ṇa	ña	na	aḥ	e	ā
	ṛ	sa	ya	pa	ta	ṭa	ca	ka	ai	i
	ḷ	sa	ra	pha	tha	ṭha	cha	kha	o	ī
	ṹ	ha	la	ba	da	ḍa	ja	ga	au	u

Note: The letters, following the conventional Chinese pattern are to be read from top to bottom, starting with the right-hand side top. Unlike India, the shape of the Siddham letters did not undergo any change in China. A few letters had variants. For instance,

ṭa: 𑖦 → 𑖧

r: 𑖦 → 𑖧

ṇa: 𑖦 → 𑖧

cha: 𑖦 → 𑖧 (The compound ccha also has just the same appearance.)

Source: Taisho Shinshu Daizokyo, V. 84, pp. 407-408; V. 54, p. 1189

## II-1. Lalitavistara Sutra

Fuyokyo 普曜經, the Lalitavistara Sutra, translated in 308 A.D. was perhaps the first translated text to carry some information on the scripts of India. It says that there were sixty-four types of scripts, and then enumerates them. The name Siddham is missing here. It may be mentioned here that the twenty-first script mentioned in the list is that of the Hunas, a people who probably had not appeared on the Indian scene yet.<sup>(1)</sup> About a century later around the first quarter of the fifth century, suddenly a number of translated sutras appeared where a section was devoted to the Sanskrit letters. A study of these letters shows that they were introduced in two basically different ways. One group of sutras like Prajñāpāramitā Sutra and Buddhavatamsaka Sutra gave only forty-two letters along with their religious meanings. As against this, another group of sutras like the two translations of the Nirvana Sutra introduced the whole Varnamala along with some linguistic information. Again, around the middle of the eighth century, a text Yugakongochokyo Mojibon, exclusively devoted to the Varnamala, was translated.

## II-2. Forty-Two Letters

Makahannyaḥaramitsukyo 摩訶般若波羅密經, the Chinese translation of Mahaprajñāpāramitā Sutra, made by Kumarajiva in 403 carries a section on the Sanskrit letters. It introduces the letters by saying that Bodhisattva Subhūti will next explain the letters and the words. Forty-two letters are given here in Chinese transcriptions along with their religious interpretations. The Sanskrit letters have not been given. The transcriptions have been shown in Table 2. As stated above, the transcriptions were not standardised.

Table 2: Forty-two letters of Kumarajiva

阿 a	羅 ra	波 pa	遮 ca	那 na	邏 la
陀 da	婆 ba	荼 ḍa	沙 ṣa	和 wa	多 ta
夜 ya	咤 ṭa	迦 ka	娑 sa	磨 ma	伽 ga
他 tha	闍 ja	𑖥 pa	𑖦 dha	除 sa	𑖧 kha
叉 kṣa	𑖦 ta	𑖦 ṇa	𑖦 tha	婆 bha	車 cha
摩 ba	火 ha(?)	𑖦 cha	伽 gha	他 tha	𑖦 ḍa
頗 bha	歌 ka(?)	𑖦 jha	遮 ca	咤 ṭa	茶 ḍa

Note:

The readings of the transcriptions of Kumarajiva have been reconstructed on the basis of the transcriptions in other Varnamalas.

(?) Probable readings. These transcriptions could not be found in the other Varnamalas consulted.

Source: Taisho Shinshu Daizokyo, V. 8, p. 256

So, the readings given in the table are the probable ones, deduced from the transcriptions appearing with the Sanskrit letters in other works. From the table it will be seen that excepting for the vowel **a**, all other vowels are missing. The letters are not arranged in the Varnamala order. It will be seen that as many as eight letters can perhaps be associated with the letters **pa**, **pha**, **ba**, **bha** and **ma**. Some of the transcriptions have been used more than once. The transcriptions do not carry any linguistic information. The religious interpretations of the first two letters have been given as follows.

The letter **a** means that all the laws were not there in the beginning. The letter **ra** means that all the laws keep away from the impurities. The religious meanings of the forty-two letters are given in the text in this manner.<sup>(2)</sup>

Daihokobutsukegonkyo 大方広仏華嚴經, Buddhahadra's

translation of the Buddhavatamsaka-mahavaipulya Sutra, appeared in 420. It also carries a list of the forty-two letters in Chinese transcriptions. Buddhabhadra has given a different set of letters here, which includes nine compound letters like **ska** and so on. Shittanzo 悉曇藏, written by a Japanese monk Annen 安然 around 880, is considered to be an authoritative work on Sanskrit as it was known in China and Japan up to his time. It carries a copy of Buddhabhadra's letters, but for some unknown reason they are slightly different. The interesting aspect of the version of Annen is that it carries the Sanskrit letters also. The letters carry the pronunciation notes. The letters **ca** and **ma** carry the pronunciation note *keiko* 輕呼 or unaspirated sound to show that they are unaspirated letters. The letters **bha** and **dha** carry the pronunciation note *in* 引 or long sound. There are as many as twelve compound letters, including the letter **kṣa**. All of them are the compounds of two consonant letters. The pronunciation note *nigo* 二合 or combine two has been appended to the compounds. The tone signs have also been given. There is a very controversial letter given here. It is the compound **jña**, but the Chinese transcription gives the reading as **ña**. It carries the pronunciation note *keiko* or unaspirated sound, and not *nigo* that has been used with the compound letters.<sup>(3)</sup>

A second translation of this sutra was made around 695 by Jisyananda. He has given another set of letters in Chinese transcription only. He has added pronunciation note only to two letters **da** and **ga** that they are *keiko* or unaspirated sounds. The compound letters do not carry any pronunciation note. He has transcribed the controversial letter **jña** mentioned above as **ña**. He has given *hansetsu* 反切 reading notes and tone signs with many characters.<sup>(4)</sup>

The religious meanings of the letters are more elaborate here. For instance, the letter **ra** means the state of infinite and non-discriminating knowledge. All the laws keep away from impurities.<sup>(5)</sup> It seems that the forty-two letters acquired a **mantra**-like status among the Buddhists.

### III. Varnamala

An important landmark in the history of Sanskrit in China is the two translations of Mahaparinirvana Sutra made in the first quarter of the fifth century. One was made by Fa Hien and the other by Dharmaraksha. Both the texts give the Varnamala along with very akin linguistic information. But somehow, Fa Hien's Varnamala was totally ignored by the scholars of Sanskrit in China and Japan. Shittanzo of Annen mentioned above has quoted the Varnamalas as well as the discussions on letters appearing in various works. He has not written anything about the Varnamala or the letters of Fa Hien. In contrast, the Varnamala and the linguistic information of Dharmaraksha received extensive attention of the writers on Sanskrit both in China and Japan.

#### III-1. Fa Hien

Fa Hien 法顯 translated a part of the Mahaparinirvana Sutra under the title Daihatsunaiongyo 大般泥洹經 in 417. It carries a section on Varnamala under the title Script. Here, the information on Sanskrit letters appears in the form of Buddha's answer to his disciple Kashyapa, who wanted to know about the meanings of the letters. Since the answers recorded here are almost identical with



those of the Dharmaraksha's version, they will be taken up later while discussing that work. An important aspect of Fa Hien's work is that it gives some linguistic information on the letters, which are missing in the Dharmaraksha's work. These will be seen below.

The short vowels **a**, **i** and **u** carry a pronunciation note *tan* 短 meaning short, and the long vowels **ā**, **ī** and **ū** carry a note *cho* 長 meaning long. The same characters have been used for the short and long vowel pairs. For instance, the short **a** and the long **ā** have been transcribed with the same character. This character has also been used for the vowel **aḥ**. The consonant letters **ka** and **ga** have been transcribed with the same character. The voiced letter pair **ja** and **jha**, has been transcribed with the same character. This practice has been followed for the pairs **ḍa** and **ḍha**, **ḍa** and **ḍha**, and **ba** and **bha** also. The voiced aspirated letters **gha**, **jha**, **ḍha**, **dha** and **bha** carry the pronunciation note *choon* 重音 to indicate that they are aspirated sounds. The letters **ra** and **la** have also been transcribed with the same character, with the phonetical note *keion* 軽音 or unaspirated sound appended to the character for the letter **la**. This character has also been used to transcribe the letter **llam**, but without any phonetical note. The reading, however, has been given according to the *hansetsu* system. The letter **kṣa** is missing.<sup>(6)</sup>

It will be seen that the information on Sanskrit letters given in this work is radically different from that given in the above mentioned texts of the forty-two letters. First, the traditional Varnamala arrangement of letters has been adopted here. All the letters excepting **kṣa** have been given. It conveys a very valuable information that the vowels and the consonants constitute separate

phonetical categories. The voiced aspirated letters have been highlighted. It may be mentioned here that the religious meanings of the letters given here differ totally from those given in the other two texts. They also differ from those given by Dharmaraksha.

### III-2. Dharmaraksha

Fa Hien translated only a part of the Mahaparinirvana Sutra. Dharmaraksa, better known by his Chinese name Donmushin 曇無讖, on the other hand, made a more detailed translation of the Mahaparinirvana Sutra under the title Daihatsunehangyo 大般涅槃經 between 414-426. As stated above, the Varnamala appears in the form of Buddha's answer to his disciple Kashyapa's request to explain the meanings of the letters. Buddha says as follows in reply. 'I will explain the half-letters. They form the basis of all the writings. People first learn these letters and then they come to know the good and bad laws.... There are fourteen sounds. They give the meanings of the letters. The letters are called **nirvana**. They are static and do not move. Since they do not move, they do not get exhausted. Since they do not get exhausted, they constitute the body of Tathagata, i.e., Buddha. These fourteen sounds are called the essence of the letters.' Following this the Sanskrit letters are given in Chinese transcriptions along with their religious meanings. The vowels are given in two instalments. Twelve vowels are given in the beginning, followed by thirty-four consonants, and ending up with four more vowels.

Each letter is followed by its religious meaning. For instance, the meaning of the first Sanskrit letter **a** is given as follows. 'The letter **a** is non-destructible. The non-destructible thing is called the

three treasures. For instance, it is very hard. Since **a** is immovable, it is Tathagata. Since the nine openings (mouth, nose, etc.) of Tathagata are immovable, they do not move. Again, the nine openings are not there. Hence they do not move. Not to move means to be static. To be static is to be Tathagata. Since Tathagata does nothing, he does not move. Again, **a** is called good quality. The good qualities are the three treasures. Hence it is called **a**.'

This is followed by eleven vowels. There is a very significant statement after the tenth vowel **au**. It says that in the fourteen sounds, this constitutes the final meaning. As stated above, after the twelve vowels, the thirty-four consonants are given, followed by the four vowels **r**, **ṛ**, **l**, **ḷ**. In all fifty letters are given here. The letter **llam** is missing. Instead, the letter **kṣa** has been used in its place. No pronunciation note has been appended to any of the letters. Excepting for **a** and **aḥ** no character has been repeated in the transcriptions. After giving the letters and their religious meanings, Buddha continues as follows.

'The inhaling sounds are produced from the base of the tongue and nose. There are long and short sounds, and the meaning is understood from the sound. The sound will differ depending on whether the tongue or the tooth is involved.... The half-letters are the sources of all the worldly woes. The full-letters are the sources of all the good laws.'<sup>(7)</sup>

One problem Dharmakṣa faced while treating the letters was the lack of linguistic terms for vowels and consonants. He was unable to coin suitable terms. He just used the word 'sound' for the vowels. Even then, the above discussion gives some valuable information on the nature of the letters. First, the letters can be

divided into two categories, vowels and consonants. There is also an important statement saying that there are fourteen sounds. It became one of the most widely quoted statements in almost all the major works on Sanskrit ever since. Even Zuisho 隨書 the official history of the Sui Dynasty (c. 581-618) written in 636 states in a place that the writing of Brahmanas can express all sounds with fourteen letters.<sup>(8)</sup> The expression fourteen sounds has been used again after the tenth vowel **au**. This strongly suggests that Dharmaraksha implied the vowels by this expression, but some later day scholars advanced their own hypotheses to explain it. Interpreting it created a lot of controversy because, as can be seen from the Varnamala table, there are not fourteen but sixteen letters in the vowel category. It must be pointed out that Fa Hien's translation also carries the statement on fourteen sounds, but the wordings are different. All major works have quoted the statement of Dharmaraksha and not of Fa Hien. Again, both the works mention half-letters and full-letters. This also stirred up a lot of debate in the later ages. Although Fa Hien's work carried more linguistic information on the Sanskrit letters than that of Dharmaraksha, somehow it is the Dharmaraksha's work that received far wider attention of the scholars of his and the subsequent periods. This is a very puzzling fact indeed.

### III-3. Samghapala

The Varnamala appears again about a century later in Monjushirimonkyo 文殊師利問經, a translation of Manjusri-paripriccha Sutra made by Samghapala who worked in China between 502 and 556. This is supposed to be a work of the early sixth century. Here

the letters are given in Chinese transcriptions only. The important point here is that all the sixteen vowels have been grouped together and have been given in the very beginning following the conventional pattern. The last consonant letter is **llaṃ**. The letter **kṣa** is missing. The same characters have been used for the long and the short vowels. The pronunciation note *cho* 長 meaning long sound has been appended to the long vowels **ā**, **ī**, **ū**, **ṛ** and **ḷ**. The characters used for transcribing the letters **ṭa**, **ṭha**, **ḍa**, **ḍha** and **ṇa** have also been used for transcribing the letters **ta**, **tha**, **da**, **dha** and **na** respectively. A pronunciation note *kei* 輕 has been added to the latter for differentiating them from the former. In this case, the term *kei* means the dental sounds.<sup>(9)</sup>

#### III-4. Subhakarasiṃha and Ichigyo

The Varnamala was presented in a different form in Daibirushana Jobutsushinpenkajikyo 大毘盧遮那成佛神變加持經, a translation of Mahavairochanabhisambodhi Sutra made jointly by Subhakarasiṃha (637-735) and Ichigyo 一行 (683-727). Here, the letters constitute a separate chapter and are given in their Chinese transcriptions only. The letters are divided into six groups. The first four groups, as will be explained below, deal with the four **a**-vocalic forms of the non-nasal consonant letters. The four **a**-vocalic forms represent the following categories. The first is the short **a**-vocalic forms which are represented by the non-nasal consonantal letters themselves. Next is the long **ā**-vocalic combinations of these letters. This is followed by the **aṃ**-vocalic combinations and the **aḥ**-vocalic combinations of the letters. In short, all these four types have been treated as the **a**-vocalic family in this work. The fifth group consists of the

remaining twelve vowels. Finally, the sixth group consists of the nasal letters and their four **a**-vocalic forms.

The first group gives the short **a**-vocalic forms or the letters themselves. There is a mantra in three lines in the very beginning: **namah samanta buddhanam a, namah samanta buddhanam sa, namah samanta vajranam va**. Then the twenty-nine non-nasal consonant letters are given.

ka, kha, ga, gha      ca, cha, ja, jha      ṭa, ṭha, ḍa, ḍha  
ta, tha, da, dha      pa, pha, ba, bha  
ya, ra, la, va, śa, ṣa, sa, ha, kṣa

There is a note in the end saying that they are the short sounds. This note indicates that they are the letters themselves. The last letters in the three-line **mantra** are **a, sa, va**. The letters **a-sa-va** have Tantric meanings. The letter **a** represents the Tathagata or the Buddha, the letters **sa** represents the lotus, and the letter **va** the **vajra**, a weapon that destroys delusion. The three together represents the **garbhadhatu**, a Tantric concept.

The second group consists of the long **ā**-vocalic forms of the twenty-nine letters. It starts with the same three-line **mantra**. The last three letters in the three-line **mantra** represent the long **ā**-vocalic forms of **a, sa, va**. The transcriptions of the first group have been repeated here for the twenty-nine letters, but with a note in the end saying that they are the long sounds. Thus they represent the long **ā**-vocalic forms of the twenty-nine letters, i.e., **kā, khā, ... hā, kṣā**.

The third group consists of the **aṁ**-vocalic forms of the twenty-nine letters. It also starts with the three-line **mantra**. The last letters here represent **aṁ, saṁ** and **vaṁ**. The transcriptions

given here for the twenty-nine letters read as **kaṃ**, **khaṃ**,... **haṃ**, **kṣaṃ**. There is also a pronunciation note *honon* 本音 in the end. This tells the reader that the letters here are of the **aṃ**-vocalic forms.

The fourth group consists of the **aḥ**-vocalic forms of the letters. The same three-line **mantra** comes in the very beginning. The last three letters here represent **aḥ**, **saḥ** and **vaḥ**. The transcriptions of the twenty-nine letters read here as **kaḥ**, **khaḥ**,... **haḥ**, **kṣaḥ**. Here also, the pronunciation note *nyusei* 入声 or entering tone has been given in the end. This note was normally used for the **aḥ**-vocalic forms of the Sanskrit letters in China.<sup>(10)</sup>

The four vowels **a**, **ā**, **aṃ** and **aḥ** and their combinations with non-nasal letters have been given above. Next, the fifth group consisting of the twelve remaining vowels, viz., **i**, **ī**, **u**, **ū**, **r**, **ṛ**, **l**, **ī**, **e**, **ai**, **o** and **au** has been given. This is followed by the sixth group of five nasal letters, given in the same format as of the consonant letters stated above.

<b>ṇa</b> , <b>ṇā</b> , <b>ṇa</b> , <b>na</b> , <b>ma</b>	<b>ṇā</b> , <b>ṇā</b> , <b>ṇā</b> , <b>nā</b> , <b>mā</b>
<b>ṇaṃ</b> , <b>ṇaṃ</b> , <b>ṇaṃ</b> , <b>naṃ</b> , <b>maṃ</b>	<b>ṇaḥ</b> , <b>ṇaḥ</b> , <b>ṇaḥ</b> , <b>naḥ</b> , <b>maḥ</b>

It is needless to say that all the letters have been given here in their Chinese transcriptions.<sup>(11)</sup>

### III-5. Amoghavajra

The Varnamala constituted only a section in the translated texts mentioned above. As against these, the *Yugakongochokyo* Mojibon 瑜伽金剛頂經积字母品 of Amoghavajra (705-774) is devoted exclusively to the Varnamala. It is a very small work of just fifty lines, each line devoted to a letter. The longest line consists of

only fourteen characters. He starts each line with a Sanskrit letter followed by its Chinese transcription. The pronunciation note has been given in certain cases. Finally, the religious interpretation of the letter is given. For instance, the letter **ka** has been interpreted as detaching oneself from **karma** or one's earthly deeds. He has first given all the sixteen vowels, followed by thirty-four consonant letters. The last letter is **kṣa**, and the letter **llaṃ** is missing. The pronunciation note *in* meaning long sound has been appended to the long vowels **ā**, **ī**, **ū** and **ṛ**. No pronunciation note has been added to other vowels. The note *in* for elongated pronunciation has been added to the consonant letter **gha**. The note *biko* 鼻呼 meaning nasal sound has been added to the letters **ṇa** and **ṇa**. This note has not been attached to the other nasal letters **ṇa**, **na** and **ma**. The note *cho* 重 meaning aspirated sound has been added to the letter **bha**. No other aspirated letter carries this note. Some letters carry tone signs. For instance the tone sign *kyosei* 去声 or departing tone has been appended to the letter **ka**. Each Sanskrit letter has been transcribed with one character with one exception. The letter **kṣa** has been transcribed with two characters with a pronunciation note *nigo* meaning combine two. This told the reader that it was a compound letter. It may be mentioned here that Amoghavajra did not use the Chinese transcriptions for the letters **ka** and **ṣa** to express this letter. He has used different characters. The later day scholars like Annen, however, have interpreted this as a compound of the letters **ka** and **ṣa**.<sup>(12)</sup>



#### IV. Chinese writings on Sanskrit

The translation of sutras began right in earnest during the Six Dynasties period (c. 222–589), a period characterized by wide spread civil strife. This was also a period of vigorous intellectual activities. The contenders for power came from the intellectual class, and they were also great patrons of scholarship. A large number of highly educated Chinese collaborated in the translation activities. They were also the first to be exposed to the concept of phonetic script. They, perhaps, told their friends that language could be written with a script that basically expressed sound rather than meaning. They also told that the reading of the words written in this script remained static and did not change with time and place. Things exotic like the phonetic script were naturally a great attraction for the scholars. One of the standing jokes on Sanskrit highly popular among the upper classes of the Six Dynasties period was *taigo* 体語, a word derived from *taimon* 体文, the Chinese translation for the consonants letters of Sanskrit. The way the Chinese scholars saw the Sanskrit script will be discussed below. The Sanskrit script was popularly known as Siddham in China. By extension Siddham meant the Sanskrit language also.

##### IV-1. Sha Reiun

The first eminent Chinese scholar to pay attention to the Sanskrit script was Sha Reiun 謝靈運 (385–433), a leading scholar and literary figure of his days. The poems he composed became instant hits with the people. His eminence can be guessed easily from the fact that his life has been described in pretty detail in

the biography section of the official history of the Sung Dynasty. Ryokosoden 梁高僧伝, the biography of early Buddhist monks written in the first half of the sixth century, writes about Sha Reiun as follows. 'Sha Reiun ardently believed in Buddhist theology. He excelled in the science of phonetics. He inquired from monk Eei 慧叡 about the letters appearing in the scriptures. He wrote Jushionkunjo 十四音訓叙, where he wrote about the rules of Sanskrit and Chinese, so that the letters could be understood clearly.' Monk Eei was a contemporary of Sha Reiun, and the biography says that he had travelled to South India to become well versed with phonetic transliteration and different types of meanings.<sup>(14)</sup> Sha Reiun wrote Benshuron 弁宗論 dealing with the theology of Buddhism. He is also said to have written a commentary of the Vajrachhedika-prajnaparamita Sutra. One of his important works is the revision of the Mahaparinirvana Sutra of Dharmaraksha, which he carried out with two monks.

It seems that Sha Reiun found the linguistic information contained in Dharmaraksha's Mahaparinirvana Sutra, like division of sounds into vowels and consonants and so on, to be too novel. This is because, the pictographic script the Chinese used for writing their language hampered the growth of such ideas like dividing the sounds in that manner. Dharmaraksha completed his translation of Mahaparinirvana Sutra around 426 A.D., and it appears that almost immediately Sha Reiun started preparing a revised version of this work along with two scholarly monks. They consulted the Fa Hien's work while carrying out the revision. The revision was completed in 443 after Sha Reiun's death.<sup>(15)</sup>

Dharmaraksha lived and worked in Pei Liang kingdom in Northwest China in present day Kansu province. It is unlikely that

he ever met Sha Reiun whose sphere of activity was far to the east in Sung kingdom located in what is today the Honan province in the middle reaches of the Huang Ho river. There was virtually no time lag between the completion of translation and the start of its revision. This can be taken as a barometer to judge the keen interest the phonetical information of Sanskrit had roused among the Chinese scholars.

A comparison of Dharmaraksha's translation with the revised version made by Sha Reiun and his friends reveals some significant changes made here and there. The original had thirteen chapters. They were recast into twenty-five chapters in the revised version. Whereas the section on Siddham letters constituted a part of a chapter in the original text, in the revised version it was made into an independent chapter. This shows the great impact the linguistic information carried by the text had on Sha Reiun. It may not be wrong to assume that one of the major motives of Sha Reiun in making an independent chapter out of the Siddham letters while revising the text was to highlight the linguistic information incorporated therein for his fellow scholars.

Sha Reiun made a major change in the transcriptions also while revising. He replaced Dharmaraksha's transcriptions with those of Fa Hien with a few exceptions. The exceptions are for the letters **e**, **ai**, **am**, **ah**, **ga**, **ra**, **r**, **ṛ**, **l** and **ḷ**. Excepting for long **ā** and **ah**, Dharmaraksha never used the same character twice for transcription. By adopting Fa Hien's transcriptions, Sha Reiun used the same characters for transcribing the long-short vowel pairs as in the case of Fa Hien. He also replaced Dharmaraksha's **kṣa** with Fa Hien's **llam**. What is more important is that Sha Reiun incorporated

Fa Hien's linguistic information on the letters in his revised text. The Chinese probably had some pronunciation problem with the two letters **ra** and **la**. Sha Reiun used two different characters to transcribe these two letters, but added a note *kei* or unaspirated sound with the letter **la**. He adopted this means to tell the readers that the two sounds were different. He has given the *hansetsu* reading of the letter **tha** and not **llam** as in the case of Fa Hien.<sup>(16)</sup>

Sha Reiun was perhaps the first eminent non-monk scholar to write on the Sanskrit script. Some of his writings have been quoted by Annen in his Shittanzo. Sha Reiun describes the letters as follows. In the Mahanirvana Sutra there are fifty letters. Among them there are twelve letters. Of the six letters that come in the beginning, the first is short and the second is long. There is no difference of long and short sounds in the six letters that come later. In these six letters, the last two letters are treated as the superfluous sounds. Again, four letters are not used much. So they are placed after the other letters. Of the thirty-four letters, the sounds of twenty-five letters are emitted from inside and they come out of the lips. The sounds of nine letters return inside from outside. In the five letters, the fourth and the third letters have slight difference of aspiration and non-aspiration. All the small letters are called half-letters. The twelve letters and the thirty-four letters belong to this category. Two letters join together to form the full-letters.

Following this Sha Reiun gives the Varnamala. For some unknown reason, he uses the transcriptions of Dharmaraksha and not of his own revised version here. He also says that the letters **ka**, **kha**, **ga**, **gha** and **ṇa** are the tongue-root sounds, the letters

ca, cha, ja, jha and ña are the molar-teeth sounds, ta, tha, da, dha and na are the tongue-tip sounds, ta, tha, da, dha and na are the tongue-top sounds, and pa, pha, ba, bha and ma are the lip sounds.<sup>(17)</sup> This shows that Sha Reiun knew about the Sanskrit classification of the consonant letters into velars, palatals, retrorflexes, dentals and labials. It may be mentioned here that the Varnamalas in the translated sutras say nothing about such classification of the consonant letters.

Sha Reiun also took up the question of fourteen sounds mentioned twice in the Dharmaraksha's text. It is very likely that he discussed the point with the Indian monks working around him. He gives his explanation as follows. The latter four letters r, ṛ, l and ḷ are added to these. In this way they make sixteen in all. Then why do they say fourteen? The answer is that the two former letters am and ah are not true sounds. They are produced just by the overflowing of sounds. Hence these are not to be taken into account. Thus, there are only ten in the beginning, and to these, the four coming in the end are added. This makes fourteen in all. However, there is a question. If the four latter letters are added to these, then why have these four letters have not been explained immediately? Why have these been explained later? The answer is that the latter four letters are used only rarely. So they have been explained separately.<sup>(18)</sup>

Sha Reiun's understanding of the fourteen vowels can explained as follows. The vowels come in two types. The first type consists of twelve vowels which are used frequently. The vowels of second type are four in number and are used rarely. Dharmaraksha gave the vowels used frequently in the beginning and those used rarely in

the end. The four vowels given in the end and the twelve vowels given in the beginning make sixteen vowels in all. Now, the two vowels **am** and **ah** listed in the first set are not true vowels. So there are only ten true vowels in the group given in the beginning. These together with the four given in the end make fourteen vowels in all. This interpretation of Sha Reiun naturally raises the question of the true nature of the two letters **am** and **ah**.

An explanation of the nature of the two letters **am** and **ah** appears in Shittan Jiki, the most widely used text book of Sanskrit letters in the Far East written by a Chinese monk Chiko around 800. Chiko also has taken up the question of fourteen vowels in this work. He agrees with the interpretation of Sha Reiun and says that the old work tells about fourteen sounds. In the twelve Sanskrit letters, there are four letters **r**, **r̄**, **l** and **l̄** after the letter **ū**. From the first set of Sanskrit letters the last two are eliminated. They are *kaihan* 界畔 letters, and hence superfluous. This makes fourteen sounds.<sup>(19)</sup> By old work Chiko obviously meant the translation of Dharmaraksha. The reason given by him for eliminating **am** and **ah** is that they are *kaihan* letters. Unfortunately, Chiko has not defined the *kaihan* letters. The word *kaihan* literally means boundary or limit. Indeed these two letters are located on the boundary since they come at the end of the vowel letters. However, they have a religious interpretation also, *kai* meaning **bodhi** or enlightenment and *han* meaning **nirvana** or final emancipation. They represent the extremes where one escapes from the eternal cycles of life and death.<sup>(20)</sup>

The physical appearance of the vowel letters **am** and **ah** also suggests a cause for their elimination by Dharmaraksha. As shown

in Table 1, the letter **am** is written by adding the dot of the **chandravindu** sign to the letter **a**, and the letter **ah** is written by adding **visarga** to it. Seen from this angle, they are not pure vowels, but a combination of the vowel **a** with the **chandravindu** sound or the **visarga** sound. The **chandravindu** sign adds a nasal element to a letter. The **visarga** sign has been conventionally explained in China as a stop element like /-k/ in /sak/. Again, in Sanskrit the vowels combine with the consonant letters to form syllables. The normal mechanism is that only one vowel combines with one or more consonant letters at a time, like **ka + e → ke** or **ka + ra + e → kre**. However, there is an exception for **am** and **ah**. They can individually combine with a consonant letter following the conventional rule, for instance, **ka + am → kam** and **ka + ah → kah**. At the same time they can also combine with a syllable formed by a vowel and a consonant letter, like **ka + e + am → kem** and **ka + e + ah → keh**. Other vowels are not permitted to behave in this way. So the properties of these two letters are somewhat different from those of the other vowels. Even then, these two letters have conventionally been lumped with the vowels in the Varnamala. The above considerations, perhaps, prompted Dharmaraksha to eliminate these two letters from the vowel list and set the number of vowels at fourteen. Such an interpretation would satisfy the Chinese objection also. Subhakarasiṃha and Ichigyo also have treated **am** and **ah** as modifications of the vowel **a** in their *Daibiroshana Jobutsushinpenkajikyō*. It may be mentioned here that the **chandravindu** sign was called *kuten* 空点, and the **visarga** sign was called *nehanten* 涅槃点 in Sanskritic studies in China. Literally, these two terms mean emptiness sign

and nirvana sign respectively.

There are other interpretations also for the fourteen sounds. The most popular one is that the first twelve vowels come in short and long pairs. They make six pairs in all. Next, the twenty-five plosive consonants come in five groups of five letters each. So they make five. Finally, the nine non-plosive consonants come in three groups of three letters each. Thus they make three. When all these are added up, they make fourteen in all.<sup>(21)</sup> Most of the other interpretations are religious in nature.

Dharmaraksha has also referred to the half-letters and full-letters in his translation. Monk Keikan 惠觀 was one of the early scholars to see the terms in the linguistic light. Sha Reiun gives Keikan's interpretation as follows. The sound makes the half. The letter and the sound combine to form the full. When divided, the sound becomes a half-letter. When the individual half-sound letters are combined, they are called full. In sound, the half-sound constitutes the basis. In letters, the half-letters constitute the basis. The letter is produced on the basis of sound. The sound is the basis. The sound is not produced on the basis of letter. Hence, the letter does not form the basis here.<sup>(22)</sup> From the above, it can be said that Sha Reiun was aware of the phonetic property of the Sanskrit letters. By half he meant the half-letters, and by full he meant the full-letters. He understood the compound Sanskrit letters as full-letters, and the constituents of the compound letters as half-letters. There were other authors also who held similar view. Keikin 惠均 was one such author and Annen has given the following information from his Gengiki 玄義記. The small letters are all half-letters. The twelve letters and the thirty-four letters are like



these. When two letters are compounded, they are called full-letters.... A word can be made by the half-letter and full-letter together. All should not necessarily be the full-letters.... Two half-letters combine to form a full-letter. The old translation says that the half-letter is half of the full-letter. When two half-letters are combined, they form the full-letter.... The fourteen sounds constitute the basis of the letters. They are the halves of the full-letters. The full-letters are obtained by combining the half-letters. Hence the fourteen sounds form the basis of the letters. The fourteen sounds are all half-letters.<sup>(23)</sup>

It appears that the full-letters here signified the combination of letters among themselves, and the half-letters signified both the letters themselves and the consonantal ligatures. This is corroborated by Wajo Shittanki Mondo 和上悉曇記問答. It says that the half-letters have two forms. One is that they are *hantai* 半体 or consonantal ligatures. They are like the letters with **hasant** sign or the ligature forms of the letter **ya** and the other letters. The other is that they are the vowel and the consonant letters. They are the letters as such. The full-letters have two forms. One is *taiman* 体滿 like the compound letters **ccha**, **ddha**, **nka**, etc. The other is *onman* 音滿, where the vocalic signs are added to the consonantal letters and compound letters.<sup>(24)</sup>

Next, Sha Reiun says that the letters are sound-based. The sound is not letter-based. The letters are not of basic importance. This shows that he was well aware of the phonetic character of the Sanskrit letters. He saw the Sanskrit letters through the lens of Chinese characters, which basically expressed the meaning and not the sound. In Chinese writings, the characters, that basically

express the meaning and not the sound, have the primary importance. As against this, in Sanskrit writings, the letters, that basically express the sound and not the meaning, have the primary importance. Although each Sanskrit letter carried some religious meaning, a word constituted by a number of letters could not be interpreted on the basis of such religious meanings of the individual letters. In Chinese, on the other hand, a sentence is understood basically from the meanings of the individual characters and not their readings. It is very likely that Sha Reiun was attracted the Siddham letters because of their phonetic character.

#### IV-2. Emperor Wu

Another eminent Chinese scholar to be attracted to the new linguistic ideas of Sanskrit was Emperor Wu 武帝 (464-549), the founder of the Liang dynasty. The Emperor, a devout Buddhist, has written a commentary of the Mahaparinirvana Sutra in which he has given the Varnamala. Annen has quoted it in his Shittanzo along with a passage saying that the fourteen sounds are the half-letters. Ten letters are taken first in the scriptures, and four letters are not taken. The four letters are the vowels **r**, etc., which come in the end. After this the Varnamala follows. Both the Sanskrit letters and their Chinese transcriptions have been given. The transcriptions of Dharmaraksha and not of Sha Reiun's revised version have been given here. The last letter given here is **kṣa**, but the transcription is that of the letter **la**. The following linguistic information has also been given along with the letters. The vowels **a**, **i** and **u** are short sounds and the vowels **ā**, **ī** and **ū** are long sounds. Of the consonants, **gha**, **jha**, **ḍha**, **dha** and **bha** are the

aspirated sounds. The letters **ka**, **kha**, **ga**, **gha** and **ña** are the tongue-root sounds, **ca**, **cha**, **ja**, **jha** and **ñā** are the mid-tongue sounds, **ṭa**, **ṭha**, **ḍa**, **ḍha** and **ṇa** are near tongue-tip sounds, **ta**, **tha**, **da**, **dha** and **na** are tongue-tip sounds, and **pa**, **pha**, **ba**, **bha** and **ma** are within-the-lips sounds. After this, the Emperor continues as follows. Of the thirty-four consonant letters, the last nine are pronounced by inhaling. The first five letters are tongue-root sounds. As for the nasal sounds, the first twenty letters enter into nose. In the fourteen sounds, the first six have long and short forms. Of the twelve sounds, the last two vowels are the super sounds. <sup>(25)</sup>

The description given above suggests that the fourteen sounds are the fourteen vowels minus **am** and **aḥ**, which he describes as super sounds. He associates the fourteen sounds with the half-letters. It seems that the classification of Sanskrit consonant letters into velars, palatals, retroflexes, dentals and labials on the basis of their origin had become familiar by this time. He has used terms like tongue-root sounds, and so on which are different from those used by Sha Reiun.

#### IV-3. Ichigyo

Ichigyo, who collaborated with Subhakarasiṃha in translating Daibirushana Jobutsushinpenkajikyō, has also written its commentary Daibirushana Jobutsushinpenkajikyōsho 大毘盧遮那成仏神變加持經疏. In this commentary he has discussed the Tantric interpretations of the letters. He explains the three letters **a**, **sa**, **va** as follows. The letter **a** denotes the deities of the Tathagata group, the letter **sa** denotes the deities of the Lotus group, and the letter **va** stands for

the deities of the **vajra** group. Here he makes a statement that the letter **a** comes in five types. They are **a**, **ā**-long, **am**, **ah** and **ah**-long. Then a little later he says that the letter **a** produces four letters. The letters are given in Chinese transcriptions. When the letters given in the translated sutra are seen in this light, it becomes very clear that the translators first gave the consonant letters which were traditionally read with a short **a** sound. Then they gave the combinations of the consonant letters with the three vowels, namely, **ā**-long, **am** and **ah**. Ichigyo's explanation suggests that they considered the letters **am** and **ah** as modifications of the letter **a**. Seen in this light, there is no discrepancy in Dharmaraksha's contention that the vowels number fourteen in all. It may be mentioned here that the three letters **a-sa-va** taken together represent the Garbhadhatu Mandala, and each letter represented a group of deities residing in the Mandala.<sup>(26)</sup>

#### IV-4. Chiko's Shittan Jiki

Finally, a Chinese monk Chiko 智広 (- 806) wrote a text book of Sanskrit, Shittan Jiki 悉曇字記, around 800 A.D. under the guidance of a South Indian monk Prajnabodhi. Numbered 2132, it is a four-page work in the fifty-fourth volume of Taisho Shinshu Daizokyo. The title can be translated as An Account of Siddham Letters. As the title shows, it deals only with the Sanskrit script and says nothing about grammar. It became the standard text book of Sanskrit in China and the Far East. It divides the letters and their combinations into eighteen sections. First he gives the outline of the eighteen sections, and then treats each section in more detail. Table 3 shows some of the information like the vocalic

Table 3: Various modifications of the letters

a) Vowels, vocalic signs and their combinations with the letter ka

													ka 𑖅	
𑖅	𑖆	𑖇	𑖈	𑖉	𑖊	𑖋	𑖌	𑖍	𑖎	𑖏	𑖐	𑖑		Vowels
ah	am	au	o	ai	e	u	u	i	i	i	i	i		Vocalic signs
𑖅	𑖆	𑖇	𑖈	𑖉	𑖊	𑖋	𑖌	𑖍	𑖎	𑖏	𑖐	𑖑		Vocalic combinations
ka	ka	ka	ka	ka	ka	ka	ka	ka	ka	ka	ka	ka		

Source: Taisho Shinshu Daizokyo, V. 84, p 644

b) Modification of the vowel r and its combination with the letter ga

r: 𑖅 → 𑖆; 𑖅 + 𑖅 → 𑖆 (ga + r → gr)

Note: Instead of treating the combinations of r with the consonantal letters as a part of the vocalic combinations, Chiko has made a separate section, Section 16, for them.

c) Some consonantal ligatures and the compound letters formed by them

ya: 𑖅 → 𑖆; 𑖅 + 𑖅 → 𑖆 (ka + ya → kya)  
 ra: 𑖅 → 𑖆; 𑖅 + 𑖅 → 𑖆 (ka + ra → kra)  
 ra: 𑖅 → 𑖆; 𑖅 + 𑖅 → 𑖆 (ra + ka → rka)  
 ma: 𑖅 → 𑖆; 𑖅 + 𑖅 → 𑖆 (ma + pa → mpa)

d) The hasant sign 𑖅 or 𑖆

𑖅 + 𑖅 → 𑖆 (/k/)      𑖅 + 𑖅 → 𑖆 (/kh/)

Note: Annen has equated the letters having the hasant sign with *hantai* or consonantal ligatures. He has used the term *hanon* 半音 for the reading of the letters with this sign. Thus *hanon* can be equated with the pure consonants.

e) Some consonantal compounds from Chiko's Shittan Jiki (TSD, V. 54, p. 1189)

kva → 𑖅      rkna → 𑖅      ska → 𑖅  
 tta → 𑖅      dbha → 𑖅      rkṣma → 𑖅  
 rkṣvya → 𑖅      rkṣvrya → 𑖅      tkva → 𑖅

signs, consonantal ligatures and compound letters, etc., covered by him. He presents the Sanskrit letters in the following way.

In Sanskrit there are six basic types of vowels. They come in short and long forms. So they are twelve in all. These are short **a** and long **ā**, etc. In the middle there are **ṛ** and three other letters. Nowadays these letters are omitted. Then there are thirty-five consonants. These make forty-seven letters in all. The sounds are produced from the molars, teeth, tongue, throat and lips. Each of these produces five letters. Then there are ten *henko* 遍口 or non-plosive letters. These letters combine with each other, and the combinations are divided into eighteen sections. The letter **llaṃ** is excluded from these combinations. The first seventeen sections are called regular sections, which means that the combinations take place according to some set rules. The combinations that do not conform to these rules are grouped together into the eighteenth section. Following this, Chiko discusses the first seventeen sections briefly. The eighteenth section, however, has been discussed in detail.

Section 1: This section consists of the thirty-four consonant letters and their combinations with the eleven vocalic signs. He gives the letters **ka** and **kā** as the examples. Chiko adds here that there will be no duplicate compound letter **lla** in Section 4, **vva** in Section 5, **mma** in Section 6, and **nna** in Section 7. These compound letters will not come in Sections 11, 12, 13 and 14 respectively also.

Section 2: This section consists of the compound letters which the consonant letters form with **ya** and their vocalic combinations. Here, **ya** comes as the second letter. For instance, **ka** + **ya** →

**kya** and **kya** + **ā** → **kyā**, etc. Three hundred and ninety-six letters are formed here.

Section 3: This section consists of the compound letters which the consonant letters form with **ra** and their vocalic combinations. Here, **ra** comes as the second letter. For instance, **ka** + **ra** → **kra**, and **kra** + **ā** → **krā**, etc. Three hundred and ninety-six letters are formed here.

Section 4: This section consists of the compound letters which the consonant letters form with **la** and their vocalic combinations. Here, **la** comes as the second letter. For instance, **ka** + **la** → **kla**, and **kla** + **ā** → **klā**, etc. Three hundred and eighty-four letters are formed here.

Section 5: This section consists of the compound letters which the consonant letters form with **va** and their vocalic combinations. Here, **va** comes as the second letter. For instance, **ka** + **va** → **kva**, and **kva** + **ā** → **kvā**, etc. Three hundred and eighty-four letters are formed here.

Section 6: This section consists of the compound letters which the consonant letters form with **ma** and their vocalic combinations. Here, **ma** comes as the second letter. For instance, **ka** + **ma** → **kma**, and **kma** + **ā** → **kmā**, etc. Three hundred and eighty-four letters are formed here.

Section 7: This section consists of the compound letters which the consonant letters form with **na** and their vocalic combinations. Here, **na** comes as the second letter. For instance, **ka** + **na** → **kna**, and **kna** + **ā** → **knā**, etc. Three hundred and eighty-four letters are formed here.

Section 8: This section consists of the compound letters which

**ra** forms with other consonant letters and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **ka** → **rka**, and **rka** + **ā** → **rkā**, etc. Three hundred and ninety-six letters are formed here.

Section 9: This section consists of the compound letters which **ra** forms with the compound letters of Section Two, i.e., **kya**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kya** → **rkya**, and **rkya** + **ā** → **rkyā**, etc. Three hundred and eighty-four letters are formed here.

Section 10: This section consists of the compound letters which **ra** forms with the compound letters of Section Three, i.e., **kra**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kra** → **rkra**, and **rkra** + **ā** → **rkṛā**, etc. Three hundred and ninety-six letters are formed here.

Section 11: This section consists of the compound letters which **ra** forms with the compound letters of Section Four, i.e., **kla**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kla** → **rkla**, and **rkla** + **ā** → **rkḷā**, etc. Three hundred and eighty-four letters are formed here.

Section 12: This section consists of the compound letters which **ra** forms with the compound letters of Section Five, i.e., **kva**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kva** → **rkva**, and **rkva** + **ā** → **rkṽā**, etc. Three hundred and eighty-four letters are formed here.

Section 13: This section consists of the compound letters which **ra** forms with the compound letters of Section Six, i.e., **kma**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kma** → **rkma**, and **rkma** + **ā** →



**rkmā**, etc. Three hundred and eighty-four letters are formed here.

Section 14: This section consists of the compound letters which **ra** forms with the compound letters of Section Seven, i.e., **kna**, etc., and their vocalic combinations. Here **ra** comes as the first letter. For instance, **ra** + **kna** → **rkna**, and **rkna** + **ā** → **rknā**, etc. Three hundred and eighty-four letters are formed here.

Section 15: This section consists of the compound letters formed by the nasal consonant letters. They are the compounds which (a) the nasal consonants form with their corresponding oral counterparts, (b) the letter **ṇa** forms with the nine non-plosive letters like **ya**, etc., and (c) the vocalic combinations of the above compounds. For instance, **ṇa** + **ka** → **ṇka**, **ṇa** + **ca** → **ṇca**, **ṇa** + **ta** → **ṇta**, **na** + **ta** → **nta**, **ma** + **pa** → **mpa** and **ṇa** + **ya** → **ṇya**, etc. Duplicate compound letters are excluded. There are just twenty-nine compounds in this group. Each has its vocalic combinations. Three hundred and forty-eight letters are formed here.

Section 16: This section consists of the combination of the thirty-four consonant letters with the vowel **r**, like **ka** + **r** → **kr**. Thirty-four letters are formed here.

Section 17: This section consists of the compound letters which the consonant letters form by combining mutually and their vocalic combinations. There are thirty-three compound letters like **sa** + **ka** → **ska** in this group. Three hundred and ninety-six letters are formed here.

Section 18: Chiko says that all the letters not included in the seventeen sections given above belong to this section. He divides the letters of this section into fifteen groups. He does not give any examples in Siddham. For some groups he gives the Chinese transcriptions

as examples. For others no Chinese transcriptions are given. The explanations given for some groups are very difficult to comprehend. Even Annen has given Siddham compounds for only ten groups, just only one letter in some cases. Chiko describes the fifteen groups as follows. <sup>(27)</sup>

Group 1: These are the compound letters of duplicate consonants, like **tta**, **jja**, **ṭṭa**, **ṇṇa**, and so on. Annen gives here all the duplicate consonant letters, **kka** and others, and their vocalic combinations.

Group 2: These are the compounds of different consonant letters which are read in **sandhi** form, like **stra**. Annen gives **pta**, **tka**, **tṣva** and **tṣchra** in addition, and their vocalic combinations.

Group 3: These are the compounds which do not undergo any vocalic combinations, like **stra**. However, they have **i** and **u** vocalic forms. Annen gives the three examples, **ṣṭra**, **ṣṭri** and **ṣṭru**. Chiko's contention can be explained if it is assumed that he meant here the compound **ṣṭr**, which is the **r** vocalic combination of the compound **ṣṭa**. In Orissa and Maharastra, the vowel **r** is usually pronounced something like **ru**, and not like **ri** as in other parts of India. Was this phenomenon there in those days also?

Group 4: Although these compounds have the twelve vocalic combinations, their origin is not the next. For instance the compounds **stra**, etc. It is difficult to say what Chiko meant here. Annen has skipped this group.

Group 5: Although different letters form compounds, they are not read according to the combination of the letters. They are like **mṇka**, etc., where the nasal letters **ṇa**, **ṇa**, **ṇa**, **na** and **ma** are added in the beginning. They also belong to a preceding section. Annen has skipped this group also.

Group 6: In these compounds, the reading of two letters forms **sandhi**. The sound precedes the letter. For instance, the compound of the letters **ma**, **ña** and **ka** is read as **mñka**. Annen gives only one example, **mñka**, here. <sup>(28)</sup>

Group 7: Letter is one, but it has different names. It is like the letter **sa** which has two sounds **sa** and **ha**. It is like borrowing. Annen gives the letter **sa** here. It seems that the letter **sa** was pronounced as **ha** in many areas in India. This, perhaps, has been stated here.

Group 8: A vocalic sign is added to a letter which already has a vocalic sign. Both the vocalic sounds are retained. It is like the letter **bhrum̐**. It is made from **bhru** and the eleventh vowel **am̐**. Annen gives the compounds **bhrum̐**, **cchrum̐** and **hum̐**. In other words, this group consists of a letter or a compound with two vocalic signs, one of which is **am̐** or **ah̐**.

Group 9: The shape is not a vocalic sign. It is a pure letter. It is like a letter having the crescent sign of **chandravindu** above it. Annen gives here just the crescent sign of the **chandravindu** minus the dot. It seems that sometimes this crescent sign was added to some letters as a decoration. Although it appeared like a vocalic sign, it was actually not so.

Group 10: The letters are there but they are read differently. When a number of letters form a compound, the last one is read correctly. But middle and the upper letters form **sandhi** and their reading is shortened. The reading is not necessarily correct. It is like the upper letter **sa** and the lower letter **ka** being read as **aska**, and so on. Annen has skipped this group. It is difficult to say what Chiko had in his mind in making this group. This is

because he has already cited this compound in Section Seventeen.

Group 11: The sound is there but the form is not there. In the compounds like **aska** of Section Seventeen, there is no **a**. But while reading the compounds, this sound **a** is added. Annen has skipped this group also. It seems that a short /a/ sound was prefixed in pronouncing the compounds like **ska** of Section Seventeen. This probably prompted Chiko to make a separate group out of these compounds.

Group 12: These are not formed from the letters. They themselves form *hantai* or half-letters. When the **hasant** sign or the ligature of **ya**, etc., are used, they are there, but the letters are not there. Annen gives here the **hasant** sign and the ligature of **ya**. When the **hasant** sign is added to a consonant letter, it acquires the character of an alphabet. For instance, the **hasant** sign added to the letter **ka** turns it into alphabetic /k/. It seems that Chiko was aware of this change, and this prompted him to make a separate group for it. Again, the use of the term half-letter probably prompted him to put the ligatures of **ya** and other consonants also in this group.

Group 13: If a letter has something missing, then it is pronounced by pulling out the sound after adding the **hasant** sign. When the **hasant** sign is added to the letters **ka**, **kha**, etc., they are pronounced something like /kat/, /khat/, etc. Annen has kept silence over this group. It appears that it is identical with the above group. It is difficult to say why Chiko made this group.

Group 14: Letters of diverse shapes whose source can be traced to a common letter. It is like the letter **sri** which assumed the shape of **sra**. The mistake crept in while curving the letter as

in the case of the seals. Annen also gives the letter **sri**. It appears that the compounds were also curved into seals and other objects in China. The shape of the compounds changed in the course of curving. Because this Chiko made a special group for such compounds.

Group 15: When seen in the light of its origin, the shape differs. The shape of **ka** is modified in the letters like **kr**, **kra**, **kru**, etc., and the shape of the vocalic sign differs in letters like **hu**, **ru**, etc. Annen gives here the letters **kr**, **kra**, **kru**, **hu** and **ru**. In this case, the shape of the letter **ka** is modified in the first three letters. In short, the ligature form is different. The vocalic form is modified in the other two letters. This perhaps prompted Chiko to assign a separate group to them.

Chiko then goes on to the second part, although no distinct division as such has been made. Here he introduces the Varnamala. He first gives the twelve vowels **a**, **ā**, **i**, **ī**, **u**, **ū**, **e**, **ai**, **o**, **au**, **am** and **ah**. He appends pronunciation note to the letters saying that the first, third, fifth, seventh, ninth and eleventh vowels are short, and the other vowels are long. Except for **am** and **ah**, the same characters have been used for transcribing the short and long vowel pairs. The readings of **i**, **e**, **ai** and **am** have been given in *hansetsu*. After giving the vowels, he adds a note that according to I Ching 義淨, in the first three pairs of vowels, those coming first are short and those coming second are long. But in the next three pairs, those coming first are long and those coming second are short. Next Chiko continues as follows. These twelve vowels constitute the vocalic endings in the sections below. When these are added to the letter **ka**, twelve letters **kā**, **kī**, **ku**, etc., are produced. The shapes of the vowels are modified when they are

added to the consonant letters. They are called the Siddham vocalic signs. The old translation says about fourteen sounds. There are four letters **r**, **ṛ**, **l** and **ḷ** after the vowel **ū** of the twelve vowels. Of the twelve vowels, the last two are eliminated. They are the *kaihanji* 界畔字 or the letters of the limits and hence superfluous. This gives fourteen sounds. Nowadays, the four letters **r**, **ṛ**, **l** and **ḷ** are excluded in making combinations.

Next, Chiko gives the consonant letters under the heading Consonant Letters. He first gives **ka**, **kha**, **ga**, **gha**, **ṇa** with pronunciation notes *kei* added to **ga** and *cho* added to **gha**. Then he says that these five letters are the molar or velar sounds. Next he gives **ca**, **cha**, **ja**, **jha**, **ṇa** with pronunciation notes *kei* and *cho* added to **ja** and **jha**. These, he says, are the tooth or dental sounds. Then he gives **ṭa**, **ṭha**, **ḍa**, **ḍha**, **ṇa** with pronunciation notes *kei* and *cho* added to **ḍa** and **ḍha**. These, he says, are the tongue or lingual sounds. After this he gives **ta**, **tha**, **da**, **dha**, **na** with pronunciation notes *kei* and *cho* added to **da** and **dha**. These, he says, are the throat or guttural sounds. Following this he gives **pa**, **pha**, **ba**, **bha**, **ma** with pronunciation notes *kei* and *cho* added to **ba** and **bha**. These, he says, are the lip or labial sounds. Finally he gives the letters **ya**, **ra**, **la**, **va**, **śa**, **ṣa**, **sa**, **ha**, **llam** and **kṣa**. He adds a pronunciation note to the letter **ra** saying that it should be pronounced by rolling up the tongue. These are the *henko* or non-plosive sounds. He has appended tone signs to some letters. For instance, departing tone sign has been added to the vowel letter **o**.

Chiko gives the reading of each letter in *hansetsu*. For instance, he gives the reading of the letters **ka** as *ko ka han*

居下反. In the pronunciation note, *han* tells the reader that the initial consonant /k/ of the first character *ko* and the final vowel /a/ of the second character *ka* when joined together gives the reading /ka/ of the letter.<sup>(29)</sup> The reading of **ra** has somehow been shown as *katsu riki ka han san go* 曷力下反三合 which gives the reading of the letter something like /kra/. After giving the letters he says that as will be seen in the sections below, excepting for the letter **llam**, the other thirty-four letters form different types of combined letters. After this he discusses the combinations in eighteen sections.

The contents of the first fourteen sections and the sixteenth section are more or less the same as those given in first part. The only difference is that excepting for the first section, more examples have been given here. For instance, in the second section, **kya** and its all other eleven vocalic combinations from **kyā** to **kyah** have been given. It has been stated in the first part that the fifteenth section consists of twenty-nine compounds of the nasal letters and that they and their vocalic combinations make three hundred and forty-eight letters in all. The twenty-nine compounds are given here with a note appended to each that it has twelve forms. The letters are given below.

<b>ṅka, ṅkha, ṅga, ṅgha</b>	<b>ñca, ñcha, ñja, ñjha</b>
<b>ṇṭa, ṇṭha, ṇḍa, ṇḍha</b>	<b>ṇta, ṇtha, ṇḍa, ṇḍha</b>
<b>mpa, mpha, mba, mbha</b>	
<b>ṇya, ṇra, ṇla, ṇva, ṇśa, ṇṣa, ṇsa, ṇha, ṅkṣa</b>	

Chiko next says that the compounds of the nasal letters among themselves are excluded.<sup>(30)</sup>

In the first part Chiko says that there are thirty-three letters

in Section 17 and that they and their vocalic combinations make three hundred and ninety-six letters. Chiko gives all the thirty-three letters here. They are as follows.<sup>(31)</sup>

ska, skha, dga, dgha	ñktra, vca, vcha, vja
vjha, jña, ṣṭa, ṣṭha	dḍa, dḍha, ṣṇa, sta
stha, vda, vdha, rtsna	spa, spha, dba, dbha
rkṣma, rkṣvya, rkṣvrya	lta, tkva, tsa, tṣa, sha, vkṣa

As seen earlier, Section 18 consists of the compounds, letters and others which are not included in the above sections. He has not specified the number of letters belonging to this group. He gives the following letters here.

pta, ṭka, dsva, ṭscra	tta, jja, ṭṭa, ṇṇa, nna
mñka, bhram, chram, hum	

Following this, he mentions the *hantai* or consonantal ligatures and gives two forms of the **hasant** sign. He then gives the ligature of **ya** with a note that it is the abbreviation of the letter **ya**. Next, he mentions the letters curved in different objects with the letter **sri** as the example. Here he says that such curved letters are very large in number and hence will be omitted.

## V. Study

The ideographic characters the Chinese used for writing their language inhibited the growth of even such basic philological concepts like vowels and consonants. To the Chinese scholars who were trying hard to evolve a method for writing down the reading of the characters, the Sanskrit script with its phonetical properties came as a great surprise. The Chinese who collaborated in translating



the sutras were aware of the fact that Sanskrit had roused much academic interest in a section of Chinese scholars, and perhaps played an important role in incorporating the Varnamala in the translated texts. A scrutiny of the Varnamalas appearing in the translated texts reveals that they carried only fragmentary phonetical information. Pronunciation notes like *tan* for short vowels and *cho* or *in* for long vowels, *nigo* for compound letters of two consonant letters, *kei* and *cho* for unaspirated and aspirated letters and tones, as well as the readings of the letters given in *hansetsu* suggest that the primary importance was accorded to reading the letters correctly. Chanting of **mantras** constituted an integral part in Buddhist rituals. As the **mantras** had to be pronounced correctly, it created a demand for reading the letters correctly. For the Indian monks this was of prime importance, and they concentrated their efforts on the practical side, and incorporated only the phonetical information which they thought was needed for correct pronunciation. They did nothing to promote Sanskrit as a language.

Another important point in the Varnamalas of the Indians is that all of them without exception give religious interpretation to each and every letter. No Indian ever tried to tell that the letters basically expressed the sounds and not the meanings. Since the Chinese characters also conveyed the meaning basically, the religious interpretations appended to the letters gave the Chinese an impression that the Sanskrit letters also were another form of ideographic script, with an additional property, the sound. The Indians probably thought that the acceptance of Varnamala would be facilitated by highlighting the religious meanings, thereby giving it a property similar to the Chinese characters, rather than by telling them that

the letters basically expressed the sounds. It is the Chinese who dropped the religious meanings from the letters in their works. Chiko did not give any religious interpretation to the letters in his Varnamala. He just concentrated on the phonetic values of the letters. Even then he did not say anywhere that the letters intrinsically expressed the sounds and not the meanings. The Chinese academic world needed that information badly. Although the Indians were a highly academic group, they just failed to understand the needs of the Chinese academic world. The cause may perhaps be traced to their lack proper command over Chinese.

The Chinese interest in the Varnamala, on the other hand, was more academic. Many Chinese, mostly monks, wrote about the Sanskrit letters where they reproduced the Varnamala. Since these writings were meant for the Chinese readers, and the subject was totally new, proper explanations had to be given for all the new concepts. A study of these writings and these Varnamalas reveals far more phonetical information. One of the earliest scholars to write on the Sanskrit letters and reproduce the Varnamala was Sha Reiun. The Sanskrit grammar conventionally grouped the plosive consonants into velars, palatals, retroflexes, dentals and labials. The Varnamalas in the translated Buddhist texts ignored this grouping. Sha Reiun, however, has given the grouping in his Varnamala, albeit under different names. This shows that Sha Reiun had some sort of communication with the Indian monks working around him.

As time passed, the Chinese accumulated more and more information, and this culminated in the compilation of the text book of Chiko. A scrutiny of this text book reveals that Chiko did

not know much of the Sanskrit language as such. He focussed his attention on reading the letters correctly. He appended the information needed for correct pronunciation to every letter. In short, the Varnamala was not intended for promoting the Sanskrit language as such. Its major aim was to assist in reading the **mantras** correctly.

One big handicap suffered by Sha Reiun and other early Chinese writers on Siddham was the lack of proper linguistic terms. The Indians by and large had a very limited knowledge of Chinese. Consequently they failed to grasp the needs of the Chinese academic world. No Indian wrote anything about the Sanskrit phonetical concepts either on their own or jointly with the Chinese monks. It appears that the Chinese became aware of the phonetical terminology through their persistent efforts to study the Sanskrit letters. A study of Chiko's Shittan Jiki reveals that the Chinese had gained much familiarity with the Sanskrit phonetical terms by that time. For instance Chiko used the terms like *mata* 摩多 or *in* 韻 for vowels, *taimon* 体文 for consonants, *tenkaku* 点画 for vocalic signs, *betsumata* 別摩多 for the vowels *r*, *ṛ*, *l* and *ī*, *hantai* 半体 for consonantal ligatures, *gasei* 牙声 or molar sounds for velars, *shisei* 齒声 or teeth sounds for palatals, *zessei* 舌声 or tongue sounds for retroflexes, *kosei* 喉声 or throat sounds for dentals and *shinsei* 唇声 or lip sounds for labials, *renjo* 連声 for **sandhi**, *tatatsu* 多達 for **hasant**, and so on. Other terms like *seion* 清音 for unvoiced sounds, *dakuon* 濁音 for voiced sounds, *tsumata* 通摩多 for the other twelve vowels as against *betsumata* 別摩多 for the vowels *r*, *ṛ*, *l* and *ī*, *goruisei* 五類声 or *bisei* 毘声 for the plosives, and so on evolved in due course of time.

Sanskrit phonetical ideas made some major contributions to

the phonetical studies in China. Two of these will be seen here. One of the earliest contributions of the Sanskritic philological concepts, perhaps, came in the form of innovation of the *hansetsu* system for recording the reading of characters. The innovation is attributed to Son En 孫炎, a scholar of the third century. It is suspected that the Indian phonetical ideas played a role here. It gave the reading of a Chinese character with two other characters, the first one giving the initial consonant and the second one giving the ending, which consisted of one or two vowels with or without a consonantal ending. A later day scholar Chin Katsu 沈括 (1030-1094) says in his *Mukei Hitsudan* 夢溪筆談 that the science of *hansetsu* came from the Western regions.<sup>(32)</sup> Here, the concept of consonants and vowels played an important role.

Another area is the compilation of rime or phonetical dictionaries. The Chinese adopted the Sanskrit classification of consonants into velars, palatals, retroflexes, dentals and labials with slight modification. They used the terms *kaku* 角, *cho* 徵, *sho* 商, *u* 羽 and *kyu* 宮, which were traditionally used in music.<sup>(33)</sup> Starting with *Setsein* 切韻 (601), the traditional Chinese scholars compiled a series of rime dictionaries where the initial consonants were given under these headings. The Buddhists also compiled a similar dictionary, *Inkyo* 韻鏡, but used the terms they used in their Sanskritic studies for the headings. The contents of both of these are more or less the same. In short, the idea of classifying the consonants according to their place of origin helped in compiling the phonetical dictionaries.

## VI. Concluding Remarks

The Varnamala introduced Sanskritic phonetical ideas like dividing sounds into vowels and consonants, classifying consonants according to their place of origin, and so on, to the Chinese. Initially the Chinese had difficulty in expressing the ideas, but slowly the technical terms were translated into Chinese. This helped in understanding the Sanskrit letters and their mutual combinations better. The scope of the text book prepared for studying Sanskrit in China was restricted to just reading the **mantras**. Grammar was totally neglected in this text book. No step was taken to promote Sanskrit as a language. The Sanskritic phonetical ideas also made important contributions in some areas of traditional Chinese scholarship. Two such areas are the *hansetsu* system of writing the readings of the characters and the phonetical dictionaries.

## References

- (1) Mabuchi Kazuo: *Nihon Ingakushino Kenkyu*, Vol. 1, Rinsen Shoten, Kyoto, 1984, p. 24, 馬渕和夫、日本韻学史の研究
- (2) Kumarajiva (Tr): *Makahannyaharamitsukyo*, Taisho Shinshu Daizokyo (TSD), V. 8, No. 223, Daizo Shuppan, Tokyo, p. 256T-M, 摩訶般若波羅密經  
Mabuchi: Pt. 1, pp. 28-30
- (3) Buddhahadra (Tr): *Daihokobutsukegonkyo*, TSD V. 9, No. 278, pp. 765B-766T, 大方廣仏華嚴經  
Annen: Shittanzo, TSD. V. 84, pp. 424T-425T, 安然, 悉曇藏  
Mabuchi, Pt. 1, pp. 31-34
- (4) A Chinese syllable consists of  $S = IMVE/T$ , where S: syllable, I: initial consonant, M: medial vowel which is a glide, V: main vowel, E: end consonant, and T: tone. The group MVE is called *in* 韻, i.e., the final or rime, and as against this, I is called *han* 反 or *setsu* 切 or the initial. In the *hansetsu* system, the reading of a

character is given by two characters, the first one giving the initial and the second one giving the final or rime. For instance, the word 東 /tung/ is expressed by two characters 德 /te/ and 紅 /hung/. The initial /t-/ of the first character and the final /-ung/ of the second character give /tung/, the reading of the word in question.

In Chinese there are four tones, viz., even tone, rising tone, departing tone and entering tone.

- (5) Jishyananda (Tr): Daihokobutsukegonkyo, TSD, V. 10, No. 279, p. 418T-B, 大方広仏華嚴經  
Mabuchi, Pt. 1, pp. 31-34
- (6) Fa Hien (Tr): Daihatsunaiongyo, TSD, V. 12, No. 376, pp. 887B-888B, 大般泥洹經  
Mabuchi: Pt. 1, pp. 37-40
- (7) Dharmaraksha (Tr): Daihatsunehangyo, TSD V. 12, No. 374, pp. 413T-414M, 大般涅槃經; Donmushin, Joban Taitei (Tr.): Daihatsunehangyo, Pt. 1, Daito Shuppan, Tokyo, 1970, pp. 179-185, 曇無讖、大般涅槃經
- (8) Konishi Jinichi: Bunkyo Hifuronko, V. 1, Daihachishu Shuppan, kyoto, 1948, p. 188, 小西甚一: 文鏡秘府論考
- (9) Samghapala (Tr): Monjushirimonkyo, TSD. V. 18, No. 468, p. 498T-B, 文殊師利問經  
Mabuchi: Pt. 1, pp. 47-49
- (10) The three letters **ah**, **sah** and **vah** have actually been transcribed with characters representing the sounds /ak/, /sak/ and /vak/, or in short, with characters having the /-k/ ending. These are known as *nyusei* 入声 or entering tone sounds. When the vowel **ah** combines with a consonant letter, it is represented by the **visarga** sign. This sign was known as *nehnten* 涅槃点 or **nirvana** sign in China, and was used to represent the Chinese characters like /kak/, /kat/, /kap/, etc., or those ending in the sound /-k/, /-t/ and /-p/. These characters were the entering tone characters in Chinese. So the reading note *nyusei* here denotes the **visarga** sound **ah**. The entering tone characters were conventionally used for transcribing the Sanskrit syllables with the **visarga** sign.
- (11) Subhakarasingha, Ichigyo: Daibirushana Jobutsushinpenkajikyo, TSD. V. 18, No. 848, p. 30M-B, 大毘盧遮那成佛神變加持經  
Mabuchi: Pt. 1, pp. 60-62
- (12) Amoghavajra: Yugakongochokyo Mojibon, TSD. V. 18, No. 880, p.p 338M-339T, 瑜伽金剛頂經積字母品  
Mabuchi: Pt. 1, pp. 56-58
- (13) Konishi, p. 162
- (14) Eko, Joban Taitei (Tr): Ryokosoden, Daito Shuppan, Tokyo, 1979, p. 155, 慧皎: 梁高僧伝

- (15) Mabuchi, pp. 36–37. According to Mabuchi, Dharmaraksha carried out his translation between 414–426, and Sha Reiun and his friends carried out the revision between 426 and 443.
- (16) Dharmaraksha Tr., Revised by Keigen and others, Daihatsu Nehangyo, TSD. V. 12, No. 375, pp. 653–55, 曇無讖、慧嚴他：大般涅槃經 Mabuchi: Pt. 1, pp. 41–45
- (17) Annen: Shittanzo, TSD. V. 84, pp. 409M–410T
- (18) *ibid.*, p. 377M–B
- (19) Chiko: Shittan Jiki, TSD. V. 54, p. 1186B, 智広：悉曇字記
- (20) Nakamura Hajime: Bukkyogo Daijiten, Tokyo Shoseki, Tokyo, 1991, p. 167–3, 中村元：仏教語大事典
- (21) Annen: p. 378T
- (22) *ibid.*, p. 432M
- (23) *ibid.*, pp. 432B–433T

The date of Keikin or Gengiki could not be ascertained.

- (24) *ibid.*, p. 433T

The date of the work could not be ascertained. The use of the terms like *taimon* 体文: consonant letters, *mata* 摩多: vowel suggests that it is a much later work.

*taiman*: **ca** + **cha** → **ccha**; *onman*: **ka** + **i** → **ki** or **ccha** + **i** → **cchi**

- (25) *ibid.*, pp. 410B–411T

- (26) Mabuchi: p. 63,

Nakamura Hajime, Entry **a-sa-va**, p. 12–4

- (27) Chiko: p. 1187M, Annen: pp. 480–81

Chiko's examples are Chinese transcriptions, Annen's examples are in Siddham script.

- (28) Traditionally, this group is explained with the transcription 莽迦 used for **mñka**. The transcription was read something like /mañ-ka/. If the Siddham **mñka** is broken up into two, it becomes /ma-ñka/. This is because there is no compound letter in Siddham like **mña**. Although the nasal /ñ/ is attached to /ka/ in Siddham, in the transcription it attaches itself to /ma/. Since /ñ/ gets attached to /ma/, the Chinese read it with /ma/ and not with the letter /ka/.

This Chiko interpreted as reading precedes the letter, and identified it as a form of **sandhi**.

- (29) The Japanese way of pronouncing has been used here. This is because, the pronunciation of characters has changed greatly in China over time. For instance the character 居 is pronounced as /ju/ in modern Chinese, whereas the Japanese reading is *ko*. The original /k/ has been retained in Japanese. Thus, in Japan, the older Chinese pronunciations have been retained in many cases.

- (30) There is a question about the compounds *nya*, *ñra*, *ñla* and *ñva*. They should belong to Sections 2, 3, 4 and 5 respectively. He gives no explanation. At the end of Shittanzo, Annen gives almost all the letters proposed by Chiko. In Sections 2, 3, 4 and 5 he says that the respective compounds *nya*, *ñra*, *ñla* and *ñva* belong to Section 15. Annen: Shittanzo, pp. 450-52
- (31) Takubo Shuyo: Hihan Shittangaku, Shingonshu Tokyo Senshu Gakuin, Tokyo, 1944, p. 112, 田久保周譽: 批判悉曇学
- (32) Chin Katsu, Umehara Kaoru (Tr): Mukei Hitsudan, Heibonsha, Tokyo, p. 91, Footnote 2, p. 107, 沈括: 夢溪筆談
- (33) Chin Katsu: p. 109

#### List of Chinese characters used in this study

Annen 安然, Benshuron 弁宗論, *betsumata* 別摩多, *biko* 鼻呼, *bisei* 毘声, Chiko 智広, Chin Katsu 沈括, *cho* 長, *cho* 重, *cho* 徵, *choon* 重音, Daibirushana Jobutsushinpenkajikyo 大毘廬遮那成仏神變加持經, Daibirushana Jobutsushinpenkajikyoshō 大毘廬遮那成仏神變加持經疏, Daihatsunaiongyo 大般泥洹經, Daihokobutsukegonkyo 大方広仏華嚴經, Daihatsunehangyo 大般涅槃經, *dakuon* 濁音, Donmushin 曇無讖, Eei 慧叡, Fa Hien 法顯, Fuyokyo 普曜經, *gasei* 牙声, Gengiki 玄義記, *goruisei* 五類声, *han* 反, *hanon* 半音, *hantai* 半体, *henko* 遍口, *honon* 本音, *hansetsu* 反切, Ichigyo 一行, I Ching 義淨, *in* 引, *in* 韻, Inkyo 韻鏡, Jushionkunjo 十四音訓叙, *kaihan* 界畔, *kaihanji* 界畔字, *kaku* 角, *katsu riki ka han san go* 曷力下反三合, *kei* 輕, Keikan 惠觀, Keikin 惠均, *keiko* 輕呼, *keion* 輕音, *ko ka han* 居下反, *kosei* 喉声, *kuten* 空点, *kyosei* 去声, *kyu* 宮, Makahannyaha ramitsukyo 摩訶般若波羅密經, *mata* 摩多, Monjushirimonkyo 文殊師利問經, Mukei Hitsudan 夢溪筆談, *nehanten* 涅槃点, *nigo* 二合, *nyusei* 入声, *onman* 音滿, *renjo* 連声, Ryokosoden 梁高僧伝, *seion* 清音, *setsu* 切, Setsuin 切韻, Sha Reiun 謝靈運, *shinsei* 腎声, *shisei* 齒声, Shittan Jiki 悉曇字記, Shittanzo 悉曇藏, *sho* 商, Son En 孫炎, *taigo* 体語, *taiman* 体滿, *taimon* 体文, *tan* 短, *tatatsu* 多達, *tenkaku* 点画, *tsumata* 通摩多, *u* 羽, Wajo Shittanki Mondo 和上悉曇記問答, Wu 武帝, Yugakongochokyo Mojibon 瑜伽金剛頂經 积字母品, *zessei* 舌声, Zuisho 隨書