

**A PHONOLOGICAL RECONSTRUCTION
OF PROTO CHIN**

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**A PHONOLOGICAL RECONSTRUCTION
OF PROTO CHIN**

by

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RESUME

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ABSTRACT

A PHONOLOGICAL RECONSTRUCTION OF PROTO CHIN

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This thesis presents a phonological reconstruction of Proto Chin. Previous phonological reconstructions of Chin focused on tone and initial consonants (Ono 1965, Solnit 1979, Luce 1985, Ostapirat 1998, Bhaskararao 1998).

Chin languages are generally classified under the Kuki-Chin-Naga branch of Tibeto-Burman (Shafer 1966, Benedict 1972, Bradley 1997), and are traditionally subgrouped as Southern Chin, Central Chin, Northern Chin, Old Kuki and Other Chin Groups (Grierson 1904, Bradley 1997). So-Hartmann (1988) has proposed a lower level subgrouping of Southern Chin languages. However, a full phonological reconstruction, classification and subgrouping of Chin languages is yet to be completed.

A lexicostatistic analysis of 21 Chin languages spoken in Myanmar resulted in a preliminary subgrouping and selection of six representative languages for reconstruction purposes. The comparative method was applied to these representative languages for a reconstruction of Proto Chin, based on a 443-word vocabulary. This reconstruction provides a solution for the longstanding reconstruction problem of *g, and sheds additional light on the subgrouping of Chin languages

บทคัดย่อ

การสืบสร้างทางระบบเสียงของภาษาไทยโบราณตระกูลนิ่น

โดย

คง คำ พง

มหาวิทยาลัยพายัพ เชียงใหม่ 2544

อาจารย์ผู้ควบคุมวิทยานิพนธ์ : ดร Fraser Bennett

วิทยานิพนธ์ฉบับนี้นำเสนอการสืบสร้างทางระบบเสียงของภาษาไทยโบราณตระกูลนิ่น การสืบสร้างภาษาไทยโบราณตระกูลนิ่นที่แล้วมานั้น ให้ความสำคัญเน้นเฉพาะการศึกษาด้านวรรณยุกต์ และพยัญชนะต้นเท่านั้น (Ono 1965, Solnit 1979, Luce 1985, Ostapirat 1998, และ Bhaskararao 1998) ภาษาตระกูลนิ่นจัดอยู่ในกลุ่มภาษาตระกูล ทิเบต-พม่า (Shafer 1966, Benedict 1972, และ Bradley 1997) ซึ่งในสมัยก่อนภาษาตระกูลนิ่นนี้มีการจัดเป็นกลุ่มย่อยออกเป็นชื่อตัวเอง คือ กะลา ชั่นเหมือ ภูเก็ต และภาษาชื่นสาขาอื่นๆ (Grierson 1904, Bradley 1997). So-Hartmann (1988) ได้เสนอการจัดแบ่งกลุ่มของภาษาตระกูลนิ่นสาขาชื่นได้ แต่อย่างไรก็ตามการสืบสร้างทางระบบเสียงของภาษาตระกูลนิ่นยังไม่สมบูรณ์นัก

วิทยานิพนธ์ฉบับนี้ได้ใช้วิธีการเปรียบเทียบสถิติของคำศัพท์ดั้งเดิม จัดแบ่งกลุ่มภาษาตระกูลนิ่นจำนวน 21 ภาษา ซึ่งเป็นภาษาใช้พูดในประเทศไทย การจัดแบ่งกลุ่มภาษาในขั้นพื้นฐานได้คัดเลือกตัวแทนภาษาลำดับการสืบสร้างภาษาไทยโบราณจำนวน 6 ภาษา จากนั้นใช้วิธีการเปรียบเทียบภาษาเพื่อการสืบสร้างภาษาไทยโบราณตระกูลนิ่น ทั้ง 6 ภาษา โดยศึกษาคำศัพท์ 443 คำ จากการสืบสร้างภาษาไทยได้ช่วยแก้ปัญหาการสืบสร้าง เสียง *g และของภาษาไทยโบราณตระกูลนิ่น ให้ความกระจง ในการจัดแบ่ง ภาษาอย่างของภาษาตระกูลนิ่นอีกด้วย

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LIST OF ABBREVIATIONS AND SYMBOLS

\$	Syllable boundary
1p	First person plural
1s	First person singular
2p	Second person plural
2s	Second person singular
BEHS	Basic Education High School
bro.	Brother
C	Consonant
F	Falling
f	female
G	Glide
H	High
ICSTLL	International Conference on Sino-Tibetan Languages and Linguistics.
IMS	Indian Military Service
Intl.	International
L	Low
LTBA	Linguistics of the Tibeto-Burman Area
m	male
M	Mid
N	Nasal consonant
NE	Northeast
No.	Number
NW	Northwest
p. c.	Personal communication
R	Rising
r.	Ratio

Ref.	Reference
Rev.	Reverend
S	Stop
SIL	SIL International
SLORC	State Law and Order Restoration Council
Sq.	Square
T	Tone
TP	Tone Pattern
V	Vowel
yr	younger

CHAPTER 1

INTRODUCTION

1.0 Introduction

The Chin languages have rarely been studied by linguists. As a result the classification and subgrouping of these languages is incomplete. This thesis aims to provide a reconstruction of Proto Chin and to propose a subgrouping of the languages based on this reconstruction.

This chapter presents a brief overview of the Chin people, Chin linguistic classification, the existing literature; the purpose of this thesis; and the sources of linguistic data and the methodology used in it.

In chapter 2, the selection of representative Chin languages is discussed. Chapter 3 provides brief descriptions of the selected languages. The reconstruction is given in chapter 4. A description of Proto Chin, the phonological relationships among Chin languages and a proposed stammbaum of the Chin language family are provided in chapter 5. Chapter 6 is the conclusion.

1.1 Background

This section provides brief background information about Chin people in general and particularly in the Chin State of Myanmar¹. The discussion includes the historical background of Chin people, geographical and demographic information, cultural background, communication, and the nomenclature used for different languages.

¹ Myanmar was formerly called Burma. The SLORC changed the country name to Myanmar in 1989.



Figure 1. Map of Myanmar

1.1.1 Historical background

Chin people have different autonyms as well as exonyms (See section 1.1.6), and live in Bangladesh, India and Myanmar. Their origin was the Yellow or Manchu River valley of Southwest China from where they migrated considerable distances over many centuries (Lehman 1963:11).

Scholars give different dates for their entry into Myanmar. Lehman (1963) claims this entry date to be 750 AD, Khen Za Sian (1999) proposes 800 AD, and Tuan Khaw Kham (1999) claims 850 AD. The earliest historical mention of Chin people in Myanmar comes from inscriptions of the Pagan kingdom from the thirteenth century AD (Lehman 1963:20).

Later, Chin people moved toward the west of mainland Myanmar. Vum Kho Hau (1963) dates this migration as 1374 AD, which is the time when the Kalay (or Kale) Sawbwa (chief) built the Kalay palace and Chin people were put to forced labor. The other proposed dates for the settlement of Chin people to the current region are 1347 AD (Kip Thian Pau 1999), 1400 AD (Khen Za Sian 1999), and 1490-1510 AD (Bawi Hu 1998).

The British invaded and annexed the Chin Hills in 1892 and declared the area an integral part of Burma. The British introduced the Chin Hills Regulation in 1896, making the Chin Hills a single administrative area. This regulation was replaced by the Chin Special Division Act of 1948, which was adopted on October 22, 1948, after Myanmar gained independence. Within the Chin Special Division were six subdivisions: from north to south, Tedim, Falam, Hakha, Mindat, Paletwa and Kanpetlet.

The Chin Special Division was changed to the Chin State under Section 30 (B) of the Constitution of the Union of Burma adopted on January 3, 1974. The former six

subdivisions were formed into nine townships: Tonzang, Tedim, Falam, Hakha, Thantlang, Matupi, Mindat, Paletwa, and Kanpetlet.

The scope of this thesis is confined to the Chin languages spoken in Myanmar, particularly in the Chin State.

1.1.2 Geography and demography

The Chin State lies in the west of Myanmar, between 24 and 21.45 degrees north latitude and between 92 and 94.5 degrees east longitude as shown in Figure 2. The area of Chin State is 13,367 square miles.

The Chin hills are a series of generally north-south oriented mountain ranges, but south of 22 degrees north latitude there is a large region in which this pattern is interrupted by cross-cutting local ridges, valleys, and other irregularities (Lehman 1963). The main mountain ranges vary in height from 5,000 to 9,000 feet. The highest mountain point, Victoria (Khonu), is 10,018 feet above sea level, situated in Mindat Township of Southern Chin State. The main rivers in Chin State are the Manipur, Bawinu, Kaladan and Tio rivers. The climate is chiefly influenced by monsoon winds, but owing to the altitude, the weather is often cold. There are three seasons, hot, wet, and cold.

Up-to-date official demographic information for the Chin State is not available. Referring to the 1931 census of India, Luce (1985) gives the total population of Chin speakers in Burma as nearly 344,000 with 44 different tribes. Today the population in Chin State is about 435,000. The writer of this thesis estimates that native speakers of Chin languages comprise over 95% of this population.



Figure 2. Map of Chin State

Map adapted from Rand McNally (1998)

1.1.3 Culture

The emblem of the Chin people is the hornbill, associated in Chin legend with faithfulness, fidelity and loyalty. Before they embraced Christianity, Chin people were headhunters and animists. The society is patriarchal and monogamous. In the past, the hair knot position differed from north to south. Grierson (1904:552) says,

... the Siyins, Soktes, Thados, Yos and Whenos wear the hair in a knot on the nape of the neck; the Tashons, Yahaos, Hakas, and the southerners generally tie it up on the top of the head, whence the name Baungshe, because it is usually just over the forehead.

The Masho, who are today known as Khami (Vumson 1988:43) wore their hair knotted at the side of the head.

Little agricultural advancement has taken place in Chin State, so that swidden cultivation is still practiced in some places. Ancient religious beliefs and culture are interwoven such that it is difficult to differentiate the culture from beliefs. In the past, Chin people did not have friendly inter-tribal relationships but fought each other. The practice of revenge is still present among some Southern Chin groups.

Christianity was introduced to the Chin Hills by American Baptist missionaries in 1899. Christianity changed some customs, such as spirit worship, head hunting and discrimination against women. Today the majority of Chin people are Christians.

1.1.4 Communication

There is no means of air or sea travel within Chin State. No national highway crosses the Chin State. Due to the geographical terrain, the rivers cannot be used for transportation. There is a road that connects Mindat in the southern part of Chin State² with the central part of Myanmar. Communication in the north is better than

² The official usage of North and South Chin State coincides with Lehman's grouping, which is based on social and cultural phenomena.

that in the south. There is no regular inter-state bus service in the Chin State, however there is daily bus service to Hakha (the state capital), Thantlang, Falam, Tedim and Tonzang from Kalaymyo in the Sagaing Division. The roads are generally paved in the north, and dirt in the south. People seldom travel north-south or vice versa, but often travel east-west or vice versa, even up to Mizoram and Manipur States of India.

1.1.5 Nomenclature

One of the main complexities among the Chin people is what they call themselves. Chin people are called ‘Kuki’³ in India, and ‘Chin’⁴ in Myanmar. Matisoff (1995) mentions that ‘Chin’ is a loose exonymic designation for many ‘Northern Kukish’ languages and peoples. Chhangte (1993:1) says, “These tribes [Chins], then were what the Bengalis indiscriminately called ‘Kukis’, and the Burmese ‘Chin’”. There are at least four different autonyms used in the Chin State: ‘Laimi’, used in Falam, Hakha and Thantlang townships; ‘Zomi’, used in Tonzang and Tedim townships; ‘Mizo’, used in some parts of Tedim and Falam townships; and ‘Cho’, used in the south.

Grierson’s definition of Chin as “the various tribes inhabiting the country to the east of Lushai hills, from Manipur in the north to about the eighteenth degree of the north latitude in the south” (1904:551) will be used in this thesis.

1.1.6 Chin languages in Chin State

There are different claims about the number of Chin languages spoken in Chin State of Myanmar. Focusing on Chin languages, Bradley (1997:26) says, “names for these

³ “Kuki is an Assamese term, applied to various hill tribes, such as the Lusheis, Rangkhols, Thados, etc. It (this name) seems to have been known at a comparatively early period. In the Rai Mala, Siva is stated to have fallen in love with a Kuki woman, and the Kuki are mentioned in connection with the Tipperah Raja Chachag, who flourished about 1512 AD” (Grierson 1904: 509).

[Kuki-Chin] groups are much more numerous than distinct languages". Referring to the 1931 census of India, Luce (1985:81) mentions that there are 44 different Chin tribes⁵. Grimes (1996) lists 38 Chin languages spoken in Myanmar: Asho, Bawm, Cho, Dai, Fannai, Falam, Gangte, Hakha (Baungshe), Hualngo, Khimi, Khualsim, Khumi, Khyo (Hyo), Laizo, Lente, Lushai, Kaang, Mara (Lakher), Matu, Mizo, Mindat, Mun, Ngawn, Ngente, Paite, Saizang, Senthang, Shongshe, Siyin, Taishon, Tedim, Teizang, Thado, Thawr, Zahau, Zo, Zokhua and Zotung.

In his article entitled "Call us Myanmar", Myatthu (2000) numbers 135 national peoples living in Myanmar, and 53 in the Chin State: Anan, Anu, Aupu, Asho Chin (plains), Awwakhami, Bamar, Chin, Dai (Yindu), Dim, Ganbe, Gwethe, Hsaihtan, Hsinhtan, Hwalngo, Kalintaw (Lushe), Kawno, Khami, Khuanghsai Chin, Khuangsu, Khunli or Hsim, Khwa-hsinme, Laing, Laizo, Laukhtu, Lemyo, Linte, Lushai (Lushe), Lyintu, Mahu, Makan, Marin, Miae, Miyam (Mara), Meithai (Kathe), Mwine, Naga, Pakim, Panan, Salaing, Tabaung, Taichun, Tandu, Tiddim (Tedam), Tardoe, Taw, Tezon, Yaunghtu, Zataung, Zohtone, Zeinnhyut (Zonniyut), Zope, Zo, and Zun. Among these 53 different languages, Meithai, Naga and Bamar are not in Chin language family.

To summarize the above sources and personal communication with local people⁶: there are 54 Chin languages spoken in respective Townships of the Chin State as shown in Table 1. The first row in the table represents the names of administrative townships.

Tonzang	Tedim	Falam	Hakha	Thantlang	Matupi	Mindat	Kanpetlet	Paletwa
Thado	Sizang	Falam	Hakha	Thantlang	Matupi	Mindat	Hnoktu	Khami

⁴ "Chin is a Burmese word used to denote the various hill tribes living in the country between Burma and the Province of Assam and Bengal. It is written and dialectically pronounced Khyang. The name is not used by the tribes themselves, who use titles such as Zo or Yo and Sho" (Grierson 1904: 510).

⁵ Tribes and languages are not always identical but generally languages differ according to tribes.

⁶ Based on personal communication with Rev. Paul Tu Lung, a Rawngtu speaker on March 29, 2001; Rev. Kaw Kung, a Zotung speaker on March 30, 2001; Rev. Ngai Hung Om, a Cho speaker on April 1, 2001 and Robert Khua Hnin Thang, a Khualsim speaker on June 14, 2001.

Tedim	Ngawn	Zokhua	Zophei	Zotung	Muun	Chinpon	
Zo	Laizo	Mie				Daai	
Teizang	Zaniat	Senthang		Lautu		Cho	Khasi
Hualngo (Mizo)	Thawr		Mara		Kaang		Khamui
Dim	Khualsim			Amlai	Rawngtu	Rah	Myo
Khuano	Zahau			Tamang			Laitu
Vangteh	Tapong			Wumtu			Khumi
Guite	Sim						Khuangsu
Val	Bualkhua						
Saizang	Taisun						
Phaileeng	Lente						

Table 1. Chin languages in the Chin State of Myanmar

1.2 Literature review

This section is divided into an overview of Chin linguistic classification and previous reconstructions of Chin languages.

1.2.1 Overview of Chin linguistic classification

The internal relationship between lower level Tibeto-Burman groups is still unclear. Various linguists classify the Tibeto-Burman language family differently. Shafer (1974) splits Tibeto-Burman into four main parts: Bodic, Baric, Burmic and Karenic. On the other hand, Benedict (1972) identifies seven subgroups: Tibetan-Kanauri, Bahing-Vayu, Abor-Miri-Dafla, Kachin, Burmese-Lolo, Bodo-Garo, and Kuki-Chin. Bradley (1997) summarizes the overall pattern of Tibeto-Burman, using Shafer and Benedict's classifications, as shown in Figure 3.

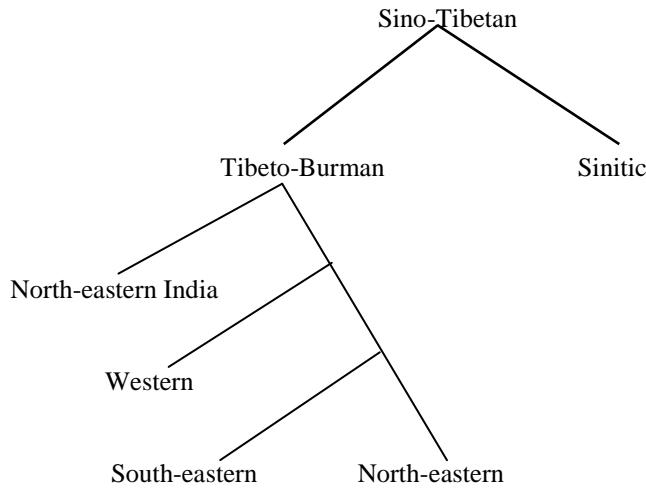


Figure 3. The Tibeto-Burman linguistic family (Bradley 1997:2)

Bradley (1997) classifies the Chin languages as part of the ‘Kuki-Chin-Naga’ language group, which he places in a ‘North-eastern India’ group of Tibeto-Burman.

Although Bradley (1997) classifies Kuki-Chin-Naga under the Northeastern India group⁷ based on substantial lexical and morphosyntactic similarities, he marks the relationship by a dotted line (as shown in Figure 4) because Shafer classifies it as a part of Burmic and Benedict links it to Burmese-Lolo. Within the Kuki-Chin-Naga group, Bradley proposes Southern Naga, Old Kuki, Meithei, Chin and Other Chin groups.

North-eastern India group (Sal)

⁷ Burling (1983) terms this group of languages the ‘Sal’ group, based on their distinctive word for ‘sun’.

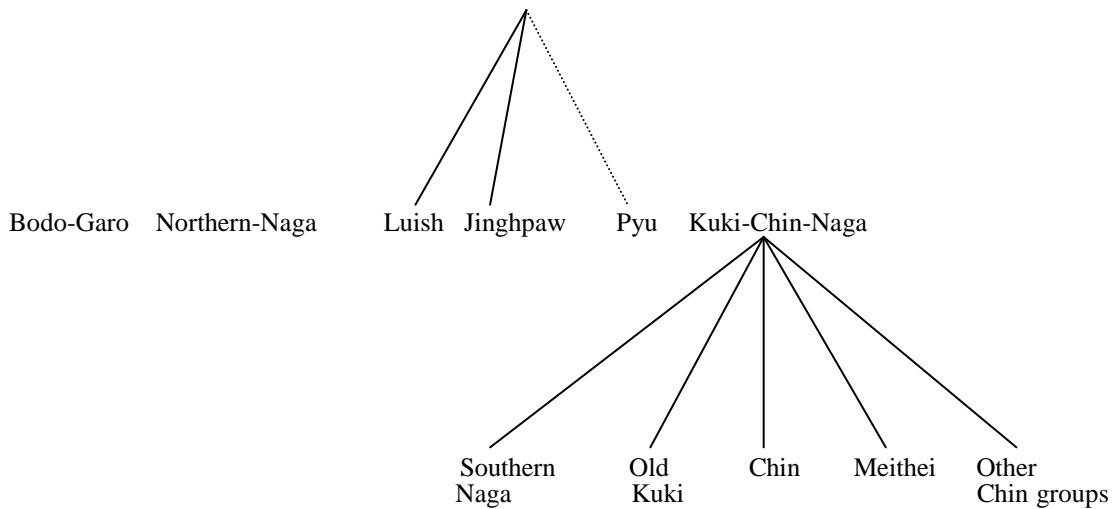


Figure 4. Kuki-Chin-Naga of North-eastern India group (Bradley 1997)

Bradley (1997), further classifies the Chin position of Kuki-Chin-Naga as Northern Chin, Central Chin and Southern Chin. The Chin language family mainly covers the languages spoken in Myanmar. Southern Chin language groups are divided into three geographical subgroups: Northern, Central and Southern.

Thus, Bradley (1997) classifies Kuki-Chin-Naga as shown in Figure 5.

Ao

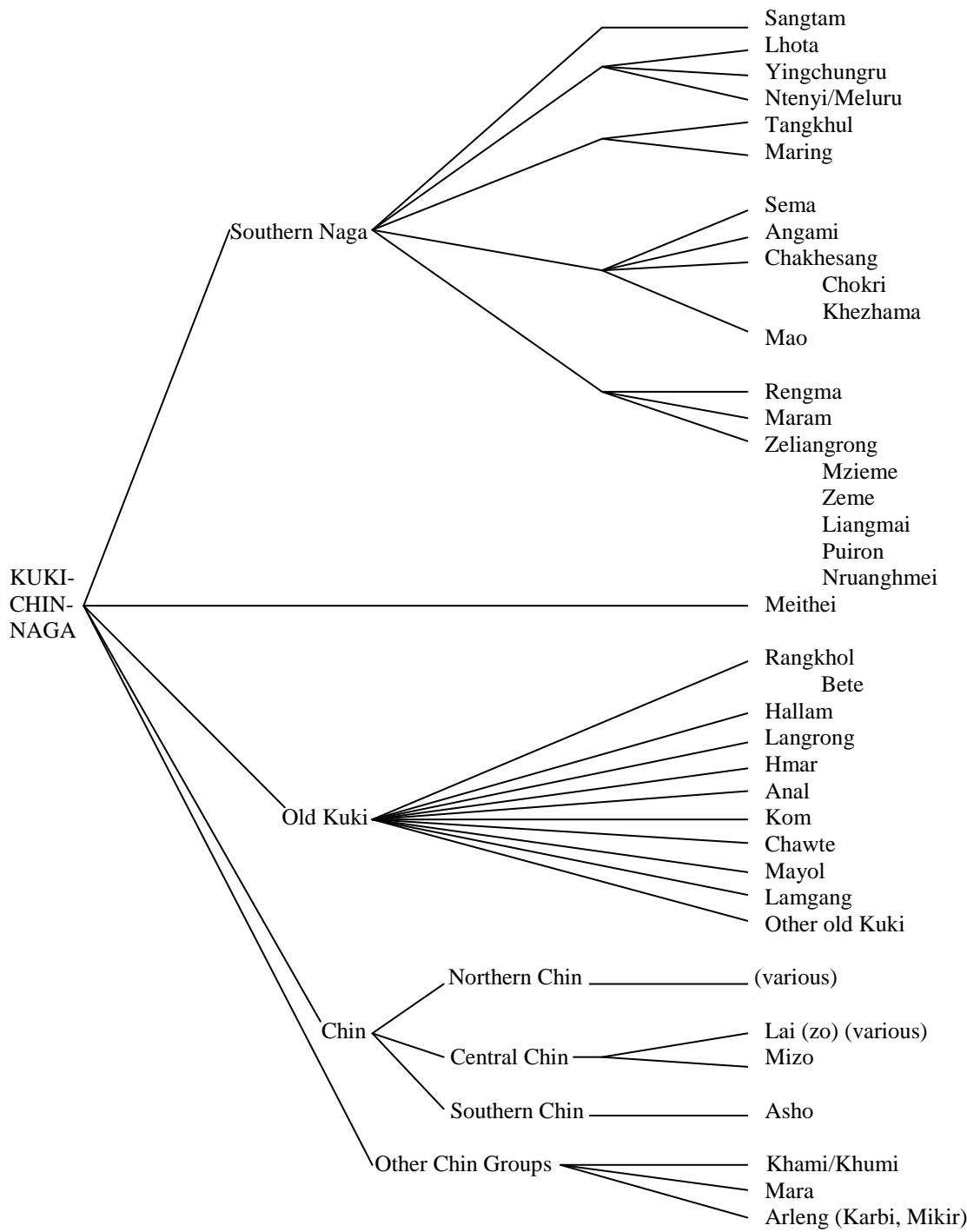


Figure 5. Kuki-Chin-Naga (Bradley 1997)

Bradley (1997:29-30) gives a more detailed picture of Chin languages at a lower level as shown in Figure 6.

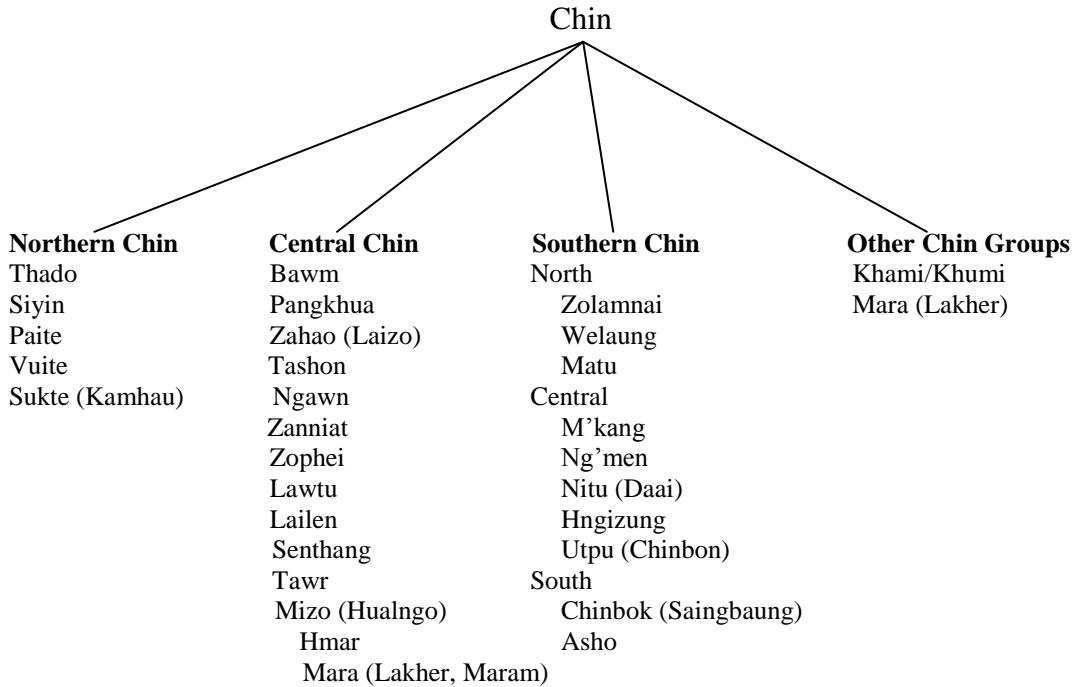


Figure 6. Chin subgroups (Bradley 1997)

Grierson (1904) in contrast, proposed four main groups: Northern Chin, Central Chin, Southern Chin and Old Kuki, as shown in Figure 7.

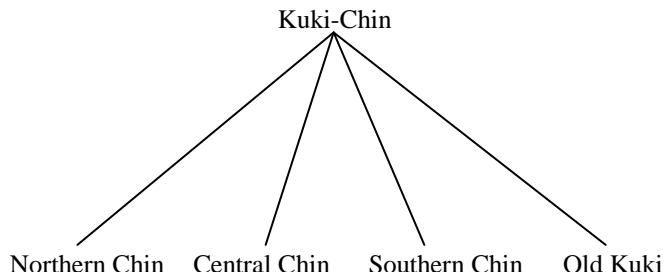


Figure 7. The Kuki-Chin language family (Grierson 1904)

The Old Kuki varieties are mainly spoken in India. Lushei (Ngente) is the archaic name of Mizo, and the speakers live both in Myanmar and India. Figure 8 illustrates Grierson's (1904) classification of Chin languages⁸.

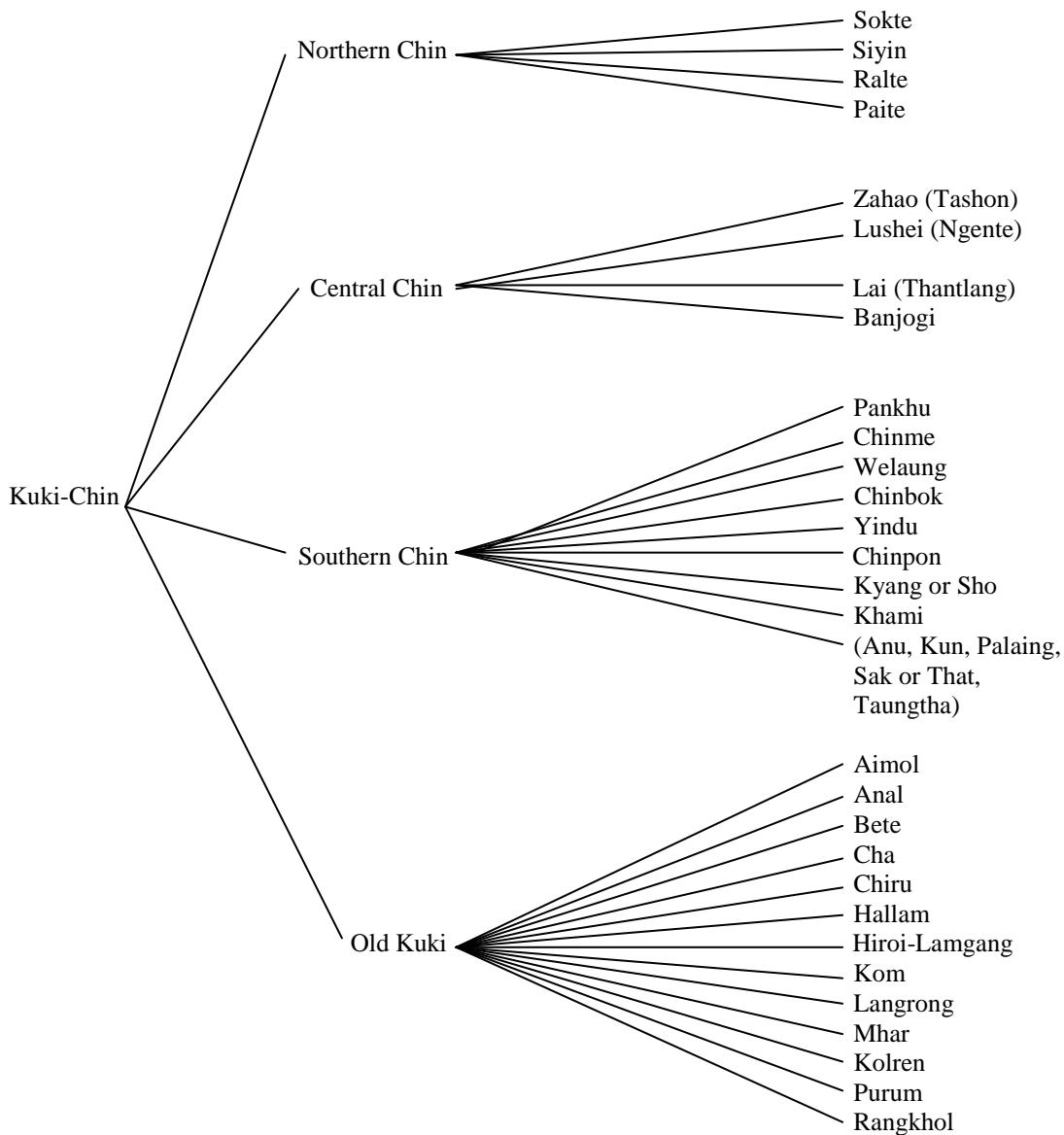


Figure 8. Grierson's classification of Chin languages

⁸ Chin people (of India and Myanmar today) were under British rule when Grierson conducted his Linguistic Survey of India.

Peiros (1998:180) says that Kuki-Chin languages may fall into two subgroups: Luhupa (including Tankhur and other languages) and Chin, which includes at least four subbranches: Southern, Lakher, Old Kuki and Lushei as shown in Figure 9.

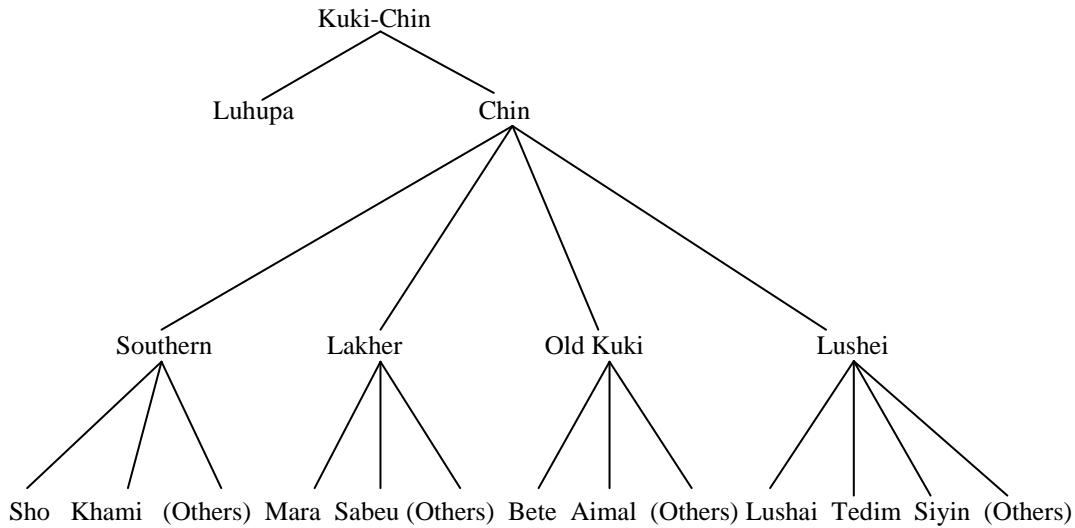


Figure 9. The Kuki-Chin language family (Peiros 1998)

Peterson (2000) proposes that there are two main Chin groups, Central and Peripheral. The Central group includes the traditional Central Chin, and probably also Old Kuki, but possibly not Mara. The Peripheral group includes traditional Southern and Northern Chin, but probably not Khumi, as shown in Figure 10.

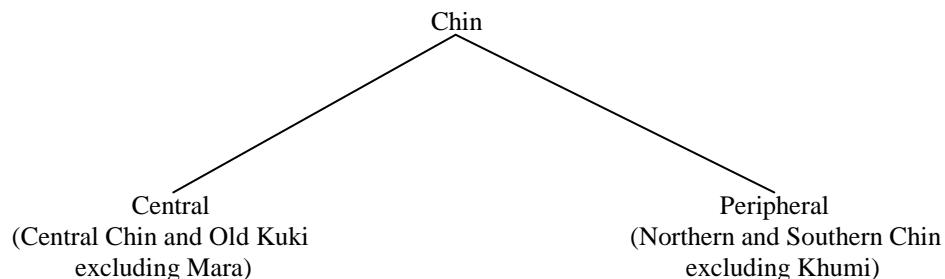


Figure 10. Chin language subgrouping (Peterson 2000)

Lower level classification of some Southern Chin languages has been attempted by So-Hartmann (1988) using a lexicostatistic analysis of the Swadesh 100 wordlist. She

subgroups the languages into two main groups, Khumi and Cho, as shown in Figure 11.

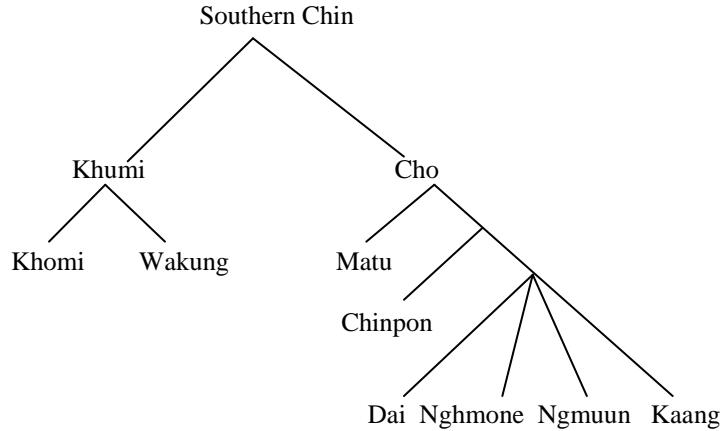


Figure 11. So-Hartmann's (1988) classification of Southern Chin

In summary, the majority of the previous research has the common conclusion that Chin languages are divided as Northern Chin, Central Chin and Southern Chin. To these three main groups, Grierson (1904) adds Old Kuki, and Bradley (1997) adds Old Kuki and Other Chin Groups. Peterson (2000) proposes only two groups, in contrast to the traditional groupings based on phonological and morphological evidence.

1.2. Reconstruction of Chin languages

There have been few comparative reconstructions of Chin languages. Ono (1965) attempts to reconstruct the initial consonants using data from eight Chin languages: Tedim, Ngawn, Lai (Hakha), Laizo (Falam), Anal, Zotung, Khumi and Chinbok. Solnit (1979) attempts to establish phonological relationships between Tedim and Mizo, focusing on developments of a reconstructed *r. Luce (1985) contains 189 words in 22 Chin dialects, 683 words in 7 (or 8, including Lushai) dialects, and 192 words selected from a 683 word wordlist. He mentions a number of common words

and proposes tone patterns. Bhaskararao (1996) also discusses the initial consonants in Mizo (Lushai) and Tedim. A review of previous initial consonant reconstructions is provided in more detail in section 4.2.1.

As regards tone, Henderson (1965) postulated three contrastive tones in Tedim. Weidert (1987) uses Lushai (Mizo), Tedim and Mara among the Chin languages in describing Tibeto-Burman tonology. Paul Thuam Thang (1982) discusses tone patterns in Tedim. Luce (1985) also offers some provisional descriptions of Chin tones, claiming that three tones was once the norm for Chin languages.

Chhangte (1985) analyses the acoustic characteristics of Mizo tone and also states (1993) that Mizo is the most phonologically conservative language in the Kuki-Chin group but does not cite any evidence for this claim. Ostapirat (1998) discusses Tedim tones from a historical perspective. Nolan (2000) presents an initial description of Cho (one of the languages spoken in Southern Chin State) tone as having three contrastive tones.

1.3 Purpose of thesis

The purpose of this research is to reconstruct Proto Chin. Previous phonological comparisons of Chin languages mainly focused on initial consonants, and a full phonological reconstruction is yet to be completed. This thesis focuses on all segmental aspects (but not tone) of Chin languages spoken in Myanmar. It is hoped that the result reported here will not only be a contribution to Tibeto-Burman historical linguistics, but will also be of practical use of Chin people in the development of Chin languages.

There are about 54 related Chin languages reported here. Many of them do not have literacy programs, and even the development of an orthography is still a critical issue for some languages. Based on shared phonological innovations, a subgrouping of the

languages is proposed which, it is hoped, will be helpful in decision-making for language development programs among the Chin languages.

1.4 Methodology

Of the 54 reported Chin languages, wordlists for 21 were available to the present author. Previous scholarship (Grierson 1904, Bradley 1997) shows that Chin languages can be divided into three to five subgroups: Northern, Central, Southern, Old Kuki, and Other Chin Groups. The 21 languages available to this study are well distributed according to geographical setting and traditional linguistic subgrouping. It is, however, difficult to apply the comparative method to 21 languages at a time.

Therefore, two main methodologies were applied in the research reported here. The first stage was a lexicostatistic comparison of the 21 languages, resulting in a preliminary subgrouping. Based on these subgroups, representative languages were selected for comparative purposes.

In the second stage, the comparative method was applied to those representative languages, resulting in a reconstructed proto-Chin and a subgrouping of the representative languages based on shared phonological innovations.

The comparative method involves considering corresponding elements in two or more related languages and projecting them backward in time by positing an ancestor whose development can be shown to have resulted in the present form (Arlotto 1972). Sound changes in languages tend to be regular, and these regular sound change provide a valid criterion to establish language relationships⁹. Phonological rules are thus posited to reconstruct earlier linguistic forms.

⁹ The ‘Neogrammarian’ school of historical linguists in the late 19th century proposed that sound change is exceptionless. Although many exceptions were discovered to this proposal, the overwhelming majority of sound changes are regular.

Therefore the comparative method is applied in order to trace the earlier phonological forms of Chin languages by comparing selected Chin languages. The guiding principles throughout the process of applying the comparative method are summarized as follows (Crowley 1992):

1. Any reconstruction should involve sound changes that are plausible.
2. Any reconstruction should involve as few changes as possible between the proto-language and the daughter language.
3. Reconstruction should fill gaps in phonological systems rather than create unbalanced systems [symmetry].
4. A phoneme should not be reconstructed in a proto-language unless it is shown to be absolutely necessary from evidence within the daughter languages.
5. For each these phonetically ‘suspicious’ pair of sound correspondences, an examination should be conducted to determine whether or not they are in complementary or contrastive distribution.

The comparative method not only provides the proto form of the language, but also provides a method to determine which languages are historically more closely related to other languages in a family (Crowley 1992).

1.5 Source of linguistic data

The main sources of data were unpublished wordlists (SIL Mainland South East Asia wordlist of 443 core words) collected by Kim and Mann¹⁰ in 1999. Both collected a number of Chin languages and out of those, 19 languages were used in this thesis. To supplement this data, the author transcribed Tedim (his native tongue) and collected wordlists on Zo.

¹⁰ I am indebted to Ajarns Kim and Mann for allowing me to use these valuable data.

In all, 21 Chin languages spoken in Myanmar were analyzed. They are Asho, Bualkhua, Dai, Falam, Hakha, Kaang, Khualsim, Khumi, Lakher, Lautu-Hnaring, Mara, Matu, Mizo, Senthang, Siyin, Taisun, Tedim, Thado (also known as Kuki or Khuangsai), Thangtlang, Zaniat, and Zo. The geographical locations of these languages are shown in Figure 12. Names of languages are in italicized letters whereas the normal letters are location names.

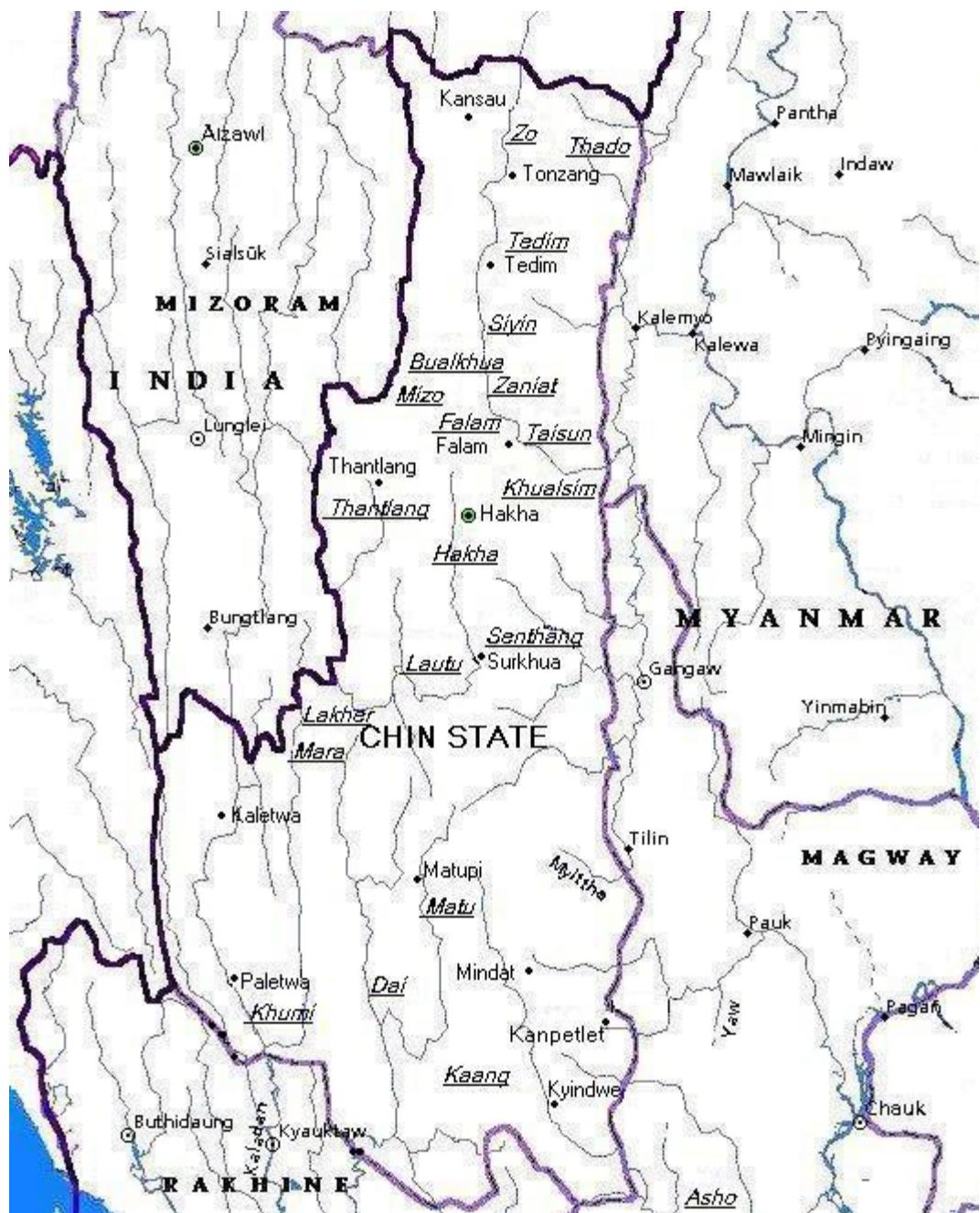


Figure 12. Geographical centers of language groups

Map adapted from Rand McNally (1998)

CHAPTER 2

SELECTION OF REPRESENTATIVE CHIN LANGUAGES

2.0 Introduction

This section discusses how representative languages were selected out of the 21 Chin languages under study for comparative analysis. Lexicostatistic methods were applied to all 21 languages. Based on these results a preliminary subgrouping was proposed, and then representative languages were selected from each subgroup.

2.1 Lexicostatistics analysis

Lexicostatistics as a technique is generally associated with glottochronology, the attempt to date the division of languages and dialects from each other on the basis of lexical divergence. Crystal (1980:221) even defines as a technique “to make quantitative comparisons between the rates of change within sets of lexical items in hypothetically related languages ... ”. However, in the present work lexicostatistic comparison are used to characterize the general degree of divergence of the languages from each other so that representative languages may be chosen as the basis for historical reconstruction.

Lexicostatistic methods were applied to 21 different Chin languages spoken in Myanmar. The 100 cognates (89 Swadesh and some others from the SIL MSEA wordlist) were chosen and compared between the Chin varieties to determine the degree of lexical similarity. The lexicostatistic method used in this study first determines the root word, assuming that the proto language is monosyllabic (Matisoff 1973). Suspected borrowed words were screened out (see more section 4.1). Then the possible morphological markers and non-root syllables were ignored. Pairs of roots

are then compared on a phoneme-by-phoneme basis, with each pair of phonemes assigned to one of 3 categories according to the following criteria (Blair 1990).

Category 1. (a) Exact matches.

(b) Vowels or diphthongs differing by one feature.

(c) Phonetically similar segments in three or more word pairs.

Category 2. (a) Phonetically similar segments in fewer than three word pairs.

(b) Vowels or diphthongs differing by two or more features.

Category 3. (a) Non-phonetically similar segments.

(b) A correspondence with nothing in fewer than three word pairs.

Ignore (a) Reduced syllables and non-root syllables.

(b) A regularly occurring deletion.

(c) Tone.

Categories 1(c) and 2(a) relate to the frequency of occurrence of phonetically similar segments. 1(c) is assumed to show a higher degree of probability than 2(a) that the correspondence is not random. Categories 1(b) and 2(b) assume that vowels or diphthongs differing by one feature have a higher degree of similarity than those differing by two or more features.

After assigning the categories for each phone correspondence, the category assignments for each word were tabulated. Then Table 2 adapted from Blair (1990:32) was used to determine whether the pair of words was sufficiently similar to be considered “lexically similar”.

Phones	Category 1	Category 2	Category 3
2	2	0	0
3	2	1	0
4	2	1	1
5	3	1	1
6	3	2	1
7	4	2	1

Table 2. Phone table for lexical similarity (Blair 1990:32)

After each pair of languages had been compared, a percentage of lexical similarity was calculated. The lexicostatistic similarity matrix for the 21 Chin languages is given in Table 3. Language names are arranged in approximate north-south order. It is interesting to note that the percentages of lexicostatistic similarity among the northern languages are higher than among the southern languages.

	Zo	Sinyin	Tedim	Bual	Zanniet	Mizo	Falam	Taisun	Hakha	Thantlang	Khualsim	Senthang	Matu	Kaang	Dai	Asho	Lautu-H	Lakher	Mara	Khumi
Thado	82	81	80	67	67	59	65	62	62	62	60	50	47	48	47	50	39	40	38	40
Zo		85	88	67	66	59	63	61	61	61	61	50	43	45	41	47	38	33	34	38
Sinyin			91	64	69	62	69	65	62	62	62	53	45	46	43	49	36	35	33	37
Tedim				66	69	63	66	63	67	65	63	52	44	46	47	50	39	35	34	38
Bualkhua					88	65	69	69	64	63	60	53	43	45	43	44	37	33	28	33
Zanniet						68	75	75	71	70	68	66	44	47	45	49	41	34	34	38
Mizo							72	76	73	73	65	55	42	47	33	47	44	36	32	31
Falam								87	82	81	80	59	46	43	40	44	38	35	33	34
Taisun									83	81	77	62	44	44	38	41	39	36	32	34
Hakha										95	89	67	47	47	42	47	46	38	36	37
Thantlang											76	66	48	46	43	47	49	35	38	36
Khualsim												68	43	41	37	46	41	38	37	36
Senthang													50	47	41	42	45	38	37	38
Matu														38	35	42	47	38	35	37
Kaang															58	42	37	33	30	48
Dai																48	39	32	31	31
Asho																	36	28	21	36
Lautu-H																		52	51	34
Lakher																			81	34
Mara																				33

Table 3. Matrix of lexicostatistic percentages in 21 Chin language

The percentages of lexicostatistic similarity in Table 3 are consistent with Luce's (1985) findings in which Thado (a northern language) has a 87.8% as opposed to Khumi (a southern language) which has only a 60.4% similarity with other Chin.

2.2 Turning numbers into trees

In order to better visualize the lexical similarity relationships between these 21 languages, the matrix in Table 3 can be transformed into a tree diagram. The “Unweighed Pairs Grouped Method with Arithmetic Average” (UPGMA, or ‘Average Link’) is a method for doing this that makes minimal assumptions about the data (Grimes 1995: Appendix 1). The table of apparent cognate percentages was processed using the “Cluster Analysis 1.01” computer program (Quigly 1995), which implements the UPGMA method¹¹.

Table 4 presents the levels of average similarity at which each language is related to others in the tree structure.

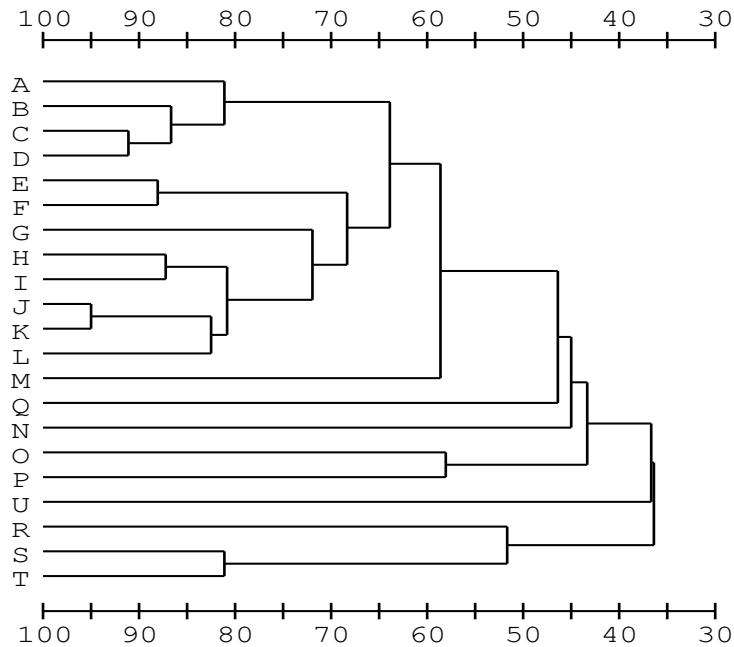
Percentage	Names of languages
------------	--------------------

¹¹The Cluster Analysis 1.01 program was run by Dr. J. F Bennett.

of similarity	
95.0	Hakha, Thantlang
91.0	Siyin, Tedim
88.0	Bualkhua, Zaniat
87.0	Falam, Taisun
86.5	Zo, Siyin, Tedim
82.5	Hakha, Thantlang, Khualsim
81.0	Thado, Zo, Siyin, Tedim
81.0	Lakher, Mara
80.7	Falam, Taisun, Hakha, Thantlang, Khualsim
71.8	Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
68.1	Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
63	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
58.4	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang
58.0	Kaang, Dai
51.5	Lautu-Hnaring, Lakher, Mara
46.4	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho
44.9	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu
43.2	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai
36.6	Thado, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai, Khumi
36.1	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai, Khumi, Lautu-Hnaring, Lakher, Mara

Table 4. Percentage of lexicostatistics similarity

Figure 13 presents the same information as a tree diagram.



Code	Language name	Code	Language name	Code	Language name
A	Thado	H	Falam	O	Kaang
B	Zo	I	Taisun	P	Dai
C	Siyin	J	Hakha	Q	Asho
D	Tedim	K	Thantlang	R	Lautu-Hnaring,
E	Bualkhua	L	Khualsim	S	Lakher
F	Zaniat	M	Senthang	T	Mara
G	Mizo	N	Matu	U	Khumi

Figure 13. Chin language tree based on average link method

The correlation between the grouping in Table 4 and the original data (i.e. Table 3) is 0.968. That is, the process of transforming Table 3 to Table 4 distorts the data by only a very small amount.

2.3 Preliminary subgrouping

The preliminary subgrouping shown in Figure 14 is based on standard lexicostatistic procedures. (Figure 14 re-casts Figure 13 into a more familiar stammbaum format). Percentages of lexicostatistic similarity show that there are two main Chin language groups: a Northern group consisting of those languages below and to the left of the

dotted line (traditionally the Northern and Central Chin languages), and a Southern group. The Northern group forms a relatively tight cluster, with lexicostatistic similarity counts of 63% and above; the Southern group shows much more internal diversity.

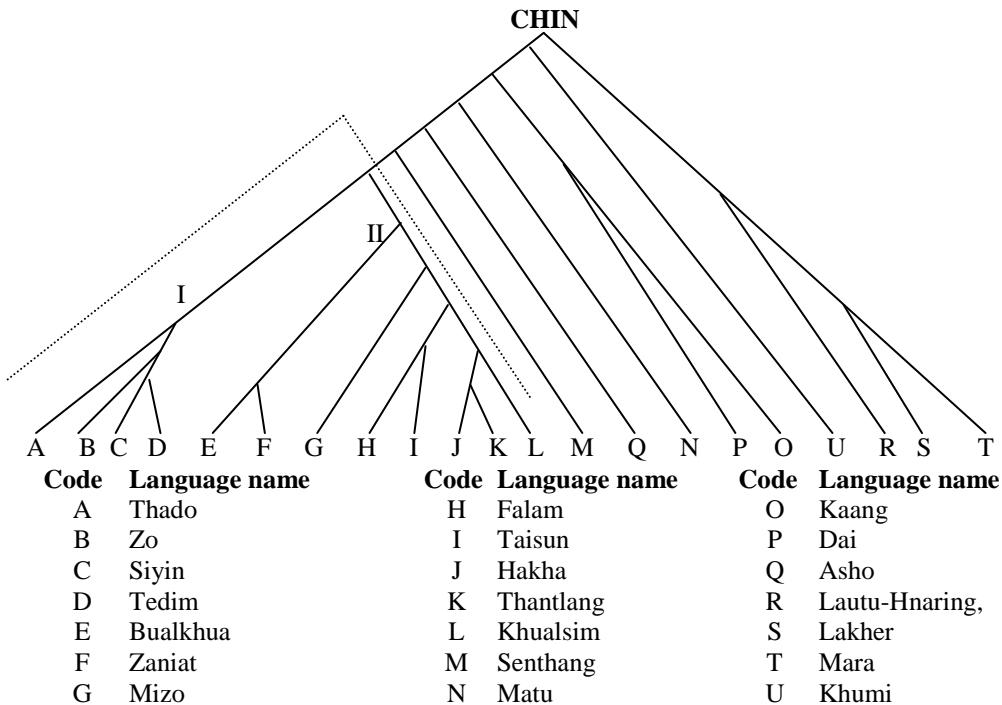


Figure 14. Preliminary subgrouping of Chin languages

The Northern languages (Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang and Khualsim) can be subdivided into two subgroups: I (Thado, Zo, Siyin and Tedim) and II (Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang and Khualsim).

Clear subgrouping of the southern languages is difficult. Based on the tree above, it is clear that Lautu-Hnaring, Lakher and Mara are in one group and Dai and Kaang are in one group. According to So-Hartman (1988) Matu is clustered together with Dai and Kaang under Cho subgroup (see Figure 11).

Therefore there may be at least three subgroups among Southern languages: Lautu-Hnaring, Lakher and Mara in one group; Matu, Dai and Kaang in another; and Khumi in a third. Asho can be clustered with Dai and Kaang group. Senthang is closer to Subgroup II of the Northern language family.

2.4 Selected languages

The preliminary subgrouping of 5 subgroups provides a useful criterion for the selection of representative languages. Six languages were selected for a phonological reconstruction of Proto Chin, one from each subgroup. As subgroup II contains almost half of the languages in this analysis, two languages were selected, Mizo and Hakha. Hakha was chosen on the account of being the dominant language in the central part of the Chin State and having a high degree of similarity with languages within the same group. On the other hand, Mizo was chosen as it has been comparatively more studied by linguists, (although the majority of speakers live in Mizoram State of India). The selected languages are Tedim, Mizo, Hakha, Mara, Khumi, and Kaang, shown in bold type in Table 5, which is based on the above discussion of preliminary subgrouping.

Preliminary Subgrouping of Chin languages				
A		B		
I	II	III	IV	V
A. Thado	E. Bualkhua	N. Matu	R. Lautu	U. Khumi
B. Zo	F. Zaniat	O. Kaang	S. Lakher	
C. Siyin	G. Mizo	P. Dai	T. Mara	
D. Tedim	H. Falam	Q. Asho		
	I. Taisun			
	J. Hakha			
	K. Thantlang			
	L. Khualsim			
	M. Senthang			

Table 5. Selected Chin languages

Tedim represents Group I. Mizo and Hakha represent Group II. Kaang represents Group III. Mara represents Group IV and Khumi represents Group V.

Geographically, the representative languages are well distributed in the Chin State. Tedim live in the extreme north of Chin State. The Mizo¹² live in south-western Tedim and western Falam Townships. The Hakha and Mara speaking communities live in the central part of the Chin State. The Kaang live in the southeast of the Chin State in Mindat and Kanpetlet Townships. The Khumi live in Paletwa Township in the southwest of the Chin State close to Bangladesh.

There are several non-linguistic factors which further support the selection of these as representative languages. The selected languages are more prominent in their history of literacy. Grierson (1904:666) states that Khumi orthography was first introduced in 1850 by Rev. L. Stilson¹³. The orthography of Mara (Lakher) was developed by Captain S. R. Tickell in 1852, Siyin by Captain Rundall in 1891, and Hakha by Sergeant-Major A. G. E. Newland (IMS) in 1894. The public use of Tedim orthography was relatively advanced such that beginning in the year 1919, a monthly newspaper in Tedim, the “TEDIM KAM THU KIZAKNA,” was regularly published from Madras until 1938. Chin vernacular education in Tedim, Falam, Hakha and Chinbok was started by the British government in 1925.

Among Chin people, the publication of the Bible in various languages proves significant in the history of literature because “the church is the unofficial ‘keeper of the languages’” (Chhangte 1993:28). Table 6 lists some of the Chin languages (both in India and Myanmar) which have received the Bible (Khup Za Go 1996).

Language	New Testament	Entire Bible
Mara (Lakher)	1928	1956

¹² The Mizo living in Tedim and Falam township are known as Hualngo and the majority live in the Mizoram State of India.

¹³ A reader and spelling book were printed but were largely left unused as the missions withdrew.

Mizo (Lusei)	1917	1959
Hmar	1946	1968
Kuki/Thado	1942	1971
Paite	1951	1971
Tedim	1932	1977
Haka	1940	1978
Vaipehi	1957	1979
Falam	1952	1991
Asho	1954	-
Khumi	1957	-

Table 6. The Bible in Chin languages

Additionally, Mizo (the Duhlian variety) has been used as the lingua franca for the related languages of Chawhte, Hmar, Hnamte, Khawlhring, Khiangte, Ngente, Paihte, Pautu, Pawi, Ralte, Rawite, Renthlei, Tlau, Vangchhia and Zawngte for more than a century (Chhangte 1993:1). Hakha and Tedim are also lingua francas among the languages in their area.

The list of representative languages has the added advantage of allowing reference to previous scholarship. Ono (1965) analyzes Tedim, Ngawn, Hakha, Falam, Anal, Zotung, Khumi and Chinbok. Solnit (1979) uses Tedim and Lushai data, and Bhaskararao (1996) compares the lexicon in Tedim and Lushai. Mizo is probably the most analyzed Chin language.

CHAPTER 3

OVERVIEW OF SELECTED LANGUAGES

3.0 Introduction

The selection of six languages for phonological reconstruction has been discussed in chapter 2. This chapter will provide an overview of each of the selected languages. The overview includes a brief description of the language, the syllable canon, consonant inventory, vowel inventory, segment distribution and tone. The phonological overviews which follow are mainly helpful for phonemicizing the phonetic transcriptions of wordlists in the selected languages to support reconstruction. It is also useful to see how each language is innovative or conservative based on comparison of the consonant and vowel inventories of each language and the reconstructed proto Chin.

3.1 Tedim

The loonym name Tedim is used in this thesis, though Tedim was previously known as Sukte¹⁴, Kam Hau¹⁵ and the allogram Tiddim. The name Tedim is the emic representation of the name, consistent with Tedim phonology and its spelling in Tedim orthography. The Tedim live in Tedim and Tonzang Townships of the Chin State and also in the Kalay and Kabaw valleys in the Sagaing division of Myanmar, and in Manipur and Mizoram States of India.

¹⁴ ‘Sukte’ is an archaic name which is derived from the clan name of an ancient Tedim chief.

¹⁵ This archaic name is derived from the personal name of the chief before and during the time of the British rule on Chin Hill. Bradley (1997:26) says that “geographical names are sometimes used instead of the rather specific subgroup names; for example, Tiddim Chin instead of Kamhau Chin.”

According to Grimes (1996), there are 189,100 Tedim speakers in Myanmar. Its syllable canon, consonant inventory, vowel inventory, segment distribution and the tone are briefly discussed in this section.

3.1.1 Syllable structure

The syllable canon of Tedim can be generalized as $(C_1)V_1(V_2)(C_2)T$. The parentheses indicate optional elements. The onset is composed of (C_1) . The nucleus is composed of either an obligatory vowel V_1 as monophthong or a diphthong V_1V_2 . The coda is at most a single (C_2) , and T represents the tone. Examples of possible syllable shapes are provided in Table 7.

Ref. No.	English gloss	Tedim transcription	Syllable shapes
437	elder bro. of m	u: ^h	V:
081	dog	ui/ ^h	VV
099	chicken	ak/ ^h	VC
002	sun	ni/ ^h	CV
212	fire	mei/ ^h	CVV
266	itch	t ^h ak/ ^h	CVC
121	brain	k ^h uak/ ^h	CVVC

Table 7. Examples of syllable shapes in Tedim

3.1.2 Consonants

The phonemic consonant inventory of Tedim is shown in Table 8.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	
Voiceless aspirated stops	p ^h	t ^h	k ^h	
Voiced stops	b	d	g	
Voiced nasals	m	n	ŋ	
Voiceless Fricative		s		h
Voiced fricatives	v	z		
Voiced lateral approximant		l		

Table 8. Tedim consonant inventory

Luce (1985) and Namkung (1996) list the voiceless dorsal fricative /χ/ in the phonological inventory, but this is synchronically in free variation with the aspirated dorsal stop [k^h]; therefore /k^h/→[k^h] ~[χ]/\$___. The voiceless coronal stop /t/ becomes a voiceless coronal affricate [ts] before a close unrounded front vowel /t/→[ts]/__i, and the voiceless aspirated coronal stop /t^h/ is realized as a voiceless coronal fricative [s] before a close unrounded front vowel /t^h/→[s]/__i. Bhaskararao (1989:110) also mentions the same process with the exception of chimming adverbs¹⁶. The glottal stop [?] is a predictable concomitant of the low tone.

3.1.3 Vowels

Tedim has five phonemic vowels as shown in Table 9. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone, /e/→[ɛ]/C__C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C__C. The open vowel /a/ varies slightly different in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open		a

Table 9. Tedim vowel inventory

¹⁶ According to Henderson (1965:57) a chimming adverb is “... a special kind of duplicated adverb, very common in colloquial style, in which there is a variation in the vowels of the adverb...”. For example in Tedim ‘to sit’ is [tu^h]; ‘to sit confidently’ [tu^h hiat^h huat^h], ‘to sit secretly’ [tu^h k^hian/k^huan^h], ‘to sit a fatty man’ [tu^h kei^h kai^h], and ‘to sit in group with fun’ [tu^h nei^hŋai^h].

3.1.5 Segment distribution

All consonants occur in the initial (C_1) position. There is no restriction on which vowels appear in the V_1 position. For diphthongs V_1V_2 the second vowel V_2 is restricted to vowels at the extreme margins of the phonemic inventory, i.e /i a u/, as shown in Table 10.

	Front	Back
Close	iu ia	ui ua
Close mid	ei eu	oi
Open	ai au	

Table 10. Tedim diphthongs

The final consonant (C_2) is restricted to voiceless stops, voiced nasals and the lateral approximant, as shown in Table 11.

	Labial	Coronal	Dorsal
Voiceless stops	p	t	k
Nasals	m	n	ŋ
Lateral approximant		l	

Table 11. Tedim final consonants

3.1.5 Tone

Tone in Tedim has been discussed by Henderson (1965), Vul Za Thang and J. Gin Za Tuang (1975), Weidert (1987), Paul Thuam Thang (1984), Luce (1985) and Ostapirat (1998). According to Henderson (1965:19) “the high falling pitch becomes low falling or low level pitch in short syllables with abrupt syllable closure.” Weidert (1987) includes, but Namkung (1996) excludes, low tone from the phonemic inventory. Ostapirat (1998:235) says,

...the three tones in smooth syllables arise from different types of laryngeal endings interacting with vowel length, and that original checked syllables only took two tones, also depending on vowel length.

The current analysis is consistent with the previous works. There are three contrastive tones. They are rising tone /˨/, mid tone /˧/ and falling tone /˥/. The low tone /˧/ is predictable, occurring in stopped syllables with a medial short vowel. The distribution of tones by different syllable types can be generalized as in Table 12.

	Smooth syllables			Stopped syllables
	Open rhyme	Nasal finals	Lateral finals	
Rising tone	Short vowel	m n ɳ	1	-
	Long vowel	m n ɳ	1	p t k
Mid tone	Short vowel	m n ɳ	1	-
	Long vowel	m n ɳ	1	k (<*r)
Falling tone	Short vowel	m n ɳ	1	-
	Long vowel	m n ɳ	1	k
Low tone	Short vowel	-	-	p t k

Table 12. Tedim tone distribution

Rising tone occurs in both open and stopped syllables. The open syllable has no restrictions on the type of medial vowel. In a closed syllable with rising tone, the final consonant is restricted to the voiceless stop series /p/, /t/ and /k/, the nasal series /m/, /n/ and /ɳ/ and lateral approximant /l/. The nasal series and lateral have no restriction in the type of medial vowel, whereas the stop series is restricted to a short medial vowel.

The mid tone occurs in both open and closed syllables. There is no restriction on the medial vowel length. In closed syllables, the final consonant is restricted to the nasal series, lateral approximant /l/ and voiceless dorsal stop /k/ that is a reflex of *r (Luce 1985). Voiceless dorsal stops occur only after a short medial vowel, whereas the nasal series occur without restriction on any types of medial vowel.

Falling tone has the same distribution as mid tone, with the exception that falling tones may be found on stopped syllables with short vowels in the restricted morphological class of Form II verbs. According to Henderson (1965), Tedim verbs

may be distinguished from all other classes of words by their “formal scatter”. In particular, verbs have two alternating forms, dependent upon grammatical context. Verb forms which can be predicted from another verb form are called “Form II” or “*irregular*” verbs, and those verb forms from which Form II forms can be predicted are called “Form I” or “*regular*” verbs. For instance; ‘to ride’ is [tuan˧], but when the verb is nominalized it becomes [tuan˧ na˧], and in the adverbial phrase ‘when he rides’ it appears as [a˧ tuan˧ tsian˧ in˧]. Table 13 shows some other examples with different syllable shapes.

English gloss	Syllable type	Form I	Form II
to flow	CVVC	luan˧	luan˧
to beat	CVC	sat˧	sat˧
to go	CVV	pai˧	pai˧
to feel pain or sick	CV	na˧	nat˧

Table 13. Examples of Tedim verb forms in different syllable shapes

Note in particular line 2 of Table 13, where the falling tone occurs on a CVC syllable. Low tone occurs only in closed syllables. The final consonants are restricted to voiceless stops /p/, /t/ and /k/.

3.2 Mizo

The name Mizo is used in this thesis in favor of the archaic name Lushei. The Mizo were originally called Duhlian (Thanga L.B. 1992:144) and were also known as Lushei. Within the Chin State the Mizo are known as Hualngo (Grierson 1904 spells it *Whenos*).

They live in the western part of Tedim and Falam Townships of the Chin State. Many Mizo speakers live in the Kalay and Kabaw valleys of the Sagaing Division. Grimes (1996) estimates 12,500 Mizo speakers in Myanmar. According to a Mizoram

website¹⁷ there is a population of 891,058 in Mizoram State as of 2001. More than 90% of the populace in Mizoram State speaks Mizo.

Today, many Mizo varieties have been assimilated into a language identified as Mizo. Chhangte (1993:1), a noted linguist among the Mizo says:

Nowadays the term Mizo refers not only to the Luseis but also other tribes such as: Chawhte, Hmar, Hnamte, Khawhring, Khiangte, Ngente, Paihte, Pautu, Ralte, Rawite, Renthei, Tlau, Yangchia and Zawngte. ... Modern spoken Mizo is more or less the same as the language of the Lusei tribe (also known as Lushai) and has been the lingua franca of the area for a century.

According to Chhangte (1993:38) Mizo has the most conservative phonology among Kuki-Chin languages. Mizo is probably one of the most studied Chin languages.

Its syllable canon, consonant inventory, vowel inventory, segment distribution and the tone are briefly discussed in this section.

3.2.1 Syllable structure

The syllable canon for Mizo can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an optional initial consonant and (C_2) is the second consonant in a consonant cluster. The nucleus is composed of either an obligatory monophthong V_1 or a diphthong V_1V_2 . The coda is composed of (C_3) , which is a final consonant, and T represents tone. Examples of possible syllable shapes are provided in Table 14.

¹⁷ <http://www.mizoram.nic.in>.

Ref. No.	English gloss	Mizo transcription	Syllable type
437	elder bro. of m	u: ^l	V:
081	dog	ui: ^l	VV
099	chicken	a:r ^l	VC
002	sun	ni: ^l	CV
212	fire	mei: ^l	CVV
266	itch	t ^h ak ^l	CVC
003	moon	t ^h la: ^l	CCV
035	mountain	tla: ^l ŋ ^l	CCVC
412	crested	tʃ ^h uaŋ ^l	CVVC
121	brain	t ^h luak ^l	CCVVC

Table 14. Examples of syllable shapes in Mizo

3.2.2 Consonants

Table 15 shows the consonant inventory of Mizo. Chhangte (1993) omits glottal stop /ʔ/ in her consonant inventory. Namkung (1996) includes /t^hl/ and /tl/ as single unit phonemes.

	Labial	Coronal	Retroflex	Dorsal	Glottal
Voiceless stops	p	t	t̪	k	?
Voiceless aspirated stops	p ^h	t ^h	t̪ ^h	k ^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̪	n̪		ŋ̪	
Voiced trill		r			
Voiceless trill		r̪			
Voiceless affricate		ts			
Voiceless aspirated affricate		tʃ ^h			
Voiceless fricatives	f	s			h
Voiced fricatives	v	z			
Voiced lateral approximant		l			
Voiceless lateral approximant		l̪			

Table 15. Mizo consonant inventory

3.2.3 Vowels

Mizo has five cardinal vowels in its vowel inventory as shown in Table 16. As with Tedim, the close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone, /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open vowel /a/ differs slightly in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open	a	

Table 16. Mizo vowel inventory

3.2.4 Segment distribution

The distribution of segments in Mizo can be summarized as follows. There is no restriction for initial consonant (C_1). The second consonant (C_2), however, is limited to /l/ after /t/ or /tʰ/. The monophthong V_1 has no restriction but the (V_2) element in the diphthong V_1V_2 is restricted to open vowel /a/, the close unrounded front vowel /i/ or the close rounded back vowel /u/, as Table 17 shows.

	Front	Back
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 17. Mizo diphthongs

The final consonant (C_3) is restricted to voiceless stops, nasals, voiced trill and voiced lateral approximant and the glottal stop, as shown in Table 18.

	Labial	Coronal	Dorsal
Voiceless stops	p	t	k
Voiced nasals	m	n	ŋ
Voiced trill		r	
Voiced lateral approximant		l	

Table 18. Mizo final consonants

Namkung (1996) considers the phonemes /r?/ and /l?/ as a single units in a closed syllable. In this thesis, glottal stop is considered as phonetic segment predictable on tone.

3.2.5 Tone

According to Namkung (1996) there are three contrastive tones in Mizo. They are rising tone /˨/, mid tone /˧/, and falling tone /˥/. Chhangte (1985) states that there are four tones, adding high tone /˦/.

In this analysis there are five contrastive tones in Mizo, high tone /˦/, rising tone /˨/, mid tone /˧/, falling tone /˥/ and low tone /˨/. The tonal distribution in different syllable types in Mizo can be generalized as shown in Table 19.

	Smooth syllables			Stopped syllables
	Open rhyme	Nasal finals	Liquid finals	
Rising tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	-	k
Mid tone	Monophthong	m n ŋ	-	-
	Diphthong and long	m n ŋ	r l	k t
Falling tone	Monophthong	m n ŋ	r l	k t p
	Diphthong and long	m n ŋ	-	-
High tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	r l	k
Low tone	Monophthong	m n ŋ	r l	t k ?

Table 19. Mizo tone distribution

3.3 Hakha

Hakha was formerly known as *Bawngshe* which was derived from a Burmese word meaning ‘hair-knot over forehead’ (Grierson 1904:552). Modern linguists like George Bedell and others use the term ‘Lai’ for Hakha. Hakha speakers live in the central part of Chin State and also in Bangladesh, India and the plain region of Myanmar. According to Grimes (1996) the Hakha population estimate is 100,000 in Myanmar, with an addition 1000 speakers outside of Myanmar.

The syllable canon, consonant inventory, vowel inventory, segmental distribution and tone are discussed in this section.

3.3.1 Syllable structure

The syllable canon for Hakha can be summarized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an initial consonant and (C_2) is the second consonant in a consonant cluster. The nucleus is composed of either an obligatory vowel V_1 as monophthong or the diphthong V_1V_2 . The final consonant is (C_3) and T represents tone. Examples of possible syllable shapes are provided in Table 20.

Ref. No.	English gloss	Hakha transcription	Syllable type
437	elder bro. of m	u: ^l	V:
081	dog	ui ^l	VV
099	chicken	a:r ^l	VC
002	sun	ni: ^l	CV
212	fire	mei ^l	CVV
266	itch	t ^h ak ^l	CVC
003	moon	t ^h la ^l	CCV
035	mountain	tlan ^l	CCVC
412	crested	t ^h uaŋ ^l	CVVC
121	brain	t ^h luak ^l	CCVVC

Table 20. Examples of syllable shapes in Hakha

3.3.2 Consonants

The consonant inventory of Hakha is shown in Table 21.

	Labial	Coronal	Retroflex	Dorsal	Glottal
Voiceless stops	p	t	t̪	k	
Voiceless aspirated stops	p ^h	t ^h	t̪ ^h	k ^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̪	n̪		ŋ̪	
Voiced trill		r			
Voiceless trill		r̪			
Voiceless affricate		ts			
Voiceless aspirated affricate		tʃ ^h			
Voiceless fricatives	f	s			h
Voiced fricatives	v	z			
Voiced lateral approximant		l			
Voiceless lateral approximant		l̪			

Table 21. Hakha consonant inventory

3.3.3 Vowels

There are five cardinal vowels in Hakha as shown in Table 22. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open vowel /a/ varies slightly in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open	a	

Table 22. Hakha vowel inventory

3.3.4 Segment distribution

The distribution of Hakha segments can be summarized as follows. All consonants may appear as initial consonant (C_1). However the second consonant in an initial consonant cluster (C_2) is limited to /l/ after /t/ or /t^h. The monophthong V_1 has no limitation but whenever the diphthong V_1V_2 occurs the second vowel V_2 is restricted to either the open vowel /a/, close unrounded front vowel /i/ or close rounded back vowel /u/. Table 23 shows the diphthongs in Hakha.

	Front	Back
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 23. Hakha diphthongs

The final consonant (C_3) is restricted to voiceless stops, nasals, liquids and the glottal stop as shown in Table 24.

	Labial	Coronal	Dorsal
Voiceless stops	p	t	k
Voiced nasals	m	n	ŋ
Voiced trill		r	
Voiced lateral approximant		l	

Table 24. Hakha final consonants

The clusters [r?] and [l?] are considered single units by Namkung (1996). In this thesis, the glottal stop is considered as a phonetic segment, predictable on tone.

3.3.5 Tone

Matisoff (1998) claims that Hakha does not have tone, but later he was convinced that Hakha is indeed a tonal language (p. c. October 4, 2000). The current analysis shows

that there are at- least five contrastive tones. They are high tone /˥/, rising tone /˧/, mid tone /˨/, falling tone /˩/, and low tone /˨/. The tonal distribution in different syllable types in Hakha can be generalized as shown in Table 25.

	Smooth syllable			Stopped syllables
	Open rhyme	Nasal finals	Lateral finals	
Rising tone	Monophthong	m n ɳ	r l	-
	Diphthong and long	m n ɳ	r l	-
Mid tone	Monophthong	m n ɳ	r l	p t k
	Diphthong and long	m n ɳ	r l	p t k
Falling tone	Monophthong	m n ɳ	r l	-
	Diphthong and long	m n ɳ	-	p t k ?
High tone	Monophthong	m n ɳ	r l	p t k ?
	Diphthong and long	m n ɳ	r l	-
Low tone	Monophthong	m n ɳ	r l	p t k ?

Table 25. Hakha tone distribution

3.4 Mara

Mara (the autoethnonym) live in the Thantlang and Matupi Townships of Myanmar and its adjacent region in the Mizoram State of India. There are 20,000 speakers in Myanmar, out of a total population of 41,000 speakers in all countries (Grimes 1996).

According to Bradley (1997) Mara (also known as Lakher¹⁸ in India) is neither a member of Central Chin or Southern Chin. Instead, he lists it under his “Other Chin Groups”. The language and culture are being assimilated into the Mizo (Bradley 1997:30).

Mara is notable among Chin languages for the absence of final consonants. This description is consistent with previous scholarship; “Mara is peculiar... for it is quite

¹⁸ “‘Lakher’ is a Central Chin and Mizo (Lushai) word for the native cotton gin, which is made preeminently by the Lakher” (Lehman 1990:19).

without closed syllables" (Lehman 1990:1) and "(Mara) ... has lost all its final consonants, except perhaps for a faint glottal stop" (Luce 1985:83).

Its syllable canon, consonant inventory, vowel inventory, segmental distribution and tone are described in the following discussion.

3.4.1 Syllable structure

The syllable canon for Mara can be generalized as $(C_1)(C_2)V_1(V_2)T$. The parentheses show optional elements. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an optional initial consonant and (C_2) is the second consonant in an initial consonant cluster. The nucleus is composed of V_1V_2 in which V_1 represents an obligatory monophthong and V_1V_2 represents a diphthong. T represents tone. Examples of possible shapes are provided in Table 26.

Ref. No.	English gloss	Mara transcription	Syllable type
247	shout	o;↑	V:
002	sun	ni/↑	CV
212	fire	mei↑	CVV
003	moon	tʰla↑	CCV

Table 26. Examples of syllable shapes in Mara

3.4.2 Consonants

The consonant inventory of Mara is shown in Table 27.

Labial	Coronal	Dorsal	Glottal

Voiceless stops	p	t	k	?
Voiceless aspirated stops	p ^h	t ^h	k ^h	
Voiced stops	b	d		
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̥	
Voiced trill		r		
Voiceless trill		r̥		
Voiceless affricate		ts		
Voiceless aspirated affricate		tʃ ^h		
Voiceless fricatives		s		h
Voiced fricatives	v	z		
Voiced lateral approximant		l		
Voiceless lateral approximant		ɬ		

Table 27. Mara consonant inventory

3.4.3 Vowels

Mara has five cardinal vowels in its vowel inventory as shown in Table 28. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in syllable with low tone, /e/→[ɛ]/__\\$L. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in syllable with low tone, /o/→[ɔ]/__\\$L. The open vowel /a/ varies slightly in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open		a

Table 28. Mara vowel inventory

3.4.4 Segment distribution

There are no restrictions on consonants in the initial position (C_1), while the second consonant (C_2) is restricted to /l/. The nucleus is composed of V_1 , which is obligatory and has no restrictions, where V_2 is an optional second element in a diphthong and is restricted to the open vowel /a/, close unrounded front vowel /i/ and close rounded back vowel /u/. Table 29 shows the distribution of diphthongs in Mara.

	Front	Back
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 29. Mara diphthongs

3.4.5 Tone

There are at least three contrastive level tones in Mara. They are high tone /˥/, mid tone /˧/, and low tone /˨/. Mara does not have falling and rising contour tones. The distribution of tone in Mara is shown in Table 30.

	Smooth syllables
Mid tone	Monophthong, Diphthong and long
High tone	Monophthong, Diphthong and long
Low tone	Monophthong

Table 30. Mara tone distribution

3.5 Khumi

The Khumi or Khami group includes several diverse dialects, which fall into two subgroups, Khumi and Khimi. So-Hartmann lists it together with the Southern group and says (1988:100), “They themselves (Khumi) explain their name as being derived from *Khu* or *Kho* ‘soil, earth’ and *mi* ‘man’”. Bradley (1997) lists Khumi under

“Other Chin Groups”. Khumi live mainly in Paletwa Township of Chin State and in Bangladesh and India. There are 76,700 Khumi speakers in Myanmar (Grimes 1996).

Its syllable canon, consonant inventory, vowel inventory, segment distribution and tone are discussed in the following sections.

3.5.1 Syllable structure

The syllable canon for Khumi can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The initial consonant (C_1) and the second consonant (C_2) in the initial consonant cluster compose the onset. The nucleus is composed of an obligatory vowel V_1 as monophthong or the diphthong V_1V_2 . The coda (C_3) is a final consonant. T represents tone. Examples of possible syllable types are provided in Table 31.

Ref. No.	English gloss	Khumi transcription	Syllable type
167	excrement	e:ɿ	V:
081	dog	uiɿ	VV
002	sun	ni:ɿ	CV
212	fire	maiɿ	CVV
003	moon	tʰla:ɿ	CCV
266	itch	tʰa:kɿ	CVC

Table 31. Examples of syllable shapes in Khumi

3.5.2 Consonants

The consonant inventory of Khumi is shown in Table 32.

Labial	Coronal	Dorsal	Glottal
--------	---------	--------	---------

Voiceless stops	p	t	k	?
Voiceless aspirated stops	p ^h	t ^h	k ^h	
Voiced stops	b	d	g	
Voiced nasals	m	n	ŋ	
Voiceless nasals	m _o	n _o	ŋ _o	
Voiced trill		r		
Voiceless fricatives		s		h
Voiced fricatives	v			
Voiced approximant			j	
Voiced lateral approximant		l		
Voiceless lateral approximant		l _o		

Table 32. Khumi consonant inventory

3.5.3 Vowels

There are five cardinal vowels in Khumi as shown in Table 33. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open vowel /a/ varies slightly in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open	a	

Table 33. Khumi vowel inventory

3.5.4 Segment distribution

All consonants are allowed in the optional initial consonant (C₁), while the second consonant (C₂) a consonant cluster is limited to /r/ and /l/. The alveolar trill /r/ occurs after voiceless coronal stops /k/ or voiceless labial stops /p/. The voiced lateral

approximant /l/ appears only after the coronal voiceless and voiceless aspirated coronal stops /t/ and /t^h. The nucleus is composed of an obligatory vowel V₁ without restrictions. Whenever the diphthong V₁V₂ occurs, the second vowel V₂ is limited to vowels at the extreme margins of the vowel inventory as shown in Table 34.

	Front	Back
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 34. Khumi diphthong inventory

The coda (C₃) is restricted to nasals and voiceless stops, with the exception of voiceless bilabial stop, as shown in Table 35. T represents tone.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops			k	?
Voiced nasals	m	n	ŋ	

Table 35. Khumi final consonants

3.5.5 Tone

There are at least four contrastive tones in Khumi. They are high tone /˥/, rising tone /↗/, mid tone /˧/, and low tone /˨/. Khumi does not have falling tone. The distribution of tone in Khumi is shown in Table 36.

	Smooth syllable		Stopped syllables
	Open rhyme	Nasal finals	
Rising tone	Monophthong Diphthong and long	n ɳ n ɳ	k k
Mid tone	Monophthong Diphthong and long	n ɳ -	k -
High tone	Monophthong Diphthong and long	n ɳ -	k k
Low tone	Monophthong	n ɳ	k

Table 36. Khumi tone distribution

3.6 Kaang

Kaang is closely related to Ngmuun and Dai. According to Lehman (1963:85) “The literature speaks of ‘the M’kaang’ as ‘the cane-bellied Chin,’ because men and boys wear girdles formed of numerous rounds of red-dyed cane.” They call themselves ‘Kaang’ (Lehman 1963:85) and live in three villages in Mindat Township: Kkyuk (Thluk), You Phong and Hla Tui (So-Hartmann 1988:100). Grimes (1996) lists Kaang together with Dai and Muun as having similar linguistic features and estimates the Kaang population at 30,000.

Its syllable canon, consonant inventory, vowel inventory, segment distribution and tone are discussed in this section.

3.6.1 Syllable structure

The syllable canon for Kaang can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The optional initial consonant (C_1) and the second consonant (C_2) in an initial consonant cluster compose the onset. The nucleus is composed of either an obligatory vowel V_1 as a monophthong or the diphthong V_1V_2 . The coda (C_3) is a final consonant in a closed syllable. T represents tone. Examples of possible syllable shapes are provided in Table 37.

Ref. No.	English gloss	Kaang transcription	Syllable type
106	frog	u [˧]	V
081	dog	ui [˥]	VV
002	sun	n [˧] i [˥]	CV
212	fire	mei [˥]	CVV
003	moon	k [˧] ra: [˧] l	CCV
266	itch	t [˧] ak [˧] l	CVC

Table 37. Examples of syllable shapes in Kaang

3.6.2 Consonants

The consonant inventory of Kaang is shown in Table 38. So-Hartmann (1988) remarks that Kaang has lost the prenasalization and preglottalization found in the other Southern dialects and has /f/ in its consonant inventory. In Kaang /t^h/ is changed into [s] before close front vowel, t^h → s/___i.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	?
Voiceless aspirated stops	p ^h	t ^h	k ^h	
Voiced stops	b	d		
Voiced nasals	m	n	ŋ	
Voiceless nasals	m _o	n _o	ŋ _o	
Voiced trill		r		
Voiceless trill		r̥		
Voiceless unaspirated affricate		ts		
Voiceless aspirated affricate		ts ^h		
Voiceless fricatives	f	s		h
Voiced fricatives	v			
Voiced palatal approximant			j	
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

Table 38. Kaang consonant inventory

3.6.3 Vowels

Kaang has five cardinal vowels and three central vowels as shown in Table 39. Segments enclosed in [brackets] are phonetic while those segments without brackets are phonemic. The close mid front vowel /e/ is changed to open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C__C. The close mid back vowel /o/ is also changed to open mid back vowel [ɔ] at the position of closed

syllable type with either falling or low tone, /o/ → [ɔ]/C__C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	Central	Back
Close	i	ɪ	ɯ
Close mid		e	o
Open mid			ə
Open		a	

Table 39. Kaang vowel inventory

3.6.4 Segment distribution

All consonants can appear in the initial consonant (C_1) position. The second consonant in an initial cluster (C_2) is restricted to /r/. The /r/ occurs after voiceless and aspirated labial stop /p/ and dorsal stop /k/. The nucleus is composed of either a monophthong vowel V_1 or diphthong V_1V_2 . V_1 has no restrictions but V_2 is restricted to the close front vowel /i/ and open vowel /a/ as shown in Table 40.

	Front	Central	Back
Close	ia	ɪa	ɯi
Close mid	ei	əi	oi
Open		ai	

Table 40. Kaang diphthongs

The final consonant (C_3) is restricted to the voiced nasal and voiceless stop series as shown in Table 41.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	?
Voiced nasals	m	n	ŋ	

Table 41. Kaang final consonants

3.6.5 Tone

In the current analysis, Kaang has five contrastive tones composed of three level tones and two contour tones. They are high tone /˥/, mid tone /˧/, low tone /˨/, rising tone /˩/, and falling tone /˥˧/. Table 42 shows the tone distribution by syllable type in Kaang.

	Smooth syllable		Stopped syllable
	Open rhyme	Nasal final	
Rising tone	Monophthong Diphthong and long	m n ɳ -	p t k -
Mid tone	Monophthong Diphthong and long	m n ɳ -	p t k -
Falling tone	Monophthong Diphthong and long	m n ɳ -	p t k k
High tone	Monophthong Diphthong and long	m n ɳ -	p t k k
Low tone	Monophthong Diphthong and long	m n ɳ -	p t k -

Table 42. Kaang tone distribution

3.7 Brief summary

An overview of the six representative Chin languages based on the significant features of consonants, vowels and tones, is briefly discussed in this section.

Regarding initial consonants, all languages share the voiceless aspirated and unaspirated stop series. Khumi and Tedim have voiced dorsal stops whereas the other Chin languages do not. Tedim does not have the voiceless nasal series and coronal trill, while the other Chin languages have voiceless and voiced nasal sets. Mizo, Hakha and Mara have two affricates, /ts/ and /tʃʰ/. Only Mizo, Hakha and Khumi have a voiceless labial fricative [f]. Tedim has only a voiced lateral approximant [l] while the other languages have voiced and voiceless lateral approximants [l] [ɿ]. All

languages share the voiced labial fricative [v] and voiceless coronal fricative [s].

Kaang and Khumi do not have the voiced coronal fricative [z] but have the voiced palatal approximant [j], which the others do not have. All languages have the glottal stop [?], at least phonetically, and glottal fricative [h].

The phonemes /tl/ and /t^hl/, in Mara, Mizo and Hakha are represented here as initial consonant clusters because they will be shown in Chapter 4 to be the reflexes of the initial consonant clusters *kr and k^hr. On the other hand, *ts and *tʃ^h in Mara, Mizo and Hakha are treated as a single phonemes because they correspond to /t/ and /s/, respectively, in Kaang, Khumi and Tedim.

For final consonants, Mara is different from the other languages, as it does not have closed syllables. The remaining languages have stop and nasal series in finals. Khumi does not have the voiceless labial stop syllable final. Khumi and Kaang do not have liquid finals.

Five cardinal vowels are common in all languages. In addition to cardinal five vowels, Kaang has central vowels: a close central /i/, back central /u/ and open mid central /ə/ vowels. Hakha, Mizo and Tedim have diphthongs (V₁V₂), which may be observed that the first vowel V₁ has no restriction but the second vowel V₂ is restricted to the close front vowel /i/, close back vowel /u/ and open vowel /a/.

The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in closed syllables. Similarly, the close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in closed syllables. The open vowel /a/ varies slightly in its realization from [a] to [ɑ]. Vowel length contrast are ignored in this analysis due to the need for acoustic analysis on each language.

A system of three tones is probably the norm for all languages, as mentioned by Luce (1985). These tones are rising, mid and falling tone. However, some languages add one or two tones. If a language has four tones, the fourth tone tends to be a low tone and if there are five tones, the fifth tone tends to be a high tone.

CHAPTER 4

RECONSTRUCTION

4.0 Introduction

Chapters 1 to 3 considered background information for Chin languages, the selection of languages used to be representative of Chin languages in the reconstruction of Proto Chin, and the description of these languages. This chapter will focus on the reconstruction of Proto Chin.

4.1 General

The primary data for this study is a list of 443 words¹⁹ for each language under study. The wordlist is provided in the appendices. This wordlist covers several semantic domains with linguistic terms appropriate to Southeast Asia, in particular domains such as nature, plants, food, animals, body parts, human relationships, home, numbers, dimensions, physical descriptions, taste, question words and various verbs.

The data for Kaang, Khumi (Paletwa), Mara, Hakha and Mizo are from unpublished data collected by Seung Kim and Noel Mann and the author retranscribed. Data for Tedim is based on the author's transcription of his own speech as a native speaker.

Wordlists for these six languages were tabulated for comparison. Possible loan words were eliminated. Loanwords from Old Mon, Karen, Jingphaw were identified on the basis of Luce (1959), Benedict (1972) and Bradley (1978); and loanwords from Burmese and Hindi on the basis of the author's own knowledge. Burmese influence is present in these languages but to a lesser extent than in Plain Chin noted by Stern (1962). Loans from Hindi (or other Indian languages) are mostly found in Mizo due

¹⁹ The wordlist was developed by the SIL International for use in Southeast Asia.

to close contact. For instance, the word for ‘candle’ (No. 215) in Mizo is identical to the Hindi word [bom̪t̪ba̪t̪iː], while Hakha, Mara and Khumi use the Burmese word [pʰa̪t̪jon̪t̪dain̪]. Khumi has the word [sanij] for ‘year’ (No. 018) which seems to be borrowed from Jingphaw [sanij] which is also *s-nik in Proto Loloish (Benedict 1972). The Khumi word [panhi] for ‘mouth’ (No. 130) seems to be borrowed from Old Mon [paːŋ]. According to Luce (1985:85) the southern Chin languages’ word for ‘buffalo’ (No. 088) is from Karen. ‘Buffalo’ for Hakha, Mara and Kaang is [na] and in Khumi [pa̪t̪naːl], which appears to be borrowed from the Sgaw Karen word [pən̪aːl]. (c.f. Lar Baa 2001:93). Numbers and percentages of identified loan words found in each languages are shown in Table 43. Khumi has 6.32% as the highest and Tedim has 1.13% as the lowest number of loans out of 443 words in the present data.

Language	Number of loans	Percentage of 443 word corpus
Tedim	5	1.13%
Mizo	8	1.81%
Mara	9	2.03%
Kaang	12	2.71%
Hakha	14	3.16%
Khumi	28	6.32%

Table 43. Percentage of loan words in Chin languages

Proto Chin is assumed to be monosyllabic and the reconstruction is conducted on the basis of root syllables. Peripheral syllables are eliminated. Correspondences in phonemes are compared to establish Proto Chin.

Bradley (1979) observes that initial consonants, rhymes and tones comprise the three basic systems in the comparative analysis of Tibeto-Burman languages. However, there is no evidence in the present data that the rhymes must be considered as a unit. Therefore the reconstruction is based on initial consonants, vowel nuclei and codas. (For tones, see section 4.6).

4.2 Initial consonants

Let us begin the consideration of initial consonants with a more detailed review of previous reconstructions of initial consonants.

A major concern of previous work has been to account for the presence of [g] in Tedim, but not in other modern Chin languages. Ono (1965) reconstructed the initial consonants of Proto Kuki-Chin²⁰ as shown in Table 44. He claims *g “to be absorbed in some other phonemes” (1965:19), but without speculating which.

Ono's Proto-Kuki-Chin initial consonants (1965:19)				
Velar stops	*k	*k ^h	*g	
Dental stops	*t	*t ^h	*d	
Bilabial stops	*p	*p ^h	*b	
Nasals (voiced)	*ŋ	*n	*m	
Nasals (voiceless)	*hŋ	*hn	*hm	
Affricates and Fricatives	*c	*c ^h	*s	*z
Semi vowels and Glottals	*w	*j	*h	*ʔ
Liquids	*r	*hr	*l	*hl
Consonant clusters	*kr	*k ^h r	*kl	*k ^h l

Table 44. Ono's (1965) Proto Kuki-Chin initial consonants

Solnit (1979) attempted to establish the phonological relationship between Tedim and Mizo (which he calls Lushai) based on the reconstructed *r. He considers separately simple initials, initial clusters and finals. Table 45 shows Solnit's (1979:118) simple initials.

	Tedim	Mizo
*g- (or K-N *k-)	k	k
*k- (or K-N *k ^h -)	χ	k ^h
*r- *g-r-, or *k-r-	g	r

Table 45. Solnit's (1979) simple initial consonants

Table 46 shows Solnit's (1979:118) initial consonant clusters.

Initial	Medial *-r-		Medial *-l-	
	Tedim	Lushai	Tedim	Lushai
*g-	k	tr	k	tl
*k-	χ	t ^h r	χ	t ^h l
*b-, *p-	p ^(h)	t ^(h) r	p ^(h)	t ^(h) l

Table 46. Solnit's (1979) initial clusters

Table 47 shows Solnit's (1979:119) final consonants.

	Tedim	Lushai
*-k	k	k
*-r	k	r

Table 47. Solnit's (1979) reconstructed final consonants

The summary of previous literature on reconstruction of consonants shows that Proto Chin had voiced, voiceless and aspirated series of stops, except voiced dorsal stop, which is assumed to be absorbed in some other phoneme. There are nasal and liquid series with their respective voiceless counterparts. Proto Chin also had voiceless and voiced coronal fricative and glottal fricative and voiceless aspirated and unaspirated coronal affricates. There are also semivowels.

Four consonant clusters can occur. The first consonant of the consonant cluster is restricted to voiceless aspirated and unaspirated alveolar (Solnit adds voiced velar stop) and the second consonant is limited to liquids. Bhaskararao posits voiceless retroflex stop and voiced coronal stop with their aspirated counterpart as the first consonant in consonant clusters. He also discusses proto *r and *k as final consonants.

²⁰ Bhaskararao (1996) also discussed the initial consonants in Lushai (Mizo) and Tedim. In many cases, he agrees with Ono (1965) however he also mentions some exceptions, many of such exceptions are the result of either misspellings or synonyms.

Having discussed the previous literature, the next consideration is the reconstruction of Proto Chin initial consonants based on the data at hand.

The data are taken from the word lists provided in Appendix A. The left hand column shows the reference number of the word, the second column is the English gloss and the remaining columns are the cognate words in the selected languages.

4.2.1 Stops

***p**. The cognate set in Table 48 indicates an unambiguous initial voiceless labial stop

***p** in Proto Chin. This is a very stable initial consonant, showing no change in any daughter language.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
050	mushroom	paɻ	pa:ɻ	paɻ	poɻ	paɻ	paɻ
169A	man	paɻ	paɻ	pa:ɻ	poɻ	-	paɻ
172	father	paɻ	pa:ɻ	pa:ɻ	poɻ	paɻ	pa:iɻ
288	give	piaɻ	pe:ɻ	pe:kɻ	piaɻ	pe:kɻ	peɻ
320	pay	pi:aɻ	pe:ɻ	pe:kɻ	piaɻ	peiɻ	-
346	thin	paɻ	panɻ	panɻ	pa:ɻ	pa:ɻ	panɻ

Table 48. Proto Chin initial voiceless labial stop ***p**

***p^h**. The cognate set in Table 49 shows that Proto Chin also had an initial voiceless aspirated labial stop ***p^h**. This sound is suspect in Mara because it shares only one cognate words out of five in the cognate set.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
153	thigh	p ^h eiɻ	-	p ^h eiɻ	-	p ^h a:iɻ	p ^h eiɻ
192	mat	p ^h ekɻ	p ^h erɻ	p ^h erɻ	p ^h iaɻ	p ^h akɻ	p ^h akɻ
302	bury corpse	p ^h u:mɻ	p ^h u:mɻ	p ^h umɻ	-	p ^h unɻ	-
304	dry something	p ^h oɻ	p ^h o:ɻ	p ^h o:ɻ	-	-	p ^h oɻ
411B	pangolin	p ^h uɻ	p ^h u:ɻ	p ^h u:ɻ	-	p ^h ei?ɻ	p ^h u:ɻ

Table 49. Proto Chin initial voiceless aspirated labial stop ***p^h**

***b**. The cognate set in Table 50 shows the voiced labial stop *b in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
057A	banana	banɿ	banɿ	banɬ	ba:ɬ	-	-
069	cooked rice	buɬ	-	buɬ	-	buɬ	buɬ
094	bird's nest	buɬ	bu:ɬ	buɬ	buɬ	buɬ	bu:ɬ
128	cheek	biaŋɬ	biaŋɬ	biaŋɬ	baiɬ	beɬ	be:ŋɬ
393	tired	-	-	baɬ	baɬ	baiɬ	boŋɬ

Table 50. Proto Chin initial voiced labial stop *b

***t**. The data in Table 51 illustrates the voiceless coronal stop *t in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
023	water	tuiɬ	tuiɬ	tiɬ	tiɬ	tuiɬ	tuiɬ
049B	bamboo shoot	toiɬ	toiɬ	toiɬ	teɬ	tuiɬ	toiɬ
150B	finger nail	tinɬ	tinɬ	tinɬ	teɬ	sinɬ	tinɬ
196	weave cloth	-	taɬ	taɬ	saɬ	-	taɬ
342	short length	tomɬ	to:iɬ	to:iɬ	-	toiɬ	toiɬ

Table 51. Proto Chin initial voiceless coronal stop *t

***t^h**. The cognate set in Table 52 exemplifies an unambiguous voiceless aspirated coronal stop *t^h in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
143	liver	t ^h inɬ	t ^h inɬ	t ^h inɬ	t ^h iɬ	t ^h inɬ	t ^h inɬ
162	fat	t ^h a:uɬ	t ^h auɬ	t ^h a:uɬ	t ^h auɬ	t ^h a:uɬ	t ^h a:uɬ
164	blood	t ^h iɬ	t ^h iɬ	t ^h i:ɬ	t ^h i:ɬ	t ^h iɬ	t ^h iɬ
211	firewood	t ^h inɬ	t ^h inɬ	t ^h inɬ	t ^h eɪɬ	t ^h inɬ	t ^h inɬ
266	itch	t ^h akɬ	t ^h akɬ	t ^h akɬ	t ^h aɬ	t ^h a:kɬ	t ^h akɬ
324	three	t ^h umɬ	t ^h umɬ	t ^h umɬ	t ^h oɬ	t ^h unɬ	t ^h umɬ
351	deep	t ^h u:kɬ	t ^h u:kɬ	t ^h u:kɬ	t ^h uɬ	t ^h o:kɬ	t ^h ukɬ

Table 52. Proto Chin initial voiceless aspirated alveolar stop *t^h

*d. The data in Table 53 illustrates the initial voiced coronal stop *d in Proto Chin. Khumi shares very few cognate words in the present data. Therefore the initial voiced coronal stop *d is suspect in Khumi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
149B	finger	-	daj [†]	dɔŋ [†]	do [†]	-	-
232	drink	do:n [†]	-	din [†]	do [†]	-	-
272	stand	dij [†]	dij [†]	diar [॥]	dia [‡]	di: [†]	du: [†]
273B	kneel	din [॥]	-	-	-	du: [†]	dɔŋ [॥]
357	straight	-	-	dij [†]	do [†]	-	dip [॥]
400	correct	dik [‡]	dik [‡]	-	do [†]	-	-

Table 53. Proto Chin initial voiced coronal stop *d

*k. The cognate set in Table 54 illustrates the unambiguous initial voiceless dorsal stop *k in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
018	year	kumɻ	kumɻ	kumɻ	koɻ	-	kumɻ
079B	porcupine	kuɻ	kuɻ	kuɻ	kuɻ	-	kuɻ
089	horn of buffalo	ki:ɻ	ki:ɻ	ki:ɻ	kiɻ	kiɻ	ki:ɻ
313	shoot	ka:pɻ	ka:pɻ	kaɻ	kaɻ	ka:ɻ	ka:pɻ
330	nine	kuaɻ	kuaɻ	kuaɻ	ki:ɻ	koɻ	koɻ
426	bend	ko:iɻ	ko:iɻ	ko:iɻ	koɻ	konɻ	-

Table 54. Proto Chin initial voiceless dorsal stop *k

*k^h. The data in Table 55 illustrates the unambiguous initial voiceless aspirated dorsal stop *k^h in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
115	bee	k ^h o:i†	k ^h o:i†	k ^h o:iŋ	k ^h ei†	k ^h oiŋ	k ^h o:iŋ
154	knee	k ^h ukɻ	k ^h u:pɻ	k ^h ukɻ	k ^h u†	k ^h u†	k ^h u:k†
183	village	k ^h ua†	k ^h ua†	k ^h uaŋ	k ^h i:†	-	k ^h o†
214B	smoke fire	k ^h u†	k ^h u:ŋ	k ^h u:†	k ^h u†	k ^h u†	k ^h u:†
376	bitter	k ^h a:ɻ	k ^h a:ŋ	k ^h a:†	k ^h a:ŋ	k ^h a:†	k ^h a:†

Table 55. Proto Chin initial voiceless aspirated dorsal stop *k^h

4.2.2 Nasals

*m. The cognate set provided in Table 56 illustrates the initial labial nasal *m in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
005	cloud	me:i ^h	-	mei ^h	mei ^h	ma:i ^h	mei ^h
125	eye	mit ^h	mit ^h	mit ^h	-	mek ^h	mik ^h
171	person	mi ^h	mi ^h	mi: ^h	-	mi: ^h	-
261B	sleep	mu ^h	mu ^h	-	mo ^h	-	-
263	dream	maŋ ^h	maŋ ^h	maŋ ^h	ma: ^h	maŋ ^h	maŋ ^h

Table 56. Proto Chin initial labial nasal *m

*n. The data in Table 57 shows unambiguously the initial coronal nasal *n in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
170B	woman	nu ^h	-	nu: ^h	no ^h	ni ^h	nu ^h
173	mother	nu ^h	nu: ^h	nu: ^h	no ^h	nu: ^h	no: ^h
264	hurt	na: ^h	na: ^h	-	-	na: ^h	na ^h
417A	thou (2s)	naŋ ^h	naŋ ^h	naŋ ^h	na ^h	naŋ ^h	naŋ ^h
420A	you (2p)	no ^h	-	nan ^h	na ^h	naŋ ^h	naŋ ^h
440A	yr. bro. of m.	nau ^h	nau ^h	nau ^h	-	nau ^h	nau ^h

Table 57. Proto Chin initial coronal nasal *n

*ŋ. The data in Table 58 shows the initial dorsal nasal *ŋ in Proto Chin. Hakha, Mara and Khumi share only two cognate sets out of five in the data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
033	silver	ŋun ^h	-	ŋun ^h	ŋo ^h	-	ŋui ^h
251A	think	ŋai ^h	ŋai ^h	-	-	-	ŋai? ^h
255	love	-	ŋai ^h	-	-	ŋai:i ^h	na ^h

326	five	ŋa˧	ŋa:˧	ŋa:˥	ŋa˧	ŋa:˧	ŋa˧
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Table 58. Proto initial Chin dorsal nasal *ŋ

*m̥. The data in Table 59 illustrates the initial voiceless labial nasal *m̥ in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
096	feather	mull	mul˥	mul˧	mi˥	mui˧	mu˧
120	face	mai˧	ma:i˧	ma:i˥	me˧	mai˧	ma:i˥
182	name	min˧	min˧	min˥	mo˧	min˧	min˥
212	fire	mei˧	mei˧	mei˥	mei˧	mai˧	mei˥
409	ripe	min˧	min˧	min˥	ma˧	min˧	min˥

Table 59. Proto Chin initial voiceless labial nasal *m̥

Mizo, Hakha, Mara, Khumi and Kaang preserve the *m̥ inconsistently, without any discernible conditioning environment, but the voiceless feature has been lost in Tedim.

Rule 1. Voicing (Tedim)

*m̥ > m/\$_____

*n̥. The selection of data in Table 60 shows the initial voiceless coronal nasal *n̥ in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
002	sun	ni˧	ni:˧	ni˥	ni˧	ni:˧	ni˥
087	milk	no:i˧	nu˧	nuk˧	no˥	nu˧	-
127	nose	na:k˥	nar˧	nar˥	na˧	na˧	na˧
166	pus	nax:i˧	nax:i˧	nax:i˥	ne˧	na:i˧	na˥
244	laugh	nui:i˧	nui˧	ni:˧	ni˧	nu:i˧	nu˥
323	two	ni˧	ni˧	ni˧	ne˧	-	ni˧
344	short height	niam˧	niam˧	niam˥	nai˧	nem˧	-

Table 60. Proto Chin initial voiceless coronal nasal *n̥

Mizo, Hakha, Mara, Khumi and Kaang keep the voiceless coronal nasal * $\dot{\eta}$ without any discernible conditioning environment, but the voiceless has been lost in Tedim.

Rule 2. Voicing (Tedim)

$$*\dot{\eta} > n/\$ __$$

/ $\dot{\eta}$ / . Table 61 contains all the cognate sets relevant to initial voiceless dorsal nasals [$\dot{\eta}$]. Due to extremely limited data, this segment is not posited as a proto phoneme (but it will be discussed in section 4.5 under symmetrical considerations).

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
101	fish	ŋaɻ	ŋaɻV	ŋaɻ	ŋaɻ	ŋaɻ	ŋaɻ
253	forget	ŋilɻ	ŋilɻ	-	-	-	ŋiɻV
257	wait	ŋakɻ	ŋa:kV	ŋaɻ	haɻ	giŋɻ	ŋaŋɻ

Table 61. Chin initial voiceless dorsal nasal / $\dot{\eta}$ /

All the languages in the sample have a voiced nasal series. Voiceless nasals appear in all languages except Tedim but without any apparent predictable environment. Moreover the status of voiceless dorsal nasal [$\dot{\eta}$] is such that it is impossible to posit it as a proto phoneme based on the limited data and needs to be reconsidered under symmetrical considerations.

4.2.3 Trill

*r. From the cognate sets in Table 62, we may infer that Proto Chin had a coronal trill *r which became a voiced dorsal stop /g/ in Tedim. The g ~ r correspondence is consistent for all language in the sample except Khumi, which shows two instances of [r] and two instances of [y].

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
048	bamboo	guaɻ	ruaɻ	ruaV	raɻ	yu:ɻ	ro:V
102	snake	gulɻ	ru:lɻ	ru:lV	riɻ	yiɻ	rui:lV

159	bone	gu [↓]	ru [↓]	ru [↓]	ru [↑]	-	ru [↓]
299	grind	goi [↓]	rial [↓]	rial [↓]	ria [↓]	-	ret [↓]
327	six	guk [↓]	ruk [↓]	ruk [↓]	ru [↑]	ruk [↑]	ruk [↓]
328B	seven	gi [↓]	ri [↓]	ri?↑	ri [↓]	ri?↑	ri [↓]
329	eight	giat [↓]	riat [↓]	riat [↓]	re [↓]	-	ret [↓]

Table 62. Proto Chin initial coronal trill *r

The [g] reflex in Tedim is best viewed as the result of a two-step process. The first step is velarization, where the coronal trill *r becomes dorsal fricative /ɣ/ in all environments.

Rule 3. Velarization (Tedim)

$$*r > \check{y} / \$ __$$

The next sound change is strengthening. The voiced dorsal fricative /ɣ/ becomes the voiced dorsal stop /g/ in Tedim.

Rule 4. Strengthening (Tedim)

$$\check{y} > g / \$ __$$

Thus, the original coronal trill *r appears as voiced dorsal stop /g/ after undergoing Rules 3 and 4. According to Solnit (1979:115) this sound change is “somewhat out of the ordinary”. However, there is ample evidence that the velarization of r ~ ɣ, at least, is not uncommon. The following tendencies of sound change prove that Rule 4 is a possible process. Solnit (1979:115) says; “There are indications of a velar/uvular point of articulation for *r: its normal reflex in both Karen and Lahu is the dorsal /ɣ/”. Moreover, Luce’s (1985) transcription of Tedim (during the Chin Hills linguistic tour of 1954) shows that nearly all voiced dorsal stops /g/ were allophones of the voiced dorsal fricative /ɣ/ as shown in the following examples: ‘six’ as [⁹guk / ɣuk], ‘seven’ as [s’agi?/s’ayi?], ‘bone’ as [⁹gu?/ɣu?], snake as [⁹gul/ɣul]. According to Lehman, (1990:19) native speakers of Mara pronounce their name [maya]. Hock and Joseph

(1996:259) also say that “/r/ is generally pronounced as a dorsal fricative /y/ in modern standard French.” All these evidences support that /g/ in Tedim as the reflex of *r of Proto Chin²¹ is not so far of the ordinary.

* \ddot{r} . Proto Chin possessed a voiceless coronal trill * \ddot{r} as the cognate set in Table 63 illustrates.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
110	louse head	hik $\ddot{\cdot}$	r $\ddot{i}k\ddot{\cdot}$	r $\ddot{i}k\ddot{\cdot}$	r $\ddot{i}\ddot{\cdot}$	hik $\ddot{\cdot}$	r $\ddot{i}k\ddot{\cdot}$
331	ten	-	-	r $\ddot{a}\mathbb{V}$	r $\ddot{a}\ddot{\cdot}$	ha $\ddot{\cdot}$	r $\ddot{a}\mathbb{V}$
365	green	hiŋ $\ddot{\cdot}$	r $\ddot{i}ŋ\ddot{\cdot}$	r $\ddot{i}ŋ\mathbb{V}$	r $\ddot{e}o\ddot{\cdot}$	-	-

Table 63. Proto Chin initial voiceless coronal trill * \ddot{r}

This initial consonant coronal trill * \ddot{r} becomes a glottal fricative /h/ in Tedim and Khumi by dropping the oral articulation and keeping the feature of voicelessness, which appears as /h/.

Rule 5. Lenition (Khumi and Tedim)

$$*\ddot{r} > h/\$ __$$

4.2.4 Fricatives

/f/. Table 64 shows that Mizo and Hakha have voiceless labial fricative /f/ in their consonant inventory.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
053	sugarcane	tu $\ddot{\cdot}$	f $u:\ddot{\cdot}$	f $u:\mathbb{V}$	su $\ddot{\cdot}$	sik $\ddot{\cdot}$	tu $\ddot{\cdot}$
220	spear	tei $\ddot{\cdot}$	fei $\ddot{\cdot}$	fei \mathbb{V}	sei $\ddot{\cdot}$	-	tei $\ddot{\cdot}$

Table 64. Chin initial voiceless labial fricative /f/

²¹ This initial consonant shift is sociolinguistically prominent: some Chin political leaders, particularly in India, such as H. Kam Khen Thang (1986), and S. Prim Vaiphei (1986) have attempted to group Chin people based only on this initial consonant as “R-group” and “Non R-group” or “G-group”.

Two cognate words of the voiceless labial fricative /f/ in Mizo and Hakha have a sound correspondence with voiceless coronal stop /t/ in Tedim and Kaang, voiceless coronal fricative /s/ in Mara and Kaang. Kaang has the voiceless labial fricative /f/ in its consonant inventory but there is no consistent sound correspondence to the other languages in the current data. The sound change system looks consistent but due to insufficient cognate sets in the current data no sound change rule can be established at this point. This phoneme will be reconsidered in section 4.5.

*v. The cognate set in Table 65 illustrates the unambiguous initial voiced labial fricative *v in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	və:nɻ	və:nɻ	və:nɻ	vəɻ	və:nɻ	-
074	bear	vomɻ	vomɻ	vomɻ	vauɻ	vonɻ	vomɻ
085	pig	vo:kɻ	vokɻ	vokɻ	voɻ	-	vokɻ
093	bird	vaɻ	vaɻ	va:ɻ	voɻ	vaɻ	va:ɻ
176	husband	-	-	va:nɻ	vaɻ	vaɻ	vaɻ

Table 65. Proto Chin initial voiced labial fricative *v

*s. The cognate set in Table 66 illustrates that all the languages unambiguously have retained the initial voiceless coronal fricative *s which is not obscure to assign as the proto phoneme.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
122	hair	samɻ	samɻ	samɻ	saɻ	sənɻ	samɻ
207	mortar	sumɻ	sumɻ	sumɻ	soɻ	sunɻ	sumɻ
208	pestle	sukɻ	-	sumɻ	-	-	sukɻ
293	launder	sɔ:pɻ	suxɻ	sukɻ	soɻ	sukɻ	-
341	long	saruɻ	-	sauɻ	-	sauɻ	sauɻ
343	tall	səŋɻ	səŋɻ	səŋɻ	saɻ	səŋɻ	-

Table 66. Proto Chin initial voiceless coronal fricative *s

*z. The cognate set in Table 67 shows that Proto Chin possessed an initial voiced coronal fricative *z.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
056	liquor	zu: [†]	zu: [†]	zu: [†]	-	-	ju: [†]
076	monkey	zo: ^j [†]	zo: ^j [†]	zo: ^j [†]	zau: [†]	-	jo: ^j [†]
080	rat	zu: [†]	zu: [†]	zu: [†]	zu: [†]	ju: [†]	ju: [†]
097	fly	zuaj [†]	-	zuaj [†]	zo: [†]	-	joj [†]
168	urine	zun [†]	zun [†]	zun [†]	zo: [†]	jun [†]	jug [†]
318	sell	zuak [†]	zuar [†]	zuar [†]	zia [†]	jo: [†]	joi [†]

Table 67. Proto Chin initial voiced alveolar fricative *z

The proto form *z becomes a palatal approximant /j/ before back vowels in Khumi and Kaang. Since all instances of /j/ in Khuimi and Kaang in the present data precede back vowels, it is not clear whether this restriction is due to a conditioning environment in the sound change or to a phonotactic restriction on /j-/ initial syllables in Khumi and Kaang.

Rule 6. Palatalization (Kaang and Khumi)

*z > j/\$__

*h. The selection of data in Table 68 illustrates that Proto Chin possessed an initial voiceless glottal fricative *h.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
040B	tree bark	ho: ^j [†]	-	ho: ^j [†]	hau [†]	-	hok [†]
059	mango	hai: [†]	hai: [†]	hai: [†]	hai [†]	-	hai [†]
133	tooth	ha: [†]	ha: [†]	ha: [†]	ha [†]	ha [†]	-
238	yawn	ha:m [†]	ham [†]	ham [†]	ha [†]	ha:n [†]	ha:m [†]
256	hate	hua [†]	hua [†]	huat [†]	ho: [†]	-	-

Table 68. Proto Chin initial voiceless glottal fricative *h

4.2.5 Affricates

***ts.** Table 69 shows that Mizo, Hakha and Mara have a voiceless coronal affricate /ts/ in their consonant inventory, which corresponds to a voiceless coronal stop in Tedim, Khumi and Mara. (Although Tedim [ti:N] ‘salt’ (071) and [til^h] ‘saliva’ (132) have initial affriates phonetically, they may be analysed as having underlying stops synchronically; cf. section 3.1.3.)

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumí	Kaang
071	salt	ti:N	tsi:N	tsi ^h	-	-	ti: ^h
113	snail	-	tseŋ:N	tsəŋ ^h	tsə: ^h	teŋ ^h	-
132	saliva	til ^h	tsil ^h	tsi:lN	tsi: ^h	-	ti ^h
142	lungs	tuap ^h	tsuap:N	tsuap ^h	tso:N	to: ^h	to:p ^h
301	dig	to ^h	tso ^h	tso? ^h	tso ^h	-	to:N
415A	earth worm	tan ^h	tsan ^h	tsan:N	tsa ^h	-	tan ^h

Table 69. Proto Chin initial voiceless coronal affricate *ts

/t/ in the etyma above should be viewed as the reflex of a proto-phoneme *ts, because we have already established an unambiguous proto phoneme *t in Proto Chin (cf. Table 52). Therefore, we may posit a rule of deaffrication to account for the /t/ in Kaang, Khumi and Tedim.

Rule 7. Deaffrication (Kaang, Khumi and Tedim)

*ts > t/\$__

***tʃ^h.** Table 70 shows that Mizo, Hakha and Mara have voiceless coronal fricative /tʃ^h/ in their consonant inventory.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumí	Kaang
019A	east	sua? ^h	tʃ ^h ak ^h	tʃ ^h ua? ^h	tʃ ^h i ^h	si ^h	-
021A	north	sak ^h	-	tʃ ^h ak ^h	-	si ^h	si:p ^h
345	thick	sa ^h	tʃ ^h a? ^h	tʃ ^h a? ^h	tʃa ^h	sa: ^h	sa: ^h
345	thick	sa? ^h	tʃ ^h a? ^h	tʃ ^h a? ^h	tʃa ^h	sa: ^h	sa: ^h
399	bad	sia ^h	tʃ ^h ia:N	tʃ ^h ia:N	tʃ ^h e: ^h	si: ^h	se: ^h

399	bad	sia ^h	tʃ ^h ia ^h	tʃ ^h ia ^h	tʃ ^h e: ^h	si: ^h	se ^h
412	crested	suan ^h	tʃ ^h uaŋ ^h	tʃ ^h uaŋ ^h	tsa ^h	-	sirŋ ^h

Table 70. Proto Chin initial voiceless aspirated coronal affricate *tʃ^h

The proto phoneme is changed to /s/ in Kaang, Khumi and Tedim. /s/ in the etyma above should be viewed as the reflex of a proto-phoneme *tʃ^h, because we have already established an unambiguous proto phoneme *s in Proto Chin (cf. Table 67). Therefore, we may posit a rule of spirantization to account for the /s/ in Kaang, Khumi and Tedim.

Rule 8. Spirantization (Kaang, Khumi and Tedim)

$$*tʃ^h > s/\$ __$$

4.2.6 Lateral approximants

*l. The cognate set in Table 71 unambiguously shows the initial lateral approximant *l in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
119	head	lu: ^h	lu: ^h	lu: ^h	lu: ^h	lu: ^h	lu ^h
131	tongue	le:i ^h	lei ^h	lei ^h	lei ^h	lai ^h	lei ^h
140	navel	la:i ^h	la:i ^h	la:i ^h	le ^h	luŋ ^h	lai ^h
141	heart	luŋ ^h	luŋ ^h	luŋ ^h	lo ^h	luŋ ^h	luŋ ^h
312	dance	la:m ^h	la:m ^h	la:m ^h	la: ^h	la: ^h	lam ^h
325	four	li ^h	li ^h	li ^h	li ^h	li ^h	li ^h
432	warm	lu:m ^h	lu:m ^h	lu:m ^h	lo: ^h	-	-

Table 71. Proto initial Chin lateral approximant *

*l. The data in Table 72 exemplifies the initial voiceless lateral approximant *l in Proto Chin. The proto voiceless lateral approximant *l becomes a voiced lateral approximant /l/ in Tedim.

Rule 9. Voicing (Tedim) $*\underset{o}{l} > l/\$$

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
011	shadow	li:mŋ	limŋ	-	riŋ	-	lipŋ
029	stone	luŋŋ	luŋŋ	luŋŋ	loŋ	long	luŋŋ
041	thorn	liŋŋ	liŋŋ	liŋŋ	leoŋ	liŋŋ	liŋŋ
057B	banana	laŋ	laŋ	laŋ	laŋ	-	-
358	far	laŋ	la:ŋ	la:ŋ	la:ŋ	la:ŋ	-
382	hot	-	lumŋ	-	loŋ	-	lokŋ
413	water leech	li:tŋ	li:tŋ	li:tŋ	liŋ	-	li:tŋ

Table 72. Proto initial Chin voiceless lateral approximant $*\underset{o}{l}$ **4.2.7 Initial consonant clusters**

***kr.** The proto initial consonant cluster, composed of voiceless dorsal stop with medial coronal trill *kr is found in Kaang as in the cognate set shown in Table 73. This sound is doubtful in Khumi for it shares only one cognate word in the current data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
020A	west	-	tʰlaŋŋ	tlakŋ	tlaŋ	-	krakŋ
226	weep	kapŋ	tapŋ	tapŋ	-	-	krapŋ
283	fall	kiaŋ	tla:ŋ	tla:ŋ	tlaŋ	ka:kŋ	kruŋ

Table 73. Proto Chin initial consonant cluster *kr

The proto alveolar trill *r as medial in Kaang is lost in Tedim and the voiceless dorsal stop /k/ is retained.

Rule 10. Deletion (Tedim) $*r > \emptyset/C$

The medial coronal trill *r in Proto Chin is retained in Kaang and becomes the coronal lateral approximant /l/ in Mizo, Hakha, and Mara.

Rule 11. Sporadic (Hakha, Mara and Mizo)

$*r > l /C__$

The coronal lateral approximant /l/ as a medial affects the initial voiceless dorsal stop /k/ causing it to become a voiceless coronal stop /t/ by place assimilation in Mizo, Hakha and Mara.

Rule 12. Assimilation (Hakha, Mara and Mizo)

$*k > t /\$_l$

The consonant cluster /tl/ is merged into a single consonant and becomes voiceless retroflex stop /ʈ/ in Mizo and Hakha.

Rule 13. Merging (Hakha and Mizo)

$*tl > \dot{t}/\$__$

***k^hr.** The cognate set for the initial consonant cluster of the aspirated dorsal stop with a medial coronal trill *k^hr is shown in Table 74.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
003	moon	k ^h a:ŋ	t ^h la:ŋ	t ^h laŋ	t ^h la:t	t ^h la:t	k ^h ra:ŋ
095	wing	k ^h aŋ	t ^h la:ŋ	t ^h la:t	t ^h lo:t	-	p ^h ra:t
121	brain	k ^h uakŋ	t ^h luakŋ	t ^h luakŋ	t ^h li:t	-	k ^h ro:kŋ
165	sweat	k ^h oŋ	t ^h lanŋ	t ^h lanŋ	t ^h lai:t	-	k ^h ranŋ
200	sew	k ^h u:i:t	t ^h ui:t	t ^h it:t	k ^h o:t	k ^h ok:t	k ^h rui:t

Table 74. Proto Chin consonant cluster *k^hr

The process of phonological change is the same as with *kr. Khumi shares only two cognate words out of five, and the sound change is inconsistent. For instance, the

word ‘sew’ has initial /k^h/ and the word ‘moon’ has initial /t^hl/. Therefore this phonological change is obscure in Khumi.

The recovery of the proto segments *k^hr and *kr is consistent with previous studies. According to Benedict (1972) the word ‘sweat’ in Proto Tibetan is *krwiy, ‘sew’ is *krwi(y), and ‘weep’ is *krap. The exact lexical form appears in Kaang for the verb ‘to weep’. By taking into account these instances, Shafer’s claim about the close relationship between Southern Chin languages and Proto Kuki-Chin is confirmed. As Peiros (1998:180) notes:

Shafer has investigated the history of Kuki-Chin group and ... He has shown that some Southern Kuki-Chin languages maintain Proto Kuki-Chin and possibly Proto Sino-Tibetan prefixes.

4.3 Nucleus

This section considers the reconstruction of Proto Chin vowel nucleus, which can be, analyzed under two subsections: monophthong and diphthong nuclei.

4.3.1 Monophthong vowels

*i. The data in Table 75 shows unambiguous evidence for the close unrounded front vowel *i in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
-----	-------	-------	------	-------	------	-------	-------

002	sun	ni ⁺	ni: [†]	ni: ^N	ni [†]	ni: [†]	ni: ^N
089	horn (of buffalo)	ki: [†]	ki: ^N	ki: [†]	ki: ^N	ki: [†]	ki: ^N
164	blood	t ^h i [†]	t ^h i [†]	t ^h i ^N	t ^h i ^N	t ^h i [†]	t ^h i ^N
323	two	ni [†]	ni [†]	ni? [†]	-	ni: [†]	ni [†]
325	four	li [†]	li [†]	li ^N	li [†]	li [†]	li ^N
013	day	ni [†]	ni: [†]	-	-	ni: [†]	ni: ^p [†]
066B	corn	mim [†]	mim [†]	-	mei ^N	-	pim [†]
201	needle	p ^h im [†]	-	t ^h im ^N	-	-	prim ^N
357	straight	-	ŋil [†]	dɪŋ [†]	-	-	dɪŋ [†]
386	heavy	gik [†]	rit [†]	rit [†]	ri: [†]	gi: [†]	ri: [†]

Table 75. Proto Chin close unrounded front vowel *i

Close unrounded front vowel *i in the nucleus of closed syllables becomes close central vowel /i/ in Kaang.

Rule 14. Fronting or Centralization (Kaang)

*i > i/C ___ C

*u. The cognate set in Table 76 shows that Proto Chin unambiguously had the close rounded back vowel *u.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
056	liquor	zu: [†]	zu: [†]	zu: ^N	-	-	ju ^N
080	rat	zu [†]	zu ^N	zu: [†]	zu [†]	ju [†]	ju: [†]
094	bird's nest	bu [†]	bu: [†]	bu [†]	bu [†]	bu [†]	bu: [†]
119	head	lu: [†]	lu: [†]	lu: ^N	lu: [†]	lu: [†]	lu [†]
214B	smoke fire	k ^h u [†]	k ^h u: [†]	k ^h u: [†]	k ^h u [†]	k ^h u [†]	k ^h u: [†]
028	dust	vui [†]	vut [†]	vut [†]	-	-	vət [†]
096	feather	mul [†]	mul [†]	mul [†]	-	mui [†]	mai [†]
213	ashes	vut [†]	-	vut [†]	-	p ^h u: [†]	vət [†]
244	laugh	nui [†]	nui [†]	ni: [†]	-	nu: [†]	nei ^N

Table 76. Proto Chin close rounded back vowel *u

In closed syllables (including those with palatal off glide diphthongs) as exemplified in the last four words of the table, the close rounded back vowel *u changed to close unrounded central vowel /ɯ/ in Kaang.

Rule 15. Fronting or Centralization (Kaang)

*u > ɯ/C ____

*a. The cognate set of Table 77 illustrates that there was an open vowel *a in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
003	moon	kʰa:ŋ	tʰla:ŋ	tʰlaŋ	tʰla:t	tʰla:t	kʰra:ŋ
101	fish	ŋaŋ	ŋa:ŋ	ŋa:t	ŋa:t	ŋa:t	ŋa:ŋ
135	chin	kʰa:ŋ	kʰa:t	kʰa:t	ka:t	-	kʰa:t
326	five	ŋa:t	ŋa:t	ŋa:ŋ	ŋa:t	ŋa:t	ŋa:t
376	bitter	kʰa:ŋ	kʰa:ŋ	kʰa:t	kʰa:t	kʰa:t	kʰa:t
257	wait	ŋakŋ	ŋa:kŋ	ŋa:t	ha:t	-	ŋəŋt
334	many	tamŋ	tamŋ	tamŋ	sa:t	-	dəmŋ
050	mushroom	paŋ	pa:ŋ	pa:t	po:t	pa:t	pa:t
093	bird	va:t	va:ŋ	va:t	vo:t	va:t	va:ŋ
169A	man	pa:t	pa:ŋ	pa:t	po:t	-	pa:t
172	father	paŋ	pa:ŋ	pa:ŋ	po:t	pa:t	pa:i:t

Table 77. Proto Chin open vowel *a

Open vowel *a in Proto Chin changed to open mid central vowel /ə/ in Kaang in closed syllables. (Note that Kaang [pa:i:t] ‘father’ (172), which has a long [a:] nucleus, is not affected.)

Rule 16. Raising or Centralization (Kaang)

*a > ə/C ____ C

Rules 15 and 16 can be summarized as “vowels become central vowels in closed syllables.”

Rule 17. Centralization (Kaang)

*V > V(Central) /C___C

The open vowel *a becomes close mid back vowel /o/ after labial stops and fricatives in Mara, as exemplified in Table 77.

Rule 18. Raising (Mara)

*a > o/C[labial]___

***o**. The cognate set in Table 78 illustrates the close mid rounded back vowel /o/ in Proto Chin. Mara has the most shared cognate words. This sound is suspect in Khumi due to limited correspondence words.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
092	elephant tusk	-	ɪjɔɻ	hoɻ	noɻ	noɻ	-
116	fly	tʰoɻ	tʰo:ɻ	tʰoɻ	tʰoɻ	-	-
142	lungs	-	-	-	tsoɻ	toɻ	topɻ
301	dig	toɻ	tsoɻ	tso?ɻ	tsoɻ	-	toɻ
304	dry something	pʰoɻ	pʰo:ɻ	pʰo:ɻ	zo:ɻ	-	pʰoɻ
380	dry, to be dry	-	roɻ	roɻ	tso:ɻ	-	roŋɻ
394B	blind	toɻ	-	tsoɻ	tsoɻ	-	-

Table 78. Proto Chin mid close back vowel *o

***e**. The cognate set of Proto Chin *e is provided in Table 79. Most languages retain /e/ as their reflex of Proto Chin *e.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
083	bite	petɻ	seɻ	se?ɻ	-	kekɻ	-
152	leg	kʰe:ɻ	ke:ɻ	ke:ɻ	-	-	-
288	give	piaɻ	peɻ	pe:kɻ	piaɻ	pe:kɻ	peɻ
320	pay	pi:aɻ	pe:ɻ	pe:kɻ	piaɻ	peiɻ	kʰrenɻ

Table 79. Proto Chin mid open front vowel *e

In Mara (and in some Tedim cognates), *e is diphthongized and becomes a close unrounded front vowel with open vowel /ia/.

Rule 19. Diphthongization (Mara) $*e > ia/__ \$$

4.3.2 Diphthongs

***ei.** The cognate set in Table 80 exemplifies unambiguously the diphthong *ei in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
005	cloud	me:i+	-	mei˥	mei˧	ma:i˥	mei˥
090	tail	mei˥	mei˥	mei˥	mei˧	mai˧	mei˥
131	tongue	le:i+	lei˧	lei˥	lei˧	lai˧	lei˧
212	fire	mei˥	mei˥	mei˥	mei˧	mai˧	mei˥
416A	I (1s)	kei˥	kei˥	kei˧	kei˧	kai˧	kei˥

Table 80. Proto Chin diphthong *ei

The diphthong *ei became /ai/ in Khumi.

Rule 20. Lowering (Khumi) $*ei > ai /C__ \$$

***ai.** Proto Chin possessed the diphthong *ai as the selected data in Table 81 shows.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
120	face	mai˥	ma:i˥	ma:i˥	me˥	mai˧	ma:i˥
140	navel	la:i+	la:i˧	la:i˥	le˧	-	lai˥
166	pus	nai:i+	nai:i˧	nai:i˥	ne˧	nai:i˧	nai:i˥
359	near	nai:˥	nai:˥	nai?˧	ne˧	nai:˥	-

Table 81. Proto Chin diphthong *ai

The proto phoneme *ai coalesces to /e/ in Mara.

Rule 21. Coalescence (Mara) $*ai > e /C__ \$$

***ui.** Table 82 is the cognate set which shows evidence for the proto phoneme of the diphthong *ui in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
023	water	tu:i:l	tui:l	ti:l	ti:l	tui:l	tui:l
098	egg	tu:i:h	tui:l	ti:l	ti:l	tui:l	tui:h
244	laugh	nui:i:h	nui:l	ni:h	ni:h	nui:l	nei:l

Table 82. Proto Chin diphthong *ui

The proto phoneme *ui is monophthongized to a single close unrounded front vowel in Hakha and Mara.

Rule 22. Fusion (Hakha and Mara)
 $*ui > i / __ \$$

***ua.** The data in Table 83 show evidence for a close rounded back vowel-to-open vowel diphthong *ua in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
007	rain	gua:l	rua:l	rua:l	-	k ^h o:l	k ^h o:l
019A	east	sua:l	-	tj ^h ua?l	tj ^h i:h	-	-
183	village	k ^h ua:l	k ^h ua:l	k ^h ua:l	k ^h i:h	-	k ^h o:l
234	vomit	lua:l	luak:l	luak:l	li:l	lok:l	lok:l
330	nine	kua:l	kua:l	kua:l	ki:l	ko:l	ko:l

Table 83. Proto Chin diphthong *ua

The proto phoneme *ua becomes a close unrounded front vowel /i/ in Mara.

Rule 23. Fusion (Mara)
 $*ua > i/C __ \$$

The same proto phoneme *ua becomes a close mid back rounded vowel /o/ in Kaang and Khumi. Khumi shares comparatively few cognate words in the cognate set.

Rule 24. Coalescence (Kaang and Khumi) $*ua > o /C__ \$$

***oi.** The selection of cognate set in Table 84 illustrates that Proto Chin had the diphthong *oi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
049B	bamboo shoot	toi [†]	toi [†]	toi [†]	-	tui [†]	toi [†]
115	bee	k ^h o:i [†]	k ^h o:i [†]	k ^h o:i [†]	-	k ^h oi [†]	k ^h o:i [†]
342	short length	-	to:i [†]	to:i [†]	-	toi [†]	toi [†]
426	bend	koi [†]	koi [†]	koi [†]	ko [†]	kon [†]	
427	lift	toi [†]	tsoi [†]	tsoi [†]	tso [†]		-

Table 84. Proto Chin diphthong *oi

Although data is scarce, *oi appears to regularly develop into a *o in Mara.

Rule 25. Monophthongization (Mara) $*oi > o /C__ \$$

***au.** Proto Chin had the diphthong *au as shown in Table 85.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
162	fat	t ^h a:u [†]	t ^h au [†]	t ^h a:u [†]	t ^h au [†]	t ^h au [†]	t ^h a:u [†]
341	long	sau [†]	-	sau [†]	-	sau [†]	sau [†]
347	fat (to be)	t ^h au [†]	t ^h a:u [†]	t ^h au [†]	t ^h o: [†]	-	t ^h au [†]
349	wide/breadth	-	zau [†]	kau [†]	ko [†]	kau [†]	kau [†]
440A	yr. bro. of m	nau [†]	nau [†]	nau [†]	-	nau [†]	nau [†]

Table 85. Proto Chin diphthong *au

The proto vowel nucleus *au, which is preserved in Tedim, Mizo, Hakha, Khumi and Kaang, coalescence into /o/ in Mara.

Rule 26. Coalescence (Mara) $*au > o /C__ \$$

(Note that Mara [t^hau-] ‘fat’ (162) irregularly retains the older *au nucleus. This may be due to speakers consciously making distinction between [t^hau-] ‘fat’ and [t^ho;-] ‘to be fat’ (347)).

***ia.** The diphthong /ia/ in the nucleus position is unambiguous as Table 86 illustrates.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
128	cheek	bia:nj-	bianj-	biaŋV	bai-	be-	be:ŋV
242	lick	liak-	liak-	liaʔV	lia-	lek-	lek-
299	grind	-	rial-	rial-	ria-	-	ret:tV
329	eight	giat-	riat-	riat-	re-	-	ret-
344	short height	niam-	ŋiam-	niamV	ŋai-	ŋen-	nem-
399	bad	sia-	tʃʰia-	tʃʰia-	tʃʰe:-	se:-	tʰe-

Table 86. Proto Chin diphthong *ia

The proto phoneme is monophthongized to close mid unrounded front vowel /e/ in Khumi and Kaang. Mara shows partial evidence for this change.

Rule 27. Monophthongization (Kaang and Khumi)

*ia > e /C___\$

4.4 Codas

The analysis of codas is divided according to types of final consonant such as nasals, trills, stops and lateral approximants.

4.4.1 Nasal codas

***m.** The cognate set in Table 87 displays the Proto Chin coda *m.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
122	hair	sam-	sam-	samV	sa-	sam-	sam-
184	road/path	lam-	-	lamV	la:-	lan-	lamV
238	yawn	ha:mV	hamV	hamV	ha-	ha:n-	ha:m-

312	dance	la:m [†]	la:m [†]	la:m [¶]	la: [†]	lan [¶]	lam [¶]
207	mortar	sum [¶]	sum [¶]	sum [¶]	so [†]	sun [†]	sum [¶]
302	bury corpse	p ^h u:m [†]	p ^h u:m [¶]	p ^h um [†]	bo: [†]	p ^h un [†]	bui [¶]
324	three	t ^h um [†]	t ^h um [¶]	t ^h um [¶]	t ^h o [†]	t ^h un [†]	t ^h um [¶]

Table 87. Proto Chin coda *m

The labial nasal as coda becomes a coronal nasal in Khumi.

Rule 28. Alveolarization (Khumi)

*m >n /C__\$

The nasal coda is dropped out of Mara.

Rule 29. Deletion (Mara)

*m > Ø /C__\$

It is worth noted that the *m coda, which is preserved in Tedim, Mizo, Hakha and Kaang becomes an coronal *n in Khumi. Coronal nasal final syllables have tended to move toward losing their nasal finals with the vowel becoming nasalized as evidenced by Zotung, a Southern Chin language. For instance the word ‘forest’ in Zotung is /rã/ and ‘three’ is /t^hū/ (Kaw Kung p.c. April 1, 2001), (cf. Tedim /gam/ ‘forest’, /t^hum/ ‘three’). This is true also of Burmese (cf. Mann 1998:38). Mara has lost all trace of the original nasal coda, and has only open syllables with oral vowels.

***n.** The coronal nasal coda *n is also posited as a proto phoneme, but Mara drops it based on the cognate set shown in Table 88.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	vazn [¶]	vazn [¶]	va:n [¶]	va: [†]	va:n [¶]	-
012	night	zan [¶]	zan [¶]	zan [¶]	ze [†]	-	t ^h an [¶]
057A	banana	ban [¶]	ban [¶]	ban [†]	ba: [†]	-	pan [†]
143	liver	sin [¶]	t ^h in [†]	t ^h in [¶]	t ^h it [†]	t ^h in [†]	sin [¶]
150B	fingernail	tin [¶]	tin [¶]	tin [¶]	te [†]	sin [†]	tin [¶]
409	ripe	min [†]	min [†]	min [¶]	ma: [†]	min [¶]	min [¶]
346	thin	pa [¶]	pan [¶]	pan [¶]	pa: [†]	pa: [†]	pan [¶]

Table 88. Proto Chin coda *n

Rule 30. Deletion (Mara) $*n > \emptyset / C __ \$$

***ŋ.** We may posit a dorsal nasal coda *ŋ for Proto Chin based on the cognate set in Table 89. Predictably, the coda does not appear in Mara.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
263	dream	maŋʌ	maŋʌ	maŋʌ	maːʌ	maŋʌ	maŋʌ
029	stone	luŋʌ	luŋʌ	luŋʌ	loːʌ	loŋʌ	luŋʌ
141	heart	luŋʌ	luŋʌ	luŋʌ	loːʌ	luŋʌ	luŋʌ
038A	tree	tʰiŋʌ	tʰiŋʌ	tʰiŋʌ	tʰoːʌ	tʰiŋʌ	tʰiŋʌ
211	firewood	tʰiŋʌ	tʰiŋʌ	tʰiŋʌ	tʰeiːʌ	tʰiŋʌ	tʰiŋʌ
076	monkey	zoːŋʌ	zoːŋʌ	zoːŋʌ	zauː	-	joːŋʌ
417A	thou (2s)	naŋʌ	naŋʌ	naŋʌ	naː	naŋʌ	naŋʌ

Table 89. Proto Chin coda *ŋ

Rule 31. Deletion (Mara) $*ŋ > \emptyset / C __ \$$

Rules 29, 30 and 31 can be summarized as Rule 32 shows: Mara deletes all final nasal consonants.

Rule 32. Deletion (Mara) $*N > \emptyset / __ \$$

4.4.2 Trill coda

***r.** Based on the evidence of Tedim, Mizo and Hakha in Table 90 we may reconstruct an coronal trill *r as Proto Chin coda.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
034	iron	tʰikʌ	tʰirʌ	tʰiarʌ	tʰiaʌ	-	tʰiʌ
099	chicken	akːʌ	aːrʌ	aːrʌ	oːʌ	aːʌ	aːrʌ
127	nose	naːkʌ	naːrʌ	naːrʌ	naː	naː	naː
318	sell	zuakːʌ	zuarʌ	zuarʌ	ziaː	joːʌ	joiː

368	new	t ^h a:k [†]	t ^h ar [†]	t ^h ar [¶]	t ^h ia [†]	t ^h a [†]	t ^h ai [¶]
375	sour	t ^h uk [†]	t ^h u:r [†]	t ^h or [¶]	t ^h u [†]	t ^h o:k [†]	t ^h ui [†]

Table 90. Proto Chin coda *r

Mizo and Hakha keep the proto phoneme. The other languages have gone through various phonological changes with respect to *r.

The coda *r has a voiceless dorsal stop /k/ reflex in Tedim. We may presume that the coda *r underwent the same developments that change the initial *r > g (Rules 3, 4).

The voiced dorsal stop /g/ then becomes a voiceless dorsal stop /k/ through final devoicing.

Rule 33. Devoicing (Tedim)

*g > k/___\$

In Mara, Kaang and Khumi, Proto Chin coda *r is lost.

Rule 34. Deletion (Kaang, Khumi and Mara)

*r > Ø/___\$

4.4.3 Stop codas

*p. Table 91 shows that Proto Chin possessed the voiceless labial stop *p coda. The coda is lost in Mara and Khumi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
142	lungs	tua:p [†]	tsuap [¶]	tsuap [†]	tso [¶]	to: [†]	top [†]
226	weep	kap [†]	tap [†]	tap [†]	-	ga [†]	krap [†]
241	suck	top [†]	hi:p [†]	dop [†]	so [†]	jo: [†]	jom [†]
313	shoot	ka:p [†]	ka:p [¶]	ka [†]	ka [†]	ka: [†]	ka:p [†]

Table 91. Proto Chin coda *p

Rule 35. Deletion (Mara and Khumi)

*p > Ø/___\$

*t. The cognate set in Table 92 shows that Proto Chin had the voiceless coronal stop *t as one of the codas. Mara and Khumi lost this coda. This sound change rule is suspect in Khumi due to very few cognates in the current data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
145	hand	k ^h ut [↓]	kut [↓]	kut [↑]	ku [↓]	-	kut [↑]
277	enter	lut [↓]	lut [↓]	lut [↑]	-	-	lut [↓]
329	eight	giat [↓]	riat [↓]	riat [↓]	re [↓]	-	ret [↓]
413	water leech	li:t [↓]	li:t [↓]	li:t [↑]	li [↑]	-	li:t [↓]
414	land leech	vɔ:t [↓]	vat [↓]	vut [↓]	va [↓]	va [↑]	vət [↑]

Table 92. Proto Chin coda *t

Rule 36. Deletion (Mara and Khumi)

*t > Ø/ ____ \$

*k. The cognate set in Table 93 illustrates that there was a voiceless dorsal stop *k in Proto Chin as coda but lost in Mara.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
121	brain	k ^h uak [↓]	t ^h luak [↓]	t ^h luak [↓]	t ^h li [↑]	-	k ^h ro:k [↓]
154	knee	k ^h uk [↓]	k ^h u:p [↓]	k ^h uk [↓]	k ^h u [↑]	k ^h u [↑]	k ^h u:k [↓]
266	itch	t ^h ak [↓]	t ^h ak [↓]	t ^h ak [↓]	t ^h a [↑]	t ^h a:k [↓]	t ^h ak [↓]
327	six	guk [↓]	ruk [↓]	ruk [↓]	ru: [↑]	ruk [↑]	ruk [↓]
351	deep	t ^h u:k [↓]	t ^h u:k [↓]	t ^h uk [↓]	t ^h u [↑]	t ^h o:k [↑]	t ^h uk [↓]

Table 93. Proto Chin coda *k

Rule 37. Deletion (Mara)

*k > Ø/ ____ \$

(Note that the coda *k is irregularly lost in Khumi [k^hu[↑]] ‘knee’ (154))

Rules 35, 36 and 37 can be summarized as Rule 38; any stop coda is lost in Mara.

Rule 38. Deletion (Mara)

*S > Ø/ ____ \$

4.4.4 Lateral approximant coda

It is unproblematic to posit the lateral approximant *l at the proto Chin level based on the cognate sets in Table 94.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
132	saliva	til ^h	tsil ^l	tsi:lN	tsi ^l	-	ti ^l
144	intestines	gil ^h	ril ^l	rilN	ri ^l	gi ^l	ri ^l
253	forget	ŋil ^h	ŋil ^l	p ^h il ^l	-	-	ni?l
292	wash	sil ^l	sil ^l	tɔ:l ^h	si:l ^h	si ^l	-
096	feather	mul ^l	m ^o ul ^l	m ^o ul ^h	m ^o i ^l	mui ^l	m ^o ui ^l
102	snake	gul ^h	ru:l ^l	rulN	ri ^l	gi ^l	ru:iN
136	beard	mul ^l	m ^o ul ^l	m ^o ulN	m ^o i ^l	mui ^l	m ^o ei ^l

Table 94. Proto Chin coda *l

The proto phoneme of lateral approximant *l as coda is lost in Mara, Khumi and Kaang.

Rule 39. Deletion (Mara, Kaang and Khumi)

*l > Ø / ____ \$

4.5 Symmetrical considerations

In this section, the consonant and vowel inventories derived in this reconstruction are be analyzed as to whether they are symmetrically distributed or not. This step is important and necessary for a completed phonological reconstruction. The completed phonological reconstruction is expected to be more or less symmetrical because “...crosslinguistically, phonological systems tend toward symmetry” (Hock and Joseph 1996:151).

4.5.1 Consonant inventory

Table 96 is the consonant inventory of Proto Chin based on the reconstruction.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	/ʔ/
Voiceless aspirated stops	*p ^h	*t ^h	*k ^h	
Voiced stops	*b	*d		
Voiced nasals	*m	*n	*ŋ	
Voiceless nasals	*m̥	*n̥	/ŋ̥/	
Voiced trill		*r		
Voiceless trill		*r̥		
Voiceless alveolar affricate		*ts		
Voiceless aspirated affricate		*tʃ ^h		
Voiceless fricatives	/f/	*s		*h
Voiced fricatives	*v	*z		
Voiced lateral approximant		*l		
Voiceless lateral approximant		*l̥		

Table 95. Non-symmetrical consonant inventory of Proto Chin

The reconstructed consonant inventory at this point has some asymmetries. One of these apparent is the lack of a reconstructable voiced dorsal stop *g, as noted by Ono (1965). Secondly, the voiceless labial fricative /f/ is potentially a proto phoneme as the data in Table 64 of section 4.2.4 suggests though data are limited. Thirdly, due to limited data, the voiceless dorsal nasal's status is also doubtful as shown in Table 61 in section 4.2.2. Therefore the consonant inventory of the reconstruction should be reconsidered.

Cross-linguistic tendencies require that we seek a symmetrical consonant inventory which a reconstruction without *g does not satisfy. Proto Chin *g is not readily reconstructable from the data, but it is possible to trace it considering sound changes in Chin languages. In Tedim, /v/ and /g/ appear in free variation: for instance, Tedim [vui˥]~[gui˥] ‘millet plants sprout’; [vui˧]~[gui˧] ‘carry the corpse to the grave, bury.’ According to Bhasakararao (1996:45), Tedim [guai˧] ‘wither’ or ‘shrive’ corresponds to Mizo [vuai˧] but in fact, both pronunciations are possible in Tedim.

Although the initial reconstruction of a proto phoneme *v appeared unambiguous, the picture becomes more complicated if we consider cognate forms from Thawr,²² a Chin language of central Chin State. Thawr has the voiced dorsal fricative /γ/ which corresponds to the voiced labial fricative /v/ in other Chin languages as shown in Table 96.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang	Thawr
001	sky	va:n˥	va:n˥	va:n˥	va˧	va:n˥	-	yo:n˥
024	river	-	-	va˥	va˧	va˧	-	yo˥
074	bear	vom˧	vom˧	vom˥	vau˧	von˧	vom˥	yom˥
085	pig	vo:k˧	vo:k˧	vo:k˧	vo˧	oi:k˧	vok˧	yok˧
091	elephant	-	-	vui˥	-	-	vui˥	yui˥
093	bird	va˧	va˥	va:˧	vo˧	va˧	va:˧	yo˥
176	husband	-	-	va:˥	va˧	va˧	va˧	yo˥
275	crawl	vak˥	vak˥	-	-	vak˧	-	yok˧

Table 96. Proto Chin voiced velar stop *g

From this data, it can be conjectured that a Proto Chin *g merged with a voiceless labial fricative *v (which is itself in free variation with [w]). This was most likely a two-stage process. The first step was spirantization, the voiced dorsal stop *g becoming a voiced dorsal fricative /γ/ (Rule 40).

Rule 40. Spirantization (Hakha, Mara, Mizo, Kaang, Khumi, Tedim, Thawr)
 $*g > \gamma / \$ __$

The voiced dorsal fricative /γ/ then became a voiced labiovelar approximant /w/, in free variation with the voiced labiodental fricative /v/.

Rule 41. Labialization (Hakha, Mara, Mizo, Kaang, Khumi and Tedim)
 $\gamma > w \sim v / \$ __$

²² Thawr is a language spoken only in Lamtuk and Ruavan village, Central Chin State; and composed of 110 families and 700-1000 estimated population. (Personal communication with Mang Hmun, a Thawr speaker from Lamtuk village on April 20, 2001.)

Rules 3 and 4 prove the process how dorsal stop /g/ in Tedim is the reflex of the proto coronal trill *r and rule 40 and 41 prove the process how voiced labial fricative /v/ in all language under study is the reflex of the proto dorsal stop *g. Both processes have /y/ as an intermediate step. There is no evident that *g and *r are not in a merger. Therefore it requires how to keep the two sound change processes separate. The possible hypothesis is to prove that the occurrence of the two sound change rules must have been at different time. There are two possibilities as provided in Table 97.

	Proto Chin	Stage I	Stage II	Stage III	Present
Scenario I	*g	>y	>w ~ v	>v	>v (All)
	*r		>y	>g	>g (Tedim)
Scenario II	*g		>y	>w ~ v	>v (All)
	*r	>y	>g		>g (Tedim)

Table 97. Sound change process for *r and *g

The Scenario I is more likely because Scenario II requires the sound change *g > y and *y > g at the same time. It may also be observed that the sound change process *r > y > g/\$__ is more recent than the *g > y > w ~ v /\$__, based on Luce's (1959) transcription on the Chin Hills linguistic tour in 1954, in which the present sound [g] is transcribed as [y] consistently.

The second asymmetry is the uncertain status of *f. In section 4.2.4, this phoneme with its possible sound correspondence was briefly discussed based on limited cognate sets. Addition to the current data, Bhaskararao (1996) provides some consistent sound correspondences between Tedim and Mizo (See appendix G). The present hypothesis is that the proto phoneme *s still preserved in Mara and Khumi, has reflexes of /f/ in Hakha and Mizo, /t/ in Tedim and Kaang. The author is not confident of this due to the absence of a voiced counterpart *v, the existence of the

/ts/ and /t/ in the set of reflexes of the purative proto phoneme *f and the limited data presently available. More investigation is required on this point.

The third asymmetry concerns the voiceless dorsal nasal *ŋ. The labial and coronal nasals have their respective voiceless counterparts in Proto Chin (cf. Table 60 and 61). Taking into account the cross-linguistic tendencies of symmetry, it is possible to posit the voiceless velar nasal as a proto phoneme. Based on four additional Mizo words from Bhaskararao (1996:127) shown in Table 98, the voiceless velar nasal in Mizo consistently corresponds with voiced dorsal nasal in Tedim.

No.	Gloss	Tedim	Mizo
1	wild boar	ŋalʌ	ŋal
2	put down	ŋakʌ	ŋat
3	neck	ŋoŋʌ	ŋoŋ
4	fast	ŋolʌ	ŋei

Table 98. Tedim /ŋ/ and Mizo /ŋ/ of Bhaskararao (1996)

The data in Table 98 strengthen the hypothesis that the *ŋ should be reconstructed for languages in northern Chin State; but the status of *ŋ as a proto phoneme of Southern Chin languages is still tenuous.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
101	fish	ŋaʌ	ŋa:ŋʌ	ŋa:ʌ	ŋa:ʌ	ŋa:ʌ	ŋa:ʌ
253	forget	ŋilʌ	ŋilʌ	-	-	-	ni?ŋʌ
257	wait	ŋakʌ	ŋa:kʌ	ŋa:ʌ	-	-	ŋaŋʌ

Table 99. Proto Chin voiceless velar nasal *ŋ

Therefore the voiceless feature becomes voiced in Tedim.

Rule 42. Voicing (Tedim)

$$*ŋ > n/\$/__$$

Rules 1, 2, 9 and 42 can be summarized that the initial voiceless nasal series *N̥ and voiceless liquids in the proto language became voiced in Tedim.

Rule 43. Voicing (Tedim)

*C_o[Sonorants] > C/\$____

Based on symmetrical reconsiderations, Table 100 shows the distribution of phonemes in the Proto Chin consonant inventory.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[?]
Voiced aspirated stops	*p ^h	*t ^h	*k ^h	
Voiced stops	*b	*d	*g	
Voiced nasals	*m	*n	*ŋ	
Voiceless nasals	*m _o	*n _o	*ŋ _o	
Voiced trill		*r		
Voiceless trill		*r _o		
Voiceless alveolar affricate		*ts		
Voiceless aspirated alveolar affricate		*tʃ ^h		
Voiceless fricatives		*s		*h
Voiced fricatives		*z		
Voiced lateral approximant		*l		
Voiceless lateral approximant		*l _o		

Table 100. Revised Proto Chin consonant inventory

It is observed that the proto Kuki-Chin initial consonant reconstruction of Ono (1965) and the proto reconstruction of Chin in this thesis are almost identical. Both have the voiceless and voiced series of stop, nasal, trill and lateral approximant. There are also a series of voiceless aspirated stop. The voiceless and voiced fricatives appear in alveolar point of articulation. Glottal stop and fricative appear in both reconstruction however, present reconstruction considers the glottal stop as a phonetic segment. The voiceless and voiceless aspirated palatals, *c and *c^h in Ono is the same with voiceless and voiceless aspirated affricates, *ts and *tʃ^h in current thesis.

4.5.2 Vowel inventory

Table 101 is the vowel inventory based on the phonological reconstruction. Five cardinal vowels are symmetrically distributed in the inventory chart from which the modern day reflexes are derived.

	Front	Back
Close	*i	*u
Close mid	*e	*o
Open	*a	

Table 101. Proto Chin vowel inventory

4.6 Tones

The consideration of tone is the most complicated part of this analysis. Luce (1985) comments that the tones or rather the Tone-Patterns are the binding factor which joins Chin languages together from north to south, and from east to west. On the basis of 17 varieties of Chin languages Luce identifies six common tones with each tone number's (shown superscripted) associated tonal description: ¹High Level, ²High Falling, ³Mid Rising or Level, ⁴Mid Falling, ⁵Low Level and ⁶Low Falling (but some dialects appear to distinguish only two or three tones; Low Level and Low Falling are rare). From these he identifies five tone patterns. His provisional conclusion of Chin Tone Pattern (1985:83) says:

- (i) Three tones, the origin of Tone-Patterns I, II, and III, were once the norm in Chin languages.
- (ii) Each of the three tones affected open, nasal and -l/-r finals.
- (iii) Tone-Pattern I did not admit a final stop- with the exception of certain -k/-r finals in the northernmost dialects, where the older final was the -r, probably uvular, and not the -k.
- (iv) Where Tone Patterns II and III now divide themselves into *a* and *b*, the division is not very ancient nor widespread in Chin, but depended

on the original presence or absence of a final stop, stopped finals being confined to II_b and III_b.

- (v) The distinction between II_b and III_b depended on whether the old medial vowel before the stop was short or long.
- (vi) The presence of a large number of apparently open finals in III_b (e.g. ‘father’, ‘mother’, ‘children’, ‘fish’, ‘flesh’, ‘bird’, ‘breast’, ‘horns’) points to the loss (as an Archiac Chinese) or [SIC] a number of sonant plosives (especially -g) after the long vowel.

Luce’s conclusions are summarized in Table 102.

	Smooth syllable			Stopped syllable
	Open	Nasal	Liquid	
Tone Pattern I	yes	yes	yes	no
Tone Pattern IIa	yes	yes	yes	no
Tone Pattern IIb	no	no	no	yes (short medial vowel)
Tone Pattern IIIa	yes	yes	yes	no
Tone Pattern IIIb	no	no	no	yes (long medial vowel)

Table 102. Co-occurrence of Luce’s Chin Tone Patterns and syllable types

Luce’s data includes the selected languages used in this thesis except Kaang. There are two Khumi varieties, Ahriang and Awa. (The Khumi dialect used in this thesis is Paletwa Khumi.) Luce shows 46 examples of words for Tone Pattern I, 23 words for Tone Pattern IIa, 19 words for Tone Pattern IIb, 26 words for Tone Pattern IIIa and 26 words for Tone Pattern IIIb. The present tonal analysis is based on the words that are found in Luce’s data within each pattern. The correspondence of the tone numbers in this data and Luce’s data is shown in Table 103. The number after the decimal point refers to a subtype of Luce’s tonal categories based on the current data.

Luce No.	Luce tone	Present No.	Present symbol	Present tone
----------	-----------	-------------	----------------	--------------

1	High Level	1	↑	High Level
2	High falling	2	↘	High Falling
		2.5	↙	Falling
3	Mid Rising/Level	3	↗	Mid Rising
		3.2	↗	Low rising
		3.5	↔	Level
		3.8	↗	Rising
4	Mid falling	4	↓	Mid Falling
5	Low Level	5	↓	Low Level
6	Low falling	-	-	-

Table 103. Tone number of Luce data and present data

Tone-Pattern I occurs with smooth syllables²³ and does not in general allow stopped syllables. Tone I occurs in stopped syllables with final /k/ in Tedim but these are a reflex of the *r.

Table 104 shows the 25 words from the current data, which correspond, to Luce's examples. Luce says Tone-Pattern I is high level tone in Tedim and Mizo, low level tone in Hakha, low falling tone in Mara, high falling tone in Ahriang Khumi, high falling and mid falling tone in Awa Khumi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang							
037	forest	gam↑	3.5	ram↑	1	ram↘	2.5	ra↑	3.5	-	-	-	-	-
048	bamboo	gua↑	3.5	rua↑	3.5	rua↘	2.5	ra↑	3.5	gu:↑	3	ro:↘	2.5	
053	sugarcane	tu↑	3.5	fu:↑	1	fu:↘	2.5	su↑	3.5	sik↑	3.5	tu↑	3.5	
059	mango	ha:i↑	3.5	hai:↑	1	hai:↘	2.5	hai↑	3.5	-	-	hai:↘	2.5	
074	bear	vom↑	3.5	vom↑	1	vom↘	2.5	vau↑	5	von↑	5	vom↑	2	
076	monkey	zo:ŋ↑	3.5	zo:ŋ↑	1	zo:ŋ↘	2.5	zau↑	5	-	-	jo:ŋ↑	2	
098	egg	tui:↑	3.5	tui:↑	1	tui:↑	1	ti:↑	5	tui:↑	3.8	tui:↑	3.5	
099	chicken	ak↑	3.5	a:r↑	1	a:r↘	2	o:↑	3.5	a:↑	3.8	a:↘	2.5	
102	snake	gul↑	3.5	ru:l↑	3	rul↘	2.5	ri↑	5	gi↑	1	ru:i↘	2.5	
119	head	lu:↑	3.5	lu:↑	1	lu:↘	2.5	lu:↑	3.5	lu:↑	3.8	lu↑	3.5	
131	tongue	le:i↑	3.5	lei↑	1	lei↘	2.5	lei↑	5	lai↑	3.5	lei↑	3.5	
132	saliva	til↑	3.5	tsil↑	1	tsi:↘	2.5	tsi:↑	5	-	-	ti↑	3.5	

²³ I am using Luce's terminology here, smooth syllable means non stopped syllables (i.e. open syllables and those with nasal and liquid finals)

133	tooth	ha: ¹	3.5	ha: ¹	1	ha: ¹	2.5	ha: ¹	5	ha: ¹	5	-	-
140	navel	la:i ¹	3.5	la:i ¹	3.8	la:i ¹	2.5	le ¹	3.5	lu ¹	1	lai ¹	2.5
141	heart	lu ¹	3.5	lu ¹	1	lu ¹	3.5	lo ¹	1	lu ¹	1	lu ¹	3.5
144	intestines	gi ¹	3.5	ri ¹	1	ri ¹	2.5	ri ¹	5	gi ¹	1	ri ¹	5
182	name	min ¹	3.5	mi ¹	1	min ¹	2.5	mo ¹	3.5	min ¹	3.8	mi ¹	2
312	dance	la:m ¹	3.5	la:m ¹	3.5	la:m ¹	2.5	la: ¹	3.5	lan ¹	3.8	lam ¹	2
318	sell	zuak ¹	3.5	zuar ¹	1	zuar ¹	1	zia ¹	5	jo: ¹	3.8	joi ¹	2
324	three	t ^h um ¹	3.5	t ^h um ¹	3.8	t ^h um ¹	2.5	t ^h o ¹	3.5	t ^h un ¹	3.5	t ^h um ¹	2.5
325	four	li ¹	3.5	li ¹	3.5	li ¹	2.5	li ¹	3.5	li ¹	3.5	li ¹	5
326	five	ŋa ¹	3.5	ŋa: ¹	3.5	ŋa: ¹	2.5	ŋa ¹	3.5	ŋar ¹	3.5	ŋa ¹	3.5
343	tall	səŋ ¹	3.5	səŋ ¹	1	səŋ ¹	2.5	sa ¹	3.5	səŋ ¹	3.8	-	-
347	fat	t ^h au ¹	3.5	t ^h a:u ¹	1	t ^h au ¹	2.5	t ^h o: ¹	5	t ^h o ¹	3	t ^h au ¹	2
364	red	san ¹	3.5	sen ¹	1	sen ¹	2.5	sai ¹	3.5	t ^h in ¹	3	sen ¹	5

Table 104. Examples of Tone-Pattern I

Based on Luce's Pattern I as the proto form, the tonal correspondence within the languages can be seen in Table 105.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	High Level	High Level	Low Level	Low Falling	High Falling/ Mid Falling High Falling	-
Present data	Mid	High Level	Falling	Level Low Level	Rising	Level Falling

Table 105. Luce's tone and the tonal equivalents based
on the current data in Tone-Pattern I

Tone-Pattern IIa occurs in smooth syllables, and not in stopped syllables. According to Luce, the structure of Tone-Pattern IIa is mid falling in Tedim and Mizo, high falling in Hakha, low level in Mara and Ahriang Khumi, and mid falling in Awa Khumi.

The present data has 13 words from Luce's examples as shown in Table 106.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
-----	-------	-------	------	-------	------	-------	-------

003	moon	k ^h a;∅	2.5	t ^h la;∅	2.5	t ^h la∅	2.5	t ^h la↓	3.5	t ^h la:↑	3.5	k ^h ra:∅	3.8
012	night	za:n∅	2.5	za:n∅	2.5	zan∅	2.5	ze↓	5	-	-	t ^h an↑	3
018	year	kum∅	2.5	kum∅	2.5	kum∅	2.5	ko↓	5	-	-	kum∅	3.8
095	wing	k ^h a∅	2.5	t ^h la;∅	2.5	t ^h la:↑	1	t ^h lo↓	3.5	-	-	p ^h ra:↑	3
123	forehead	tal∅	2.5	tsal∅	2.5	tsal∅	2.5	-	-	-	-	tai↑	3.5
127	nose	na:k∅	2.5	nar↑	1	na:r∅	2.5	ña↓	5	na↑	1	ña↑	3.5
143	liver	sin∅	2.5	t ^h in↓	5	t ^h in∅	2.5	t ^h i↓	3.5	t ^h in↑	3.5	sin↑	3
146	elbow	kiu∅	2.5	kiu∅	2.5	kiu∅	2.5	k ^h i↓	3.5	k ^h u↑	1	ki:∅	3.8
152	leg	k ^h e;∅	2.5	ke:N	4	ke:∅	2.5	-	-	k ^h o;k↑	3.8	k ^h o:∅	3.8
168	urine	zun∅	2.5	zun∅	2.5	zun∅	2.5	zo↓	3.5	jun↓	5	jup↑	3.5
224	see	mu∅	2.5	mu:↓	5	mu?↑	1	mo↓	3.5	-	-	mu↑	1
250	sing	sa∅	2.5	-	-	sa↑	1	sa↓	3.5	sak↓	3.5	-	-
332	hundred	za:∅	2.5	za:∅	2.5	za↓	3.5	za↓	3.5	-	-	-	-

Table 106. Examples of Tone-Pattern IIa

The tonal correspondence of Chin languages is provided based on Luce's Pattern IIa as the proto form in Table 107.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Falling	Mid Falling	High Falling	Low Level	Low Level/ Mid Falling	-
Present data	Falling	Falling	Falling	Mid	Mid?	Mid, Rising

Table 107. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIa

The Tone-Pattern IIb is restricted to stopped syllables with short medial vowel. The present data has 15 out of 19 the words, which Luce uses as examples, as shown in Table 108.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang	
-----	-------	-------	------	-------	------	-------	-------	--

007	rain	gua↓	5	rua?↓	5	rua?↑	1	-		-	-	-	-
085	pig	vo:k↓	5	vok↓	5	vok↓	5	vo↓	5	o:k↑	3	vok↑	1
125	eye	mit↓	5	mit↓	5	mit↓	5	-	-	mek↓	5	mik↑	1
145	hand	k ^h ut↓	5	kut↓	5	kut↑	1	ku↓	5	-	-	kut↑	1
147	armpit	zak↓	5	zak↓	5	zak↓	5	-		jak↑	1	-	-
159	bone	gu↓	5	ru↓	5	ru↓	5	ru↑	3.5	hu↓	5	ru↓	5
226	weep	kap↓	5	tap↓	5	tap↓	5	-	-	ga↓	3.5	krap↑	1
261A	sleep	i↓	5	-	-	i↑	3.5	-	-	i↑	1	ip↑	1
266	itch	t ^h ak↓	5	t ^h ak↓	5	t ^h ak↓	5	t ^h a↓	3.5	t ^h ak↑	3.8	t ^h ak↑	1
322	one person	k ^h at↓	5	k ^h at↓	5	k ^h at↓	5	k ^h a↓	3.5	-	-	-	-
323	two	ni↓	5	ni↓	5	ni?↓	5	ne↓	5	mi:↑	3	ni↓	5
327	six	guk↓	5	ruk↓	5	ruk↓	5	ru:↑	3.5	ruk↑	1	ruk↓	5
328B	seven	gi↓	5	ri↓	5	ri?↑	1	ri↓	3.5	ri?↑	1	ri↓	5
345	thick	sa↓	5	t ^h a?↓	5	t ^h a?↑	1	t ^h a↓	5	t ^h a↑	3	t ^h a↓	1
410	rice seedling	-	5	-	3.5	tsaq↓	2.5	tsa↓	3.5	sap↓	3.5	tan↑	1

Table 108. Examples of Tone-Pattern IIb

The structure of Pattern IIb for Luce is mid falling in Tedim and Mizo, high falling in Hakha, low level in Mara and low level in Ahriang Khumi and mid rising in Awa Khumi. The tone correspondence of Chin languages based on Tone-Pattern IIb can be viewed in Table 109.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Falling	Mid Falling	High Falling	Low Level	Low Level/ Mid Rising	-
Present data	Low Level	Low Level	High Level Low Level	Mid Low Level	High Level Mid Rising	High Level Low Level

Table 109. Luce's tone and the tonal equivalents based on
the current data in Tone-Pattern IIb

Tone-Pattern IIIa occurs at smooth syllables. The voiceless velar stop appears as final, as the reflect of *r. The present data has 17 out of the 26 words which Luce uses as examples, as Table 110 shows.

No.	Gloss	Tedim	Mizo	Hakha	Mara		Khumi		Kaang				
023	water	tu:i/	3.8	tui/	3.8	ti: ¹ /	3.8	ti: ¹	2	tui/	3	tui/ ¹	2.5
026	earth/soil	lei/	3.8	lei/	3	lei/ ¹	2.5	lei/ ¹	2.5	-	-	lei: ¹	3.5
029	stone	luŋ/	3.8	luŋ/	3.8	luŋ/ ¹	2.5	lo: ¹	1	nloŋ: ¹	1	luŋ: ¹	5
038A	tree	siŋ/	3.8	t ^h inj/	3.8	t ^h inj: ¹	3.5	t ^h o: ¹	1	t ^h inj: ¹	1	siŋ/ ¹	2.5
081	dog	ui/	3.8	ui/	3.8	ui/ ¹	2.5	i: ¹	2	ui: ¹	3	ui/ ¹	2.5
090	tail	mei/	3.8	mei/	3.8	mei/ ¹	2	mei: ¹	3.5	mai: ¹	1	mei/ ¹	4
096	feather	mul/	3.8	mul/	3.8	mul: ¹	3.5	mji: ¹	2	mui: ¹	3.8	mui: ¹	5
120	face	mai/	3.8	m̥ai:/	3.8	m̥ai: ¹	2.5	m̥e: ¹	2	m̥ai: ¹	1	m̥ai: ¹	4
122	hair	sam/	3.8	sam/	3.8	sam/ ¹	2.5	sa: ¹	3.5	sa:n: ¹	3	sam: ¹	5
150B	fingernail	tin/	3.8	tin/	3.8	tin/ ¹	2.5	te: ¹	1	sin: ¹	3.5	tin: ¹	5
164	blood	t ^h i/	3.8	t ^h i: ¹	1	t ^h i: ¹	2.5	t ^h i: ¹	2	t ^h i: ¹	3.8	s ^h i/ ¹	4
184	road/path	lam/	3.8	-	-	lam/ ¹	2.5	la: ¹	1	lan: ¹	3.5	lam/ ¹	2.5
186	house	in/	3.8	in/	3.8	in/ ¹	2.5	o: ¹	1	in/	3.8	im/ ¹	2.5
212	fire	mei/	3.8	mei/	3.8	mei/ ¹	2.5	mei: ¹	1	m̥ai: ¹	3	mei/ ¹	2.5
317	buy	lei/	3.8	lei/	3.8	-	-	lei: ¹	1	-	-	lei: ¹	3.5
330	nine	kua/	3.8	kua/	3.8	kua/ ¹	2.5	ki: ¹	2	ko: ¹	1	ko/ ¹	2.5
375	sour	t ^h uk/	3.8	t ^h ur:/	3.8	t ^h or/ ¹	2.5	t ^h u: ¹	1	t ^h o:k/	3.8	t ^h ui/	3.8

Table 110. Examples of Tone-Pattern IIIa

The Tone-Pattern IIIa for Luce is mid rising in Tedim and Mizo, low level in Hakha, high level in Mara and Ahriang Khumi, and high falling in Awa Khumi. The tone correspondence of Chin languages in Pattern IIIa is shown in Table 111.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Rising	Mid Rising	Low Level	High Level	High Level/ High Level, High Falling	-
Present data	Rising	Rising	Falling	High Level High Falling	Mid Rising Rising High Level	Falling Low Level

Table 111. Luce's tone and the tonal equivalents based on

the current data in Tone-Pattern IIIa

Tone-Pattern IIIb occurs with stopped syllables, restricted to a long medial vowel before the stop. Luce (1985:83) suggests that many of the open syllables in the Tone-

Pattern IIIb category are the result of the loss of final stops, especially –g. The present data has 16 out of the 26 words which Luce uses as examples, as shown in Table 112.

No.	Gloss	Tedim		Mizo		Hakha		Mara		Khumi		Kaang	
089	horn	ki: ¹	3.8	ki: ¹	2.5	ki: ¹	3.5	ki: ¹	2	ki: ¹	1	ki: ¹	2.5
093	bird	va: ¹	1	va: ¹	2.5	va: ¹	3.5	vo: ¹	1	va: ¹	3.5	va: ¹	3.8
101	fish	ŋa: ¹	3.8	ŋa: ¹	2.5	ŋa: ¹	3.5	ŋa: ¹	1	ŋa: ¹	1	ŋa: ¹	3.8
121	brain	k ^h uak ¹	3.8	t ^h luak ¹	2.5	t ^h luak ¹	2.5	t ^h li ¹	1	-	-	k ^h ro:k ¹	3.8
135	chin	k ^h a: ¹	3.8	k ^h a ¹	3.5	k ^h a ¹	3.5	ka ¹	3.5	-	-	k ^h a ¹	3.5
142	lungs	tuap ¹	3.8	tsuap ¹	2.5	tsuap ¹	3.5	tso ¹	2	to: ¹	1	to:p ¹	3.5
154	knee	k ^h uk ¹	3.8	k ^h up ¹	2.5	k ^h uk ¹	5	k ^h u ¹	1	k ^h u ¹	1	k ^h u:k ¹	1
161A	flesh	sa ¹	1	ti: ¹	2.5	tak ¹	5	sa ¹	3.5	-	-	-	-
167	excrement	e:k ¹	3.8	e:k ¹	2.5	e:k ¹	3.5	e: ¹	1	i: ¹	5	e:k ¹	3
172	father	pa ¹	3.8	pa: ¹	2.5	pa: ¹	2.5	po ¹	1	pa ¹	3.5	paxi ¹	3.5
173	mother	nu ¹	3.8	nu: ¹	2.5	nu: ¹	2.5	no ¹	1	nu: ¹	3.5	no:i ¹	1
222	hear	za ¹	3.8	-	-	t ^h ei ¹	1	t ^h ei ¹	5	t ^h ai ¹	3.8	ja ¹	1
288	give	pia ¹	3.8	pe: ¹	2.5	pe:k ¹	3.5	pia ¹	1	pe:k ¹	3	pe ¹	3.5
329	eight	giat ¹	3.8	riat ¹	2.5	riat ¹	2.5	re ¹	2	-	-	ret ¹	3.8
376	bitter	k ^h a: ¹	3.8	k ^h a: ¹	2.5	k ^h a: ¹	3.5	k ^h a: ¹	2	k ^h a: ¹	1	k ^h a ¹	1
399	bad	sia ¹	3.8	tʃ ^h ia ¹	2.5	tʃ ^h ia ¹	2.5	tʃ ^h e: ¹	3.5	si: ¹	1	t ^h e ¹	1

Table 112. Examples of Tone-Pattern IIIb

According to Luce's analysis, the structure of Pattern IIIb is mid rising in Tedim, high falling in Mizo, high level in Hakha, Mara and Ahriang Khumi, and high falling in Awa Khumi. The tone correspondence of Chin languages within Tone Pattern IIIb is shown in Table 113.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Rising	High Falling	High Level	High Level	High Level/ High Falling	-
Present data	Rising	Falling	Mid Falling	High Level High Falling Mid	High Level Mid	High Level Mid Rising

Table 113. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIIb

A summary of the tone correspondence for all Tone Patterns in Chin languages based on Luce's Tone Patterns can be seen in Table 114.

Tone Pattern	Data	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Tone Pattern I	Luce's data	HL	HL	LL	LF	HF/MF,HF	-
	Present data	M	HL	F	L/LL	R	M/F
Tone Pattern IIa	Luce's data	MF	MF	HF	LL	LL/MF	-
	Present data	F	F	F	M	M?	M/R
Tone Pattern IIb	Luce's data	MF	MF	HF	LL	LL/MR	-
	Present data	LL	LL	HL/LL	M/LL	HL/MR	HL/LL
Tone Pattern IIIa	Luce's data	MR	MR	LL	HL	HL/HL,HF	-
	Present data	R	R	F	HL/HF	MR/R./HL	F/LL
Tone Pattern IIIb	Luce's data	MR	HF	HL	HL	HL/HF	-
	Present data	R	F	M/F	HL/MF/M	HL/M	HL/M/R

Table 114. Chin tonal relationship

This analysis shows that there are comparatively clearer tonal correspondences between Tedim, Mizo and Hakha. However, tone in Mara, Khumi and Kaang are split within the Patterns, tremendously complicated and without predictable environments. Thus, while a reconstruction of proto Northern Chin may be proposed from this data, a reconstruction of Proto Chin tone is incomplete²⁴ and cannot at present be proposed. Therefore this thesis will be limited to a segmental reconstruction for Proto Chin.

4.7 Summary

This section summarizes the phonological reconstruction of the Proto Chin syllable in terms of onsets, vowel nuclei and codas. The onset correspondences are shown in Table 115.

²⁴ Work in progress by Fraser Bennett and Noel Mann on the analysis of Chin tones initially confirms Luce's Tonal Patterns.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*p	p	p	p	p	p	p
*t	t	t	t	t	t	t
*k	k	k	k	k	k	k
*b	b	b	b	b	b	b
*d	d	d	d	d	d	d
*g	v	v	v	v	v	v
*p ^h	p ^h	p ^h	p ^h	p ^h	p ^h	p ^h
*t ^h	t ^h	t ^h	t ^h	t ^h	t ^h	t ^h
*k ^h	k ^h	k ^h	k ^h	k ^h	k ^h	k ^h
*m	m	m	m	m	m	m
*m _o	m	m _o	m _o	m _o	m _o	m _o
*n	n	n	n	n	n	n
*n _o	n	n _o	n _o	n _o	n _o	n _o
*ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
*ŋ̊	ŋ	ŋ̊	ŋ̊	-	-	ŋ̊
*r	g	r	r	r	r	r
*r̊	h	r̊	r̊	r̊	h	r̊
*s	s	s	s	s	s	s
*z	z	z	z	z	j	j
*h	h	h	h	h	h	h
*ts	t	ts	ts	ts	t	t
*tʃ ^h	s	tʃ ^h	tʃ ^h	tʃ ^h	s	s
*l	l	l	l	l	l	l
*l _o	l	l _o	l _o	l _o	l _o	l _o

Table 115. Chin onset correspondences

All languages discussed in this thesis uniformly have the voiced labial fricative /v/ reflex for the voiced dorsal stop *g. The identification of this reflex solves some of the questions raised by Ono (1965). The proto *r has the reflex /g/ in initial position and /k/ in final position in Tedim and is consistent with the work of Ono (1965), Solnit (1979) and Bhaskararao (1996). Tedim does not have voiceless counterparts for nasals and liquids. Kaang and Khumi do not share the voiced coronal fricative but have the voiced palatal approximant. Considering the onset correspondences, Tedim

is the most innovative with nine reflexes, followed by Khumi (six), Kaang (four), Mara (two) and Hakha and Mizo with one reflex each.

The vowel correspondences are shown in Table 116.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*i	i	i	i	i	i	i
*e	e	e	e	e	e	e
*a	a	a	a	a	a	a
*o	o	o	o	o	o	o
*u	u	u	u	u	u	u
*ia	ia	ia	ia	ia	e	e
*ei	ei	ei	ei	ei	ai	ei
*ai	ai	ai	ai	e	ai	ai
*au	au	au	au	au	au	au
*oi	oi	oi	oi	o	oi	oi
*ui	ui	ui	i	i	ui	ui
*ua	ua	ua	ua	i	o	o

Table 116. Chin vowel correspondences

Evidence for reconstructing the simple vowel nuclei shows that Khumi has three reflexes, Mara four, Kaang two, and Hakha one. There are significant gaps in diphthongs. Considering vowel correspondences, the Southern languages are more innovative than the Northern languages. Chin coda correspondences are displayed in Table 117.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*m	m	m	m	-	m	m
*n	n	n	n	-	n	n
*ŋ	ŋ	ŋ	ŋ	-	ŋ	ŋ
*r	k	r	r	-	-	-
*p	p	p	p	-	-	p
*t	t	t	t	-	-	t
*k	k	k	k	-	k	k
*l	l	l	l	-	-	-

Table 117. Chin coda correspondences

Tedim, Mizo and Hakha retain the Proto Chin coda except for *r in Tedim. Mara appears to be the most innovative language and behaves differently from the other Chin languages by dropping all codas. Kaang retains Proto Chin nasal codas, but is innovative in the loss of stopped and liquid codas. In Khumi, labial nasal codas have become coronal nasals. The coda *p and *t are lost in Khumi. Mara, Khumi and Kaang have lost the liquid codas. Therefore the coda correspondences show that Mara is extremely innovative, followed by Khumi and Kaang. Northern languages are relatively conservative when compared to the Southern languages.

CHAPTER 5

PROTO CHIN

5.0 Introduction

This chapter is a description of Proto Chin based on the reconstruction in Chapter 4. The discussion is divided into a general description of the language and a proposal for the language family. The general description of the language is structured according to syllable structure, consonants, vowels and segment distribution. Tone is not reconstructed. An initial stammbaum of the Chin language family based on shared phonological development is then proposed.

5.1 General description of Proto Chin

This section considers the general description of Proto Chin as to its syllable structure, consonant inventory, vowels, segment distribution and tones. This reconstruction is assumed to be the picture of Chin languages based on Tedim, Mizo, Hakha, Mara, Khumi and Kaang.

5.1.1 Syllable structure

The syllable canon of Proto Chin can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The optional initial consonant (C_1) can be clustered with the medial (C_2). The nucleus is composed of either a monophthong V_1 or the diphthong $V_1(V_2)$. The final consonant (C_3) is also optional. T represents tone. The potential syllable types are V, VV, VC, CV, CCV, CVC, CVV, CVVC, CCVC, and CCVVC. Examples of different syllable sharps are provided in Table 118.

Ref. No.	English gloss	Proto Chin	Syllable type
437	elder bro. of m	*u:	V:
081	dog	*ui	VV
099	chicken	*a:r	V:C
002	sun	*ni	CV
212	fire	*mei	CVV
266	itch	*tʰak	CVC
003	moon	*kʰra:	CCV:
287	flow	*luan̥	CVVC
121	brain	*kʰruak	CCVVC
035	mountain	*kraŋ	CCVC

Table 118. Examples of syllable types in Proto Chin

5.1.2 Consonant inventory

Table 119 provides the consonant inventory for Proto Chin (repeated from Table 100). The consonant inventory is symmetrical. Proto Chin has a voiceless stop series, a voiced stop series and an aspirated voiceless stop series. Nasal and liquid series have voiceless counterparts but the voiced and voiceless features for fricatives are present only for coronals. There is a voiceless glottal fricative.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[*ʔ]
Voiceless Aspirated stops	*pʰ	*tʰ	*kʰ	
Voiced stops	*b	*d	*g	
Voiced Nasals	*m	*n	*ŋ	
Voiceless nasals	*m̥	*n̥	*ŋ̥	
Voiced Trill		*r		
Voiceless trill		*ɾ		
Voiceless alveolar affricate		*ts		
Voiceless aspirated alveolar affricate		*tʃʰ		
Voiceless Fricatives		*s		*h
Voiced fricatives		*z		
Voiced Lateral approximant		*l		
Voiceless lateral approximant		*ɿ		

Table 119. Proto Chin consonant inventory

5.1.3 Vowels

Proto Chin vowel inventory is shown in Table 120.

	Front	Back
Close	*i	*u
Close mid	*e	*o
Open	*a	

Table 120. Proto Chin vowel inventory

There are five cardinal vowels composed of the close unrounded front vowel *i, the close rounded back vowel *u, the close mid unrounded front vowel *e, the close mid rounded back vowel *o and the open vowel *a. They constitute a symmetrical vowel inventory.

5.1.4 Segment distribution

The distribution of Proto Chin segments can be summarized as follows. All consonants can appear in the initial consonant (C_1) position. However, the second consonant (C_2) is limited to /r/. Whenever a consonant cluster occurs, the first consonant is restricted to the voiceless aspirated or unaspirated velar stop. All vowels can appear in V_1 monophthong position, but V_2 in diphthongs is restricted to either the open vowel /a/, the close unrounded front vowel /i/ or the close rounded back vowel /u/. The set of reconstructed diphthongs is shown in Table 121.

	Front	Back
Close	*ia	*ua *ui
Close mid	*ei *eu	*oi *o
Open	*au *ai	

Table 121. Proto Chin vowel distribution of diphthongs

The final consonant (C_3) in closed syllables is restricted to voiceless stops, nasals, and liquids as shown in Table 122.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[?]
Nasals	*m	*n	*ŋ	
Trill		*ɾ		
Lateral approximant		*l		

Table 122. Proto Chin final consonants

5.2 The Chin language family

The subgrouping of Chin languages in previous literature was described in Chapter 2. In Chapter 3, a preliminary subgrouping of Chin languages was also proposed from a lexicostatistic analysis of 100 core words.

This section considers the relationship of Chin languages based on the phonological reconstruction in Chapter 4. The phonological relationships among Chin languages are used as a basis for proposing a subgrouping of these languages.

5.2.1 Shared phonological rules

A Chin Stammbaum can be reconstructed based on shared phonological rules. There are 43 phonological rules identified in this phonological reconstruction. Table 123 presents a summary of the phonological rules that have applied in the development of each language.

The first column from the left is number of phonological sound change rules as it appear in the text and followed by names of rules. Third column to the end from the left is names of languages effected by the respective sound change rules. The symbol (*) shows the generalized rules.

Rule No	Name of Rules	Languages applied to respective the rules					
Rule 1	Voicing	Tedim					
Rule 2	Voicing	Tedim					
Rule 3	Velarization	Tedim					
Rule 4	Strengthening	Tedim					
Rule 5	Lenition	Tedim				Khumi	
Rule 6	Palatalization					Khumi	Kaang
Rule 7	Deaffrication	Tedim				Khumi	Kaang
Rule 8	Spirantization	Tedim				Khumi	Kaang
Rule 9	Voicing	Tedim					
Rule 10	Deletion	Tedim					
Rule 11	Sporadic		Mizo	Hakha	Mara		
Rule 12	Assimilation		Mizo	Hakha	Mara		
Rule 13	Merging		Mizo	Hakha			
Rule 14	Fronting or Centralization						Kaang
Rule 15	Fronting or Centralization						Kaang
Rule 16	Raising and Centralization						Kaang
Rule 17	*Centralization						Kaang
Rule 18	Raising				Mara		
Rule 19	Diphthongization				Mara		
Rule 20	Lowering					Khumi	
Rule 21	Coalescence				Mara		
Rule 22	Fusion			Hakha	Mara		
Rule 23	Fusion				Mara		
Rule 24	Coalescence					Khumi	Kaang
Rule 25	Monophthongization				Mara		
Rule 26	Coalescence				Mara		
Rule 27	Monophthongization					Khumi	Kaang
Rule 28	Alveolarization					Khumi	
Rule 29	Deletion				Mara		
Rule 30	Deletion				Mara		
Rule 31	Deletion				Mara		
Rule 32	*Deletion				Mara		
Rule 33	Devoicing	Tedim					
Rule 34	Deletion				Mara	Khumi	Kaang
Rule 35	Deletion				Mara	Khumi	
Rule 36	Deletion				Mara	Khumi	
Rule 37	Deletion				Mara		
Rule 38	*Deletion				Mara		
Rule 39	Deletion				Mara	Khumi	Kaang
Rule 40	Spirantization	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Rule 41	Labialization	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Rule 42	Voicing	Tedim					
Rule 43	*Voicing	Tedim					

Table 123. Summary of the phonological rules

To convert the information in Table 123 into a similarity matrix and tree diagram, we may calculate the Jaccard coefficient of similarity for each pair of languages according to the following formula (Grimes 1995).

$$\text{Jaccard } [i,j] = \frac{a}{b + c} ,$$

where **a** is the number of phonological rules shared by language **i** and **j**, **b** is the number of rules that apply to languges **i** but not to language **j**, and **c** is the number of rules that apply to language **j** but not to language **i**. (Rules which apply to neither language are assumed not to be relevant).

Tables 124, 125, 126 presents the a, b and c values, respectively for each pair of languages.

Tedim		Mizo	Hakha	Mara	Khumi	Kaang
2		5				
2		4	5			
2		2	2	5		
5		2	2	2	9	
4		2	2	2	9	Kaang

Table 124. Count of shared phonological rules.

Tedim		Mizo	Hakha	Mara	Khumi	Kaang
11		0				
11		1	1			
11		3	4	1		
8		3	4	4	9	
9		3	4	4	9	Kaang

Table 125. Count of phonological rules shared by language **i** but not by language **j**

Tedim	Mizo	Hakha	Mara	Khumi	Kaang
3					
4	1				
18	16	15			
8	11	11	15		
8	10	10	11	3	

Table 126. Count of phonological rules shared by language **j** but not by language **i**

Table 127 gives the Jaccard coefficient of similarity value.

Tedim	Mizo	Hakha	Mara	Khumi	Kaang
0.13					
0.12	0.13				
0.06	0.19	0.24			
0.24	0.13	0.12	0.22		
0.19	0.13	0.12	0.14	0.56	

Table 127. Jaccard coefficient of similarity value

The Jaccard coefficients is turned into tree as shown in Figure 15 by running the Unweighted Paired Group Method with Arithmetic Average (UPGMA, or average link method)²⁵ as shown Table 128.

-- Analysis: Average Link -- Correlation (r) = 0.986	
83.0	Mizo, Hakha
56.0	Khumi, Kaang
21.5	Mizo, Hakha, Mara
21.5	Tedim, Khumi, Kaang
13.1	Tedim, Khumi, Kaang, Mizo, Hakha, Mara

Table 128. UPGMA grouping of representative Chin languages by Jaccard coefficient values for shared phonological rules.

²⁵ This program was run by Dr. J. F. Bennett.

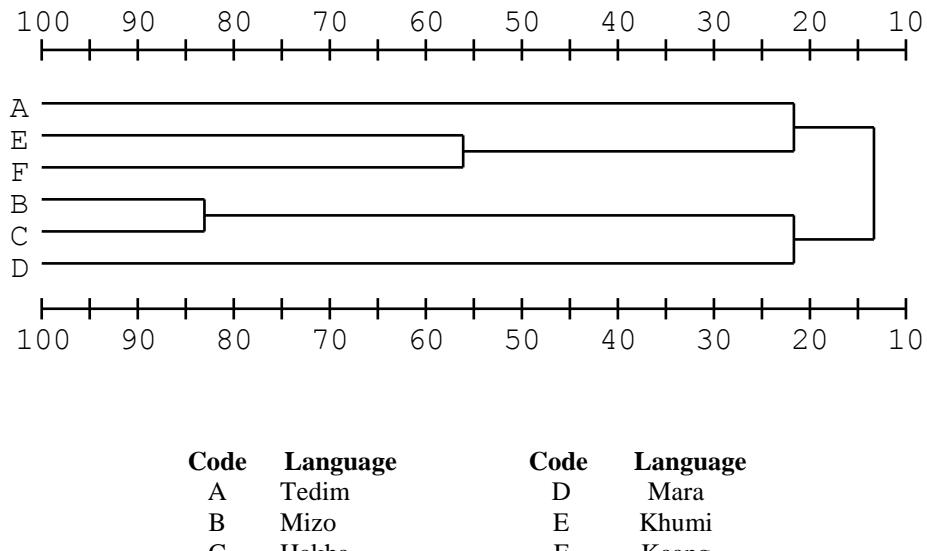


Figure 15. Chin language tree based on shared phonological changes

The sound change rules depict the phonological relationship of the Chin languages and trace their decent from the parent language as shown in Figure 16.

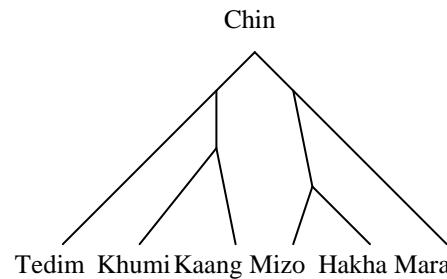


Figure 16. Subgrouping based on shared phonological rules

This subgrouping based on shared phonological rules is different from both traditional classifications and the preliminary subgrouping based on lexicostatistic analysis. Tedim is grouped together with Khumi and Kaang that is, traditional Northern Chin is phonologically closer to traditional Southern languages than the Central languages.

5.2.2 Phonological vs. lexicostatistic groupings

The lexicostatistic subgrouping in Figure 17 (repeated from Figure 13) shows that there are two main Chin language groups: a Northern group (traditionally Central and Northern) and a Southern groups. The Northern languages are closely related each other but the Southern groups are far from the Northern groups and from each other.

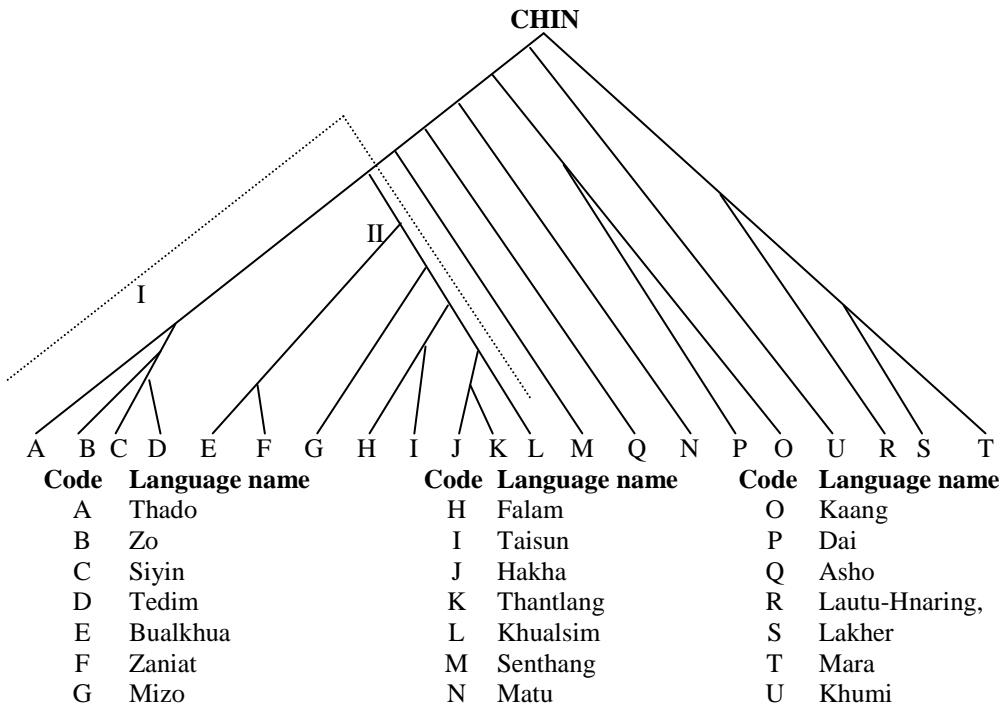


Figure 17. Preliminary subgrouping of Chin languages

The northern languages can be subdivided in to two subgroups: I (Thado, Zo, Siyin and Tedim) and II (Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang, Senthang and Khualsim). In the comparative analysis Tedim represents subgroup I and Hakha and Mizo represent subgroup II.

There can be at least three subgroups among Southern languages such as Lautu-Hnaring, Lakher and Mara (represented by Mara); Asho, Matu, Dai and Kaang (represented by Kaang); and Khumi.

The subgrouping based on shared phonological rules also shows two main Chin language groups. In this grouping, however, Tedim, traditionally a Northern language is grouped together with the traditional Southern languages Khumi and Kaang; that is, Tedim is closer to the traditional Southern languages in terms of its phonological developments than it is to the Central languages. The traditional Central languages are clustered together with Mara, as shown in Figure 18 (repeated from Figure 16).

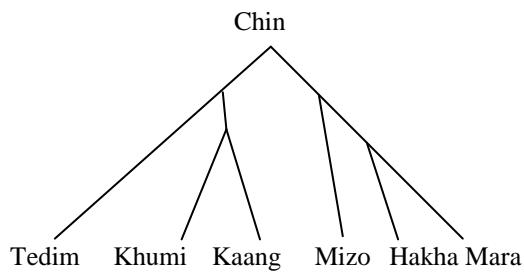


Figure 18. Subgrouping based on shared phonological rules

It should be noted that the relationship between Tedim and the southern languages of Khumi and Kaang is extremely weak compared to the relationship between Hakha and Mizo, or even between Khumi and Kaang. It should also be noted that Hakha and Mizo, traditionally Central Chin languages, are grouped together with Mara, which is listed under “Other Chin Groups” by Bradley (1997). Interestingly, Mara is the most innovative and Hakha and Mizo are the most conservative languages phonologically.

In sum, the lexicostatistic subgrouping and the phonological subgrouping are not entirely congruent. However, they agree in having two Chin language groups which challenges the traditional classification. Hakha and Mizo are in one group in both subgrouping. Khumi and Kaang also remain one group in both subgroupings.

However, there are differences in the components of the groups. Tedim is together with Hakha and Mizo in the lexicostatistic subgrouping, whereas it groups together with Khumi and Kaang in the phonological subgrouping. In the same manner, Mara is

together with Khumi and Kaang in the lexicostatistic subgrouping, but it groups together with Mizo and Hakha in the phonological subgrouping.

Therefore it is worth noting that the phonological grouping and lexicostatistic grouping differ at points, although not across the whole family.

5.3 Summary

The Proto Chin consonant inventory is symmetrical. It has voiceless stop, voiced stop and voiceless aspirated stop series. Liquids and nasals have their voiceless counterparts. Voicing contrast for fricatives appear only at the alveolar point of articulation. The vowel inventory is also symmetric with a typical five-vowel system. The syllable can be generalized as (C₁)(C₂)V₁(V₂)(C₃)T.

The subgrouping based on this phonological reconstruction challenges the traditional subgrouping. There are only two main groups in the Chin language family with the traditional Northern Chin and Southern Chin groups placed together in one group. This is similar to Peterson's (2000) proposed division of Chin languages with "Central" and "Peripheral" groups. In addition, the traditional Central Chin group is merged with Mara, which Bradley classifies among "Other Chin Groups".

CHAPTER 6

CONCLUSION

This chapter provides a summary of the conclusions in this thesis. Each chapter is briefly summarized.

Chapter 1 introduced the Chin people, the languages and methods of investigation in this thesis. The Chin people are originally from the Yellow river or Manchu river valley of Southwest China and currently live in adjacent to the border of Myanmar, India and Bangladesh. The date of their arrival to the present region is estimated not earlier than the 13th century AD. There are possibly as many as 54 Chin languages spoken in Chin State. Most linguists consider Chin languages to be in three groups: Northern, Central and Southern Chin.

Chapter 2 involves about the selection of representative languages. Lexicostatistic methods are applied to twenty-one different Chin languages. Based on the lexicostatistic analysis, a preliminary subgrouping is proposed as shown in Table 129.

Preliminary Subgrouping of Chin languages				
A		B		
I	II	III	IV	V
A. Thado	E. Bualkhua	N. Matu	R. Lautu	U. Khumi
B. Zo	F. Zaniat	O. Kaang	S. Lakher	
C. Siyin	G. Mizo	P. Dai	T. Mara	
D. Tedim	H. Falam	Q. Asho		
	I. Taisun			
	J. Hakha			
	K. Thantlang			
	L. Khualsim			
	M. Senthang			

Table 129. Selected Chin languages

There are five subgroups of Chin languages. Representative languages are selected from each subgroup. Mizo and Hakha are selected from subgroup II. Thus, there are

six selected languages: Tedim, Mizo, Hakha, Mara, Khumi, and Kaang. Tedim represents group I, Mizo and Hakha represent group II, Kaang represents group III, Mara represents group IV and Khumi represents group V.

Chapter 3 presents an overview of the six selected languages based on syllable canon, consonant inventory, vowel inventory, segment distribution and tones. Regarding initial consonants, all languages share the voiceless aspirated and unaspirated stop series. Khumi and Tedim have the voiced dosal stops whereas the other Chin languages do not. Tedim does not have the voiceless nasal series and coronal trill while the other Chin languages have voiceless and voiced sets. Mizo, Hakha and Mara have two affricates. Only Mizo, Hakha and Khumi have voiceless labial fricatives. Tedim does not have the voiceless lateral approximant while the other languages have voiced and voiceless lateral approximants. All languages share the voiced labial fricative and voiceless coronal fricative. Kaang and Khumi do not have the voiced coronal fricative but have the voiced palatal approximant which the other do not have. All languages have the glottal stop, at least phonetically, and glottal fricative [h].

For final consonants, Mara is different from the other languages as it does not have closed syllables. The remaining languages have stop and nasal series in finals. Khumi does not have the voiceless labial stop syllable final. Khumi and Kaang do not have liquid finals.

Five cardinal vowels are common in all languages. In addition, Kaang vowels tend to be central while Hakha, Mizo and Tedim mostly have diphthongs. Mizo and Hakha.

Chapter 4 provided the phonological reconstruction. This chapter solves the longstanding problem of the proto *g in Chin reconstruction. Arguments from symmetry are used to reconstruct more marginal elements in the data. It is noted that while there are some relationships between tonal correspondence in Tedim, Mizo and

Hakha, however there are no consistent correspondences in Mara, Kaang and Khumi.

Thus, tone is not included in this reconstruction.

Chapter 5 described the Proto Chin and proposed the subgrouping. The Proto Chin consonant inventory is symmetrical. It has voiceless stop, voiced stop and voiceless aspirated stop series. Liquids and nasals have their voiceless counterparts. A voicing contrast for fricatives appears only at the coronal point of articulation. The vowel inventory is also symmetric with a typical five-vowel system. The syllable can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$.

The subgrouping based on this phonological reconstruction as shown in Figure 19 (repeated from Figure 16) challenges the traditional subgrouping.

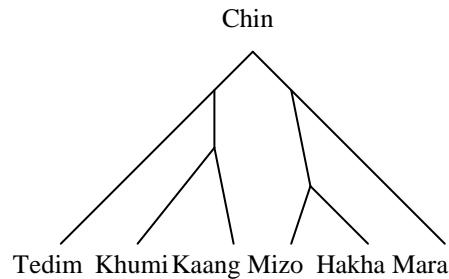


Figure 19. Subgrouping based on shared phonological rules

(repeated from Figure 16)

This subgrouping is different from traditional classifications and the preliminary subgrouping based on lexicostatistic analysis. Tedim is grouped together with Khumi and Kaang which shows that the traditional Northern Chin group is phonologically closer to the traditional Southern languages than are the Central languages. Again, Hakha and Mizo (traditional Central languages) are grouped together with Mara which is listed as “Other Chin Groups” by Bradley (1997). Mara is the most innovative and Hakha and Mizo are the most conservative languages phonologically.

There are only two main groups in Chin language family with the traditional Northern Chin and Southern Chin groups placed together in one group. This is similar to Peterson's (2000) proposed division of Chin languages with "Central" and "Peripheral" groups. In addition, the traditional Central Chin group is merged with Mara, which Bradley classifies among "Other Chin Groups".

The unfinished tonal analysis shows a clearer predictable tonal correspondence among the northern Chin languages (Mizo, Hakha and Tedim), but the tonal correspondences among the Southern Chin languages are more unpredictable. Therefore, if the tonal reconstruction is considered as criterion for subgrouping the Chin languages examined here, the two main divisions will likely remain the same, but the affiliation of Tedim will likely shift to the northern Chin group. Tedim has a very weak relationship with the southern languages based on shared phonological innovation, and the inclusion of tonal development is likely to shift the balance toward the northern languages. The northern and southern division is also consistent with Lehman's (1963) division of northern and southern Chin groups based on socio-cultural phenomena.

The thesis provides a thorough reconstruction of Chin languages based on phonological segmental aspects. The reconstruction could contribute a solution for recovering the longstanding unsolved problem of *g. It also identifies some key problems involved in tone.

APPENDIX A

RECONSTRUCTED SYLLABLES

Based on phonological changes discussed in Chapter 4, the reconstructed roots are provided syllable by syllable. Proto Chin is primarily monosyllabic, but there are some words that are disyllabic. For instance the word for ‘sea’ is [tuiʌ.piʌ], which is the combination of [tu:iʌ] ‘water’ and [piʌ] ‘big, large or mother’. The letter ‘A’ attached to a reference number indicates the initial syllable, and the letter ‘B’ the second syllable of a reconstructed compound word. In cases where there is some uncertainty as to the reconstruction either based on the cognates or variation in the cognates, the reconstructed form is shown in {braces}. Wherever the reconstruction is impossible due to loan or ambiguity in the correspondences, there is no entry. In cases where the vowel quality is uncertain, the vowel is indicated by /V/. Likewise, where a consonant cannot be differentiated, it is represented by /C/. When a nasal consonant phoneme is not clear, it is shown by /N/. The left hand column shows the reference number and gloss for the word followed by the reconstructed form while the other

columns show data from representative languages. Tone is omitted in the reconstructed syllables.

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	*ga:n	va:n˥	va:n˥	va:n˥	va:˧	va:n˧	-
002	sun	*ni	ni˧	ni:˧	ni:˧	ni:˧	ni:˧	ni:˧
003	moon	*kʰra:	kʰa:a:˥	tʰla:˥	tʰla:˥	tʰla:˧	tʰla:˧	kʰra:˧
004A	star	*ar	ak˧	ar˧	ar˧	o:˧	a:˧	ai:˧
004B	star	*si	si˥	si˥	fi:˧	si:˧	si:˧	si˥
005	cloud	*mei	me:i:˧	-	mei˥	mei:˧	ma:i:˧	mei˥
007	rain	*rua	gua˧	rua˧	rua:˧	-	-	-
010	thunder	*kʰo	-	kʰo:˧	kʰua:˧	ka:˧	-	kʰo:˧
011	shadow	*jim	li:m˥	lim˥	-	ri:˧	-	lip:˧
012	night	*zan	za:n˥	za:n˥	zan˥	ze:˧	-	tʰan:˧
013	day	*ni	ni:˧	ni:˧	-	-	ni:˧	ni:p:˧
014	morning	*ziŋ	ziŋ˧	ziŋ˧	ziŋ˧	-	-	-
015	noon	*tʃʰun	su:n˥	tʃʰun˥	tʃʰun˥	tʃʰo?˧	-	-
016A	yesterday	*za:	za:˧	-	zan:˧	za:˧	zaŋ:˧	jan:˧
016B	yesterday	*ni	ni:˧	ni:˧	ni:˧	ne:˧	-	-
018	year	*kum	kum˥	kum˥	kum˥	ko:˧	-	kum˥
019A	east	*tʃʰua	sua?˧	tʃʰak:˧	tʃʰua?˧	tʃʰi:˧	si:˧	-
019B	east	*lam	lam˧	lam˧	lei:˧	-	-	lam˧
020A	west	*krak	-	tʰlaŋ:˧	tla:˧	tla:˧	-	krak:˧
020B	west	*lam	lam˧	lam˧	lei:˧	-	-	lam˧
021A	north	*tʃʰak	sak:˧	-	tʃʰak:˧	-	si:˧	si:p:˧
021B	north	*lam	lam˧	lam˧	lei:˧	-	-	lam˧
022A	south	*kʰraŋ	kʰan:˧	-	tʰlaŋ:˧	tʃʰe:˧	-	tum:˧
022B	south	*lam	lam˧	lam˧	lei:˧	-	-	lam˧
023	water	*tui	tui˧	tui˧	ti:˧	ti˧	tui:˧	tui˥
025A	sea	*tui	tui˧	tui˧	ti:˧	-	-	tui:˧
025B	sea	*pi	pi˧	-	-	pi˧	-	pai:˧
026	earth soil	*lei	lei˧	lei˧	lei˥	lei˥	-	lei:˧
028	dust	*gui	vui:˧	vut:˧	vut:˧	-	-	vut:˧
029	stone	*luŋ	luŋ˧	luŋ˧	luŋ˥	lo:˧	nlong:˧	luŋ:˧
030	sand	*{se:}	se:˧	-	se:˧	sa:˧	si:˧	-
033	silver	*ŋu:n	ŋu:n˥	-	ŋun˥	ŋo˥	-	ŋui˥
034	iron	*tʰir	sik˧	tʰir˧	tʰiar:˧	tʰia˥	su:n˥	si˥
035	mountain	*kraŋ	-	tla:ŋ:˧	tlaŋ˥	tla:˧	-	-
036	cave	*kʰul	kʰu:˧	-	kua:˧	kʰo:˧	-	kʰui:˧

037	forest	*ram	gam+	ram+	ram\	ra+	-	-
038A	tree	*t ^h inj	t ^h inj/	t ^h inj/	t ^h inj+	t ^h o+	t ^h inj+	t ^h inj\
038B	tree	*kuŋ	kuŋ/	kuŋ\	kuŋ+	ko+	kuŋ+	-
039A	branch	*t ^h inj	t ^h inj/	t ^h inj/	t ^h inj+	t ^h o+	t ^h inj+	t ^h inj+
039B	branch	*{Ce}	-	-	ŋe:+	tse+	ben+	-
040A	tree bark	*t ^h inj	t ^h inj/	t ^h inj/	t ^h inj+	t ^h o+	t ^h inj+	t ^h inj+
040B	tree bark	*hoŋ	hoŋ+	-	hoŋ+	hau+	-	hok+
041	thorn	*liŋ	liŋ+	liŋ+	liŋ\	leo+	liŋ/	liŋ\
No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
043A	leaf	*t ^h inj	t ^h inj/	t ^h inj/	t ^h inj+	-	t ^h inj+	t ^h inj+
043B	leaf	*na ^o	na? ^l /te? ^l	na ^l	na ^l	na ^l	-	na? ^l
044A	flower	*panj	-	panj+	panj+	po:+	pao+	-
044B	flower	*par	pak+	par+	par+	-	-	-
045	fruit	*t ^h ei	-	t ^h e:i/	t ^h ei+	t ^h ei+	t ^h a:i+	t ^h ei+
048	bamboo	*rua	gua+	rua+	rua\	ra+	gu:+	ro:\
049A	bamboo shoot	*rua	go+	ro+	rua\	ra+	-	ro:+
049B	bamboo shoot	*toi	toi+	toi+	toi\	te+	tui/	toi\
050	mushroom	*pa	pa/	pa:/	pa+	po+	pa+	pa+
051	rattan	*rui	-	rui+	ri+	ri+	gui+	rui+
052	kapok	*panj	panj+	panj+	-	p ^h a+	-	panj
053	sugarcane	*su	tu+	fu:+	fu:\	su+	sik+	tu+
056	liquor	*zu:	zu:+	zu:+	zu:\	-	-	ju\
057A	banana	*ban	ban\	ban\	ban+	ba:+	-	pan+
057B	banana	*la ^o	la/	la:/	la+	la+	-	-
059	mango	*ha:i	ha:i+	ha:i+	hai\	hai+	-	hai\
062A	eggplant	*bok	bok+	bok+	bon+	-	-	bu+
062B	eggplant	*bo:n	bo:n\	bo:n\	bok+	-	-	bun+
064	ginger	*t ^h inj	t ^h inj+	t ^h inj+	t ^h inj+	sei+	t ^h inj/	t ^h inj\
066A	corn	*gai	vai+	vai+	voi+	-	-	va+
066B	corn	*mim	mim+	mim+	-	mei\	-	-
067A	red pepper	*{mal}	-	mar+	m ^h an+	-	mai+	-
067B	red pepper	*{Ca:}	za+	tsa:\	-	-	-	-
068	paddy rice	*sa	-	-	fa+	sa:\	saj+	sa:\
069	cooked rice	*bu	bu? ^l	-	bu? ^l	-	bu+	bu+
070	pounded rice	*tsaj	taŋ/	fai:+	tsaj\	tsa+	tsaj+	tsaj\
071	salt	*tsi:	ti:\	tsi:\	tsi+	-	-	ti:+
072A	animal	*ram	gam+	ram+	ram\	ra:+	-	-
072B	animal	*sa:	sa:+	sa:+	sa+	sa+	-	sa:+
073A	tiger	*sa	sa+	sa+	-	tsa+	ta+	sa+
073B	tiger	*kei	-	kei+	-	kei+	kai/	-

074	bear	*gom	vom↑	vom↑	vom↓	vau↓	von↓	vom↓
075A	deer	*sa	sa↑	sa↓	sa↓	-	sa↑	-
075B	deer	*zuk	zuk↓	-	-	zu↑	suk↓	-
076	monkey	*zo:ŋ	zo:ŋ↑	zo:ŋ↑	zo:ŋ↓	zau↓	-	jo:ŋ↓
077	gibbon	*{hu}	-	hau↓	hu↑	tu↑	ha↑	vək↓
078A	rabbit	*sa	-	sa↓	sa↓	sa↓	-	-
078B	rabbit	*{ge}	-	bek↓	ve?↓	ve↓	-	vi:↓
079A	porcupine	*sa	sa↑	sa↓	sa↓	so↓	si↑	sa↑
079B	porcupine	*ku	ku↓	ku↓	ku↓	ku↑	-	ku↓
080	rat	*zu	zu↓	zu↓	zu:↑	zu↑	ju↑	ju:↓
081	dog	*ui	ui↓	ui↓	ui↓	i:↓	ui↓	ui↓

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
082	bark	*nak	nak/	-	-	-	nak [†]	nat [†]
084A	cat	*zo	zo [†]	zo [†]	zo ^{ʔ†}	zo: [†]	-	-
084B	cat	*{CV}	ŋeu/	te [†]	-	ka [†]	-	-
085	pig	*gok	vo:k [†]	vok [†]	vok [†]	vo [†]	o:k [†]	vok [†]
087	milk	*ŋu	no:i [†]	ŋu [†]	ŋuk [†]	ŋo [†]	ŋu [†]	-
089	horn of buffalo	*ki:	ki: [†]	ki: [†]	ki: [†]	ki [†]	ki [†]	ki: [†]
090	tail	*mei	mei [†]	mei [†]	mei [†]	mei [†]	mai [†]	mei [†]
091	elephant	*sa:i	sai: [†]	sai: [†]	vui [†]	se: [†]	sai [†]	vui [†]
092	elephant tusk	*{ŋo}	-	ŋo [†]	hou [†]	no [†]	not [†]	-
093	bird	*ga	va [†]	va [†]	va [†]	vo [†]	va [†]	va: [†]
094	bird's nest	*bu	bu [†]	bu [†]	bu [†]	bu [†]	bu [†]	bu: [†]
095	wing	*k ^h ra	k ^h a [†]	t ^h la: [†]	t ^h la: [†]	t ^h lo [†]	-	p ^h ra: [†]
096	feather	*mul	mul [†]	mul [†]	mul [†]	mi [†]	mui [†]	mu: [†]
097	fly	*zuaŋ	zuaŋ [†] /le: [†]	-	zuaŋ [†]	zo [†]	-	joŋ [†]
098	egg	*tui	tui: [†]	tui [†]	ti [†]	ti [†]	tui [†]	tui [†]
099	chicken	*a:r	ak [†]	a:r [†]	a:r [†]	o: [†]	a: [†]	a:i [†]
101	fish	*ŋa	ŋa [†]	ŋa [†]	ŋa: [†]	ŋa [†]	ŋa: [†]	ŋa [†]
102	snake	*rul	gul [†]	ru: [†]	ru: [†]	ri [†]	gi [†]	ru:i [†]
104A	turtle	*sum	sum [†]	sa [†]	t ^h un [†]	so [†]	-	sum [†]
104B	turtle	*k ^h ok	kuaŋ [†]	-	ku [†]	kei [†]	gu: [†]	k ^h op [†]
106	frog	*u	ui [†]	ut [†]	u [†]	u [†]	ui [†]	u [†]
107	insect	*luŋ	luŋ [†]	-	ruŋ [†]	lo [†]	luŋ [†]	-
108	spider	*mom	mom [†]	mom [†]	-	-	pum [†]	vom [†]
109A	spider web	*mom	mom [†]	mom [†]	-	-	pum [†]	vom [†]
109B	spider web	*bu	-	-	bu [†]	bu [†]	bu [†]	-
110	louse head	*rik	hik [†]	rik [†]	rik [†]	ri [†]	hik [†]	rik [†]
111	termite	*lei	lei [†]	-	-	lei [†]	-	lei [†]
113	snail	*tseŋ	-	tseŋ [†]	tsaŋ [†]	tsa: [†]	ten [†]	-
114	mosquito	*kaŋ	kaŋ [†]	kaŋ [†]	-	-	kaŋ [†]	-
115	bee	*k ^h o:i	k ^h o:i [†]	k ^h o:i [†]	k ^h o:i [†]	k ^h ei [†]	k ^h oi [†]	k ^h o:i [†]
116	fly	*t ^h o	t ^h o [†]	t ^h o [†]	t ^h au [†]	t ^h o [†]	-	-
117A	butterfly	*pa	-	p ^h e [†]	pa [†]	ba [†]	p ^h o [†]	pe [†]
117B	butterfly	*lep	-	lep [†]	lep [†]	lie [†]	le: [†]	lem [†]
119	head	*lu:	lu: [†]	lu: [†]	lu: [†]	lu: [†]	lu: [†]	lu: [†]
120	face	*mai	mai [†]	ma:i [†]	ma:i [†]	me [†]	mai [†]	ma:i [†]
121	brain	*k ^h ruak	k ^h uak [†]	t ^h luak [†]	t ^h luak [†]	t ^h li [†]	-	k ^h ro:k [†]
122	hair	*sam	sam [†]	sam [†]	sam [†]	sa [†]	sa:n [†]	sam [†]

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
123	forehead	*tsal	tal\	tsal\	tsal\	-	-	tai+
124A	eyebrow	*mik	mit↓	mit↓	mit↓	-	-	mik↓
124B	eyebrow	*k ^h u	k ^h u\	ko:1	-	-	k ^h u:n1	-
125	eye	*mik	mit↓	mit↓	mit↓	-	mek↓	mik↓
127	nose	*n _o a:r	na:k\	n _o ar↓	n _o ar\	na↓	na↓	na↓
128	cheek	*biaŋ	biaŋ↓	biaŋ↓	biaŋ\	bai↓	be↓	beŋ↓
129	ear	*n _o ₖ	-	-	n _o ₖ	na↓	n _o :1	n _o ₖ
130	mouth	*kam	kam↓	ka:1	ka:\	-	-	-
131	tongue	*lei	le:i↓	lei↓	lei\	lei↓	lai↓	lei↓
132	saliva	*tsil	til↓	tsil↓	tsi:l\	tsi↓	-	ti↓
133	tooth	*ha:	ha:↓	ha:↓	ha:\	ha↓	ha↓	-
134A	tooth	*ha:	ha:↓	ha:↓	ha:↓	-	-	-
134B	gums	*ni:	ni\	n _o \	ni:↓	nei↓	-	n _o i:↓
135	chin	*k ^h a	k ^h a:1	k ^h a↓	k ^h a↓	ka↓	-	k ^h a↓
136	beard	*mul	mul\	mul\	m _o l\	m _o i\	mui↓	m _o ui↓
137	shave	*met	me:t\	met\	me?1	-	-	-
138	back	*nVN	nuj↓	nuj\	-	-	nam↓	nam↓
140	navel	*la:i	la:i↓	la:i\	la:i\	le↓	luŋ↓	lai\
141	heart	*luŋ	luŋ↓	luŋ↓	luŋ↓	lo↓	luŋ↓	luŋ↓
142	lungs	*tsuap	tuap\	tsuap\	tsuap↓	tso\	to:1	to:p↓
143	liver	*t ^h in	sin\	t ^h in↓	t ^h in\	t ^h i↓	t ^h in↓	sin\
144	intestines	*ril	gil↓	ril↓	ril\	ri↓	gi↓	ri↓
145	hand	*kut	k ^h ut↓	kut↓	kut↓	ku↓	-	kut↓
146	elbow	*ki	kiu\	kiu\	kiu\	k ^h i↓	k ^h u↓	ki:1
147	armpit	*zak	zak↓	zak↓	zak↓	-	jak↓	-
148A	palm	*kut	k ^h ut↓	kut↓	-	ku↓	-	kut↓
148B	palm	*p ^h a	pe:k\	p ^h a↓	pei\	pa↓	ba↓	p ^h a↓
149A	finger	*kut	k ^h ut↓	kut↓	kut↓	ku↓	-	kut↓
149B	finger	*{daj}	-	daj↓	dɔŋ↓	do↓	-	-
150A	fingernail	*kut	k ^h ut↓	kut↓	-	ku↓	-	kut↓
150B	fingernail	*tin	tin\	tin\	tin\	te↓	sin↓	tin↓
152	leg	*k ^h e:/k ^h o:	k ^h e:\	ke:1	ke:\	-	k ^h or:k\	k ^h o:1
153	thigh	*p ^h ei	p ^h ei\	-	p ^h ei\	-	p ^h a:i↓	p ^h ei↓
154	knee	*k ^h uk	k ^h uk\	k ^h u:p\	k ^h uk↓	k ^h u↓	k ^h u↓	k ^h u:k↓
155	calf	*tsan	tan↓	tso:n\	ten↓	-	-	-
156	shin	*ŋal	ŋal↓	ŋal↓	ŋal↓	-	-	-
157A	foot	*k ^h e/k ^h o	k ^h e\	ke↓	-	-	k ^h u↓	k ^h o↓
157B	foot	*{p ^h a}	bom\	-	-	p ^h ei↓	pon↓	p ^h a↓
159	bone	*ru	gu↓	ru↓	ru↓	ru↓	hu↓	ru↓

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
160A	rib	*na:k	na:kɻ	nakɻ	nak-†	-	nak†	ŋak†
160B	rib	*ru	gu-†	ru-†	ru-†	-	hu-†	ru-†
161A	flesh	*sa	sa-†	saɻ	sa-†	-	-	-
161B	flesh	*tak	tak-†	ti:ɻ	tak-†	-	-	-
162	fat	*tʰa:u	tʰa:uɻ	tʰauɻ	tʰa:uɻ	tʰau-†	tʰau-†	tʰa:uɻ
163	skin	*gun	vunɻ	vunɻ	-	va-†	-	vənɻ
164	blood	*tʰi	tʰi-†	tʰi-†	tʰi-†	tʰi-†	tʰi-†	tʰi-†
165	sweat	*kʰran	-	tʰlanɻ	tʰlanɻ	tʰlai-†	-	kʰran-†
166	pus	*nai:	na:i-†	na:i-†	na:i-†	ne-†	na:i-†	nai-†
167	excrement	*e:k	e:kɻ	e:kɻ	e:k-†	e:†	i-†	e:k-†
168	urine	*zun	zun-†	zunɻ	zunɻ	zo-†	jun-†	jup-†
169A	man	*pa	pa-†	paɻ	pa:†	po†	-	pa†
169B	man	*mi	-	mi-†	mi-†	-	mi-†	-
170A	woman	*nu	nu-†	-	nu:†	no†	mon-†	nu-†
170B	woman	*mi	-	mei-†	mi-†	-	mi-†	-
171	person	*mi	mi-†	mi-†	mir-†	-	mi:†	-
172	father	*pa	pa-†	paɻ	pa:ɻ	po†	pa-†	pa:i-†
173	mother	*nu	nu-†	nu:ɻ	nu:ɻ	no†	nu:i-†	no:i-†
175A	son in law	*ma:k	ma:k-†	makɻ	-	-	muk-†	-
175B	son in law	*sa	-	-	fa-†	sa-†	sa:†	ta-†
176	husband	*ga	-	-	va:ɻ	va-†	va-†	va-†
177A	wife	*nu	-	nu-†	nu:†	no†	-	-
177B	wife	*pi:	-	pui-†	pi-†	pi-†	-	-
178A	widow	*nu	-	-	nu-†	no†	-	nu-†
178B	widow	*mei	meiɻ	mei-†	mei-†	-	-	mei-†
180	yr. bro. of f.	*nau	na:u-†	nau-†	-	-	nau-†	nauɻ
182	name	*min	min-†	min-†	minɻ	mo-†	min-†	min-†
183	village	*kʰua	kʰua-†	kʰua-†	kʰuaɻ	kʰi-†	-	kʰo-†
184	road path	*lam	lam-†	-	lamɻ	la:†	lan-†	lamɻ
185	boat	*loŋ	-	loŋ-†	loŋ-†	lau-†	loŋ-†	-
186	house	*in	in-†	in-†	inɻ	o:†	in-†	imɻ
187	door	*konj	konj-†	konj-†	ka-†	-	kʰanj-†	kot-†
188	window	*tʰo	to-†	tuk-†	tʰlaɻ	tʰa-†	tʰo-†	tʰo?†
189	roof	*kruŋ	kʰumɻ	tsuŋ-†	tsuŋ-†	-	-	kruŋ
191	wall of house	*panj	-	panj-†	panj-†	ba:†	panj-†	panjɻ
192	mat	*pʰer	pʰek-†	pʰer-†	pʰerɻ	pʰie-†	pʰak-†	pʰak-†
193	pillow	*kʰam	kʰam-†	kʰam-†	-	-	kaj-†	-
194	blanket	*puan	puan-†	puan-†	puanɻ	po-†	-	-
196	weave cloth	*ta	-	ta?†	ta?†	saɻ	-	ta?†

197	dye cloth	*roŋ	-	roŋ†	-	ro:†	joŋ†	roŋ†	
200	sew	*kʰrui	kʰu:i†	tʰui†	tʰit†	kʰo†	kʰok†	kʰrui†	
201	needle	*pʰim	pʰim†	-	tʰim†	pʰo†	-	prim†	
202	comb	*tʰi	tʰi†	-	tʰi†	tʰi†	tʰi†	tʰi†	
205A	pot cooking	*be:l	be:l†	be:l†	-	bei†	-	-	
205B	pot cooking	*am	-	-	um†	-	on†	am†	
207	mortar	*sum	sum†	sum†	sum†	so†	sun†	sum†	
208	pestle	*suk	suk†	-	sum†	-	-	suk†	
211	firewood	*tʰinj	tʰinj†	tʰinj†	tʰinj†	tʰei†	tʰinj†	tʰinj†	
212	fire	*mei	mei†	mei†	mei†	mei†	mai†	mei†	
213	ashes	*gut	vut†	vap†	vut†	-	-	vət†	
214A	smoke fire	*mei	mei†	mei†	mei†	mei†	mai†	mei†	
214 B	smoke fire	*kʰu	kʰu†	kʰu†	kʰu†	kʰu†	kʰu†	kʰu†	
216	drum	*kʰuaŋ	kʰuaŋ†	kʰuaŋ†	kʰuaŋ†	kʰo:†	-	-	
218	bow (cross bow)	*li:	-	-	-	li:†	li:†	li:†	
219	arrow	*tʰal	tʰal†	tʰal†	tʰal†	tai†	-	-	
No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang	
220	spear	*sei	tei†	fei†	fei†	sei†	-	tei†	
221	knife	*tsem	tem†	tsem†	-	ta†	-	tim†	
222	hear	*tʰei	-	-	tʰei†	tʰei†	tʰa:i†	-	
223	smell something	*nam	nam†	-	nim†	tʰei†	na:n†	ŋut†	
224	see	*mu	mu†	mu:†	mu?†	mo†	-	mu†	
226	weep	*krap	kap†	tap†	tap†	-	ga†	krap†	
227	eat	*ei	-	ei†	ei†	-	-	ai†	
228	swallow	*dol	-	dol†	dol†	dau†	-	-	
231A	thirsty	*tui	-	tui†	ti†	-	tui†	tui†	
231B	thirsty	*hal	-	ha:l†	hal†	-	he:ʔ†	-	
232	drink	*{din}	do:n†	in†	din†	do†	-	-	
233	drunk	*rui	gui†	rui†	ri†	ri†	gui†	rui†	
234	vomit	*lua	lua†	luak†	luak†	li†	lok†	lok†	
235A	spit	*tsil	til†	tsil†	tsil†	tsi:†	sui†	ti†	
235B	spit	*tʃʰak	sia†	tʃʰak†	tʃʰak†	tʃʰo†	-	-	
236	cough	*kʰu	kʰu†	kʰu	kʰu†	kʰo†	kʰu†	kʰu?†	
237A	sneeze	*ha	hek†	ha†	ha†	-	-	ŋak†	
237B	sneeze	*tʃʰei	tʃei†	tʃio†	tʰiu†	-	-	tʃi:†	
238	yawn	*ha:m	ha:m†	ham†	ham†	ha†	ha:n†	ha:m†	
242	lick	*liak	liak†	liak†	lia?†	lie†	leik†	le:k†	
244	laugh	*nu:i	nu:i†	nui†	ni:†	ni:†	nui†	nui†	
247	shout	*au	oŋ†	au†	au†	o:†	-	-	
250A	sing	*la	la†	-	la:†	la:†	la†	-	

250B	sing	*sa	sa ^V	-	sa [†]	sa [†]	sak [†]	-
251A	think	*ŋai	ŋai [†]	ŋai [†]	-	-	-	ŋai?†
251B	think	*{ tua }	-	tua [†]	-	-	-	tu?†
253	forget	*ŋil	ŋil [†]	ŋil [†]	-	-	-	ŋi?†
256	hate	*hua	hua ^V	hua ^V	huat [†]	ho: [†]	-	-
257	wait	*ŋa:k	ŋak ^V	ŋa:k ^V	ŋa [†]	ha: [†]	giŋ ^V	ŋan [†]
261A	sleep	*ip	i [†]	-	i [†]	-	i [†]	ip [†]
261B	sleep	*mu	mu [†]	mu [†]	-	mo [†]	-	-
262	snore	*nar	na:k ^V	nar [†]	-	no [†]	-	ŋai ^V
263	dream	*maŋ	maŋ ^V	maŋ ^V	maŋ [†]	ma: [†]	maŋ [†]	maŋ [†]
264	hurt	*na:	na: [†]	na: [†]	-	-	na: ^V	na [†]
266	itch	*t ^h ak	t ^h ak [†]	t ^h ak [†]	t ^h ak [†]	t ^h a [†]	t ^h a:k ^V	t ^h ak [†]
267	scratch	*k ^h rut	k ^h uat ^V	-	k ^h eu?†	k ^h o: [†]	-	k ^h rut [†]
268	shiver	*k ^h rur	-	k ^h ur ^V	t ^h er [†]	t ^h e [†]	-	k ^h ret [†]
269	die	*t ^h i:	t ^h i: [†]	t ^h i: [†]	t ^h i [†]	t ^h i: [†]	-	t ^h i [†]
270	ghost	*k ^h ra	k ^h a [†]	-	t ^h la ^V	t ^h lo: [†]	-	-
271	sit	*t ^h u:	tu [†]	t ^h u: [†]	t ^h ut [†]	to [†]	-	-
272	stand	*dij	dij [†]	dij [†]	diar ^V	dia [†]	di: [†]	dui ^V
273A	kneel	*k ^h uk	k ^h uk ^V	-	k ^h uk [†]	k ^h ua [†]	k ^h uk [†]	k ^h u [†]
273B	kneel	*{din}	din ^V	-	-	-	du [†]	dɔŋ ^V
274A	walk	*lam	lam ^V	-	lam [†]	la: [†]	lan [†]	lam [†]
No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
274B	walk	*{CVC}	pai [†]	-	len ^V	-	ke [†]	tet [†]
275	crawl	*gak	vak ^V	vak ^V	-	-	vak [†]	-
277	enter	*lut	lut ^V	lu:t ^V	lut [†]	-	-	lut [†]
279	push	*nam	-	nam ^V	nam [†]	-	nui [†]	-
281	kick	*sui/pet	sui ^V /pek [†]	pet [†]	tʃ ^h ui?†	tʃ ^h ei [†]	t ^h ui [†]	pet [†]
283	fall	*kra	kia ^V	bla: ^V	tla: [†]	tla [†]	ka:k [†]	krui ^V
284A	swim	*tui	tui ^V	tui ^V	ti [†]	ti [†]	tui [†]	tui [†]
284B	swim	*zo	-	-	-	zo [†]	jao [†]	jok [†]
287	flow	*luaj	luaj [†]	luaj ^V	luanj ^V	lo [†]	lon [†]	lon ^V
288	give	*pe:	pia ^V	pe: ^V	pek [†]	pia [†]	pe:k [†]	pe [†]
289	tie	*{to:n}	-	to:n [†]	tem [†]	tau [†]	ko:n [†]	-
291	rub scrub	*no:t	no:t ^V	no:t ^V	nor ^V	-	-	mo:t ^V
292	wash	*sil	sil ^V	sil ^V	-	si: [†]	si [†]	-
293	launder	*sop	so:p ^V	su ^V	suk [†]	so [†]	suk [†]	-
294A	bathe	*tui	-	-	-	ti [†]	tui [†]	tui [†]
294B	bathe	*sil	sil ^V	-	-	si [†]	-	s ^h i [†]
297A	cut hair	*sam	sam ^V	sam [†]	-	sa [†]	san [†]	-
297B	cut hair	*met	me:t ^V	met ^V	me [†]	-	-	-

299	grind	*rial	goi [†]	rial [†]	rial [†]	rial [†]	-	re:t [†]
300	plant	*tsin [†]	-	tsin [†]	tsin [†]	tsei [†]	-	-
301	dig	*tso	to [†]	tso [†]	tso [†]	tso [†]	-	to [†]
302	bury corpse	*p ^h u:m	p ^h u:m [†]	p ^h u:m [†]	p ^h um [†]	bo: [†]	p ^h un [†]	bui [†]
304	dry something	*p ^h o	p ^h o [†]	p ^h o: [†]	p ^h o: [†]	-	-	p ^h o [†]
305	pound rice	*su	su: [†]	-	suk [†]	-	-	su [†]
307	boil something	*so	-	so: [†]	t ^h um [†]	-	-	so [†]
312	dance	*la:m	la:m [†]	lam [†]	la:m [†]	la: [†]	lan [†]	lam [†]
313	shoot	*ka:p	ka:p [†]	ka:p [†]	ka [†]	ka [†]	ka:p [†]	ka:p [†]
315	kill	*t ^h at	t ^h at [†]	t ^h at [†]	t ^h a [†]	t ^h ia [†]	-	-
317	buy	*lei	lei [†]	lei [†]	-	lei [†]	-	lei [†]
318	sell	*zuar	zuak [†]	zuar [†]	zuar [†]	zia [†]	jo: [†]	joi [†]
319	exchange	*k ^h req	k ^h e:k [†]	t ^h len [†]	t ^h len [†]	t ^h lai [†]	-	t ^h on [†]
320	pay	*pia	pi:a [†]	pe: [†]	perk [†]	pia [†]	pei [†]	-
321	steal	*ru:	gu: [†]	ru: [†]	-	ru: [†]	-	ru [†]
322	one person	*k ^h at	k ^h at [†]	k ^h at [†]	k ^h at [†]	k ^h a [†]	-	-
323	two	*ni ^o	ni [†]	ni [†]	ni? [†]	ne [†]	mi: [†]	ni [†]
324	three	*t ^h um	t ^h um [†]	t ^h um [†]	t ^h um [†]	t ^h o [†]	t ^h un [†]	t ^h um [†]
325	four	*li	li [†]	li [†]				
326	five	*ŋa	ŋa [†]	ŋa: [†]	ŋa: [†]	ŋa: [†]	ŋa: [†]	ŋa: [†]
327	six	*ruk	guk [†]	ruk [†]	ruk [†]	ru: [†]	ruk [†]	ruk [†]
328A	seven	*sa	sa [†]	pa [†]				
328B	seven	*ri	gi [†]	ri [†]	ri? [†]	ri [†]	ri? [†]	ri [†]
329	eight	*riat	giat [†]	riat [†]	riat [†]	re [†]	-	ret [†]
330	nine	*kua	kua [†]	kua [†]	kua [†]	ki: [†]	ko [†]	ko [†]
331	ten	*ra ^o	so:m [†]	so:m [†]	ra: [†]	ra: [†]	ha [†]	ra [†]
332	hundred	*za	za: [†]	za: [†]	za [†]	za [†]	-	-
No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
334	many	*tam	tam [†]	tam [†]	tam [†]	-	-	dam [†]
337	few	*to:m	to:m [†]	tlem [†]	tlom [†]	-	-	-
339	big	*lian	lian [†]	lian [†]	-	lai [†]	len [†]	-
341	long	*sau	sau:u [†]	-	sau [†]	-	sau [†]	sau [†]
342	short (length)	*toi	tom [†]	toi:i [†]	toi:i [†]	-	toi [†]	toi [†]
343	tall	*sa:ŋ	sa:ŋ [†]	sa:ŋ [†]	sa:ŋ [†]	sa [†]	saj [†]	-
344	short (height)	*niam	niam [†]	ŋiam [†]	niam [†]	ŋai [†]	ŋen [†]	nem [†]
345	thick	*t ^h a	sa? [†]	t ^h a? [†]	t ^h a? [†]	tʃa [†]	sa: [†]	sa [†]
346	thin	*pan	pa [†]	pan [†]	pan [†]	pa: [†]	pa: [†]	pan [†]
347	fat	*t ^h au	t ^h au [†]	t ^h a:u [†]	t ^h au [†]	t ^h o: [†]	t ^h o [†]	t ^h au [†]
349	wide (breadth)	*kau	-	-	kau [†]	ko [†]	kau [†]	kau [†]
351	deep	*t ^h u:k	t ^h u:k [†]	t ^h u:k [†]	t ^h uk [†]	t ^h u [†]	t ^h o:k [†]	t ^h uk [†]

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
395A	deaf	*pan ^j	-	-	pa ^j	biŋ ^j	pan ^j	
399	bad	*tʃʰia	sia ^j	tʃʰia ^j	tʃʰia ^j	tʃʰe: ^j	si: ^j	se ^j
402	when (past)	*tik	tik ^j	tik ^j	tik ^j	ti ^j	tu ^j	tia ^j
403	where	*koi	koi ^j	kʰoi ^j	kʰoi ^j	kʰa ^j	-	-
403	where	*a	a ^j	a ^j	a ^j	-	o ^j	-
404	who	*hau	-	-	hau ^j	hau ^j	-	ha ^j
355A	right side	{ - }	-	-	-	-	-	-
355B	left side	*lam	lam ^j	lam ^j	lei ^j	la ^j	-	lam ^j
356A	left side	*gei	vei ^j	vei ^j	-	vei ^j	gi ^j	-
356B	left side	*lam	lam ^j	lam ^j	lei ^j	la ^j	-	lam ^j
358	far	*la:	la ^j	la: ^j	la: ^j	la ^j	la: ^j	-
359	near	*nai:	na:i ^j	nai: ^j	nai? ^j	ne ^j	nai ^j	-
360A	this	*hi	hi? ^j	hei ^j	hi ^j	hi ^j	hi ^j	-
360B	this	*hi	-	hi ^j	hi ^j	hi? ^j	-	-
361A	that	*hua:	hua: ^j	kʰa ^j	kʰi ^j	ho: ^j	hu ^j	kho ^j
361B	that	*kʰa	hua: ^j	kʰa ^j	kʰi ^j	ho: ^j	hu ^j	kho ^j
364	red	*sen	san ^j	sen ^j	sen ^j	sai ^j	tʰin ^j	sen ^j
365	green	*riŋ	en ^j /hiŋ ^j	riŋ ^j	riŋ ^j	reo ^j	en ^j	krin ^j
366	yellow	*Na:i	na:i ^j	-	ai ^j	mai ^j	-	a:i ^j
368	new	*tʰar	tʰa:k ^j	tʰar ^j	tʰar ^j	tʰia: ^j	tʰa: ^j	tʰai ^j
369	old	*lui	lu:i ^j	lui ^j	lun ^j	-	-	-
370	dark	*mial	mial ^j	-	mui ^j	-	-	m̥ap ^j
373	different	*CaN	lam ^j	raŋ ^j	daj ^j	na ^j	laŋ ^j	lak ^j
374	sweet	*kʰrum	kʰum ^j	tʰlum ^j	tʰlum ^j	tʰlo ^j	tui ^j	-
375	sour	*tʰur	tʰuk ^j	tʰur ^j	tʰor ^j	tʰu ^j	tʰo:k ^j	tʰui ^j
376	bitter	*kʰa:	kʰa: ^j	kʰa: ^j	kʰa: ^j	kʰa: ^j	kʰa: ^j	kʰa: ^j
377	spicy hot	*tʰak	tʰak ^j	tʰak ^j	tʰak ^j	-	-	-
380	dry, to be dry	*ro	-	ro: ^j	rau ^j	-	-	roŋ ^j
382	hot	*IVC	-	lum ^j	-	lo ^j	-	loŋ ^j
384	sharp	*Cum	hiam ^j	zum ^j	zum ^j	-	sui ^j	sʰum ^j
385	blunt	*mo:l	mo:l ^j	-	no: ^j	mo: ^j	-	moŋ ^j
386	heavy	*rit	gik ^j	rit ^j	rit ^j	ri: ^j	gi: ^j	ri? ^j
387	hard	*Cak	sak ^j	sak ^j	hak ^j	-	tak ^j	-
388	smooth	*na:l	-	na:l ^j	mil ^j	nia ^j	-	nai ^j
389	fast	*raŋ	la:ŋ ^j	raŋ ^j	reŋ ^j	-	raŋ ^j	-
393	tired	*ba	-	-	ba ^j	ba ^j	bai ^j	boŋ ^j
394A	blind	*mik	mit ^j	mit ^j	mit ^j	ma: ^j	mi ^j	mik ^j
394B	blind	*tso	to ^j	-	tso ^j	tso ^j	-	-
395A	deaf	*na	-	-	na ^j	na ^j	na ^j	na ^j

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
406	how many person	*zat	za↓	zat↑	zat↑	zi↑	-	jat↑
407A	stream	*tui	-	-	ti↑	ti↑	-	tui↑
407B	stream	*ga	-	-	va↓	va↓	va↓	-
408	wet rice field	*lo	lo↓	lo:↑	lei↓	lei↑	li↑	lai↓
409	ripe	*m̥in	min↓	min↑	m̥in↓	m̥a↓	m̥in↓	m̥in↓
410	rice seedling	*tsaj	-	-	tsaj↓	tsa↓	saj↓	taŋ↓
411A	pangolin	*sa	sa↓	sa↓	sa↓	-	-	-
411B	pangolin	*pʰu	pʰu↓	pʰu:↑	pʰu:↑	-	-	pʰu:↑
412	crested	*tʃʰuaŋ	suanj↓	tʃʰuaŋ↓	tʃʰuaŋ↓	tsa↓	-	siŋ↓
413	water leech	*li:t	li:t↓	li:t↓	li:t↑	li↑	-	li:t↓
414	land leech	*got	vot↓	vat↓	vut↓	va↓	va↓	vat↓
415A	earth worm	*tsaj	taŋ↓	tsaj↓	tsaj↓	tsa↓	-	taŋ↓
415B	earth worm	*tsel	tel↓	-	tsel↓	-	tei↓	-
416A	I (1s)	*kei	kei↓	kei↓	kei↓	kei↓	kai↓	kei↓
416B	I (1s)	*ma	ma↓	ma↓	ma?↓	ma↓	-	-
417A	thou (2s)	*naŋ	naŋ↓	naŋ↓	naŋ↓	na↓	naŋ↓	naŋ↓
417B	thou (2s)	*ma	ma↓	ma↓	ma?↓	ma↓	-	-
418A	it	*a	a↓	a↓	a↓	a↓	a↓	a↓
428B	it	*ma	ma↓	ma↓	ma?↓	ma?↓	-	-
429A	we (1p)	*kei	ei↓	kan↓	kan↓	kei↓	kai↓	kei↓
429B	we (1p)	*ma	mau↓	-	ma?↓	mo↓	mi↓	mi↓
420A	you (2p)	*nan	no↓	in↓	nan↓	na↓	naŋ↓	naŋ↓
420B	you (2p)	*ma	mau↓	-	ma?↓	mo↓	mi↓	mi↓
421A	they	*an	a↓	an↓	an↓	a↓	ni↓	an↓
421B	they	*ma	mau↓	-	ma?↓	mo↓	mi↓	ni↓
423	take	*la:	la:↓	la:↓	la:k↓	la↓	la:↓	-
425	split with knife	*tsan	tan↓	-	tsan↓	tsu↓	-	sʰa:t↓
426	bend	*ko:i	ko:i↓	koi↓	koi↓	ko↓	kon↓	
427	lift	*tsoi	toi↓	tsoi↓	tsoi↓	tso↓		-
430	half a quantity	*tsan	-	tsan↓	tan↓	tseu↓	-	-
432	warm	*lum	lu:m↓	lum↓	lum↓	lo:↓	-	-
434	difficult	*har	hak↓	har↓	har↓	-	-	-
437	elder bro. of m	*u:	u:↓	u:↓	u:↓	u:↓	-	-
438A	elder sister of f	*u:	u:↓	u:↓	u:↓	u:↓	-	-
438B	elder sister of f	*nu	nu↓	nu↓	nu↓	-	nu↓	-
439	elder sister of m	*nu	nu↓	nu↓	nu↓	-	nu↓	-
440A	yr. bro. of m	*nau	na:u↓	nau↓	nau↓	-	nau↓	nau↓
440B	yr. bro. of m	*pa	pa↓	-	pa↓	-	-	pa↓
441A	yr. sister of f	*nau	na:u↓	far↓	nau↓	-	-	nau↓

441B	yr. sister of f	*nu	nuʌ	nu;ŋ	nuŋ	-	-	nuʌ
442	yr. sister of m	*nu	nuʌ	nu;ŋ	nuŋ	-	nuŋ	nuŋ

APPENDIX B

RECONSTRUCTED WORDS

The following table shows the reconstructed Proto Chin vocabulary. Reconstructed words for disyllabic forms are the combination of each reconstructed syllables shown in Appendix A. Where there are two completing word forms, they are added as additional entity with the same reference number. In any disyllabic which is a compound syllable of A and B in Appendix A, a dot (.) will be used as a sign of syllable break. The left-hand column shows the reference number. The final two columns provide glosses of words and reconstructed form.

No.	Gloss	Proto Chin
001	sky	*ga:n
002	sun	*ni
003	moon	*k ^h ra:
004	star	*ar.si
005	cloud	*mei
007	rain	*rua
010	thunder	*k ^h o
011	shadow	*lim ^o
012	night	*zan
013	day	*ni
014	morning	*ziŋ

No.	Gloss	Proto Chin
015	noon	*tʃ ^h un
016	yesterday	*za:.ni
018	year	*kum
019	east	*tʃ ^h ua.lam
020	west	*krak.lam
021	north	*tʃ ^h ak.lam
022	south	*k ^h raj.lam
023	water	*tui
025	sea	*tui.pi

026	earth/soil	*lei
028	dust	*gui
029	stone	*luj
No.	Gloss	Proto Chin
030	sand	*{se:}
033	silver	*ju:n
034	iron	*t ^h ir
035	mountain	*kraŋ
036	cave	*k ^h ul
037	forest	*ram
038	tree	*t ^h inj.kuŋ
039	branch	*t ^h inj.{Ce}
040	tree bark	*t ^h inj.hoŋ
041	thorn	*liŋ
043	leaf	*t ^h inj.na
044	flower	*panj.par
045	fruit	*t ^h ei
048	bamboo	*rua
049	bamboo shoot	*rua.toi
050	mushroom	*pa
051	rattan	*rui
052	kapok	*panj
053	sugarcane	*su
056	liquor	*zu:
057	banana	*ban.la:
059	mango	*hai:i
062	eggplant	*bok.bo:n
064	ginger	*t ^h iŋ
066	corn	*gai.mim
067	red pepper	*{mal}.{Ca:}
068	paddy rice	*sa
069	cooked rice	*bu
070	pounded rice	*taŋ
071	salt	*tsi:
072	animal	*ram.sa:
073	tiger	*sa.kei
074	bear	*gom
075	deer	*sa.zuk
076	monkey	*zoŋ
077	gibbon	*{hu}

078	rabbit	*sa.{ge}
079	porcupine	*sa.ku
080	rat	*zu
081	dog	*ui
082	bark	*nak
084	cat	*zo.{CV}
085	pig	*gok
087	milk	*nu ^o
088	buffalo	*loi
No.	Gloss	Proto Chin
089	horn of buffalo	*ki:
090	tail	*mei
091	elephant	*sai
092	elephant tusk	*{ŋo}
093	bird	*ga
094	bird's nest	*bu
095	wing	*k ^h ra
096	feather	*mul
097	fly	*zuaŋ
098	egg	*tui
099	chicken	*a:r
101	fish	*ja
102	snake	*rul
104	turtle	*sum.k ^h ok
106	frog	*u
107	insect	*luŋ
108	spider	*mom
109	spider web	*mom.bu
110	louse head	*rik
111	termite	*lei
113	snail	*tseŋ
114	mosquito	*kaŋ
115	bee	*k ^h o:i
116	fly	*t ^h o
117	butterfly	*pa.lep
119	head	*lu:
120	face	*mai
121	brain	*k ^h rok
122	hair	*sam
123	forehead	*tsal

124	eyebrow	*mik.k ^h u
125	eye	*mik
127	nose	*n ^g a:r
128	cheek	*biaŋ
129	ear	*n ^g a
130	mouth	*kam
131	tongue	*lei
132	saliva	*tsil
133	tooth	*ha:
134	tooth	*ha:.ni:
135	chin	*k ^h a
136	beard	*mul
137	shave	*met
138	back	*nVN
140	navel	*la:i
No.	Gloss	Proto Chin
141	heart	*luŋ
142	lungs	*tsuap
143	liver	*t ^h in
144	intestines	*ril
145	hand	*kut
146	elbow	*ki
147	armpit	*zak
148	palm	*kut.p ^h a
149	finger	*kut.{daŋ}
150	fingernail	*kut.tin
152	leg	*k ^h e:/k ^h o:
153	thigh	*p ^h ei
154	knee	*k ^h uk
155	calf	*tsan
156	shin	*ŋal
157	foot	*k ^h e.{p ^h a}
157	foot	*k ^h o.{p ^h a}
159	bone	*ru
160	rib	*na:k.ru
161	flesh	*sa.tak
162	fat	*t ^h au
163	skin	*gun
164	blood	*t ^h i
165	sweat	*k ^h ran

166	pus	*ŋai
167	excrement	*e:k
168	urine	*zun
169	man	*pa.mi
170	woman	*nu.mi
171	person	*mi
172	father	*pa
173	mother	*nu
175	son in law	*ma:k
175	son in law	*sa
176	husband	*ga
177	wife	*nu.pi:
178	widow	*nu.mei
180	yr. bro. of f.	*nau
182	name	*min
183	village	*k ^h ua
184	road/path	*lam
185	boat	*loŋ
186	house	*in
187	door	*kon
188	window	*t ^h o
No.	Gloss	Proto Chin
189	roof	*kruŋ
191	wall of house	*paj
192	mat	*p ^h er
193	pillow	*k ^h am
194	blanket	*puan
196	weave (cloth)	*ta
197	dye (cloth)	*ron
200	sew	*k ^h rui
201	needle	*p ^h im
202	comb	*t ^h i
205	pot (cooking)	*be:l
205	pot (cooking)	*am
207	mortar	*sum
208	pestle	*suk
211	firewood	*t ^h ij
212	fire	*mei
213	ashes	*gut
214	smoke (fire)	*mei.k ^h u

216	drum	*k ^h uaŋ
218	bow (cross bow)	*li:
219	arrow	*t ^h al
220	spear	*sei
221	knife	*tsem
222	hear	*t ^h ei
223	smell something	*nam
224	see	*mu
226	weep	*krap
227	eat	*ei
228	swallow	*dol
231	thirsty	*tui.hal
232	drink	*{din}
233	drunk	*rui
234	vomit	*lua
235	spit	*tsil.tj ^h ak
236	cough	*k ^h u
237	sneeze	*ha.tj ^h ei
238	yawn	*ha:m
242	lick	*liak
244	laugh	*nu:i
247	shout	*au
250	sing	*la.sa
251	think	*ŋai.{tua}
253	forget	*ŋil
256	hate	*hua
257	wait	*ŋa:k
No.	Gloss	Proto Chin
261	sleep	*ip.mu
262	snore	*ŋar
263	dream	*maŋ
264	hurt	*na:
266	itch	*t ^h ak
267	scratch	*k ^h rut
268	shiver	*k ^h rur
269	die	*t ^h i:
270	ghost	*k ^h ra
271	sit	*t ^h u:
272	stand	*diŋ
273	kneel	*k ^h uk.{din}

274	walk	*lam.{CVC}
275	crawl	*gak
277	enter	*lut
279	push	*nam
281	kick	*sui/pet
283	fall	*kra
284	swim	*tui.zo
287	flow	*luaj
288	give	*pe:
289	tie	*{to:n}
291	rub/scrub	*no:t
292	wash	*sil
293	launder	*sop
294	bathe	*tui.sil
297	cut hair	*sam.met
299	grind	*rial
300	plant	*tsiŋ
301	dig	*tso
302	bury corpse	*p ^h u:m
304	dry something	*p ^h o
305	pound rice	*su
307	boil something	*so
312	dance	*la:m
313	shoot	*ka:p
315	kill	*t ^h at
317	buy	*lei
318	sell	*zuar
319	exchange	*k ^h reŋ
320	pay	*pia
321	steal	*ru:
322	one person	*k ^h at
323	two	*ni ^ŋ
324	three	*t ^h um
No.	Gloss	Proto Chin
325	four	*li
326	five	*ŋa
327	six	*ruk
328	seven	*sa.ri
329	eight	*riat
330	nine	*kua

No.	Gloss	Proto Chin
331	ten	* ^o ra
332	hundred	*za
334	many	*tam
337	few	*to:m
339	big	*lian
341	long	*sau
342	short (length)	*toi
343	tall	*sa: ^ŋ
344	short (height)	*niam
345	thick	*tʃʰa
346	thin	*pan
347	fat	*tʰau
349	wide (breadth)	*kau
351	deep	*tʰu:k
355	right side	*{ }.lam
356	left side	*gei.lam
358	far	*la: ^o
359	near	*na:i
360	this	*hi.hi
361	that	*hua:
361	that	*kʰa
364	red	*sen
365	green	*riŋ
366	yellow	*Na:i
368	new	*tʰar
369	old	*lui
370	dark	*mial
373	different	*CaN
374	sweet	*kʰrum
375	sour	*tʰur
376	bitter	*kʰa:
377	spicy hot	*tʰak
380	dry, to be dry	*ro
382	hot	*IVC
384	sharp	*Cum
385	blunt	*mo:l
386	heavy	*rit
387	hard	*Cak
388	smooth	*na:l

389	fast	*ranj
393	tired	*ba
394	blind	*mik.tso
395	deaf	* ^o na.panj
399	bad	*tʃʰia
402	when (past)	*tik
403	where	*koi
403	where	*a
404	who	*hau
406	how many person	*zat
407	stream	*tui.ga
408	wet rice field	*lo
409	ripe	*min
410	rice seedling	*tanj
411	pangolin	*sa.pʰu
412	crested	*tʃʰuaŋ
413	water leech	*lit
414	land leech	*got
415	earth worm	*tsaq.tsel
416	I (1s)	*kei.ma
417	thou (2s)	*naŋ.ma
417	thou (2s)	*ma
418	it	*a.ma
429	we (1p)	*kei.ma
420	you (2p)	*nan.ma
421	they	*an.ma
423	take	*la:
425	split with knife	*tsan
426	bend	*ko:i
427	lift	*tsoi
430	half a quantity	*tsan
432	warm	*lum
434	difficult	*har
437	elder bro. of m	*u:
438	elder sister of f	*u:.nu
439	elder sister of m	*nu
440	yr. bro. of m	*nau.pa
441	yr. sister of f	*nau.nu
442	yr. sister of m	*nu

APPENDIX C

RECONSTRUCTED WORDS ALPHABETIZED BY CHIN

The following table shows the reconstructed Proto Chin vocabulary alphabetized by Proto Chin.

Proto Chin	No.	Gloss
*{ } .lam	355	right side
*{ŋo}	092	elephant tusk
*{din}	232	drink
*{hu}	077	gibbon
*{mal} .{Ca:}	067	red pepper
*{se:}	030	sand
*{to:n}	289	tie
*CaN	373	different
*Cak	387	hard
*Cum	384	sharp
*Na:i	366	yellow
*ŋa:k	257	wait
*ŋil	253	forget
*ŋa	101	fish
*ŋa	326	five
*ŋai .{ tua }	251	think
*ŋal	156	shin
*ŋu:n	033	silver
*a	403	where

Proto Chin	No.	Gloss
*a.ma	418	it
*am	205	pot 9cooking)
*an.ma	421	they
Proto Chin	No.	Gloss
*ar.si	004	star
*au	247	shout
*a:r	099	chicken
*ba	393	tired
*ban.la:	057	banana
*be:l	205	pot (cooking)
*biaŋ	128	cheek
*bok.bo:n	062	eggplant
*bu	069	cooked rice
*bu	094	bird's nest
*dijŋ	272	stand
*dol	228	swallow
*ei	227	eat
*e:k	167	excrement
*ga	093	bird
*ga	176	husband

*gai.mim	066	corn
*gak	275	crawl
*ga:n	001	sky
*gei.lam	356	left side
*gok	085	pig
*gom	074	bear
Proto Chin	No.	Gloss
*got	414	land leech
*gui	028	dust
*gun	163	skin
*gut	213	ashes
*ha.t ^h ei	237	sneeze
*har	434	difficult
*hau	404	who
*ha:	133	tooth
*ha:.ni:	134	tooth
*ha:i	059	mango
*ha:m	238	yawn
*hi.hi	360	this
*hua	256	hate
*hua:	361	that
*in	186	house
*ip.mu	261	sleep
*k ^h a	135	chin
*k ^h a	361	that
*k ^h am	193	pillow
*k ^h at	322	one person
*k ^h a:	376	bitter
*k ^h e.{p ^h a}	157	foot
*k ^h e:/k ^h o:	152	leg
*k ^h o	010	thunder
*k ^h o.{p ^h a}	157	foot
*k ^h o:i	115	bee
*k ^h ra	095	wing
*k ^h ra	270	ghost
*k ^h raj.lam	022	south
*k ^h ran	165	sweat
*k ^h ra:	003	moon
*k ^h reŋ	319	exchange
*k ^h rok	121	brain

*k ^h rui	200	sew
*k ^h rum	374	sweet
*k ^h rur	268	shiver
*k ^h rut	267	scratch
*k ^h u	236	cough
*k ^h ua	183	village
*k ^h uaŋ	216	drum
*k ^h uk	154	knee
*k ^h uk.{din}	273	kneel
*k ^h ul	036	cave
*kam	130	mouth
*kau	349	wide (breadth)
Proto Chin	No.	Gloss
*ka:ŋ	114	mosquito
*ka:p	313	shoot
*kei.ma	416	I (1s)
*kei.ma	429	we (1p)
*ki	146	elbow
*ki:	089	horn of buffalo
*koŋ	187	door
*koi	403	where
*ko:i	426	bend
*kra	283	fall
*kraŋ	035	mountain
*krak.lam	020	west
*krap	226	weep
*kruŋ	189	roof
*kua	330	nine
*kum	018	year
*kut	145	hand
*kut.{daŋ}	149	finger
*kut.p ^h a	148	palm
*kut.tin	150	fingernail
*IVC	382	hot
*la:	358	far
*liŋ	041	thorn
*lim	011	shadow
*lui	369	old
*la.sa	250	sing
*lam	184	road/path

*lam.{CVC}	274	walk
*la:	423	take
*lai:i	140	navel
*la:m	312	dance
*lei	026	earth soil
*lei	111	termite
*lei	131	tongue
*lei	317	buy
*li	325	four
*liak	242	lick
*lian	339	big
*li:	218	bow (cross bow)
*lit:	413	water leech
*lo	408	wet rice field
*loŋ	185	boat
*loi	088	buffalo
*luŋ	029	stone
*luŋ	107	insect
Proto Chin	No.	Gloss
*luŋ	141	heart
*lua	234	vomit
*luɑŋ	287	flow
*lum	432	warm
*lut	277	enter
*lu:	119	head
*min	409	ripe
*mul	096	feather
*ma	417	thou (2s)
*maj	263	dream
*mai	120	face
*ma:k	175	son in law
*mei	005	cloud
*mei	090	tail
*mei	212	fire
*mei.kʰu	214	smoke fire
*met	137	shave
*mi	171	person
*mial	370	dark
*mik	125	eye
*mik.kʰu	124	eyebrow

*mik.tso	394	blind
*min	182	name
*mom	108	spider
*mom.bu	109	spider web
*mo:l	385	blunt
*mu	224	see
*mul	136	beard
*nVN	138	back
*na.pan	395	deaf
*nar	262	snore
*na:i	166	pus
*na:i	359	near
*na:r	127	nose
*ni	323	two
*nu	087	milk
*na	129	ear
*naj.ma	417	thou (2s)
*nak	082	bark
*nam	223	smell something
*nam	279	push
*nan.ma	420	you (2p)
*nau	180	yr. bro. of f.
*nau.nu	441	yr. sister of f
*nau.pa	440	yr. bro. of m
Proto Chin	No.	Gloss
*na:	264	hurt
*na:k.ru	160	rib
*na:l	388	smooth
*ni	002	sun
*ni	013	day
*niam	344	short (height)
*no:t	291	rub scrub
*nu	173	mother
*nu	439	elder sister of m
*nu	442	yr. sister of m
*nu.mei	178	widow
*nu.mi	170	woman
*nu.pi:	177	wife
*nu:i	244	laugh
*pʰei	153	thigh

	No.	Gloss
*p ^h er	192	mat
*p ^h im	201	needle
*p ^h o	304	dry something
*p ^h u:m	302	bury (corpse)
*pa	050	mushroom
*pa	172	father
*pa.lep	117	butterfly
*pa.mi	169	man
*pan	052	kapok
*pan	191	wall of house
*pan.par	044	flower
*pan	346	thin
*pe:	288	give
*pia	320	pay
*puan	194	blanket
*ra	331	ten
*rin	365	green
*rik	110	louse (head)
*rui	051	rattan
*raŋ	389	fast
*ram	037	forest
*ram.sa:	072	animal
*rial	299	grind
*riat	329	eight
*ril	144	intestines
*rit	386	heavy
*ro	380	dry, to be dry
*roŋ	197	dye (cloth)
*ru	159	bone
*rua	007	rain
Proto Chin	No.	Gloss
*rua	048	bamboo
*rua.toi	049	bamboo shoot
*rui	233	drunk
*ruk	327	six
*rul	102	snake
*ru:	321	steal
*sa	068	paddy rice
*sa	175	son in law
*sa.{ge}	078	rabbit

	No.	Gloss
*sa.kei	073	tiger
*sa.ku	079	porcupine
*sa.p ^h u	411	pangolin
*sa.ri	328	seven
*sa.tak	161	flesh
*sa.zuk	075	deer
*sam	122	hair
*sam.met	297	cut (hair)
*sau	341	long
*saŋ	343	tall
*sa:i	091	elephant
*sei	220	spear
*sen	364	red
*sil	292	wash
*so	307	boil something
*sop	293	launder
*su	053	sugarcane
*su	305	pound rice
*sui/pet	281	kick
*suk	208	pestle
*sum	207	mortar
*sum.k ^h ok	104	turtle
*t ^h ak	266	itch
*t ^h ak	377	spicy hot
*t ^h al	219	arrow
*t ^h ar	368	new
*t ^h at	315	kill
*t ^h au	347	fat
*t ^h a:u	162	fat
*t ^h ei	045	fruit
*t ^h ei	222	hear
*t ^h i	164	blood
*t ^h i	202	comb
*t ^h inj	211	firewood
*t ^h inj.{Ce}	039	branch
*t ^h inj.ho:ŋ	040	tree bark
Proto Chin	No.	Gloss
*t ^h inj.kuŋ	038	tree
*t ^h inj.na	043	leaf
*t ^h in	143	liver

*t ^h ir	034	iron
*t ^h i:	269	die
*t ^h inj	064	ginger
*t ^h o	116	fly
*t ^h o	188	window
*t ^h um	324	three
*t ^h ur	375	sour
*t ^h u:	271	sit
*t ^h uk	351	deep
*tʃ ^h a	345	thick
*tʃ ^h ak.lam	021	north
*tʃ ^h ia	399	bad
*tsil	132	saliva
*tʃ ^h ua.lam	019	east
*tʃ ^h uanj	412	crested
*tʃ ^h un	015	noon
*ta	196	weave (cloth)
*taŋ	070	pounded rice
*taŋ	410	rice seedling
*tam	334	many
*tik	402	when (past)
*toi	342	short (length)
*to:m	337	few
*tsaŋ.tsel	415	earth worm
*tsal	123	forehead
*tsan	155	calf
*tsan	425	split with knife
*tsan	430	half a quantity
*tseŋ	113	snail
*tsem	221	knife
*tsinj	300	plant

	Proto Chin	No.	Gloss
*tsi:	071	salt	
*tso	301	dig	
*tsoi	427	lift	
*tsuap	142	lungs	
*tui	023	water	
*tui	098	egg	
*tui.ga	407	stream	
*tui.hal	231	thirsty	
*tui.pi	025	sea	
*tui.sil	294	bathe	
Proto Chin	No.	Gloss	
*tui.zo	284	swim	
*u	106	frog	
*ui	081	dog	
*u:	437	elder bro. of m	
*u:.nu	438	elder sister of f	
*za	332	hundred	
*zak	147	armpit	
*zan	012	night	
*zat	406	how many person	
Proto Chin	No.	Gloss	
*za:.ni	016	yesterday	
*zij	014	morning	
*zo.{CV}	084	cat	
*zoŋj	076	monkey	
*zu	080	rat	
*zuaŋj	097	fly	
*zuar	318	sell	
*zun	168	urine	
*zu:	056	liquor	

APPENDIX D

RECONSTRUCTED WORDS ALPHABETIZED BY GLOSS

The following table shows the reconstructed Proto Chin vocabulary alphabetized by English gloss. There is no entry for the words which do not have proto form.

Gloss	No.	Proto Chin
animal	072	*ram.sa:
armpit	147	*zak
arrow	219	*tʰal
ashes	213	*gut
back	138	*nVN
bad	399	*tʃʰia
bamboo	048	*rua
bamboo shoot	049	*rua.toi
banana	057	*ban.la:
bark	082	*nak
bathe	294	*tui.sil
bear	074	*gom
beard	136	*mul
bee	115	*kʰoi
bend	426	*ko:i
big	339	*lian
bird	093	*ga
bird's nest	094	*bu

Gloss	No.	Proto Chin
bitter	376	*kʰa:
blanket	194	*puan
Gloss	No.	Proto Chin
blind	394	*mik.tso
blood	164	*tʰi
blunt	385	*mo:l
boat	185	*lon
boil something	307	*so
bone	159	*ru
bow cross bow	218	*li:
brain	121	*kʰrok
branch	039	*tʰinj.{Ce}
buffalo	088	*loi
bury corpse	302	*pʰu:m
butterfly	117	*pa.lep
buy	317	*lei
calf	155	*tsan
cat	084	*zo.{CV}
cave	036	*kʰul

cheek	128	*biaŋ
chicken	099	*a:r
chin	135	*kʰa
cloud	005	*mei
Gloss	No.	Proto Chin
comb	202	*tʰi
cooked rice	069	*bu
corn	066	*gai.mim
cough	236	*kʰu
crawl	275	*gak
crested	412	*tʃʰuaŋ
cut hair	297	*sam.met
dance	312	*la:m
dark	370	*mial
day	013	*ni
deaf	395	*nə.panŋ
deep	351	*tʰu:k
deer	075	*sa.zuk
die	269	*tʰi:
different	373	*CaN
difficult	434	*har
dig	301	*tso
dog	081	*ui
door	187	*koŋ
dream	263	*maŋ
drink	232	{din}
drum	216	*kʰuaŋ
drunk	233	*rui
dry something	304	*pʰo
dry, to be dry	380	*ro
dust	028	*gui
dye cloth	197	*roŋ
ear	129	*nə
earth soil	026	*lei
earth worm	415	*tsaŋ.tsel
east	019	*tʃʰua.lam
eat	227	*ei
egg	098	*tui
eggplant	062	*bok.bɔ:n
eight	329	*riat

elbow	146	*ki
elder bro. of m	437	*u:
elder sister of f	438	*u:.nu
elder sister of m	439	*nu
elephant	091	*sa:i
elephant tusk	092	*{ŋo}
enter	277	*lut
exchange	319	*kʰreŋ
excrement	167	*eɪk
eye	125	*mik
Gloss	No.	Proto Chin
eyebrow	124	*mik.kʰu
face	120	*mai
fall	283	*kra
far	358	*la:
fast	389	*raŋ
fat	162	*tʰa:u
fat	347	*tʰau
father	172	*pa
feather	096	*mul
few	337	*to:m
finger	149	*kut.{daŋ}
fingernail	150	*kut.tin
fire	212	*mei
firewood	211	*tʰinj
fish	101	*na
five	326	*ŋa
flesh	161	*sa.tak
flow	287	*luanŋ
flower	044	*panŋ.par
fly	097	*zuŋ
fly	116	*tʰo
foot	157	*kʰe.{pʰa}
foot	157	*kʰo.{pʰa}
forehead	123	*tsal
forest	037	*ram
forget	253	*ŋil
four	325	*li
frog	106	*u
fruit	045	*tʰei

ghost	270	*kʰra
gibbon	077	*{hu}
ginger	064	*tʰɪŋ
give	288	*pe:
green	365	*rɪŋ
grind	299	*rial
hair	122	*sam
half a quantity	430	*tsan
hand	145	*kut
hard	387	*Cak
hate	256	*hua
head	119	*lu:
hear	222	*tʰei
heart	141	*luŋ
heavy	386	*rit
horn of buffalo	089	*ki:
Gloss	No.	Proto Chin
hot	382	*lVC
house	186	*in
how many person	406	*zat
hundred	332	*za
hurt	264	*na:
husband	176	*ga
I (1s)	416	*kei.ma
insect	107	*luŋ
intestines	144	*ril
iron	034	*tʰir
it	418	*a.ma
itch	266	*tʰak
kapok	052	*paŋ
kick	281	*sui/pet
kill	315	*tʰat
knee	154	*kʰuk
kneel	273	*kʰuk.{din}
knife	221	*tsem
land leech	414	*got
laugh	244	*nu:i
launder	293	*sop
leaf	043	*tʰɪŋ.ŋa
left side	356	*gei.lam

leg	152	*kʰe:/kʰo:
lick	242	*liak
lift	427	*tsoi
liquor	056	*zu:
liver	143	*tʰin
long	341	*sau
louse head	110	*řik
lungs	142	*tsuap
man	169	*pa.mi
mango	059	*ha:i
many	334	*tam
mat	192	*pʰer
milk	087	*nu
monkey	076	*zoŋ
moon	003	*kʰra:
morning	014	*zin
mortar	207	*sum
mosquito	114	*kaŋ
mother	173	*nu
mountain	035	*kraj
mouth	130	*kam
mushroom	050	*pa
Gloss	No.	Proto Chin
name	182	*min
navel	140	*la:i
near	359	*nai
needle	201	*pʰim
new	368	*tʰar
night	012	*zan
nine	330	*kua
noon	015	*tʃʰun
north	021	*tʃʰak.lam
nose	127	*na:r
old	369	*lui
one person	322	*kʰat
paddy rice	068	*sa
palm	148	*kut.pʰa
pangolin	411	*sa.pʰu
pay	320	*pia
person	171	*mi

pestle	208	*suk
pig	085	*gok
pillow	193	*kʰam
plant	300	*tsiŋ
porcupine	079	*sa.ku
pot cooking	205	*be:l
pot cooking	205	*am
pound rice	305	*su
pus	166	*nai:
pus	166	*nɔ:i
push	279	*nam
rabbit	078	*sa.{ge}
rain	007	*rua
rat	080	*zu
rattan	051	*rui
red	364	*sen
red pepper	067	*{mal}.{Ca:}
rib	160	*na:k.ru
rice seedling	410	*taŋ
right side	355	*{ }.lam
ripe	409	*mɪn
road path	184	*lam
roof	189	*kruŋ
root	042	*tʰinj.{ }
rub scrub	291	*no:t
saliva	132	*tsil
salt	071	*tsi:
sand	030	*{se:}
Gloss	No.	Proto Chin
scratch	267	*kʰrut
sea	025	*tui.pi
see	224	*mu
sell	318	*zuar
seven	328	*sa.ri
sew	200	*kʰrui
shadow	011	*lim
sharp	384	*Cum
shave	137	*met
shin	156	*ŋal
shiver	268	*kʰrur

shoot	313	*ka:p
short height	344	*niam
short length	342	*toi
shout	247	*au
silver	033	*ju:n
sing	250	*la.sa
sit	271	*tʰu:
six	327	*ruk
skin	163	*gun
sky	001	*ga:n
sleep	261	*ip.mu
smell something	223	*nam
smoke fire	214	*mei.kʰu
smooth	388	*na:l
snail	113	*tsep
snake	102	*rul
sneeze	237	*ha.tʃʰei
snore	262	*nar
son in law	175	*ma:k
son in law	175	*sa
sour	375	*tʰur
south	022	*kʰraŋ.lam
spear	220	*sei
spicy hot	377	*tʰak
spider	108	*mom
spider web	109	*mom.bu
spit	235	*tsil.tʃʰak
split with knife	425	*tsan
stand	272	*dij
star	004	*ar.si
steal	321	*ru:
stone	029	*luŋ
stream	407	*tui.ga
sugarcane	053	*su
Gloss	No.	Proto Chin
sun	002	*ni
swallow	228	*dol
sweat	165	*kʰran
sweet	374	*kʰrum
swim	284	*tui.zo

tail	090	*mei
take	423	*la:
tall	343	*sa: ^ŋ
ten	331	* ^o ra
termite	111	*lei
that	361	*hua:
that	361	*k ^h a
they	421	*an.ma
thick	345	*tʃ ^h a
thigh	153	*p ^h ei
thin	346	*pan
think	251	*ŋai.{tua}
thirsty	231	*tui.hal
this	360	*hi.hi
thorn	041	*ʃin̩
thou (2s)	417	*naŋ.ma
thou (2s)	417	*ma
three	324	*t ^h um
thunder	010	*k ^h o
tie	289	*{to:n}
tiger	073	*sa.kei
tired	393	*ba
tongue	131	*lei
tooth	133	*ha:
tooth	134	*ha:.ni:
tree	038	*t ^h in̩.kuŋ
tree bark	040	*t ^h in̩.hoŋ
turtle	104	*sum.k ^h ok
two	323	* ^o ni
urine	168	*zun
village	183	*k ^h ua
vomit	234	*lua
wait	257	*ŋa:k
walk	274	*lam.{CVC}
wall of house	191	*paŋ
warm	432	*lum
wash	292	*sil
water	023	*tui
water leech	413	*li:t
we (1p)	429	*kei.ma

Gloss	No.	Proto Chin
weave cloth	196	*ta
weep	226	*krap
west	020	*krak.lam
wet rice field	408	*lo
when past	402	*tik
where	403	*koi
where	403	*a
who	404	*hau
wide breadth	349	*kau
widow	178	*nu.mei
wife	177	*nu.pi:
window	188	*t ^h o
wing	095	*k ^h ra
woman	170	*nu.mi
yawn	238	*ha:m
year	018	*kum
yellow	366	*Na:i
yesterday	016	*za:.ni
you (2p)	420	*nan.ma
yr. bro. of f.	180	*nau
yr. bro. of m	440	*nau.pa
yr. sister of f	441	*nau.nu
yr. sister of m	442	*nu

APPENDIX E

WORD LISTS IN FULL SYLLABLE

The following table shows phonetic transcriptions of the word list of 443 vocabulary items in full syllable.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
1	sky	va:nɿ	va:nɿ	va:nɿ	a:va:lpɪɿ	ni:lta:lva:nɿ	k ^h o:mikɿ
2	sun	ni:ɿ	ni:ɿ	ni:ɿ	ne:ɿ	ɳ ^h ni:ɿ	k ^h o:ɳi:ɿ
3	moon	k ^h a:ɿ	t ^h la:ɿ	t ^h la:ɿpa:ɿ	t ^h la:ɿpa:ɿ	t ^h la:ɿ	k ^h ra:ɿ
4	star	ak:si:ɿ	ar:si:ɿ	ar:fi:ɿ	o:si:ɿ	a:si:ɿ	ai:si:ɿ
5	cloud	me:i:ɿ	t ^h u:mɿ	min:lmei:ɿ	mei:da:ɿ	ta:ma:i:ɿ	vaj:lmei:ɿ
6	mist	tui:k ^h u:ɿ	tiau:t ^h u:mɿ	ti:l:t ^h umɿ	mei:t ^h a:ɿ	ta:mai:bu?ɿ	zi:ɿ
7	rain	gua?ɿ	rua?ɿ	rua?ɿpiɿ	a:va:/sia:ɿ	k ^h u:ɿ	k ^h o:a:ɿ

No.	Gloss	Tedim	Mizo	Hakha	Ku'eo	Mara	Khumi	Li:pil
8	rainbow	sa:k ^h i:gun:k ^h a:u:	tʃ ^h imbal	tʃ ^h un:tʃ ^h a:ʃ	ku'eo:ri	gui:laj:zen	li:pil	Kaang
9	lightning	k ^h ɔ:p ^h e:ʃ	kol:p ^h e:ʃ	mim:tlaul	lo:lla:la:dza:kei?	le:sit	k ^h o:ptra:lai?	
10	thunder	van:giŋ	k ^h o:pui:ri:	k ^h ua:ri:ʃ	to:ka:lo:la:t ^h ia?	taŋ:p ^h ak	k ^h o:mɛ:m	
11	shadow	li:m	ʃim:t ^h laʃ	t ^h la:dem	a:ne:bu:ri	mu:t ^h la:ʃ	lip	
12	night	za:n	za:n	zan	a:ze	ɳ:du:n	t ^h an	
13	day	ni:	ni:/t ^h un	tʃ ^h un	a:va	ka:ni:ʃ	ɳə:pʃ	
14	morning	ziŋ:san	ziŋ:lam	ziŋ:ka:ʃ	mau:di	ɳ:k ^h on:mi:zaŋ	k ^h o:ŋo:i	
15	noon	sux:n	tʃ ^h un:lai	tʃ ^h un	nei:t ^h o?	ni:laŋ:hun	k ^h o:ŋi:p	
16	yesterday	za:ni	ni:min:la?	ni:zazan	za:tʃ:a:ne	zaŋ:du:	jan:mua	
17	morrow	ziŋ:dzian	nak:tuk:la?	t ^h ai:ziŋ	mo:la	ɳ:k ^h on	ŋo:i:k ^h o:ŋoi	
18	year	kum	kum	kum	ko	sa:niŋ	kum	
19	east	ni:tsua?na:lam	t ^h ak:lam	ni:t ^h ua?lei	ne:tʃ <i>h</i> i	ni:ka:si:beŋ	ɳu:lo:lam	
20	west	ni:tum:na:lam	t ^h lap:lam	ni:tak:lei	ne:tla	a:ni:dam:beŋ	ɳu:krak:lam	
21	north	sak:lam	ŋal:lam	t ^h ak:lei	mo	ba:si:beŋ	a:sip:lam	
22	south	k ^h ap:lam	t ^h im:lam	t ^h lap:lei	t ^h ə	ba:li:beŋ	tsum:lam	
23	water	tui	tui	ti:	ti	tui	tui	
24	river	gu:n	lui	ti:va	tsa:va	tui:pui/va?	tui:nu:	
25	sea	tui:pil	tui:fin:riat	ri:li	tsa:va:lai:pil	paj:le	tui:pai	
26	earth/soil	lei	lei:lung	vo:lei	a:lei	n:loŋ	lei:dek	
27	mud	buan	diak	nɔn:dzek	dzo:tłe	taŋ:no	tai?	
28	dust	lei:vui	vai:vut	lei:vut	a:lei:pald	bai:p ^h u:	və:t:k ^h ui	
29	stone	suaŋ/lun	luŋ	luŋ	a:lo	n:loŋ	luŋ	
30	sand	se:nel	tiau	t ^h a:se:	sa:di	si:si:li	di:rən	
31	lime	lei:kaŋ	dʒi:hnai	t ^h uŋ	lei:ra	t ^h oŋ	t ^h uŋ	
32	gold	k ^h am	raŋ:ka:dzak	sui	si	sui	ŋui	
33	silver	ŋu:n	taŋ:ka:rua	ŋun	ŋo	taŋ:ka	ŋui	
34	iron	sik	t ^h ir	t ^h iar	t ^h ia	su:n	si	
35	mountain	mual	tlaŋ	tlaŋ	tla	e:mi:ʃ	k ^h o:tsuŋ	

36	cave	k ^h u:i:H	pu:k\	luŋ ^h kua:t	lo:t ^h k ^h o:\	ta:t ^h puk\	luŋ ^h k ^h ui:H
37	forest	gam:lak\	ram ^h ja: ^h	tu:t ^h pi:\ ram\lak\	ra:tba:t ^h ri: ^h pa:\	a:t <u>tu:</u> \	du:p\
38	tree	siŋ ^h kuj\	t ^h in ^h kuŋ\	t ^h in ^h kuŋ\	t ^h o:t ^h ko:\	t ^h in ^h kuŋ\	siŋ\
39	branch	siŋ ^h hiaŋ\	t ^h in ^h zar\	t ^h in ^h je: ^h	t ^h o:t ^h dze: ^h	taŋ ^h ben\	siŋ ^h pram\
40	tree bark	siŋ ^h ho: ^h	t ^h in ^h pi:\	t ^h in ^h ho: ^h	t ^h o:t ^h hau:t ^h kua:\	t ^h in ^h kei: ^h lei?\	siŋ ^h hok\
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumí	Kaang
41	thorn	lin ^h	li: ^h	liŋ\	a: ^h leo:\	a: ^h lin ^h	liŋ\
42	root	siŋ ^h zuŋ\	t ^h in ^h zuŋ\	t ^h in ^h zəm\	t ^h ei:t ^h a: ^h ri:\	t ^h in ^h taŋ ^h zun\	siŋ ^h pra: ^h
43	leaf	siŋ ^h te? ^h /na? ^h	t ^h in ^h na? ^h	t ^h in ^h na:\	t ^h ei:t ^h na:\	t ^h in ^h gan\	siŋ ^h na? ^h
44	flower	pak\	paj ^h par\	paj ^h par\	po: ^h pi:\	a: ^h pao:\	rei\
45	fruit	siŋ ^h ga? ^h	t ^h in ^h th:e: ^h	t ^h in ^h th:e: ^h	t ^h ei:t ^h ei:\	a: ^h th:ai:\	a: ^h th:ei:\
46	seed	a:tap\	t ^h lai:t ^h dzi: ^h	t ^h lai:t ^h dzi: ^h	a: ^h mo:\	a: ^h mu:\	a: ^h ui\
47	grass	lo:t ^h pa\	ŋim\	bel? ^h	si: ^h n ^h na:\	a: ^h sak ^h pra:\	sa:i\
48	bamboo	gua:\	rua:/mau:\	rua\	ra:t ^h mo:\	yu:\	ro:\
49	bamboo shoot	gɔ:tua <i>i</i> \	rɔ:tua <i>i</i> \	tuai\	ra:t ^h mo:t ^h e:\	aj:tui:an\	ro:tɔ:i\
50	mushroom	pa:\	pa:\	pa: ^h par\	tsi:t ^h lo:t ^h po:\	k ^h ui: ^h pa: ^h pok\	pa:\
51	rattan	dz ^h i: ^h	ɸui:t ^h zik\	ri: ^h p ^h i:\	a: ^h ri:\	yui:\	rui:\
52	kapok	paj ^h pat\	pa: ^h ŋ ^h la\		a: ^h p ^h a:\	le: ^h mok\	pan ^h p ^h ra: ^h
53	sugarcane	kɔl:t <u>tu</u> \	fu: ^h	fu: ^h	be: ^h su:t ^h lai\	pa:sik\	tsu: ^h be: ^h ro:\
54	betelnut	kun\lga? ^h	ku: ^h va:ra? ^h	kun ^h t ^h ei\	ku: ^h va:t ^h ei\	kɔŋ ^h t ^h ai:\	kɔn ^h t ^h ei?\
55	opium	ber\	ka: ^h ni:\	biŋ\	bi:\	biŋ\	biŋ\
56	liquor	zu: ^h	zu: ^h	zu:\	sa: ^h ma:\	rau? ^h	ju\
57	banana	ban\l <u>la</u> \	ban\l <u>la</u> \	ban\l <u>la</u> \	ba: ^h la:\	to: ^h ki:t ^h ai\	pan ^h tsi:\
58	papaya	nu:nun\	ɸu: ^h ɸu:n\	sa: ^h ŋ ^h ɸ ^h \	t ^h ɔ: ^h ba: ^h la: ^h t ^h ei\	saŋ ^h p ^h ɔ: ^h la:t ^h ai?\	siŋ ^h mai: ^h t ^h ei?\
59	mango	hai: ^h	t ^h ei: ^h ha: ^h	ha:i\	hai:t ^h ei:\	ka:p ^h ɔ:k ^h t ^h ai?\	hai:t ^h ei?\
60	jackfruit	siŋ ^h pi\	lam ^h k ^h uaŋ\	ɸu: ^h ɸu:n\	a: ^h li:t ^h ei\	pa:lnai:t ^h ai?\	bu:lnai:t ^h ei?\
61	coconut	əŋ ^h ga? ^h	na? ^h rial\	əŋ ^h t ^h ei\		oŋ ^h si:t ^h ai?\	uŋ ^h t ^h ei?\
62	eggplant	bɔk ^h bɔ:n\	bɔk ^h bɔ:n\	bɔn ^h bɔk\	sa: ^h zai:t ^h ei\	min:tɔk ^h t ^h ai?\	bu:bun:t ^h ei?\
63	peanut	moŋ ^h p ^h a: ^h li\	ba:ldam\	me: ^h pe:\	pe:\	pi:dɔŋ\	de:k ^h bei:\

64	ginger	sɪŋ˧	sɔʔ˧tʰɪŋ˧	aɪ˧tʰɪŋ˧	e˧seɪ˧	ka˧sɪŋ˧	sɪŋ˧
65	garlic	ləʊl̥tʰaŋ˧kaŋ˧	pʊl̥run˧val˧	kʰa:˧tʃʰuan˧	və:˧kʰɔ:˧ra˧	mi˧jɔk˧ka˧tɔ˧ləŋ˧	va˧su˧bɔk˧
66	corn	vai˧mim˧	vai˧mim˧	fʊŋ˧vɔi˧	tʃʰa:˧mei˧	m̥˧ku:n˧	va˧pim˧
67	red pepper	za˧san˧	mar˧dʒa:˧	m̥an˧pʰek˧	a˧he˧	mai˧gun˧tʰai?˧	saj˧pʰɔ:˧
68	paddy rice	bu˧hu:m˧	bu˧	fa˧dʒaŋ˧	sa:˧	saŋ˧ni:˧	tsa:˧
69	cooked rice	bu?˧	dʒo:˧	bu?˧	pa˧ti:˧	bu?˧	bu?˧
70	pounded rice	bu?˧taŋ˧	bu?˧fa:i˧	fa˧dʒaŋ˧	sa˧dʒa˧pa:˧	tsaŋ˧	tsaŋ˧
71	salt	dži:˧	dži:˧	dži:˧te˧	a˧lo:˧	pa˧lo:i˧	tsi:˧
72	animal	gam˧sa:˧	rən˧sa:˧	sa˧ram˧	sa˧ra:˧no:˧	ui˧o?˧la:˧	kʰi˧sa:˧
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
73	tiger	sa˧l̥han˧	sa˧kei˧	po:˧pi:˧	dža˧kei˧	ta˧kai˧	sa:˧
74	bear	vəm˧	sa˧vəm˧	vəm˧	dža˧vau˧	ta˧vən˧	vəm˧
75	deer	sa˧zuk˧	sa˧kʰi:˧	sa˧kʰi:˧	zu˧nai˧	sa˧suk˧	ki˧rap˧
76	monkey	zɔ:ŋ˧	zɔ:ŋ˧	zɔ:ŋ˧	a˧zau˧	ka˧lai˧	jɔ:ŋ˧
77	gibbon	ŋa:u˧	hau˧huk˧	hu˧ho:˧	vei˧tu:˧	jəŋ˧ha:˧	ku˧vuk˧
78	rabbit	bil˧pi:˧	sa˧bek˧	sa˧ve:˧	sa˧ve:˧	jəŋ˧	vi:˧
79	porcupine	sa˧ku?˧	sa˧ku?˧	sa˧ku?˧	so˧ku:˧	si˧pi˧hi:˧	sa˧ku:˧
80	rat	zu˧	sa˧zu:˧	zu:˧	pa˧zu:˧	pi˧ju:˧	ju:˧
81	dog	ui:˧	ui:˧	ui:˧dʒau:˧	i:˧	ui:˧	ui:˧
82	bark	nak˧	a˧bau:˧	a˧bou:˧	a˧sa:˧	n̥˧nak˧	nat˧ku:˧
83	bite	pet˧	a˧se?˧	a˧se?˧	a˧dʒai:˧	kei?˧	ket˧ku:˧
84	cat	zəʔ˧heu:˧	zəʔ˧te:˧	tʃʰi˧zəʔ˧	zo:˧ka:˧	miŋ˧boi:˧	mi:˧
85	pig	vɔ:k˧	vɔ:k˧	vɔ:k˧	vɔ:˧	ɔ:k˧	vɔ:k˧
86	cow	bɔ:ŋ˧	bɔ:ŋ˧	dʒɔ:˧	dʒɔ:˧	mai˧to:˧	van˧taŋ˧
87	milk	nɔ:il˧	bɔ:ŋ˧n̥u:˧te:˧	dʒɔ:˧n̥uk˧	ve˧dʒuŋ˧n̥o:˧	mai˧to:˧la:˧n̥u:˧	van˧taŋ˧sɔk˧tu:˧
88	buffalo	lɔ:i˧	lɔ:i˧	na:˧	no:˧	pa˧na:˧	na:˧
89	horn of (buffalo	ki:˧	lɔ:i:˧ki:˧	ki:˧	no:˧ki:˧	pa˧na:˧la:˧ki:˧	ki:˧
90	mei˧	a˧mei˧	a˧mei˧	a˧dʒu˧la:˧mei:˧	ta˧mai:˧	a˧mei:˧	
91	elephant	sai:˧	sai:˧	vui:˧	ma˧se:˧	ka˧sai:˧	vai:˧

92	elephant tusk	sai ^h ha ⁺	sai ^h ŋo ^W	vui ^h hou ¹	ma ^h se: ^h no ⁺	ka ^h sai ^h a ^h not ^h
93	bird	va ^h sa ^h	sa ^h va ^W	va: ¹	pa ^h vo ¹	ta ^h va ^h
94	bird's nest	va ^h sa ^h bu ^h	sa ^h va ^h bu: ^W	va ^h bu ¹	pa ^h vo ^h bu ^h	ta ^h va ^h a ^h bu ^h
95	wing	k ^h a ^h	a ^h t ^h la: ^W	va ^h t ^h la: ¹	a ^h ma ^h t ^h lo ⁺	a ^h pa ^h li: ^W
96	feather	mul ^h	sa ^h va ^h mul ^h	va ^h mul ^h	pa ^h vo ^h la ^h mi ^W	ta ^h va ^h a ^h mu ^h
97	fly	le ^h ŋ ^h /zuau ^h	a ^h t ^h lo ^h :k ^h	a ^h zuau ^h	pa ^h vo ^h la ^h zo ⁺	aj ^h teŋ ^h
98	egg	tui ^h	tui ^h	ar ^h ti ^h	pa ^h vo ^h la ^h ti ^h	ta ^h tui ^h
99	chicken	ak ^h	a:r ^h	a:r ^h	o: ^h θo ^h θo ^W	a: ^h
100	duck	va ^h to:t ^h	va ^h rak ^h	d ^h ɔ:m ^h pei ^W	tau ^h p ^h au ^h	lum ^h pai ^h
101	fish	ŋa ^h sa ^h	sa ^h ŋja: ^W	ŋa: ^h	ŋa ^h	ta ^h ŋja ^h
102	snake	gul ^h	ru: ^h	ru ^h	pa ^h ri ^h	pu ^h yi ^h
103	house lizard	in ^h hik ^h	baŋ ^h t ^h ai ^h dai ^h dep ^h	t ^h e:k ^h ral ^h	ə: ^h tri ^h ha ^h pa ^W	d ^h ok ^h lek ^h
104	turtle	sum ^h kuau ^h	sa ^h te ^h	t ^h uŋ ^h ku ^h	so ^h lla ^h kei ^h	te ^h pa ^h gu: ^h
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi
105	crocodile	ɔ ^h le ^h	ɔ ^h le: ^h	ti: ^h sal ^h tlam ^h	ti ^h sa ^h da ^h va ^h	tui ^h nan ^h
106	frog	ui ^h p ^h uk ^h	ut ^h d ^h zaŋ ^h	u ^h tlak ^h	d ^h za ^h u ^h	ui ^h p ^h o ^h
107	insect	luŋ ^h noŋ ^h	t ^h il ^h rik ^h	ruŋ ^h ru ^h	a ^h lo ^h a ^h le ^h pa ^h	ta ^h luŋ ^h
108	spider	mɔm ^h /mai ^h	mai ^h mɔm ^h	sɔm ^h pa ^h lak ^h	zau ^h tɔn ^h	pun ^h pa ^h tha: ^h
109	spiderweb	mɔm ^h /mai ^h in ^h	mai ^h mɔm ^h ri ^h	sɔm ^h pa ^h lak ^h bu ^h	zau ^h tɔn ^h bu ^h	pun ^h pa ^h tha ^h bu ^h
110	lousehead	hik ^h	lu ^h rik ^h	rik ^h	a ^h ri ^h	e ^h hik ^h
111	termite	lei ^h k ^h a ^h	t ^h in ^h jet ^h	tuŋ ^h tuŋ ^h	lei ^h s ^h o: ^h	k ^h a ^h ra ^h
112	cockroach	in ^h lɔi ^h	d ^h zuk ^h zu: ^W	p ^h i ^h lik ^h	d ^h zo ^h ka ^h ka ^h li ^h	t ^h lan ^h k ^h o ^h
113	snail	tɔk ^h tɔl ^h	d ^h zen ^h kɔl ^h	d ^h zaj ^h ka ^h reɔ ^h	d ^h za: ^h ka ^h ru: ^h	ten ^h ba: ^h
114	mosquito	t ^h o ^h ka: ^h	t ^h o ^h ka: ^h	fik ^h fa: ^h	ma ^h t ^h a: ^h	saŋ ^h ka: ^h
115	bee	k ^h uai ^h	k ^h uai ^h	k ^h uei ^h	k ^h ei ^h	k ^h ɔ:i ^h
116	fly	t ^h o ^W	t ^h o ^W	t ^h ao ^W	ma ^h t ^h o ^h	teŋ ^h si: ^h
117	butterfly	ka:u ^h	p ^h eŋ ^h /p ^h e ^h lep ^h	pa ^h lep ^h	d ^h za: ^h ba ^h lie ^h	p ^h ɔ:jle: ^h
118	scorpion	a:i ^h kam ^h	k ^h ɔ: ^h mua ^h kai ^h kuau ^h	tlaŋ ^h kiŋ ^h kual ^h	pui ^h pa ^h siŋ ^h	pe ^h pe ^h lem ^h
119	head	lu: ^h	lu: ^h	lu: ^h	e ^h ma ^h lu: ^h	ru ^h tsi ^h ai ^h
						lu ^h pum ^h

120	face	mai ^l	m̥ai ^l	m̥ai ^l	e̥im̥e ^l li ^l	m̥ai ^l mai ^l
121	brain	k ^h uak ^l	t ^h luak ^l	t ^h luak ^l	e̥im̥at̥ra ^l li ^l t ^h li ^l	a ^l lu ^l a ^l ho ^l
122	hair	sam ^l	sam ^l	sam ^l	e̥im̥a ^l sa: ^l pho ^l	a ^l sa:n ^l
123	forehead	tal ^l	d̥zal ^l	d̥zal ^l	e̥im̥at̥k ^h i ^l pa ^l	lu ^l pen ^l
124	eyebrow	mit ^l k ^h u ^l	mit ^l ko: ^l	mit ^l tlaj ^l	e̥im̥at̥tlal ^l	mik ^l k ^h u ^l mai ^l
125	eye	mit ^l	mit ^l	mit ^l	e̥im̥at̥k ^h ɔ: ^l	e̥mek ^l
126	eyelid	mit ^l vun ^l	mit ^l d̥zin ^l	mit ^l d̥zuar ^l	e̥im̥at̥vøle ^l ek ^l	e̥mek ^l teg ^l
127	nose	na:k ^l	ɳar ^l	ɳar ^l	e̥im̥a ^l ɳa ^l k ^h u ^l	na ^l yoŋ ^l
128	cheek	bia: ^l	biaŋ ^l	biaŋ ^l	e̥im̥abai ^l k ^h ai ^l	taŋ ^l be: ^l
129	ear	bil ^l	ben ^l	ɳa ^l k ^h ɔ: ^l	e̥im̥a ^l na ^l kɔ: ^l	ɳa ^l kɔi ^l
130	mouth	kam ^l	ka: ^l	ka: ^l	e̥im̥a ^l m̥ɔ: ^l tau ^l	pa ^l ni: ^l
131	tongue	lei ^l	lei ^l	lei ^l	e̥im̥a ^l pallei ^l	pa ^l lai ^l
132	saliva	d̥zil ^l	d̥zil ^l t ^h li ^l	d̥zi: ^l	e̥im̥a ^l pa ^l d̥zi: ^l	a ^l ha ^l moi ^l
133	tooth	ha: ^l	ha: ^l	ha: ^l	e̥im̥a ^l ha ^l	a ^l ha: ^l
134	gums	ha ^l ni ^l	ha ^l ni: ^l	ha ^l ni: ^l	e̥im̥a ^l pa ^l nei ^l	a ^l ha ^l k ^h un ^l
135	chin	k ^h a: ^l	k ^h a ^l be ^l	k ^h a ^l be ^l	em̥ika ^l dia ^l	baŋ ^l hi ^l a ^l mo ^l
136	beard	k ^h a ^l mul ^l	k ^h a ^l be ^l mul ^l	k ^h a ^l mul ^l	ei ^l mo ^l lmi ^l	moŋ ^l lmu ^l
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi
137	shave	met ^l	k ^h a ^l be ^l mul ^l /met ^l	i ^l me ^l	mo ^l mi ^l a ^l ho ^l :pa ^l	moŋ ^l lmu ^l ha ^l vok ^l
138	back	ɳuŋ ^l zaŋ ^l	nuŋ ^l zaŋ ^l	keŋ ^l	e̥im̥a ^l kao ^l	a ^l nam ^l ikroŋ ^l
139	belly	pi ^l	dul ^l /pum ^l	po: ^l	e̥im̥a ^l pa ^l vaŋ ^l	a ^l jɔk ^l
140	navel	la:i ^l	la:i ^l pɔŋ ^l	la:i ^l	em̥ipa ^l le ^l so ^l	tsai ^l luŋ ^l
141	heart	luŋ ^l	luŋ ^l	luŋ ^l t ^h in ^l	em̥illo ^l ta ^l pao ^l	pa ^l luŋ ^l
142	lungs	tuap ^l	d̥zuap ^l	d̥zuap ^l	em̥ipa ^l d̥zo ^l	pa ^l to: ^l
143	liver	sin ^l	t ^h in ^l	t ^h in ^l	em̥ipa ^l t ^h i ^l	a ^l pa ^l t ^h in ^l
144	intestines	gil ^l	ril ^l	ril ^l	e̥im̥ari ^l pi ^l	a ^l da ^l yi ^l
145	hand	k ^h ut ^l	kut ^l	kut ^l	e̥im̥a ^l ku ^l	a ^l ban ^l
146	elbow	kiu ^l	kiu ^l	kiu ^l	e̥im̥a ^l d̥za ^l k ^h i ^l	a ^l ban ^l ta ^l k ^h u ^l
147	armpit	le ^l nuai ^l /zak ^l	zak ^l	zak ^l taŋ ^l	e̥im̥a ^l ba ^l ka ^l le ^l	ka ^l jak ^l

148	palm	k ^h ut-lpek ^h	kut-lp ^h a? ^h	za-pe ^h i	im ^h ku ^h pa ^h za ^h	a-lban-lba ^h di ^h	kut-lp ^h a ^h
149	finger	k ^h ut-lme ^h	kut-ldan ^h	kut-lde ^h	im ^h ku ^h de ^h	a-lban-lpi-ljɔn ^h	kut-lpriŋ ^h
150	finger nail	k ^h ut-ldziŋ ^h	kut-ltin ^h	tin ^h	im ^h ku ^h te ^h	a-lban-lpa ^h sin ^h	kut-ltsin ^h
151	buttocks	tɔlbou ^h	mɔŋ ^h tam ^h	tɔl-dzor ^h	e ^h ma-ldzi ^h ai ^h	le-lk ^h ua-lta-lbu ^h	mei-lpei ^h
152	leg	k ^h e: ^h	ke: ^h	ke: ^h	em ^h p ^h ei-lkai ^h	a-lk ^h ok ^h	k ^h ɔ: ^h
153	thigh	p ^h ei ^h	mal ^h	p ^h ei ^h	em ^h tlɔ-lpau ^h	a-lp ^h ai? ^h	p ^h ei-ltui ^h
154	knee	k ^h uk ^h	k ^h u:p ^h	k ^h uk ^h	em ^h pa ^h k ^h u ^h	k ^h uk-lk ^h u ^h	k ^h u:k ^h lu ^h
155	calf	tan ^h	džɔ:n ^h	ten-lpor ^h	em ^h bo-llo ^h	a-lk ^h umui ^h	baŋ-lbəm ^h
156	shin	ŋal ^h	ŋal ^h	ŋal-ldziar ^h	em ^h p ^h ei-lpa ^h za ^h	a-lk ^h ubu-lkroŋ ^h	tan ^h kɔŋ ^h
157	foot	k ^h e: ^h bəm ^h	ke: ^h l ^h ia? ^h		em ^h p ^h ei-lza ^h	a-lk ^h upin-lpon ^h	k ^h o-lp ^h a ^h
158	heel	za ^h tu:l ^h	ke: ^h lar-ltui ^h	ke-ldir ^h	em ^h lga-lha-lmu-ltau ^h	a-lk ^h umo? ^h	k ^h o-ltsu:n ^h
159	bone	gu? ^h	ru? ^h	ru? ^h	e ^h ma-lru ^h pa ^h	a-lhu ^h	ru? ^h
160	rib	nak ^h gu? ^h	nak ^h ru? ^h	nak-lru? ^h	im ^h ka-lru ^h	pa-nak ^h	ŋak-lru? ^h
161	flesh	sa ^h tak ^h	ti: ^h sa ^h	tak-lsa ^h	e ^h ma-lsa ^h pa ^h	a-lmu ^h	me? ^h
162	fat	t ^h au ^h	t ^h au ^h	t ^h au ^h	e ^h ma-t ^h au ^h	a-lt ^h au ^h	a-lt ^h au ^h
163	skin	vun ^h	vun ^h	džuar ^h	e ^h ma-lva ^h ko ^h	a-ljan-lhin ^h	vən ^h
164	blood	si ^h	t ^h is ^h en ^h	t ^h ir ^h	e ^h ma-t ^h hi: ^h	a-lt ^h i: ^h	s ^h i ^h
165	sweat	k ^h ɔ: ^h ?ul ^h	t ^h lan ^h	t ^h lan ^h	e ^h ma-t ^h lai ^h	aŋ-lsa-ltui ^h	k ^h ran-ltui ^h
166	pus	nai: ^h	pan ^h ŋa:i ^h	ŋa:i ^h	e ^h ma-ma-la-ŋe ^h	a-ŋa:i ^h	ŋai ^h
167	excrement	e:k ^h	e:k ^h	e:k ^h	e ^h ma-lie: ^h	ke-li? ^h	e:k ^h
168	urine	zun ^h	zun ^h	zun ^h	e ^h ma-lzo ^h	pa-ljun-ltui ^h	jun ^h l <i>tui^h</i>
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
169	man	pa ^h sal ^h	mi ^h pa ^h	mi ^h pa ^h	dža-lpo ^h	mi ^h toŋ ^h za ^h	pa-toŋ ^h
170	woman	nu-lmei ^h	mei ^h dzia ^h	mi ^h nu ^h	dža-lno ^h	moŋ ^h mi ^h za ^h	nu-toŋ ^h
171	person	mi ^h hiŋ ^h	mi ^h riŋ ^h	mi: ^h	džo-lsa ^h	k ^h u-lmi: ^h	k ^h raŋ ^h
172	father	pa ^h	pa: ^h	ka-lpa: ^h	im ^h po ^h	aŋ-lpa ^h	pa:i ^h
173	mother	nu ^h	nu: ^h	ka-lnu: ^h	em ^h lnə ^h	a-lnu: ^h	no:i ^h
174	child	nau-lpaŋ ^h	nau ^h paŋ ^h	ŋak ^h l ^h ia ^h	hɔ: ^h lti ^h	a-lsa-ŋnu-di ^h	mɔ: ^h
175	son in law	ma:k ^h	mak ^h pa ^h	fa-lpa ^h	sa-lma-lva ^h	muk-lsa: ^h	tsa-lva ^h

176	husband	pa-lsal ¹	pa-lsal ¹	va: ¹	e-lma-tva-lpa ¹	a-lsa-lva ¹	a-lva ¹
177	wife	zi: ¹	nu-lpu ¹	nu-lpi: ¹	e-lma-tla-lpi-hno ¹	a-lju: ¹	a-lk ^h ru ¹
178	widow	mei ¹ gɔŋ ¹	mei ¹ t ^h ai ¹	nu-lmei ¹	no-llei ¹	in-trey ¹	nu-lmei ¹
179	bro elder of f	u: ¹	u: ¹	ka-lta ¹		an-lja-lka-lso? ¹	ka-lbe? ¹
180	bro yr of f	na-u ¹	nau ¹	ka-lta ¹		an-lja-lka-lnau? ¹	nau ¹
181	friend	lɔ:m ¹	t ^h ian ¹	hoi-kom ¹	vie ¹ sa ¹	kan-lpu ¹	pə:i ¹
182	name	min ¹	miŋ ¹	min ¹	em-lmo ¹	a-lmīn ¹	miŋ ¹
183	village	k ^h ua ¹	k ^h ua ¹	k ^h ua ¹	k ^h i: ¹	a-lva: ¹	k ^h ɔ:l-sa ¹
184	road/path	lam ¹	kɔŋ ¹	lam ¹	la: ¹ pi ¹	a-llan ¹	lam ¹
185	boat	gun-lkuau ¹	tai-lkuau ¹	loŋ ¹	ba-lau ¹	pa-lloŋ ¹	kɔŋ ¹
186	house	in ¹	in ¹	in ¹	ə? ¹	in ¹	im ¹
187	door	kɔŋ ¹	kɔŋ-lk ^h ar ¹	in-lka: ¹	ə? ¹ t ^h i ¹	k ^h an-jma ¹	kɔŋ ¹
188	window	tɔ: ¹ let ¹	tuk-lver? ¹	t ^h la-lla-ŋɔŋ ¹	t ^h la-lla-ŋɔŋ ¹	t ^h ɔ:bun ¹	t ^h ɔ? ¹
189	roof	in ¹ k ^h um ¹ /in ¹ tun ¹	in ¹ džuŋ ¹	in ¹ džuŋ ¹	a-lva-lp ^h u ¹	im-lp ^h u ¹	kruŋ ¹
190	area under hous	in ¹ nuai ¹	in ¹ nuai ¹	in ¹ taj ¹	ə? ¹ rau ¹	in-llu-lkui ¹	im-lkai ¹
191	wall of house	in ¹ kɔ:m ¹	van-lpaŋ ¹	van-lpaŋ ¹	a-lba: ¹	in-lpaŋ ¹	paŋ ¹
192	mat	p ^h ek ¹	p ^h er ¹	p ^h er ¹	a-lp ^h ie ¹	p ^h ak ¹	p ^h ak ¹
193	pillow	lu ¹ k ^h am ¹	lu ¹ k ^h am ¹	t ^h an-ltiŋ ¹	lo-lhia ¹	lu-lkɔŋ ¹	lu-lde ¹
194	blanket	zan ¹ puan ¹	puan ¹	puan ¹	pe: ¹	ka-lñi: ¹	ji? ¹
195	clothing	puan ¹	t ^h em ¹ ñ ¹	t ^h il-lpuan ¹	dža-ñisie ¹	lai-lhɔ ¹	sui-ls ^h ak ¹
196	weave cloth	ga:n ¹	a-lta? ¹	a-lta? ¹	t ^h ai-lal-sa ¹	a-lkɔŋ ¹	ta? ¹ lkai ¹
197	dye cloth	nim ¹	rɔŋ-lal-nɔi? ¹	si-lbur? ¹	a-lrɔ: ¹ la-lna ¹	a-ljɔŋ-lal-sa ¹	a-lrɔ: ¹ ka:p ¹ ku ¹
198	sarong	puan ¹ te:n ¹	puan ¹ fen ¹	ñi: ¹	ñe-lra ¹	lɔŋ-lki ¹	ri: ¹
199	trousers	p ^h ei ¹ tuam ¹	ke-lkɔl-ltlɔn ¹	bɔŋ-lbi-lsau ¹	ta-lqo ¹	p ^h ɔŋ-lp ^h i ¹	suŋ-lno ¹
200	sew	k ^h ui ¹	t ^h ui ¹	t ^h it ¹	k ^h o-lal-bie ¹	a-lk ^h ɔ ¹	k ^h rui-lku ¹
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
201	needle	p ^h im ¹	rio ¹	t ^h im ¹	dže-lp ^h o ¹	ai ¹	prim ¹
202	comb	sam-lsi? ¹	sam ¹ k ^h ui? ¹	sam-lt ^h i? ¹	sa-lt ^h i ¹	pa-lt ^h i ¹	si: ¹
203	ring finger	zuŋ-lbul? ¹	zuŋ-lbun ¹	kut-lçɔŋ-lçɔ? ¹	ku-lse-ldi ¹	le-lsue ¹	kut-ltsue-p ¹

204 paper	lai\dal\	le?\-k^h-a\puan\	\dza:\-k^h-u\	\dza:\-na\	sa\gan\	tsa\na?+
205 pot cooking	be:\H	be:l\	um\	bei\	\ja:\on\	am\
206 coconut shell		fian\pui\		ti:\-p^h-e\	o\j-si:\-k^h-o\	kap\
207 mortar	sum\	sum\	mak-\p^h-ek-\sum\	a\lhe:\-dze:\-ra-\nu\so\	sun\tsa\	sip\sum\
208 pestle	suk\	dze-\r\ot-\lu\y\	sum-\k^h-a\l\	ka:\-to\	ma-\g\en-\l-a-\de\j-\hai\	suk-\k^h-ai\
209 spoon	sik/\keu\	fian\	da:r-\keo\	p^h-e:\-t^h-l\	su:i\	jak\
210 plate	pa-\ka:n\	t^h-le:\y\	pa-\ka:n\	pa-\ka:\l	pa-\ken\	bei\
211 firewood	si\j\	tua?\-t^h-in\j\	ti?\-t^h-in\j\	t^h-ei\	t^h-in\j\	si\j\
212 fire	mei\	mei\	mei\	mei\	\ma:i\	mei\
213 ashes	vut\	mei\va\p\	vut-\dza\m\	bu-\dza\	bai-\p^h-u:\l	vat\
214 smoke of fire	mei/\k^h-u\	mei-\k^h-u:\l	mei-\k^h-u:\l	mei-\k^h-u\	mai-\k^h-u\	mei-\k^h-u:\l
215 candle	k^h-uai-\mei\	bom\ba-\ti:\l	p^h-e-\j\o:\l-dai\y\	k^h-e-\l\o-\me-\sa\	p^h-a-\j\o:\l-dai\y\	mei-\nei\
216 drum	k^h-uaj\	k^h-uaj\	k^h-uaj\	k^h-e:\l	a-\l\o:n\	p\aj\
217 gong	za:m\	dal-\k^h-uaj\	b\o\j-\b\o\j\	do-\k^h-e\	t\o:\l-ga-\sa:\o\	\dza:\-p^h-aa:\j\
218 bow crossbow	t^h-al\	sai-\ru-\k^h-er?\-	ni:\l-kuk\	\dza:\-ta-i-\li:\l	li:\l	li:\l
219 arrow	t^h-al/\ta\j\	t^h-al\	t^h-al\	\dza:\-ta-i\	la\	pa\lla\
220 spear	tei-\pa:k\	fei\	fei\	a-\l\se:\l	ta-\ri:\l	tsei-\po\j\
221 knife	tem\	\dze:m\	na:m\	ta-\ko\	hai-\keik\	tsim\
222 hear	za:\l	a-\j\ria\	a-\l\th-ei\	a-\l\th-ei\	t^h-ai\	ja-\keu\
223 smell something	nam-\za:\l	rim-\j\ria\	a-\l\im\	a-\l\re-\l-a-\l\th-ei\	a-\l\pa-\l\p\o:\n\	\j\at-\keu\
224 see	mu\	a-\l\mu:\l	a-\l\mu:\l	a-\l\mo\	a-\l\nok\	\mu-\keu\
225 wink	mit-\p^h-ia\	mit-\siai\	a-\l\th-e?\l	a-\l\mo-\l-a-\l\th-au\	a-\l\k^h-en\	mik-\k^h-rip-\keu\
226 weep	kap\	a-\l\ap\	a-\l\ap\	a-\l\dzia\	a-\l\ya\	kiu-\krap-\keu\
227 eat	ne\	a-\l\ei\	a-\l\ei\	a-\l\ni\	a-\l\sak\	ai-\keu\
228 swallow	val?\l	a-\l\lem\//a-\l\dol?\-	a-\l\lem\//a-\l\dol?\-	a-\l\pa-\l\da\	a-\l\pi-\l\i\	joi-\keu\
229 hungry	gil-\kial\	a-\l\ril-\l\tam\	a-\l\p\o:\l\tam\	a-\l\na:\l\di\	a-\l\jok-\l\aj-\l\jan\	toi-\keu\
230 full	gil-\va?\l	a-\l\p\ual\	a-\l\p\o:\l-k^h-im\	a-\l\ri-\l-a-\l\bie\	a-\l\jok-\l\at-\l\ko\i\	p^h-u:\l\keu\
231 thirsty	da\j-\ta:k\	a-\l\tui-\l-a-\l\ha:\l\	a-\l\ti:\l\ha:\l\	a-\l\da:\l-a-\l\p^h-i\	tui-\l\an-\l\he?\l	tui-\l\rai-\l\keu\
232 drink	d\o:n\	a-\l\in\	a-\l\in\	ti-\l\al-\l\de\	a-\l\ne:\l\	ok-\keu\

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
233	drunk	zu:k ^h am//gui	a:lrui	a:lri	sa:lma:lpatri	raukla:ba:γui?	rui:kə
234	vomit	lua	a:luak	a:luak	a:pa:lili	a:pa:llok	lok:kə
235	spit	dzi:l sia	dzi:l a:lt ^h ak	dzi:l t ^h a:k	a:pa:dzi:la:pa:t ^h ɔ	pa:sui:tui:la:pa:t ^h ui	tsi:t ^h ui:t ^h uk:kə
236	cough	k ^h u?!	a:lk ^h u?!	a:lk ^h u?!	k ^h ɔ:ro:la:so	taŋlk ^h u?!	k ^h u?kə
237	sneeze	hek ^h tsei	a:ha:t ^h iao	a:hat ^h iu	a:ŋa:a:ŋe	na:ha:ŋik	ŋak ^h t ^h i:kə
238	yawn	ha:m	a:ham	ham	a:pa:ha	a:pa:ha:n	ha:m:kə
239	breathe	na:k	a:t ^h ɔ:	t ^h ɔ:dɔ:p	a:hu:la:se	a:ka:ha:a	ri:kə
240	whistle	hu:m:hut	a:fai:fu	fi:fit:itum	a:tu:la:pa:hi	a:taŋ:sui	su:k:kə
241	suck	tɔ:p	a:hip	a:dcɔ:p	a:sau	a:pa:jo:a	jɔ:n:kə
242	lick	liak	a:liak	a:liak	a:pa:lie	a:pa:le:k	le:k:kə
243	smile	nui?mai	a:sei	a:pən	a:me:lp ^h uam:p ^h a:sa	a:pa:ŋui	mai:ŋa:jkə
244	laugh	nui:	a:nui	a:ni:	a:pa:ŋi	a:pa:ŋui:tok:tok	nui:kə
245	speak	pau	a:tɔŋ	bia:t ^h im	bia:la:re	a:lo:la:peit	t ^h u:tək:kə
246	tell	ge:n	a:soi	a:t ^h im	a:t ^h e:ʃ	a:t ^h ui	tək:ita?kə
247	shout	ɔ:ŋ	a:au	a:au	a:ɔ:	a:ha:ŋ	vi:k:kə
248	answer	dɔ:xj	a:t ^h axj	a:p ^h it	a:t ^h au	a:p ^h ie	lan:kə
249	liefib	k ^h e:m	a:bum	a:ʃen	a:he	a:leinj	ra:i:kə
250	sing	la:sa	a:za:i	la:la:sa	la:la:sa	la:la:sak	əi:əi:H
251	think	ŋai?sun	a:ŋai?tua?	i:rua?	a:pa:dʒa:	a:pdəm	ŋai?tu?kə
252	know	t ^h ei	a:ria	t ^h ei?	a:pa:ŋe	a:po:ŋo:	ŋat:kə
253	forget	maj/ŋil?	a:t ^h ei:ŋil?	p ^h il?	a:mau	a:pa:ŋe:	ŋi?kə
254	choose	te:H	a:t ^h laŋj	t ^h im	a:tlau	a:ye:	ŋui:kə
255	love	it	a:ŋa:ŋai?	dɔ:t	a:lk ^h o	a:ŋa:i	jɔ:ŋa:nakə
256	hate	hua	a:huə	huat	a:lhō:	nu:ŋma	t ^h u:i:nakə
257	wait	ŋak	a:ŋa:k	ŋa?	a:ha:	a:ŋi:ŋ	ŋəŋ:kə
258	count	sim	a:t ^h iar	re	a:pa:ki:	a:pa:ti	k ^h e:ru?kə
259	afraid	la:u	a:la:u	ti?	a:ŋzi:	a:ye:i	kri?kə
260	angry	he?	a:t ^h in:rim	t ^h in:hun	-	mua:na	luŋ:t ^h e:kə

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
261	sleep/lie	i-μu-	a-μu:-	i-	a-īmō-	i-i:	ip-ku-
262	snore	na:k\ sia\	a-ñar\	sik-	a-īra-ñō-	a-īhōk\	ñai\ku-
263	dream	maj\ man\	maj\ a-ñeī\	maj\ man\	a-īma:h-a-sa-	a-īmaj\ a-īmaj\	maj\ ma?íku-
264	hurt	na:̄	a-ña:̄	fālter\	a-īpa-sa\	a-ña:̄	na-ku\
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
265	medicine	za:̄	dam\ dōi\	si:̄	si:̄	ta-īsi:̄	sei-
266	itch	t ^h ak-	a-t ^h ak-	a-t ^h ak-	a-īpa-łt ^h a:̄	a-īpa-łt ^h a:̄	t ^h ak-ku-
267	scratch	k ^h uat\	a-łhiat\	i-k ^h eu?̄	a-łk ^h o:̄	a-łsuei?̄	k ^h rat\ku-
268	shiver	li:̄j\	a-łk ^h ur\	t ^h a-łt ^h er\	a-łdža-łt ^h e-	a-łjə:n\	k ^h ret\ku-
269	die	si:̄	a-t ^h i:̄	t ^h i-	a-łt ^h i:̄	dū:k\	si-ku-
270	ghost	si:łk ^h a-	ram\huaī	mu:t ^h la\	a-łt ^h lo:̄	ta-łyo:k\	sun\rai\
271	sit	tu-	a-łt ^h u:̄	t ^h ut\	a-łtɔ-	a-łni:̄	łci\ku-
272	stand	dij̄	a-łdij̄	diar\	a-łdia-	a-łtɔ:̄	dai\ku-
273	kneel	k ^h uk\din\	a-łt ^h in\t ^h i:̄	k ^h uk\bil\	pa-łk ^h uałpa-nai-	k ^h uk\k ^h uk\diłdə-	k ^h u-łk ^h u-łdəj\ku-
274	walk	lam\paī	a-łkal\	lam\len\	la-łsia-	a-łlan\la-łke:̄	lam\łżet\ku-
275	crawl	bök\vak\	a-łbök\vak\	a-łlon\	a-łlo-	a-łvak\	jɔi\ku-
276	come	hɔj\paī	a-łron\kal\	a-łra\	a-łvɔ-	a-łle:̄k\	lok\ku-
277	enter	lut\	a-łron\lu:t\	a-łlut\	a-łne-	a-łku:n\	lut\ku-
278	return	ki-łle?̄	a-łron\ki:r\	a-łkir\t ^h an\	a-łvɔ-łku-łha-	a-łle:̄j\	łat\łok\ku-
279	push	sɔn\	a-łnam\	a-łnam\	a-łtɔ-łlai-	a-łnui\	bu?̄-ku-
280	pull	kai\	a-łpɔt\	a-łdɔ?̄	a-łdu-łp ^h i\	a-łru:̄	kai\ku-
281	kick	sui\	a-łpet\	a-łt ^h ui?̄	a-łt ^h ei-	a-łpa-łt ^h ui\	pet\ku-
282	throw	łɔn\	a-łpai?̄	a-łt ^h e-	a-łt ^h au\	a-łp ^h ei\	fit\ku-
283	fall	kia\	a-łtla:\	a-łtla:	a-łtla-	a-łka:k\	krui\ku-
284	swim	tui\pek\	tui\a-łeo-	ti-łalio-	a-łti-łalzɔ-	tui-łaljao\	tui-łjok\ku-
285	float	tui\tuj\ la:m\	tui\a-łlen\	a-łuan\	am\p ^h o-łlai-	tui-łsun-łalp ^h o-	p ^h ən\ku-
286	sink	tui\kia\	tui\a-łal-pil\	a-łpil\	ti-łalnau-	a-łtui-łjaok\	p ^h um\ku-
287	flow	luaq̄	tui\luaq̄	a-łluaq̄	ti-łallo-łlai-	tui-łçłi-łtui\	tui-łçłi-łku-
288	give	pia\	a-łpe:\	a-łpie\	a-łpe:k\	pe-łku-	

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
289	tie	k ^h i? ^h	a ^l ɔ:n ¹	a ^l tem ¹	a ^l dʒa ^l tau ¹	a ^l kɔ:n ¹	p ^h uŋ ^l ku ^l
290	wipe	nu: ^h	a ^l ru: ^h	a ^l t ^h u ^l	a ^l t ^h u: ¹	a ^l mi ^l mo ¹	pin ^l ku ^l
291	rub/scrub	nɔ:t ^l	a ^l nɔ:t ^h	a ^l nɔ:r ^l	a ^l dʒa ^l ta: ¹	a ^l te:t ¹	mɔ:t ^l ku ^l
292	wash	sil ^l	a ^l sil ^l	i ^l ʃɔ:l ^h	a ^l pa ^l si: ¹	a ^l pa ^l si ^l	prɔi ^l ʃin ^l ku ^l
293	launder	sɔ:p ^l	a ^l su: ^h	a ^l suk ^l	dʒa ^l si ^l a ^l pa ^l so ^l	lei ^l ho ^l a ^l pa ^l suk ¹	sui ^l shak ^l p ^h ət ^l ku ^l
294	bathe	ki ^l sil ^l	a ^l in ^l bual ^h	i ^l k ^h ɔ:l ^h	ti ^l ha ^l si ^h	tui ^l ha ^l hɔ:k ¹	tui ^l s ^h i ^l ku ^l
295	hit	vua ^l	a ^l vua ^h	a ^l tuk ^l	a ^l tu: ^h	a ^l pa ^l k ^h a: ¹	pa:i ^l ku ^l
296	split	su ^l k ^h am ^h	a ^l p ^h el ^l	a ^l t ^h eu ¹	a ^l pa ^l t ^h ai ^l	a ^l kɔ:1	bou ^l ku ^l
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
297	cut hair	sam ^l /me:t ^l	sam ^l a ^l met ^h	a ^l me: ^l	sa: ^l a ^l ju: ¹	a ^l san ^l a ^l vɔ:k ¹	tei ^l ku ^l
298	stab	sun ^l	a ^l t ^h at ^l /a ^l vit ^h lum ^l	a ^l t ^h a ²	a ^l t ^h uo ^l so ¹	a ^l t ^h ɔ:g ¹	t ^h ək ^l ku ^l
299	grind	gɔ:i ^h	a ^l rial ^l	a ^l rial ^l	a ^l rie: ^l	a ^l ki: ¹	re:t ^l ku ^l
300	plant	sua:n ^l	a ^l p ^h un ^l /a ^l džin ^h	a ^l džin ¹	dži ^l a ^l džei ^l	a ^l in ^l	lin ^l ku ^l
301	dig	tou ^l	a ^l lai ^l /a ^l dzo ¹	a ^l dzo ²	a ^l le:i ^l a ^l dzo ¹	a ^l ra ^l ki ¹	to ^l ku ^l
302	bury (corpse)	p ^h u:m ^h	a ^l p ^h u:m ^l	a ^l p ^h um ^l	a ^l pa ^l bo: ¹	bai ^l p ^h un ¹	bui ^l ku ^l
303	winnow rice	sep ^h	bu? ^l a ^l hel ¹	a ^l vam ^l	a ^l tl ^h le ^l	saŋ ^l a ^l pa ^l sei ¹	tsaŋ ^l k ^h ru ^l ku ^l
304	dry something	p ^h ou ^h	a ^l p ^h o: ¹	a ^l dža ^l r ¹ /p ^h o ¹	a ^l zo: ^h	a ^l vo:k ¹	p ^h o ^l ku ^l
305	pound rice	su: ^h	a ^l de: ^h	a ^l suk ^l	a ^l p ^h au ¹	a ^l de: ¹	su ^l ku ^l
306	cook rice	huan ^l	a ^l t ^h u:m ^h	a ^l t ^h uan ¹	a ^l t ^h a ¹	a ^l ɔ:g ^l	t ^h ɔ:g ^l ku ^l
307	boil something	tui ^l /huan ^h	a ^l so: ¹	a ^l t ^h um ^l	a ^l bu: ^h	a ^l bu: ¹	soul ^l ku ^l
308	burn	ha: ^h	a ^l ha: ^l /a ^l kaŋ ^h	a ^l k ^h ap ^l	mei ^l a ^l ro: ¹	mai ^l a ^l lei? ¹	mei ^l k ^h um ^l ku ^l
309	extingth (fire)	mit ^l	mei ^l a ^l t ^h at ¹	mei ^l a ^l t ^h a ¹	mei ^l a ^l dem ¹	mai ^l a ^l pa ^l duk ¹	mei ^l si? ^l ku ^l
310	work	sem ^l	na ^l a ^l t ^h ok ^l	rian ^l tuan ^h	re: ^l a ^l re ¹	a ^l to ^l a ^l sa? ¹	bi ^l bi ^l ku ^l
311	play	ki ^l mo: ^h	a ^l in ^l fiam ^h	len ^l te ^l džel ^h	a ^l pa ^l lo ¹	a ^l nak ^l	ru ^l ku ^l
312	dance	la:m ^l	a ^l la:m ^h	la:m ^l	a ^l la: ¹	a ^l lan ^l	lam ^l ku ^l
313	shoot	ka:p ^l	a ^l ka:p ^h	ka? ^l	a ^l ka ¹	a ^l ka? ¹	kap ^l ku ^l
314	hunt	sa ^l ben ^h	sa ^l dža:x ^h	ram ^l vai ¹	a ^l dža ^l dai ^h	ta ^l moi ^l laŋ ^l ke ¹	prəŋ ^l set ^l ku ^l
315	kill	t ^h at ^l	a ^l t ^h at ^l	a ^l t ^h a ¹	a ^l t ^h ie ¹	a ^l pa ^l duk ¹	ŋɔ:n ^l ku ^l
316	fight	ki ^l tcŋ ^h	a ^l in ^l tsual ^h	i ^l vel ²	a ^l tu: ^l a ^l t ^h ie ¹	a ^l pan ¹	rak ^l kru ^l ni? ^l ku ^l

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
317 buy	lei/l	a-lei/l	dʒɔ:k/t	a-dʒa-lei/t	a-yan/l	lei-kən/l
318 sell	zuak/t	a-zuar/t	tʰil/zuar/t	a-tzia/t	a-jo:/l	joi/kən/l
319 exchange	k ^h ek/l	a-l ^h leŋ/l	i ^h len/t	a-ma-ltai/t	a-łe:/t	t ^h ɔŋ/kən/l
320 pay	pi:a/l	man-pe:l	man/pɛ:k/t	a-ma-la-pie/t	a-p ^h u-pei/t	k ^h reŋ/kən/l
321 steal	gu:/l	a-tru:/l	t ^h il/fir/t	a-pa-ru:/t	a-thən/l	ru-kən/l
322 one person	k ^h at/t	pa-lk ^h at/t	pa-lk ^h at/t	pa-lk ^h a/t	loŋ-hme:t	a-pum/l
323 two	ni?/t	pa-łni?/t	pa-łni?/t	pa-łne/t	loŋ-hmī:t	pa-łni?/t
324 three	t ^h um/t	pa-lt ^h um/l	pa-lt ^h um/t	pa-lt ^h o/t	loŋ-hun/t	pa-t ^h um/l
325 four	li/t	pa-lli:t	pa-lli/l	pa-lli/t	loŋ-hba-lli/t	pa-lli/t
326 five	ŋa:t	pa-łja:t	pa-łja:/l	pa-łja:t	loŋ-hpa-łja:t	pa-łja:t
327 six	guk/t	pa-łruk/t	pa-łruk/t	pa-dža-łruk/t	loŋ-ha-łruk/t	pa-łruk/t
328 seven	sałgi?/t	pa-łsa-łri?/t	pa-łsa-łri?/t	pa-łsa-łri/t	loŋ-ha-łri?/t	pa-łri?/t
No.	Gloss					
329 eight	giat/t	pa-łriat/t	pa-łriet/t	pa-dža-łre/t	loŋ-hde-łja/t	pa-tret/t
330 nine	kua/l	pa-łkua/l	pa-łkua/l	pa-dža-łki:/l	loŋ-ha-łko/l	pa-łko/l
331 ten	sɔ:m/l	sɔ:m/l	pa-łra:/l	pa-łro:/l	loŋ-ha/l	pa-łra/l
332 hundred	za:/l	za:/l	za-lk ^h at/t	za-lk ^h a/t	loŋ-hsun-łvai/t	p ^h ra/t
333 thousand	tu:/l	saŋ/lk ^h at/t	t ^h ɔŋ/lk ^h at/t	t ^h au/lk ^h a/t	loŋ-hsaŋ/t	sim/t
334 many	tam/l	a-tam/l	a-tam/pi/t	ru-łja-łsa/t	a-łnuei/t	dəm/kən/l
335 all	vek ^h pi/l	a-łvai: ^h in/t	a-łza-łte/l	a-łma-łzo-łdua/t	bui-łbui/t	a-łvan/t
336 some	pɔ:Hk ^h at/t	a-l ^h en/t	a-łt ^h eu-łk ^h at/t	a-łt ^h ai/t	t ^h on-łtu/t	a-łvaŋ/t
337 few	tɔ:m/t	a-łtem/t	a-łłom-łte/l	ma-łdzau/t	i-łsa/l	jo-łsa-kən/l
338 half a unit	a-łlaŋ/t	a-łdżan-łve/l	a-łt ^h eu/l	a-łk ^h o-łp ^h ie/t	ka-łħu/t	a-łtsət/t
339 big	lian/l	a-łlian/l	a-łjan/l	a-łlai/t	a-łlen/t	bau-kən/l
340 small	ne:u/l	a-łte:/l	a-łfa:/l	a-łdzau/t	a-łt ^h əŋ/t	jo-i/kən/l
341 long	sau/l	a-łsej/t	a-łsau/l	a-łsei/t	a-łsau/t	s ^h au-kən/l
342 short (length)	tɔm/t	a-łtɔ:i/t	a-łto:i/l	a-łpa-łt ^h a/t	a-łtoi/t	tɔi/kən/l
343 tall	sau/t	a-łsa:ŋ/t	a-łsa:ŋ/l	a-łsa/t	a-łsaŋ/t	łuŋ/kən/l
344 short (height)	niam/l	a-łniam/l	a-łniam/l	a-łnai/t	a-łnen/t	nem-kən/l

		Tedim	Mizo	Hakha	Mara	Khumi	Kaang
345	thick	saʔ+	aʔtʃʰaʔ+	aʔtʃʰaʔ+	aʔʃa+	aʔtʰa:1	tʰaʔɪkən
346	thin	paŋ/panŋ	aɻpanŋ	aɻpanŋ	aɻpa:1	taŋɻpa:1	panŋɪkən
347	fat	tʰau+	aɻtʰau+	aɻtʰau+	aɻtʰɔ:1	aɻtʰau+	tʰauŋɪkən
348	skinny	gɔ:m+	aɻdze:r+	aɻder+	aɻzɔ:1	aɻyei?	kruŋɪkən
349	wide (breadth)	zai+	aɻzau+	aɻkau+	aɻkɔ:1	aɻkau+	kauŋɪkən
350	narrow	toŋ+	aɻzim+	aɻbi:1	aɻbu+	taŋtʰsei+	tsekɪkən
351	deep	tʰuk+	aɻtʰu:k+	aɻtʰuk+	aɻtʰu+	aɻtʰɔ:k+	tʰukŋɪkən
352	shallow	dai+	aɻpo:n+	aɻpuan+	aɻpʰa+	taɻdei+	təmɪkən
353	round	be:m+	aɻbial+	aɻkul?	aɻlɔ:1	aɻtaɻba+	buɻlumɪkən
354	full	dim+	aɻkʰat+	aɻkʰat+	aɻbie+	aɻkɔi+	beɪkən
355	right side	ziat/laŋ+	diŋɻlam+	ɔl?	aɻdza+dza+la+	ban+taŋ+beŋ+	patɻlam+
356	left side	vei/laŋ+	veiɻlam+	ke?	aɻdza+vei+la+	taŋy+beŋ+	enɻlam+
357	straight	tar+	aɻŋil+	aɻdŋi+	aɻde+	aɻtəŋ+	dŋɪkən
358	far	gam/laŋ	aɻla:1	aɻla:1	aɻla:1	aɻla:1	souɪkən
359	near	na:i+	aɻnɔ:a:i+	aɻnai?	aɻne+	aɻnɔ:i+	jəɪkən
360	this	hi?	heiɻhi+	hi+hi+	hi+le+hi+	hiɻta+	tso?
No.	Gloss						
361	that	hua:+	kʰaɻkʰa+	kʰi:ɻkʰi+	ho:ɻle+hu+	huɻta+	kʰoɻtso?
362	black	vəm+	aɻdum+	aɻnak+	aɻvau+pa+	kaɻduŋ+	aɻle+
363	white	ka:ŋ+	aɻval+	aɻraŋ+	aɻra:ɻpa+	kaɻtaɻloŋ+	aɻboŋk+
364	red	san+	aɻsen+	aɻsen+	aɻsai+pa+	kaɻthiŋ+	aɻsen+
365	green	en+/hiŋ+	aɻriŋ+	aɻriŋ+	aɻreo+pa+	kaɻpa+en+	aɻkriŋ+
366	yellow	na:iɻpa:k+	aɻenŋ+	aɻai+re:1	aɻmai+pa+	kaɻpa+sen+	aɻai:i
367	dirty	ninŋ	tenɻnom+	aɻtʰur+	aɻpuat+aɻle+	an+raŋ+ak+	tsinɪkən
368	new	tʰak+	aɻtʰar+	aɻtʰar+	aɻtʰie+	aŋtʰa+	tʰaiŋɪkən
369	old	lu:i+	aɻui+	aɻlun+	aɻpa+rai+	aŋtʰən+	rəmɪkən
370	dark	mial+	aɻtʰim+	aɻmu+i	aɻzeo+	aɻviŋ+	məŋɪkən
371	bright	taŋ+	aɻe:ŋ+	aɻdze:o+	aɻkʰai+	aɻap+	vəŋɪkən
372	the same	ki:baŋ+	inŋaiŋ+	aɻkʰat+	aɻlo+	aɻmoŋ+	təŋɪkən

373	different	ki: ^h lam/daj ^h /	raj ^h	a: ^h daj ^h	a: ^h na: ^h nei ^h	a: ^h la:j ^h	lak ^h ma: ^h ku ^h
374	sweet	k ^h um ^h	a: ^h l ^h um ^h	a: ^h l ^h um ^h	a: ^h l ^h o ^h	a: ^h tui ^h	ɔi ^h ku ^h
375	sour	t ^h uk ^h	a: ^h l ^h u:r ^h	a: ^h l ^h ɔ:r ^h	a: ^h l ^h o: ^h pa ^h	a: ^h l ^h ɔ:kl ^h	t ^h ui: ^h ku ^h
376	bitter	k ^h a: ^h	a: ^h l ^h a: ^h	a: ^h l ^h a: ^h	a: ^h l ^h a: ^h	a: ^h l ^h a: ^h	k ^h a: ^h ku ^h
377	spicy hot	t ^h ak ^h	a: ^h l ^h ak ^h	a: ^h l ^h ak ^h	a: ^h l ^h he: ^h	a: ^h l ^h sa: ^h	sip ^h ku ^h
378	rotten	muat ^h	a: ^h l ^h ɔi ^h	a: ^h l ^h u: ^h	t ^h u: ^h pa ^h	a: ^h l ^h ɔyɔj ^h	ui? ^h ku ^h
379	swell	bɔ: ^h k ^h	a: ^h l ^h vu: ^h j ^h	a: ^h l ^h p ^h in ^h	a: ^h l ^h le: ^h	a: ^h l ^h ɔk ^h	p ^h rin ^h ku ^h
380	dry	keu ^h	a: ^h l ^h ro: ^h	a: ^h l ^h rau ^h	a: ^h l ^h dzo: ^h	a: ^h l ^h p ^h ui ^h	rɔj ^h ku ^h
381	wet	kɔ: ^h t ^h	a: ^h l ^h oŋ ^h	a: ^h l ^h dzin ^h	a: ^h l ^h da: ^h	tui: ^h la:sui ^h	sui: ^h ku ^h
382	hot	sa ^h	a: ^h l ^h lum ^h	a: ^h l ^h sa: ^h	a: ^h l ^h pa: ^h lo ^h	a: ^h l ^h bi: ^h	ʃok ^h ku ^h
383	cold	vɔ: ^h t ^h	a: ^h l ^h vɔ:t ^h	a: ^h l ^h kik ^h	a: ^h l ^h dza: ^h ku ^h	a: ^h l ^h de ^h	sik ^h ku ^h
384	sharp	hiam ^h	a: ^h l ^h zum ^h	a: ^h l ^h zum ^h	a: ^h l ^h te: ^h	a: ^h l ^h pa: ^h sui ^h	s ^h um ^h ku ^h
385	blunt	mɔ: ^h t ^h	a: ^h l ^h bil ^h	a: ^h l ^h oŋ ^h	a: ^h l ^h mo: ^h	a: ^h l ^h bə: ^h ŋ ^h	moŋ ^h ku ^h
386	heavy	gik ^h	a: ^h l ^h rit ^h	a: ^h l ^h rit ^h	a: ^h l ^h ri: ^h	a: ^h l ^h yit ^h	ri? ^h ku ^h
387	hard	sak ^h	a: ^h l ^h sak ^h	a: ^h l ^h hak ^h	a: ^h l ^h dza: ^h	a: ^h l ^h tak ^h	ʃaŋ ^h ku ^h
388	smooth	zɔ: ^h H	a: ^h l ^h na: ^h H	a: ^h l ^h mi ^h	a: ^h l ^h pa: ^h nie ^h	a: ^h l ^h hoi ^h	ɳai ^h ku ^h
389	fast	man ^h /la:j ^h /	a: ^h l ^h ra:j ^h	a: ^h l ^h reŋ ^h	a: ^h l ^h dza: ^h tlie ^h	a: ^h l ^h ra:j ^h	vai? ^h ku ^h
390	slow	ze: ^h ka:i ^h	a: ^h l ^h muaj ^h	a: ^h l ^h nuaŋ ^h	a: ^h l ^h ho: ^h	pa: ^h jai ^h	jai ^h ku ^h
391	strong	ha:t ^h	a: ^h l ^h džak ^h	a: ^h l ^h ɔ:ŋ ^h	a: ^h l ^h a:lal ^h lə ^h	a: ^h l ^h a:lal ^h lən ^h	t ^h a: ^h ma: ^h ku ^h
392	weak	t ^h a: ^h ne:m ^h	a: ^h l ^h džak ^h -lo ^h	a: ^h l ^h der ^h	a: ^h l ^h a:lal ^h dia ^h	a: ^h l ^h a:lal ^h bəŋ ^h	t ^h a: ^h l ^h ɔm ^h ku ^h
No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
393	tired	tɔ: ^h H	a: ^h l ^h ha? ^h	a: ^h l ^h ba ^h	a: ^h l ^h a:lal ^h ba ^h	a: ^h l ^h bai ^h	bɔj ^h ku ^h
394	blind	mit ^h tɔ: ^h	mit ^h de ^h	a: ^h l ^h mit ^h džɔ: ^h	a: ^h l ^h ma: ^h a: ^h džɔ: ^h	a: ^h l ^h mi: ^h a: ^h bui ^h	mik ^h lɔ: ^h ku ^h
395	deaf	beŋ ^h tɔ: ^h	beŋ ^h lt ^h e:t ^h	a: ^h l ^h na ^h lt ^h e:t ^h	a: ^h l ^h na:a: ^h lpa ^h	ka: ^h na:a: ^h lbiŋ ^h	ɳa: ^h paŋ ^h ku ^h
396	bald	tal ^h kɔ: ^h	džan ^h ljal? ^h	a: ^h l ^h džal ^h ljau ^h	a: ^h l ^h hi: ^h lpa ^h o ^h	nu: ^h peŋ ^h ta:di: ^h lək ^h	tai ^h bɔ: ^h ku ^h
397	naked	pum ^h /taŋ ^h /	sa: ^h ruak ^h	a: ^h l ^h ki: ^h lɔ: ^h	ne: ^h rai: ^h pa:ta: ^h au ^h	oŋ ^h ko: ^h ləŋ ^h	pum ^h taŋ ^h ku ^h
398	good	hɔi? ^h	a: ^h l ^h a: ^h	a: ^h l ^h ha: ^h	a: ^h l ^h ba ^h	a: ^h l ^h hoi ^h	ni ^h ku ^h
399	bad	sia ^h	a: ^h l ^h fia: ^h	a: ^h l ^h fia: ^h	a: ^h l ^h e: ^h	a: ^h l ^h si: ^h	t ^h e: ^h ku ^h
400	correct	dik ^h /man ^h	a: ^h l ^h dik ^h	a: ^h l ^h man ^h	a: ^h l ^h de ^h	a: ^h l ^h men ^h	tai ^h ku ^h

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
425	knife	at/tan/	p ^h el/	a ^h dzan/	a ^h dzu ^h sa/	a ^h bi/	s ^h at ^h pro ^h k/
426	bend	kɔ:i/	a ^h kɔ:i/	a ^h kɔ:i/	a ^h ke/	ta ^h kɔn/	d ^h ui ^h k/
427	lift	dəm/ /toi/	dʒɔ:i/	a ^h dʒɔ:i/	a ^h dʒə ^h le/	a ^h ta ^h bən ^h ta ^h haŋ/	jək ^h ka ^h /
428	make	bɔ:H	siam/	tua?/ser/	a ^h to:/	sa:/	bi ^h ka ^h /
401	wrong	k ^h ial/	a ^h dik ^h lo/	a ^h pal?/	a ^h pa:/	a ^h mə: ^h	ka ^h ku ^h /
402	when (past)	dʒik ^h lin/	ej ^h tik ^h an ^h je:/	zei ^h tik ^h lio ^h a?/	k ^h a ^h ti ^h ne:/ta ^h ma/	mə ^h tu ^h na ^h lo ^h ni/	a ^h ho ^h tia/
403	where	kɔ:i/a?/	k ^h ɔ:i ^h a?/je/	k ^h o ^h ka ^h a?/	k ^h a ^h ta ^h lo ^h ma/	mu ^h no ^h o?/	a ^h ho ^h la/
404	who	kua/	tu ^h je:/	a ^h hau ^h da?/	a ^h hau ^h ma/	mi ^h ni/	ha ^h lu/
405	what	baŋ/	ej ^h je:/	zei ^h da?/	k ^h a ^h pe:/a ^h dza:/	mo ^h ni/	ha ^h tu/
406	how many persc	baŋ ^h za?/	ej ^h zat ^h je:/	zei ^h zat ^h da?/	k ^h a ^h zi:/i ^h ma/	loŋ ^h mu ^h e ^h tu ^h ni/	ha ^h tu ^h jat/
407	stream	lui/	lui/	ti ^h va/	ti ^h va/	va ^h soŋ/	tui ^h log/
408	wet rice field	lou/	lou:/	lei ^h kuŋ/	lei ^h pa ^h lie/	li ^h praj/	lai/
409	ripe	min/	min/	a ^h min/	a ^h mə: ^h	a ^h mə: ^h	min ^h ku ^h /
410	rice seedling	bu? ^h nou/	bu? ^h dzi:/	fa ^h džaŋ ^h dži:/	sa ^h dza: ^h pa ^h ko/	saŋ ^h kuŋ/	tsaŋ ^h tsi ^h pro ^h
411	pangolin	sa ^h p ^h u/	sa ^h p ^h u:/	sa ^h p ^h u:/		t ^h in ^h p ^h ei?/	dim ^h p ^h u/
412	crested	suaŋ/	a ^h t ^h uaŋ/	a ^h t ^h uaŋ/	a ^h džə ^h la ^h au/	a ^h moŋ ^h lo ^h on/	siŋ ^h si ^h om ^h ku ^h /
413	water leech	li:t/	sai ^h li:t/	li:t/	ma ^h li/	mio?/	li:t/
414	land leech	vɔ:t/	vaj ^h vat/	džan ^h vut/	dža ^h va ^h ?	tu ^h va/	vət/
415	earth worm	tag ^h te:l/	džan ^h pa:t/	džan ^h džel/	dža ^h ka ^h rie/	a ^h tei/	tag ^h ko <i>h</i> /
416	I (1s)	kei ^h ma?/	kei ^h ma?/	kei ^h ma?/	kei ^h ma?/	kai/	kei/
417	thou (2s)	naŋ ^h ma?/	naŋ ^h ma?/	naŋ ^h ma?/	naŋ ^h	naŋ/	naŋ/
418	it	a ^h ma?/	a ^h ma?/	a ^h ma?/	a ^h ma ^h no/	a ^h ni:/	a ^h ni/
419	we (1p)	ei ^h mau/	kan/	kan ^h ma?/	kei ^h mo/	kai ^h mi/	kei ^h mi/
420	you (2p)	no ^h mau/	in/	nan ^h ma?/	na ^h mo/	naŋ ^h mi/	naŋ ^h mi ^h tu:/
421	they	a ^h mau/	an/	an ^h ma?/	a ^h mo/	e ^h ni ^h mi/	am ^h ni ^h tu:/
422	sleeping area	lup ^h na: ^h	pin ^h dan/	i ^h nak ^h an/	a ^h muŋ ^h na ^h la ^h ka ^h a/	i ^h li ^h hai ^h miŋ ^h lən/	i ^h lənak ^h lən/
423	take	la:/	a ^h lla:/	la:k/	a ^h lla ^h ho/	a ^h lla:/	tse ^h lpu ^h ka ^h /
424	disappear	maŋ/	bou ^h ral/	a ^h lou/	a ^h le ^h ha/	aj ^h mə: ^h	k ^h ru ^h ka ^h /
	No. Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang

429	don't do it	hi ^l hi ^l ?ken ^l	ti ^l su ^l	tua ^l la ^l	he ^l he: ^l re ^l k ^h a ^l	hi ^l ta ^l sa ^l han ^l	ɔ? ^l bi ^l
430	half a quantity	a ^l laŋ ^l	a ^l dʒan ^l ve: ^l	a ^l tan ^l	dʒeu ^l ka ^l	ka ^l hu: ^l	kɔ:k ^l
431	disgusting	ki? ^l huai ^l	a ^l ten ^l	fi ^l	a ^l ri ^l i ^l la ^l pa ^l	pa ^l nu ^l ə ^l t ^h ək ^l	tai ^l le ^l ka ^l
432	warm	lu:m ^l	a ^l lum ^l	a ^l lum ^l mi ^l	a ^l la ^l lo: ^l pa ^l	a ^l bi ^l ən ^l	ɔi? ^l pəŋ ^l
433	cool	vɔ:t ^l	a ^l dai ^l /a ^l vɔ:t ^l	a ^l kik ^l mi ^l	a ^l dza ^l k ^h a ^l dai ^l t ^h i ^l	a ^l de ^l ru ^l	rei ^l pəŋ ^l
434	difficult	hak ^l sa ^l	a ^l har ^l	a ^l har ^l mi ^l	a ^l ru: ^l	a ^l rai ^l p ^h i ^l t ^h a ^l	kui ^l ka ^l pəŋ ^l
435	easy	əl ^l	a ^l ɔ:l ^l	a ^l fɔ:i ^l mi ^l	a ^l nu: ^l	a ^l jui ^l sa ^l	jəi ^l sa ^l pəŋ ^l
436	loose	kɔ:l ^l	a ^l t ^h ɔ:l ^l	a ^l lɔŋ ^l mi ^l	a ^l lau ^l pa ^l	a ^l əŋ ^l lɔŋ ^l	ləŋ ^l pəŋ ^l
437	bro elder of m	u: ^l pa ^l	u: ^l bel ^l	ka ^l u ^l pa ^l			ka ^l p ^h ə:i ^l
438	sis elder of f	u: ^l nu ^l	u: ^l nu ^l	ka ^l u ^l nu ^l		ta ^l nu ^l ka ^l jo? ^l	ka ^l si ^l ei ^l
439	sis elder of m	u: ^l nu ^l	u: ^l nu ^l	ka ^l far ^l nu ^l		ta ^l nu ^l ka ^l nau? ^l	ka ^l kə:i ^l
440	bro yr of m	na:u ^l pa ^l	nau ^l	ka ^l nau ^l pa ^l		a ^l ma ^l ha ^l ka ^l nau? ^l	ka ^l nau ^l pa ^l
441	sis yr of f	na:u ^l nu ^l	far ^l nu: ^l	ka ^l nau ^l nu ^l		ka ^l so ^l ko? ^l	ka ^l nau ^l nu ^l
442	sis yr o fm	na:u ^l nu ^l	far ^l nu: ^l	ka ^l far ^l nu ^l		ta ^l nu ^l ka ^l nau ^l ko? ^l	nu ^l be ^l
443	when future	kɔ:l:a? ^l	en ^l tik ^l la? ^l je: ^l	zei ^l tik ^l la? ^l da? ^l	k ^h a ^l ti ^l ne: ^l ta ^l lə ^l dʒau ^l	moi ^l no ^l ək ^l	hɔ:lia ^l

APPENDIX F

WORD LISTS USED FOR LEXICOSTATISTICS

The following table shows phonetic transcriptions of the word lists of 100 vocabularies used for lexicostatistic analysis. The first column from the left is a serial number for this word list and the second column indicates the reference number that appears in the general word lists. The third column is the English gloss and the rest are the words in languages compared by lexicostatistic comparison.

Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	Hakha	Hakha	Thanlan
1	1	sky	van [˧]	van [˧]	va:n [˥]	van [˥]	va:n [˧]	va:n [˧]	va:n [˧]	van [˧]	va:n [˥]	va:n [˥]	van [˧]
2	2	sun	ni: [˧]	ni: [˧]	ni [˧]	ni: [˧]	ni: [˧]	ni: [˧]	ni: [˧]	ni [˧]	ni: [˥]	ni: [˧]	ni [˧]
3	3	moon	la:	tʰa: [˧]	kʰa: [˥]	la: [˥]	la [˧]	tʰla [˧]	tʰla [˧]	tʰla [˧]	tʰla [˥]	tʰla [˧]	tʰla [˧]

Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	Hakha	Hakha	Thantlan
4	4	star	a ⁺	ak ⁺	ak ⁺	a ⁺	ar ⁺	ar ⁺	ar ⁺	ar ⁺	ar ⁺	ar ⁺	ar ⁺
5	5	cloud	mei ¹	mei ¹	mei ¹	mei ¹	me: ¹	mei ¹	mei ¹	mei ¹	mei ¹	mei ¹	mei ¹
6	7	rain	go: ¹	ŋua ¹	gu ¹	gu ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹
7	12	night	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹	za:n ¹
8	18	year	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹	kum ¹
9	23	water	tui ¹	tui ¹	tui ¹	tui ¹	ti: ¹	ti ¹	ti ¹	ti ¹	ti ¹	ti ¹	ti ¹
10	26	earth/soil	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹
11	29	stone	sor ¹	suaŋ ¹	luŋ ¹	suɔŋ ¹	luŋ ¹	luŋ ¹	luŋ ¹	luŋ ¹	luŋ ¹	luŋ ¹	luŋ ¹
12	34	iron	t ^h i ¹	t ^h i:k ¹	sik ¹	sia ¹	t ^h i:r ¹	t ^h i:r ¹	t ^h iar ¹	t ^h ir ¹	t ^h iar ¹	t ^h iar ¹	da:r ¹
13	35	mountain	mo:l ¹	muɑŋ ¹	muaŋ ¹	muɔl ¹	muaŋ ¹	tlaŋ ¹	tlaŋ ¹	tlaŋ ¹	tlaŋ ¹	tlaŋ ¹	tlaŋ ¹
14	38	tree	t ^h in ¹	t ^h in ¹	siŋ ¹	siŋ ¹	t ^h iŋ ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹
15	41	thorn	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹	lin ¹
16	42	root	bul ¹	zuŋ ¹	zuŋ ¹	hui	ham ¹	ham ¹	ɻam ¹	ɻom ¹	-	-	ɻam ¹
17	43	leaf	na ¹	te ¹	te?l/na? ¹	te ¹	na ¹	na ¹	na ¹	na ¹	na ¹	na ¹	na ¹
18	46	seed	mo: ¹	tsi: ¹	taŋ ¹	taŋ ¹	?i: ¹	dzi ¹	mu: ¹	tsi ¹	tsi: ¹	tsi: ¹	tsi: ¹
19	48	bamboo	go: ¹	ŋua ¹	gua ¹	guo ¹	ro: ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹	r <u>ua</u> ¹
20	76	monkey	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹	zo:ŋ ¹
21	81	dog	ui ¹	ui ¹	ui ¹	?ui ¹	ui ¹	ui ¹	ui ¹	ui ¹	ui ¹	ui ¹	ui ¹
22	83	bite	pet ¹	pet ¹	pet ¹	pet ¹	pet ¹	ŋeo ¹	ke:o ¹	kæo ¹	se? ¹	se? ¹	se ¹
23	89	horn	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹	ki: ¹
24	90	tail	mei ¹	mei ¹	mei ¹	mei ¹	mei ¹	mei ¹	mei ¹	mi ¹	mei ¹	mei ¹	mei ¹
25	93	bird	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹	va ¹
26	95	wing	la ¹	t ^h a: ¹	k ^h a ¹	la ¹	la: ¹	kau ¹	t ^h la ¹	t ^h la ¹	t ^h la: ¹	t ^h la: ¹	t ^h la: ¹
27	96	feather	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹	mul ¹
28	97	fly	leŋ ¹	leŋ ¹	zuŋ ¹	leŋ ¹	zuŋ ¹	zuŋ ¹	zam ¹	zuŋ ¹	zuŋ ¹	zuŋ ¹	zuŋ ¹
29	98	egg	tui ¹	tui ¹	tui ¹	tui ¹	ti: ¹	ti: ¹	ti ¹	ti ¹	ti ¹	ti ¹	ti ¹
30	101	fish	ŋa: ¹	ŋa ¹	ŋa ¹	ŋa ¹	ŋa: ¹	ŋa: ¹	ŋa ¹	ŋa ¹	ŋa ¹	ŋa ¹	ŋa ¹
31	110	louse head	hit ¹	hik ¹	hik ¹	hik ¹	hik ¹	ɻik ¹	ɻik ¹	ɻik ¹	ɻik ¹	ɻik ¹	ɻik ¹

Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	Hakha	Hakha	Thanlan
32	119	head	lu: ¹	lu ¹	lu: ¹	lu ¹	lu: ¹	lu: ¹	lu: ¹	lu ¹	lu: ¹	lu: ¹	lu: ¹
33	122	hair	sam ¹	s ^h am ¹									
34	125	eye	mit ¹										
35	127	nose	na ¹	na:k ¹	na:k ¹	nap ¹	na:r ¹	na:r ¹	na:r ¹	na:r ¹	na:r ¹	na:r ¹	na:r ¹
36	129	ear	bil ¹	bil ¹	bil ¹	bil ¹	ben ¹	bil ¹	na: ¹	na ¹	na ¹	na ¹	na ¹
37	130	mouth	kam ¹	ka: ¹	ka ¹	ka ¹	ka: ¹	ka ¹	ka ¹				
38	131	tongue	lei ¹	lei ¹	lei: ¹	lei: ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹	lei ¹
39	133	tooth	ha: ¹	ha ¹	ha ¹	ha ¹	ha: ¹	ha: ¹	ha: ¹				
40	135	chin	laŋ ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	he ¹	k ^h a: ¹	k ^h a ¹	k ^h a ¹	k ^h a ¹	k ^h a: ¹
41	139	belly	pu ¹	ŋil ¹	pi ¹	gil ¹	pum ¹	pum ¹	pum ¹	pum ¹	po ¹	po ¹	po ¹
42	141	heart	luŋ ¹										
43	143	liver	t ^h in ¹	t ^h in ¹	sin ¹	sin ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹	t ^h in ¹
44	145	hand	k ^h ot ¹	k ^h ut ¹	k ^h ut ¹	k ^h ut ¹	kut ¹	kut ¹	kut ¹	kut ¹	kut ¹	kut ¹	kut ¹
45	150	finger nail	tin ¹	tsin ¹	tin ¹	tsin ¹	tin ¹	tin ¹	te: ¹	tin ¹	tin ¹	tin ¹	tin ¹
46	152	leg	ke: ¹	peaj ¹	k ^h e: ¹	keŋ ¹	ko: ¹	ke ¹	ke ¹	ke ¹	ke: ¹	ke: ¹	ke: ¹
47	154	knee	k ^h up ¹	k ^h uk ¹	k ^h up ¹	k ^h uk ¹							
48	159	bone	gu: ¹	ŋu: ¹	gu? ¹	gu ¹	ru ¹						
49	161	flesh	sa: ¹	sa: ¹	sa ¹	sa ¹	s ^h a: ¹	sa: ¹	sa: ¹	tit ¹	tak ¹	sa ¹	sa ¹
50	163	skin	vun ¹	tsuar ¹	tsuar ¹	vun ¹							
51	171	person	mi: ¹	mi ¹	mi ¹	mi	mi ¹	mi ¹	mi ¹	mi ¹	mi: ¹	mi: ¹	mi ¹
52	172	father	pa: ¹	pa: ¹	pa ¹	pa ¹	pa: ¹	pa ¹	pa ¹	pa ¹	pa: ¹	pa: ¹	pa ¹
53	173	mother	nu: ¹	nu: ¹	nu ¹	nu ¹	nu: ¹	nu ¹	nu ¹	nu ¹	nu: ¹	nu: ¹	nu: ¹
54	182	name	min ¹	min ¹	min ¹	min ¹	miŋ ¹	miŋ ¹	min ¹	miŋ ¹	min ¹	min ¹	min ¹
55	184	road/path	lam ¹										
56	192	mat	p ^h e: ¹	p ^h ek ¹	p ^h ek ¹	p ^h ek ¹	k ^h o ¹	p ^h ak ¹	p ^h er ¹				
57	212	fire	mei ¹										
58	213	ashes	vut ¹										
59	214	smoke	xu ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹

Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	Hakha	Hakha	Thantlan
60	224	see	mu: ¹	mu ¹	mu ¹	mu ¹	mu:m ¹	mu ¹	mu: ¹	mu ¹	mu? ¹	mu? ¹	mu ¹
61	226	weep	kap ¹	kap ¹	kap ¹	kap ¹	kap ¹	kap ¹	tap ¹	tap ¹	tap ¹	tap ¹	tap ¹
62	227	eat	ne: ¹	ne: ¹	ne ¹	ne ¹	ei ¹	ai ¹	ei ¹	i ¹	ei ¹	ei ¹	ei ¹
63	234	vomit	lu: ¹	lu: ¹	lu: ¹	luo ¹	o:k ¹	o:p ¹	o:k ¹	luak ¹	luak ¹	luak ¹	luak ¹
64	244	laugh	nui ¹	nui ¹	nui ¹	nui: ¹	ni: ¹	ni: ¹	ni: ¹	ni ¹	ni: ¹	ni: ¹	ni: ¹
65	250	sing	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sak ¹	sak ¹	sa ¹	sa ¹	sa ¹
66	251	think	ŋai ¹	ŋai ¹	ŋai? ¹	ŋai ¹	ruat ¹	ruat ¹	ruat ¹	ruat ¹	rua? ¹	rua? ¹	ruat ¹
67	269	die	t ^h i: ¹	t ^h i: ¹	si: ¹	si: ¹	t ^h i: ¹	t ^h i: ¹	t ^h i: ¹	t ^h i ¹	t ^h i? ¹	t ^h i? ¹	t ^h i ¹
Sr.No Ref.No. Gloss													
68	271	sit	to: ¹	to: ¹	tu ¹	to ¹	tau ¹	tau ¹	tau ¹	tau ¹	t ^h ut ¹	t ^h ut ¹	t ^h u: ¹
69	272	stand	dij ¹	dij ¹	dij ¹	dij ¹	dij ¹	dij ¹	dij ¹	dij ¹	diar ¹	diar ¹	dir ¹
70	277	enter	lut ¹	lu:t ¹	lut ¹	lut ¹	lut ¹	lu:t ¹	lu:t ¹	lut ¹	lut ¹	lut ¹	lu:t ¹
71	281	kick	pe: ¹	peak ¹	sui ¹	sui ¹	sir ¹	sir ¹	si:t ¹	sai ¹	t ^h ui? ¹	t ^h ui? ¹	t ^h ui ¹
72	284	swim	lap ¹	ok ¹	pek ¹	pe ¹	leo ¹	leo ¹	leo ¹	leo ¹	lio ¹	lio ¹	lio ¹
73	288	give	pe: ¹	pia ¹	pia ¹	pie ¹	pe: ¹	pe: ¹	pe:k ¹	pæk ¹	pe:k ¹	pe:k ¹	pe:k ¹
74	308	burn	hal ¹	hal ¹	ha:l ¹	ha:l ¹	hal ¹	ka: ¹ ŋ ¹	ur ¹	k ^h aŋ ¹	k ^h aŋ ¹	k ^h aŋ ¹	kao ¹
75	312	dance	la:m ¹	lam ¹	la:m ¹	la:m ¹	la:m ¹	la:m ¹	lam ¹	la:m ¹	la:m ¹	la:m ¹	la:m ¹
76	313	shoot	ka:p ¹	ka:p ¹	ka:p ¹	ka:p ¹	ka:p ¹	kap ¹	ka:p ¹	kap ¹	ka ¹	ka? ¹	ka ¹
77	315	kill	t ^h et ¹	t ^h at ¹	t ^h at ¹	t ^h at ¹	re:k ¹	re:k ¹	t ^h at ¹	t ^h a ¹	t ^h a? ¹	t ^h a ¹	t ^h a ¹
78	318	sell	zuo ¹	zuak ¹	zuak ¹	zua ¹	zuar ¹	zuar ¹	zuar ¹	zuar ¹	zuar ¹	zuar ¹	zuar ¹
79	322	one person	xet ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹
80	323	two	ni ¹	ni ¹	ni? ¹	ni ¹	ni ¹	ni ¹	ni ¹	ni ¹	ni? ¹	ni? ¹	ni ¹
81	334	many	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹	tam ¹
82	335	all	bon ¹	vek ¹	vek ¹	zo ¹ sie	va ¹	vek ¹	za: ¹	sen ¹	za: ¹	za: ¹	di ¹
83	339	big	gol ¹	lian ¹	lian ¹	gol ¹	lien ¹	lian ¹	tum ¹	ŋam ¹	ŋan ¹	ŋan ¹	ŋan ¹
84	341	long	sao ¹	sa:u ¹	sa:u ¹	sa:u ¹	sa:ŋ ¹	sau ¹	saru ¹	sau ¹	sau ¹	sau ¹	sa:u ¹
85	344	short height	ne:m ¹	niam ¹	niam ¹	niam ¹	?om ¹	niam ¹	niam ¹	niam ¹	niam ¹	niam ¹	niam ¹
86	345	thick	sa ¹	sa ¹	sa? ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	t ^h a? ¹	t ^h a? ¹	t ^h a ¹
87	351	deep	t ^h u ¹	t ^h u:k ¹	t ^h u:k ¹	t ^h uk ¹	t ^h uk ¹	t ^h u:p ¹	t ^h uk ¹	t ^h uk ¹	t ^h uk ¹	t ^h uk ¹	t ^h u:k ¹

88	354	full	dim ¹	dim ¹	dim ¹	dim ¹	dim ¹	dim ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹	k ^h at ¹
89	360	this	hi ¹	hi ¹	hi? ¹	tam ¹	he ¹	he ¹	hi ¹	i ¹	hi ¹	hi ¹	hi ¹
90	361	that	xu ¹	tu ¹	hua: ¹	hu ¹	k ^h e ¹	ke ¹	k ^h i ¹	k ^h a ¹	k ^h i ¹	k ^h i ¹	k ^h a ¹
91	362	black	vom ¹	vom ¹	vom ¹	vom ¹	haŋ ¹	haŋ ¹	dum ¹	dum ¹	nak ¹	nak ¹	nak ¹
92	363	white	kaŋ ¹	kaŋ ¹	kaŋ ¹	kaŋ ¹	ŋou ¹	ŋou ¹	raŋ ¹				
93	364	red	sen ¹	san ¹	san ¹	san ¹	sen ¹	saŋ ¹	sen ¹				
94	365	green	dom ¹	ej ¹	ej ¹ /hij ¹	ej ¹	hij ¹	p ^h o ¹	ɹin ¹	ɹin ¹	ɹin ¹	ɹin ¹	ɹin ¹
95	368	new	t ^h a: ¹	t ^h ak ¹	t ^h a:k ¹	t ^h a ¹	t ^h er ¹	t ^h ar ¹					
96	376	bitter	xa ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹	k ^h a: ¹
97	382	hot	sa: ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	sa ¹	li:n ¹
98	386	heavy	gi ¹	ŋit ¹	gik ¹	gi? ¹	rit ¹						
99	403	where	hoi ¹	koi ¹	koi ¹	hai ¹	ko ¹	kon ¹	k ^h ui ¹	k ^h a ¹	k ^h oi ¹	k ^h oi ¹	k ^h oi ¹
Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	Hakha	Hakha	Thantlan¹
100	404	who	kue ¹	kua ¹	kua ¹	koi ¹	tu ¹	ai ¹	zau ¹	zau ¹	hau ¹	hau ¹	hau ¹

Sr.No	Ref.No.	Gloss	Mizo	Khualsim	Senthang	Matu	Kaang	Dai	Khumi	Asho	Lautu-H	Mara	Lakher
1	1	sky	va:n ¹	van ¹	va:n ¹	van ¹	k ^h o ¹	k ^h a:n ¹	va:n ¹	-	vuo ¹	va ¹	va: ¹
2	2	sun	ni: ¹	ni: ¹	ni: ¹	ni ¹	ŋi ¹	mik ¹	ni: ¹	ni: ¹	nij ¹	nei ¹	nei ¹
3	3	moon	t ^h la:N	t ^h la ¹	t ^h a: ¹	t ^h a ¹	k ^h ra: ¹	k ^h j:a: ¹	t ^h la: ¹	k ^h lo: ¹	t ^h la ¹	t ^h la ¹	t ^h la ¹
4	4	star	ar ¹	ar ¹	a: ¹	a ¹	ai ¹	ai: ¹	a ¹	a ¹	a ¹	o: ¹	o: ¹
5	5	cloud	t ^h u:m ¹	mej ¹	mai ¹	mai ¹	mei ¹	mei ¹	ma:i ¹	me:i ¹	my ¹	mei ¹	-
6	7	rain	rua? ¹	rua? ¹	k ^h ua ¹	k ^h o ¹	-	k ^h o ¹	-	jo: ¹	k ^h u ¹	-	va ¹
7	12	night	za:n ¹	za:n ¹	za:n ¹	rum ¹	t ^h an ¹	mi: ¹	-	mu: ¹	zuo ¹	ze? ¹	zo ¹

8	18	year	kum ^l	kum ^l	ku:m ^l	kum ^l	kum ^l	kum ^l	-	ko:y ^l	ko:y ^l	ko? ^l	ko ^l	
9	23	water	tui ^l	ti: ^l	ti: ^l	tui ^l	tui ^l	tui ^l	tui ^l	ti ^l	ti ^l	ti ^l	ti: ^l	
10	26	earth/soil	lei ^l	lei ^l	la:i ^l	la:i ^l	lei ^l	lei ^l	m ^l dek ^l	-	dai ^l	ly ^l	lei ^l	li ^l
11	29	stone	luŋ ^l	luŋ ^l	loŋ ^l	loŋ ^l	luŋ ^l	luŋ ^l	loŋ ^l	luŋ ^l	loŋ ^l	lo ^l	lo ^l	
12	34	iron	t ^h ir ^l	t ^h ir ^l	t ^h ia ^l	s:um ^l	si ^l	t ^h i ^l	su:n ^l	t ^h i ^l	t ^h a ^l	t ^h ia ^l	t ^h i ^l	
13	35	mountain	tla:ŋ ^l	tla:ŋ ^l	taŋ ^l	mo:n ^l	-	zu:ŋ ^l	-	zun ^l	tluo ^l	tla ^l	tla ^l	
14	38	tree	t ^h in ^l	t ^h in ^l	t ^h in ^l	t ^h in ^l	siŋ ^l	t ^h in ^l	t ^h in ^l	t ^h in ^l	t ^h ou ^l	t ^h ei ^l	t ^h ei ^l	
15	41	thorn	lin ^l	lin ^l	lin ^l	k ^h in ^l	lin ^l	lin ^l	lin ^l	lin ^l	lin ^l	leo ^l	-	
16	42	root	zun ^l	ram ^l	ram ^l	p ^h a ^l	-	p ^h a ^l	taŋ ^l	juŋ ^l	ri ^l	t ^h a ^l	ri ^l	
17	43	leaf	ɳa? ^l	ɳa ^l	ɳa ^l	ɳa ^l	ɳa? ^l	ɳa ^l	-	ɳo: ^l	ɳa ^l	ɳa? ^l	ɳo ^l	
18	46	seed	tsi: ^l	mu: ^l	tsi: ^l	mu ^l	-	ui ^l	mu: ^l	ui: ^l	mɔŋ ^l	mɔ? ^l	mɔ ^l	
19	48	bamboo	rua ^l	rua ^l	rua ^l	ro ^l	ro: ^l	ɛo: ^l	wu: ^l	jo: ^l	ru ^l	ra ^l	la ^l	
20	76	monkey	zo:ŋ ^l	zoŋ ^l	zo ^l	zaʊ ^l	jo:ŋ ^l	joŋ ^l	-	joŋ ^l	zo:ŋ ^l	zau ^l	zau ^l	
21	81	dog	ui ^l	ui ^l	ui ^l	u:i ^l	ui ^l	ui ^l	?ui ^l	u ^l	i: ^l	i: ^l	i: ^l	
22	83	bite	se ^l	go ^l	kio ^l	kei ^l	kət ^l	su:i ^l	kei? ^l	so ^l	sie ^l	-	-	
23	89	horn	ki: ^l	ki: ^l	ki: ^l	ki ^l	ki: ^l	ki ^l	tsi ^l	ki ^l	ki ^l	ki ^l	-	
Sr.No	Ref.No.	Gloss	Mizo	Khualsim	Senthang	Matu	Kaang	Dai	Khumi	Asho	Lautu-H	Mara	Lakher	
24	90	mei ^l	mei ^l	mai ^l	mai ^l	mei ^l	mei ^l	mai ^l	mei ^l	my ^l	mei ^l	mi ^l		
25	93	bird	va ^l	va: ^l	va: ^l	va ^l	va: ^l	k ^h a: ^l	va ^l	jo ^l	va ^l	vo ^l	vo ^l	
26	95	wing	t ^h la: ^l	t ^h la: ^l	t ^h a ^l	t ^h e ^l	p ^h ra: ^l	ɤa: ^l	li: ^l	p ^h ia: ^l	t ^h la ^l	t ^h lo ^l	-	
27	96	feather	m ^l ul ^l	m ^l ul ^l	m ^l ui ^l	mun ^l	m ^l ui ^l	mu: ^l	mui ^l	mo ^l	m ^l i ^l	m ^l i ^l	-	
28	97	fly	t ^h lo:k ^l	soi ^l	zuŋ ^l	doi ^l	joŋ ^l	joŋ ^l	taŋ ^l	pa ^l	zu ^l	zo ^l	t ^h la ^l	
29	98	egg	tui ^l	ti: ^l	ti: ^l	dui ^l	tui ^l	tui ^l	tui ^l	tuei ^l	ti ^l	ti ^l	ti ^l	
30	101	fish	ɳa: ^l	ɳa: ^l	ɳa: ^l	ɳa: ^l	ɳa: ^l	ɳa: ^l	ɳo: ^l	ɳa ^l	ɳa ^l	ɳa ^l	ɳa: ^l	
31	110	louse head	rik ^l	rik ^l	ri ^l	k ^h a ^l	rik ^l	s ^h en ^l	hik ^l	hai? ^l	ri ^l	-	-	
32	119	head	lu: ^l	lu: ^l	lu: ^l	lu: ^l	lu: ^l	lu: ^l	lu: ^l	li ^l	la ^l	lu: ^l	lu ^l	
33	122	hair	sam ^l	sam ^l	sam ^l	sam ^l	sam ^l	sa:m ^l	sa:m ^l	s ^h on ^l	suo ^l	-	sa ^l	
34	125	eye	mit ^l	mit ^l	mi ^l	mit ^l	mik ^l	mik ^l	mek ^l	mik ^l	min ^l	-	mei ^l	
35	127	nose	ɳar ^l	ɳar ^l	ɳa: ^l	ɳoŋ ^l	ɳa: ^l	ɳa ^l	ɳa ^l	ɳa ^l	ɳa ^l	ɳo ^l	ɳo ^l	

Sr.No	Ref.No.	Gloss	Mizo	Khualsim	Senthang	Matu	Kaang	Dai	Khumi	Asho	Lautu-H	Mara	Lakher
36	129	ear	beŋ ¹	na: ¹	ɳa: ¹	ɳa: ¹	-	-	ɳ-ħa: ¹	ɳa: ¹	na ¹	na ¹	na ¹
37	130	mouth	ka: ¹	ka: ¹	ka: ¹	-	-	mp'ɔŋ ¹	-	k ^h o: ¹	ka ¹	-	ka ¹
38	131	tongue	lei ¹	le:i ¹	lai ¹	lai ¹	lei ¹	lei ¹	lai ¹	lei ¹	ly ¹	lei? ¹	li ¹
39	133	tooth	ha: ¹	ha: ¹	ha: ¹	ha: ¹	fa ¹	ha: ¹	ha: ¹	ho: ¹	ha ¹	ha ¹	ha ¹
40	135	chin	k ^h a ¹	k ^h a ¹	k ^h a ¹	k ^h a ¹	k ^h a ¹	k ^h aŋ ¹	-	k ^h o ¹	k ^h a ¹	kai ¹	-
41	139	belly	pum ¹	pun ¹	von ¹	von ¹	k ^h uan ¹	jok ¹	pui ¹	po ¹	vao? ¹	pau ¹	
42	141	heart	luŋ ¹	t ^h in ¹	loŋ ¹	luŋ ¹	luŋ ¹	loŋ ¹	luŋ ¹	loŋ ¹	lu ¹	lo ¹	
43	143	liver	t ^h in ¹	tsuap ¹	t ^h in ¹	t ^h in ¹	sin ¹	t ^h in ¹	t ^h en ¹	t ^h i ¹	t ^h i ¹	t ^h i ¹	
44	145	hand	kut ¹	kut ¹	kui ¹	kut ¹	kut ¹	kut ¹	-	ko? ¹	kui ¹	ku ¹	ku ¹
45	150	finger nail	tin ¹	tin ¹	tin ¹	tin ¹	tin ¹	din ¹	sin ¹	deŋ ¹	tiŋ ¹	te ¹	to ¹
46	152	leg	ke ¹	ke ¹	kei ¹	k ^h ok ¹	k ^h o: ¹	k ^h o: ¹	k ^h o: ¹	-	p ^h y ¹	-	kai ¹
47	154	knee	k ^h u:k ¹	k ^h u:k ¹	k ^h um ¹	k ^h u ¹	k ^h u:k ¹	k ^h u:k ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	k ^h u ¹	
48	159	bone	ru? ¹	ru ¹	ru ¹	ru ¹	ru? ¹	ju ¹	hu ¹	jo: ¹	ru ¹	ru ¹	ru ¹
49	161	flesh	ti: ¹	sa: ¹	ti ¹	moi ¹	-	sa: ¹	mui ¹	s ^h o: ¹	sa ¹	sa ¹	-
50	163	skin	vun ¹	p ^h o: ¹	vun ¹	vun ¹	vən ¹	wun ¹	jan ¹	-	vəŋ ¹	va ¹	vei ¹
51	171	person	mi ¹	mi ¹	ma ¹	mi ¹	k ^h raŋ ¹	k ^h iaŋ ¹	k ^h u ¹	k ^h laŋ ¹	tso ¹	-	tsa ¹
52	172	father	pa: ¹	pa: ¹	pa: ¹	pa: ¹	k ^h raŋ ¹	pa: ¹	pa ¹	pa: ¹	pa ¹	po ¹	po ¹
53	173	mother	nu: ¹	nu: ¹	nu: ¹	nu: ¹	pa:i ¹	nu: ¹	nu: ¹	?u: ¹	noŋ ¹	no ¹	no ¹
54	182	name	min ¹	min ¹	min ¹	min ¹	no:i ¹	min ¹	min ¹	min ¹	min ¹	mau ¹	mo ¹
55	184	road/path	-	lam ¹	lam ¹	lam ¹	min ¹	lam ¹	lan ¹	loŋ ¹	luo ¹	la: ¹	la: ¹
Sr.No	Ref.No.	Gloss	Mizo	Khualsim	Senthang	Matu	Kaang	Dai	Khumi	Asho	Lautu-H	Mara	Lakher
56	192	mat	p ^h er ¹	p ^h ak ¹	p ^h a ¹	t ^h ai ¹	lam ¹	p ^h ak ¹	p ^h ai? ¹	p ^h a ¹	p ^h ie ¹	p ^h ie ¹	
57	212	fire	mei ¹	mei ¹	mai ¹	ɳai ¹	p ^h ak ¹	mei ¹	ɳai ¹	mei ¹	my ¹	mei ¹	mi ¹
58	213	ashes	vap ¹	vut	bua ¹	ba ¹	vət ¹	put ¹	bai ¹	p ^h a: ¹	tsuo ¹	bu ¹	-
59	214	smoke	k ^h u: ¹	k ^h u: ¹	k ^h u ¹	k ^h u ¹	k ^h u: ¹	k ^h u: ¹	k ^h i ¹	k ^h u: ¹	k ^h u ¹	k ^h u: ¹	
60	224	see	mu: ¹	mu: ¹	hum ¹	mu ¹	mo ¹	mok ¹	nok ¹	mu ¹	moŋ ¹	mo ¹	mo ¹
61	226	weep	tap ¹	tap ¹	tam ¹	ka ¹	krap ¹	kap ¹	ya? ¹	ka ¹	tsa ¹	tsia ¹	tsa ¹
62	227	eat	ei ¹	o: ¹	o:lo ¹	sa ¹	ai ¹	ei ¹	sak ¹	?e ¹	niŋ ¹	ni ¹	ni ¹
63	234	vomit	luak ¹	lua ¹	lua ¹	lo ¹	lok ¹	lok ¹	lok ¹	lo ¹	li ¹	li ¹	li ¹

Sr.No	Ref.No.	Gloss	Mizo	Khualsim	Senthang	Matu	Kaang	Dai	Khumi	Asho	Lautu-H	Mara	Lakher
64	244	laugh	nui ¹	ni ¹	na:i ¹	nui ¹	na:i ¹	tai ¹	nui ¹	nui ¹	ny ¹	nei ¹	ni ¹
65	250	sing	za:i ¹	sa ¹	sat ¹	sak ¹	ai ¹	ai ¹	sak ¹	t ¹ sa:i ¹	sa ¹	sa ¹	sa ¹
66	251	think	ŋai? ¹	ruat ¹	ruat ¹	pak ¹	ŋai? ¹	ŋai? ¹	da:n ¹	-	rie ¹	tsa: ¹	tsa: ¹
67	269	die	t ^h i: ¹	t ^h i: ¹	t ^h i: ¹	d ^h u ¹	si ¹	t ^h ik ¹	d ^h k ¹	d ^h u ¹	t ^h i: ¹	t ^h i: ¹	t ^h i: ¹
68	271	sit	t ^h u: ¹	to: ¹	t ^h u: ¹	hung ¹	-	sut ¹	ŋi: ¹	no ¹	tu ¹	to ¹	to ¹
69	272	stand	dij ¹	dix ¹	di:a ¹	dur ¹	dai ¹	dix ¹	do ¹	dun ¹	da ¹	dia ¹	da ¹
70	277	enter	lux ¹	lut ¹	kun ¹	en ¹	lut ¹	lut ¹	ku:n ¹	-	ŋie ¹	ŋe ¹	ŋia ¹
71	281	kick	pet ¹	sir ¹	sui ¹	t ^h ui ¹	pet ¹	kan ¹	t ^h ui ¹	kap ¹	t ^h ui ¹	t ^h ei ¹	-
72	284	swim	leu? ¹	lau ¹	lio ¹	le ¹	jok ¹	jo ¹	jao ¹	ku ¹	zu ¹	zo ¹	zo ¹
73	288	give	pe: ¹	pia ¹	pe ¹	pur ¹	pe ¹	pek ¹	pe:k ¹	pai ¹	pi ¹	pie ¹	pi ¹
74	308	burn	ha:l ¹	tik ¹	tro ¹	soi ¹	k ^h um ¹	k ^h i ¹	leit ¹	si ¹	ri ¹	ro: ¹	-
75	312	dance	la:m ¹	la:m ¹	la:m ¹	lam ¹	lam ¹	la:m ¹	lan ¹	lon ¹	luo ¹	la: ¹	la: ¹
76	313	shoot	ka:p ¹	sa:i ¹	va: ¹	ka ¹	ka:p ¹	ga:p ¹	ka: ¹	ko ¹	ka ¹	ka ¹	-
77	315	kill	t ^h at ¹	t ^h at ¹	t ^h ai ¹	t ^h ei ¹	ŋo:n ¹	ŋim ¹	duk ¹	tu ¹	t ^h ie ¹	t ^h ie ¹	t ^h ie: ¹
78	318	sell	zuar ¹	zuar ¹	zua ¹	zo ¹	joi ¹	joi ¹	jo: ¹	ji: ¹	za ¹	zia ¹	zua ¹
79	322	one person	k ^h at ¹	k ^h at ¹	k ^h e ¹	but ¹	pum ¹	mat ¹	me: ¹	pa ¹	k ^h a ¹	k ^h a? ¹	k ^h o: ¹
80	323	two	ŋi? ¹	ŋi ¹	ŋi: ¹	ŋi ¹	ŋi ¹	ŋi ¹	m ¹ i: ¹	ni ¹	ŋiŋ ¹	ŋe ¹	nei ¹
81	334	many	tam ¹	tlu: ¹	tam ¹	pap ¹	dam ¹	da ¹	nuei ¹	nu: ¹ i	lur ¹	run ¹	lu ¹
82	335	all	vai ¹	za ¹	za: ¹	la ¹	van ¹	baŋ ¹	bui ¹	buei ¹	laŋ ¹	za: ¹	zei ¹
83	339	big	lian ¹	ŋim ¹	hei ¹	len ¹	baŋ ¹	dam ¹	len ¹	len ¹	le ¹	lai ¹	lai ¹
84	341	long	sei ¹	sa:u ¹	sau ¹	so ¹	sau ¹	s ^h a? ¹	sauk ¹	s ^h au ¹	sy ¹	sei ¹	sie ¹
85	344	short height	ŋiam ¹	niam ¹	niam ¹	ŋam ¹	nem ¹	ne:m ¹	ŋen ¹	nen ¹	t ^h onŋ ¹	ŋai ¹	ŋai ¹
86	345	thick	t ^h a? ¹	sa ¹	sa: ¹	t ^h a ¹	t ^h a? ¹	s ^h a ¹	t ^h a: ¹	s ^h o ¹	t ^h a ¹	t ^h a ¹	t ^h a ¹
87	351	deep	t ^h u:k ¹	t ^h um ¹	dun ¹	t ^h uk ¹	t ^h uk ¹	t ^h o:k ¹	t ^h u ¹	t ^h u ¹	t ^h u ¹	t ^h u ¹	t ^h u ¹
88	354	full	k ^h at ¹	k ^h at ¹	bei ¹	koi ¹	be ¹	be: ¹	koi ¹	lui ¹	bi ¹	bie ¹	bi ¹
89	360	this	hei ¹	hi ¹	hi ¹	hi ¹	tso? ¹	hin ¹	hi ¹	ni: ¹	hi ¹	hi ¹	-
90	361	that	hi ¹	tzu ¹	k ^h i: ¹	ho ¹	k ^h o ¹	sen ¹	hu ¹	to: ¹	hi ¹	ho: ¹	-
91	362	black	k ^h a ¹	nak ¹	na ¹	maŋ ¹	le ¹	le ¹	dun ¹	ni ¹	vo ¹	vau ¹	vau ¹

92	363	white	val [†]	raŋ [†]	raŋ [†]	ŋo [†]	bo:k [‡]	bo:k [‡]	loŋ [†]	bo [‡]	ruo [†]	ra: [‡]	ra: [‡]
93	364	red	sen [†]	sən [†]	sen [†]	lɪŋ [†]	sen [‡]	sen [‡]	tʰin [†]	sʰeŋ [†]	se [†]	sai [‡]	sai [‡]
94	365	green	riŋ [†]	riŋ [†]	riŋ [†]	riŋ [†]	kriŋ [‡]	kim [‡]	iŋ [†]	siŋ [‡]	riŋ [†]	reɔ [‡]	rei [‡]
95	368	new	tʰar [†]	tʰar [†]	tʰa: [‡]	tʰa: [‡]	tʰai [†]	tʰai: [‡]	tʰa [†]	tʰa: [‡]	tʰie [†]	tʰie [‡]	tʰie [‡]
96	376	bitter	kʰa: [‡]	kʰa: [‡]	kʰa: [‡]	kʰa: [‡]	kʰa [‡]	kʰak [†]	kʰa: [‡]	kʰo [‡]	kʰa [‡]	kʰa: [‡]	kʰa [‡]
97	382	hot	lum [†]	sa: [‡]	lom [‡]	bet [†]	lɒk [†]	lɒk [†]	bi: [‡]	lo [†]	liŋ [†]	lə [‡]	lei [‡]
98	386	heavy	rit [‡]	rit [†]	ri [‡]	ri [‡]	ri [‡]	ri: [‡]	ɣit [†]	ji: [†]	ri [‡]	ri: [‡]	-
99	403	where	kʰoi [‡]	kʰo: [‡]	tia [‡]	twaŋ [†]	ho [‡]	hai [‡]	na [‡]	ni [†]	kʰa [‡]	kʰa [‡]	kʰa [‡]
100	404	who	tu [‡]	hu [‡]	ho: [‡]	mo [‡]	ha [‡]	u [†]	mi [‡]	a [‡]	hoŋ [†]	hau [†]	hau [‡]

APPENDIX G

THE STATUS OF THE VOICELESS LABIAL FRICATIVE

As discussed in section 4.2.4 the status of voiceless labial fricative /f/ in proto language is questionable. Table H-1 (repeated from Table 65) is the cognate set based on the current data. Even though there seems to be a consistent sound correspondence across the languages, due to the limited data it is doubtful to posit the voiceless labial fricative as a proto phoneme.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
053	sugarcane	tu˧	fu:˥	fu:˥	su˧	sik˧	tu˧
220	spear	tei˥	fei˥	fei˥	sei˥	-	tei˧

Table G-1. Chin initial voiceless labial fricative /f/

Table G-2 provides additional data which bears on this question. Except the first two words, 26 Mizo words are taken from Bhasakararao (1996:113) and 20 Hakha words are based on the author's knowledge.

Bhaskararao's data is modified by changing /ng/ to /ŋ/, /aw/ to /ɔ/. He does not show tone for Mizo, the Tedim tonal marks correlate with the current data as 1=˨, 2=˧ and 3=˥.

No.	Tedim	Hakha	Mizo	Gloss
1	tu˨	fu;˨	fu;˨	sugarcane
2	tei˨	fei˨	fei˨	spear
3	ta:˥ ¹	fa	fa	son; offspring
4	ta?˨ ³	fa?˨	fa?˨	feed with the mouth; by hand
5	taŋ˥ ¹	fan̥	fan̥	seed
6	taŋ˥ma:i ²	-	fan̥ma	cucumber
7	ta:k ²	fɔr	far	drip; leak
8	ta:k ²	far	far	pine tree
9	tɔ:p ¹	-	fɔ:p	kiss; suck
10	te:ŋ ²	feŋ	feŋ	apron, wear a lower garment
11	te:p ¹	fe:p	fe:p	suck (as sugarcane, fluids)
12	tel ¹	fiaŋ	fel	understand accurately
13	tu:n ¹	fu:n	fu:n	wrap up in a parcel or bundle
14	tu:k ³	fu:r	fu:r	rainy season
15	tual ¹	fual	fual	sag, hang low
16	tuk ³	fɔk	fuk	erect
17	ci:m ² ~ti:m ²	fi:m	fi:m	clear, transparent
18	ci:m ² ~ti:m ²	fim	fiŋ	wise, clever, artful,
19	ci:l ¹ ~ti:l ¹	-	fir	mean, stingy, thrifty, miserly
20	ta ¹ ga?˨ ³	-	fahrah	orphan
21	ta ¹ nu ¹	fa tu	fa tu	one who presides at a feast
22	taŋ ¹	-	fan̥	alone, only
23	to?˧ ³	-	fɔ:m	along with
24	teŋ ²	-	feŋ	much, all
25	tɔ:m ²	fɔm	fɔm	gather fagots
26	tɔ:m ³	fɔm	fɔm	gather, pick up (stick, firewood)
27	ciak ² ~tiak ²	fiak	fiak	be high pitched, noisy
28	ciam ³ nui ² ~tiam ³ nui ²	-	fiam	laugh after joke, humorous

Table G-2. The consistent correspondence of /t/ in Tedim and /f/ in Mizo and Hakha

The Table unambiguously shows that the voiceless labial fricative in Hakha and Mizo consistently corresponds with voiceless coronal stop in Tedim. Based on the

consistent sound change between Tedim, Hakha and Mizo, if we assume that the other languages share the consistent sound changes which are shown in Table G-1, it is possible to posit the voiceless labiodental fricative /f/ as the reflex of the voiceless alveolar fricative *s.

Mara and Khumi are conservative as they keep the proto phoneme, whereas the others have gone through phonological changes.

The voiceless alveolar fricative *s becomes the voiceless labiodental fricative in Mizo and Hakha by fronting.

Rule 1. Fronting (Hakha, Mizo)

*s > f/\$____

Tedim and Kaang despirantize *s to /t/.

Rule 2. Despirantization (Tedim, Kaang)

*s > t/\$____

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