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 loconym name Tedim is used in this thesis, though Tedim was previously known as Sukte[14], Kam Hau[15] 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:˩	V:
081	dog	uiˊ	VV
099	chicken	ak˩	VC
002	sun	ni˩	CV
212	fire	meiˊ	CVV
266	itch	t^hak˩	CVC
121	brain	k^huakˊ	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

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 adverbs[16]. The glottal stop [ʔ] is a predictable concommitant 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

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

[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˩]; 'to sit confidently' [tu˩ hiat˥ huat˥], 'to sit secretly' [tu˩ k^hian˥/k^huan˥], 'to sit a fatty man' [tu˩ kei˩ kai˩], and 'to sit in group with fun' [tu˩ ŋei˥/ŋai˥].

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

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 ŋ	l	-
	Long vowel	m n ŋ	l	p t k
Mid tone	Short vowel	m n ŋ	l	-
	Long vowel	m n ŋ	l	k (<*r)
Falling tone	Short vowel	m n ŋ	l	-
	Long vowel	m n ŋ	l	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 /ŋ/ 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 reflexe 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 [tuaŋ˧], but when the verb is nominalized it becomes [tuan˥na˧], and in the adverbial phrase 'when he rides' it appears as [a˧ tuan˥ tsiaŋ/in˧]. Table 13 shows some other examples with different syllable shapes.

English gloss	Syllable type	Form I	Form II
to flow	CVVC	luaŋ˧	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

website[17] 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, Vangchia 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:˥	V:
081	dog	ui˩	VV
099	chicken	a:r˥	VC
002	sun	ni:˥	CV
212	fire	mei˩	CVV
266	itch	t^hak˧	CVC
003	moon	t^hla:˩	CCV
035	mountain	tla:ŋ˥	CCVC
412	crested	$tʃ^h$uaŋ˥	CVVC
121	brain	t^hluak˩	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	ʈ	k	ʔ
Voiceless aspirated stops	p^h	t^h	$ʈ^h$	k^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̥	n̥		ŋ̊	
Voiced trill		r			
Voiceless trill		r̥			
Voiceless 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 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 /t^h/. 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 /rʔ/ and /lʔ/ 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 ʔ

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:˥	V:
081	dog	ui˩	VV
099	chicken	a:r˩	VC
002	sun	ni:˩	CV
212	fire	mei˩	CVV
266	itch	tʰak˨	CVC
003	moon	tʰla˩	CCV
035	mountain	tlaŋ˩	CCVC
412	crested	tʃʰuaŋ˩	CVVC
121	brain	tʰluak˩	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	ʈ	k	
Voiceless aspirated stops	p^h	t^h	$ʈ^h$	k^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̥	n̥		ŋ̊	
Voiced trill		r			
Voiceless trill		r̥			
Voiceless 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 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 [rʔ] and [lʔ] are considered single units by Namkung (1996). In this thesis, the glottal stop is considered as a phonetic sengement, 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 ŋ	r l	-
	Diphthong and long	m n ŋ	r l	-
Mid tone	Monophthong	m n ŋ	r l	p t k
	Diphthong and long	m n ŋ	r l	p t k
Falling tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	-	p t k ʔ
High tone	Monophthong	m n ŋ	r l	p t k ʔ
	Diphthong and long	m n ŋ	r l	-
Low tone	Monophthong	m n ŋ	r l	p t k ʔ

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 Lakher[18] 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 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.

[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).

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	ʔ
Voiceless aspirated stops	pʰ	tʰ	kʰ	
Voiced stops	b	d		
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̊	
Voiced trill		r		
Voiceless trill		r̥		
Voiceless affricate		ts		
Voiceless aspirated affricate		tʃʰ		
Voiceless fricatives		s		h
Voiced fricatives	v	z		
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

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:˥	V:
081	dog	ui˥	VV
002	sun	n̥i:˥	CV
212	fire	m̥ai˥	CVV
003	moon	tʰla:˦	CCV
266	itch	tʰa:k˥	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	ʔ
Voiceless aspirated stops	p^h	t^h	k^h	
Voiced stops	b	d	g	
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̊	
Voiced trill		r		
Voiceless fricatives		s		h
Voiced fricatives	v			
Voiced approximant			j	
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

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 (C_1), while the second consonant (C_2) 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 V_1 without restrictions. Whenever the diphthong V_1V_2 occurs, the second vowel V_2 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 (C_3) 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	ʔ
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	n ŋ	k
	Diphthong and long	n ŋ	k
Mid tone	Monophthong	n ŋ	k
	Diphthong and long	-	-
High tone	Monophthong	n ŋ	k
	Diphthong and long	-	k
Low tone	Monophthong	n ŋ	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	n̥i˥	CV
212	fire	mei˥	CVV
003	moon	kʰra:˧	CCV
266	itch	tʰak˩	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, $t^h \rightarrow s/\_\_\_i$.

	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	ŋ̊	
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	ɨ ʉ	u
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	ɨa ʉi	ua ui
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	ʔ
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 ŋ -	p t k -
Mid tone	Monophthong Diphthong and long	m n ŋ -	p t k -
Falling tone	Monophthong Diphthong and long	m n ŋ -	p t k k
High tone	Monophthong Diphthong and long	m n ŋ -	p t k k
Low tone	Monophthong Diphthong and long	m n ŋ -	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] [l̥]. 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 [ʔ], 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 /ɨ/, back central /ʉ/ and open mid central /ə/ vowels. Hakha, Mizo and Tedim have diphthongs (V_1V_2), which may be observed that the first vowel V_1 has no restriction but the second vowel V_2 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.