

The Phonology of Lawa

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1. Background information

In this paper the term 'Lawa' is referred to as the language of a tribal group whose population is estimated to be about 9,841¹ and is concentrated in two Northern provinces, Chiangmai and Maehongsorn.² Specifically the Lawa villages are found between Baw Luang, Hot district, Chiangmai province in the East and Maesariang district, Maehongsorn province in the West.³ These Lawa or, as they call themselves, [laviə], belong to different linguistic groups from the so-called 'Lawa' of Kanchanaburi province, from the 'Lue' (Mal, Thin) of Nan province, and from the 'Lawa' (Chaobon, Nahkur)⁴ of Petchabun, Nakorn Rajseema and Chaiyaphum provinces. Historically, the Lawa are the descendants of the powerful Lawa whose kingdom was recorded in the early Northern Thai chronicles. The history of these Lawa has been a subject of discussion by many historians and anthropologists. For example, according to two Thai scholars, Sisawat and Khanthathatbamroong, the Lawa were once the lords of the land in the upper part of the Golden Peninsula before the southward migration of

the Thai race from China.⁵ Gordon Young mentioned a story told to him by a great Wa chieftain who claimed that his people had journeyed thousands of years ago northward along the Mae Ping river and settled for a long time in what is now Chiangmai valley*.⁶ Princess Viphavadee Rangsit believed that the Lawa once had attained a state of civilization whereby human society consisted of classes. The belief was based on her discovery in 1969 when she visited the Lawa village of Umphai in Chiangmai province where it was found that the Lawa community actually consists of four classes, i.e., (1) The saman (royal blood), (2) the lam (mandarin), (3) the koyit (sorcerer and shaman) and (4) the ordinary lawia.⁷ Besides, from her observation of the crocodile motives carved on the pillars of an ancient ceremonial pavillion in that village together with the saman's use of fish as their herald, she advanced the theory about the sea origin or the northward migration of the Lawa*.⁸

Linguistically speaking, the Lawa language belongs to the Palaungic branch of the Mon-Khmer family in the Austroasiatic Phylum.⁹ The Lawa language described in this paper is the one spoken in Ban Pa Pae village [yuəŋ pɛ], Maesariang district Maehongsorn province. The Institute of Language and Culture for Rural Development, Mahidol University has been working on this language since 1974 with the purpose of compiling a Lawa-Thai and Thai-Lawa dictionary¹⁰ which will be published very soon.

Ban Pa Pae village,¹¹ situated in Ban Pa Pae, Tambon Mae Sariam, Mae Sariam district, Maehongsorn Province, consists of 284 Lawa living in 54 households. The majority of the population are animistic Buddhists and accept the saman as their leaders. Christian missionaries came to the village 20 years ago and converted a small number of the Lawa. Perhaps the greatest contribution by those missionaries to the Lawa was the introduction of the Roman and Thai alphabets as the means of writing Lawa.¹² As a result, the Lawa have been using these alphabets in their daily correspondences including the writing of the *læsom* [?]/₁₄ poetry.¹³ Even if the widespread written language introduced by these missionaries was based on the pronunciation of people from another village, Ban La-up, the Ban Pa Pae people have no difficulty in using it as an effective means of correspondence because they know the systematic sound correspondence between the pronunciation of Ban La-up and their own. The phonological description in this paper is based on the pronunciation of the authors' principle informant, Khun Bunphob Bo[?]bi, age 33.

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2.1 The Intonation Group

There are 2 Intonation Group types in Lawa:

2.1.1 The Statement Contour

This is used in ordinary statements, negatives and imperatives. Its pitch is mid level.

n̄m

'It is delicious'

kuən som ʔaop

'A child eats rice'

2.1.2 The Question Contour

This is marked by a rising pitch on the last syllable of the utterance.

n̄m

'Is it delicious?'

kuən som ʔaop

'Does a child eat rice?'

2.2 The Stress Group

Lawa Stress Group has one or two syllables. Only loanwords from Thai may have three syllables (for example: [nali'ka] 'watch'). Each Stress Group has as its nucleus one stressed syllable, which always occupies the final position in the group. As its periphery, it has one weakly stressed or unstressed syllable. Its structure is (W)S:

'paŋ

'bottle'

lə'pat

'to flow'

si'cai

'in a hurry'

ɣu'ɣi

'to swing'

, tuŋ'liŋ

'to hang, to cling to'

, sət'sɛ

'naughty'

, ʔɔʔʔəih

'thing, whatever'

(The symbol ['] is used to mark a stressed syllable, [] a weakly stressed syllable, and [] (no symbol) an unstressed syllable).

2.3 The Syllable

2.3.1 Structure

There are 2 types of syllable set up on the basis of their structure : an open syllable and a closed syllable.

2.3.1.1 Open syllable: C(C)V(V) (V)

There are 6 sub-types:

CV	:	ləce	'to quarrel'
CCV	:	^m bje	'to cook'
CVV	:	^m biə	'to forget'
CCVV	:	^m bluə	'small'
CVVV	:	laɪɛ	'both sides'
CCVVV	:	klaɪɛ	'to stir'

2.3.1.2 Closed syllable: C(C)V(V) (V)C

There are 5 sub-types:

CVC	:	ⁿ dak	'tongue'
CCVC	:	^m bjɔŋ	'horse'
CVVC	:	k ^h iət	'to bite, to pretend'
CCVVC	:	pləiʔ	'fruit'
CVVVC	:	ŋaɪɛʔ	'sound made by buffalo'

2.3.2 Function

There are 2 main classes of syllables in terms of their function in the Stress Group: a nuclear syllable and a peripheral syllable.

2.3.2.1 Nuclear syllable

This is stressed, and functions as the nucleus of the Stress Group, and always occupies the final position. This syllable type can be either an open or closed syllable, and it may be called the "major syllable".

' <u>hə</u> o	'to go'
lə' <u>mɔ</u> ɛc	'graveyard'
təh' <u>ta</u> ʔ	'thunder'

2.3.2.2 Peripheral syllable

This functions as the periphery in the Stress Group. It can be sub-divided into two sub-classes: a weakly stressed syllable and an unstressed syllable.

2.3.2.2.1 Weakly stressed syllable

Syllables of this sub-class are either of the open or closed types, and always occupy the first position. This type may be called the "minor syllable".

ʔ' <u>me</u> 'ʔmak	'very poor'
put' <u>p</u> ɛt	'to sneak away quickly'

2.3.2.2.2 Unstressed syllable

Syllables of this sub-class are of the open syllables and always occupy the first position. This type may be called the 'presyllable'.

<u>sə</u> 'ʔɔh	,	'dry'
<u>ti</u> 'lao		'to herd'
<u>cu</u> 'ceʔ		'cloth'

2.4 The Phoneme

There are 2 major classes of phonemes according to their function in the syllable: consonants and vowels.

2.4.1 The Vowels

Lawa vowels function as syllable nucleus, and consist of:

/i e ɛ ɪ w ə a u o ɔ

iə ɪə uə əi əɪ əo əɔ ai aɪ ao ui oi ɔi ɔə aiɛ/

Two subclasses of vowels are set up according to their function in the syllables: vowels in open syllables and vowels in closed syllables.

2.4.1.1 Vowels in open syllables

They function in open syllable type

C(C)V(V)(V). In presyllable type CV, only /i,ə,u/ occur. In other open syllable types, almost all the vowels occur, except /ɔi/.

<u>sicai</u>	'in a hurry'	<u>ləmo</u> ʔ	'dream'
<u>tutai</u>	'soft (cloth)'	t ^h i	'clear'
ɣuə	'a fly'	həi	'this'

2.4.1.2 Vowels in closed syllables

They function in closed syllable types

C(C)V(V) (V)C, and consist of all vowels.

t ^h i?	'one'	p ^h eñ	'white'
mah	'to be'	caop	'to wear'
taip	'frequently'	ñiə?	'house'

2.4.2 The Consonants

Lawa consonants function as syllable-periphery. There are 37 consonant phonemes:

/p p^h b m b t t^h n d c c^h ñ c j ? j
 k k^h ŋ g ? m hm ?m n hn ?n ñ hñ ?ñ
 ŋ hŋ ?ŋ f v s ɣ ?ɣ h l hl ?l/

These consonants can be divided into 3 subclasses in terms of their distribution: single initial consonants, consonant clusters and final consonants.

2.4.2.1 Single Initial Consonants

These consonants function in syllable-initial position and consist of all the consonants.

The correlation between single initial consonants and vowels is shown in figure 1.

C \ V																										
	i	e	ɛ	ɪ	w	ə	a	u	o	ɔ	ɪə	ɛə	uə	əɪ	əɛ	əʊ	ɛɔ	aɪ	aɛ	ao	ui	oi	ɔɪ	ɔɛ	aɪə	
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p ^h	✓	✓	-	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-	✓	-	✓	✓	-	-	-	✓	
b	✓	✓	-	✓	-	-	✓	✓	✓	✓	-	✓	✓	✓	-	-	-	✓	-	✓	-	-	-	-	-	
m _b	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	-	-	✓	-	✓	✓	✓	✓	-	-	✓	-	
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t ^h	✓	✓	-	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	✓	-	-	✓	-	-	✓	✓	
n _d	✓	✓	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-	-	✓	-	✓	✓	
c	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	-	-	✓	
c ^h	✓	✓	✓	✓	-	-	✓	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	✓	✓	-	-	-	-	
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The correlation between single initial consonants and vowels (1600-word data)



occurring



non-occurring

2.4.2.2 Consonant Clusters

These function in syllable-initial position, and consist of /p_l p^h_l m_l k_l k^h_l ŋ_l

p_j p^h_j m_j k_j k^h_j ŋ_j/

The correlation between consonant clusters and vowels is shown in figure 2.

CC \ V	i	e	ɛ	ɪ	w	ə	a	u	o	ɔ	iə	ɛə	uə	ei	əi	eo	ɛɔ	ai	aɪ	ao	ui	oi	ɔi	ɔɛ	aiɛ
p _l	-	✓	-	-	-	-	✓	✓	✓	✓	-	-	✓	✓	-	-	-	✓	✓	✓	-	-	-	✓	✓
p ^h _l	-	✓	-	✓	-	-	✓	✓	✓	-	✓	-	✓	-	-	-	-	-	-	-	-	-	-	✓	-
m _l	-	-	✓	-	-	-	✓	-	✓	✓	✓	✓	✓	-	✓	✓	-	✓	✓	✓	-	-	-	-	-
k _l	-	✓	✓	-	-	-	✓	-	✓	✓	✓	-	-	✓	✓	✓	-	✓	-	✓	-	✓	✓	-	✓
k ^h _l	-	-	-	✓	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
ŋ _l	-	-	✓	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	-	-	-	✓	✓	-
p _j	-	✓	✓	-	-	-	✓	-	-	✓	-	-	-	-	✓	-	-	✓	-	-	-	✓	-	-	-
p ^h _j	-	✓	-	-	-	-	-	✓	✓	-	✓	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-
m _j	✓	✓	✓	-	-	-	✓	✓	✓	✓	✓	-	-	✓	✓	-	-	✓	✓	✓	-	✓	-	-	-
k _j	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	✓	✓	-	-	✓	✓	✓	-	✓	✓	-	-
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(1600-word data)

Figure 2 The correlation between consonant clusters and vowels.



occurring



non-occurring

2.4.2.3 Final Consonants

These function in syllable-final position, and consist of /p t c k ʔ h m n ñ ŋ/

The correlation between final consonants and vowels is shown in figure 3.

i	e	ɛ	ɪ	w	ə	a	u	o	ɔ	iə	ɪə	uə	eɪ	əɪ	əʊ	ɛʊ	ai	aɪ	ao	ui	oi	ɔi	ɔɛ	aɪɛ	V	C
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	-	✓	-	-	-	-	-	p	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	-	-	-	✓	✓	-	-	-	-	-	t	
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✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	-	✓	✓	-	h	
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✓	✓	✓	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	✓	✓	-	✓	✓	✓	-	-	ñ	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	-	-	✓	✓	-	-	-	-	-	ŋ	

(1600-word data)

Figure 3 The correlation between final consonants and vowels



occurring



non-occurring

2.4.3 Phoneme Charts

2.4.3.1 The Vowel Charts

Lawa has 10 simple vowels and 15 complex vowels.

The complex vowels consist of 14 diphthongs and 1 triphthong.

2.4.3.1.1 Simple Vowel Phonemes

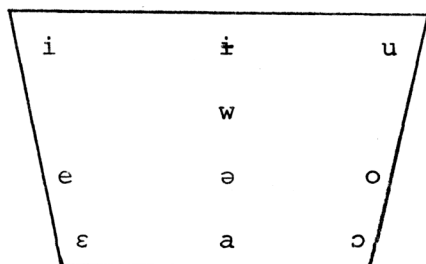


Figure 4 Simple Vowel Phonemes

2.4.3.1.1.1 Formational Statements of Simple Vowels

/i/ [i] a high spread front vowel.

/p^hi/ 'person'

/e/ [e] a mid spread front vowel.

/n^{de}/ 'sweet'

/ɛ/ [ɛ] a low spread front vowel.

/hɛɛ/ 'pregnant'

/ɨ/ [ɨ] a high spread central vowel.

/n^ɨ/ 'to clean (body)'

/w/ [w] a higher-mid spread central vowel.

/k^hwp/ 'false'

/ə/	[ə]	a mid spread central vowel.
/ʔəŋ/		'he, she, it, they'
/a/	[a]	a low spread central vowel.
/ha/		'from'
/u/	[u]	a high rounded back vowel.
/fu/		'to debate'
/o/	[o]	a mid rounded back vowel.
/ʔo/		'not'
/ɔ/	[ɔ]	a low rounded back vowel.
/ŋɔ/		'fire'

2.4.3.1.1.2 Simple Vowel Contrasts

/i/ - /e/	/ᵐbiñ/	'mud'
	/ᵐbeñ/	'white'
/i/ - /ɪ/	/p ^h it/	'sticky'
	/p ^h it/	'to drop (into a hole)'
/i/ - /w/	/kət ^h in/	'a kind of tree'
	/t ^h wn/	'shelf'
/e/ - /ɛ/	/γeh/	'to pour'
	/γɛh/	'root'
/e/ - /w/	/tek/	'to press'
	/twk/	'to be stuck'
/e/ - /ə/	/ñeʔ/	'pin'
	/ñəʔ/	'final particle showing emphasis'

/ɛ/ - /a/	/ñeʔ/	'cucumber'
	/ñəʔ/	'before, at, place'
/ɪ/ - /w/	/tɪk/	'at the most'
	/twk/	'to be stuck'
/ɪ/ - /ə/	/ʔɪŋ/	'bullfrog'
	/ʔəŋ/	'he, she, it, they'
/ɪ/ - /u/	/ñɪ/	'to clean (body)'
	/ñu/	'wax'
/w/ - /ə/	/kwt/	'to bar, to obstruct'
	/kət/	'to be born'
/w/ - /u/	/vwŋ/	'to feel lonely and nostalgic'
	/vuŋ/	'to throw'
/w/ - /o/	/cwŋ/	'to dance with weapons'
	/coŋ/	'corner'
/ə/ - /a/	/sə/	'will, shall'
	/sa/	'basket'
/ə/ - /o/	/sə/	'will, shall'
	/so/	'to pour'
/a/ - /ɔ/	/ŋa/	'flat in taste'
	/ŋɔ/	'fire'
/u/ - /o/	/ʔu/	'to speak'
	/ʔo/	'not'
/o/ - /ɔ/	/p ^h oʔ/	'to suck'
	/p ^h ɔʔ/	'pack'

2.4.3.1.2 Complex Vowel Phonemes

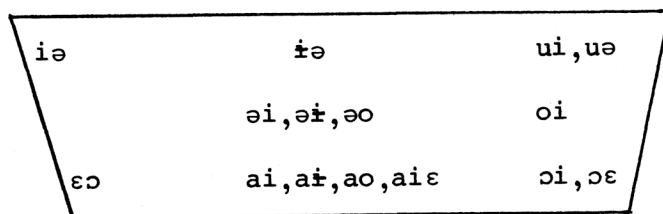


Figure 5 Complex Vowel Phonemes

2.4.3.1.2.1 Formational Statements of Complex Vowels

2.4.3.1.2.1.1 Diphthongs

2.4.3.1.2.1.1.1 Rising Diphthongs

/əi/ [əi] a mid spread central vowel to a high spread front vowel.

/ʔəi/ 'thin'

/ai/ [ai] a low spread central vowel to a high spread front vowel.

/ʔmai/ 'with'

/oi/ [oi] a mid rounded back vowel to a high spread front vowel.

/coi/ 'to turn (a way)'

/ɔi/ [ɔi] a low rounded back vowel to a high spread front vowel.

/pɔic/ 'to take off'

/əɪ/ [əɪ] a mid spread central vowel to a high spread central vowel.

/ʔləɪ/ 'a kind of squirrel'

/aɪ/ [aɪ] a low spread central vowel to a high spread central vowel.

/paɪ/ 'blue'

/ao/ [ao] a low spread central vowel to a mid rounded back vowel.

/kao/ 'ten'

2.4.3.1.2.1.1.2 Level Diphthongs

/ui/ [ui] a high rounded back vowel to a high spread front vowel.

/t^hui/ 'to buy'

/eo/ [eo] a mid spread central vowel to a mid rounded back vowel.

/p^heo/ 'to fly'

/ɛɔ/ [ɛɔ] a low spread front vowel to a low rounded back vowel.

/k^hjɛɔ/ 'to chew'

/ɔɛ/ [ɔɛ] a low rounded back vowel to a low spread front vowel.

/n^hdɔɛ/ 'orphan'

2.4.3.1.2.1.1.3 Falling Diphthongs

/iə/ [iə] a high spread front vowel to a mid spread central vowel.

/ciə/ 'tale'

/ɪə/ [ɪə] a high spread central vowel to a mid spread central vowel.

/p^hɪə/ 'coconut'

/uə/ [uə] a high rounded back vowel to a mid spread central vowel.

/kuə/ 'softly'

2.4.3.1.2.1.2 Triphthong

/aɪɛ/ [aɪɛ] a low spread central vowel to a high spread front vowel, to a low spread front vowel

/klaɪɛ/ 'to stir'

2.4.3.1.2.2 Simple and Complex Vowel Contrasts

/i/ - /iə/	/ci/	'to punch a hole'
	/ciə/	'tale'
/i/ - /iə/	/ñim/	'delicious'
	/ñiəm/	'when'
/u/ - /uə/	/p ^h u/	'thick, dark'
	/p ^h uə/	'to complain'
/u/ - /ui/	/p ^h u/	'thick, dark'
	/p ^h ui/	'he, anybody'
/ə/ - /əi/	/hə/	'final particle showing request'
	/həo/	'to go'
/ó/ - /oi/	/so/	'to pour'
	/soi/	'cone'
/a/ - /ai/	/ᵐbah/	'pale'
	/ᵐbaih/	'to be scraped'
/a/ - /aɪ/	/hlat/	'fear'
	/hlait/	'deaf'

/a/ - /ao/	/hak/	'skin'
	/haok/	'to be up'
/ɔ/ - /ɔi/	/səʔɔh/	'dry'
	/ʔɔih/	'to swell'
/ɔ/ - /ɔɛ/	/sɔ/	'to wake (someone) up'
	/sɔɛ/	'to vibrate'
/iə/ - /iɛ/	/ ^m biə/	'to forget'
	/ ^m biɛ/	'because'
/iɛ/ - /uə/	/p ^h iɛ/	'coconut'
	/p ^h uə/	'to complain'
/əi/ - /əi̯/	/ləih/	'down'
	/ləi̯h/	'to answer'
/əi/ - /ai/	/ʔəic/	'taro'
	/ʔaic/	'to lay down'
/əi/ - /oi/	/ʔəic/	'taro'
	/ʔoic/	'to be used up'
/əi/ - /əo/	/pəi̯h/	'to pluck (a stringed instrument)'
	/pəoh/	'to throw away'
/əi̯/ - /ai̯/	/ɣəi̯t/	'brave'
	/ɣai̯t/	'curled up'
/əo/ - /ao/	/cəop/	'to darn (mend)'
	/caop/	'to wear'
/ai/ - /ai̯/	/tai̯h/	'mushroom'
	/tai̯h/	'milk, breast'

/ai/ - /ɔi/	/haic/	'to scratch'
	/hɔic/	'to arrive, to come'
/aɪ̯/ - /ao/	/kaɪ̯/	'wind, storm'
	/kao/	'ten'
/ui/ - /uə/	/vui/	'shade'
	/vuə/	'to singe, hold over a flame'
/ui/ - /oi/	/k ^h uic/	'to feel nauseated'
	/k ^h oic/	'to scrape'
/oi/ - /ɔi̯/	/hoic/	'to be used up, to finish'
	/hɔic/	'to arrive, to come'
/ɔi/ - /ɔɛ/	/ʔɔih/	'to swell'
	/ʔɣɔɛh/	'finger'
/ai/ - /aiɛ/	/lai/	'to calk'
	/laiɛ/	'both side'

2.4.3.2 The Consonant Chart

Lawa has 37 consonant phonemes, as shown in the following chart:

Points of articulation			bilabial	labio-dental	alveolar	palatal	velar	glottal
Manners of articulation								
Stops	Oral	voiceless unaspirated	p		t	c	k	ʔ
		voiceless aspirated	p ^h		t ^h	c ^h	k ^h	
		voiced	b			j		
		prenasalized	m ^b		n ^d	ɲ ^c	ŋ ^g	
		preglottalized				ʔj		
	Nasal	voiced	m		n	ɲ	ŋ	
		voiceless	hm		hn	hɲ	hŋ	
		preglottalized	ʔm		ʔn	ʔɲ	ʔŋ	
	Slit	voiceless		f				h
		voiced		v			ɣ	
		preglottalized					ʔɣ	
	Groove	voiceless			s			
Laterals		voiced			l			
		voiceless			hl			
		preglottalized			ʔl			

Figure 6 Consonant Chart

2.4.3.2.1 Formational Statements of Consonants

/p/	[p]	a voiceless unaspirated bilabial stop
	/pok/	'male'
/p ^h /	[p ^h]	a voiceless aspirated bilabial stop
	/p ^h ɪn/	'to be able'
/b/	[b]	a voiced unaspirated bilabial stop
	/boʔ/	'edge'
/ᵐb/	[ᵐb]	a voiced bilabial prenasalized stop
	/ᵐboʔ/	'to add'
/t/	[t]	a voiceless unaspirated tip-alveolar stop
	/taŋ/	'pen (for animals)'
/t ^h /	[t ^h]	a voiceless aspirated tip-alveolar stop
	/t ^h aŋ/	'pitfall'
/ᵐd/	[ᵐd]	a voiced tip-alveolar prenasalized stop
	/ᵐdaʔ/	'to sprinkle'
/c/	[c]	a voiceless unaspirated fronto-palatal stop
	/ce/	'to expose (to light, air)'
/c ^h /	[c ^h]	a voiceless aspirated fronto-palatal stop
	/c ^h e/	'unstable, unsteady'
/j/	[j]	a voiced fronto-palatal stop
	/jɪə/	'easily'
/ṇc/	[ṇc]	a voiced fronto-palatal prenasalized stop
	/ṇcɪən/	'before time'

/ʔj/	[ʔj]	a fronto-palatal preglottalized stop
	/ʔjiəŋ/	'excrement'
/k/	[k]	a voiceless unaspirated dorso-velar stop
	/ke/	'to discuss'
/k ^h /	[k ^h]	a voiceless aspirated dorso-velar stop
	/k ^h e/	'to cut (by climbing onto the things that will be cut)'
/ŋg/	[ŋg]	a voiced dorso-velar prenasalized stop
	/ŋgoŋ/	'a roll'
/ʔ/	[ʔ]	a glottal stop
	/ʔaic/	'to lay down'
/m/	[m]	a voiced bilabial nasal
	/mɛ/	'again'
/hm/	[hm]	a voiceless bilabial nasal
	/hmeʔ/	'fowl louse'
/ʔm/	[ʔm]	a preglottalized bilabial nasal
	/ʔmɛ/	'saliva'
/n/	[n]	a voiced tip-alveolar nasal
	/neʔ/	'flesh'
/hn/	[hn]	a voiceless tip-alveolar nasal
	/hnaŋ/	'necklace'
/ʔn/	[ʔn]	a preglottalized tip-alveolar nasal
	/ʔneʔ/	'a kind of hat'
/ñ/	[ñ]	a voiced fronto-palatal nasal
	/ñi/	'to clean (body)'

/hñ/	[hñ]	a voiceless fronto-palatal nasal
	/hñi/	'to contract'
/ʔñ/	[ʔñ]	a preglottalized fronto-palatal nasal
	/ʔñi/	'to warm at the fire'
/ŋ/	[ŋ]	a voiced dorso-velar nasal
	/ŋa/	'flat in taste'
/hŋ/	[hŋ]	a voiceless dorso-velar nasal
	/hŋa/	'virgin, fresh'
/ʔŋ/	[ʔŋ]	a dorso-velar preglottalized nasal
	/ʔŋa/	'twenty'
/f/	[f]	a voiceless labio-dental fricative
	/fiəh/	'final particle showing emphasis'
/v/	[v]	a voiced labio-dental fricative
	/viəh/	'wide'
/s/	[s]	a voiceless tip-alveolar fricative
	/saic/	'to be astringent (in taste)'
/ɣ/	[ɣ]	a voiced dorso-velar fricative
	/ɣen/	'to keep'
/ʔɣ/	[ʔɣ]	a dorso-velar preglottalized fricative
	/ʔɣen/	'diligent'
/h/	[h]	a voiceless glottal fricative
	/hen/	'to be careful'
/l/	[l]	a voiced tip-alveolar lateral
	/lɛh/	'six (6)'

/hl/	[hl]	a voiceless tip-alveolar lateral
	/hlɛ/	'a bottle gourd'
/ʔl/	[ʔl]	a tip-alveolar preglottalized lateral
	/ʔlɛ/	'to tease'

2.4.3.2.2 Consonant Contrasts

/p/ - /p ^h /	/pok/	'male'
	/p ^h ok/	'right'
/p/ - /b/	/pok/	'to cancel'
	/bok/	'bowl'
/b/ - / ^m b/	/boŋ/	'strong'
	/ ^m boŋ/	'stair'
/p ^h / - /f/	/p ^h iəʔ/	'father'
	/fiəʔ/	'monkey'
/t/ - /t ^h /	/tom/	'liver'
	/t ^h om/	'to spread out'
/t/ - /nd/	/tɔm/	'egg, to lay eggs'
	/ ⁿ dɔm/	'right (side)'
/c/ - /c ^h /	/cɛh/	'to tear'
	/c ^h ɛh/	'very near'
/c/ - / ^ñ c/	/cɛh/	'to tear'
	/ ^ñ cɛh/	'to be torn out'
/c/ - / ^ñ /	/cuə/	'young'
	/ ^ñ uə/	'waist'
/c/ - /j/	/cuə/	'young'
	/juə/	'teak'

/ch/ - /ñc/	/ch ^h uə/	'to flow'
	/ñcuə/	'land'
/j/ - /ʔj/	/joŋ/	'to know'
	/ʔjoŋ/	'to suspect'
/j/ - /ñ/	/jiəŋ/	'to pull'
	/ñiəŋ/	'strand, line'
/k/ - /k ^h /	/kuət/	'to scoop together'
	/k ^h uət/	'to want; to be old, dark(colour)'
/k/ - /ŋg/	/kəh/	'to untie'
	/ŋgəh/	'to be unfastened'
/k/ - /ʔ/	/kɛ/	'cucumber'
	/ʔɛ/	'hen'
/ŋg/ - /ŋ/	/ŋgeom/	'barn'
	/ŋəom/	'to distill (to get liquor)'
/ʔ/ - /h/	/ʔaɪc/	'to lay down'
	/haɪc/	'to scratch'
/m/ - /hm/	/mɔŋ/	'to wait'
	/hmɔŋ/	'to listen, to hear'
/m/ - /ʔm/	/maʔ/	'mother'
	/ʔmaʔ/	'to be broken'
/m/ - /n/	/maʔ/	'mother'
	/naʔ/	'sour'
/hm/ - /ʔm/	/hmoʔ/	'lung'
	/ʔmoʔ/	'rope; bulb'

/ʔm/ - /ʔn/	/ʔməo/	'to be round; fruit'
	/ʔnəo/	'a moment'
/n/ - /hn/	/nan/	'woman' (Th.)
	/hnan/	'necklace'
/n/ - /ʔn/	/nəo/	'to hit (by using a piece of wood'
	/ʔnəo/	'a moment'
/n/ - /ŋ/	/na/	'to spread out'
	/ŋa/	'flat of taste'
/ñ/ - /hñ/	/ñi/	'to clean (body)'
	/hñi/	'to contract'
/ñ/ - /ʔñ/	/ñiəh/	'to laugh'
	/ʔñiəh/	'to tear apart'
/ñ/ - /ñc/	/ñiəh/	'to laugh'
	/ñciəh/	'to pierce'
/ñ/ - /ŋ/	/ñan/	'a kind of thing which has supernatural powers'
	/ŋan/	'to look up'
/hñ/ - /ʔñ/	/hñi/	'to contract'
	/ʔñi/	'to warm at the fire'
/ʔñ/ - /ʔŋ/	/ʔñuə/	'slippery'
	/ʔŋuə/	'thirty'
/ŋ/ - /hŋ/ - /ʔŋ/		
	/ŋa/	'flat of taste'
	/hŋa/	'virgin, fresh'
	/ʔŋə/	'twenty'

/f/ - /v/	/fiək/	'dark'
	/viək/	'abdomen, intestine'
/f/ - /s/	/fa/	'to be acquainted easily', 'to be sociab
	/sa/	'basket'
/s/ - /h/	/saʔ/	'morning'
	/haʔ/	'to be burned'
/ɣ/ - /ʔɣ/ - /h/		
	/ɣɛn/	'to keep'
	/ʔɣɛn/	'diligent'
	/hɛn/	'to be careful'
/l/ - /hl/	/lɔŋ/	'black'
	/hlɔŋ/	'cool'
/l/ - /ʔl/	/lɛn/	'to look; to look after'
	/ʔlɛn/	'to throw away'
/hl/ - /ʔl/	/hlɛʔ/	'rain, to rain'
	/ʔleʔ/	'a kind of climbers'

3. Lawa-English Glossary

The following is a Lawa-English glossary, consists of Lawa words in phonemic transcription, followed by their English equivalents. The Lawa is listed from simple vowels to complex vowels as follows:

i e ɛ ɪ w ə a u o ɔ

əi ai oi ɔi ɛɪ aɪ əo ao ui ɛɔ ɔɛ iə ɪə uə aɪɛ

Vowels with no final consonants come first, and are followed by vowels with final consonants: p t c k ʔ h m n ñ ŋ respectively.

phī	person; he, she; ghost (Th.)	vit	to defecate
thī	clearly; a singleton	lavit	to meet, to join
ci	to thrust, to pierce	sit	to swing, to give an injection (Th.)
lāci	screw		
khī mui	thief	kik	odd (number)
vi	to fan	laphīʔ	clothes
si	colour (Th.)	thīʔ	one; a moment
si cai	hurried	ŋgoʔ thīʔ	the day before yesterday
yu yi	to swing	sathīʔ	the day after tomorrow
ʔmok li	cigarette	ndiʔ	together; each other; not yet
ndip	slope, hillside		
yip	hurried (Th.)	səndiʔ	near
pit	poison (Th.)	phih	to chant (prayers); to speak very quickly
phit	sticky; wrong (Th.)		
səphit	stingy	khih	salt; to give birth to (an animal)
tit	co stick (Th.)		
səgeʔ van tit	Sunday	ŋgih	to incline
əkhīt	matches	nih	just a moment
səŋgit	to pour slowly	mbiñ	mud
it	a word signifying completion of an action, already	mbjiñ	same, equal
		chiñ	to sew
it	knife (Th.)	lābe	to turn (a way)

m ^{ble}	a bracelet (for hands)	læk ^{he} ?	after; the last
m ^{bje}	to cook; to make sth. carefully; decorate	ʔe?	we; I (poetic word)
te	that; final particle showing command	ləme?	man; husband; sugar cane
n ^{de}	sweet	ne?	flesh
læce	to quarrel	ko? ne?	kinsman
c ^{he}	unfirm	səge?	sun; day, daytime; classifier of knife
ke	to debate	ve?	left (side)
ʔme ʔmak	very poor	hle?	rain, to rain
hne	happy, contented	peh	to pick
kætet	papaya	ləʔeh	today
vec	sword	ʔneh	dry; lean, thin
tek	to press	kəseh	under; south
pje?	hot (taste); to start (a fire)	yeh	to pour
p ^{hje} ?	forest; land for planting; weather	cen	lifelong
kəp ^{hje} ?	outside	phēñ	white
te?	he, she, it; hand, arm; great grandfather; soil	mbeñ	white (used with elephant, garlic, eagle, ginger, milk)
ko? te?	body, oneself	ləvenñ	jealous
pho? te?	each other	phēñ/phlēñ	song (Th.)
kəte?	basement, cellar	phañ keñ	trouser (Th.)
səte?	eight	ʔlēñ	bell
ləte?	eighty	pjε	hail
je?	great-grandmother	kε	cucumber; old (Th.)
kle?	lazy	ʔε	hen
k ^{he} ?	to find; after	ʔyε	forehead
		hε	bee; mineral (Th.)
		ʔlε	to tease

ket	to expect	tik	most, used to indicate the superlative degree
vet	to surround		
pjeh	to blow	chik	a paddy field
csh	to tear	laphim	garden
ñcsh	to be torn	thim	ripe
leŋgleh	sixty	ŋgim	under, beneath
ʔeh	to get; to get married; (sth.done by)oneself	ñim	delicious
ʔeh		pin,pin ʔak	bow
ʔeh	to dress	phin	able
ʔeh	root; precocious	nin	at,in,on,in the middle of,among,with,by,from; -ing;which
leh	six		
ʔalsh	seven	khwp	false
səm	Thai	ʔwʔ	yes
ʔəm	to cut (grass)	səmə	straight
ʔmən	to massage; to press	sə	will, shall
ʔən	quarter	təh taʔ	thunder
ʔən	diligent	ʔən	it, he, she
nən	careful	nda	long
lən	to look, to look after	ka	to roast; before; at; place
ʔlən	to throw away		
ʔñi	to warm (oneself)	ləka	in front of
phit	to drop (sth. in a hole)	kha	to kill; to torture
laphit	a digging tool		
ʔbit mam	how many,how much	ləʔa	two
lathit	to bump against	səma	to plant; to beg pardon
		ʔma	plantation; to go to a plantation

ŋa	tasteless	ka?	fish
to ² səŋa	curry	kja?	way, road
?ŋa	twenty	ma?	mother
sa	basket	?ma?	to be broken
ha	from; (more, less) than	ləŋa?	sesame; to play
mənət	pineapple	sa?	morning; to abuse; to yell
sənət	gun	ya?	big; many; loud
sat	mat; animal (Th.)	ha?	to be burnt
hlat	to be fearful	la?	to place; to give; to divorce; for; at
bak	frog	hla?	leaf
ndak	tongue; steep slope	ndah	if
kak	branch (of tree)	kah	to loose
kjak	buffalo	?ah	to say, to speak
səkjak	red	mah	to be, to be called
mak	to cut (grass); to harvest	?am	(question particle)
ləmak	sickle; knife for cutting grass	mam	what; whatever
səmak	areca	hnam	blood
yak	to cry; to love (Th.)	gam	to be rotten
lak	direction	kan	work
pa?	you	ŋan	to look up
səpa?	cheek	pjaŋ	roof; to make a roof
ta?	grandfather, old man; to intend	klaŋ	eagle
ca?	ashes; stove	sə?aŋ	bone
səta?	tail; to intend	?maŋ	empty
		naŋ si	book (Th.)

saq lom	spider	pho [?] /pho [?] te [?]	to each other
saq	elephant (Th.)	lapho [?]	spirit, soul
chu	stomach; mountain	bo [?]	edge
'u	to speak	setho [?]	silk
lu/ñu he	wax	kuen ndo [?]	child; how many
u yi	to sling	cho [?]	to sell; old(things)
luk plak	a flash of lightning	jo [?]	without; to see, to find
hu [?]	younger sibling	ko [?]	body; self; root (of plants); animal
uh	to do, to make; of	leko [?]	milled rice; dove
hum	who	kh [?]	tree; wood
hum	where	khjo [?]	new
um	to die; a dead man	ngjo [?]	to divide
um	owner	samo [?]	stone
uq	to throw away	lamo [?]	dream; to dream
>	don't!	hmo [?]	lung
bo	shallow	?mo [?]	rope; bulb
o	not	ño [?]	to drink
o	to pour	som ño [?]	to get married
li ho	corn	lahjo [?] la [?]	to tell
?op	hot (weather)	so [?]	to be sick; to be painful
ok	male	?yo [?]	deep
ok	to be right	la [?] lo [?]	to stop, to rest
ok	to ride (a vehicle)	poh	to open
lok	male elephant	læplo ^h	to change
tok	somewhere	toh/lætoh	to meet
ok/?mok li	cigarette		

n ^h doh	to put; a bonfire	səɔ	to put
coh	to use	kɔt	cold
ləʔoh	loud	lənɔt	lonely; quietly
voh	to build	ʔɔt	to listen; to obey; to think
ɣoh	to bark; same	tɔk	to be alike
hloh	to get, to gain	sətɔk	to teach
ləmbom	mouth	kɔk	to call; basket
som	to eat	ʔɔʔ	bamboo
ləphoŋ	word; speech	haʔɔʔ	to vomit
boŋ	strong	hɔʔ	paddy; paddy tree
mboŋ	stairs	ʔɔʔ	mad; most
n ^h doŋ	pot	sɔʔ	dog
coŋ	corner	kaɪ lɔʔ	storm
choŋ	to stand	n ^h doh laʔ	to think of
joŋ	to know	naʔoh	wherever
kloŋ	stream; river	səʔoh	dry; two days after tomorrow
ŋgjoŋ	to carry	tɔm	egg; drop(of water)
ʔoŋ	he, she, it; to stop	n ^h dɔm	right (side)
ʔnoŋ	only	vɔm	hat
ŋoŋ	knee	ph ^h ɔn	five
ləvoŋ	banana tree	hmɔŋ	listen; to hear
ɣoŋ	first	loŋ	black
tɔ	to run; to flee	məloŋ	sky
ʔɔ	elder sister	hloŋ	cool; open-air
ʔɔ ʔəih	thing	təi	to light (a lamp)
ŋɔ	fire		

ŋgoʔ ʔnəi	yesterday	ʔŋai	eye
səŋəi	yellow, orange (colour)	lai luəŋ	story
ɣəi	thin	ləlai	when, at the time of
həi	this	səkaip	narrow
nə həi	here	ɣaip	grass
kləip	shoulder	klaic	fast, quickly
ʔəic	taro	ʔaic	to lay down
ləic	pig	maic	good, beautiful; must
hləic	iron	hmaic	sand
pləiʔ	fruit; areca	pjaim	old, former
khəiʔ	moon; month; firewood	lətaim	ninety
səiʔ	louse	ñcaim	ring
nəiɦ	to kick	hmaim	finger nail
cəiɦ	to pierce (an abscess)	saim	bird
ñcəiɦ	to be blown out (an abscess)	paiñ	to catch; to hold
pʰi kʲəiɦ	girl; sweetheart (female)	coi	to turn (a way)
ləiɦ	down	koi	to be used to
məiñ	to count	pjoic	wing
ʔləiñ	long (time)	mbjoic	chili
səpai	nearly, mostly	poiñ	to fire at
khjai	gold	kloiñ	to be fat
səmai	to notice	khjoĩñ	every
hmai	very poor	ŋgoĩñ	to chew
ʔmai	with	səʔoiñ	snake
kənai	inside	səʔmoiñ	star
		ñccic	pointed

koic	sun light; hot	taih	breast; milk
ŋgoic	sun light	lə'aiah	fat; oil
?moic	ant	maih	nose
hoic	reach, come	ləmaih	few, little
?loin	to be at the end of	kain	head
mbləit	to swallow(liquid)	ləhaiŋ	sweat
səit	to pick up	ləlaiŋ/laiŋ	among, at the middle of
γəit	to be brave	pəo	to fly; to bail(water)
kəih	to cook	mbəo	to swing
lə?məih	to wake up	ñiə?...təo	no more
ləih	to answer	hməo	friend
ləpəin	woman, wife, female	?nəo	a moment
sətəin	slowly	pəok	to break
həin	many	mbəok	to be broken
?əin	return, come	məok	cow, bull
khjəin	things; clothing	sə?əom	rotten
paɪ	blue	γəom	to help
kaɪ	wind, storm	lələom	to fall down
ŋgaɪ	because	təon	to boil
maɪ	money	γəon	horn
?aɪt	to stay	kao	ten
?maɪt	smoke	kjao	barn
hgaɪt	to smell	ŋao	stupid (Th.)
hlaɪt	deaf	caop	to put on, to wear
ləpaik	bridge	?aop	cooked rice
haik	hair	səŋaop	tomorrow
?aɪ?	I	ləkjaok	clothes

naok	full	γɔɛh	to choose
pəʔyaok	forest	ʔγɔɛh	finger
phaom/ləphaom	heart	ʔlɔɛh	loud; sound (of non- animate)
ʔaom	to feel		
ləʔaom	water	mbiə	forget
naom	urine	thiə	flower; cotton tree
ŋaom	to sit	ciə	fable; tale
saom/ləsaom	night	chiə	to sing
haom	to bathe	ləviə	tiger
paon	four	pəʔliə	now
ləpaon	forty	khiət	to bite; to pretend
kjaon	neck	phi khiət	mosquito
səŋaon	red	ʔjiək	elder brother
hlaon	high	ŋgiək	worm
phui	he, she; person; anybody	fiək	dark
thui	to buy, to get	viək	abdomen; intestine
phuic	at the end of	liək	enter
keo	glass (of water) (Th.)	phliəh	spear
ɛɔʔ	small	ŋniəh	little
ɔɔɛ	orphan; lips	thiəm	low
ɔɛ	to have; to be rich; cotton; needle	chiən	heavy
mɔɛ	axe	mbiən	strong, energetic
nɔɛ	talkative	mbjiən	tooth
ɔɛ	hundred (Th.)	jiən	same (size, length)
əlɔɛ	tamarind	ʔjiən	to pull
əmɔɛɛ	graveyard	niən	feces; to shit
		ʔniən	thread
			short

hiəŋ	clever	jiəm	to cry
phie	coconut	ñie	when, at the time of
mbie	because	chiən	to pick
thie	duck	puə	to ask for; to borrow
cie	to believe (Th.)	phuə	to mutter, to complain
chie, ñcie	far	chue	to flow
?jie	medicine; tobacco	kuə	slowly, softly
mie	time, when	le?uə	three
phak ñie	vegetable	ñue	waist
khiet	rough	?ñue	slippery
ndiek	to fry	?nuə	thirty
khliek	to lick	yuə	a fly
?ñiek	to mix	buət	to rub, to clean
viək	big worm	lambuət	eyedrops
phie?	father	chuət	shy
mblie?	to let	khuət	to want; old; dark (colour)
jie?	father's mother	yuət	to embrace
jie? nəom	mother's mother	buək	to cheat
lakhie?	thin	səbuək	elbow
ñie?	home, family	juək	to raise
fie?	monkey	suək	ear
levie?	door	quəh	price, value
khieh	to give; to cause	luəh	substance
ñieh	to laugh	mbluən	to swallow (non liquid things)
viəh	wide	kuən	child, son, daughter
chiəm	dish		

senuen	spoon
chuēn	foot, leg
?juēn	village
luēn	way, side
phaie	ghost
klaie	to stir
laie	both sides
gaie	cry (of buffalo)

Footnotes

1. The number was given by the Tribal Research Center in its reports, Tribal Population Summary in Thailand, 1979.
2. The Lawa population in Chiangmai is 7,139, consisting of 1,239 households in 19 villages. In Maehongsorn, the number is decreased to 2,570, consisting of 499 households in 13 villages. There is also a Lawa village in Chiangrai where there are only 132 Lawa and 29 households; cf. the above mentioned Tribal Population Summary in Thailand.
3. A vivid description of a two-day trek to these Lawa villages was given by the late Princess Viphavadee Rangsit in her article "mîe nuèy phrá' rajchathan khîn khao" (when the Royal Aid comes to the hills) in her collected papers "riêng lăi rót" (Different tastes), Bangkok, Prae Pittaya Press, 1971.
4. A description of the Chaobon language was done by Miss Payao Meemanas in her A Description of Chaobon (ñahkur): an Austroasiatic Language in Thailand, an unpublished M.A. thesis, Southeast Asian Language Center, Mahidol University, 1979, 314 pages (in English).
5. Sisawat, Bunchuai 'săm sip chăt nai Chiangrai' (Thirty Nationalities in Chiangrai), Outhai Press, Bangkok, 1952 (in Thai).

Khanthathatbamroong, Manas 'kan sǒṅkhrǒ' chao khăo nai phāk nîe khǒṅ tamruét phuthon chai đen' (An assistant to the hilltribes in the North

by the Royal Patrol Police), an unpublished M.A. thesis, Thammasart University, 1965 (in Thai).

6. Young, Oliver Gordon The Hill Tribes of Northern Thailand, 1961, fifth edition published by the Siam Society, Bangkok, 1974, 96 pages, page 53.
7. Kauffmann, H.E gave a slightly different account of the Lawa system of classes in his article 'Some Social and Religious Institutions of the Lawa' part I'. Journal of the Siam Society 60, 1, 1972.
8. Viphavadee Rangsit, "mio nuøy phra rajchathan khin khao", page 283-350.
9. Thomas, David D., and Headley, Robert K., 'More on Mon-Khmer Subgrouping', Lingua 25, 4 page 398-418.
10. Ratanakul, Suriya, 'ruəpruəm kham phasǎ Lawa' (A collection of Lawa vocabulary), paper presented to the Symposium on Humanities Disciplines, organized by the National Research Council of Thailand, March 24-26, 1977, 40 pages.
11. Kunstadter, Peter gave a description of Lawa circle of life in Ban Pa Pae village in his article 'Living With Thailand's Gentle Lua' in the National Geographic Magazine, July, 1966, page 123-146.
12. Schlatter, Donald gave a detailed description of the analysis and development of orthography for writing the Lawa language, in Phonemes

and Orthography: Language Planning in Ten Minority Languages of Thailand, William A. Smalley (editor), Pacific Linguistics Series C - No.43, the Australian National University, 1976, chapter 11, page 273-281.

13. Ratanakul, Suriya, 'The Lawa-ləsom 'lɛ Poetry', paper presented to the Symposium on Austro-Asiatic Languages, Helsingor, Denmark, October 24-26, 1979, 38 pages.

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