

## THE REPRESENTATION OF TAI ONSETS IN KAMMU LOANWORDS

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**Abstract:** Kammu (Kmhmu', Khmu'), an Austroasiatic language of northern Laos, has borrowed extensively from Tai languages (Lao and Lü) for a long time. Many loanwords retain phonological features lost in Tai languages, and it is shown that the donor language for the first major layer of loanwords is more or less identical to Proto-Southwestern Tai as reconstructed by Li (1977). In general, the Kammu data support Li's reconstruction, but also suggest some emendations.

**Keywords:** Kammu, Khmu, Tai, loanwords, historical phonology

### 1. BACKGROUND

Kammu (Kmhmu', Khmu', etc.) is a Mon-Khmer language spoken in Northern Laos and in adjacent areas of Vietnam, Thailand and China. The number of speakers is at least 500,000. The Yùan dialect, which is treated here, is traditionally spoken in the southern part of Luang Namtha province in northern Laos (Viengphoukha district and Nalae district to the west of the Nam Tha river; see the map in Lindell et al. 1982: vi). The Yùan Kammu area now belongs to Laos, but before the formation of French Indochina at the end of the 19th century, at least part of it belonged to the Sipsong Panna, an area then dominated by the Lü and loosely attached to China. Since the 1980s, many Yùan villages have been abandoned and the inhabitants have moved to live in areas closer to rivers and roads.

For a long time, Kammu has been in close contact with Tai languages, and has borrowed many words, especially from languages of the Southwestern Tai subbranch. In this article, Tai loanwords in Kammu are compared with Proto-Southwestern Tai and with Lao and Lü, the modern Southwestern Tai languages which have had most contact with Kammu. The main sources are the Kammu-English dictionary being compiled at Lund University (Svantesson et al. ms), the reconstruction of Proto-Southwestern Tai by Li (1977), the Lao-English dictionary by Kerr (1972) and the Lü-Chinese dictionary by Dāo et al. (2002), a dictionary based on the traditional Lü (Tham) writing system. For Lao, the dictionaries by Guignard (1912), Reinhorn (1970) and Morev, Vasil'eva & Plam (1982) were also occasionally used.

The oldest forms of both the Lao and the Lü scripts were probably created towards the end of the 13th Century (Diller 1996; Luó 1992). The modern forms of these scripts are rather conservative and still make consonant distinctions that were neutralized in the spoken languages in connection with the split of the tone systems in these languages; see Section 3 below.

It should be pointed out (as one *LTBA* reviewer did), that there are problems with this approach of comparing data from a spoken language with dictionary materials. One such problem is that the dictionaries represent standardized written Lao and Lü rather than the dialects actually spoken in the same area as Kammu. Many of the Tai loanwords occur not only in Yùan, but in other Kammu dialects as well, and it is impossible to know exactly where and when they were borrowed. Because of this and because we do not have any detailed information about the Lao and Lü dialects spoken in the Kammu-speaking areas now or in the past, I had no other choice than to rely on the dictionaries. Another problem is that the available dictionary material is much richer for Lao than for Lü.

Tai loanwords in Kammu have been treated before by Gedney (1965) and Downer (1992), but the present article gives a more comprehensive picture.

## 2. THE KAMMU LANGUAGE

Yùan is a sub-dialect of the Northern Kammu dialect, which is a tone language with two tones, high and low. The tones are denoted with accents (´ for ‘high’ and ` for ‘low’) over the vowels, and when associated with a particular onset consonant will be written here as ‘-H’ and ‘-L’, respectively. The Northern Kammu tones have developed rather recently from a historical linguistic point of view, and Eastern Kammu, spoken to the east and south of the Northern Kammu area, is still a non-tonal language. The main phonological difference between these two dialects is that Eastern Kammu has retained the contrast between plain voiced (*b, d, ʃ, g*) and voiceless (*p, t, c, k*) stops as well as the contrast between voiced (*m, n, ɲ, l, r, w, j*) and voiceless sonorants (here written *hm, hn, hp, hɲ, hl, hr, hw, hj*). Northern Kammu went through a process of tonogenesis by which words with a voiced plain stop or sonorant onset got low tone and those with a voiceless onset got high tone; in this process, the consonants merged into the unmarked member of each pair, i.e. the voiceless stop and the voiced sonorant. For example, the minimal pair *màan* ‘pregnant’ ~ *máan* ‘to bury’ in Northern Kammu corresponds to Eastern Kammu *maan* ~ *hmaan*, with no tone difference; similarly, the words ‘stone’ and ‘eagle’ are *klàan* ~ *kláan* in Northern Kammu, but *glaan* ~ *klaan* in Eastern Kammu; in onset clusters, all of which consist of a stop and a sonorant, the first consonant decides the tone. Other phonological differences between Kammu dialects are marginal, and all dialects are mutually comprehensible. See Svantesson 1983, 1989 and Svantesson & House 2006 for more information on Kammu and its tonogenesis.

Consonants which do not appear in voiced ~ voiceless pairs in Eastern Kammu have only one possible tone in Northern Kammu: low tone for the glottal stop (*ʔ*) and high tone for aspirated stops (*p<sup>h</sup>, t<sup>h</sup>, c<sup>h</sup>, k<sup>h</sup>*), glottalized stops (*ʔ, ʔ<sup>h</sup>*), glottalized glides (*ʔw, ʔj*) and voiceless fricatives (*s, h*). Thus only those combinations of syllable onsets and tones which are shown in Table 1 occur in Northern Kammu (Svantesson 1983).

### 3. TAI LANGUAGES

Li (1977) reconstructs Proto-Tai as well as the proto-forms of the three branches Southwestern Tai, Central Tai and Northern Tai. In general, the Tai loanwords in Kammu do not reflect features outside Southwestern Tai, and contrasts made in Proto-Tai but not in Proto-Southwestern Tai have left no traces in the Kammu loans. Exceptions are a few very early loans, referred to as Layer 1 below. On the other hand, almost all contrasts made in Proto-Southwestern Tai onsets are reflected in Kammu loanwords.

p-H	t-H	c-H	k-H		pl-H	kl-H	pr-H	tr-H	cr-H	kr-H	kw-H
p-L	t-L	c-L	k-L	?-L	pl-L	kl-L	pr-L	tr-L	cr-L	kr-L	kw-L
p <sup>h</sup> -H	t <sup>h</sup> -H	c <sup>h</sup> -H	k <sup>h</sup> -H								k <sup>h</sup> w-H
ɓ-H	ɗ-H										
	s-H			h-H							
m-L	n-L	ɲ-L	ŋ-L								
m-H	n-H	ɲ-H	ŋ-H								
	l-L										
	l-H										
	r-L										
	r-H										
w-L		j-L									
w-H		j-H									
?w-H		?j-H									

Table 1. Northern Kammu onsets and tones

p	t	c	k	ʔ	pl	kl		kr	kw
p <sup>h</sup>	t <sup>h</sup>	c <sup>h</sup>	k <sup>h</sup>		p <sup>h</sup> L	k <sup>h</sup> l		k <sup>h</sup> r	k <sup>h</sup> w
b	d	ʃ	g		bl	gl	br	gr	gw
ɓ	ɗ				ɓL				
f	s			h				xr	
v	z		ɣ						yw
m	n	ɲ	ŋ		mL				ŋw
hm	hn	hɲ	hŋ						
	l								
	hl								
	r								
	hr								
w		j							
hw		?j							

L stands for l or r, which cannot always be distinguished in clusters, according to Li.

Table 2. Proto-Southwestern Tai onsets (Li 1977)

According to Li (1977), Proto-Southwestern Tai had the onsets shown in Table 2. There were three contrasting tones. As is well known, the Tai languages (and several other East and Southeast Asian languages, including Chinese and

Vietnamese) have gone through a tone split similar to Northern Kammu tonogenesis, merging voiced and voiceless stops, fricatives and sonorants, and keeping the contrasts by doubling the tone system (see e.g. Haudricourt 1961). The original voiced and voiceless consonants are kept separate in the writing systems of Lao and Lü, however. The consonant contrasts shown in written Lao and Lü normally reflect the historical origins of the consonants, but it should be emphasized that this may not always be the case, due to spelling changes and orthographic conventions.

#### A. Consonants

ກ		ຂ	k <sup>h</sup>	ຄ	g	[k <sup>h</sup> ]	ງ	ŋ
ຈ	c	ສ	s	ຊ	ʃ	[s]	ຍ	ɲ/j
ດ	d/t	ຕ	t	ຖ	t <sup>h</sup>		ທ	d [t <sup>h</sup> ]
ນ	n	ບ	b/p	ປ	p		ຜ	p <sup>h</sup>
ຝ	f	ຟ	b [p <sup>h</sup> ]	ຟ	v	[f]	ມ	m
ຢ	j	ຮ	ʀ [l]	ລ	l		ວ	w
ຫ	h	ຫງ	hŋ [ŋ]	ຫຍ	hɲ [ɲ]		ຫນ	hn [n]
ຫມ	hm [m]	ຫລ	hl [l]	ຫວ	hw [w]		ອ	ʔ
ຮ	r [h]							

#### B. Vowels (shown with the consonant ກ k)

ກະ	aʔ	ກັກ	aC	ກາ	aa	ກີ	iʔ
ກິກ	iC	ກື	ii	ກື	ɨʔ	ກິກ	ɨC
ກື	ɨ	ກູ	uʔ	ກູກ	uC	ກູ	uu
ເກະ	eʔ	ເກັກ	eC	ເກ	ee	ເເກະ	ɛʔ
ເເກ	ɛɛ	ໂກະ	oʔ	ໂກ	oo	ກິກ	oC
ເກາະ	ɔʔ	ກໍ	ɔɔ	ກອກ	ɔɔC	ເກີ	əʔ
ເກິກ	əC	ເກີ	əə	ເກັຮະ	iaʔ	ເກັຮ	ia
ກຮກ	iaC	ເກືອ	ɨaʔ	ເກືອ	ɨa	ກີວະ	uaʔ
ກີວ	ua	ກວກ	uaC	ໄກ	aj	ໄກ	aj
ເກົາ	aw	ກໍາ	am				

The modern pronunciation is given in square brackets if it differs from the written form; two forms separated with a slash show the pronunciation as onset and coda, respectively. The Lao tone marks are written with superscript digits 1–2.

Table 3. Transliteration of written Lao

In this article, forms from Lao and Lü are given in transliteration of the written languages (see Tables 3 and 4). When the modern pronunciation of an onset differs from the one indicated by the transliteration of its written form, it is given within square brackets [].

Neither the old nor the modern Tai tones have left any traces in the Kammu loanwords (except in the most recent loans). The tone marks of the written languages are shown with superscript digits in the transliterations, however.

The vowels have changed more in Lü than in Lao: the length distinction has disappeared and some vowels, e.g. *ua* and *o*, have merged. The modern

pronunciation of Lü vowels (according to Morev 1978) is shown in Table 4B. These specific Lü changes are usually not reflected in Kammu loans, where the vowels are normally identical to the Lao vowels. The system of coda consonants is /p, t, k, m, n, ŋ, w, j/ in both Lao and Lü, and coda consonants are normally taken over unchanged in Kammu. For these reasons, only the onset consonant (or consonant cluster) is cited from Proto-Southwestern Tai. In the Appendix, Lao and Lü words are given in transliteration of the written form, and the modern pronunciation is shown only for onsets.

A. Consonants

ᵛ	ʔ		ᵛ	k		ᵛ	-k		ᵛ	k <sup>h</sup>	[x]
ᵛ	g	[k]	ᵛ	ŋ		ᵛ	c	[ts]	ᵛ	j	[ts]
ᵛ	d/t		ᵛ	t		ᵛ	t <sup>h</sup>		ᵛ	d	[t]
ᵛ	d <sup>h</sup>	[t <sup>h</sup> ]	ᵛ	n		ᵛ	ᵛ/p		ᵛ	p <sup>h</sup>	
ᵛ	b	[p]	ᵛ	b <sup>h</sup>	[p <sup>h</sup> ]	ᵛ	m		ᵛ	ɲ	[j]
ᵛ	r/n	[h/n]	ᵛ	l		ᵛ	w		ᵛ	s	
ᵛ	h		ᵛ	p		ᵛ	f		ᵛ	j	
ᵛ	v	[f]	ᵛ	ɣ	[x]	ᵛ	z	[s]	ᵛ	hn	[n]
ᵛ	hm	[m]	ᵛ	hj	[j]	ᵛ	hŋ	[ŋ]	ᵛ	hw	[w]
ᵛ	hl	[l]	ᵛ	-r-	-						

B. Vowels (shown with a dummy consonant written as x)

xᵛ	aʔ	[ə]	ᵛx	aC	[ə]	xᵛ	aa	[a]	ᵛ	iʔ	
ᵛx	iC		ᵛ	ii	[i]	ᵛ	uʔ		ᵛx	uC	
ᵛ	uu	[u]	ᵛx	iaC	[e]	ᵛxᵛ	eʔ		ᵛx	e	
ᵛᵛxᵛ	εʔ		ᵛᵛxᵛ	ěC	[ɛ]	ᵛᵛx	ε		ᵛ	ua	[o]
ᵛx	uaC	[o]	ᵛxᵛ	oʔ		ᵛx	oo	[o]	ᵛx	oC	
ᵛx	ɔʔ		ᵛx	ɔ		ᵛ	ɔ		ᵛx	ɔC	
ᵛxᵛ	iʔ		ᵛ	i		ᵛᵛxᵛ	əʔ		ᵛᵛx	ə	
ᵛᵛx	əC		ᵛᵛx	əəC	[ə]	ᵛx	aj	[əj]	ᵛx	aj	[əj]
ᵛ	uaj	[oj]	ᵛ	ɔj		ᵛxᵛ	aw	[əw]	ᵛ	aw	[əw]
ᵛ	iaw	[ew]	ᵛ	aŋ	[əŋ]	xᵛ	am	[əm]			

The consonants have special subscript forms when they occur as the second element in an initial cluster and when they are codas, depending also on the form of the preceding letter. Some vowel letters have slightly different forms depending on the form of the preceding or following consonant. The tone marks are shown with superscript digits 1–2. Some uncommon letters which do not occur in the loanwords have been omitted.

Table 4. Transliteration of written Lü

In addition to the Tai tone split, which eliminated the plain voiced stops (*b, d, ʃ, g*), the voiced fricatives (*v, z, ɣ*) and the voiceless sonorants (*hm, hn, hp, hŋ, hl, hr, hw*) in modern spoken Lao and Lü, another process was active in the development of the modern languages; simplification of liquid clusters. All liquids *-l-* and *-r-* disappeared from onset clusters, and unlike the consonant mergers related to tone split, this is reflected in the written languages as well,

except for some words in written Lü. The loss of onset clusters in the writing systems suggests that this loss is earlier than the tone split; there is, however, a possibility that it is also due to later adaptations of the written languages to the spoken forms. As is well known, the Thai script writes onset clusters, which are preserved better in this language than in Lao and Lü.

Some onsets went through individual changes, such as *\*r* > [h] (but original *\*r* and *\*h* are written with different letters both in the Lao and Lü scripts). The normal development of Proto-Southwestern Tai onsets in (written and spoken) Lao and Lü is outlined in sections 5–13.

#### 4. TAI LOANWORDS IN KAMMU

Tai loanwords have entered Kammu throughout the ages, and at least four different layers of different ages can be distinguished.

Layer 1 consists of a few apparently very old loans. The correspondences tend to be phonologically irregular, and the direction of borrowing is uncertain. Examples are shown in (1). Some words for which correspondences were not found in Tai, but in Proto-Kra (Weera 2000), another branch of the Kra-dai (or Tai-Kadai) family, are also included in (1); some may be area words occurring in several language families. Proto-Tai (Li 1977), Proto-Kra (Weera 2000) and Proto-Tibeto-Burman (Matisoff 2003) forms are given for comparison, as well as words from Saek (Gedney 1993a; Morev 1988).

An *LTBA* reviewer has made me aware of the relevance of Saek in this context. This language belongs to the Northern Tai branch and retains some features (in particular the lateral coda consonant *-l*) which probably belong to Proto-Tai (Gedney 1993b), but are not represented in Li's reconstruction. Unlike other Northern Tai languages, Saek is spoken in Laos and Thailand, to the south of the Kammu area, and may have come into contact with Kammu at some stage.

##### (1) Layer 1 contact words

<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	<i>Saek</i>	<i>Proto-Tai</i>	<i>Proto-Kra</i>	<i>Proto-TB</i>	
k <sup>h</sup> úul	k <sup>h</sup> on	k <sup>h</sup> on	pul <sup>1</sup>	*k <sup>h</sup> (u)on <sup>A</sup>		*s-mul	body hair
tm.míl	hmon <sup>1</sup>	hmuun <sup>1</sup>	mul <sup>5</sup>	*hm̥in <sup>B</sup>		*r-dul/r-tul	dust/grey
t̃j.kíl	goon		kól <sup>6</sup>	*g-		*bul/pul	stump
múuc	mot	mot	mək <sup>6</sup>	*m̥it <sup>D</sup>	*mot <sup>D</sup>		ant
s.cáaŋ	jaaŋ <sup>2</sup>	jaaŋ <sup>2</sup>	saan <sup>6</sup>	*jaŋ <sup>C</sup>			elephant
hr.nàa	naa	naa	naa <sup>4</sup>	*na <sup>A</sup>	*na <sup>A</sup>		wet field
l.ŋàʔ	ŋaa	ŋaa	ŋaa <sup>4</sup>	*ŋla <sup>A</sup>	*l-ŋa <sup>A</sup>		sesame
críil					*kjəl <sup>C</sup>	*sjir/sja:l	gold/iron
c.ŋáar					*C-ŋil <sup>C</sup>		yellow
kláaŋ					*d-laŋ <sup>C</sup>	*glaŋ	bird of prey
táaj					*tai <sup>A</sup>		elder brother
p̃ian					*pwən <sup>B</sup>		to get

The words for 'body hair', 'dust/grey' and 'stump' may have had a final *-l* in Proto-Tai, as the Saek and Kammu forms (and also the Proto-Tibeto-Burman

forms) suggest. Gedney (1993a) glosses the Saek form *mul*<sup>5</sup> as “hypercorrection for *mun*<sup>5</sup> ‘mud’”, but Morev (1988), who recorded Saek in Laos, just glosses it as ‘mud, dust’. The high tone on the ‘major syllable’ *m̄l* of this word in Kammu shows that the initial *m* was originally voiceless *hm*.

The final palatal in Kammu ‘ant’ vs. a final dental in Tai may suggest that the word was borrowed from Mon-Khmer to Tai. On the other hand, the *i* in the Proto-Tai form may have been interpreted as a palatal vowel offglide so that the dental stop following it was identified with the Mon-Khmer palatal stop, especially since coda stops are unreleased in these languages and the vocalic offglide is the only audible cue. Weera (2005: 119) reconstructs this word with a palatal coda in Proto-Kradai.

Some of the Kammu words in (1) have an initial unstressed ‘minor syllable’, lacking in Tai, such as *s.cáaŋ* ‘elephant’ and *hr.nàa* ‘wet field’ (where *s-* [sə] and *hr-* [hər] are minor syllables). The existence of minor syllables in the Kammu forms might indicate that Tai borrowed them from Mon-Khmer. The word for ‘sesame’ exists in Austronesian as well; Weera (2005: 122) gives the Proto-Austronesian form *\*leŋa*. These three words were later borrowed into Kammu as *càaŋ*, *nàa* and *ŋàa*, words that are not used in ordinary language, however (see below).

The last five words in (1) are only marginally relevant here, but are listed because of their connection to Kra, a language group genetically related to Tai. Since the correspondences in (1) are rather irregular, some of them may just be incidental.

The youngest layer of loans, here called Layer 4, consists of words recently borrowed from Lao. Almost all Kammu in Laos are bilingual and have at least some knowledge of Lao. All school education is in Lao and most Kammu children in Laos learn to speak, read and write Lao at school, while Kammu is used only as a spoken language. All modern terminology in fields such as politics, science and technology, and also terms used in ordinary modern life but foreign to traditional Kammu lifestyle, are invariably taken over unchanged from Lao (possibly with some phonological adaptations depending on the individual speaker’s knowledge of Lao). At least in some of these words, the local Lao pronunciation of the tones is attempted and they cannot be assigned to the Kammu tone categories. These loanwords are normally not recorded in our dictionary—this would require that more or less the entire Lao vocabulary be included—and are not treated here since they are not very interesting from the point of view of historical phonology.

This article is concerned mainly with loanwords of the two intermediate layers of loans, Layers 2 and 3. The corpus of these words, given in the appendix, consists of about 1630 words. 69% of them occur both in Lao and Lü, 23% only in Lao and 8% only in Lü. The proportion of words occurring in Lü is probably underestimated since the dictionary used for Lü is less comprehensive than those used for Lao.

Layers 2 and 3, which differ phonologically from each other (see below), both consist of two different kinds of words, which may be called restricted and unrestricted. Restricted words are not used in ordinary language, but only in spells, in ritual texts, in some proverbs and sayings, and in some compounds. The spells (*krùu*) are known and used only by the shamans. They contain almost no indigenous Kammu words, but consist of Tai loans; some words in them are ultimately of Indic origin. Unrestricted words can occur in these contexts, but are also used as ordinary words which are fully naturalized in Kammu. These are quite numerous, and unlike the restricted words, they are not regarded as foreign by the speakers. Examples are *miit* ‘knife’, *màan* ‘pregnant’, *tóop* ‘to answer’. Many of these words are integrated into the derivational morphology of Kammu: for example, *pn.màan* ‘to impregnate’ and *tr.nòop* ‘answer’ are derived by the causative prefix *pn-* and the nominalizing infix *-rn-*, respectively. There is no phonological difference between restricted and unrestricted words, however, so this distinction will not be discussed further here.

The words in Layer 2 were borrowed before the Tai tone split and before Northern Kammu tonogenesis. They have developed tones after they were borrowed, according to the Kammu rules. The phonology of these words, in particular retention of onset clusters and the way the tones developed, show that their donor language is very similar to Proto-Southwestern Tai (PSW) as reconstructed by Li (1977). Some examples illustrating how these words developed from Proto-Southwestern Tai to modern Lao and from pre-tonogenesis Kammu (more or less identical to modern Eastern Kammu) to modern Northern Kammu are given in (2). For example, PSW *\*daaŋ* was borrowed into Kammu as *daaŋ*. In Tai, it changed from *\*daaŋ* to modern Lao *t<sup>h</sup>aaŋ*, and in Northern Kammu it changed from *daaŋ* to *tàaŋ*.

(2) *Layer 2 loans*

(a) *voiced stop <i>*daaŋ</i> ‘way’	(b) *voiceless sonorant <i>*hmɔɔ</i> ‘shaman’	(c) *onset cluster <i>*plɔɔk</i> ‘ring’
<i>Tai</i> <i>Kammu</i>	<i>Tai</i> <i>Kammu</i>	<i>Tai</i> <i>Kammu</i>
<i>*daaŋ</i> ⇒ <i>daaŋ</i>	<i>*hmɔɔ</i> ⇒ <i>hmɔɔ</i>	<i>*plɔɔk</i> ⇒ <i>plɔɔk</i>
↓            ↓	↓            ↓	↓            ↓
<i>t<sup>h</sup>aaŋ</i> <i>tàaŋ</i>	<i>mɔɔ</i> <i>móɔ</i>	<i>pɔɔk</i> <i>plóɔk</i>

The words in Layer 3 were borrowed later than those in Layer 2. Their phonological form shows that they were borrowed after some of the processes that shaped the modern Southwestern Tai languages took place, in particular the tone split and cluster simplification. They are exemplified in (3). For example, PSW *\*dam* changed to Lao *t<sup>h</sup>am* before it was borrowed into Kammu, where it developed to *t<sup>h</sup>ám* in Northern Kammu. The Northern Kammu tones of the two first words in (3) are different from those of the two first words in (2), showing that they were borrowed after the segmental changes connected with the Tai tone split (*\*d* > *t<sup>h</sup>*; *\*hm* > *m* in these words) took place in the donor language (see also Downer 1992: 45), but before Northern Kammu tonogenesis.



## (3) Layer 3 loans

<p>(a) *voiced stop *<i>dam</i> ‘to do’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>dam</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>t<sup>h</sup>am</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>t<sup>h</sup>am</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>t<sup>h</sup>ám</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>dam</i>			↓			<i>t<sup>h</sup>am</i>	⇒	<i>t<sup>h</sup>am</i>			↓			<i>t<sup>h</sup>ám</i>	<p>(b) *voiceless sonorant *<i>hmɔ̀ɔ̀n</i> ‘pillow’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>hmɔ̀ɔ̀n</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>mɔ̀ɔ̀n</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>mɔ̀ɔ̀n</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>mɔ̀ɔ̀n</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>hmɔ̀ɔ̀n</i>			↓			<i>mɔ̀ɔ̀n</i>	⇒	<i>mɔ̀ɔ̀n</i>			↓			<i>mɔ̀ɔ̀n</i>	<p>(c) *onset cluster *<i>plian</i> ‘to change’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>plian</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>pian</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>pian</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>pían</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>plian</i>			↓			<i>pian</i>	⇒	<i>pian</i>			↓			<i>pían</i>
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Words which had a \*voiced stop and developed as in (3a), must have been borrowed from Lao rather than from Lü, where the voiced stops became voiceless unaspirated. A few words may have been borrowed from Lü, having voiceless unaspirated stop and high tone in Kammu (see examples in the Appendix), but generally, words in Layer 3 show signs of having been borrowed from Lao rather than Lü in those cases where there is a difference between these languages. Since the sonorants and the voiceless stops (both unaspirated and aspirated) developed in the same way in Lao and Lü, the Kammu forms of words with these onsets do not show which language they came from. As mentioned above, the specific Lü vowel changes are not reflected in the Kammu loans.

For words whose Proto-Southwestern Tai onset is retained unchanged in modern Lao and Lü, it is impossible to judge from the phonological form if they are early or late loans, i.e. if they belong to Layer 2 or Layer 3. In particular, this holds for voiceless unaspirated or aspirated stops and for voiced sonorants, as illustrated in (4). Since the onset did not change from Proto-Southwestern Tai to modern Lao (or Lü), the phonological form would be the same whenever it was borrowed (as long as it was borrowed before Kammu tonogenesis).

## (4) Loans ambiguous between Layers 2 and 3

<p>(a) *voiceless stop *<i>taam</i> ‘to follow’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>taam</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>taam</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>taam</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>táam</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>taam</i>			↓			<i>taam</i>	⇒	<i>taam</i>			↓			<i>táam</i>	<p>(b) *aspirated stop *<i>t<sup>h</sup>oŋ</i> ‘bag’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>t<sup>h</sup>oŋ</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>t<sup>h</sup>oŋ</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>t<sup>h</sup>oŋ</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>t<sup>h</sup>óŋ</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>t<sup>h</sup>oŋ</i>			↓			<i>t<sup>h</sup>oŋ</i>	⇒	<i>t<sup>h</sup>oŋ</i>			↓			<i>t<sup>h</sup>óŋ</i>	<p>(c) *voiced sonorant *<i>maan</i> ‘pregnant’</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><i>Tai</i></td> <td></td> <td style="text-align: center;"><i>Kammu</i></td> </tr> <tr> <td style="text-align: center;">*<i>maan</i></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">↓</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><i>maan</i></td> <td style="text-align: center;">⇒</td> <td style="text-align: center;"><i>maan</i></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><i>màan</i></td> </tr> </table>	<i>Tai</i>		<i>Kammu</i>	* <i>maan</i>			↓			<i>maan</i>	⇒	<i>maan</i>			↓			<i>màan</i>
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It also happened that the same word was borrowed both in Layers 2 and 3, sometimes with different meanings. One example is *plɔ̀ɔ̀ŋ* ‘calf of leg’ and *pɔ̀ɔ̀ŋ* ‘(bamboo) section’, both borrowed from a word with PSW \**pl*, the first one borrowed before the loss of the liquid (Layer 2), and the second one after this loss (Layer 3). Another example is *krùu* ‘spell’ (Layer 2) and *k<sup>h</sup>úu* ‘teacher’ (Layer 3), both from a word with PSW \**gr-*, ultimately from Indic *guru*.

The great majority of words in Layers 2 and 3 must have been borrowed from Tai into Kammu, and not in the opposite direction. One clear indication of this is

the fact that almost no Kammu words incompatible with Tai phonology occur among the loanwords. For example, words with liquids (*l, r*), palatals (*c, ɲ*), *s* or *h* as syllable coda and words with minor syllables are seldom found in the loanword material. Another indication is that many of the loanwords occur throughout Tai but seem to have a limited distribution in Mon-Khmer (this aspect has not been systematically investigated, however). A few words with non-Tai codas are given in the appendix, e.g. Kammu *prùuc* ‘to spit out’ (Lao *buut*), *tís* ‘to criticize’ (Lao, Lü *ti?*) and *már* ‘barren’ (Lao, Lü *hman*). These may have been borrowed from Mon-Khmer to Tai, but it is not impossible that a few words are similar due to pure chance in a corpus of this size.

There are also a few words with aspirates and low tone. This is probably due to a tendency to use the Lao pronunciation of the stop while keeping the original Kammu tone, as shown in (5). In this example, PSW *\*bim* was presumably first borrowed in Layer 2, in the same way as *\*daaŋ* in (2), giving the form *\*pìm* with low tone; later the aspirated Lao onset was transferred to the Kammu word, so that it became *p<sup>h</sup>ìm*.

(5) *Lao segmental influence*

*voiced stop	
* <i>bim</i> ‘to print’	
<i>Tai</i>	<i>Kammu</i>
* <i>bim</i> ⇒	<i>bim</i>
	↓
↓	<i>pìm</i>
	↓
<i>p<sup>h</sup>im</i> ↔	<i>p<sup>h</sup>ìm</i>

In modern Kammu speech we have noticed many examples of low-tone words with an initial aspirate as a variant pronunciation of the unaspirated onset stop in traditional Kammu. For example, the word *tàaŋ* ‘way’ in (2) has the variant pronunciation *t<sup>h</sup>àaŋ*. It can be mentioned that in Western (Rðòk) Kammu, words with original voiced stops have an aspirated stop and low tone, so there is also the possibility that some words of this kind have been borrowed into Northern Kammu via Western Kammu. There are also variants of the type *sùu* ‘lover’, traditional Kammu *cùu* (PSW *\*ɟ-*; see A27), where the modern Lao onset [s] has replaced the regular correspondence *c* in Kammu, but the tone is retained. This has led to the existence of words with initial *s* and low tone, another impossible combination in traditional Kammu.

In a way, words of this kind are hybrids belonging tonally to Layer 2 but segmentally to Layer 3. The Kammu tone shows that they were originally borrowed in Layer 2, before the Tai tone split, and before Kammu tonogenesis; on the other hand, the onset indicates that they were segmentally “reborrowed” after Kammu tonogenesis and after the Tai onset changed to its modern Lao form. These alternative pronunciations are usually not recorded in our dictionary

(and consequently not in this article), except for a few words which occur in spells or proverbs.

In sections 5–13 below, each onset is treated separately. The regular development of each onset is given; if there are different versions of the Kammu correspondence in older (Layer 2) and newer (Layer 3) loans, they are separated with ‘|’. The material on which these sections are based is given in the appendices numbered A1 to A59, each corresponding to a Proto-Southwestern Tai onset. The words are placed under the onset suggested by our material, even in those cases when Li reconstructs another onset. The Proto-Southwestern Tai onset given in the leftmost column in the appendices is always Li’s reconstruction, however.

## 5. VOICELESS UNASPIRATED STOPS

	<i>PSW</i>	<i>Lao</i>	<i>Lü</i>		<i>Kammu</i>
A1	*p	p	p		p-H
A2	*pl	p	p(l)	[p]	pl-H p-H
A3	*t	t	t		t-H
A4	*c	c	c	[ts]	c-H
A5	*cr	c	–		cr-H
A6	*k	k	k		k-H
A7	*kl	k	k(l)	[k]	kl-H k-H
A8	*kr	k	k <sup>h</sup>	[x]	kr-H
A9	*kw	kw	kw		kw-H
A10	*ʔ	ʔ	ʔ		ʔ-L

The stops *\*p*, *\*t*, *\*c* and *\*k* are retained unchanged in Lao and Lü (except that written Lü *c* is pronounced [ts]). In Kammu they are also retained and have high tone. In a few words (labeled T in the appendices), there is an unexplained tonal mismatch so that Kammu has irregular low tone.

The glottal stop onset *\*ʔ* is retained in all languages. Somewhat unexpectedly, it gives low tone in Kammu. In many related languages, such as Parauk, Blang and Lamet, the glottal stop behaves in the same way as the other voiceless stops in relation to tone or voice quality (see Svantesson 1989).

The clusters *\*pl* and *\*kl* are simplified to the corresponding single onsets *p* or *k* both in Lao and Lü, although written Lü has *pl* or *kl* in a few words. Words for which there is some indication (in Kammu, Lao or Lü) of the presence of *\*l* are listed in the cluster sections in the appendix, even in those cases where Li reconstructs single onsets *\*p* and *\*k*. These clusters are retained in Layer 2 loans, but the *\*l* is absent in Layer 3 words, which were borrowed after the liquid had been deleted in the donor language. If Kammu, Lao and Lü all have *p* or all have *k* (with high tone in Kammu), and no Proto-Southwestern Tai form is reconstructed, it is impossible to decide whether Proto-Southwestern Tai had a liquid cluster or not; these words are listed in the sections for the single onsets (A1, A6).

None of the words where Li (1977) reconstructs PSW *\*kr* is found in the Kammu material, but there are some words with Kammu *kr*-H and Lao *k* which may have had this onset (A8). Li does not reconstruct a *\*cr* cluster, but there is one word (*cr*໓໐໑ ‘to scoop up’) with Kammu *cr*-H and Lao *c*, which might suggest this onset (A5). The onset cluster *\*pr* existed in Proto-Tai, but became *\*t* in Proto-Southwestern Tai; there are no traces of it in the Kammu material.

The cluster *\*kw* is normally retained in Kammu (with high tone), Lao and Lü (A9).

## 6. VOICELESS ASPIRATED STOPS

	<i>PSW</i>	<i>Lao</i>	<i>Lü</i>	<i>Kammu</i>
A11	<i>*p<sup>h</sup></i>	<i>p<sup>h</sup></i>	<i>p<sup>h</sup></i>	<i>p<sup>h</sup></i> -H
A12	<i>*p<sup>h</sup>l</i>	<i>p<sup>h</sup></i>	<i>p<sup>h</sup></i>	<i>p<sup>h</sup></i> -H
A13	<i>*p<sup>h</sup>r</i>	<i>p<sup>h</sup></i>	<i>p<sup>h</sup></i>	<i>pr</i> -H
A14	<i>*t<sup>h</sup></i>	<i>t<sup>h</sup></i>	<i>t<sup>h</sup></i>	<i>t<sup>h</sup></i> -H
A15	<i>*t<sup>h</sup>w</i>	<i>t<sup>h</sup></i>	<i>t<sup>h</sup>w</i>	<i>t<sup>h</sup>w</i> -H
A16	<i>*c<sup>h</sup></i>	<i>s</i>	<i>s</i>	<i>c<sup>h</sup></i> -H
A17	<i>*c<sup>h</sup>r</i>	<i>s</i>	<i>s(r)</i> [s]	<i>cr</i> -H
A18	<i>*k<sup>h</sup></i>	<i>k<sup>h</sup></i>	<i>k<sup>h</sup></i> [x]	<i>k<sup>h</sup></i> -H
A19	<i>*k<sup>h</sup>l</i>	<i>k<sup>h</sup></i>	<i>k<sup>h</sup></i> [x]	<i>k<sup>h</sup></i> -H
A20	<i>*k<sup>h</sup>r</i>	<i>k<sup>h</sup></i>	<i>k<sup>h</sup></i> [x]	<i>kr</i> -H  <i>k<sup>h</sup></i> -H
A21	<i>*k<sup>h</sup>w</i>	<i>k<sup>h</sup>w</i>	<i>k<sup>h</sup>w</i> [xw]	<i>k<sup>h</sup>w</i> -H

Li (1977) reconstructs the aspirated stops *\*p<sup>h</sup>*, *\*t<sup>h</sup>*, *\*c<sup>h</sup>*, *\*k<sup>h</sup>* and the clusters *\*p<sup>h</sup>L*, *\*k<sup>h</sup>l*, *\*k<sup>h</sup>r*, *\*k<sup>h</sup>w* (where *L* denotes *l/r*, which cannot be distinguished in this position in the Tai material, according to Li). The stops *\*p<sup>h</sup>*, *\*t<sup>h</sup>* and *\*k<sup>h</sup>* are retained in the modern languages, although written Lü *k<sup>h</sup>* is pronounced [x] in modern Lü. They have high tone in Kammu. No word reconstructed with PSW *\*c<sup>h</sup>* by Li occurs in the Kammu material, but one word (*c<sup>h</sup>ít* ‘to spray’) with Kammu *c<sup>h</sup>*-H, Lao and Lü *s* may have had this onset (A16).

The cluster *\*k<sup>h</sup>l* has merged with *\*k<sup>h</sup>*, having the reflex *k<sup>h</sup>* in all three modern languages (A19), but *\*k<sup>h</sup>r*, which has merged with *\*k<sup>h</sup>* in Lao and Lü, has the reflex *kr*-H in Kammu (A20), where there is no contrast between [kr] and [k<sup>h</sup>r]; there is some variation in the amount of aspiration in this onset between Kammu dialects. Some of these words are reconstructed with *\*k<sup>h</sup>l* by Li, but the *kr*-H in Kammu suggests PSW *\*k<sup>h</sup>r*.

Those words in the Kammu material where Li reconstructs *\*p<sup>h</sup>L* all have Kammu *p<sup>h</sup>*-H, Lao *p<sup>h</sup>* and Lü *p<sup>h</sup>* (A12). There are also some words with Kammu *pr*-H, Lao and Lü *p<sup>h</sup>* (A13); one of these is reconstructed with *\*p<sup>h</sup>* by Li, but for the others no Proto-Southwestern Tai reconstruction is available. On analogy with the *\*k<sup>h</sup>l* and *\*k<sup>h</sup>r* clusters, it can be suggested that the words in A12 have the PSW onset *\*p<sup>h</sup>l*, and those in A13 have *\*p<sup>h</sup>r*. This is confirmed for the word *práj* ‘bamboo’ by the Saek form *p<sup>h</sup>raj<sup>6</sup>*. Similarly, the correspondence Kammu *cr*-H, Lao and Lü *s* suggests PSW *\*c<sup>h</sup>r* (A17).

The reflex of PSW  $*k^h w$  is  $k^h w$ -H in Kammu,  $k^h w$  in Lao and  $k^h w$  [xw] in Lü (A21). Although Li does not reconstruct this onset, there is one word ( $t^h wáaj$  ‘to offer’) that suggests PSW  $*t^h w$  (A15).

## 7. VOICED STOPS

	PSW	Lao	Lü	Kammu
A22	*b	b [p <sup>h</sup> ]	b [p]	p-L p <sup>h</sup> -H
A23	*bl	b [p <sup>h</sup> ]	b [p]	pl-L
A24	*br	b [p <sup>h</sup> ]	b <sup>h</sup> [p <sup>h</sup> ]	pr-L p <sup>h</sup> -H
A25	*d	d [t <sup>h</sup> ]	d [t]	t-L t <sup>h</sup> -H
A26	*dr	d [t <sup>h</sup> ]	d [t]	tr-L
A27	*j	j [s]	j [ts]	c-L s-H
A28	*jr	j [s]	z [s]	cr-L
A29	*g	g [k <sup>h</sup> ]	g [k]	k-L k <sup>h</sup> -H
A30	*gl	g [k <sup>h</sup> ]	g(l) [k]	kl-L
A31	*gr	g [k <sup>h</sup> ]	ɣ [x]	kr-L k <sup>h</sup> -H

Li reconstructs the plain voiced stops  $*b$ ,  $*d$ ,  $*j$ ,  $*g$  for Proto-Southwestern Tai, and the clusters  $*bl$ ,  $*br$ ,  $*gl$ ,  $*gr$ ,  $*gw$ . The originally voiced stops are written with separate letters in Lao and Lü, here transliterated as *b*, *d*, *j*, *g*. They are pronounced [p<sup>h</sup>, t<sup>h</sup>, s, k<sup>h</sup>] in Lao and [p, t, ts, k] in Lü, i.e. they have merged with the voiceless aspirates in Lao and with the voiceless unaspirated stops in Lü. The contrast between these series is upheld with the tones in modern Lao and Lü, but since the tones have no significance in Kammu loans, this will not be treated here.

Layer 2 loans with voiced stops were borrowed before the onset became devoiced in the donor language. Later they went through Northern Kammu tonogenesis, resulting in a voiceless stop and low tone. Most Layer 3 loans have an aspirated stop ( $p^h$ ,  $t^h$  or  $k^h$ ) and high tone, showing that they were borrowed from Lao after the voiced stops developed to aspirates in this language, and not from Lü, where the voiced stops became voiceless unaspirated. There are a few words with unaspirated stop (*p*, *c*, *k*) and high tone in Kammu which may have been borrowed from Lü after they were devoiced in this language (or, alternatively, the tone development was irregular). The regular development of  $*j$  in Layer 3 loans is s-H since  $*j$  became *j* [s] in Lao. If a word has Kammu *s*, Lao *j* [s] and no attested Lü or Proto-Southwestern Tai form, it cannot be decided if it had PSW  $*j$  (A27) or  $*z$  (A38); somewhat arbitrarily, they are listed here under PSW  $*j$ .

Two words where  $*j$  became  $c^h$  in Kammu are recorded,  $c^h áa$  ‘tea’ and  $c^h òn$  ‘person’ (occurring in some compounds), but these are late loans, perhaps influenced by Thai. The traditional Kammu word for tea is *làa*, borrowed from Lü (A47). The ultimate source for both Tai words for tea, as well as for Proto-Tibeto-Burman  $*s-la$  (Matisoff 2003) and Chinese *chá* (Schuessler 2007), is most probably Proto-Mon-Khmer (Shorto 2006)  $*sla?$  ‘leaf’ (Kammu *lá?*).

Only one word where Li reconstructs PSW *\*bl* and no word with *\*gl* occurs in the Kammu material, but there are a number of words where Kammu has *p<sup>h</sup>-L*, Lao *b* [p<sup>h</sup>] and Lü *b* [p] (A23), or where Kammu has *kl-L*, Lao *g* [k<sup>h</sup>] and Lü *g* [k] (A30), suggesting PSW *\*bl* and *\*gl*, respectively.

Words with PSW *\*br* have Kammu *pr-L* (or *p<sup>h</sup>-H* in the few Layer 3 loans), Lao *b* [p<sup>h</sup>] and Lü *b<sup>h</sup>* [p<sup>h</sup>] (A24). Words with PSW *\*gr* have Kammu *kr-L* (or *k<sup>h</sup>-H*), Lao *g* [k<sup>h</sup>] and Lü *ɣ* [x] (A31). Although Li (1977) does not reconstruct PSW *\*dr* or *\*jr*, two words (*triam* ‘to prepare’ and *cn.tràa* Nam Tha river’) with Kammu *tr-L* (A26) and two (*crùup* ‘turn’ and *cróɔj* ‘to slice’) with Kammu *cr* (A28), Lao *ʃ* and Lü *z* tentatively suggest that these onset clusters should be reconstructed (although the last word has unexplained tone development in Kammu). Another possibility for the onset cluster in A28 is *\*zr*, more compatible with the written Lü onset *z*.

No word where Li reconstructs PSW *\*gw* occurs in Kammu; however, see the words with *\*ɣw* in (A40).

## 8. GLOTTALIZED VOICED STOPS

	PSW	Lao	Lü	Kammu
A32	*ɓ	ɓ	ɓ	ɓ-H
A33	*ɗ, *ɓL	ɗ	ɗ	ɗ-H

The glottalized (implosive) voiced stops *\*ɓ* and *\*ɗ* are retained unchanged in Kammu, Lao and Lü. Words with these stops have high tone in Kammu. Li reconstructs a Proto-Southwestern Tai cluster *\*ɓL*, which has merged with *\*ɗ* in most Southwestern Tai languages. In Kammu, Lao and Lü it developed exactly like *\*ɗ* (A33).

## 9. VOICELESS FRICATIVES

	PSW	Lao	Lü	Kammu
A34	*f	f	f	p <sup>h</sup> -H
A35	*s	s	s	s-H
A36	*h	h	h	h-H

The fricative *\*f* is retained unchanged in Lao and Lü, but since it is not in the phoneme inventory of Kammu, it is replaced by *p<sup>h</sup>-H* in Kammu loans. The word *wáaj* ‘cotton’ (A34) has *w-H* in Kammu. It does not seem implausible that *\*f* was rendered by [hw] in pre-tonogenesis Kammu, and then regularly became *w-H* in Northern Kammu, but it may also be the case that this word is not borrowed from the Tai word for ‘cotton’, but from the word ‘rattan’, Lao and Lü *hwaaj*, with PSW *\*hw*. Perhaps this word belongs to Layer 1.

The Proto-Southwestern Tai onsets *\*s* and *\*h* are retained unchanged in Kammu, Lao and Lü, and give high tone in Kammu. For words which have *h* in Kammu, Lao and Lü, but no Proto-Southwestern Tai reconstructed form, it

cannot be determined if the Proto-Southwestern Tai onset was *\*h* or *\*hr/\*xr* (A56), but these words are listed under *\*h* in A36.

## 10. VOICED FRICATIVES

	<i>PSW</i>	<i>Lao</i>	<i>Lü</i>	<i>Kammu</i>
A37	<i>*v</i>	v [f]	v [f]	p-L p <sup>h</sup> -H
A38	<i>*z</i>	ʃ [s]	z [s]	s-H
A39	<i>*ɣ</i>	g [k <sup>h</sup> ]	ɣ/g [x/k]	k-L k <sup>h</sup> -H
A40	<i>*ɣw</i>	gw [k <sup>h</sup> w]	ɣw [xw]	kw-L

The onset *\*v* is retained in written Lao and Lü, but the pronunciation is changed to [f] in the modern languages. In Kammu, it developed like *\*b*, becoming *p*-L in Layer 2 and *p<sup>h</sup>*-H in Layer 3, borrowed after *\*v* > [f] in the donor language.

PSW *\*z* has the reflexes ʃ [s] in Lao, merging with PSW *\*ʃ*, but the Lü reflex *z* [s] is distinct from the reflex ʃ [ts] of PSW *\*ʃ*. The correspondence in Kammu is s-H. Since there was no voiced [z] in pre-tonogenesis Kammu, [z] was rendered as [s] by the Kammu speakers (just as many speakers of Swedish (including me) tend to replace English or German [z] with [s]); voiceless [s] regularly gave rise to high tone in Kammu tonogenesis. As mentioned above, words with Kammu s, Lao ʃ [s] and no attested Lü or Proto-Southwestern Tai form are listed under PSW *\*ʃ* (A27).

In Lao, PSW *\*ɣ* merged with *\*g* to give *g* [k<sup>h</sup>]. In written Lü, *\*g* became *g* [k], but *\*ɣ* became either *ɣ* [x] (6 cases in my material) or *g* [k] (3 cases). Kammu has *k*-L (Layer 2) or *k<sup>h</sup>*-H (Layer 3). Thus the Kammu reflexes are the same as those of *\*g*, but there is a higher proportion of *k<sup>h</sup>*-H in words with PSW *\*ɣ* than in those with *\*g* (6/11 = 55% vs 1/12 = 8% in those words where Li reconstructs *\*ɣ* and *\*g*, respectively). It may also be noted that 5 out of 6 words with Lü *ɣ* have *k<sup>h</sup>*-H in Kammu. The onset cluster *\*ɣw* became *kw*-L in Kammu, *gw* [k<sup>h</sup>w] in Lao and *ɣw* [xw] in Lü (A40).

## 11. VOICED SONORANTS

	<i>PSW</i>	<i>Lao</i>	<i>Lü</i>	<i>Kammu</i>
A41	<i>*m</i>	m	m	m-L
A42	<i>*mL</i>	m	m(l) [m]	m-L
A43	<i>*n</i>	n	n	n-L
A44	<i>*ɲ</i>	ɲ	ɲ [j]	ɲ-L
A45	<i>*ŋ</i>	ŋ	ŋ	ŋ-L
A46	<i>*ŋw</i>	ŋ/w	w	ŋ-L/w-L
A47	<i>*l</i>	l	l	l-L
A48	<i>*r</i>	r [h]	r [h]	r-L h-H
A49	<i>*w</i>	w	w	w-L
A50	<i>*j</i>	ɲ	ɲ [j]	j-L

The voiced nasals, the liquid *\*l* and the glide *\*w* are retained unchanged in all three languages (although written Lü *ɲ* is pronounced [j]). The Kammu loans have low tone, with a few irregular exceptions with high tone.

PSW *\*r* merged with *\*h* in modern Lao and Lü, but the contrast is retained in the writing systems, where different letters are used, here transliterated *r* and *h*, respectively. The contrast is retained as a tone difference in the modern pronunciation, but this is not relevant for the Kammu loans. Most Kammu loans (Layer 2) with PSW *\*r* have *r*-L. Later loans (Layer 3) have Kammu *h*-H, and a few words irregularly have *r*-H with high tone. There are also a number of words where Kammu has *l*-L, but Lao and Lü have *r*; they might have come to Northern Kammu from (or via) some language (Tai or a Kammu dialect) which does not distinguish between [r] and [l].

The PSW glide *\*j* merged with *\*ɲ* to *ɲ* in written Lao and Lü (pronounced [ɲ] and [j], respectively, in these two languages), but is kept distinct from *\*ɲ* in Kammu, where its reflex *j*-L is different from the reflex *ɲ*-L of *\*ɲ*. Li reconstructs *\*hɲ* in the word *ɲìɲ* ‘woman’, but the forms in the languages treated here suggest *\*j*.

The onset cluster *\*mL* (where *L* stands for *l* or *r*) merged with *\*m*. In the word *màa* ‘horse’, Lü has *ml* [m], so the Proto-Southwestern Tai form may have been *\*mL*; cf. the reconstructed Old Chinese form *\*mraʔ* (Baxter 1992: 775) and *hm.ràɲ*, which is the ordinary Kammu word for ‘horse’.

The three examples of *\*ɲw* developed in different ways.

## 12. VOICELESS SONORANTS

	PSW	Lao	Lü	Kammu
A51	*hm	hm [m]	hm [m]	m-H m-L
A52	*hn	hn [n]	hn [n]	n-H n-L
A53	*hɲ	hɲ [ɲ]	hj [j]	ɲ-H
A54	*hŋ	—	hŋ [ŋ]	ŋ-H
A55	*hl	hl [l]	hl [l]	l-H l-L
A56	*hr, *xr	h [h]	h(r) [h]	r-H h-H
A57	*hw	hw [w]	hw [w]	w-H w-L

Proto-Southwestern Tai had the voiceless nasals *\*hm*, *\*hn*, *\*hɲ*, *\*hŋ*, the voiceless liquids *\*hl*, *\*hr* and the voiceless glide *\*hw*. There was also an onset cluster *\*xr*, which behaves like *\*hr* in the languages treated here. Li does not reconstruct *\*hj*, but the possible existence of this onset is discussed in Section 13 below.

The onsets *\*hm*, *\*hn*, *\*hl* and *\*hw* are unchanged in written Lao and Lü, but became voiced in the modern languages. Most Kammu loans belong to Layer 2, having the corresponding voiced sonorant and high tone. Not so few words belong to Layer 3 and have low tone in Kammu, since they were borrowed after they had become voiced in the donor language (cf. (3b) above).

The regular reflex of *\*hɲ* is *hɲ* [ɲ] in Lao and *hj* [j] in Lü. Kammu loans have *ɲ*-H.



No word reconstructed with *\*hŋ* by Li is found in the Kammu material; two words (*ŋɔʔ* ‘disabled’ and *ŋɔɔp* ‘drowsy’) which possibly had this onset are listed in A54.

The PSW onsets *\*hr* and *\*xr* have merged with *\*h* in (written and spoken) Lao and Lü, becoming *h*; in a few words written Lü has *hr* [h]. Kammu loans have *r*-H (Layer 2) or *h*-H (Layer 3), both with high tone. For words with *h* in Kammu, Lao and Lü, where no Proto-Southwestern Tai reconstruction exists, it cannot be determined if the PSW onset was *\*hr*/*\*xr* or *\*h*. These words are listed under *\*h* (A36).

### 13. GLOTTALIZED VOICED SONORANTS

	<i>PSW</i>	<i>Lao</i>	<i>Lü</i>	<i>Kammu</i>
A58	<i>*ʔj</i>	j	j	<sup>ʔ</sup> j-H
A59	<i>*hj</i>	j	hj [j]	<sup>ʔ</sup> j-H

Li (1977) reconstructs a glottalized glide *\*ʔj* in Proto-Southwestern Tai. Its reflex is *j* in Lao, and Kammu loans have <sup>ʔ</sup>j-H. Written Lü, however, has two different reflexes of *\*ʔj*, one is *j* [j] (A58), and the other one is *hj*, also pronounced [j] (A59). Since they occur in the same environments, they should be the reflexes of two different Proto-Southwestern Tai onsets. For the set in (A58), Li’s *\*ʔj* seems appropriate, and the most obvious choice for the set in (A59) is *\*hj*, which is the only missing voiceless sonorant in Li’s Proto-Southwestern Tai system. It is, however, difficult to understand why loanwords in Kammu have <sup>ʔ</sup>j-H in loans with PSW *\*hj*, since [hj] exists in pre-tonogenesis Kammu (and still in non-tonal Eastern Kammu), and developed to /j-H/ rather than <sup>ʔ</sup>j-H in Northern Kammu. The onsets *j*-H and <sup>ʔ</sup>j-H do contrast in Northern Kammu, e.g. in *jáaŋ* ‘female’ vs. <sup>ʔ</sup>jáaŋ ‘resin’. One possibility is that *\*hj* and *\*ʔj* merged to [j], possibly pronounced [ʔj] in Tai before these words entered Kammu. There is, however, also the possibility that *hj* in written Lü is an artificial orthographic device.

### 14. CONCLUSION

With the possible exception of a few loans in Layer 1, the Tai loans in Kammu were borrowed after the Proto-Southwestern Tai stage, since phonological features found in Proto-Tai but not in Proto-Southwestern Tai have left very few traces in the Kammu loans. On the other hand, the early loans in Layer 2 must have entered Kammu soon after the Proto-Southwestern Tai stage since there are only a few early changes within Proto-Southwestern Tai, which are not reflected in the Kammu loans. These are the mergers of the clusters *\*p<sup>h</sup>l*, *\*k<sup>h</sup>l* and *\*mL* with *\*p<sup>h</sup>*, *\*k<sup>h</sup>*, *\*m*, the merger of *\*ɓL* and *\*d* and the merger of *\*hr* and *\*xr*. All these mergers took place in written Lao and Lü as well. Li (1977: 256) gives *\*hr* and *\*xr* as two different Proto-Southwestern Tai onsets, but his remarks in the sections on these onsets (pp. 120ff., 148ff., 233ff.) suggest that they actually had merged at the Proto-Southwestern Tai stage.

Some other contrasts were lost in the Kammu loans because of adaptation to the Kammu consonant system: The voiceless fricative *\*f* and the voiced fricatives *\*z*, *\*v*, *\*ɣ*, which did not occur in Kammu, were rendered as *p<sup>h</sup>*, *s*, *b*, *g*, merging in (pre-tonogenesis) Kammu with these Proto-Southwestern Tai onsets. In addition, PSW *\*k<sup>h</sup>r* and *\*kr* (and perhaps *\*c<sup>h</sup>r* and *\*cr*) merged in Kammu, where these onsets do not contrast.

The Kammu loans make a clear distinction between *\*k<sup>h</sup>r* and *\*k<sup>h</sup>l* and between *\*p<sup>h</sup>r* and *\*p<sup>h</sup>l*, not made in Tai according to Li. A few additional onset clusters (*cr*, *t<sup>h</sup>w*, *c<sup>h</sup>r*, *dr*, *ɟr*) are suggested by the Kammu material, but this is supported by only very few words for each onset. The contrast between *\*hr*/*\*xr* and *\*h*, which occurs only in Ahom within Southwestern Tai, and is lost in Lao and Lü, is upheld clearly in Kammu. All this suggests that the early loans (Layer 2) started to enter Kammu very soon after the Proto-Southwestern Tai stage, before the creation of the Lao and Lü writing systems (probably in the 13th century) and before the Tai tone split.

Words in Layer 3 were borrowed after the change of the Proto-Southwestern Tai onset, either a cluster simplification, a change related to the Tai tone split (*\*voiceless sonorant > voiced*; *\*voiced stop > voiceless aspirated*) or one of the individual changes that occurred (*\*hr*, *\*xr*, *\*r > h*; *\*ɟ > s*, etc.). Since these changes did not take place at the same time, no absolute time limit can be drawn between Layers 2 and 3.

For those 20 words in the Kammu material where Li reconstructs *\*pl* or *\*kl* (which are those clusters where the only change within Tai is the loss of the liquid), only 50% retain the cluster in Kammu (i.e. belong to Layer 2). Words in the Kammu material where Li reconstructs voiced stops (*\*b*, *\*d*, *\*ɟ*, *\*g*; 53 words) and voiceless sonorants (*\*hm*, *\*hn*, *\*hl*, *\*hw*; 54 words; *\*hr* was not counted because it changed to *h* in Lao and Lü) have a much higher proportion of Layer 2 loans, 89% and 72%, respectively. A high proportion of Layer 2 loans indicates that the older form of the word was available for borrowing for a longer time and thus that the change eliminating it was later. Thus the Kammu material confirms that the loss of onset clusters was earlier than the tone split changes in Tai, as is also indicated by the loss of clusters in written Lao and Lü.

Words in Layer 3 are usually closer to Lao than to Lü in those cases when there is a difference between the two languages, as is the case for *\*voiced stop* onsets. As mentioned above, the specific Lü vowel changes are seldom reflected in the Kammu loans, so when they took place, Kammu borrowed mostly from Lao.

The words in Layers 2 and 3 were borrowed before Northern Kammu tonogenesis, as shown by the tone developments in these loans, and also by the fact that the Tai tones are completely ignored in these Kammu loanwords. This shows that Northern Kammu tonogenesis took place rather recently, after the Tai tone split, perhaps only a couple of centuries ago. This is also suggested by the fact that tonal Northern Kammu and non-tonal Eastern Kammu are completely

mutually understandable dialects, whose phonological structures are identical at a level just below the surface (Svantesson & House 2006).

### APPENDIX: TAI LOANWORDS IN KAMMU

In this appendix, the identified Tai loanwords occurring in our Kammu–English dictionary (Svantesson et al. ms.) are listed and their written Lao and Lü forms (transliterated as in Tables 3 and 4) are given. The modern pronunciation of the onset is given in square brackets if it differs from the written form. The few di- or polysyllabic loans which occur are not listed. Each word is classified under the Proto-Southwestern Tai onset they belong to, as suggested by the Lao, Lü and Kammu forms, even when it differs from Li’s reconstruction. The Proto-Southwestern Tai onset given in the ‘PSW’ column inside the table is always Li’s reconstruction, however. For example the word for ‘year’ is listed under PSW *\*pl* (A2) because written Lü has *pl*, although Li reconstructs *\*p*, and Kammu (which often retains clusters like *pl*) has *p*. The reconstruction is, of course, uncertain in such cases.

In the appendices, words in Layers 2 and 3 are labeled L2 and L3, and ambiguous words are labeled L. Words with a tonal mismatch are labeled T, and some words which seem to be borrowed, but with irregular developments, are labeled I.

<i>A1. Proto-Southwestern Tai *p</i>					
	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L		páʔ	—	paʔ	to meet
	*p	páj	paj	paj	to go
	*p	pán	pan	pan	to divide
	*p	pán	pan <sup>2</sup>	pan <sup>2</sup>	to knead
	*p	pát	pet	pet	duck
	*p	pát	pat	pat	to swat
	*p	páa	paa <sup>1</sup>	paa <sup>1</sup>	forest
		páaj	—	paaj <sup>1</sup>	to whip
		páaj	paaj <sup>2</sup>	—	sign
	*p	páak	paak	paak	mouth
	*p	páan	paan <sup>1</sup>	paan <sup>1</sup>	ramie
		páan	paan	paan	birthmark
		páaŋ	paan <sup>2</sup>	paan <sup>2</sup>	spleen
		páaŋ	—	paan	temporary village
		páap	paap	—	to frighten
	*p	páat	paat	paat	to slice
	*p	páaw	paaw	paaw <sup>1</sup>	to inform
		páaw	paw <sup>2</sup>	—	target
	*p	pén	pen	pen	to be
		pəət	pəət	pít	to open
		péʔ	péʔ	—	to join

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		πέε	πεε <sup>2</sup>	pe <sup>2</sup>	lame
		πέε	πεε	—	to interpret
	*p	πέεν	πεεν <sup>2</sup>	pen <sup>2</sup>	board
		πέεη	πεεη	peη	to make
		πέεη	πεεη	—	brush
		πέετ	πεετ	—	to stick to
	*p	πέετ	πεετ	pet <sup>1</sup>	eight
		πίʔ	—	piʔ	faint from hunger
	*p	πίι	pii <sup>1</sup>	pii <sup>1</sup>	flute
		πίαp	piap	—	to compare
		πίη	piη	—	bamboo
		πία	pua	pua	to treat
		πίαj	piaj <sup>1</sup>	—	tender
		πίαν	pian <sup>2</sup>	—	dirty
		πόʔ	poʔ	poʔ	together
		πόk	pok	—	to rule
		πόν	pon	—	to mix
		πόη	poη	—	375 g
		πότ	pit	—	to pick off
		πόom	pom	pom	knob
		πόot	poot	poot	broken
		πόɔ	poɔ	po	<i>Mallotus barbatus</i>
		πόom	poom	poom	forged
		πόom	poom <sup>2</sup>	—	<i>Eryngium foetidum</i>
		πόoη	pooη <sup>1</sup>	poη <sup>1</sup>	scorpion
		πόop	poop	—	tiger spirit
		πούη	puη <sup>1</sup>	puoη <sup>1</sup>	salt-pond
		πούτ	put	put	broken
		πούum	puum	puum	stomach
		πούun	puun	puun	lime
		πούaj	puaj <sup>1</sup>	—	sick
	*ɖ	πούaη	puaη <sup>1</sup>	—	side
		πούat	puat	puat	to ache
T		πίτ	pit	—	to shut
		πίim	piim <sup>2</sup>	—	book
		πίin	piin	pin	gun
	*p	πόot	poot	pot <sup>1</sup>	lung
		πούj	puj	—	manure
I		p <sup>h</sup> éek	peek	pek <sup>1</sup>	pine

## A2. Proto-Southwestern Tai \*pl

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2		pláʔ	—	paʔ	to split
		pláh	paʔ	paa <sup>2</sup>	to release
	*p	plák	pak	pak	to beat
		pláa	paa <sup>2</sup>	paa <sup>2</sup>	citizen
		pláaj	paaj	paaj	more than
		plók	pək	pək	5th term in 10-cycle
		pléek	peek	—	strange
		pléen	peen	—	cleared

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*pl	plíŋ plía plíaŋ plón plónŋ plót pót plóŋŋ	piŋ pia <sup>2</sup> piaŋ pon <sup>2</sup> poŋ <sup>1</sup> pot poŋ	piŋ pe <sup>2</sup> pəŋ — — pot puuŋ	leech lame wasted to rob to sprout to push down to throw down
	*pl	plóʔ plóɔ	paw <sup>1</sup> paw <sup>2</sup>	paw <sup>1</sup> paw <sup>2</sup>	flattened 2nd term in 12-cycle
	*pl	plóɔj	pɔɔj <sup>1</sup>	pɔj <sup>1</sup>	to release
	*pl	plóɔk plóɔŋ póɔŋ	pɔɔk pɔɔŋ <sup>1</sup>	pɔk pɔŋ <sup>1</sup>	ring to make a hole window
	*pl	plóɔŋ póɔŋ plóɔt	pɔɔŋ <sup>2</sup> pɔɔt	pɔŋ <sup>2</sup> pɔt <sup>1</sup>	calf of leg section flawless
L3	*pl	páa	paa	paa	fish
	*p	píi	píi	[p] plii	year
	*pl	píin	píin <sup>2</sup>	pin <sup>2</sup>	to turn around
	*pl	pían	pian <sup>1</sup>	pian <sup>1</sup>	to change
T	*pl	púuk plùŋ	puuk poŋ <sup>1</sup>	puuk puuŋ <sup>1</sup>	to plant sucker (shoot)

A3. Proto-Southwestern Tai \*t

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*t	táj	taj <sup>1</sup>	taj <sup>1</sup>	to creep
	*t	táj	taj <sup>2</sup>	taj <sup>2</sup>	down
		táj	—	taj <sup>1</sup>	to look for
	*t	táj	taj <sup>2</sup>	taj <sup>2</sup>	to light
	*t	ták	tak	tak	insect
	*t	tám	tam	tam	to beat
	*t	tán	tan	tan	solid
		tán	[t <sup>h</sup> ] dan	taan	jube
	*t	tánŋ	taŋ <sup>2</sup>	taŋ <sup>2</sup>	to build
	*t	tánŋ	taŋ <sup>1</sup>	taŋ <sup>1</sup>	stool
	*t	táp	tap	tap	liver
		tát	tat	—	to decide
		tát	tat	—	to forbid
	*t	táw	taw <sup>1</sup>	taw <sup>1</sup>	tortoise
		táw	taw	taw	oven
	*t	táw	taw <sup>2</sup>	taw <sup>2</sup>	gourd
	*t	táa	taa	taa	eye
	*t	táaj	taaj	taaj	to die
	*t	táam	taam	taam	to follow
	*t	táan	taan	taan	Palmyra palm
		táan	taan <sup>2</sup>	—	to dig
	*t	táanŋ	taanŋ <sup>1</sup>	taanŋ <sup>1</sup>	another
		táanŋ	taanŋ <sup>1</sup>	taanŋ <sup>1</sup>	to transport
		táanŋ	taanŋ	taanŋ	instead of
		táap	taap	taap	to cover
	*t	táat	taat	taat	waterfall
		téʔ	teʔ	—	to kick

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	ték	tek	tek	to press down
*t	tém	tem	tiam	full
	tén	ten <sup>2</sup>	—	to jump
	téŋ	teŋ	tiŋ	to press down
	téʔ	teʔ	teʔ	altar
*t	téek	teek	tek <sup>1</sup>	to break
	téem	teem <sup>2</sup>	tem <sup>2</sup>	to make
*t	téeŋ	teeŋ	teŋ	melon
	téeŋ	teeŋ <sup>1</sup>	teŋ <sup>1</sup>	to prepare
	tís	tiʔ	tiʔ	to criticize
*t	tíi	tii	tii	to beat
	tíi	tii	—	to set a price
*t	tíin	tiin	tin	foot
	tíiŋ	—	tiŋ	to fall over
	tíaŋ	tiaŋ	—	bed
	tíaw	tiaw <sup>1</sup>	tiaw <sup>1</sup>	trousers
	tít	tut	tít	to stop
	tít	tit	tit	to stick to
	tíi	tii <sup>2</sup>	tí <sup>2</sup>	thousand millions
	tíik	—	tík <sup>1</sup>	tapeworm
*t	tíin	tíin <sup>1</sup>	tín <sup>1</sup>	to wake up
*t	tían	tian	tən	to warn
	tóʔ	toʔ	—	table
*t	tók	tok	tok	to fall
	tók	tok	tok	to arrive
	tók	tok	tok	to fish
	tók	tok	—	to miss
*t	tóm	tom <sup>2</sup>	tuum <sup>2</sup>	to boil
*t	tón	ton <sup>2</sup>	tuun <sup>2</sup>	trunk
	tóŋ	—	tuaŋ <sup>1</sup>	bamboo tube
*t	tóo	tua	tua	body
	tóoŋ	—	tuaŋ	cage
*t	tóo	tóo <sup>1</sup>	tóʔ	to join
	tóo	taw <sup>1</sup>	taw <sup>1</sup>	9th term in 10-cycle
	tóo	tóo <sup>1</sup>	tó <sup>1</sup>	to tease
	tóo	tóo <sup>1</sup>	tó <sup>1</sup>	against
*t	tóoj	tóoj <sup>1</sup>	tój <sup>1</sup>	to beat
*t	tóok	tóok	tók <sup>1</sup>	to knock in
	tóom	tóom	tóm	to gather
*t	tóon	tóon	tón	to castrate
*t	tóon	tóon <sup>2</sup>	tón <sup>2</sup>	to welcome
	tóon	tóon	tón <sup>1</sup>	piece
	tóon	tóon	—	time
	tóoŋ	tóoŋ <sup>2</sup>	tóŋ <sup>2</sup>	must
	tóoŋ	tóoŋ <sup>1</sup>	—	to pour out
	tóoŋ	tóoŋ <sup>2</sup>	tóŋ <sup>2</sup>	to stamp
*t	tóop	tóop	tóp <sup>1</sup>	to answer
*t	túm	tum <sup>1</sup>	tuum <sup>1</sup>	blister
	túm	tum <sup>2</sup>	tom <sup>2</sup>	fishing trap
*t	túu	(paʔ) tuu	tuu	door

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		túu	tuu <sup>1</sup>	tuu <sup>2</sup>	to accuse falsely
		túu	tuu <sup>2</sup>	—	cabinet
		túuj	tuuj <sup>2</sup>	tuuj <sup>2</sup>	fat
		túum	tuum <sup>2</sup>	—	to carry
		túun	tun <sup>1</sup>	—	bamboo rat
		túup	tuup	tuup	hut
		túut	—	tuut	horn
T	*t	tàk	tak	tak	to scoop up
		tàan	taan <sup>2</sup>	—	to fight
		tàaw	taaw	—	Wallich palm
		tèε	tεε <sup>1</sup>	tε <sup>1</sup>	from
		tèε	tεε <sup>1</sup>	—	but
	*t	tòp	top	top	to clap
		tòm	tòm	tom	to swarm
		tòn	toon	tuan	to jump off
	*t	tònɣ	tɔŋ	tɔŋ	leaf

A4. Proto-Southwestern Tai \*c

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L	*c	cáj	caj	[ts]	caj	heart
		cám	cam	[ts]	cam	to remember
		cám	cam		—	to reach
		cám	—	[ts]	cam	scoop-net
	*c	cáp	cap	[ts]	cap	to hold
		cáp	—	[ts]	cap	just enough
	*c	cáw	caw <sup>2</sup>	[ts]	caw <sup>2</sup>	master
		cáa	caa	[ts]	caa	to speak
		cáaj	caaj <sup>1</sup>	[ts]	caaj <sup>1</sup>	to distribute
	*c	cáan	caan	[ts]	caan	plate
		cáaŋ	caan <sup>2</sup>	[ts]	caan <sup>2</sup>	to hire
		cáat	caat		—	a kind of carp
		cáaw	caaw <sup>2</sup>	[ts]	caaw <sup>2</sup>	to boil
	*c	cép	cep	[ts]	cep	pain
	*c	cét	cet	[ts]	cet	seven
		cét	cat		—	to inquire
		céeŋ	ceen <sup>2</sup>		—	to go bankrupt
		cóə	caj <sup>2</sup>	[ts]	caj <sup>2</sup>	1st term in 12-cycle
		céek	ceek	[ts]	cek <sup>1</sup>	to distribute
		céen	ceen <sup>2</sup>		—	cup
		céeŋ	ceen <sup>2</sup>	[ts]	ceen <sup>2</sup>	light
		céeŋ	ceen <sup>1</sup>	[ts]	ceen <sup>1</sup>	corner
		céew	ceew <sup>1</sup>		—	chilli sauce
		cíŋ	ciŋ	[ts]	ciŋ	true
		cíp	cip		—	dip-net
		cíp	cip	[ts]	cip	to die out
	*c	cíi	cii <sup>1</sup>	[ts]	cii <sup>1</sup>	to burn
		cíam	ciam		—	shy
		cían	—	[ts]	cian	wool
		cíaŋ	ciaŋ	[ts]	ciaŋ	first
		cíi	cii <sup>1</sup>	[ts]	ci <sup>1</sup>	to remember

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
		c̄in	ciin	[ts]	cin	to melt
		cók	cok	[ts]	cok	to take out
	*c	cóm	com	[ts]	cuum	to sink
		cón	con		—	poor
		cón	con		—	until
		cót	cot	[ts]	cot	to write
		cóon	coon	[ts]	cuan	thief
		cóot	coot		—	to interrogate
		cók	cək	[ts]	cək	cup
		cóm	cəm		—	leech lime
		cóŋ	cəŋ <sup>2</sup>	[ts]	cəŋ <sup>2</sup>	umbrella
		cóŋ	cəŋ <sup>1</sup>		—	to fasten
		cóp	cəp		—	to persuade
		cót	cət	[ts]	cət <sup>1</sup>	to caulk
		cót	cət	[ts]	cət <sup>1</sup>	to land
		cót	—	[ts]	cət <sup>1</sup>	all over
		cúk	cuk	[ts]	cuk	mandarin
		cúm	cum <sup>2</sup>		—	to come together
		cúp	cup	[ts]	cup	full
		cút	cut		— spot	
		cúut	—	[ts]	cuut	to poke
		cúaŋ	cuaŋ	[ts]	cuaŋ	<i>Viburnum inopinatum</i>
		cúap	cuap	[ts]	coop	to meet
T		càk	cak	[ts]	cak	machine
		càŋ	caŋ <sup>1</sup>	[ts]	caŋ <sup>1</sup>	then
		càa	caa <sup>1</sup>	[ts]	caa <sup>1</sup>	warrant officer
	*c	càak	caak	[ts]	caak	to part from
		càaŋ	—	[ts]	caaŋ <sup>1</sup>	to depend on
		cèk	cek		—	Chinese
		cəŋ	ciŋ <sup>1</sup>		—	then
		c̄in	ciin		—	Chinese
		còp	cop	[ts]	cup	to end
		còj	cəj		—	<i>Aglaonema</i> sp.

## A5. Proto-Southwestern Tai \*cr

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L2		cróŋ	cəŋ		—	to scoop up

## A6. Proto-Southwestern Tai \*k

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L		ká?	ka?		ka?	to estimate
		ká?	ka?		—	tiger spirit
	*k	kám	kam		kam	to measure
		kám	kam		kam	destiny
		kám	kam		—	arrow
	*k	kán	kan		kan	each other
		kán	kan		kan <sup>1</sup>	to protect
		kán	kan <sup>1</sup>		—	tight
		káŋ	kaŋ <sup>2</sup>		kaŋ <sup>2</sup>	to block
	*k	káp	kap		kap	and



PSW	Kammu	Lao	Lü	
	káp	kap	kap	box
	káp	kap	—	snap-trap
*k	kát	kat	kat	to bite
	kát	kat	kat	6th term in 10-cycle
	kát	kat	kat	cold
*k	káw	kaw <sup>2</sup>	kaw <sup>2</sup>	nine
*k	káa	kaa	kaa	crow
	káa	kaa	—	stamp
	káa	kaa <sup>1</sup>	kaa <sup>1</sup>	10th term in 10-cycle
	káa	—	kaa	kettle
	káaj	kaaj <sup>1</sup>	kaaj <sup>1</sup>	to lay across
	káam	kaam <sup>2</sup>	—	arm muscle
	káan	kaan	—	to ringbark
	káan	kaan	kaan	work
	káan	kaan <sup>1</sup>	kaan <sup>1</sup>	spot
	káan	kaan <sup>2</sup>	kaan <sup>2</sup>	clf. for umbrellas
*k	káaŋ	kaaŋ	kaaŋ	to stretch
	káap	kaap	kaap	leaf sheath
	káap	kaap	kaap	1st term in 10-cycle
	káat	kaat	kaat	market
	káat	—	kaat	to scrape off
	káaw	kaaw	—	glue
	kéŋ	keŋ <sup>1</sup>	kěŋ	clever
*k	kép	kep	kep	to collect
	kót	—	kət	to stop
	kóəp	kəəp	kəəp	shoe
	kóət	kəət	kət	to give birth
	kéʔ	keʔ	—	sheep
	kée	keε <sup>2</sup>	ke <sup>2</sup>	to repair
	kéem	keem <sup>2</sup>	—	to eat snacks
*k	kéen	keen <sup>1</sup>	ken <sup>1</sup>	hard
	kéen	keen <sup>1</sup>	ken <sup>1</sup>	seed
	kéeŋ	keεŋ <sup>2</sup>	—	rapids
	kéeŋ	keεŋ <sup>2</sup>	—	to harrass
*k	kéew	keew	—	Vietnamese
	kéew	keew <sup>2</sup>	kew <sup>2</sup>	glass
*k	kín	kin	kin	to eat
*k	kiit	kiit	kiit	crowded
	kiiw	kiiw <sup>1</sup>	kiw <sup>1</sup>	valley
*k	kiaw	kiaw <sup>1</sup>	kiaw <sup>1</sup>	to cut with a sickle
	kít	kit	—	burial site
	kía	kia	—	to sacrifice
	kíap	kiap	—	almost
	kók	kok	kok	trunk
	kók	kok	kək	pipe
	kók	kək	—	<i>Spondias pinnata</i>
*k	kóm	kom <sup>2</sup>	kum <sup>2</sup>	to bend
*k	kóŋ	—	koŋ	bow
	kóŋ	koŋ <sup>1</sup>	kuoŋ <sup>1</sup>	to bend
*k	kóp	kop	kop	frog

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		kót	kot	kot	7th term in 10-cycle
		kót	kot	kot	principle
		kóot	koot	koot	ten millions
		kóɔ	kɔɔ <sup>1</sup>	kɔ <sup>1</sup>	to begin
		kóɔm	kɔɔm	kɔm	round
		kóɔm	—	kɔm <sup>2</sup>	segment
		kóɔn	—	kɔn <sup>1</sup>	really
		kóɔn	kɔɔn <sup>2</sup>	kɔn <sup>2</sup>	piece
	*k	kóɔŋ	kɔɔŋ	kɔŋ	stack
		kóɔŋ	kɔɔŋ	—	group
		kúm	kum <sup>2</sup>	—	to bury
	*k	kúu	kuu	kuu	I
		kúu	kuu <sup>2</sup>	kuu <sup>2</sup>	to borrow
	*k	kúut	kuut	kuut	wild lime
		kúut	kuut	—	bent backwards
		kúan	kuan	kuan	to disturb
		kúan	kuan <sup>2</sup>	—	goby
		kúat	kuat	kuat	to inspect
T		kèen	keen	—	to gather
		kəən	kəən	—	to exceed
		kòŋ	koŋ	—	to cheat
		kòok	—	kuak	gourd
		kùt	kut	kut	broken

## A7. Proto-Southwestern Tai \*kl

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2	*kl	kláaj	kaaj	kaaj	to become
	*kl	kláaŋ káaŋ (sŋ)klíaŋ kíaŋ	kaaŋ kiaŋ <sup>2</sup>	kaaŋ kiaŋ <sup>2</sup>	middle orange
	*kl	klíaw	kiaw	kiaw <sup>2</sup>	to twine
		klín	kin <sup>1</sup>	kin <sup>1</sup>	smell
	*kl	klíp	kup	kup	rainhat
		klía	kua <sup>2</sup>	—	everywhere
		klíak	kiak	kək <sup>1</sup>	to roll on the ground
		klóm	kom	kom	round
		klúm	kum <sup>2</sup>	koom	to cover
	*kl	klúaj	kuaj	kuaj	basket
L3	*k	káj	kaj <sup>1</sup>	[k] klaj <sup>1</sup>	hen
	*k	káw	kaw <sup>1</sup>	[k] klaw <sup>1</sup>	old
	*kl	káa	kaa <sup>2</sup>	[k] klaa <sup>2</sup>	seedbed
		káa	kaa <sup>2</sup>	[k] klaa <sup>2</sup>	brave
	*kl	két	ket	ket	scale
	*k	kéε	kεε <sup>1</sup>	[k] klε <sup>1</sup>	old
	*kl	kíip	kiip	—	clf. for flat objects
	*kl	kía	kiá	kə	salt
	*kl	kóɔŋ	—	kɔŋ <sup>2</sup>	tobacco pipe
	*kl	kúaj	kuaj <sup>2</sup>	kuaj <sup>2</sup>	banana
T		klùm	kum <sup>2</sup>	—	tired
		klùm	kum <sup>1</sup>	—	group

## A8. Proto-Southwestern Tai \*kr

	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2	kráaŋ	kaaŋ	[x] k <sup>h</sup> aŋ <sup>2</sup>	to block
	kríaŋ	kiaŋ	—	<i>Syzygium cumini</i>
	krón	koon	—	creased
	króop	koop	—	to keep legs together
	krúj	kuj	—	bad smell

## A9. Proto-Southwestern Tai \*kw

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*kw	kwáa	kwaa <sup>1</sup>	—	more
		kwáak	kwaak	—	<i>Garcinia pedunculata</i>
	*kw	kwáaŋ	kwaan <sup>2</sup>	kwaan <sup>2</sup>	wide
	*kw	kwáat	kwaat	—	to scrape
		kwéen	kween <sup>1</sup>	—	to love
		kwéen	kween <sup>1</sup>	—	to coil up

## A10. Proto-Southwestern Tai \*ʔ

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*ʔ	ʔàn	ʔan	ʔan	classifier
		ʔàn	ʔan <sup>2</sup>	ʔan <sup>2</sup>	to put in
		ʔat	ʔat	ʔat	to stop
	*ʔ	ʔaw	ʔaw	—	to take
	*ʔ	ʔaa	ʔaaw	ʔaaw	uncle
	*ʔ	ʔaa	ʔaa <sup>2</sup>	ʔaa <sup>2</sup>	to open
	*ʔ	ʔaaj	ʔaaj <sup>2</sup>	ʔaaj <sup>2</sup>	elder brother
		ʔaaj	ʔaaj	ʔaaj	shy
	*ʔ	ʔaan	ʔaan <sup>1</sup>	ʔaan <sup>1</sup>	to count
	*ʔ	ʔaaŋ	ʔaaŋ <sup>1</sup>	ʔaaŋ <sup>1</sup>	tub
		ʔaat	ʔaat	—	authority
	*ʔ	ʔèt	ʔet	ʔet	one
		ʔèt	ʔet	ʔit	a little
		ʔèek	ʔeek	ʔek	one
		ʔəŋ	ʔəŋ	—	a kind of carp
		ʔəən	ʔəən <sup>2</sup>	ʔəŋ	to call
		ʔəəp	—	ʔəəp	basket
		ʔɛʔ	—	ʔɛ	shit
		ʔɛɛ	ʔɛɛ <sup>2</sup>	ʔɛ <sup>2</sup>	swim bladder
	*ʔ	ʔèek	ʔeek	ʔek <sup>1</sup>	to carry on one's back
		ʔèep	ʔeep	ʔep	rice basket
		ʔèep	ʔeep	—	to train
		ʔèew	—	ʔew <sup>1</sup>	to visit
		ʔik	ʔiik	ʔiik	again
		ʔin	ʔin	ʔin	Indra
		ʔii	ʔii <sup>1</sup>	ʔii <sup>1</sup>	Miss
		ʔii	ʔii <sup>2</sup>	—	chair
	*ʔ	ʔiiŋ	ʔiiŋ	ʔiiŋ	to lean
		ʔiit	—	ʔiit	machine with rollers
		ʔiaŋ	ʔiaŋ <sup>2</sup>	ʔiaŋ <sup>2</sup>	myna
		ʔiaŋ	ʔiaŋ	—	to tilt

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>
	ʔiaŋ	ʔiaŋ	ʔiaŋ <sup>1</sup>	compete
*ʔ	ʔim	ʔom	ʔom	to hold in mouth
	ʔin	ʔin	—	moist
	ʔit	ʔit	—	to lack
	ʔiŋ	ʔiŋ <sup>1</sup>	ʔiŋ <sup>1</sup>	bullfrog
	ʔiaŋ	ʔiaŋ <sup>2</sup>	—	<i>Hedychium coronarium</i>
*ʔ	ʔòk	ʔok	ʔok	chest
*ʔ	ʔòp	—	ʔop	to fasten
	ʔòp	ʔop	ʔop	to heat
	ʔòt	ʔot	ʔot	to lack
	ʔòt	—	ʔoot	to cook
	ʔòoŋ	ʔooŋ <sup>1</sup>	—	jar
	ʔòop	ʔoop	—	to hold in one's arms
	ʔòɔ	ʔɔɔ	—	to shoal
*ʔ	ʔòɔj	ʔɔɔj <sup>2</sup>	ʔɔj <sup>2</sup>	sugar cane
	ʔòɔj	ʔɔɔj <sup>1</sup>	ʔɔj <sup>1</sup>	to lay bait for
*ʔ	ʔòɔk	ʔɔɔk	ʔɔk <sup>1</sup>	to go out
	ʔòɔm	ʔɔɔm <sup>2</sup>	ʔɔm <sup>2</sup>	to measure
	ʔòɔm	ʔɔɔm <sup>1</sup>	ʔɔm <sup>1</sup>	to boil
*ʔ	ʔòɔn	ʔɔɔn <sup>1</sup>	ʔɔn <sup>1</sup>	soft
	ʔòɔŋ	—	ʔɔŋ	to carry on tusks
	ʔòɔt	ʔɔɔt	ʔuat	to persuade
*ʔ	ʔùn	ʔun <sup>1</sup>	ʔuun <sup>1</sup>	warm
	ʔùu	ʔuu <sup>1</sup>	—	cradle
	ʔùum	—	ʔom <sup>1</sup>	to plate
	ʔùup	ʔuup	ʔuup	box
	ʔùut	ʔuut	—	to blacken
	ʔùut	ʔuut	—	camel
	ʔùan	ʔuan <sup>2</sup>	—	fat
	ʔùat	ʔuat	ʔuat	admire
I	ʔwíaj	ʔuaj <sup>1</sup>	ʔuaj <sup>1</sup>	dirty

*All. Proto-Southwestern Tai \*p<sup>h</sup>*

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L		p <sup>h</sup> áŋ	p <sup>h</sup> aŋ	—	level
		p <sup>h</sup> át	p <sup>h</sup> at	p <sup>h</sup> at	to make appointment
		p <sup>h</sup> át	p <sup>h</sup> at	—	to fry
*p <sup>h</sup>		p <sup>h</sup> áa	p <sup>h</sup> aa <sup>1</sup>	p <sup>h</sup> aa <sup>1</sup>	to cleave
*p <sup>h</sup>		p <sup>h</sup> áa	p <sup>h</sup> aa <sup>2</sup>	p <sup>h</sup> aa <sup>2</sup>	cloth
		p <sup>h</sup> áaŋ	p <sup>h</sup> aaŋ	p <sup>h</sup> aaŋ	lamp
*p <sup>h</sup>		p <sup>h</sup> éen	p <sup>h</sup> een <sup>1</sup>	p <sup>h</sup> en <sup>1</sup>	sheet
		p <sup>h</sup> iŋ	p <sup>h</sup> əŋ <sup>2</sup>	p <sup>h</sup> iŋ <sup>2</sup>	bee
		p <sup>h</sup> iin	p <sup>h</sup> iin	p <sup>h</sup> iin	classifier for clothes
		p <sup>h</sup> ia	p <sup>h</sup> ia <sup>1</sup>	p <sup>h</sup> ə <sup>1</sup>	to add
		p <sup>h</sup> iak	p <sup>h</sup> iak	—	seedbed
		p <sup>h</sup> ian	—	p <sup>h</sup> ən	table
		p <sup>h</sup> ók	p <sup>h</sup> ok	p <sup>h</sup> ok	to hide
		p <sup>h</sup> ón	p <sup>h</sup> on	—	benefit
		p <sup>h</sup> óŋ	p <sup>h</sup> oŋ	p <sup>h</sup> oŋ	powder
		p <sup>h</sup> ɔɔ	p <sup>h</sup> ɔɔ <sup>1</sup>	p <sup>h</sup> ɔ <sup>1</sup>	to look

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		p <sup>h</sup> óɲ	p <sup>h</sup> ɔɲ	p <sup>h</sup> ɔɲ	to measure
		p <sup>h</sup> út	p <sup>h</sup> ut	p <sup>h</sup> ut	come through
	*p <sup>h</sup>	p <sup>h</sup> úu	p <sup>h</sup> uu <sup>2</sup>	p <sup>h</sup> uu <sup>2</sup>	person
<i>A12. Proto-Southwestern Tai *p<sup>h</sup>l</i>					
L3	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*p <sup>h</sup> L	p <sup>h</sup> ák	p <sup>h</sup> ak	p <sup>h</sup> ak	vegetable
	*p <sup>h</sup> L	p <sup>h</sup> íi	p <sup>h</sup> ii	p <sup>h</sup> ii	spirit
	*p <sup>h</sup> L	p <sup>h</sup> óm	p <sup>h</sup> om	p <sup>h</sup> om	hair
<i>A13. Proto-Southwestern Tai *p<sup>h</sup>r</i>					
L2	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*p <sup>h</sup>	práj	p <sup>h</sup> aj <sup>1</sup>	—	bamboo
		práay p <sup>h</sup> áaj	p <sup>h</sup> aaj	p <sup>h</sup> aaj	to spread
		práam	p <sup>h</sup> aam	p <sup>h</sup> aam	hut
		préε	p <sup>h</sup> εεw	—	to tidy up
		prónɲ	p <sup>h</sup> onɲ <sup>†</sup>	p <sup>h</sup> uuɲ <sup>2</sup>	county
		próot	p <sup>h</sup> oot	p <sup>h</sup> uat	to give alms
<i>A14. Proto-Southwestern Tai *t<sup>h</sup></i>					
L	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*t <sup>h</sup>	t <sup>h</sup> áj	t <sup>h</sup> aj	t <sup>h</sup> aj	to plough
	*t <sup>h</sup>	t <sup>h</sup> ák	t <sup>h</sup> ak	t <sup>h</sup> ak	to bind
	*t <sup>h</sup>	t <sup>h</sup> ám	t <sup>h</sup> am <sup>2</sup>	t <sup>h</sup> am <sup>2</sup>	cave
		t <sup>h</sup> át	t <sup>h</sup> at	—	near
	*t <sup>h</sup>	t <sup>h</sup> áw	t <sup>h</sup> aw <sup>2</sup>	t <sup>h</sup> aw <sup>2</sup>	old
		t <sup>h</sup> áw	t <sup>h</sup> aw <sup>1</sup>	—	like
		t <sup>h</sup> áa	t <sup>h</sup> aa <sup>2</sup>	—	if
		t <sup>h</sup> áaj	t <sup>h</sup> aaj <sup>1</sup>	t <sup>h</sup> aaj <sup>1</sup>	to change
		t <sup>h</sup> áak	t <sup>h</sup> aak	t <sup>h</sup> aak	to cut
	*t <sup>h</sup>	t <sup>h</sup> áan	t <sup>h</sup> aan <sup>1</sup>	t <sup>h</sup> aan <sup>1</sup>	charcoal
		t <sup>h</sup> áan	t <sup>h</sup> aan <sup>2</sup>	t <sup>h</sup> aan <sup>2</sup>	platform
		t <sup>h</sup> áaɲ	t <sup>h</sup> aaɲ	t <sup>h</sup> aaɲ	to clear
		t <sup>h</sup> áap	t <sup>h</sup> aap	t <sup>h</sup> aap	to scrape
		t <sup>h</sup> éε	—	t <sup>h</sup> e <sup>2</sup>	125 g
	*t <sup>h</sup>	t <sup>h</sup> ók	t <sup>h</sup> ək	t <sup>h</sup> ək	male
	*t <sup>h</sup>	t <sup>h</sup> óɲ	t <sup>h</sup> əɲ	t <sup>h</sup> ɨɲ	to reach
		t <sup>h</sup> óɲ	t <sup>h</sup> əɲ	—	even if
	*t <sup>h</sup>	t <sup>h</sup> éεm	t <sup>h</sup> εεm	t <sup>h</sup> εm	more
		t <sup>h</sup> éεn	t <sup>h</sup> εεn	t <sup>h</sup> ian	heaven
		t <sup>h</sup> éεp	t <sup>h</sup> εεp	—	fifty centime coin
		t <sup>h</sup> íi	t <sup>h</sup> ii <sup>1</sup>	—	to close
		t <sup>h</sup> íip	t <sup>h</sup> iip	t <sup>h</sup> iip	to pedal
		t <sup>h</sup> ían	t <sup>h</sup> ian	t <sup>h</sup> ian <sup>1</sup>	classifier for knives
		t <sup>h</sup> íaɲ	t <sup>h</sup> iaɲ	t <sup>h</sup> iaɲ	to deny
		t <sup>h</sup> íi	t <sup>h</sup> ii	t <sup>h</sup> i	to respect
		t <sup>h</sup> ía	t <sup>h</sup> ia	t <sup>h</sup> ə	to skin an animal

<sup>†</sup>Note: From Guignard 1912; this dictionary does not give Lao tonemarks.

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	t <sup>h</sup> óm	t <sup>h</sup> om	t <sup>h</sup> om	to cover
*t <sup>h</sup>	t <sup>h</sup> óŋ	t <sup>h</sup> oŋ	t <sup>h</sup> oŋ	bag
	t <sup>h</sup> óɔ	t <sup>h</sup> ɔɔ <sup>1</sup>	t <sup>h</sup> ɔ <sup>1</sup>	to pole
*t <sup>h</sup>	t <sup>h</sup> óɔj	t <sup>h</sup> ɔɔj	t <sup>h</sup> ɔj	to give up
	t <sup>h</sup> óɔk	t <sup>h</sup> ɔɔk	t <sup>h</sup> ɔk <sup>1</sup>	to pour out
*t <sup>h</sup>	t <sup>h</sup> óɔt	t <sup>h</sup> ɔɔt	t <sup>h</sup> ɔt <sup>1</sup>	to withdraw
*t <sup>h</sup>	t <sup>h</sup> úu	t <sup>h</sup> uu <sup>1</sup>	t <sup>h</sup> uu <sup>1</sup>	chopsticks
	t <sup>h</sup> úu	t <sup>h</sup> uu	t <sup>h</sup> uu	to rub off
*t <sup>h</sup>	t <sup>h</sup> úuk t <sup>h</sup> ik	t <sup>h</sup> ik	t <sup>h</sup> uuk	right
	t <sup>h</sup> úuk t <sup>h</sup> ik	t <sup>h</sup> ik	t <sup>h</sup> uuk	to receive
	t <sup>h</sup> úuk t <sup>h</sup> ik	t <sup>h</sup> ik	t <sup>h</sup> uuk	cheap
*t <sup>h</sup>	t <sup>h</sup> úa	t <sup>h</sup> ua <sup>1</sup>	t <sup>h</sup> oo <sup>1</sup>	groundnut
*t <sup>h</sup>	t <sup>h</sup> úaj	t <sup>h</sup> uaj <sup>2</sup>	t <sup>h</sup> uaj <sup>2</sup>	bowl
*t <sup>h</sup>	t <sup>h</sup> úam	t <sup>h</sup> uam <sup>2</sup>	t <sup>h</sup> uam <sup>2</sup>	to flood
*t <sup>h</sup>	t <sup>h</sup> úan	t <sup>h</sup> uan <sup>2</sup>	t <sup>h</sup> uan <sup>2</sup>	all

A15. Proto-Southwestern Tai \*t<sup>h</sup>w

	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	t <sup>h</sup> wáaj t <sup>h</sup> áaj	t <sup>h</sup> aaj <sup>1</sup>	t <sup>h</sup> waaj	to offer

A16. Proto-Southwestern Tai \*c<sup>h</sup>

	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2	c <sup>h</sup> iit	siit	sit	to spray

A17. Proto-Southwestern Tai \*c<sup>h</sup>r

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L2		créɛŋ	sɛɛŋ <sup>1</sup>		sɛŋ <sup>1</sup>	cymbal
		críi	sii	[s]	srii	bo tree
		cróŋ	soŋ <sup>1</sup>		suuŋ <sup>1</sup>	to send
	*s	cróɔj	sɔɔj <sup>2</sup>		sɔj <sup>2</sup>	chain

A18. Proto-Southwestern Tai \*k<sup>h</sup>

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L	*k <sup>h</sup>	k <sup>h</sup> áʔ	k <sup>h</sup> aa	[x]	k <sup>h</sup> aa	leg
	*k <sup>h</sup>	k <sup>h</sup> áj	k <sup>h</sup> aj	[x]	k <sup>h</sup> aj	to open
		k <sup>h</sup> áj	k <sup>h</sup> aj	[x]	k <sup>h</sup> aj	tallow
		k <sup>h</sup> ám	—	[x]	k <sup>h</sup> am	stuck
		k <sup>h</sup> án	k <sup>h</sup> an	[x]	k <sup>h</sup> an	tray
		k <sup>h</sup> án	—	[x]	k <sup>h</sup> an <sup>2</sup>	to put in between
	*k <sup>h</sup>	k <sup>h</sup> áp	k <sup>h</sup> ap	[x]	k <sup>h</sup> ap	song
		k <sup>h</sup> át	k <sup>h</sup> at	[x]	k <sup>h</sup> at	to hinder
	*k <sup>h</sup>	k <sup>h</sup> áw	k <sup>h</sup> aw <sup>2</sup>	[x]	k <sup>h</sup> aw <sup>2</sup>	rice
	*k <sup>h</sup>	k <sup>h</sup> áw	k <sup>h</sup> aw <sup>2</sup>	[x]	k <sup>h</sup> aw <sup>2</sup>	to come in
	*k <sup>h</sup>	k <sup>h</sup> áw	k <sup>h</sup> aw	[x]	k <sup>h</sup> aw	horn
	*k <sup>h</sup>	k <sup>h</sup> áa	k <sup>h</sup> aa <sup>2</sup>	[x]	k <sup>h</sup> aa <sup>2</sup>	to kill
		k <sup>h</sup> áa	k <sup>h</sup> aa <sup>2</sup>	[x]	k <sup>h</sup> aa <sup>2</sup>	slave
		k <sup>h</sup> áa	k <sup>h</sup> aa <sup>2</sup>	[x]	k <sup>h</sup> aa <sup>2</sup>	I
		k <sup>h</sup> áa	k <sup>h</sup> aa	—		partner
	*k <sup>h</sup>	k <sup>h</sup> áaj	k <sup>h</sup> aaj	[x]	k <sup>h</sup> aaj	to sell

PSW	Kammu	Lao		Lü	
*k <sup>h</sup>	k <sup>h</sup> áam	k <sup>h</sup> aam <sup>2</sup>	[x]	k <sup>h</sup> aam <sup>2</sup>	to cross
	k <sup>h</sup> áam	k <sup>h</sup> aam <sup>1</sup>	[x]	k <sup>h</sup> aam <sup>1</sup>	invulnerable
	k <sup>h</sup> áaŋ	k <sup>h</sup> aaŋ	[x]	k <sup>h</sup> aaŋ	cast iron
	k <sup>h</sup> áap	k <sup>h</sup> aap	—	—	chip
*k <sup>h</sup>	k <sup>h</sup> áat	k <sup>h</sup> aat	[x]	k <sup>h</sup> aat	broken
	k <sup>h</sup> áat	k <sup>h</sup> aat	[x]	k <sup>h</sup> aat	to reach
	k <sup>h</sup> áaw	k <sup>h</sup> aaw <sup>1</sup>	[x]	k <sup>h</sup> aaw <sup>1</sup>	news
*k <sup>h</sup>	k <sup>h</sup> áaw	k <sup>h</sup> aaw	[x]	k <sup>h</sup> aaw	white
*k <sup>h</sup>	k <sup>h</sup> ém	k <sup>h</sup> em	[x]	k <sup>h</sup> im	needle
	k <sup>h</sup> éŋ	k <sup>h</sup> eŋ <sup>2</sup>	—	—	basket
	k <sup>h</sup> ét	k <sup>h</sup> et	—	—	to marvel
	k <sup>h</sup> ée	k <sup>h</sup> ee <sup>2</sup>	—	—	to urge
	k <sup>h</sup> éet	k <sup>h</sup> eet	[x]	k <sup>h</sup> et	region
*k <sup>h</sup>	k <sup>h</sup> əj	k <sup>h</sup> əj	[x]	k <sup>h</sup> əj	son-in-law
	k <sup>h</sup> éʔ	k <sup>h</sup> eʔ	—	—	to avoid hard work
	k <sup>h</sup> éε	k <sup>h</sup> εε <sup>2</sup>	[x]	k <sup>h</sup> ε <sup>2</sup>	catfish
*k <sup>h</sup>	k <sup>h</sup> ék	k <sup>h</sup> εk	[x]	k <sup>h</sup> ek <sup>1</sup>	guest
	k <sup>h</sup> éεŋ	k <sup>h</sup> εεŋ <sup>1</sup>	—	—	to compete
*k <sup>h</sup>	k <sup>h</sup> íi	k <sup>h</sup> ii <sup>2</sup>	[x]	k <sup>h</sup> ii <sup>2</sup>	shit
*k <sup>h</sup>	k <sup>h</sup> íi	k <sup>h</sup> ii <sup>1</sup>	[x]	k <sup>h</sup> ii <sup>1</sup>	to ride
	k <sup>h</sup> íin	k <sup>h</sup> iin	—	—	poor
	k <sup>h</sup> ít	k <sup>h</sup> iit	[x]	k <sup>h</sup> iit	line
	k <sup>h</sup> íam	k <sup>h</sup> iam	[x]	k <sup>h</sup> iam	a few
	k <sup>h</sup> ían	k <sup>h</sup> ian	[x]	k <sup>h</sup> ian	to write
*k <sup>h</sup>	k <sup>h</sup> íaw	k <sup>h</sup> εw <sup>2</sup>	[x]	k <sup>h</sup> iaw <sup>2</sup>	tooth
*k <sup>h</sup>	k <sup>h</sup> íin k <sup>h</sup> ian k <sup>h</sup> ian		k <sup>h</sup> in <sup>2</sup> [x]	k <sup>h</sup> in <sup>2</sup>	to rise
	k <sup>h</sup> íin	k <sup>h</sup> iin	[x]	k <sup>h</sup> in	to force
	k <sup>h</sup> ían	k <sup>h</sup> ian <sup>1</sup>	—	—	dam
*k <sup>h</sup>	k <sup>h</sup> óm	k <sup>h</sup> om <sup>1</sup>	[x]	k <sup>h</sup> om <sup>1</sup>	to force
	k <sup>h</sup> ón	k <sup>h</sup> on	[x]	k <sup>h</sup> un	to transport
	k <sup>h</sup> óʔ	—	[x]	k <sup>h</sup> oʔ	to rake
*k <sup>h</sup>	k <sup>h</sup> óɔ	k <sup>h</sup> oɔ	[x]	k <sup>h</sup> oɔ	hook
*k <sup>h</sup>	k <sup>h</sup> óɔ	k <sup>h</sup> oɔ <sup>2</sup>	[x]	k <sup>h</sup> oɔ <sup>2</sup>	section
*k <sup>h</sup>	k <sup>h</sup> óɔj	k <sup>h</sup> oɔj <sup>2</sup>	—	—	servant
*k <sup>h</sup>	k <sup>h</sup> óɔn	k <sup>h</sup> oɔn	—	—	log
	k <sup>h</sup> óɔŋ	k <sup>h</sup> oɔŋ	[x]	k <sup>h</sup> oɔŋ	thing
*k <sup>h</sup>	k <sup>h</sup> óɔp	k <sup>h</sup> oɔp	[x]	k <sup>h</sup> oɔp <sup>1</sup>	frame
*k <sup>h</sup>	k <sup>h</sup> óɔp	[k <sup>h</sup> ] gɔɔp	—	—	ten-day week
*k <sup>h</sup>	k <sup>h</sup> úm	k <sup>h</sup> um	[x]	k <sup>h</sup> om	trench
*k <sup>h</sup>	k <sup>h</sup> ún	k <sup>h</sup> un <sup>1</sup>	—	—	sediment
	k <sup>h</sup> ún	[k <sup>h</sup> ] gun	[x]	k <sup>h</sup> un	Mr
*k <sup>h</sup>	k <sup>h</sup> út	k <sup>h</sup> ut	[x]	k <sup>h</sup> ut	to dig up
	k <sup>h</sup> úu	k <sup>h</sup> uu <sup>1</sup>	—	—	to threaten
*k <sup>h</sup>	k <sup>h</sup> úut	k <sup>h</sup> uut	[x]	k <sup>h</sup> uut	to scrape
	k <sup>h</sup> úa	k <sup>h</sup> ua <sup>2</sup>	[x]	k <sup>h</sup> oo <sup>2</sup>	to fry
	k <sup>h</sup> úaŋ	k <sup>h</sup> uaŋ <sup>1</sup>	[x]	k <sup>h</sup> uaŋ <sup>1</sup>	open place
	k <sup>h</sup> úaŋ	k <sup>h</sup> uaŋ	—	—	evil
	k <sup>h</sup> úat	k <sup>h</sup> uat	—	—	bottle

A19. Proto-Southwestern Tai \*k<sup>h</sup>l

	PSW	Kammu	Lao		Lü	
L3	*k <sup>h</sup> l	k <sup>h</sup> áj	k <sup>h</sup> aj <sup>2</sup>	[x]	k <sup>h</sup> aj <sup>2</sup>	fever
	*k <sup>h</sup> l	k <sup>h</sup> éεη	k <sup>h</sup> εεη	[x]	k <sup>h</sup> εη	hard

A20. Proto-Southwestern Tai \*k<sup>h</sup>r

	PSW	Kammu	Lao		Lü	
L2	*k <sup>h</sup> l	kráj	k <sup>h</sup> aj	[x]	k <sup>h</sup> aj	to lock in
	*k <sup>h</sup> l	kráp	k <sup>h</sup> ap	[x]	k <sup>h</sup> ap	to chase
		kréεp	k <sup>h</sup> εεp	[x]	k <sup>h</sup> εp <sup>1</sup>	to put on edging
		kríʔ	—	[x]	k <sup>h</sup> iʔ	to tell
		kría	—	[x]	k <sup>h</sup> ə <sup>2</sup>	to reprove
		króʔ	—	[x]	k <sup>h</sup> ɔʔ	to pick up
	*k <sup>h</sup> r	króɔ	k <sup>h</sup> ɔɔ	[x]	k <sup>h</sup> ɔ	to ask for
		króɔn	k <sup>h</sup> ɔɔn <sup>2</sup>	[x]	k <sup>h</sup> ɔn <sup>2</sup>	to gather
		króɔŋ	k <sup>h</sup> ɔɔŋ	[x]	k <sup>h</sup> ɔŋ	Mekong
L3	*k <sup>h</sup> r	k <sup>h</sup> áj	k <sup>h</sup> aj <sup>1</sup>	[x]	k <sup>h</sup> aj <sup>1</sup>	egg

A21. Proto-Southwestern Tai \*k<sup>h</sup>w

	PSW	Kammu	Lao		Lü	
L	*k <sup>h</sup> w	k <sup>h</sup> wán	k <sup>h</sup> wan	[xw]	k <sup>h</sup> wan	soul
		k <sup>h</sup> wáaj	k <sup>h</sup> waaj	—	—	late
		k <sup>h</sup> wáam	k <sup>h</sup> wam <sup>2</sup>	[x]	k <sup>h</sup> ɔm <sup>2</sup>	to turn upside down
		k <sup>h</sup> wéεη	k <sup>h</sup> wεεη	—	—	province

## A22. Proto-Southwestern Tai \*b

	PSW	Kammu	Lao		Lü	
L2		pàn	[p <sup>h</sup> ] ban	[p]	ban	thousand
		pàn	—	[p]	ban	to tie
	*b	pàp p <sup>h</sup> áp	[p <sup>h</sup> ] bap	[p]	bap	book to fold
		pàaj	[p <sup>h</sup> ] baaj	[p]	baaj	place
	*b	pàaj	[p <sup>h</sup> ] baaj <sup>1</sup>	[p]	baaj <sup>1</sup>	to run away
		pàaj	[p <sup>h</sup> ] baaj	—	—	to row
		pàan	—	[p]	baan	gong
		pàap	—	[p]	baap	oblong
		pèŋ	[p <sup>h</sup> ] beŋ	—	—	full
		pəŋ	[p <sup>h</sup> ] bəŋ <sup>1</sup>	[p]	biŋ <sup>1</sup>	to lean against
		pəən	[p <sup>h</sup> ] bən <sup>1</sup>	[p]	bən <sup>1</sup>	others
		pèʔ	[p <sup>h</sup> ] beʔ	[p]	beʔ	goat
	*b	pèε	[p <sup>h</sup> ] beε	[p]	be	raft
		pèε	[p <sup>h</sup> ] beε <sup>2</sup>	[p]	be <sup>2</sup>	to win over
	*b	pèεŋ	[p <sup>h</sup> ] beεŋ	[p]	beŋ	expensive
		pèεŋ	[p <sup>h</sup> ] beεŋ	[p]	beŋ	to love
		pèεŋ	[p <sup>h</sup> ] beεŋ <sup>1</sup>	—	—	round of wine
		pèεŋ	pεεŋ <sup>2</sup>	—	—	powder
	*b	pìi	[p <sup>h</sup> ] bii	[p]	bii	fat
	*b	pìi	[p <sup>h</sup> ] bii <sup>1</sup>	[p]	bii <sup>1</sup>	elder sibling
		pìaj	[p <sup>h</sup> ] biaj	[p]	biaj	even
		pìat	[p <sup>h</sup> ] biat	[p]	bet	large basket
		pìp	[p <sup>h</sup> ] bop	[p]	bop	to meet



	PSW	Kammu	Lao	Lü	
		p̄in	[p <sup>h</sup> ] biin <sup>2</sup>	[p] bin <sup>2</sup>	ground
		p̄iŋ	[p <sup>h</sup> ] biŋ	[p] biŋ <sup>1</sup>	group
		p̄iam	[p <sup>h</sup> ] buam	—	probably
		p̄on	[p <sup>h</sup> ] bon <sup>2</sup>	[p] buun <sup>2</sup>	to pass
	*b	p̄ɔ	[p <sup>h</sup> ] bɔɔ <sup>1</sup>	[p] bɔ <sup>1</sup>	father
		p̄ɔ	[p <sup>h</sup> ] bɔɔ	[p] bɔ	enough
	*b	p̄ɔk	[p <sup>h</sup> ] bɔɔk	—	to gild
	*b	p̄ɔŋ	[p <sup>h</sup> ] bɔɔŋ	[p] bɔŋ	to swell
	*b	p̄uŋ	[p <sup>h</sup> ] buŋ <sup>1</sup>	[p] buŋ	mud
	*b	p̄uu	[p <sup>h</sup> ] buu	[p] buu	mountain
	*p <sup>h</sup>	p̄uu	[p <sup>h</sup> ] p <sup>h</sup> uu <sup>2</sup>	[p] buu <sup>2</sup>	male
	*b	p̄uaŋ	[p <sup>h</sup> ] buaŋ	—	wreath
		p̄uut	[p <sup>h</sup> ] buut	—	lot
L3		p̄ <sup>h</sup> áŋ	[p <sup>h</sup> ] baŋ	[p] baŋ	to break
	*b	p̄ <sup>h</sup> át	[p <sup>h</sup> ] bat	[p] bat	to blow on
	*b	p̄ <sup>h</sup> áa	[p <sup>h</sup> ] baa	[p] baa	to lead
		p̄ <sup>h</sup> áa	[p <sup>h</sup> ] baa	—	plate
		p̄ <sup>h</sup> áak	[p <sup>h</sup> ] baak	[f] vaak	area
		p̄ <sup>h</sup> áap	[p <sup>h</sup> ] baap	—	host
		p̄ <sup>h</sup> ét	[p <sup>h</sup> ] bet	—	jewel
		p̄ <sup>h</sup> ók	—	[p] bək	radish
		p̄ <sup>h</sup> əəm	[p <sup>h</sup> ] bəəm <sup>1</sup>	—	to add
		p̄ <sup>h</sup> ía	[p <sup>h</sup> ] bia	—	high official
		p̄ <sup>h</sup> it	[p <sup>h</sup> ] biit	—	crop
		p̄ <sup>h</sup> ian	[p <sup>h</sup> ] bían <sup>1</sup>	—	friend
		p̄ <sup>h</sup> ón	[p <sup>h</sup> ] bon	—	general officer
		p̄ <sup>h</sup> óo	[p <sup>h</sup> ] buu <sup>1</sup>	—	to blow out
		p̄ <sup>h</sup> óot	[p <sup>h</sup> ] boot	—	very
		p̄ <sup>h</sup> ɔʔ	[p <sup>h</sup> ] bɔʔ	—	because
	*b	p̄ <sup>h</sup> úk	[p <sup>h</sup> ] buk	—	pomelo
		p̄ <sup>h</sup> úak	[p <sup>h</sup> ] buak	[p] buak	group
T		p̄ɔy	[p <sup>h</sup> ] bɔɔj	[p] bɔj	odd
		p̄ <sup>h</sup> im	[p <sup>h</sup> ] bim	[p <sup>h</sup> ] b <sup>h</sup> im	to print

A23. Proto-Southwestern Tai \*bl

	PSW	Kammu	Lao	Lü	
L2	*6	plà <sup>ʔ</sup>	ḡaa <sup>1</sup>	ḡaa <sup>1</sup>	shoulder
		plàaŋ	—	[p] baŋ	<i>Miscanthus sinensis</i>
		plàaw	[p <sup>h</sup> ] baaw <sup>2</sup>	[p] baaw <sup>2</sup>	coconut palm
		pl̄iak	[p <sup>h</sup> ] bæək	—	to move away
		pl̄ɔj	fɔɔj	fɔj	flying leaves
		pl̄ɔŋ	[p <sup>h</sup> ] bɔɔŋ	—	rattan
		pl̄uh	ḡuu <sup>ʔ</sup>	ḡuu <sup>ʔ</sup>	to penetrate
	*bl	pl̄uu	[p <sup>h</sup> ] buu	[p] buu	betel pepper
T		pl̄éŋ p̄ <sup>h</sup> éŋ	[p <sup>h</sup> ] beŋ	[p <sup>h</sup> ] b <sup>h</sup> iaŋ	song

Note: For the word ‘song’, the Lü form suggests \*br (A24) rather than \*bl, and the Kammu high tone is unexplained.

## A24. Proto-Southwestern Tai \*br

	PSW	Kammu		Lao		Lü	
L2		pràʔ	[p <sup>h</sup> ]	baʔ	[p <sup>h</sup> ]	braʔ	Buddha
		pràj	[p <sup>h</sup> ]	baj	[p <sup>h</sup> ]	b <sup>h</sup> aj	to bind
		pràj	[p <sup>h</sup> ]	baj <sup>1</sup>	[p <sup>h</sup> ]	b <sup>h</sup> aj <sup>1</sup>	citizen
	*br	pràak	[p <sup>h</sup> ]	baak	[p <sup>h</sup> ]	b <sup>h</sup> aak	to separate
		pràan	[p <sup>h</sup> ]	baan	[p <sup>h</sup> ]	b <sup>h</sup> aan	successful
		pràəj		—	[p <sup>h</sup> ]	b <sup>h</sup> aaj <sup>1</sup>	to sprinkle
		prèε	[p <sup>h</sup> ]	bεε	[p <sup>h</sup> ]	b <sup>h</sup> ε	silk
		prèet	[p <sup>h</sup> ]	bεet		—	<i>Axonopus compressus</i>
		pròoŋ	[p <sup>h</sup> ]	booŋ	[p <sup>h</sup> ]	b <sup>h</sup> uaŋ	omnivorous
	*br	pròom	[p <sup>h</sup> ]	bɔom <sup>2</sup>	[p <sup>h</sup> ]	b <sup>h</sup> ɔm <sup>1</sup>	to make friends
		pròoŋ póoŋ		pɔoŋ	[p <sup>h</sup> ]	b <sup>h</sup> ɔŋ	to strive
		pròoŋ póoŋ		pɔoŋ <sup>2</sup>		—	to protect
		prùŋ	[p <sup>h</sup> ]	bun <sup>1</sup>		—	to come pouring out
		prùuc	[p <sup>h</sup> ]	buut		—	to spit out
L3	*br	p <sup>h</sup> áa	[p <sup>h</sup> ]	baa <sup>2</sup>	[p <sup>h</sup> ]	b <sup>h</sup> aa	knife
		p <sup>h</sup> áaj	[p <sup>h</sup> ]	baaj	[p <sup>h</sup> ]	b <sup>h</sup> aaj	female spirit

## A25. Proto-Southwestern Tai \*d

	PSW	Kammu		Lao		Lü	
L2		tàʔ		—	[t]	daʔ	to be hindered
	*d	tàj	[t <sup>h</sup> ]	daj <sup>1</sup>	[t]	daj <sup>1</sup>	shoulder bag
		tàk	[t <sup>h</sup> ]	dak	[t]	dak	to greet
		tàm		—	[t]	dam	to spread out
		tàn	[t <sup>h</sup> ]	dan	[t]	dan	to have time
		tàŋ	[t <sup>h</sup> ]	daŋ <sup>1</sup>	[t]	daŋ <sup>1</sup>	to hit
		tàp	[t <sup>h</sup> ]	dap		—	hut
		tàp		—	[t]	dap	to cover
		tàt	[t <sup>h</sup> ]	dat	[t]	dat	exactly
		tàt		—	[t]	dat	opposite
	*d	tàa	[t <sup>h</sup> ]	daa	[t]	daa	to smear
	*d	tàa	[t <sup>h</sup> ]	daa <sup>2</sup>	[t]	daa <sup>2</sup>	to challenge
	*d	tàa	[t <sup>h</sup> ]	daa <sup>1</sup>	[t]	daa <sup>1</sup>	place by a river
		tàaj	[t <sup>h</sup> ]	daaj <sup>2</sup>	[t]	daaj <sup>2</sup>	stern
		tàan	[t <sup>h</sup> ]	daan	[t]	daan	to offer
	*d	tàaŋ	[t <sup>h</sup> ]	daaŋ	[t]	daaŋ	way
		tàaŋ	[t <sup>h</sup> ]	daaŋ		—	to ford
		tàaw t <sup>h</sup> áaw	[t <sup>h</sup> ]	daaw <sup>2</sup>	[t]	daaw <sup>2</sup>	Mr
		tək		—	[t]	dik	very
	*d	təŋ	[t <sup>h</sup> ]	daŋ	[t]	daŋ	all
		tèε t <sup>h</sup> éʔ	[t <sup>h</sup> ]	dεε <sup>2</sup>	[t]	dε <sup>2</sup>	true
		tèek	[t <sup>h</sup> ]	dεek	[t]	dεk	to measure
	*d	tèen	[t <sup>h</sup> ]	dεen	[t]	dεn	to replace
		tèen		—	[t]	dεn <sup>1</sup>	to make a stopover
		tèep	[t <sup>h</sup> ]	dεep		—	to be up against
		tèew	[t <sup>h</sup> ]	dεew		—	horizontal lath
	*d	tii t <sup>h</sup> ii	[t <sup>h</sup> ]	dii <sup>1</sup>	[t]	dii <sup>1</sup>	place
		tiiŋ	[t <sup>h</sup> ]	diŋ		—	water tube
		tian	[t <sup>h</sup> ]	dian	[t]	dian	candle

PSW	Kammu		Lao		Lü	
	t̤ip	[t <sup>h</sup> ]	dip		—	to block
	t̤i		—	[t]	di	to be worth
	t̤ia	[t <sup>h</sup> ]	dia <sup>1</sup>	[t]	də <sup>1</sup>	time
	t̤iaŋ	[t <sup>h</sup> ]	duaŋ		—	to fetch
*d	tòp	[t <sup>h</sup> ]	dop	[t]	dop	to fold
	tòo	[t <sup>h</sup> ]	doo <sup>2</sup>		—	indeed
	tòoj		—	[t]	duaŋ	to follow
	tòot	[t <sup>h</sup> ]	doot	[t]	doos	guilt
*d	tòok	[t <sup>h</sup> ]	dòok		—	only
	tòok		—	[t]	dòk	weight
*d	tòoŋ	[t <sup>h</sup> ]	dòoŋ	[t]	dòŋ	copper
	tù?	[t <sup>h</sup> ]	du?	[t <sup>h</sup> ]	d <sup>h</sup> u?	bonze
	tùk	[t <sup>h</sup> ]	duk	[t]	duk	poor
	tùn	[t <sup>h</sup> ]	dun		—	capital
	tùut	[t <sup>h</sup> ]	duut		—	leprosy
L3	*d	t <sup>h</sup> áj	daj	[t]	daj	Thai
	t <sup>h</sup> ám	[t <sup>h</sup> ]	dam	[t]	dam	to do
	t <sup>h</sup> ám	[t <sup>h</sup> ]	dam	[t <sup>h</sup> ]	d <sup>h</sup> am	scripture
	t <sup>h</sup> án	[t <sup>h</sup> ]	dan	[t]	dan	equal to
	t <sup>h</sup> áp	[t <sup>h</sup> ]	dap		—	to hit
*t	t <sup>h</sup> áw	[t <sup>h</sup> ]	daw <sup>2</sup>	[t]	daw <sup>2</sup>	to lean on
	t <sup>h</sup> ít	[t <sup>h</sup> ]	dit		—	direction
	t <sup>h</sup> ít	[t <sup>h</sup> ]	dit		—	abbot
	t <sup>h</sup> ii	[t <sup>h</sup> ]	dii	[t <sup>h</sup> ]	d <sup>h</sup> ii	ordinal number marker
	t <sup>h</sup> ón	[t <sup>h</sup> ]	don		—	to bear
	t <sup>h</sup> óŋ	[t <sup>h</sup> ]	duŋ	[t]	dòŋ	flag
	t <sup>h</sup> úk	[t <sup>h</sup> ]	duk	[t]	duk	each
*d	t <sup>h</sup> úp	[t <sup>h</sup> ]	dup	[t]	dup	to pound
	t <sup>h</sup> úu	[t <sup>h</sup> ]	duu <sup>1</sup>		—	to blow
	t <sup>h</sup> úa	[t <sup>h</sup> ]	dua <sup>1</sup>	[t]	doo <sup>1</sup>	throughout
T	tóom	[t <sup>h</sup> ]	doom		—	to support

A26. Proto-Southwestern Tai \*dr

	Kammu		Lao		Lü	
L2	(cn.)tràa	[t <sup>h</sup> ]	(nam <sup>2</sup> ) daa		—	Nam Tha river
	triám	[t <sup>h</sup> ]	diam	[t]	diam	to prepare

A27. Proto-Southwestern Tai \*ʃ

PSW	Kammu		Lao		Lü		
L2	*ʃ	càj	[s]	ʃaj <sup>2</sup>	[ts]	ʃaj <sup>2</sup>	to tell
		càk	[s]	ʃak	[ts]	ʃak	to pull
		càm	[s]	ʃam	[ts]	ʃam	to soak
*ʃ		càŋ	[s]	ʃaŋ <sup>1</sup>	[ts]	ʃaŋ <sup>1</sup>	to weigh
		càw	[s]	ʃaw <sup>1</sup>	[ts]	ʃaw <sup>1</sup>	to rent
*ʃ		càa	[s]	ʃaa <sup>2</sup>	[ts]	ʃaa <sup>2</sup>	wayward
*ʃ		càaj	[s]	ʃaaj	[ts]	ʃaaj	man
		càaj		—	[ts]	ʃaaj	tassel
		càam		—	[ts]	ʃaam	to splice
*ʃ		càaŋ	[s]	ʃaaŋ <sup>1</sup>	[ts]	ʃaaŋ <sup>1</sup>	artisan

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*ɟ	scáaŋ càaŋ	[s] ɟaaŋ <sup>2</sup>	[ts] ɟaaŋ <sup>2</sup>	elephant
		càat	[s] ɟaat	[ts] ɟaat	sort
		càat c <sup>h</sup> áat	[s] ɟaat	[ts] ɟaat	nationality
		cèn	[s] ɟan <sup>2</sup>	[ts] ɟan <sup>2</sup>	level
	*ɟ	cèt	[s] ɟet	[ts] ɟiat	to rub
		cəʔ	—	[ts] ɟaʔ	dirty
		cəən	[s] ɟəən	—	to invite
		cəəŋ	[s] ɟəəŋ <sup>2</sup>	—	sword dance
		cèe	[s] ɟeɛ <sup>1</sup>	[ts] ɟe <sup>1</sup>	to soak
		cèep	cɛep	[ts] ɟep	suitable
		cii	[s] ɟii	[ts] ɟii	coriander
		cii	[s] ɟii <sup>1</sup>	[ts] ɟii <sup>1</sup>	tobacco juice
	*ɟ	cìim	[s] ɟiim	[ts] ɟim	to taste
		cìin	[s] ɟiin <sup>2</sup>	[ts] ɟin <sup>2</sup>	meat
		cǐp	[s] ɟup	[ts] ɟuup	to dip
	*ɟ	cǐi	[s] ɟii <sup>1</sup>	[ts] ɟi <sup>1</sup>	name
		cǐin	[s] ɟiin <sup>1</sup>	[ts] ɟin <sup>1</sup>	alert
	*ɟ	cǐin	[s] ɟiin	[ts] ɟin	lead
	*ɟ	cǐa	[s] ɟia <sup>2</sup>	[ts] ɟə <sup>2</sup>	seed
	*ɟ	cǐa	[s] ɟia <sup>1</sup>	[ts] ɟə <sup>1</sup>	to trust
	*ɟ	cǐa	[s] ɟua <sup>1</sup>	[ts] ɟoo <sup>1</sup>	time period
		cǐaŋ	[s] ɟiaŋ	[ts] ɟiaŋ	town
		còok	[s] ɟook	[ts] ɟok	luck
		còon	[s] ɟoon <sup>1</sup>	—	roots above the ground
		còo	—	[ts] ɟo <sup>1</sup>	mango flower
	*ɟ	còɔj súaj	[s] ɟuaj <sup>1</sup>	[ts] ɟɔj <sup>1</sup>	to help
		cəəm	—	[ts] ɟəm	to follow
		cùʔ	cuʔ	[ts] ɟuʔ	group
		cùk	—	[ts] ɟuk	fishtail palm
		cùm	[s] ɟum	[ts] ɟom	group
		cùm	[s] ɟum <sup>1</sup>	[ts] ɟom <sup>1</sup>	calm
	*ɟ	cùu	[s] ɟuu <sup>2</sup>	[ts] ɟuu <sup>2</sup>	lover
		cùut	[s] ɟut	[ts] ɟuut	to be ruined
L3		səŋ	[s] ɟiŋ <sup>1</sup>	—	(nominalizer)
		séem	[s] ɟɛem	—	heavily loaded
		síaŋ	[s] ɟiaŋ	—	monk
		sóok	[s] ɟɔok	—	to seek
		sóop	[s] ɟɔop	—	to like
		súa	[s] ɟua <sup>1</sup>	—	bad
T	*ɟ	cíi	[s] ɟii <sup>2</sup>	[ts] ɟii <sup>2</sup>	to point
		cón	[s] ɟon	[ts] ɟuun	to crash
		cóɔj	—	[ts] ɟɔj <sup>2</sup>	to sing
I	*ɟ	c <sup>h</sup> áa	[s] ɟaa	—	tea
		c <sup>h</sup> on	[s] ɟon	—	person

## A28. Proto-Southwestern Tai \*ɟr

	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2	crùup	[s] ɟuup	[s] zɪp	turn
T	cróɔj	[s] ɟɔɔj	[s] zɔj	to slice

		A29. Proto-Southwestern Tai *g					
	PSW	Kammu	Lao	Lü			
L2		kàm	[k <sup>h</sup> ] gam	[k] gam		speech	
		kàm	[k <sup>h</sup> ] gam <sup>2</sup>	[k] gam <sup>2</sup>		to help	
		kàm	[k <sup>h</sup> ] gam <sup>1</sup>	[k] gam		time	
		kàp	[k <sup>h</sup> ] gap	[k] gap		tight	
		*g kàa	[k <sup>h</sup> ] gaa <sup>1</sup>	[k] gaa <sup>1</sup>		price	
		*g kàa	[k <sup>h</sup> ] gaa <sup>2</sup>	[k] gaa <sup>2</sup>		to trade	
		kàan	—	[k] gaan <sup>2</sup>		to lose	
		*g kàap	[k <sup>h</sup> ] gaap	[k] gaap		to hold between teeth	
		kàat	[k <sup>h</sup> ] gaat	—		to put a log beside a path	
		*g kè̄m	[k <sup>h</sup> ] gem	—		salty	
		kè̄ŋ	[k <sup>h</sup> ] geeŋ	—		to talk loudly	
		kət̚ k <sup>h</sup> ít	[k <sup>h</sup> ] git	[k] git		to think	
		kə̄ə	[k <sup>h</sup> ] gaj <sup>2</sup>	[k] gaj <sup>2</sup>		12th term in 12-cycle	
		kə̄əj	[k <sup>h</sup> ] gə̄əj	[k] gə̄əj		to frequent	
		kè̄ε	—	[k] ge		to wear necklace	
		kè̄ε	kεε	[k] ge		bamboo trumpet	
		kè̄em	[k <sup>h</sup> ] gεem	—		neighbourhood	
		*g kè̄ep	[k <sup>h</sup> ] gεep	—		narrow	
		k̄iw	[k <sup>h</sup> ] giw <sup>2</sup>	—		to come true	
		k̄iat	[k <sup>h</sup> ] giat	[k] giat		angry	
		k̄op	[k <sup>h</sup> ] gop	[k] gop		to put together	
		k̄ot	[k <sup>h</sup> ] got	[k] got		to cheat	
		k̄om	[k <sup>h</sup> ] goom	[k] goom		lamp	
		*g k̄oon	[k <sup>h</sup> ] goon <sup>2</sup>	—		log put under a pot	
		k̄ə̄	kə̄ə	[k] gaw		to wait	
		*g k̄ə̄j	[k <sup>h</sup> ] gə̄əj <sup>1</sup>	[k] gə̄əj <sup>1</sup>		to wait	
		*g k̄ə̄n	[k <sup>h</sup> ] gə̄ən	—		to help carry	
		k̄ə̄ŋ	[k <sup>h</sup> ] gə̄əŋ <sup>2</sup>	[k] gə̄əŋ <sup>2</sup>		gong	
		k̄ə̄ŋ	—	[k] gə̄əŋ		custom	
		k̄ə̄p	[k <sup>h</sup> ] gə̄əp	—		to ask	
		k̄ùk	[k <sup>h</sup> ] guk	[x] k <sup>h</sup> uk		prison	
		k̄ùm	[k <sup>h</sup> ] gum	—		to control	
		k̄ùm	[k <sup>h</sup> ] gum <sup>2</sup>	—		place of living	
		k̄ùn	[k <sup>h</sup> ] gun	[k] gun		dignity	
		k̄ùn	[k <sup>h</sup> ] gun <sup>2</sup>	[k] guun <sup>2</sup>		tame	
		*g k̄ùu	[k <sup>h</sup> ] guu <sup>1</sup>	[k] guu <sup>1</sup>		pair	
		k̄ùu	[k <sup>h</sup> ] guu <sup>1</sup>	—		each	
	L3		k <sup>h</sup> án	[k <sup>h</sup> ] gan	[k] gan		classifier for swords
			k <sup>h</sup> át	[k <sup>h</sup> ] gat	—		to select
			k <sup>h</sup> át	[k <sup>h</sup> ] gat	—		roof
		k <sup>h</sup> át	[k <sup>h</sup> ] gat	—		to put up (hair)	
		k <sup>h</sup> áan	[k <sup>h</sup> ] gaan <sup>2</sup>	[k] gaan <sup>2</sup>		to compete	
		*g k <sup>h</sup> é̄en	[k <sup>h</sup> ] gεen	—		mouth organ	
		k <sup>h</sup> é̄en	[k <sup>h</sup> ] gεen <sup>2</sup>	—		provocation	
		k <sup>h</sup> ɿ?	[k <sup>h</sup> ] gi?	—		beautiful	
		k <sup>h</sup> óp	[k <sup>h</sup> ] gop	—		all	
		k <sup>h</sup> óp	[k <sup>h</sup> ] gop	—		to make friends	
		k <sup>h</sup> ój	[k <sup>h</sup> ] gooj <sup>2</sup>	—		penis	
		k <sup>h</sup> ú?	[k <sup>h</sup> ] gu?	—		bucket	

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		k <sup>h</sup> út	[k <sup>h</sup> ] gut	—	talisman
T	*g	kíaw	[k <sup>h</sup> ] giaw <sup>2</sup>	[k] giaw <sup>2</sup>	to chew
	*g	kíim	[k <sup>h</sup> ] giim	[k] gim	pliers
		kán	[k <sup>h</sup> ] gan	—	classifier for vehicles

A30. *Proto-Southwestern Tai \*gl*

	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2	klàj	[k <sup>h</sup> ] gaj	[k] gaj	<i>Spirogyra</i> sp.
	klàŋ	—	[k] glaŋ <sup>2</sup>	continuous
	klàat	—	[k] gaat	to pass
L3	kàw	[k <sup>h</sup> ] gaw <sup>2</sup>	[k] glaw <sup>2</sup>	beginning

A31. *Proto-Southwestern Tai \*gr*

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2		kràj	[k <sup>h</sup> ] gaj <sup>2</sup>	[x] ɣaj <sup>2</sup>	<i>Homonoia riparia</i>
		kràw	[k <sup>h</sup> ] gaw	—	whiskers
		kràa	—	[k] glaa	white-skinned
	*gr	kràan	[k <sup>h</sup> ] gaan <sup>2</sup>	[x] ɣaan <sup>2</sup>	lazy
		kràap	[k <sup>h</sup> ] gaap	[x] ɣaap	meal
		kràap	[k <sup>h</sup> ] gaap	—	at the same time
		kràaw	[k <sup>h</sup> ] gaaw	[x] ɣaaw	short period
	*gr	krəŋ	[k <sup>h</sup> ] gəəŋ <sup>1</sup>	[x] ɣiŋ <sup>1</sup>	equal
		(səə) krəə	[k <sup>h</sup> ] (sii) gaj	—	lemongrass
		krèe	—	[x] ɣe	to cook
		krèeŋ	—	[x] ɣeŋ	small basket
		krəm	—	[x] ɣim	to pile up firewood
		krĭp	[k <sup>h</sup> ] gup	[x] ɣip	to catch
		krĭin	[k <sup>h</sup> ] giin	[x] ɣin	bird snare
	*gr	krĭaŋ	[k <sup>h</sup> ] giəŋ <sup>1</sup>	[x] ɣəŋ <sup>1</sup>	equipment
	*gr	kròk	[k <sup>h</sup> ] gok	[x] ɣok	bamboo bowl
		kròoŋ	[k <sup>h</sup> ] gooŋ	—	fortune song
		kròop	[k <sup>h</sup> ] guap	[k] gop	to join
		kròʔ	[k <sup>h</sup> ] gɔʔ	[x] ɣɔʔ	bad luck
		krùu k <sup>h</sup> úu	[k <sup>h</sup> ] guu	[x] ɣuu	spell teacher
	*k <sup>h</sup>	krùus	[k <sup>h</sup> ] guut	[x] ɣuut	to scrape
		krùa	[k <sup>h</sup> ] gua	[x] ɣua	cloth
		krùa	[k <sup>h</sup> ] gua	[x] ɣoo	to prepare
T		kráj	[k <sup>h</sup> ] gaŋ	—	treasury
		krúap	[k <sup>h</sup> ] gɔɔp	[x] ɣɔp	property

A32. *Proto-Southwestern Tai \*b*

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*b	ɓáj	ɓaj	ɓaj	leaf
		ɓáj	ɓaj <sup>2</sup>	ɓaj <sup>2</sup>	stupid
	*b	ɓák	ɓak	ɓak	to notch
	*b	ɓáj	ɓaŋ <sup>2</sup>	ɓaŋ <sup>2</sup>	bamboo tube
		ɓáj	ɓaŋ	ɓaŋ	to protect
		ɓát	ɓat	—	document
		ɓáw pàw	ɓaw <sup>2</sup>	ɓaw <sup>2</sup>	pipe crucible

PSW	Kammu	Lao	Lü	
*ɓ	ɓáa	ɓaa <sup>2</sup>	ɓaa <sup>2</sup>	violent
*ɓ	ɓáan	ɓaan <sup>2</sup>	ɓaan <sup>2</sup>	village
*ɓ	ɓáaŋ	ɓaaŋ	ɓaaŋ	thin
*ɓ	ɓáaŋ	ɓaaŋ	—	some
	ɓáap	ɓaap	ɓaap	unlucky
*ɓ	ɓáat	ɓaat	—	time
	ɓéŋ	ɓeŋ <sup>1</sup>	—	to strain
*ɓ	ɓét	ɓet	ɓet	fishhook
	ɓéə	—	ɓə	unmarried pregnant
	ɓéɛŋ	ɓeɛŋ <sup>1</sup>	ɓeŋ <sup>1</sup>	to divide
	ɓéɛp	ɓeɛp	ɓep <sup>1</sup>	sort
*ɓ	ɓín	ɓín	ɓín	to fly
	ɓíi	ɓii <sup>2</sup>	—	ten centime coin
	ɓíip	ɓiip	ɓiip	to press
	ɓían	—	ɓian	plate
	ɓíaŋ	ɓiaŋ <sup>1</sup>	—	turban
	ɓík	ɓík	ɓík	giant catfish
	ɓít	ɓit	ɓit	soon
*ɓ	ɓía	ɓia <sup>1</sup>	ɓə <sup>1</sup>	poisonous
	ɓók	—	ɓok	to dig
	ɓót	ɓot	ɓut	to pound
	ɓóok	ɓook	ɓok	measuring tube
*ɓ	ɓóɔ	ɓɔɔ <sup>1</sup>	ɓɔ <sup>1</sup>	mine
*ɓ	ɓóɔ	ɓɔɔ <sup>1</sup>	ɓaw	not
*ɓ	ɓóɔk	ɓɔɔk	—	classifier for guns
	ɓóɔk	ɓɔɔk	ɓɔk <sup>1</sup>	to tell
*ɓ	ɓóɔn	ɓɔɔn <sup>1</sup>	ɓɔn <sup>1</sup>	place
	ɓún	ɓun	ɓun	luck
*ɓ	ɓúŋ	ɓoŋ <sup>2</sup>	ɓuun <sup>2</sup>	<i>Ipomoea aquatica</i>
	ɓúut	ɓuut	—	rancid
	ɓúa	ɓua	ɓua	lotus
	ɓúak	ɓuak	ɓook	plus

A33. Proto-Southwestern Tai \*d and \*ɓL

L	PSW	Kammu	Lao	Lü	
	*d	dám	dám	dám	black
		dám	dám	dám	to dive
	*d	dáp	dap	dap	extinguished
		dáp ràp	rap	dap	2nd term in 10-cycle
		dát	dat	—	to wave
	*d	dáj	daj <sup>2</sup>	daj <sup>2</sup>	to get
		dáa	dáa	dáa	deliberately
		dáa	dáa	dáa	water cockroach
	*d	dáaj	daaj	daaj	idle
		dáak	daak	daak	clay
		dáam	—	daam <sup>2</sup>	to hunt
		dáan	daan <sup>2</sup>	—	side, direction
		dáaŋ	daaŋ	—	classifier for nets
		dáap	daap	daap	sword
		dét	det	—	definitely

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
		dǎk	dǎk	dǎk	night
		dǎε	dǎε <sup>1</sup>	—	too
		dǎεk	dǎεk	dǎk <sup>1</sup>	to shoot
		dǎεk	dǎεk	—	fermented meat
	*d	dǎεt	dǎεt	dǎt <sup>1</sup>	sunshine
	*d	dǎεn	dǎεn	dǎn	border
	*d	dǎεŋ	dǎεŋ	dǎŋ	red
		dǎn	dǎn	dǎn	earth
	*d	dǎp	dǎp	dǎp	alive
	*d	dǎi	dǎi	dǎi	good
	*d	dǎaw	dǎaw <sup>1</sup>	dǎaw <sup>1</sup>	just
		dǎŋ	dǎŋ	—	to drag
		dǎi	dǎi <sup>2</sup>	—	stubborn
	*ɖL	dǎan	dǎan	dǎn	moon
		dǎat	dǎuat	—	level
	*d	dǎoŋ	dǎoŋ	dǎoŋ	forest
	*d	dǎɔj	dǎɔj	dǎɔj	mountain
	*ɖL	dǎɔk	dǎɔk	dǎk <sup>1</sup>	flower
		dǎɔk	dǎɔk	—	interest
		dǎɔm	—	dǎɔm	to look
	*d	dǎɔn	dǎɔn	dǎn	island
	*d	dǎuu	dǎuu	dǎuu	to look
		dǎuu	dǎuu <sup>1</sup>	—	<i>Pterocarpus macrocarpus</i>
	*d	dǎuuk	dǎuuk	dǎuuk	bone
	*d	dǎuut	dǎuut	dǎuut	to suck
	*d	dǎuaj	dǎuaj <sup>2</sup>	dǎuaj <sup>2</sup>	with
		dǎuan	dǎuan <sup>1</sup>	dǎuan <sup>1</sup>	urgent
		dǎuaŋ	dǎuaŋ	—	lucky
		dǎuaŋ	dǎuaŋ	—	classifier for knives
T	*d	dǎj nàj	dǎj	dǎj	where?

## A34. Proto-Southwestern Tai \*f

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*f	p <sup>h</sup> áj	faŋ <sup>1</sup>	faŋ <sup>1</sup>	shore
		p <sup>h</sup> áw	—	faw <sup>1</sup>	gunpowder
	*f	p <sup>h</sup> áak	faak	faak	to entrust
		p <sup>h</sup> ák	fək	fək	to train
		p <sup>h</sup> ín	fin <sup>1</sup>	fin <sup>1</sup>	opium
		p <sup>h</sup> iit	fiit	fiit <sup>1</sup>	stiff
	*f	p <sup>h</sup> ón	fon	fuun	rain
T		p <sup>h</sup> àaj	faaj <sup>1</sup>	faaj <sup>1</sup>	party
I	*f	wáaj p <sup>h</sup> áay	faaj <sup>2</sup>	faaj <sup>2</sup>	cotton thread

## A35. Proto-Southwestern Tai \*s

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L	*s	sáj	saj	saj	clear
	*s	sáj	saj <sup>2</sup>	saj <sup>2</sup>	intestine
	*s	sáj	saj <sup>1</sup>	—	to put
	*s	sák cák	sak	sak	just



<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
	sák	sak		sak	army rank
*s	sák	sak	[s]	zak	to prick with a needle
	sák	sak		sak	teak
*s	sán̄	saŋ <sup>1</sup>		saŋ <sup>1</sup>	to order
	sán̄	saŋ		saŋ	what?
*s	sáp	sap		sap	to mix
	sáa	saa <sup>2</sup>		saa <sup>2</sup>	to make a salad
*s	sáaj	saaj		saaj	string
*s	sáam	saam		saam	three
	sáan	saan		saan	trichina
	sáan	saan		—	lawcourt
	sáan	saan		—	soldering metal
	sáaŋ	saŋ <sup>2</sup>		saŋ <sup>2</sup>	to create
*s	sáap	saap		saap	smell
*s	sáat	saat		saat	sleeping mat
*s	sáaw	saaw		saaw	girl
	sén	sen <sup>2</sup>		—	string
	sén	san		san	spine
	sén	san		san	9th term in 12-cycle
	séŋ	seŋ		—	to compete
	sét	set		set	11th term in 12-cycle
	sét	sat		sat	animal
	séet	seet		siat	remainder
	sók	sək		sək	war
	sóə	saj <sup>2</sup>		saj <sup>2</sup>	6th term in 12-cycle
	sée	—		sɛ <sup>1</sup>	to pierce
	sée	sɛɛ <sup>2</sup>		sɛ <sup>2</sup>	whip
	séen	seen		sen	hundred thousand
	séeŋ	seŋ		seŋ	talisman
	séeŋ	seŋ		seŋ	light
	séet	seet		—	a kind of vine
	síŋ	siŋ		siŋ	lion
	síŋ	siŋ <sup>1</sup>		siŋ <sup>1</sup>	things
	sít	sit		—	power
*s	síi	sii <sup>1</sup>		sii <sup>1</sup>	four
	síi	sii		sii	colour
	síi	sii		sii	5th term in 12-cycle
	síik	siik		—	urinal
*s	sía	sia		se	to lose
*s	síam	siam		siam	spade
*s	síam	siam <sup>2</sup>		siam <sup>2</sup>	sharp
	síaŋ	siaŋ		siaŋ	sound
	síaŋ	siaŋ <sup>2</sup>		siaŋ <sup>2</sup>	to finish
	síaw	siaw <sup>1</sup>		siaw <sup>1</sup>	friend
*s	síp	sip		sip	ten
	sít	sut		sut	to be finished
	síip	siip		síp <sup>1</sup>	to inquire
*s	sía	sia		sə	tiger
*s	sóm	som <sup>2</sup>		som <sup>2</sup>	sour
*s	són	son <sup>2</sup>		suun <sup>2</sup>	backside of butt

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	són	—	son	make a hole
	sónŋ	soonŋ <sup>2</sup>	—	trousers
*s	sóp	sop	sop	clf. for rivermouths
	sóo	soo <sup>2</sup>	—	chain
	sóɔ	sɔɔ	sɔ	pencil
	sóɔk	sɔɔk	sɔk	forearm
	sóom	sɔom <sup>2</sup>	sɔm <sup>2</sup>	fork
*s	sóon	sɔon	sɔn	to teach
	sóonŋ	sɔonŋ	sɔnŋ	two
	sóonŋ	sɔonŋ <sup>1</sup>	sɔnŋ <sup>1</sup>	to light up
	sóop	sɔop	—	to interrogate
	súk	suk	suk	happy
	súp	sup	sup	to put on
*s	sút	sut	sut	mosquito net
*s	súu	suu	suu	you
	súu	suu <sup>1</sup>	suu <sup>1</sup>	to strengthen the soul
	súu	suu <sup>2</sup>	—	to fight
	súun	—	suun	to mingle
	súun	suun	sun	zero
	súun	suun	—	sight of a gun
*s	súunŋ	suunŋ	suunŋ	high
	súup	suup	suup	to pump
	súut	suut	suut	to chant
*s	súan	suan	suan	garden
	súan	suan <sup>1</sup>	suan <sup>1</sup>	part

## A36. Proto-Southwestern Tai \*h

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L		hán	hen	han	to see
		hát	hat	hat	to practise
		hát	hat	—	measles
*h		háa	haa <sup>2</sup>	haa <sup>2</sup>	five
		háaj	haaj	haaj	to disappear
*h		háak	haak	haak	by oneself
		háam	haam <sup>2</sup>	haam <sup>2</sup>	to forbid
		háan	haan	haan	brave
		háanŋ	haanŋ <sup>2</sup>	haanŋ <sup>2</sup>	hut
		háanŋ	haanŋ <sup>2</sup>	haanŋ <sup>2</sup>	to arrange
		háanŋ	haanŋ <sup>2</sup>	—	lacquer
*h		háat	haat	haat	rapids
		háaw	haaw <sup>1</sup>	haaw <sup>1</sup>	spear-trap
		héet	heet	hiat	cause
		hóət	hət	—	to lift
		héε	heε	he	wild
		héεŋ	heεŋ <sup>1</sup>	heŋ <sup>1</sup>	place
		híip	—	hiip	to ladle
		híak	—	hek <sup>1</sup>	galvanized iron
		híi	—	hi <sup>2</sup>	to let
		híin	—	hin <sup>1</sup>	to copulate
*h		hóm	hom <sup>1</sup>	hom <sup>1</sup>	blanket

	PSW	Kammu	Lao	Lü	
		hót	hot	hot	to knot
		hóop	hoop	—	to hold
		hóɔ	hɔɔ <sup>2</sup>	hɔ <sup>2</sup>	Chinese
	*h	hóom	hɔom	hɔm	aromatic herb
		húum	hum	hom	to like
		húut	hot	hot	to pour
		húaŋ	huaŋ <sup>1</sup>	—	worried about
I	*h	ŋàan	haan <sup>1</sup>	haan <sup>1</sup>	goose

A37. Proto-Southwestern Tai \*v

	PSW	Kammu	Lao	Lü	
L2	*v	pàj p <sup>h</sup> áj	[f] vaj	[f] vaj	fire
	*v	pàa p <sup>h</sup> áa	[f] vaa <sup>2</sup>	[f] vaa <sup>2</sup>	sky
	*v	pàan	[f] vaan <sup>1</sup>	[f] vaan	barking-deer
		pàaw	[f] vaaw <sup>2</sup>	[f] vaaw <sup>2</sup>	hurry
		pùu	[f] vuu	[f] vuu	to float
		pùu	[f] vuu	—	to swell
L3	*v	p <sup>h</sup> án	[f] van	[f] van	to cut
		p <sup>h</sup> əə	[f] vəə <sup>2</sup>	—	with diminished value
		p <sup>h</sup> óŋ	[f] voŋ <sup>2</sup>	[f] vuŋ <sup>2</sup>	to scatter
		p <sup>h</sup> ón	[f] vɔn <sup>2</sup>	[f] vɔn <sup>2</sup>	to dance
		p <sup>h</sup> óŋ	[f] vɔŋ <sup>2</sup>	—	to inform against
T	*v	p <sup>h</sup> úaŋ	[f] viaŋ <sup>2</sup>	—	1.25 g
		pát	[f] vat	[f] vat	to beat

A38. Proto-Southwestern Tai \*z

	PSW	Kammu	Lao	Lü	
L		sáj	—	[s] zaj <sup>2</sup>	to pick
	*z	sák	[s] ʃak	[s] zak	to wash
		sám	—	[s] zam <sup>2</sup>	to be finished
		sáw	[s] ʃaw	[s] zaw	to cease
		sáa	[s] ʃaa <sup>2</sup>	[s] zaa <sup>2</sup>	basket
	*z	sáaj	[s] ʃaaj	[s] zaaj	sand
		sáak	—	[s] zaak	wasted
		sáaw	[s] ʃaaw	[s] zaaw	twenty
		sét	sat	[s] zɛt	honest
		séɛ	—	[s] zɛ <sup>1</sup>	screw
		séem	—	[s] zem	scissors
		síŋ	[s] ʃiŋ	[s] ziŋ	lute
		síi	—	[s] zii <sup>1</sup>	day
	*z	síi	[s] ʃii <sup>1</sup>	[s] zi <sup>1</sup>	straight
		síip	siip	[s] zip	to extend
	*z	sóŋ	[s] ʃɔŋ	[s] zɔŋ	packet
		súm	[s] ʃum	[s] zom	to discuss
		súm	[s] ʃum <sup>2</sup>	[s] zuum <sup>2</sup>	hunting hut

## A39. Proto-Southwestern Tai \*ɣ

	PSW	Kammu		Lao		Lü	
L2	*ɣ	kàan	[k <sup>h</sup> ]	gaan	[k]	gaan	carrying-pole
	*ɣ	kǝ̃p	[k <sup>h</sup> ]	gǝ̃p	[x]	ɣip	fingerspan
	*ɣ	kòn	[k <sup>h</sup> ]	gon	[k]	gon	person
	*ɣ	kòɔk	[k <sup>h</sup> ]	gòɔk		—	pen
	*ɣ	kòɔp	[k <sup>h</sup> ]	gòɔp		—	cycle
L3	*ɣ	k <sup>h</sup> ám	[k <sup>h</sup> ]	gam <sup>1</sup>	[x]	ɣam <sup>1</sup>	night
	*ɣ	k <sup>h</sup> ám	[k <sup>h</sup> ]	gam	[x]	ɣam	gold
	*ɣ	k <sup>h</sup> áaŋ	[k <sup>h</sup> ]	gaan <sup>2</sup>	[k]	gaan <sup>2</sup>	stuck
	*ɣ	k <sup>h</sup> iin	[k <sup>h</sup> ]	giin	[x]	ɣin	night
	*ɣ	k <sup>h</sup> óŋ	[k <sup>h</sup> ]	goŋ	[x]	ɣuŋ	invulnerability
	*ɣ	k <sup>h</sup> óɔ	[k <sup>h</sup> ]	gòɔ	[x]	ɣɔ	neck

## A40. Proto-Southwestern Tai \*ɣw

	PSW	Kammu		Lao		Lü	
L2		kwàt	[k <sup>h</sup> w]	gwat		—	to hollow out
	*ɣw	kwàaj	[k <sup>h</sup> w]	gwaaj	[xw]	ɣwaaɣ	buffalo
	*ɣw	kwàam	[k <sup>h</sup> w]	gwaam	[xw]	ɣwaaɣ	(nominalizer)
		kwèen	[k <sup>h</sup> ]	gèen	[xw]	ɣwen	good

## A41. Proto-Southwestern Tai \*m

	PSW	Kammu		Lao		Lü	
L	*m	màj		maj <sup>2</sup>		maj <sup>2</sup>	tree
		màm		mam <sup>1</sup>		—	to eat
	*m	màn		man		man	it
		màn		man		man	oil
		màŋ		maŋ <sup>1</sup>		maŋ <sup>1</sup>	rich
	*m	màt		mat		mat	to bind
	*m	màw		maw		maw	drunk
	*m	màa		maa		maa	to come
		màan		maan		maan	pregnant
		màan		maan <sup>1</sup>		—	Burmese
		màaŋ		maaŋ <sup>2</sup>		maaŋ <sup>2</sup>	to take apart
		màat		maat		maat	sulphur
		mèek		mèek		mèk	cloud
		mèŋ		məŋ		mɨŋ	4th term in 10-cycle
	*m	mèe		mɛɛ <sup>1</sup>		mɛ <sup>1</sup>	mother
		mèe		mɛɛ <sup>2</sup>		—	although
		mèen		mɛɛn <sup>1</sup>		mɛn <sup>1</sup>	right
		mèen		mɛɛn <sup>1</sup>		—	to be
	*m	mèew		mɛɛw		mɛw	cat
		mèew		mɛɛw <sup>2</sup>		mɛw <sup>2</sup>	Hmong
	*m	mii		mii		mii	to have
		mii		mii <sup>2</sup>		mii <sup>2</sup>	jackfruit
	*m	miit		miit		mit	knife
	*m	mìa		mia		me	wife
		mian		mian <sup>2</sup>		mian <sup>2</sup>	to keep in order
	*m	mìŋ		mɨŋ		mɨŋ	you
	*m	mìi		mii		mi	hand

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	m̄i	mi <sup>2</sup>	mi <sup>2</sup>	day
	m̄ia	mia	mə	to return
*m	m̄ia	mia <sup>1</sup>	mə <sup>1</sup>	time
	m̄iaj	miaj <sup>1</sup>	mɔj <sup>1</sup>	tired
	m̄ian	muan <sup>1</sup>	muan <sup>1</sup>	beautiful
	m̄ian	muan <sup>2</sup>	muan <sup>2</sup>	to roll up
	m̄iaŋ	miaŋ	məŋ	town
	m̄on	mon	muun	mantra
*m	m̄on	mon	muun	round
	m̄ot	mot	met	8th term in 12-cycle
*m	m̄ot	mot	mot	ant
	m̄oo	moo <sup>2</sup>	mɔ <sup>2</sup>	to grind
	m̄ooj	muaj	—	boxing
	m̄ooŋ	mooŋ	muəŋ	clock
	m̄ooŋ <sup>2</sup>	mooŋ <sup>2</sup>	—	gong
	m̄ɔk	—	mɔk	as
*m	m̄ɔn	mɔn <sup>2</sup>	—	mulberry
	m̄ɔŋ	mɔŋ	mɔŋ	fishnet
	m̄ɔp	mɔp	mɔp	to give
	m̄ɔt	mɔt	—	to die out
	m̄uj	muj <sup>1</sup>	—	green
	m̄uŋ	muŋ <sup>2</sup>	—	mosquito net
	m̄uŋ	muŋ <sup>1</sup>	muuŋ <sup>1</sup>	to intend

A42. Proto-Southwestern Tai \*mL

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>		
L	*mL	màk	mak		mak	to like
	*m	màa	maa <sup>2</sup>	[m]	m <sup>2</sup> laa <sup>2</sup>	horse
	*mL	màak	maak		maak	much
	*mL	mèeŋ	mèeŋ		mèeŋ	insect

A43. Proto-Southwestern Tai \*n

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>		
L	*n	nàj	naj		naj	inside
		nàj	naj		—	spinning-wheel
		nàk	nak		nak	professional
	*n	nàm	nam <sup>2</sup>		nam <sup>2</sup>	water
	*n	nàm	nam		—	with
	*n	nàŋ	naŋ <sup>1</sup>		naŋ <sup>1</sup>	to sit
		nàp	nap		nap	to count
		nàt	nat		—	to make appointment
	*n	nàw	naw <sup>1</sup>		naw <sup>1</sup>	rotten
	*n	nàa	naa		naa	wet field
		nàaj	naaj		naaj	master
	*n	nàak	naak		—	otter
		nàak	naak		naag	demon
		nàak	naak		—	alloy of gold and copper
	*n	nàan	naan		naan	long time
	*n	nàaŋ	naaŋ		naaŋ	young woman

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*n	nàap	[n] hnaap	—	to press down
		nàaw	naaw	naaw	lemon
	*n	nəŋ	[n] hniŋ <sup>1</sup>	niŋ <sup>1</sup>	one
		nèew	nèew	—	way
		nìit	—	nit	to press
	*n	niiw	niiw <sup>2</sup>	niw <sup>2</sup>	fingerbreadth
		nĭk	nĭk	—	to believe
		nĭaŋ	nĭaŋ <sup>1</sup>	nəŋ <sup>1</sup>	because
		nĭat	nuat	—	to massage
	*n	nòk	nok	nok	bird
	*n	nòm	nom	nom	milk
	*n	nòp	nop	nop	to greet
	*n	nòɔj	nɔɔj <sup>2</sup>	nɔj <sup>2</sup>	small
		nòɔj	nɔɔj	—	gourd
	*n	nòɔk	nɔɔk	nɔk	outside
	*n	nòɔn	nɔɔn	nɔn	to sleep
	*n	nòɔŋ	nɔɔŋ <sup>2</sup>	nɔŋ <sup>2</sup>	younger sibling
		nòɔp	—	nɔp	to give
T		néε	nεε <sup>1</sup>	—	sure
	*n	nĭa	nĭa <sup>2</sup>	nə <sup>2</sup>	flesh
		nóɔ	nɔɔ	nɔ	rhinoceros horn

## A44. Proto-Southwestern Tai \*ɲ

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L		ɲàk	ɲak	[j] ɲak	demon
		ɲàŋ	—	[j] ɲaŋ <sup>2</sup>	to rest
		ɲàp	—	[j] ɲap	to catch
		ɲàa	ɲaʔ	[j] ɲaʔ	to enlarge
		ɲàaj	ɲaaj <sup>2</sup>	[j] ɲaaj <sup>2</sup>	to move
		ɲàam	ɲaam	—	to guard
		ɲàan	ɲaan	[j] ɲaan	slack
		ɲàaŋ	ɲaaŋ	—	Karen
		ɲèt	ɲat	[j] ɲet	to press down
	*ɲ	ɲii	ɲii <sup>1</sup>	[j] ɲii <sup>1</sup>	second
		ɲii	ɲii <sup>1</sup>	[j] ɲii	3rd term in 12-cycle
		ɲiaʔ	ɲiaʔ	[j] ɲeʔ	to do
		ɲĭiŋ	ɲĭiŋ <sup>1</sup>	[j] ɲiŋ <sup>1</sup>	to flow back
		ɲòt	ɲot	[j] ɲot	rank
		ɲòop	ɲoop	—	to hold
		ɲòɔk	ɲɔɔk	[j] ɲɔk	to put in
	*ɲ	ɲòɔm	ɲɔɔm <sup>2</sup>	[j] ɲɔm <sup>2</sup>	to dye
		ɲòɔm	ɲɔɔm	[j] ɲɔm	to give in
I	*ɲ	ɲàŋ	ɲaŋ	[j] ɲaŋ	still
	*ɲ	ɲiŋ	ɲiŋ	—	to shoot

A45. Proto-Southwestern Tai \*ŋ

	PSW	Kammu	Lao	Lü	
L		ŋàm	ŋam	ŋam	to cover
		ŋàt	ŋat	—	to break open
	*ŋ	ŋàw	ŋaw	ŋaw	shadow
	*ŋ	ŋàa	ŋaa	ŋaa	tusk
	*ŋ	lŋàʔ ŋàa	ŋaa	ŋaa	sesame
	*ŋ	ŋàaj	ŋaaj <sup>1</sup>	ŋaaj <sup>1</sup>	easy
		ŋàam	ŋaam	ŋaam	beautiful
		ŋàan	ŋaan	ŋaan	work
		ŋàaŋ	ŋaang <sup>2</sup>	ŋaang <sup>2</sup>	to stretch out
		ŋàaw	ŋaaw <sup>1</sup>	ŋaaw <sup>1</sup>	stupid
	*ŋ	ŋən	ŋən	ŋin	silver
		ŋiɪw	ŋiɪw <sup>2</sup>	niw <sup>2</sup>	kapok tree
		ŋiəŋ	ŋiaŋ <sup>1</sup>	ŋiaŋ <sup>1</sup>	fin spine
		ŋiəŋ	ŋiaŋ <sup>1</sup>	[ŋ] hŋiaŋ <sup>1</sup>	to incline
		ŋiəw	ŋiaw <sup>2</sup>	—	Shan
		ŋim	ŋim	ŋim	to get into
		ŋit	ŋit	ŋit	to marvel
	*ŋ	ŋiak	ŋiak	ŋək	dragon
		ŋian	ŋian <sup>1</sup>	ŋən <sup>1</sup>	border
		ŋiəŋ	ŋuaŋ	ŋuaŋ	trunk
		ŋiap	—	ŋəp	before breakfast
		ŋòm	ŋom	ŋom	to catch
	*ŋ	ŋòom	—	ŋoom <sup>2</sup>	to weigh down
		ŋḍək	ŋḍək	ŋək	sprout
		ŋḍəm	—	ŋəm	to fall on
		ŋḍəŋ	ŋḍəŋ <sup>2</sup>	ŋəŋ <sup>2</sup>	butt
	*ŋ	ŋùu	ŋuu	ŋuu	snake
		ŋùat	ŋuat	—	tax
T		ŋát	—	ŋat	to go dry
	*ŋ	ŋáap	ŋaap	ŋaap	to yawn

A46. Proto-Southwestern Tai \*ŋw

	PSW	Kammu	Lao	Lü	
	*ŋw	ŋiə	ŋua	wua	ox
	*ŋw	wàn	wan	wan	day
		wàp	[ŋ] ŋwap	—	bird trap

A47. Proto-Southwestern Tai \*l

	PSW	Kammu	Lao	Lü	
L		làʔ	laʔ	laʔ	to leave
		làʔ	laʔ	—	each
	*l	làj	laj <sup>1</sup>	laj <sup>1</sup>	to drive away
		làj	laj <sup>1</sup>	—	to discuss
		làj	laj	—	screw
	*l	làk	lak	lak	to steal
	*l	làmm	lam	lam	classifier for boats
		làmm	lam	—	song
		làmm	—	lam	tasty

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	làt	lat	lat	to take a shortcut
	làw	law	law	barrel
	làa	laa	laa <sup>1</sup>	to stick out
	làa	laa	laa	donkey
	làa	—	laa <sup>2</sup>	tea
*1	làaj	laaj	laaj	stripe
	làaj	laaj <sup>1</sup>	laaj <sup>1</sup>	to tell a lie
	làaj	laaj	—	dizzy
	làaj	laaj	—	to dissolve
*1	làak	laak	laak	to pull
	làan	laan <sup>2</sup>	laan <sup>2</sup>	million
*1	làaŋ	laaŋ <sup>2</sup>	laaŋ <sup>2</sup>	to wash
	làaw	laaw	laaw	Laos
	lèŋ	leŋ <sup>1</sup>	—	to hurry
*1	lèp	lep	lep	nail
	lèek	leek	lik	number
	ləəj	ləj <sup>1</sup>	ləj	to pursue
	ləək	ləək	—	to stop
	lèe	—	le	parakeet
*1	lèek	leek	lek	to change
	lèeŋ	leəŋ <sup>2</sup>	—	only
	lèep	leep	lep	fine
	lii	lii <sup>1</sup>	lii <sup>1</sup>	weir
	lii	lii	lii	market
*1	liin	liin <sup>2</sup>	lin <sup>2</sup>	tongue
*1	liiŋ	liiŋ	liŋ	monkey
*1	lia	lia	le	to lick
	liaŋ	liaŋ <sup>2</sup>	liaŋ <sup>2</sup>	to breed
	liap	liap	liap	to go along
	lip	lip	—	to break a taboo
	lii	lii <sup>2</sup>	li <sup>2</sup>	Lü
	lia	liaj <sup>1</sup>	lə <sup>1</sup>	to saw
*1	liak	liak	lək	to select
	liam	liam	—	to pretend
	lian	lian <sup>1</sup>	—	to move forward
	liaŋ	luaŋ	luaŋ	direction
*1	liat	liat	lət	blood
*1	lòm	lom	lom	wind
*1	lòŋ	loŋ	loŋ	to go down
	lòp	lop	lup	to avoid
	lòt	lot	hot	to lower
	lòt	lot	hot	to sprinkle
	lòok	look	look	world
	lòoŋ	looŋ	—	coffin
	lòop	loop	loop	to cheat
	lòʔ	—	ləʔ	to do again
*1	lòo	ləo <sup>2</sup>	lə <sup>2</sup>	wheel
	lòo	ləo	[1] hlə <sup>2</sup>	mule
*1	lòoj	ləoj	ləj	to float
*1	lòok	ləok	lək	to skin



	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
	*l	lɔm	lɔm <sup>2</sup>	lɔm <sup>2</sup>	to surround
	*l	lɔŋ	lɔŋ <sup>1</sup>	lɔŋ <sup>1</sup>	to go along
		lɔŋ	lɔŋ	lɔŋ	to try
		lɔp	lɔp	lɔŋ	to accompany
	*l	lɔt	lɔt	lɔt	to go through
		lɔl	—	law <sup>1</sup>	to speak
		lɔk	luk	luk	to rise
		lɔm	lum <sup>1</sup>	lom <sup>1</sup>	below
		lɔn	lun	luun	last
	*l	lɔuk	luuk	luuk	child
		lɔa?	lua <sup>2</sup>	—	bad
		lɔaj	luaj	—	rich
		lɔaŋ	luaŋ	—	to cheat
		lɔat	luat	—	wire
T		lák	lak	—	hundred millions
		láat	[l] lwaat	—	to cover
		lók	lok	—	fence

A48. Proto-Southwestern Tai \*r

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>	<i>Lü</i>	
L2		ràj	[h] raj <sup>1</sup>	—	field measure
		ràk	[h] rak	[h] rak	to love
		ràm hám	[h] ram <sup>1</sup>	[h] ram <sup>1</sup>	to learn
		ràn	[h] ran	—	to hurry
	*r	ràŋ	[h] raŋ	[h] raŋ	bee-hive
		ràŋ	[h] raŋ <sup>2</sup>	[h] raŋ <sup>2</sup>	abandoned
	*r	ràp háp	[h] rap	[h] rap	to catch
	*r	ràt	[h] rat	[h] rat	to fasten
		ràw	[h] raw <sup>2</sup>	—	10th term in 12-cycle
	*r	ràaj	[h] raaj <sup>2</sup>	[h] raaj <sup>2</sup>	to scold
		ràam	—	[h] raam	ashamed
		ràan	[h] raan <sup>2</sup>	[h] raan <sup>2</sup>	shop
		ràat	—	[h] raat	to give up
		ràaw	[h] raaw <sup>2</sup>	[h] raaw	to take up with a sieve
		rèŋ héŋ	[h] reŋ <sup>1</sup>	—	to urge
		rèε	[h] reε <sup>1</sup>	[h] re <sup>1</sup>	ore
		rèek	[h] reek	[h] rek	to begin
		rèem	[h] reem	[h] rem	waning
	*r	rèeŋ	[h] reeŋ	[h] reŋ	strong
		rèet	[h] reet	[h] ret	rhinoceros
		rèew	[h] reew <sup>2</sup>	—	spring-pole snare
		rìip	[h] riip	[h] rip	quickly
		rìit	[h] riit	[h] rit	tradition
	*r	rìak	[h] riak	[h] riak	to call
		rìan hían	[h] rian	[h] rian	to study
		rìp	[h] rip	—	to collect
		rìi	[h] ri <sup>2</sup>	—	to take away
	*r	rìa	[h] ria	[h] rə	boat
		rìam	[h] ruam <sup>1</sup>	—	to share
	*r	rìan hían	[h] rian	[h] rən	house

	<i>PSW</i>	<i>Kammu</i>		<i>Lao</i>		<i>Lü</i>	
		r̄iaŋ	[h]	riaŋ		—	to adorn
		ròʔ		—	[h]	roʔ	to take
	*r	ròm	[h]	rom <sup>1</sup>	[h]	rom <sup>1</sup>	shadow
		ròm	[h]	rom	[h]	ruum	to smoke
		ròp	[l]	ʔop		—	to fight
		ròok	[l]	ʔook		—	disease
		ròoŋ	[h]	rooŋ	[h]	rooŋ	building
		ròj	[h]	roj <sup>2</sup>	[h]	roj <sup>2</sup>	hundred
	*r	ròom	[h]	ruam <sup>1</sup>	[h]	ròm <sup>2</sup>	to weld together
		ròom	[h]	ròm <sup>1</sup>	[h]	ròm <sup>1</sup>	steep place
		ròn	[h]	ròn <sup>2</sup>	[h]	ròn <sup>2</sup>	warm
	*r	ròoŋ hóoŋ	[h]	ròoŋ <sup>2</sup>	[h]	ròoŋ <sup>2</sup>	to call
	*r	ròoŋ	[h]	ròoŋ <sup>1</sup>	[h]	ròoŋ <sup>1</sup>	valley
		ròop	[h]	ròop	[h]	ròp	to encircle
		ròot	[h]	ròot	[h]	ròt	to arrive
		rùm	[h]	rum		—	to gang up
		rùŋ		huŋ		—	to steam
		rùup	[h]	ruup	[h]	ruup	picture
	*r	rùut	[h]	ruut	[h]	rut	to strip off
	*r	rùa	[h]	rua <sup>2</sup>	[h]	roo <sup>2</sup>	fence
	*r	rùam	[h]	ruam <sup>1</sup>	[h]	rom <sup>1</sup>	together
		rùaŋ	[h]	ruaŋ <sup>2</sup>	[h]	ruaŋ <sup>2</sup>	8th term in 10-cycle
L3		háŋ	[h]	raŋ <sup>1</sup>	[h]	raŋ <sup>1</sup>	rich
		hát	[h]	rat		—	to make a net
	*r	háw	[h]	raw	[h]	raw	we
	*r	háak	[h]	raak	[h]	raak	root
		háaŋ	[h]	raaŋ <sup>2</sup>	[h]	raaŋ <sup>2</sup>	to abandon
		héeŋ	[h]	ræeŋ <sup>1</sup>		—	more
		héeŋ	[h]	ræeŋ <sup>2</sup>	[h]	reŋ <sup>2</sup>	vulture
		hók		—	[h]	ruk	to prod
		hóok	[h]	ròok	[h]	ròk	squirrel
		hóom		—	[h]	ròm	to tie
	*r	húu	[h]	ruu <sup>2</sup>	[h]	ruu <sup>2</sup>	to know
T	*r	rák		—	[h]	rak	lacquer tree
	*r	réʔ	[h]	raj <sup>1</sup>	[h]	raj <sup>1</sup>	swidden field
		ría		—	[h]	rə	string
		róoŋ	[h]	ròoŋ	[h]	ròŋ	to line
I		làaŋ	[h]	raaŋ		—	silver coin
		làap	[h]	raap	[h]	raap	flat
		lèek	[h]	ræek		—	first
		řiaŋ	[l]	řiaŋ <sup>1</sup>	[h]	rəŋ <sup>1</sup>	story
		lòt	[l]	ʔot		luat	vehicle
		lòoŋ	[h]	ròoŋ <sup>2</sup>	[h]	ròŋ <sup>2</sup>	to chant
		lòoŋ	[h]	ròoŋ	[h]	ròŋ	vice
		lùn	[h]	run <sup>1</sup>		—	generation

## A49. Proto-Southwestern Tai \*w

	PSW	Kammu	Lao	Lü	
L	*w	wàj	waj <sup>2</sup>	waj <sup>2</sup>	to keep
		wàj	waj	waj	quick
	*w	wàŋ	waŋ	—	pool
		wàŋ	waŋ	waŋ	to ringbark
		wàt	wat	wat	temple
		wàt	wat	—	to measure
	*w	wàa	waa <sup>1</sup>	waa <sup>1</sup>	to say
	*w	wàa	waa	waa	fathom
	*w	wàaj	waaj	waaj	to die out
		wàaj	—	waaj	after
		wàan	waan	waan	to ask
		wàaŋ	waanŋ	waanŋ	to put
		wàat	waat	waat	to draw
	*w	wàaw	waaw <sup>1</sup>	—	paper kite
		wèen	ween	wian	evil
		wèən	wəən <sup>1</sup>	—	to circulate
		wèʔ	wɛɛ <sup>1</sup>	wɛ <sup>1</sup>	to drop in and visit
		wèɛp	wɛɛp	wɛp	to shrink
		wèɛt	wɛɛt	wɛt	to surround
	*w	wìt	wit	wit	toilet
	*w	wìi	wii	wii	fan
		wìak	wiak	wiak	work
		wìaŋ	wiaŋ	wiaŋ	city wall
		wìaŋ	wəəŋ <sup>2</sup>	—	to go around
		wòŋ	wonŋ	wonŋ	ring
		wòɔk	wɔɔk	wɔk	cunning
		wòɔm	wɔɔm <sup>1</sup>	—	hat
T		wéɛn	wɛɛn <sup>1</sup>	wɛn <sup>1</sup>	glass

## A50. Proto-Southwestern Tai \*j

	PSW	Kammu	Lao	Lü	
L	*j	jàʔ	ɲaa <sup>1</sup>	[j] ɲaa <sup>1</sup>	grandmother
		jàŋ	ɲaŋ <sup>1</sup>	—	really
		jàw	ɲaw	[j] ɲaw <sup>2</sup>	chronically ill
		jàac	ɲaat	[j] ɲaat	to seize
	*j	jàak	ɲaak	[j] ɲaak	difficult
	*j	jàam	ɲaam	[j] ɲaam	time
		jàaŋ	ɲaaŋ	[j] ɲaaŋ	coop
		jàaŋ	—	[j] ɲaaŋ	area with one plant
		jàaw	ɲaaw	[j] ɲaaw	long
		jəŋ	ɲiŋ <sup>1</sup>	[j] ɲiŋ <sup>1</sup>	more
		jɛɛ	ɲɛɛ <sup>2</sup>	—	real
		jɛɛk	ɲɛɛk	—	to separate
		jɛɛŋ	ɲɛɛŋ	[j] ɲɛŋ	to look
	*hɲ	jìŋ	ɲiŋ	[j] ɲiŋ	woman
	*j	ĵiŋ	ɲiŋ <sup>1</sup>	[j] ɲiŋ <sup>1</sup>	to give
		ĵiit	ɲiit	[j] ɲiit	to extend
		jòk	ɲok	[j] ɲok	to lift

<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
	jòon	ɲoon	[j]	ɲuan	to toss
	jòɔ	ɲɔɔ <sup>1</sup>	[j]	ɲɔ <sup>1</sup>	third stomach
	jòɔj	—	[j]	ɲɔj	balance
	jòɔm	ɲɔɔm	[j]	ɲɔm	to surrender
	jòɔŋ	—	[j]	ɲɔŋ <sup>2</sup>	long-horned
	jòɔr jòɔn	ɲɔɔn <sup>2</sup>	[j]	ɲɔn <sup>2</sup>	because of
	jùŋ	—	[j]	ɲuuŋ	to share meat
	jùaʔ	ɲuaʔ		—	to provoke
	jùan	ɲuan		—	a Kammu subgroup

## A51. Proto-Southwestern Tai \*hm

	<i>PSW</i>	<i>Kammu</i>		<i>Lao</i>		<i>Lü</i>	
L2	*hm	máj	[m]	hmaj	[m]	hmaj	silk
	*hm	mán	[m]	hman <sup>2</sup>	[m]	hman <sup>2</sup>	steady
		máŋ		—	[m]	hmaŋ	worn
	*hm	már	[m]	hman	[m]	hman	barren
	*hm	máaj	[m]	hmaaj	[m]	hmaaj	to mark
	*hm	máaj	[m]	hmaaj <sup>2</sup>	[m]	hmaaj <sup>2</sup>	widow
	*hm	máak	[m]	hmaak	[m]	hmaak	betel nut
		máan	[m]	hmaan	[m]	hmaan	lucky in hunting
		máat	[m]	hmaat		—	flabby
		méʔ		—	[m]	hmeʔ	to lean against
		míaŋ	[m]	hmiaŋ <sup>2</sup>	[m]	hmiaŋ <sup>2</sup>	tea
		míi	[m]	hmi <sup>2</sup>	[m]	hmi <sup>2</sup>	tinder
		míin	[m]	hmiin <sup>1</sup>	[m]	hmiin <sup>1</sup>	ten thousand
		míaj	[m]	hmiaj	[m]	hmej	dew
		mían	[m]	hmian	[m]	hmean	to look like
		mót	[m]	hmot	[m]	hmot	clean
	*hm	móɔ	[m]	hmɔɔ	[m]	hmɔ	shaman
	*hm	móɔ	[m]	hmɔɔ <sup>2</sup>	[m]	hmɔ <sup>2</sup>	kettle
		móɔ	[m]	hmaw <sup>2</sup>	[m]	hmaw <sup>2</sup>	4th term in 12-cycle
		móɔŋ	[m]	hmɔɔŋ	[m]	hmeŋ	sad
	*hm	múu	[m]	hmuu <sup>1</sup>	[m]	hmuu <sup>1</sup>	group
	*hm	múu	[m]	hmuu	[m]	hmuu	pig
		múun	[m]	hmuun	[m]	hmuun	to raise
		múun	[m]	hmuun		—	to turn
	*hm	múak	[m]	hmuak	[m]	hmuak	hat
		múaŋ	[m]	hmuaf	[m]	hmuaf	basket
L3		màn	[m]	hman	[m]	hman	piastre
		màn	[m]	hman <sup>1</sup>		—	often
		màw	[m]	hmaw	[m]	hmaw <sup>2</sup>	to take as a whole
	*hm	màa	[m]	hmaa <sup>1</sup>	[m]	hmaa <sup>1</sup>	to soak
		mèep	[m]	hmeep		—	to lean down
	*hm	mək	[m]	hmik	[m]	hmek	tattoo
		mòop	[m]	hmɔɔp		—	to crouch
		mòom	[m]	hmɔɔm <sup>1</sup>	[m]	hmeom <sup>1</sup>	prince
	*hm	mòon	[m]	hmɔɔn	[m]	hmeon	pillow
		mùat	[m]	hmuat		—	platoon

## A52. Proto-Southwestern Tai \*hn

	PSW	Kammu	Lao	Lü	
L2	*hn	náj	—	[n] hnaj	earlier
	*hn	nák	[n] hnak	[n] hnak	heavy
	*hn	náj	[n] hnaŋ	[n] hnaŋ	skin
	*hn	náa	[n] hnaa <sup>2</sup>	[n] hnaa <sup>2</sup>	face
	*hn	náa	[n] hnaa <sup>2</sup>	—	crossbow
		náa	[n] hnaa <sup>2</sup>	—	season
	*hn	náam	[n] hnaam	[n] hnaam	thorn
		nép	[n] hnep	[n] hnep	to put in
		née	nɛɛ	[n] hne	to aim at
		néen	[n] hnɛɛn <sup>2</sup>	[n] hnɛn <sup>2</sup>	tight
	*hn	níi	[n] hnii <sup>2</sup>	[n] hnii <sup>2</sup>	to owe
	*hn	níi	[n] hnii	[n] hnii	to run away
	*hn	níaw	[n] hniaw	[n] hniaw	tough
	*hn	nía	[n] hnia	[n] hnə	upstream
		nóɔŋ	[n] hnɔɔŋ	[n] hnɔŋ	lake
	*hn	nóɔŋ	[n] hnɔɔŋ	[n] hnɔŋ	pus
	*hn	núm	[n] hnum <sup>1</sup>	[n] hnom <sup>1</sup>	young
		núaj	[n] hnua <sup>1</sup>	[n] hnua <sup>1</sup>	clf. for round things
L3		nàan	[n] hnan	—	abbot
	*hn	nàaw	[n] hnaaw	[n] hnaaw	cold
	*hn	nèɛp	[n] hnɛɛp	[n] hnɛp <sup>1</sup>	spring
		nìiw	[n] hniiw	[n] hniw <sup>2</sup>	gallstone
		nùn	[n] hnun	—	to raise

## A53. Proto-Southwestern Tai \*hɲ

	PSW	Kammu	Lao	Lü	
L2	*hɲ	ɲáj	[ɲ] hɲaj <sup>1</sup>	[j] hjaj <sup>1</sup>	big
	*hɲ	ɲáa	[ɲ] hɲaa <sup>2</sup>	jaa <sup>2</sup>	grass
		ɲáam	[ɲ] hɲaam <sup>2</sup>	[j] hjaam <sup>2</sup>	to frequent
	*hɲ	ɲáap	[ɲ] hɲaap	—	tough
		ɲíp	—	[j] hjip	to catch
	*hɲ	ɲía	[ɲ] hɲia <sup>1</sup>	—	bait
	*hɲ	ɲúŋ	[ɲ] hɲuŋ <sup>2</sup>	—	disturbed

## A54. Proto-Southwestern Tai \*hŋ

		Kammu	Lao	Lü	
L2		ŋɔʔ	ŋɔ	[ŋ] hŋɔʔ	disabled
		ŋɔɔp	—	[ŋ] hŋɔp	drowsy

## A55. Proto-Southwestern Tai \*hl

	PSW	Kammu	Lao	Lü	
L2		lák	—	[l] hlak	tame
	*hl	lák	[l] hlak	[l] hlak	pole
	*hl	láj	[l] hlaŋ	[l] hlaŋ	classifier for houses
	*hl	láv	[l] hlaw <sup>2</sup>	[l] hlaw <sup>2</sup>	wine
	*hl	lóa	[l] hlaa <sup>2</sup>	[l] hlaa <sup>2</sup>	late
	*hl	láj	[l] hlaaj	[l] hlaaj	many
	*hl	lák	[l] hlaak	[l] hlaak	strange
		láj	[l] hlaaŋ <sup>2</sup>	[l] hlaaŋ <sup>2</sup>	ought to

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
		láap	[1] hlaap	[1]	hlaap	to be deterred
		láaw	[1] hlaaw	[1]	hlaaw	bamboo spear
	*hl	lék	[1] hlek	[1]	hlek	iron
		lém	[1] hlem <sup>2</sup>		—	stem
		léem	[1] hleem	[1]	hlem	pointed
		léeŋ	leeŋ <sup>1</sup>	[1]	hleŋ <sup>1</sup>	to bind
		léep	[1] hleep	[1]	hlep <sup>1</sup>	pack
		líim	[1] hliim <sup>2</sup>	[1]	hlim <sup>2</sup>	oval silver coin
		líak	[1] hleek	[1]	hle <sup>1</sup>	fine
	*hl	lía	[1] hlia	[1]	hlə	remaining
	*hl	líaŋ	[1] hliaŋ	[1]	hleŋ	yellow
	*hl	lóm	[1] hlom <sup>2</sup>	[1]	hlum <sup>2</sup>	to sink
	*hl	lónŋ	[1] hloŋ	[1]	hluŋ	to forget
		lóo	[1] hloo <sup>1</sup>		—	to overflow
	*hl	lóc	[1] hlóc <sup>1</sup>	[1]	hlə <sup>1</sup>	to smelt
		lócok	[1] hlócok		—	to deceive
		lócón	[1] hlócón		—	to burst
	*hl	lócot	[1] hlócot	[1]	hlət <sup>1</sup>	tube
	*hl	lúaŋ	[1] hluaŋ	[1]	hluaŋ	royal
L3	*hl	láp	[1] hlap	[1]	hlap	to sleep
	*hl	lāan	[1] hlaan	[1]	hlaan	grandchild
	*hl	lèen	[1] hlin <sup>2</sup>	[1]	hlen <sup>2</sup>	to play
		liik	[1] hliik	[1]	hliik	to make way for
	*hl	liam	liam <sup>1</sup>		liam <sup>1</sup>	side
		liak	[1] hliak	[1]	hle <sup>1</sup>	cross-eyed
	*hl	liam	[1] hliam	[1]	hle <sup>1</sup>	python
	*hl	lòn	[1] hlon <sup>1</sup>	[1]	hlun <sup>1</sup>	to fall
		lòo	[1] hloo	[1]	hloo	dozen
	*hl	lüt	[1] hlut	[1]	hlut	to escape
		lúa	[1] hlua <sup>2</sup>		—	spade

## A56. Proto-Southwestern Tai \*hr and \*xr

	<i>PSW</i>	<i>Kammu</i>	<i>Lao</i>		<i>Lü</i>	
L2	*hr	ráj	haj		haj	rice-cooker
	*hr	ráam	haam		—	to carry together
	*hr	ráap	haap		haap	shoulder pole load
		ráaw	haaw		haaw	emptiness
		rəŋ	həŋ		hiŋ	long time
		rée	he <sup>1</sup>		—	to go in procession
		ríŋ	hiŋ <sup>2</sup>		hiŋ <sup>2</sup>	altar
	*hr	ríiw	hiw <sup>2</sup>		—	to carry in a strap
		rík	hik		hik	coarse
	*xr	rók	hok	[h]	hrok	six
		róm	hum <sup>2</sup>		hom <sup>2</sup>	to put on a drumhead
		rónŋ	hoŋ <sup>2</sup>		huoŋ <sup>2</sup>	valley
	*xr	rúu	huu		huu	ear
	*hr	rúuŋ	huŋ		—	to distill
	*hr	rúa húa	hua		hua	head
	*xr	rúaj húaj	huaj <sup>2</sup>		huaj <sup>2</sup>	river valley
L3	*xr	háp	hap		—	basket

	PSW	Kammu	Lao		Lü	
	*xr	háa	haa		haa	to seek
	*hr	háaŋ	haaŋ		haaŋ	tail
	*xr	héε	hεε	[h]	hrε	casting-net
	*hr	híin	hin	[h]	hrin	stone
	*xr	hóɔ	hɔɔ		hɔ	building
	*hr	hóɔk	hɔɔk	[h]	hrɔk <sup>1</sup>	sword
	*hr	hóɔŋ	hɔɔŋ <sup>2</sup>		hɔŋ <sup>2</sup>	room
T		ròɔn	hɔɔn		hɔn	cockscorb

A57. Proto-Southwestern Tai \*hw

	PSW	Kammu	Lao		Lü	
L2		wáj	[w] hwaj <sup>2</sup>	[w]	hwaj <sup>2</sup>	to greet
		wáŋ	[w] hwaŋ	[w]	hwaŋ	to believe
		wáaj	—	[w]	hwaaj <sup>1</sup>	early
		wáak	waak	[w]	hwaak	chipped
	*hw	wáan	[w] hwaan <sup>1</sup>	[w]	hwaan <sup>1</sup>	to sow
	*hw	wáan	[w] hwaan	[w]	hwaan	sweet
		wáan	[w] hwaan <sup>2</sup>	[w]	hwaan <sup>2</sup>	medicinal plant
		wéen	[w] hwéen	[w]	hwen	ring
L3		wít	[w] hwit	[w]	hwit	to lack
		wàn	—	[w]	hwan	to twine
	*hw	wàaj	[w] hwaaj <sup>2</sup>	[w]	hwaaj <sup>2</sup>	to swim
	*w	wàaŋ	[w] hwaan <sup>1</sup>	[w]	hwaan <sup>1</sup>	empty
	*hw	wìi	[w] hwii	[w]	hwii	comb

A58. Proto-Southwestern Tai \*ʔj

	PSW	Kammu	Lao		Lü	
L	*ʔj	ʔjáa	jaa		jaa	medicine
	*ʔj	ʔjáa	jaa <sup>1</sup>		jaa <sup>1</sup>	don't!
	*ʔj	ʔjáaŋ	jaan		jaan	resin
	*ʔj	ʔjáaŋ	jaan <sup>1</sup>		jaan <sup>1</sup>	kind
		ʔjén	jan		—	to rest one's feet
	*ʔj	ʔjím	jim		jim	to borrow
	*ʔj	ʔjín	jín		jín	to stand
		ʔjóɔk	jɔɔk		jɔk <sup>1</sup>	to joke
		ʔjóɔn	jɔɔn <sup>1</sup>		jɔn <sup>1</sup>	to withdraw
		ʔjóɔŋ	—		jɔŋ <sup>2</sup>	adorn
	*ʔj	ʔjúu	juu <sup>1</sup>		juu <sup>1</sup>	to stay
I		jìam	jiam <sup>2</sup>		jiam <sup>2</sup>	to see

A59. Proto-Southwestern Tai \*hj

	PSW	Kammu	Lao		Lü	
L	*ʔj	ʔják	jik	[j]	hjik	to pinch
		ʔjám	jam	[j]	hjam	to respect
		ʔjáaj	jaaj	[j]	hjaaj	to share
	*ʔj	ʔjáak	jaak	[j]	hjaak	to want
		ʔjáan	jaan <sup>2</sup>	[j]	hjaan <sup>2</sup>	to fear
		ʔjáat	jaat	[j]	hjaat	to filter
		ʔjít ʔjút	jut	[j]	hjít	to stop
I	*ʔj	jèen	jen	[j]	hjín	cold

## REFERENCES

- Baxter, William H. 1992. *A handbook of Old Chinese phonology*. Berlin: Mouton de Gruyter.
- Dāo Shìxūn 刀世勛 (Daw<sup>1</sup> Sî<sup>1</sup>-zin<sup>1</sup>) et al. 2002. *Dǎi-Hàn cídiǎn* 傣汉词典 (*Bap thɔj<sup>2</sup> gam Daj-Hɔ<sup>2</sup>*) [Lü-Chinese dictionary]. Kūnmíng: Yúnnán mínzú.
- Diller, Anthony. 1996. Thai and Lao writing. In Peter T. Daniels & William Bright (eds.), *The world's writing systems*, 457-466. New York: Oxford University Press.
- Downer, Gordon. 1992. The Tai element in Khmu?. *Mon-Khmer Studies* 18-19.44-51.
- Gedney, William J. 1965. Old Tai loanwords in Khmu?. Paper presented at the Linguistic Society of America annual meeting. Reprinted in Thomas John Hudak (ed.), 1997, *William J. Gedney's Tai dialect studies: Glossaries, texts, and translations*, 1275-1280. Ann Arbor: Center for South and Southeast Asian Studies, University of Michigan.
- Gedney, William J. 1993a. *William J. Gedney's The Saek language: Glossary, texts, and translations* (edited by Thomas John Hudak). Ann Arbor: Center for South and Southeast Asian Studies, The University of Michigan.
- Gedney 1993b. Saek final *-l*: archaism or innovation?. In Gedney 1993a, 917-973.
- Guignard, Théodore. 1912. *Dictionnaire laotien-français*. Hongkong: Imprimerie de Nazareth.
- Haudricourt, André-Georges. 1961. Bipartition et tripartition des systèmes de tons dans quelques langues d'Extrême-Orient. *Bulletin de la Société de Linguistique de Paris* 56.163-180.
- Kerr, Allen D. 1972. *Lao-English dictionary* (2 vols.). Washington: Catholic University of America Press.
- Li, Fang-kuei. 1977. *A handbook of comparative Tai*. Honolulu: University Press of Hawaii.
- Lindell, Kristina, Håkan Lundström, Jan-Olof Svantesson & Damrong Tayanin. 1982. *The Kammu year: Its lore and music*. London: Curzon Press.
- Luó Měizhēn 罗美珍. 1992. Xīshuāng Bǎnnà Dǎiwén 西双版纳傣文 [The Lü script of Sipsong Panna]. In *Zhōngguó shǎoshù mínzú wénzì* 中国少数民族文字, 63-88. Běijīng: Zhōngguó Zàngxué Chūbǎnshè 中国藏学出版社.
- Matisoff, James A. 2003. *Handbook of Proto-Tibeto-Burman: System and philosophy of Sino-Tibetan reconstruction*. Berkeley: University of California Press.
- Morev, Lev Nikolaevič. 1978. *Jazyk ly* [The Lü language]. Moskva: Nauka.
- Morev, Lev Nikolaevič. 1988. *Jazyk sèk* [The Saek language]. Moskva: Nauka.
- Morev, Lev Nikolaevič, Valentina Honovna Vasil'eva & Jurij Jakovlevič Plam. 1982. *Laosko-russkij slovar'* [Lao-Russian dictionary]. Moskva: Russkij jazyk.



- Reinhorn, Marc. 1970. *Dictionnaire laotien–français* (2 vols.). Paris: Éditions du Centre National de la Recherche Scientifique.
- Schuessler, Axel. 2007. *ABC etymological dictionary of Old Chinese*. Honolulu: University of Hawai‘i Press.
- Shorto, Harry Leonard. 2006. *A Mon-Khmer comparative dictionary*. Canberra: Pacific Linguistics.
- Svantesson, Jan-Olof. 1983. *Kammu phonology and morphology*. Lund: Gleerup.
- Svantesson, Jan-Olof. 1989. Tonogenetic mechanisms in Northern Mon-Khmer. *Phonetica* 46.60-79.
- Svantesson, Jan-Olof & David House. 2006. Tone production, tone perception and Kammu tonogenesis. *Phonology* 23.309-333.
- Svantesson, Jan-Olof, Kàm Ràw (Damrong Tayanin), Kristina Lindell & Håkan Lundström. Kammu Yùan – English dictionary. Unpublished ms.
- Weera Ostapirat. 2000. *Proto-Kra* (=LTBA 23(1)).
- Weera Ostapirat. 2005. Kra-Dai and Austronesian: Notes on phonological correspondences and vocabulary distribution. In Laurent Sagart, Roger Blench and Alicia Sanchez-Mazas (eds.), *The peopling of East Asia: Putting together archaeology, linguistics and genetics*, 107-131. London: Routledge Curzon.

