

The Reconstruction of Proto-Miao-Yao Tones

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1. Introduction

Miao and Yao are the Chinese designations for one of the national minorities living in the mountainous regions of the provinces of Hunan, Kweichow, Szechuan, Yünnan, Kwangsi, and Kwangtung. The Chinese term Miao has a longer history than does the term Yao: Miao occurs as early as the Book of Documents. Miao and Man seem to be Chinese transliterations of the Miao-Yao word for 'people' (see Appendix III). The Miao-Yao people have been in contact with the Hsia-Han people at least since the Shang-Chou period. In their struggle for survival, the Miao-Yao people have, however, been in continuous migration, going as far as the northern parts of Vietnam, Laos, and Thailand. Large communities have been broken into small groups: in one district, several different groups of Miao-Yao people of different origins and speaking different dialects may live next to one another.

In my discussion, the terms Miao and Yao are linguistically defined: Yao dialects are those which preserve the set of final consonants p, t, k, m, n, ŋ either completely or almost completely; Miao dialects have either none of these final consonants or at most n and ŋ. This classification coincides generally with the ethnic classification indicated by the two Chinese designations.

So far, there have been studies and reports on roughly seventy Miao-Yao dialects. These materials do not, however, present a well-balanced picture of the Miao-Yao languages. We have many reports on Miao dialects, but just a few on Yao dialects. These Miao dialects are, furthermore,

mainly from Kweichow and western Hunan: we have reports on only one dialect each from the provinces of Szechuan, Yünnan, and Kwangsi. Very few of these linguistic reports are sufficiently detailed. For many of the dialects which I shall discuss here, we have only twenty or thirty words; for still others, we have even less. Printing errors cause further frustration. (In Appendix I, I list all of the dialects for which we have records, no matter how scanty.)

1.1. Miao Dialects

There are four criteria for distinguishing subgroups of Miao dialects. One is the occurrence of the prenasalized initial stops and affricates mp, nt, ŋk, ŋq, nts, ntš, and ntr. In the first group of dialects, such initials have no tonal restrictions. This group is spoken by about 1,150,000 Miao people in southern Szechuan, western Kweichow, and eastern Yünnan, and by about 240,000 Yao people, called Punu, in the eastern part of the Autonomous Region for the Chuang people in Kwangsi. In the second group of dialects, these prenasalized initials can only coexist with a certain set of tones. This group has about 440,000 speakers in the various districts of Hunan (Huan-yüan, Feng-huang, Chi-shou, Ku-chang, Lu-hsi, and Pao-ching), and in the Sung-t'ao Autonomous District for the Miao people in Kweichow. In the third group of dialects, there are no prenasalized initials. This group has about 900,000 speakers, in the districts of K'ai-li, Lei-shan, Ma-chiang, Huang-p'ing, Chin-p'ing, Li-p'ing, Ts'ung-chiang, and Jung-chiang in Kweichow, in the Ta-miao-shan Autonomous District for

the Miao people in Kwangsi, in the San-chiang Autonomous District for the Kam people in Kwangsi, and in the T'ung-tao Autonomous District for the Kam people in Hunan.

The second criterion for differentiating types of Miao dialects is the presence or absence of initial consonantal clusters. In some dialects, such as the dialect of Ke-cheng, there are the initial clusters pr-, pl-, and ql- (Chart 1); in other dialects, such as the dialect of Kao-p'o, there are initial clusters pl- and tl-; in still other dialects, such as the dialect of Kao-t'ung, the corresponding initial clusters are ts- and lh-. Other variations are of minor importance.

Chart 1

Initial Consonantal Clusters in Miao Dialects

[Numbers indicate tones in the terms of Y. R. Chao's five-level scale:

Le maître phonétique 45.24-7 (1920.)]

	'house'	'hair'	'dog'
Ke-cheng	pra 45	plau 44	qla 45
Kao-p'o	plæ 13	plo 34	tlæ 13
Kao-t'ung	tsai 55	lhju 44	lhai 55

The contrast of back velars (q) and regular velars (k) is the third feature distinguishing one group of Miao dialects from another; most, but not all, Miao dialects have this contrast (Chart 2).

Chart 2

The q : k Contrast in Miao Dialects

	'star'	'chicken'	'horn'	'road'
Ke-cheng	qw 44	qai 44	kw 44	ka 45
Kao-p'o	qɣŋ 35	qɛ 34	kɣŋ 35	kæ 13
Kao-t'ung	qa 44	qɛ 44	ka 44	kɛ 55
Shih-tung-k'ou	qa 44	qai 44	ka 44	
Yao-lu	kuŋ 22	ka 22	kuŋ 22	kjai 34

The fourth criterion in classifying Miao dialects is the occurrence of nasal and lateral contrasts. Some Miao dialects, such as the dialect of Shui-wei, have three-way contrasts, which I posit for Proto-Miao: ?m : mh : m; ?n : nh : n; ?l : lh : l (Chart 3). Other dialects, such as the dialect of Ke-cheng, have reduced the three-way contrasts to two-way contrasts: mh : m; nh : n; lh : l. Yet other dialects, such as the dialect of Kao-t'ung, have only one type of nasal and lateral, n and l, in words of these disparate origins. (Kao-t'ung lh derives from other sources; cf. Chart 1.)

	'pain'	'night'	'eye'
Shui-wei	?mon 31	mhon 35	ma 35
Ke-cheng	maw 44	mhau 33	mɣŋ 22
Kao-t'ung	mu 44	maŋ 34	ma 33
	'this'	'sun'	'to eat'
Shui-wei	?non 55	nha 31	non 31
Ke-cheng	no 45	nhɣŋ 34	nau 55
Kao-t'ung	no 55	na 44	nu 51
	'to pour'	'big'	'old'
Shui-wei	?lu 31	lhu 31	lu 55
Ke-cheng	le 44	lhau 34	lau 31
Kao-t'ung	lo 34	ljo 44	lo 21

Chart 3

Nasals and Laterals in Miao Dialects

1.2. Yao Dialects

The Yao dialects differ from the Miao dialects not only in phonology, but also sometimes in vocabulary. (See, for example, Chart 4.)

Chart 4

Miao-Yao Differences in Vocabulary

[RF = Rising-Falling; RFL = Rising-Falling-Low; RFH = Rising-Falling-High; EH = Even-High; EL = Even-Low]

	'pig'	'black'	'nearby'	'boat'
Yao:				
Thailand: Chiengrai and Lampang	tuj RFL	kiak RFH	fat RFH	dzaŋ RFH
Thailand: Kwei-kang-pa	tuj RFL		fəd RFH	
Laos	tuj RFL	kiək RFH	fat RFH	dʒa:ŋ RFH
Hsing-an	tuj RF			
Yao-ling	tiŋ EH	kia EH		ddoŋ EL
Kim-Ōi	tõŋ	kiã	xiǎt	dəŋ
Ta-pan	tuõŋ	kĩa	phǎt	
Miao:				
Ke-cheng	mpo 33	qlw 44	zra 33	ŋko 55
Kao-p'o	mpa 54	tlɿ 34	zræ 54	ŋko 55
Kao-t'ung	pe 34	lha 44	hɛ 34	ña 51
Yao-lu	mpa 33	tlɯ 22	hɑ 33	n̄ɛ 44

We have very few extensive linguistic reports on Yao dialects: exceptions are the recent Yao-English Dictionary by S. J. Lombard (1968) and an early publication by F. M. Savina, Dictionnaire Français-Mán (1926). Purnell's and Lombard's reports on the Yao dialects in northern Thailand and Downer's material on the Yao dialect of the Northern Highland in Laos are based on substantially the same dialect. The description of Yao languages by Mao and Chou (1962) is very sketchy; their classification is based on a dialect's contacts with the Chinese language. The Mien dialects, with loanwords from Cantonese, are spoken by about 260,000 Yao people in more than sixty districts of the Kwangsi Autonomous Region for the Chuang People, and in the provinces of Hunan, Kwangtung, Yünnan, and Kweichow. More than 15,000 ethnically Miao people in the districts of Pao-t'ing, Lo-tung, Pai-sha, Tung-fang, Ch'iung-chung, Yai-hsien, Ling-shui, T'un-ch'ang, Wan-ning, Lin-kao, Ch'eng-mai, Lo-hui, and An-ting on the Island of Hainan speak the Mien dialects. The Tsao-min dialects, with loanwords from the Hakka dialect, are spoken by 29,000 Yao people in the district of Lien-nan in Kwangtung and the district of I-chang in Hunan. The Piao-min dialects, with loanwords from the southwestern Mandarin dialects, are spoken by 21,000 Yao people in the districts of Ch'üan-chou, Kuan-yang, and Kung-ch'eng in Kwangsi.

2. Proto-Miao-Yao Initials

The Miao-Yao tonal developments are closely related to the initials: the contrast of voiced and voiceless initials has brought about tonal splits; that of the aspirated and unaspirated initials has in some instances

led to further tonal diversification. Preglottalized and prenasalized initials also condition tone changes. I have tentatively reconstructed the initials given in Chart 5 for the Proto-Miao-Yao language.

3. Miao-Yao Tones

3.1. Modern Miao-Yao Tonal Features

In Appendix II I specify the tones of modern Miao-Yao dialects on a five-level scale, indicate in features the shapes and heights of the tones, and outline the internal contrasts within each dialect. I use the features high (H), mid (M), low (L), even (E), rising (R), and falling (F); convex and concave tones are complexes of rising-falling (RF) and falling-rising (FR) features. If in a dialect there is only one even, rising, falling, convex, or concave tone, no height specification is needed. Some dialects may have as many as four tones which, though they have the same shape, differ in height; to differentiate these tones I use the high : low contrast twice. I use the specification mid only when there are three or five tones of the same shape to be distinguished (see Chart 6).

Readers may disagree with me for emphasizing the internal contrasts within individual dialects rather than imposing a universal standard of tonal specification. Tonal descriptions in linguistic reports are, however, merely linguists' impressionistic notations: different investigators often offer different numerical notations for the same tonal phenomena; even a single author may, in different publications, give different sets of tonal notations for the same dialect. It is impossible to reconstruct

p	pr	pl	t	tr	ts	tš	k	kw	q
ph	prh	plh	th	trh	tsh	tšh	kh	kwh	qh
b	br	bl	d	dr	dz	dž	g	gw	G
mp	mpr	mpl	nt	ntr	nts	ntš	ŋk	ŋkw	Nq
mph	mprh	mplh	nth	ntrh	ntsh	ntšh	ŋkh	ŋkwh	Nqh
mb	mbr	mbI	nd	ndr	ndz	ndž	ŋg	ŋgw	NG
ʔm			ʔn	ʔr	ʔl	ʔħ	ʔŋ		ʔN
mh			nh	rh	lh	ħh	ŋh		Nh
m			n	r	l	ħ	ŋ		N
ʔv					ʔz	ʔž	ʔh		ʔ
f					s	š	h		
v					z	ž	<u>h</u>		

Chart 5

Proto-Miao-Yao Initials

Chart 6

Tonal Systems with Four- and Five-way Contrasts

Even Tones

Four-way Contrasts:

	EHH	EHL	ELH	ELL
Ma-chia-t'un	55	44	33	11
Chiao-ch'a	55	44	22	11
Ke-cheng	55	44	33	22
Hsi-kuan	55	44	33	22
Chiu-chou	55	44	33	22
Chia-pa				
Hsin-ch'iao				
Chou-hsi	55	44	33	22
Yang-hao	55	44	33	11
K'ai-t'ang [P'an, Ts'ao; Ts'ao (cf. Bibliography)]	55	44	33	11
Kao-t'ung	55	44	33	11
Hsi-shan-chieh	55	44	33	22
Yao-lu	44	33	22	11
Tung-t'ou	55	44	33	22

Five-way Contrast:

	EHH	EHL	EM	ELH	ELL
Shih-tung-k'ou	55	44	33	22	11

Chart 6 (cont.)

Falling Tones

Four-way Contrasts:

	FHH	FHL	FLH	FLL
Hsien-chin	54	43	32	21
Chiao-ch'a	53	42	32	31
Tsung-ti	43	42	32	31
Yiu-chien	54	53	43	31
Pai-t'o	54	43	32	21

Rising Tones

Four-way Contrast:

	RHH	RHL	RLH	RLL
Hsin-ch'ang	45	24	23	14

Five-way Contrast:

	RHH	RHL	RM	RLH	RLL
Hsiao-miao	35	24	23	13	12

the tonal values for the four historical categories A, B, C, D (cf. section 3.2.), and I am trying to avoid specifications which are unnecessary and irrelevant to the internal structure of an individual tonal system.

3.2. Proto-Miao-Yao Tones

There are four Proto-Miao-Yao tonal categories: A, B, C, D. (The D category is made up of words with the stop endings *-p, *-t, *-k, which are still found in some Yao dialects.) There is no evidence that the four-tone system found in some modern dialects (Chart 7) derives from a system with fewer tones: words with the same segmental makeup have contrasting tones. There is, however, evidence that systems with more than four tones derive from a four-tone system.

Chart 7

Miao Four-tone Systems

	A	B	C	D
Lao-chün	31	55	24	33
Yeh-chi-p'o	31	55	24	31
Shui-wei	31	55	35	31

3.3. Tonal Splits

In some Miao-Yao dialects, one or two of the A-D categories remain as entities, while the others have split. This is true of the A and B tone categories in P'ing-yai, B and D tone categories in Hsiao-chang, C and D tone categories in Wu-chia, and the D-tone category in Chiu-chou, Chia-pa, Hsin-ch'iao, Chou-hsi, Hsüan-wei-chen, P'ai-ting, and Chin-p'ing.

In most Miao-Yao dialects, however, these tonal categories have split into two: words with voiceless initials have one tone; those with voiced initials have another tone. (Preglottalized nasals, laterals, and *r are in the voiceless class.) A1, B1, C1, D1 words originally had voiceless initials; A2, B2, C2, D2 words originally had voiced initials. We might expect A1, B1, C1, D1 to be phonetically higher than A2, B2, C2, D2, respectively, but in fact we do not always find such a correlation in the modern dialects. From the reflexes in modern dialects it is impossible to reconstruct the original shapes of these four tones and thus the nature of the contrasts between the odd and even series of tones. In Chart 8 I catalogue the contrasts of A1/A2, B1/B2, C1/C2, D1/D2 tones in modern dialects. (Numbers in parentheses correspond to the numbered list of dialects in Appendix I; numbers outside parentheses indicate tones.)

Chart 8

Contrasts of Odd and Even Tones in Modern Miao-Yao Dialects

[E = Even; R = Rising; F= Falling]

	A1/A2	B1/B2	C1/C2	D1/D2
E/E	44/55 (11)	55/33, 11 (3)	55/44 (47)	44/55 (19)
	33/55 (26, 27,	55/22 (33)	55/33 (2)	44/33 (55)
	29, 30, 31, 3,	44/33 (55)	44/33 (19)	44/22 (54)
	37, 49)	44/22 (26, 27,	33/22 (12)	33/55 (11)
	22/44 (50)	29, 31, 1, 32,	33/11 (1, 50)	11/?11 (59)
		34, 35, 36, 37,		
E/R		38, 40, 41, 42,		
		43, 44, 48, 54)		
		33/22 (52)		
		22/11 (47)		
	55/35 (3)	55/13 (3, 28)	44/23 (31, 2, 3)	55/12 (63)
	33/24 (28)	44/23 (49)	44/13 (4, 5, 30)	44/13 (2)
E/F	33/13 (52)			33/24 (4, 5)
	33/12 (51)			
E/F	55/54 (21)	55/31 (1)	55/31 (28)	44/31 (50)
	55/53 (59)	55/21 (5, 46)	33/53, 31 (3)	33/21 (12)
	44/51 (33, 46)	44/21 (39)	33/21 (11, 59)	
	44/41 (69)		22/21 (45)	

Chart 8 (cont.)

	A1/A2	B1/B2	C1/C2	D1/D2
E/F (cont.)	44/31 (67) 33/53 (31.1, 2, 32, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45) 33/21 (63)			
E/RF		55/231 (51)		
R/R		13/35 (45)	35/23 (31.1, 34, 35, 36, 38, 40, 41, 42, 43, 49) 35/13 (39, 44) 24/12 (63) 13/23 (29, 32)	
R/E	35/55 (48) 34/55 (22) 34/33 (47) 24/55 (20)	45/11 (31.2) 35/11 (30, 31.3) 34/11 (59) 13/33 (11)	35/33 (33) 34/33 (46) 24/11 (67, 69)	35/22 (52) 13/11 (33, 46)

Chart 8 (cont.)

	A1/A2	B1/B2	C1/C2	D1/D2
R/F	35/31 (54,55)	45/31 (12) 34/42 (50) 13/32 (21) 13/31 (19,20) 13/21 (22)	35/53 (52) 35/21 (48) 13/21 (26, 27,37)	35/32 (45) 23/53 (48) 23/21 (44) 13/21 (31.1,2, 34,35,36,38, 39,40,41,42) 12/21 (31.3)
F/F	54/21 (2) 53/31 (1) 43/32 (4) 43/31 (5)	54/21 (4)	53/42 (54,55) 43/21 (21)	53/31 (30,47) 43/54 (21) 41/21 (51)
F/E	42/55 (19)	51/11 (2)	54/33 (22) 43/22 (20) 42/22 (51)	54/55 (22) 43/55 (20)
F/R				53/13 (28)
F/RF		52/231 (63)		

Chart 8 (cont.)

	A1/A2	B1/B2	C1/C2	D1/D2
RF/RF		454/231 (67) 453/231 (69)		
RF/E				454/11 (69) 453/11 (67)

3.3.1. The Role of Voicing

Several Miao dialects have preserved the voicing contrast which led to the A1 : A2, B1 : B2, C1 : C2, D1 : D2 tonal split. The Shih-men-k'an dialect is one of these. Where, for example, in words with dental-stop initials (Chart 9) Shih-men-k'an has differences in both tone and voicing, Ma-chia-t'un has differences in tone alone; Kao-t'ung has differences in tone and though it does not have voiced-stop initials, its reflex for a prenasalized voiced dental stop does differ from that of a simple voiced stop: *nt- → t-, *nd- → n-.

Chart 9

The Shih-men-k'an Voicing Contrast in Dental-stop Initials

Proto-Miao-Yao	*t-	*d-
	'to kill'	'to die'
Shih-men-k'an	to 33	do 31
Ma-chia-t'un	ta 55	ta 33
Kao-t'ung	ta 34	ta 33
Proto-Miao-Yao	*nt-	*nd-
	'tree'	'hemp'
Shih-men-k'an	ntau 33	nda 53
Ma-chia-t'un	nton 55	nta 33
Kao-t'ung	tu 34	nau 33

In Wang Fu-shih's description of the phonological system of the Shih-men-k'an dialect (1957), there are both unaspirated and aspirated voiced initial stops, spirants, nasals, and laterals. No contrast of voiced unaspirated and voiced aspirated initials can, however, be reconstructed for Proto-Miao-Yao; the two series do not, for the most part, contrast even synchronically. (See Chart 10, in which I summarize the relationship between the seven tones and the initials.) Voicing contrasts are found in words with tones 33 (both stops and continuants) and 55, 11 (continuants only). The contrast of aspirated and unaspirated voiceless initials is also found in words with tones 55, 33, and 11. It is only in words with tone 31, however, that aspirated voiced initials contrast with their unaspirated counterparts. Two historically distinct tones have here merged in one, but have left their mark on the initials. The four-way contrast of voiceless unaspirated, voiceless aspirated, voiced unaspirated, and voiced aspirated stems from a three-way contrast in Proto-Miao-Yao. The double development of voiced initials in the B2 and C2 categories has a grammatical correlate (cf. Chart 11 for examples): nouns have higher tones than do verbs. In the A2 and D2 categories, nouns have the same tone as verbs; whatever raised the pitch of nouns in the B2 and C2 categories (or lowered the pitch of verbs) was evidently missing in the A2 and D2 categories.

Voiceless

Stops: Unasp. A1 B1 55 C1 33 D1 11

Asp. A1 B1 55 C1 33 D1 11

Continuants A1 B1 55 C1 33 D1 11

Voiced

Stops: Unasp. B2 33 C2 53 C2 31

Asp. A2 35 B2 13 D2 31

Continuants:

Unasp. A1 B1 55 B2 33 D1 11 C2 53 C2 31

Asp. A2 35 B2 13 D2 31

Chart 10

Shih-men-k'an Tones and Initials

['stops' include affricates; 'continuants' include spirants, laterals,
and nasals]

Chart 11

Voiced Aspirated Initials in Shih-men-k'an

[Forms from Ke-cheng, a dialect without such initials, are given here for comparison.]

Proto-Miao-Yao	Shih-men-k'an
A2	35; voiced aspirated initials
B2	33; voiced unaspirated initials (mainly nouns) 13; voiced aspirated initials (mainly verbs)
C2	53; voiced unaspirated initials (mainly nouns) 31; voiced unaspirated initials (mainly verbs)
D2	31; voiced aspirated initials

Examples:

	Shih-men-k'an	Ke-cheng
A2	b ^h aw 35 'flower'	poŋ 55
	m ^h a 35 'to have'	mp ^h a 55
B2	mba 33 'fish'	mp ^h a 31
	m ^h a 13 'to buy'	mɿŋ 31
C2	ndø 53 'hemp'	nto 22
	do 31 'to die'	to 22
D2	nd ^h ae 31 'tongue'	mplai 21
	b ^h o 31 'to see'	pɿ 21

The development of aspirated or spirantized voiced stops from plain voiced ones is not limited to the Shih-men-k'an dialect (cf. Chart 12). The dialect of Shui-wei has prespirantized voiced stops (Proto-Miao-Yao *b- → Shui-wei vb-, *d- → ɔd-, *g- → hg-, *dʒ- → ʒdʒ-), which are, however, devoiced when preceded by a nasal. In the dialect of Hsien-chin, voiced-stop initials have been devoiced in the A2 and D2 tones, but are voiced and heavily aspirated in the B2 and C2 tones. In the dialect of Chi-wei, the stop element of the voiced-stop initials has been devoiced throughout, but in the B2, C2, D2 tones the voiceless stop is still followed by a voiced aspiration (h). In the dialect of Tsung-ti, voiced aspiration is found only after prenasalized initials in words with B2 and C2 tones; after plain initials in words with B2 and C2 tones there is voiceless aspiration.

From the correlation of the odd-numbered series of tones with voiceless initials in some modern dialects and that of the even-numbered series with voiced initials we may extend the reconstruction of an earlier voicing contrast to areas where there is no evidence from modern dialects. Words with odd-numbered tonal reflexes in one set of dialects, indicating voiceless initials, but even-numbered reflexes in another set, indicating voiced initials, provide one example of such a reconstruction (cf. Chart 13), which suggests, in turn, the possibility of a prefix which caused devoicing (or voicing) in certain dialects.

Chart 12

Proto-Miao-Yao Voiced-stop Initials in Some Miao Dialects

Proto-Miao-Yao	*dʒ-	*ndʒ-	*d-	*mbr-
	'nine' (A2)	'mouth' (A2)	'to wait' (B2)	'fish' (B2)
Shih-men-k'an	dʒha 35	ʔdʒhau 35	dho 13	mbe 33
Shui-wei	ʒdʒa 31	ntʂo 31	ʔdon 55	mpi 55
Hsien-chin	tʂo 32	ʔtʂeu 32	dha 21	ndzrhe 21
Chi-wei	tʂo 21	ʔo 21	thaŋ 22	mrhuw 22
Tsung-ti	tʂa 42	ʔtʂu 21	thoŋ 11	mprhe 11
Proto-Miao-Yao	*d-	*nd-	*g-	*nq-
	'to die' (C2)	'hemp' (C2)	'ten' (D2)	'narrow' (D2)
Shih-men-k'an	da 31	nda 53	ghau 31	nghae 31
Shui-wei	ɔda 35	nta 35	hgo 31	nqe 31
Hsien-chin	dha 13	ndhɔ 13	kəu 24	nqai 24
Chi-wei	tha 42	nho 42	khu 22	nha 22
Tsung-ti	tha 13	ntha 13	ku 31	nke 31

Chart 13

Words with both Odd- and Even-numbered Tonal Reflexes

Proto-Miao-Yao	*b-/*p- 'to fall'	*n-/*nh- 'to wear'	*l-/*lh- 'land'	*mb1-/*mp1- 'tongue'
Ma-chia-t'un	poŋ 54 (A1)	nhaŋ 51 (B1)		mplai 44 (D1)
Ke-cheng	paw 44 (A1)	nhon 45 (B1)	law 33 (C1)	mplai 21 (D2)
Kao-p'o	poŋ 34 (A1)	nhaŋ 13 (B1)	loŋ 54 (C1)	mp1e 55 (D2)
Shih-tung-k'ou	pa 51 (A2)	naŋ 22 (B2)	la 33 (C2)	ħe 11 (D2)
Kao-t'ung	pa 51 (A2)	nɿŋ 21 (B2)	la 33 (C2)	ħe 11 (D2)
Hsi-shan-chieh		ně 11 (B2)		
Yao-lu	pou 22 (A1)	nan 42 (B2)	lou 33 (C1)	ntljai 31 (D2)
Ket-ba-chun	poŋ 55 (A1)	nha 34 (B1)	loŋ 33 (C1)	mplai? 11 (D2)

3.3.2. The Role of Aspiration

In some dialects the development of the four tone categories was affected by the presence or absence of aspiration in the initial consonants of the proto-language. Within each of the four basic tone categories there are as many as three reflexes, depending on the initial: one (Chart 14, column 1a) derives from words with initial glottalized voiced spirants, nasals, and laterals (e.g. *ʔv-, *ʔm-, *ʔl-), unaspirated voiceless stops and affricates (e.g. *ʔ-, *p-, *ts-, *tʰl-), and prenasalized unaspirated voiceless stops and affricates (e.g. *mp-, *nts-, *ntl-); another (Chart 14, column 1b) derives from words with initial voiceless spirants, nasals, and laterals (e.g. *f-, *mh-, *lh-), aspirated voiceless stops and affricates (e.g. *ph-, *tsh-, *tʰlh-), prenasalized aspirated voiceless stops and affricates (e.g. *mph-, *ntsh-, *ntlh-); the third (Chart 14, column 2) derives from words with initial voiced spirants, nasals, laterals (e.g. *v-, *m-, *l-), voiced stops and affricates (e.g. *b-, *dz-, *dl-), and prenasalized voiced stops and affricates (e.g. *mb-, *ndz-, *ndl-).

Chart 14

The Role of Aspiration in Tonal Splits

[1a: original unaspirated initials; 1b: original aspirated initials;
2: original voiced initials]

	A			B			C			D		
	1		2	1		2	1		2	1		2
	a	b		a	b		a	b		a	b	
Lo-k'uan	33	33	45	54	44	24	54	44	33	13	13	31
*Chiao-ch'a	32	22	53	42	232	11	55	35	13	44	13	31
Tsung-ti	32	22	42	43	243	11	45	24	13	33	13	31
Szu-ta	33	13	35	44	34	33	13	11	44	31	11	53
Ke-cheng	34	44	55	45	45	31	33	33	22	33	33	21
Pai-suo	33	23	55	35	24	13	13	13	43	22	12	53
Hsin-ch'ang	44	23	45	24	14	55	33	21	32	33	21	55
Hsiao-miao	35	15	31	53	31	213	55	42	24	44	24	213
Yiu-chien	33	33	55	35	15	13	13	13	43	54	31	53
P'ing-yai	24	24	24	13	13	13	53	31	31	55	55	44
Hsi-kuan	33	33	53	55	55	22	44	24	13	44	24	21

*In the D tone, Chiao-ch'a has double reflexes: 44 and 55 for 1a, 13 and 35 for 1b, 31 and 13 for 2.

3.3.3. The Role of Prenasalized Initials

The presence of homorganic nasals preceding the initials has produced a tonal split in some dialects (Chart 15). In the dialect of Tung-t'ou there are as a result three tones in the A category: one where the original initial was plain voiceless (Chart 15, column 1x), another where it was prenasalized voiceless (column 1y), the third where it was voiced (column 2). In the B-C-D tone categories there are just two tones: in the B category, the tones of words with plain voiceless initials and those of words with voiced initials merged; in the C and D categories the tones of words with prenasalized voiceless initials merged with those of words with voiced initials. In the dialect of Hsiao-chang the tones of words with prenasalized (but not plain) voiceless initials and those of words with voiced initials merged in the A and C categories; in the B and D categories there was no tonal split. In the dialect of Wu-chia, on the other hand, the tonal merging with prenasalized voiceless initials and voiced initials is characteristic of the A and B categories while the C and D categories show no split.

Chart 15

The Role of Prenasalized Initials in Tonal Splits

[lx: original plain voiceless initials; ly: original prenasalized voiceless initials; 2: original voiced initials]

	A			B			C			D		
	1	2		1	2		1	2		1	2	
	x	y		x	y		x	y		x	y	
*Tung-t'ou	53	33	21	55	44	55	33	22	22	34	24	24
Hsiao-chang	53	21	21	55	55	55	33	13	13	24	24	24
Wu-chia	53	33	33	33	35	35	11	11	11	11	11	11

*In Tung-t'ou the nasal elements in the aspirated prenasalized initials are not stable; the tonal developments of words with these initials are similar to those of words with plain voiceless initials.

3.3.4. Post-split Merging

As the result of the split of the four tones A, B, C, D, Miao-Yao dialects may have as many as eight tones. Some, however, have fewer: not every tone split in every dialect. Post-split mergings have also reduced the number of tonal categories. (For several major patterns in this sort of merging, see Chart 16. Appendix II shows other, sporadic, instances of merging.)

Chart 16

Merging after the Split of A, B, C, D Tones

I.	Chia-ting	Pai-t'o	Kao-p'o	Pai-chin
A2 = D2	55	54	55	55
C1 = D1	43	43	54	44
II.		T'uan-p'o		
A2 = D2		55		
C1 = D1 = B2		33		
III.	Feng-hsiang	Chi-wei	La-i-p'ing	
B1 = D1	53	44	44	
B2 = D2	13	22	33	
IV.	Thailand Yao	Laos Yao		
B1 = D1	453	454		
C2 = D2	11	11		
V.	San-tu	Thailand White Meo		
B2 = D1	35	11		

4. Miao-Yao : Chinese Tonal Correspondences

The tonal correspondences of Miao-Yao words which closely resemble Chinese words confirm the reconstruction of a Miao-Yao A1/A2, B1/B2, C1/C2, D1/D2 tonal system: for the eight Chinese tones A1/A2, B1/B2, C1/C2, D1/D2 the Miao-Yao correspondences display the full range of distinct reflexes which compels the reconstructions outlined above in this paper. (In Chart 17 I give one example of Chinese : Miao-Yao correspondences for each tonal category; for additional examples see Appendix III. In Chart 18 I give examples of words which have stop endings and D tone in some Chinese and Yao dialects but which in Miao dialects lack--have lost?--the stop endings and have C tone. Note that in some other examples, as in Chart 17, the Miao dialects have the D tone even in the absence of stop endings. This latter type may imply later loss of the stops.)

Chart 17

Miao-Yao : Chinese Correspondences (A Tone)

	'chicken'	'copper'
Chinese:		
Cantonese	kai 55 (A1)	thuŋ 11 (A2)
Ch'ao-chou	koi 33 (A1)	toŋ 55 (A2)
Wenchow	tsw 44 (A1)	doŋ 31 (A2)
Miao-Yao:		
Ma-chia-t'un	qa 54	toŋ 21
Ke-cheng	qai 44	taw 55
Kao-p'o	qe 34	toŋ 55
Shih-tung-k'ou	qai 44	
Kao-t'ung	qe 44	tu 51
Hsi-shan-chieh		tã 33
Yao-lu	ka 22	tou 44
Ket-ba-chun	qai 55	toŋ 53
Thailand Yao	cai EH	toŋ F

Chart 17

Miao-Yao : Chinese Correspondences (B Tone)

	'wide'	'to buy'
Chinese:		
Cantonese	kwɔŋ 35 (B1)	ma:i 13 (B2)
Ch'ao-chou	kuaŋ 52 (B1)	boi 52 (B1)
Wenchow	kuɔ 54 (B1)	ma 24 (B2)
Miao-Yao:		
Ma-chia-t'un	klaŋ 51	ma 11
Ke-cheng	koŋ 45	mɿŋ 31
Kao-p'o		mɿŋ 21
Shih-tung-k'ou	faŋ 55	ma 22
Kao-t'ung	fɿŋ 55	ma 21
Hsi-shan-chieh	kwai 22	
Yao-lu	kpan 34	
Ket-ba-chun	?da 34	mua 11
Thailand Yao	caŋ RFH	maa i RFL

Chart 17

Miao-Yao : Chinese Correspondences (C Tone)

	'charcoal'	'to sell'
Chinese:		
Cantonese	tha:n 33 (C1)	ma:i 22 (C2)
Ch'ao-chou	thũã 12 (C1)	boi 11 (C2)
Wenchow	tha 42 (C1)	ma 11 (C2)
Miao-Yao:		
Ma-chia-t'un	then 55	
Ke-cheng	the 33	mɿŋ 22
Kao-p'o	thẽ 54	
Shih-tung-k'ou	than 45	
Kao-t'ung	tha 34	
Hsi-shan-chieh		me 44
Yao-lu		mɿŋ 11
Ket-ba-chun	then 33	mua 21
Thailand Yao	thaan R	maai EL

Chart 17

Miao-Yao : Chinese Correspondences (D Tone)

	'to drink'	'ten'
Chinese:		
Cantonese	ho 55 (D1)	sap 22 (D2)
Ch'ao-chou	ho 1 (D1)	tsap 5 (D2)
Wenchow	hø 23 (D1)	zai 12 (D2)
Miao-Yao:		
Ma-chia-t'un	hau 44	kou 13
Ke-cheng	hu 33	tʃu 21
Kao-p'o	hy 54	tʃy 55
Shih-tung-k'ou	hau 13	tʃu 11
Kao-t'ung	hu 13	tʃu 11
Hsi-shan-chieh	ho 54	kw 31
Yao-lu	hw 44	ʔw 31
Ket-ba-chun	hau 11	kau? 11
Thailand Yao	hop RFH	tsiep EL

Chart 18

Words with Miao C Tone, Yao and Chinese Stop Endings and D Tone

	'guest'	'eye'	'bird'	'to drop, drip'
Ma-chia-t'un	qhwa 55		noŋ 33	ntro 33
Ke-cheng	qho 33	mɿŋ 22	naw 22	ntrau 22
Kao-p'o	qha 34?	mɿŋ 33	noŋ 33	ntrɿ 33
Shih-tung-k'ou		ma 33	nau 33	ŋo 33
Kao-t'ung		ma 33	nu 33	ŋo 33
Hsi-shan-chieh	khe 55	ne 44		
Yao-lu	kha 34?	moŋ 11	no 11	ntjau 11
Ket-ba-chun	qhua 33	mua 21	noŋ 21	nro 21
Thailand Yao	khek RFH	mbziŋ EL	no 11	dop EL
Archaic Chinese	*khrak (D)	*mjok (D)	*nok (D)	*dep (D)

Chart 18 (cont.)

Words with Miao C Tone, Yao and Chinese Stop Endings and D Tone

	'hundred'	'six'	'to wear'	'iron'	'strength'
Ma-chia-t'un	pa 55	trou 55	trou 55		zro 33
Ke-cheng	po 33	tru 33	trau 33	lhu 33	zrau 22
Kao-p'o	pa 54	trɿ 54		lhɿ 54	zrɿ 33
Shih-tung-k'ou	pa 45	tju 45	tjo 45	lhau 45	ho 33
Kao-t'ung	pɛ 34	tju 34	tjo 34	lhu 34	ho 33
Hsi-shan-chieh	pɛ 55	tʂu 55		lhw 55	jæ 44
Yao-lu	pai 33	tju 33		lhw 33	hau 11
Ket-ba-chun	pua 33	trau 33	lhau	lhau 33	ʒo 21
Thailand Yao	pɛk RFH	cuk RFH	tap RFH	lhiaɿ RFH	
Archaic Chinese	*prak (D)	*druk (D)	*tap (D)	*thiet (D)	*ljɛk (D)

Appendix I

A List of Miao-Yao Dialects

[For bibliographical details, see Bibliography under the names bracketed here.]

I. The Miao (苗) Dialects:

A. Yünnan (雲南)

1. Mo-shih-ts'un (莫石村) in the district of Eh-shan (峨山) [Kao]

B. Szechuan (四川)

2. Ma-chia-t'un (馬家屯) in the district of Hsü-yung (叙永) [Ruey and Kuan]

C. Kweichow (貴州)

3. Shih-men-k'an (石門坎) in the district of Wei-ning (威寧) [Li, Ch'en, Ch'en; Wang, December, 1957; Institute, 1962; Ying]
4. Hsien-chin (先進) in the district of Pi-chieh (畢節) [Li, Ch'en, Ch'en]
5. Ta-nan-shan (大南山) in the district of Pi-chieh (畢節) [Institute, 1962; Ying]
6. Cheng-feng (貞豐) [Esquirol]
7. Lo-k'uan (樂寬) in the district of Wang-mo (望謨) [Li, Ch'en, Ch'en]
8. Chiao-ch'a (交城) in the district of Tzu-yün (紫雲) [Institute, 1962; Ying]

9. Tsung-ti (宗地) in the district of Tzu-yün (紫雲)
[Li, Ch'en, Ch'en]
10. Szu-ta-chai (四大寨) in the district of Tzu-yün
(紫雲) [Li, Ch'en, Ch'en]
11. T'uan-p'o (團坡) in the district of Tzu-yün (紫雲)
[Li, Ch'en, Ch'en]
12. Ke-cheng-chai (格正寨) in the district of Kwang-shun
(廣順) (now Ch'ang-shun 長順) [Chang Kun: field
notes]
13. Pai-suo (擺梭) in the district of Ch'ang-shun
(長順) [Li, Ch'en, Ch'en]
14. Hsin-ch'ang (新場) in the district of Lo-tien (羅甸)
[Li, Ch'en, Ch'en]
15. Hsiao-miao-chai (小苗寨) in the district of Lo-tien
(羅甸) [Li, Ch'en, Ch'en]
16. Yiu-chien (油尖) in the district of Lo-tien (羅甸)
[Li, Ch'en, Ch'en]
17. P'ing-yai (平岩) in the district of Lo-tien (羅甸)
[Li, Ch'en, Ch'en]
18. Hsi-kuan (西關) in the district of P'ing-t'ang (平塘)
[Li, Ch'en, Ch'en]
19. Pai-chin (擺金) in the district of Hui-shui (惠水)
[Li, Ch'en, Ch'en]

20. Chia-ting (甲定) in the district of Hui-shui (惠水)
[Institute, 1962; Ying]
21. Pai-t'o (擺托) in Ch'ing-yai (青岩) in the city
of Kwei-yang (貴陽) [Ying]
22. Kao-p'o (高坡) in the district of Kwei-chu (貴筑)
[Chang Kun: field notes]
23. Shui-wei (水尾) in the district of Lung-li (龍里)
[Li, Ch'en, Ch'en]
24. Yeh-chi-p'o (野鷄坡) in the district of Fu-ch'üan
(福泉) Institute, 1962; Ying]
25. Lao-chün-chai (老君寨) in the district of K'ai-li
(凱里) [Institute, 1962]
26. Chiu-chou (舊州) in the district of Huang-p'ing
(黃平) [Ma, T'ai]
27. Chia-pa (加巴) in the district of Huang-p'ing (黃平)
[Ma, T'ai]
28. Feng-hsiang (楓香) in the district of Huang-p'ing
(黃平) [Ying]
29. Chou-hsi (舟溪) in the district of Lu-shan (鎮山)
(now K'ai-li 凱里) [Ma, T'ai]
30. Yang-hao (養蒿) in the district of Lu-shan (鎮山)
(now K'ai-li) [Ma, T'ai; Li, Ch'en, Ch'en; Institute, 1962;
Ying]

31. K'ai-t'ang (凱棠) in the district of Lu-shan (鑪山)
(now K'ai-li) [(1) Ma, T'ai; (2) Li, Ch'en, Ch'en; (3) P'an,
Ts'ao; Ts'ao]
32. Hsüan-wei-chen (宣威鎮) in the district of Ma-chiang
(麻江) [Ma, T'ai]
33. Shih-tung-k'ou (施洞口) in the district of T'ai-chiang
(台江) [Li Fang-kuei: field notes; Kwan]
34. T'ai-kung-chai (台拱寨) in the district of T'ai-chiang
(台江) [Ma, T'ai]
35. Yung-an (永安) in the district of T'ai-chiang (台江)
[Ma, T'ai]
36. Chin-chung (金鐘) in the district of Shih-k'ang
(施康) (or Shih-ping 施秉) [Ma, T'ai]
37. Hsin-ch'iao (新橋) in the district of Shih-k'ang
(施康) (or Shih-ping) [Ma, T'ai]
38. The district of Chen-yüan (鎮遠) [Ma, T'ai]
39. T'ai-yung (太雍) in the district of Chien-ho (劍河)
[Ma, T'ai]
40. Wu-ch'a (五岔) in the district of Chien-ho (劍河)
[Ma, T'ai]
41. Huang-li (黃里) in the district of Lei-shan (雷山)
[Ma, T'ai]
42. Wu-lo (烏洛) in the district of Chou-chai (丹寨)
(or Tan-chai 丹寨) [Ma, T'ai]

43. P'ai-ting (排庭) in the district of Chou-chai (舟寨)
(or Tan-chai) [Ma, T'ai]
44. The district of San-sui (三穗) [Ma, T'ai]
45. The district of San-tu (三都) [Ma, T'ai]
46. Kao-t'ung-chai (高同寨) in the district of Jung-chiang
(榕江) [Chang Kun: field notes]
47. Hsi-shan-chieh (西山街) in the district of Yung-ts'ung
(永從) [Chang Kun: field notes]
48. The district of Ts'ung-chiang (從江) [Ma, T'ai]
49. The district of Chin-p'ing (錦屏) [Ma, T'ai]
50. Yao-lu (侬麓) in the district of Li-po (荔波)
[Chang Kun: field notes]
- D. Kwangsi (廣西)
51. The district of Tu-an (都安) [Mao, Chou]
- E. Hunan (湖南)
52. The district of Ching-hsien (靖縣) [Ma, T'ai]
53. The district of Feng-huang (鳳凰) [Ling, Ruey]
54. Chi-wei (吉偉) in the district of Hua-yüan (花垣)
[Li, Ch'en, Ch'en; I]
55. La-i-p'ing (臘乙坪) in the district of Hua-yüan
(花垣) [Institute, 1962; Ying]
56. Tung-t'ou-chai (洞頭寨) in the district of Lu-hsi
(瀘溪) [Li, Ch'en, Ch'en]

57. Hsiao-chang (小章) in the district of Lu-hsi (瀘溪)
[Li, Ch'en, Ch'en]

58. Wu-chia-chai (吳家寨) in the district of Lung-shan
(龍山) [Li, Ch'en, Ch'en]

F. Thailand

59. Petchabun, Northern Thailand [Heimbach; Downer, 1967; Barney, Smalley]

60. Tak [Rulison, Barney, Smalley]

61. Sam Neua and Xieng-khouang [Bertrais-Charrier]

G. Vietnam

62. Yên-bay [Savina, 1916]

II. The Yao (僮) Dialects:

A. Kwangsi (廣西)

63. The district of Hsing-an (興安) [Mao, Chou]

64. The Yao Shan [Chao; Li]

B. Kwangtung (廣東)

65. Yau-ling (油嶺) along the borders in the districts
of Lien-chou (連州), Lien-shan (連山), and
Yang-shan (陽山) [Wong]

C. Vietnam

66. Hai-ninh (Binh-liêu, Tiên-yên, Định-lập), bordering the
province of Quang-yên [Savina, 1926]; there are two
varieties of this dialect: Kim-ôi and Ta-pan.

D. Thailand

67. Hwei-kang-pa in the district of Maechan, in the province
of Chiengrai [Purnell, 1965]

68. The provinces of Chiengrai and Lampang [Lombard]

E. Laos

69. Northern Laos [Downer, 1961]

Appendix II

Tonal Systems of Miao-Yao Dialects

Numbers in the leftmost column are keyed to the list of dialects in Appendix I. Dialects with a₂b in this column have undergone tonal splits conditioned by aspiration (cf. section 3.2.2.); those with x,y have had tonal splits conditioned by prenasalized initials (cf. section 3.3.3.). Abbreviations: E, even; R, rising; F, falling; H, high; M, mid; L, low; RF, rising-falling or convex; FR, falling-rising or concave.

	A		B		C		D	
	1	2	1	2	1	2	1	2
(1)	FH	FL	EH	FL	EM	EL	?	R
	53	31	55	31	33	11		13
(2)	FH	FL	FM	ELL	EHH	ELH	EHL	R
	54	21	51	11	55	33,44 (?)	44,34 (?)	13
(3)	EH	RH	EH	EM,EL, RL	EM	FH,FL	EM,EL	FH,FL
	55	35	55	33,11, 13	33	53,31	33,11	53,31
(4)	FHL	FLH	FHH	FLL	EH	RL	EL	RH
	43	32	54	21	44	13	33	24

	A		B		C		D	
	1	2	1	2	1	2	1	2
(5)	FH	FM	EH	FL	EM	RL	EL	RH
	43	31	55	21	44	13	33	24
(7) a,b	EL	RH	FH,EH	RM	FH,EH	EL	RL	FL
	33	45	54,44	24	54,44	33	13	31
(8) a,b	FLH, ELH	FHH	EHL, RF	ELL	EHH, RH	RL	EHL, RL	FLL
	32,22	53	42, 232	11	55,35	13	44,13	31
(9) a,b	FLH, EM	FHL	FHH, RF	EL	RH,RM	RL	EH,RL	FLL
	32,22	42	43, 243	11	45,24	13	33,13	31
(10) a,b	EM,RL	RH	EH,RM	EM	RL,EL	EH	FL,EL	FH
	33,13	35	44,34	33	13,11	44	31,11	53
(11)	EM	EH	R	EL	EL	F	EL	EH
	44	55	13	33	33	21	33	55
(12) a,b	RL, EHL	EHH	RH	FH	ELH	ELL	ELH	FL
	34,44	55	45	31	33	22	33	21

	A		B		C		D	
	1	2	1	2	1	2	1	2
(13) a,b	EM,RM	EH	RHH, RHL	RLH	RLH	FL	EL, RLL	FH
	33,23	55	35,24	13	13	43	22,12	53
(14) a,b	EM,RLH	RHH	RHL, RLL	EH	EL,FL	FH	EL,FL	EH
	44,23	45	24,14	55	33,21	32	33,21	55
(15) a,b	RH,RL	FL	FH,FL	FR	EH,FM	RM	EL,RM	FR
	35,15	31	53,31	213	55,42	24	44,24	213
(16) a,b	EL	EH	RH,RM	RL	RL	FLH	FHH, FLL	FHL
	33	55	35,15	13	13	43	54,31	53
(17) a,b	RH		RL		FH,FL	FL	EH	EL
	24		13		53,31	31	55	44
(18) a,b	ELH	FH	EHH	ELL	EHL, RH	RL	EHL, RH	FL
	33	53	55	22	44,24	13	44,24	21
(19)	FH	EH	R	FL	EM	EL	EM	EH
	42	55	13	31	44	33	44	55

	A		B		C		D	
	1	2	1	2	1	2	1	2
(20)	RH	EH	RL	FL	FH	EL	FH	EH
	24	55	13	31	43	22	43	55
(21)	E	FHH	R	FLH	FHL	FLL	FHL	FHH
	55	54	13	32	43	21	43	54
(22)	RH	EH	RL	FL	FH	EL	FH	EH
	34	55	13	21	54	33	54	55
(23)	F		E		R		F	
	31		55		35		31	
(24)	F		E		R		F	
	31		55		24		31	
(25)	F		EH		R		EL	
	31		55		24		33	
(26, 27, 37)	ELH	EHH	EHL	ELL	R	FL	FH	
	33	55	44	22	13	21	53	
(28)	EL	RH	FH	RL	EH	FL	FH	RL
	33	24	53	13	55	31	53	13

	A		B		C		D	
(29)	ELH	EHH	EHL	ELL	RL	RH	F	
	33	55	44	22	13	23	53	
(30)	ELH	EHH	RH	ELL	EHL	RL	FH	FL
	33	55	35	11	44	13	53	31
(31.1) Ma, T'ai	EM	FH	EH	EL	RH	RM	RL	FL
	33	53	44	22	35	23	13	21
(31.2) Li, Ch'en, Ch'en	EM	FH	RH	EL	EH	RM	RL	FL
	33	53	45	11	44	23	13	21
(31.3) Ts'ao	ELH	EHH	RH	ELL	EHL	RM	RL	F
	33	55	35	11	44	23	12	21
(32)	EM	F	EH	EL	RL	RH	F	
	33	53	44	22	13	23	53	
(33)	EHL	F	EHH	ELH	RH	EM	RL	ELL
	44	51	55	22	35	33	13	11
(34, 35, 36, 38, 40, 42)	EM	FH	EH	EL	RH	RM	RL	FL
	33	53	44	22	35	23	13	21
(39)	EL	FH	EH	FL	RH	RL	RL	FL
	33	53	44	21	35	13	13	21

The Reconstruction of Proto-Miao-Yao Tones

	A		B		C		D	
	1	2	1	2	1	2	1	2
(41)	EM	FH	EH	EL	RH	RM	RL	FL
	33	53	44	22	35(?)	23(?)	13(?)	21
(43)	EM	F	EH	EL	RH	RL	F	
	33	53	44	22	35	23	53	
(44)	EM	FH	EH	EL	RH	RL	RM	FL
	33	53	44	22	35	13	23	21
(45)	EH	FH	RL	RH	EL	FL	RH	FM
	33	53	13	35	22	21	35	32
(46)	EHL	FH	EHH	FL	RH	ELH	RL	ELL
	44	51	55	21	34	33	13	11
(47)	R	EM	ELH	ELL	EHH	EHL	FH	FL
	34	33	22	11	55	44	53	31
(48)	RH	EH	EM	EL	RH	FL	RL	FH
	35	55	44	22	35	21	23	53
(49)	EL	EH	EM	RL	RH	RL	F	
	33	55	44	23	35	23	53	

	A		B		C		D	
	1	2	1	2	1	2	1	2
(50)	ELH	EHH	R	FH	EHL	ELL	EHH	FL
	22	44	34	42	33	11	44	31
(51)	EM	R	EH	RF	FH	EL	FM	FL
	33	12	55	231	42	22	41	21
(52)	EH	RL	EH	EL	RH	F	RH	EL
	33	13	33	22	35	53	35	22
(54)	R	FL	EH	EL	FH	FM	EH	EL
	35	21	44	22	53	42	44	22
(55)	R	FL	EH	EL	FH	FM	EH	EL
	35	31	44	33	53	42	44	33
(56) x,y	FH, ELH	FL	EHH, EHL	EHH	ELH, ELL	ELL	RH,RL	RL
	53,33	21	55,44	55	33,22	22	34,24	24
(57) x,y	FH,FL	FL	EH		EL,RL	RL	RH	
	53,21	21	55		33,13	13	24	
(58) x,y	F,EH	EH	EH,R	R	EL		EL	
	53,33	33	33,35	35	11		11	

The Reconstruction of Proto-Miao-Yao Tones

	A		B		C		D	
	1	2	1	2	1	2	1	2
(59)	EH	FH	R	EL	EM	FL	EL	?EL
	55	53	34	11	33	21	11	?11
(63)	EL	FL	FH	RF	RH	RL	EH	RL
	33	21	52	231	24	12	55	12
(67)	EH	F	RFH	RFL	R	EL	RFH	EL
	44	31	453	231	24	11	453	11
(68)	EH	F	RFH	RFL	R	EL	RFH	EL
(69)	EH	F	RFH	RFL	R	EL	RFH	EL
	44	41	454	131	24	11	454	11

Appendix III

Miao-Yao Cognates

Tones of the dialects cited here:

	A1	A2	B1	B2	C1	C2	D1	D2
Ma-chia-t'un	54	21	51	11	55	33	44	13
Ke-cheng	34, 44	55	45	31	33	22	33	21
Kao-p'o	34	55	13	21	54	33	54	55
Shih-tung-k'ou	44	51	55	22	45	33	13	11
Kao-t'ung	44	51	55	21	34	33	13	11
Hsi-shan-chieh	34	33	22	11	55	44	54	31
Yao-lu	22	44	34	42	33	11	44	31
Ket-ba-chun	55	53	34	11	33	21	11	?11
Thailand Yao	EH	F	RFH	RFL	R	EL	RFH	EL

The Reconstruction of Proto-Miao-Yao Tones

Tone: A1

	1. 'to know'	2. 'hair'	3. 'one'	4. 'two'	5. 'three'
Ma-chia-t'un	pou 54	plou 54	ʔi 54	ʔau 54	pe 54
Ke-cheng	pau 44	plau 44	ʔi 44	ʔau 44	pa 44
Kao-p'o	po 34	plo 34	ʔi 34	ʔa 34	pæ 34
Shih-tung-k'ou	pu 44	lhju 44	ʔei 44	ʔo 44	pje 44
Kao-t'ung	pu 44	lhju 44		ʔo 44	pai 44
Hsi-shan-chieh	pə 34	pi 34		va 34	pɤ 34
Yao-lu	peu 22			ʔoi 22	pa 22
Ket-ba-chum	pau 55	plau 55	i 55	o 55	pe 55
Thailand Yao	pei EH	pyei EH		i EH	pua EH

Tone: A1

	6. 'four'	7. 'five'	8. 'to give'	9. 'pain'	10. 'vine'
Ma-chia-t'un	pləu 54	tsrwi 54		mau 54	mhaŋ 54
Ke-cheng	plo 44	prai 44	pu 44	mau 44	mhaw 44
Kao-p'o	plo 34	pla 34		moŋ 34	mhaŋ 34
Shih-tung-k'ou	lho 44	sai 44	pa 44	mo 44	
Kao-t'ung	lho 44	tsi 44	pa 44	mu 44	moŋ 44
Hsi-shan-chieh	pi 34	pjæ 34	pã 34	ma 34	m hæ 34
Yao-lu	tləu 22	pja 22	puŋ 22	muŋ 22	
Ket-ba-chun	plau 55	tsi 55	pu 55	mo 55	mha 55
Thailand Yao	pvei EH	pyaa EH	pun EH	mun EH	mhei EH

Tone: A1

	11. 'people'	12. 'deep'	13. 'son'	14. 'snake'	15. 'sun; day'
Ma-chia-t'un	mho(ŋ) 54	to 54	to 54	naŋ 54	nho(ŋ) 54
Ke-cheng	mhaw 34	tau 44	tw 44	noŋ 44	nhɤŋ 34
Kao-p'o	mhon 34	ty 34	tyŋ 34	naŋ 34	nhɤŋ 34
Shih-tung-k'ou	mho 44	to 44	ta 44	naŋ 44	nha 44
Kao-t'ung	mu 44	tau 44	ta 44	nyŋ 44	na 44
Hsi-shan-chieh	hŋ 34	to 34	tã 34	ne 34	nhe 34
Yao-lu	mhau 22	tau 44?	tun 22	nan 22	nhon 22
Ket-ba-chum		to 55	tu 55	na 55	nhu 55
Thailand Yao	mien F!	do EH	ton EH	naŋ EH	nhɔi EH

Tone: A1

	16. 'seed'	17. 'large'	18. 'thousand'	19. 'clear'	20. 'light' (weight)
Ma-chia-t'un		lho 54	tshə 54		srwe 54
Ke-cheng	naw 44	lhau 34	srai 44	ntshai 34	sri 44
Kao-p'o	nhon 34		tshě 34	ntshě 34	tshi 34
Shih-tung-k'ou	ŋhu 44	lhhjo 44	shan 44	she 44	fha 44
Kao-t'ung	ŋu 44	lhjo 44	syŋ 44	šyŋ 44	fɛ 44
Hsi-shan-chieh			šo 55?		
Yao-lu			sai 22	ntshi 22	kphai 22
Ket-ba-chun		lho 55	tshia 55	ntshia 55	
Thailand Yao	ŋim EH	lho EH	tshin EH	tship EH	heŋ EH

Tone: A1

	21. 'mushroom'	22. 'horn'	23. 'needle'	24. 'insect'	25. 'sweet'
Ma-chia-t'un	ntʂe 54	ko 54	koŋ 54	kaŋ 54	qaŋ 54
Ke-cheng	ntʂa 44	ku 44	kaw 44	koŋ 44	qoŋ 44
Kao-p'o	ntʂæ 34	koŋ 34	koŋ 34	koŋ 34	qoŋ 34
Shih-tung-k'ou	tʂe 44	ka 44	tʂu 44	kʁŋ 44	
Kao-t'ung	tʂɛ 44	ka 44	tʂu 44	kʁŋ 44	qʁŋ 44
Hsi-shan-chieh		kǎ 34			kai 34
Yao-lu	ntʂai 22	kuŋ 22	tʂu 22	kjan 22	kan 22
Ket-ba-chum	nce 55	ku 55	koŋ 55	ka 55	qa 55
Thailand Yao	cou EH	coŋ EH	sim EH	keŋ EH	kaam EH

Tone: A1

	26. 'work	' 27. 'thatch'	28. 'dry'	29. 'vegetable' 30. 'bitter'
Ma-chia-t'un	qoŋ 54	nqəŋ 54	nq̄hwa 54	zrou 54 ʔæ 54
Ke-cheng	qaw 44	nqə 44	nq̄ho 34	zrau 44 ʔai 44
Kao-p'o	qoŋ 34	nq̄ě 34	nq̄ha 34	zro 34 ʔě 34
Shih-tung-k'ou		qa 44	q̄ha 55?	ʔei 44
Kao-t'ung	qu 44	qa 44	q̄hə 44	hɔ̄ 44 ʔɛ 44
Hsi-shan-chieh		nai 34	k̄hə 22?	vi 34 jɿ̄ 34
Yao-lu	ku 22	nqəu 22	ŋk̄hai 22	həu 22 nai 22
Ket-ba-chun	qoŋ 55	nqəŋ 55	nq̄hua 55	ʔau 55
Thailand Yao	koŋ EH	gaan EH	gaai EH	lai EH im EH

Tone: A1

31. 'water' 32. 'young rice 33. 'ash'
plant'

Ma-chia-t'un

Ke-cheng ʔaw 44 ju 44 fwi 44

Kao-p'o ʔoŋ 34 jɿŋ 34 fi 34

Shih-tung-k'ou ʔau 44 ja 44 he 44

Kao-t'ung ʔu 44 ja 44 hø 13?

Hsi-shan-chieh ʔǎ 34 jǎ 34

Yao-lu ʔou 22 juŋ 22 fui 22

Ket-ba-chun yu 55

Thailand Yao uam EH yaŋ EH whi EH

Tone: A2

	34. 'flower'	35. 'to bubble, boil'	36. 'unhulled rice'	37. 'ear'	38. 'to have'
Ma-chia-t'un	pa 21		mple 21	ntsre 21	ma 21
Ke-cheng	poŋ 55	paw 55	mpla 55	mpra 55	mɿŋ 55
Kao-p'o	poŋ 55	poŋ 55	mplæ 55	mplæ 55	mɿŋ 55
Shih-tung-k'ou	paŋ 51	poŋ 51		ne 51	ma 51
Kao-t'ung	pɿŋ 51		nai 51	nai 51	
Hsi-shan-chieh	pai 33			mjo 33	
Yao-lu	pan 44			mpjai 44	
Ket-ba-chun	pa 53		nple 53	ntse 53	mua 53
Thailand Yao	pyaŋ F	pom F	byau F	mbnom F	mai F

Tone: A2

	39. 'leaf'	40. 'to come out'	41. 'long time'	42. 'paddy field'	43. 'plow'
Ma-chia-t'un	mploŋ 21	ta 21	le 21	la 21	lai 21
Ke-cheng	mplaw 55	to 55	la 55	lai 55	lai 55
Kao-p'o	mploŋ 55	tu 55		le 55	le 55
Shih-tung-k'ou	nau 51	ta 51		li 51	
Kao-t'ung	nu 51	ta 51	lai 51	le 51	li 11?
Hsi-shan-chieh	mã 33	te 33		ljẽ 33, l' 33	
Yao-lu	ntlou 44	tau 44	la 44		li 44
Ket-ba-chun	mploŋ 53	tau 33?		lia 53	lai 53
Thailand Yao	nom F	taai F	lau F	liŋ F	lai F

Tone: A2

	44. 'money'	45. 'nine'	46. 'mouth'	47. 'buffalo'	48. 'yellow'
Ma-chia-t'un	tsæ 21	tša 21	n̥ʃou 21	ŋo 21	paŋ 21
Ke-cheng	tsai 55	tšo 55	ntšw 55		koŋ 55
Kao-p'o	tsě 55	tšəu 55	ntšu 55	ŋxŋ 33?	koŋ 55
Shih-tung-k'ou		tšo 51		ŋi 51	fhxŋ 51
Kao-t'ung	sɿŋ 51	tšo 51	ŋu 51	ŋi 51	fxŋ 51
Hsi-shan-chieh		ko 33			
Yao-lu	tsai 22?	ɬw 44	n̥ty 44	ŋuŋ 44	kpan 44
Ket-ba-chun	tsia 53		ncaw 53	nyu 53	ʔda 53
Thailand Yao	tsin F	dua F	dzwi F	ŋoŋ F	yaaŋ F

Tone: A2

49. 'garden'

Ma-chia-t'un

vaŋ 21

Ke-cheng

voŋ 55

Kao-p'o

vun 33?

Shih-tung-k'ou

Kao-t'ung

Hsi-shan-chieh

Yao-lu

Ket-ba-chun

va 53

Thailand Yao

whŋ F

Tone: B1

	50. 'to be full'	51. 'to shoot'	52. 'fruit'	53. 'house'	54. 'tail'
Ma-chia-t'um	po 51	pau 51		tre 51	tu 55?
Ke-cheng	pw 45	poŋ 45	pi 45	pra 45	ty 45
Kao-p'o	pxŋ 13	poŋ 13	pi 13	plæ 13	tw 13, txŋ 13
Shih-tung-k'ou	pa 55	paŋ 55	sai 55	se 55	te 55
Kao-t'ung	pa 55	paŋ 55	tsi 55	tsai 55	tø 55
Hsi-shan-chieh	pǎ 22	pō 22	pje 22	pjo 22	tæ 22
Yao-lu	puŋ 34, poŋ 34		pi 34	mjai 34	toi 34
Ket-ba-chun	pu 34		txi 34	tse 34	tw 33?
Thailand Yao	pwaŋ RFH	poŋ RFH	pyou RFH	pyau RFH	twai RFH

Tone: B1

	55. 'body' louse'	56. 'long'	57. 'this'	58. 'cross- bow'	59. 'to hear'
Ma-chia-t'un	to 51	nte 51	na 51	nheŋ 51	nhau 51
Ke-cheng	tu 45	nta 45	no 45	nhe 45	nhau 45
Kao-p'o	tyŋ 13	ntæ 13	naŋ 13	nthě 13	nhon 13
Shih-tung-k'ou	ta 55	te 55		nhai 55	nhon 55
Kao-t'ung	ta 55	tai 55	no 55	ni 55	nan 55
Hsi-shan-chieh					
Yao-lu	tuŋ 34	nta 34	nai 34		nhai 34
Ket-ba-chun	tu 34	nte 34			hno 34
Thailand Yao	tam RFH	daau RFH	nai RFH	nhaa HRH	nhom RFH 'to smell'

Tone: B1

	60. 'heavy'	61. 'short'	62. 'early'	63. 'wine'	64. 'rice bread'
Ma-chia-t'un	ŋhaŋ 51	lo 55?	ntso 51	tʃeu 51	ntʃa 51
Ke-cheng	ŋhaw 45	lw 45	ntsau 45, srau 45	tsaw 45	ntʃo 45
Kao-p'o	ŋhaŋ 13	lʷŋ 13	ntsɿ 13	tʃɿ 13	ŋku 13
Shih-tung-k'ou	ŋhoŋ 55	la 55	so 55	tʃu 55	tʃo 55
Kao-t'ung	ŋoŋ 55	la 55	sau 55	tʃo 55	tʃo 55
Hsi-shan-chieh	ŋhæ 22	lǎ 22		tʃɿ 22	
Yao-lu	ŋhoŋ 34	luŋ 34		tʃa 34	ntw 34
Ket-ba-chun	hnya 34	lu 34	ntso 34		ncua 34
Thailand Yao	nhia RFH	naŋ RFH	dzyou RFH	tiu RFH	jau RFH

Tone: B1

	65. 'salt'	66. 'head louse'	67. 'blood'	68. 'road'	69. 'frog'
Ma-chia-t'un	ntre 51		ntsraŋ 51	ke 51	qaŋ 51
Ke-cheng	ntša 45	ntšau 45	ntšhoŋ 45	ka 45	qoŋ 45
Kao-p'o	ntsæ 13	ntsho 13	ntshoŋ 13	kæ 13	qoŋ 13
Shih-tung-k'ou	še 55	šhu 55	šhaŋ 55		
Kao-t'ung	še 55	šu 55	šyŋ 55	ke 55	qyŋ 55
Hsi-shan-chieh			šhe 22	ko 22	
Yao-lu	ntsjaɪ 34	ntshjəu 34, ntəu 34	ntshjan 34	kjai 34	kjə 34
Ket-ba-chun	ntse 34	ntshau 34	ntsha 34	ke 34	qa 34
Thailand Yao	dzaau RFH	dzei RFH	dzyaam RFH	cau RFH	keŋ RFH

Tone: B1

	70. 'excrement'	71. 'dog'	72. 'head'	73. 'to count'
Ma-chia-t'un		kle 51	hou 51	srwa 51
Ke-cheng	qo 45	qla 45	hau 45	
Kao-p'o	qu 13	tlæ 13	ho 13	sræ 13
Shih-tung-k'ou		lhe 55	hau 55	xe 55
Kao-t'ung	qi 21?	lhai 55	hu 55	xi 55
Hsi-shan-chieh	ka 22	ljǎ 45?		ho 22
Yao-lu	kau 34	tla 34		
Ket-ba-chun	qua 34	?de 34	hau 33?	sua 34
Thailand Yao	chai RFH	cu RFH	mbgɔŋ RFH	saau RFH

Tone: B2

	74. 'fish'	75. 'horse'	76. 'fire'	77. 'rat'	78. 'old'
Ma-chia-t'un	ntsre 21?	ma 11, neŋ 11	teu 11	naŋ 11	lou 11
Ke-cheng	mpɾa 31	mi 31	taw 31	noŋ 31	lau 31
Kao-p'o	mplæ 21	mě 21	tɿ 21		lau 21
Shih-tung-k'ou	ne 22	mai 22	to 22	naŋ 22	lo 22
Kao-t'ung	nai 21	mi 21	tɔ 21	nɿŋ 21	lo 21
Hsi-shan-chieh	mje 11	me 11	tɿ 11	ne 11	
Yao-lu	mpjai 42	mɿu 42	tuo 42	nan 42	luc 42
Ket-ba-chun	ntse 11	neŋ 11	taw 11	na 11	lau 11
Thailand Yao	byau RFL	maa RFL	tou RFL	naa RFL	lo RFL

Tone: B2

	79. 'raw, un-cooked'	80. 'village'	81. 'urine'	82. 'hand'
Ma-chia-t'un		zrau 11	zrwi 11	
Ke-cheng	ɣaw 31	zron 31	zre 31	
Kao-p'o	ɣon 21	zron 21	zra 21	
Shih-tung-k'ou	ɣu 22	hən 22	vai 22	pie 22
Kao-t'ung	ɣu 21	hən 21		pai 21
Hsi-shan-chieh			ve 11	pu 11
Yao-lu		he 42	ja 42	pa 42
Ket-ba-chum	nyon 11	zo 11	zi 11	
Thailand Yao	ɣem RFL	laon RFL	ya RFL	pua RFL

Tone: C1

	83. 'to sleep'	84. 'dream'	85. 'name'	86. 'to boil' (intr.)	87. 'to kill'
Ma-chia-t'un	pu 55	mpo 55	mpe 55	mpou 55	ta 55
Ke-cheng	pw 33	mpau 33	mpa 33		to 33
Kao-p'o		mpo 54	mpæ 54	mpo 54	tu 54
Shih-tung-k'ou	pje 45	pu 45	pje 45	pu 45	
Kao-t'ung	pjɔ 34	pu 34	pai 34		ta 34
Hsi-shan-chieh	pai 55		mo 55	me 55	
Yao-lu	poi 33	mpɛu 33	mpa 33	mpɛu 33	tau 33
Ket-ba-chun	pw 33	mpau 33	mpe 33	mpau 33	tua 33
Thailand Yao	pwei R	bei R	bua R	pywei R	tai R

Tone: C1

	88. 'broken'	89. 'charcoal'	90. 'tree'	91. 'to smell'	92. 'moon'
Ma-chia-t'un	to 55	theŋ 55	ntoŋ 55	nhæ 55	lhi 55
Ke-cheng	tw 33	the 33			lhe 33
Kao-p'o	trvŋ 54	thě 54		mhě 54	lha 54
Shih-tung-k'ou		thaŋ 45		mhi 45	lhai 45
Kao-t'ung		tha 34		ne 34	lhi 34
Hsi-shan-chieh	tă 55				lha 55
Yao-lu	tun 33		ntou 33	mhan 33	lhuo 33
Ket-ba-chun		theŋ 33	ntoŋ 33	nhia 33	hi 33
Thailand Yao	taŋ R	thaan R	dian R		lhaa R

Tone: C1

	93. 'wind'	94. 'to wash, to bathe'	95. 'fear'	96. 'egg'	97. 'cloudy'
Ma-chia-t'un	tʂa 55	ntsha 55	ntsrhai 55	qai 55	
Ke-cheng		ntsho 33	ntʂhai 33	ka 33	ʔaw 33
Kao-p'o	tʂa 54	ntshu 54	ntshe 54	kæ 54	ʔoŋ 54
Shih-tung-k'ou	tʂi 45	sho 45	ʂhe 44?		ʔau 45
Kao-t'ung	tʂi 34		ʂe 44?	ke 34	ʔu 34
Hsi-shan-chieh	tʂi 55		ʂhe 55		
Yao-lu	ʔi 22?		ntshjai 22?	kjai 33	ʔou 33
Ket-ba-chun		ntshu 33	ntshai 33	qe 33	
Thailand Yao	dzyaau R	dzaau R	dzia R	cau R	om R

Tone: C1

98. 'to swell'

ʔau 55

Ma-chia-t'un

Ke-cheng

ʔoŋ 54

Kao-p'o

ʔaŋ 45

Shih-tung-k'ou

Kao-t'ung

ʔö 55

Hsi-shan-chieh

Yao-lu

ʔo 33

Ket-ba-chun

om R

Thailand Yao

Tone: C2

	99. 'soft'	100. 'to sell'	101. 'to die'	102. 'to in- quire'	103. 'to steal'
Ma-chia-t'un	ma 34?		ta 33	noŋ 33	ħæ 33
Ke-cheng	maw 22	mɔŋ 22	to 22	nɔŋ 22	ħai 22
Kao-p'o	mɔŋ 33		tu 33	nɔŋ 33	ŋɛ 33
Shih-tung-k'ou	ma 33		ta 33		ħaŋ 33
Kao-t'ung	ma 33		ta 33	na 33	ħɔŋ 33
Hsi-shan-chieh	me 44	me 44	tɛ 44	ne 44	
Yao-lu	mɔŋ 11	mɔŋ 11	tau 11		ħi 11
Ket-ba-chun	mua 21	mua 21	tua 21	nu 21	nyia 21
Thailand Yao	mok EL	maai EL	tai EL	naai EL	nim EL

Tone: C2

	104. 'chisel'	105. 'chop- stick'	106. 'bamboo shoots'	107. 'nose'	108. 'sharp'
Ma-chia-t'un			ntsruwa 33	ntsru 33	
Ke-cheng		traw 22	mpro 22	mpw 22	
Kao-p'o	tsa 33	try 33	mplu 33	mplw 33	zru 33
Shih-tung-k'ou	so 33	tju 33	na 33	ne 33	
Kao-t'ung	so 33	tjo 33	na 33	no 33	ha 33
Hsi-shan-chieh		tso 44	mje 44	mjo 44	
Yao-lu	soi 11	tja 11	mpjai 11	mpY 11	
Ket-ba-chun	tsau 21	traw 21	ntsua 21	ntsw 21	zua 21
Thailand Yao	tsuk EL	tsou EL	byai EL	bywi EL	lai EL

Tone: C2

109. 'seven'

Ma-chia-t'un ʃaŋ 55?

Ke-cheng saŋ 22

Kao-p'o saŋ 33

Shih-tung-k'ou ʃoŋ 33

Kao-t'ung ʃoŋ 33

Hsi-shan-chieh tsã 44

Yao-lu ʃoŋ 11

Ket-ba-chun sya 33

Thailand Yao sia EL

Tone: D1

110. 'wing' 111. 'to weave' 112. 'to cough' 113. 'to laugh' 114. 'bear'
(noun)

Ma-chia-t'un	ti 44	nto 44	nɔu 44	tro 44	klai 44
Ke-cheng	te 44?	ntau 33	nhaw 33	trau 33	qlai 33
Kao-p'o	ta 55?		nhog 54	try 54	tle 54
Shih-tung-k'ou			nhau 13	tjo 13	
Kao-t'ung	ti 13	tau 13	nu 13	tjo 13	hie 13
Hsi-shan-chieh	tæ 54, tɛ 54	næ 54		tʂæ 54	
Yao-lu	tuɔ 44	ntau 44		tjau 44	tljai 44
Ket-ba-chun	ti 11	nto 11	nhog 11		ʔdai 11
Thailand Yao	daat RFH	dat RFH	nhop RFH	cet RFH	cep RFH

Tone: D1

115. 'duck'

Ma-chia-t'un

Ke-cheng

Kao-p'o

Shih-tung-k'ou

Kao-t'ung

Hsi-shan-chieh

Yao-lu

Ket-ba-chun

Thailand Yao

ʔau 33

ʔɿ 54

ʔau 13

ʔæ 54

ʔau 44

ʔo 11

ʔaap RFH

Tone: D2

	116. 'to see'	117. 'tongue'	118. 'peppery'	119. 'bean'	120. 'ten'
Ma-chia-t'un	po 13	mplai 44	ntsrwe 44	tau 13	kou 13
Ke-cheng	pɿ 21	mplai 21	mpre 21	tu 21	tʂu 21
Kao-p'o	pɿ 55	mple 55	mpla 55	tɿ 55	tʂɿ 55
Shih-tung-k'ou	pu 11	ŋe 11		tau 11	tʂu 11
Kao-t'ung	pu 11	ŋe 11		tu 11	tʂu 11
Hsi-shan-chieh	pa 31	mai 31	mje 31	tu 31	kw 31
Yao-lu	pau 31	ntljai 31	mpja 31	tu 31	tʂw 31
Ket-ba-chun	po ?11	mplai ?11	ntsi ?11	tau ?11	kau ?11
Thailand Yao	pwat EL	biet EL	byaat EL	top EL	tsiep EL

Tone: D2

121. 'eight'

Ma-chia-t'un

ja 34?

Ke-cheng

ji 21

Kao-p'o

ja 55

Shih-tung-k'ou

ji 11

Kao-t'ung

ji 11

Hsi-shan-chieh

ji 31

Yao-lu

ja 31

Ket-ba-chun

yi 211

Thailand Yao

yet EL

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