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PROTO-MAZATEC PHONOLOGY

By

PAUL LIVINGSTON KIRK

A thesis submitted in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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Approved by Laurence P. Thompson  
Department Linguistics  
Date 16 June 1966

UNIVERSITY OF WASHINGTON

Date: May 27, 1966

We have carefully read the dissertation entitled Proto-Mazatec Phonology

Paul Livingston Kirk submitted by  
the requirements of the degree of Doctor of Philosophy in partial fulfillment of  
and recommend its acceptance. In support of this recommendation we present the following  
joint statement of evaluation to be filed with the dissertation.

This thesis compares twelve closely related languages in central Mexico and reconstructs a large number of forms of the proto-language from which they are descended. The work picks up where an earlier scholar, Sarah Gudschinsky, left off, operating with material for several additional languages and a far wider selection of forms, and attempting to account for all the loose ends in the material used. (Gudschinsky's approach may be characterized as more exploratory and generalizing, and she did not attempt to handle many vexing details of the comparison.)

The rationale of the reconstruction (which differs significantly from that of Gudschinsky) is discussed in considerable detail, and it is apparent that the author has applied the most rigorous standards of comparative linguistics to his task. He has also provided careful accounts of the supposed developments of sounds in the various languages.

In addition to the originality of the reconstruction, and its importance for further work with linguistic relationships in Mexico and more broadly in the Americas, this study reflects original field research on the languages which are compared: the group as a whole has been little studied, and several of the individual languages have not been previously treated at all.

DISSERTATION READING COMMITTEE:

Laurence C. Thompson  
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Date July 21, 1966

## TABLE OF CONTENTS

	<u>Page</u>
<b>LIST OF CHARTS.....</b>	vi
<b>ACKNOWLEDGMENTS.....</b>	vii
<b><u>Chapter</u></b>	
<b>I. INTRODUCTION.....</b>	1
<b>II. PHONOLOGICAL SYSTEMS OF MODERN MAZATEC LANGUAGES.....</b>	11
2.1 Mazatlán de Flores.....	14
2.2 San Bartolomé Ayautla.....	15
2.3 San Juan Chiquihuitlán.....	16
2.4 San Felipe Jalapa de Díaz.....	17
2.5 Santo Domingo del Río.....	18
2.6 Huautla de Jiménez.....	19
2.7 Santa María Jiotes.....	20
2.8 San Miguel Soyaltepec.....	21
2.9 San Pedro Ixcatlán.....	22
2.10 San Miguel Huautla.....	23
2.11 San Lorenzo Cuaunecuiltitla.....	24
2.12 San Jerónimo.....	25
2.13 Principal Allophones of Phonemes with More than One Allophone in the Mazatec Languages.....	26
<b>III. INTERMEDIARY RECONSTRUCTION.....</b>	30
3.1 Pre-Ja and Pre-Do Reconstruction.....	30
3.2 Pre-Ix Reconstruction.....	32
3.3 Pre-So Reconstruction.....	33
3.4 Pre-Te Reconstruction.....	36

TABLE OF CONTENTS--Continued

<u>Chapter</u>		<u>Page</u>
IV.	RECONSTRUCTION OF PROTO-MAZATEC CONSONANTS.....	38
4.1	Laryngeals (*h, *?).....	38
4.2	Non-clustered Oral Stops (*t, *t <sup>y</sup> , *k, *k <sup>w</sup> , *c, *č).....	51
4.3	Stop Plus *h (*th, *t <sup>y</sup> h, *kh, *k <sup>w</sup> h, *ch, *čh).....	57
4.4	*n Plus Stop (*nt, *nt <sup>y</sup> , *nk, *nk <sup>w</sup> , *nc, *nč).....	61
4.5	*n Plus Stop Plus *h (*nth, *nt <sup>y</sup> h, *nkh, *nk <sup>w</sup> h, *nch, *nčh).....	73
4.6	*hn Plus Stop (*hnt, *hnt <sup>y</sup> , *hnk).....	76
4.7	*?n Plus Stop (*?nt, *?nk, *?nč).....	78
4.8	Spirant Plus Stop.....	80
4.8.1	*s Plus Stop (*st, *sk, *skh, *sk <sup>w</sup> , *sc, *sč).....	82
4.8.2	*š Plus Stop (*št, *sth, *st <sup>y</sup> h, *šk, *škh, *šk <sup>w</sup> h).....	85
4.9	Apical Stop Plus Dorsal Stop.....	88
4.9.1	*t Plus Dorsal Stop (*tk, *tk <sup>w</sup> h)	90
4.9.2	*t <sup>y</sup> Plus Dorsal Stop (*t <sup>y</sup> k, *nt <sup>y</sup> k, *t <sup>y</sup> kh, *t <sup>y</sup> k <sup>w</sup> ).....	91
4.10	Spirants.....	93
4.10.1	Simple Spirants (*s, *š).....	93
4.10.2	Spirant Plus *h (*sh, *šh)...	94
4.11	Nasals.....	96
4.11.1	Non-clustered Nasals (*m, *n *ñ).....	97
4.11.2	*h Plus Nasal (*hm, *hn, *hñ)	104
4.11.3	*? Plus Nasal (*?m, *?n, *?ñ)	109

TABLE OF CONTENTS--Continued

<u>Chapter</u>		<u>Page</u>
4.12 Semivowels.....	114	
4.12.1 Non-clustered Semivowels (*y, *w).....	115	
4.12.2 *h Plus Semivowel (*hy, *hw). .	117	
4.12.3 *? Plus Semivowel (*?y, *?w). .	120	
V. RECONSTRUCTION OF PROTO-MAZATEC VOWELS.....	123	
5.1 Non-clustered Vowels (*i, *e, *a, *u)..	128	
5.2 Vowel Clusters (*ia, *iu, *ei, *ai, *ui, *ue, *au, *ua).....	159	
VI. RECONSTRUCTION OF PROTO-MAZATEC STRESSES AND TONES.....	167	
6.1 Monosyllables.....	169	
6.2 Disyllables.....	172	
VII. REFLEXES OF PROTO-MAZATEC PHONEMES IN THE DAUGHTER LANGUAGES.....	184	
7.1 Mazatlán Reflexes.....	185	
7.2 Ayautla Reflexes.....	187	
7.3 Chiquihuitlán Reflexes.....	189	
7.4 Jalapa Reflexes.....	191	
7.5 Domingo Reflexes.....	194	
7.6 Huautla Reflexes.....	197	
7.7 Jíotes Reflexes.....	200	
7.8 Soyaltepec Reflexes.....	202	
7.9 Ixcatlán Reflexes.....	204	
7.10 Miguel Reflexes.....	206	
7.11 Lorenzo Reflexes.....	209	
7.12 Tecatlán Reflexes.....	212	

TABLE OF CONTENTS--Continued

<u>Chapter</u>	<u>Page</u>
APPENDIX: LIST OF COGNATE SETS.....	214
BIBLIOGRAPHY.....	485
INDICES.....	487
Index of English Glosses.....	487
Index of Proto-Mazatec Structure Sets (Gudschinsky 1956).....	497
Index of Proto-Popotecan Sets (Gudschinsky 1959).....	498

## LIST OF CHARTS

<u>Chart</u>	<u>Page</u>
1. Relative Geographical Distance Relationships of Mazatec Languages.....	3
2. Symbols Used for the Mazatec Languages.....	4
3. Summary of the Total Number of PMaz Etyma and Reflexes Cited from Each Language.....	6
4. PMaz Consonants and Consonantal Clusters.....	10
5. Pre- <i>So</i> and Synchronic <i>So</i> Disyllabic Tone Correspondences.....	35
6. Correspondence Sets for the Reconstruction of * <i>h</i>	47
7. Correspondence Sets for the Reconstruction of * <i>nt</i> .....	64
8. Principal Correspondence Sets for the Reconstruction of * <i>nty</i> .....	68
9. Correspondence Sets for the Reconstruction of * <i>nč</i> .....	73
10. Correspondence Sets for the Reconstruction of * <i>ñ</i>	103
11. Correspondence Sets for the Reconstruction of * <i>hñ</i> .....	109
12. Correspondence Sets for the Reconstruction of * <i>?ñ</i> .....	114
13. Correspondence Sets for the Reconstruction of * <i>i</i>	131
14. Correspondence Sets for the Reconstruction of * <i>e</i>	137
15. Correspondence Sets for the Reconstruction of * <i>a</i>	147
16. Correspondence Sets for the Reconstruction of * <i>u</i>	158
17. Correspondence Sets for the Reconstruction of * <i>au</i> .....	165
18. Correspondence Sets for the Reconstruction of Tone in Monosyllables.....	172
19. Correspondence Sets for the Reconstruction of Tone in Disyllables.....	181

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been otherwise possible. My four daughters--Janet, Evelyn, Linda, and Elaine--were understanding when the schedules were demanding and gave their encouragement through the interest they showed as the work progressed.

## CHAPTER I

### INTRODUCTION

Successive studies of a subject broaden the base, refine the detail, and substantiate the correct points of the earlier work. The reconstruction of Proto-Mazatec (PMaz) has followed such a pattern of progression.

Gudschinsky's 1953 sketch of PMaz with thirty-four published cognate sets was revised and amplified by her 1956 and 1959 studies. The present work is but one further step toward a better understanding of the probable phonological structure of PMaz and of the development it took in the various daughter languages. Detailed reconstruction of PMaz grammar must await further study; at present, the only description is of modern Huautla Mazatec (Pike 1948: 95-164).

Although this study goes beyond Gudschinsky's on a number of points which I shall enumerate shortly, it nevertheless is deeply indebted to her earlier work. The data for Mazatlán de Flores, Santa María Jíotes, San Miguel Soyaltepec, San Miguel Huautla come from her published materials and from her field notes, which she has kindly permitted me to use. The data from Huautla de Jiménez presented in this study has been further checked with Eunice

V. Pike, to whom I am indeed grateful. The data for the other seven languages come from my own field work; one of these, Jalapa de Díaz, has been the focus of intensive study since 1953.

The Mazatec languages (in this study I simply call them languages and leave aside the argument over whether some or all might preferably be called dialects) are today spoken in the northeastern area of the state of Oaxaca, Mexico. Their relative geographical positions are shown on Chart 1. The distance between any two of the towns furthest apart is approximately two long walking days by trail.

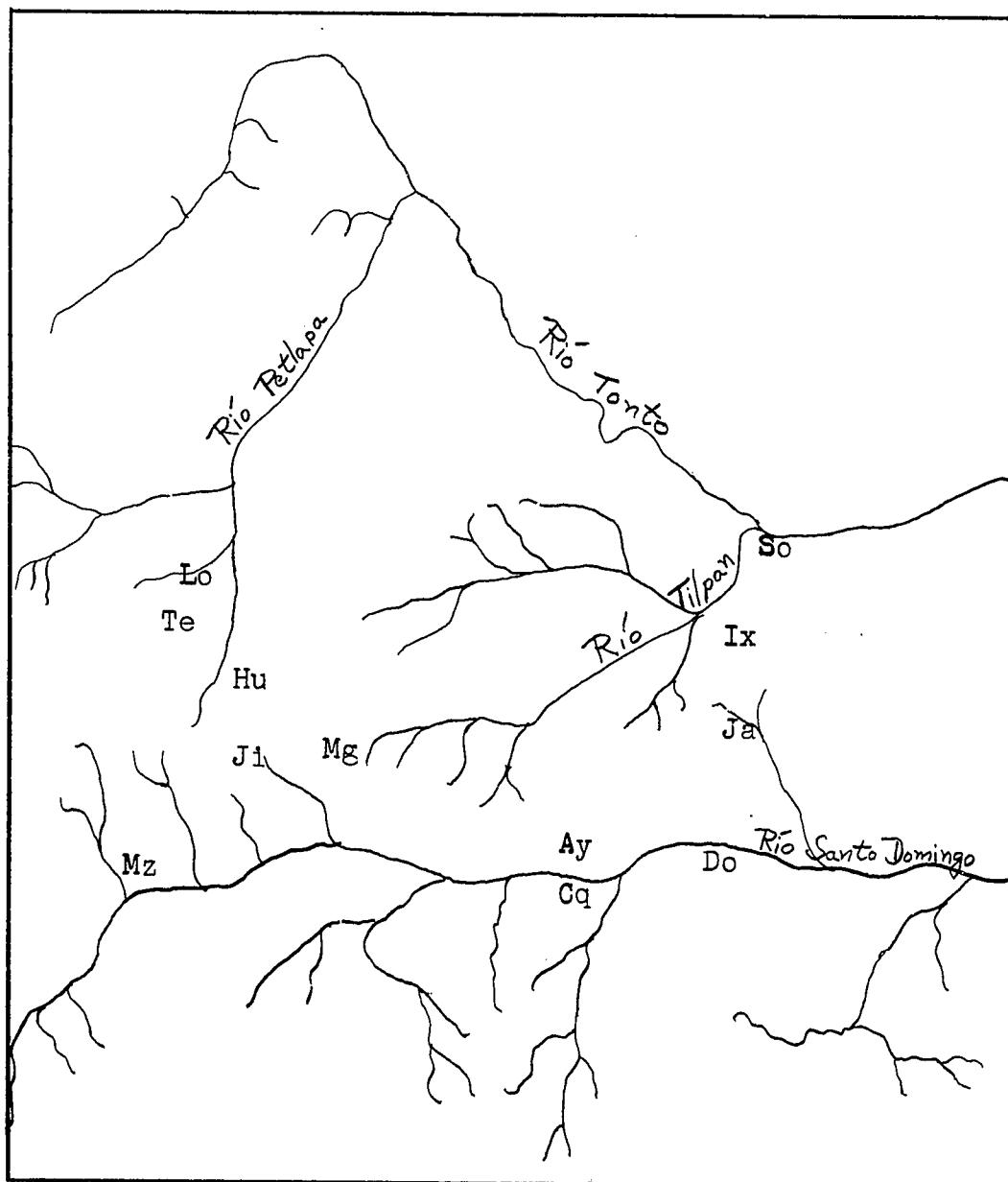
This Mazatec group, with some ninety-five thousand speakers, belongs to the Popolocan language family, which also includes Popoloc, Ixcatec, and Chocho. The relationship of these languages was demonstrated by Fernández de Miranda (1951, 1956), Gudschinsky (1959), and Hamp (1958, 1960), (see Bibliography).

The Popolocan language family is in turn a member of the Otomanguean stock: Gudschinsky (1959) demonstrated that Popolocan is related to Amuzgo and Mixtecan (Longacre 1957, 1962, 1966); Fernández de Miranda and Weitlaner (1961) have shown the relationship of these languages to Chiapanec and Mangue; a detailed comparative study of the major languages of the Otomanguean family is being presented during the current year as a doctoral dissertation at the University

## CHART I

RELATIVE GEOGRAPHICAL DISTANCE RELATIONSHIPS

OF MAZATEC LANGUAGES



## CHART 2

## SYMBOLS USED FOR THE MAZATEC LANGUAGES

(Gudschinsky 1953, 1956, 1959; Kirk 1966)

	1966	1959	1956	1953
Mazatlán de Flores	Mz	Mz	Maz	
San Bartolomé Ayautla	Ay			
San Juan Chiquihuitlán	Cq	Ch	Ch	
Jalapa de Díaz	Ja			
Santo Domingo del Río	Do			
Huautla de Jiménez	Hu	H	H	H
Santa María Jiotics	Ji		MJ	
San Miguel Soyoltepec	So	S	S	S
San Pedro Ixcatlán	Ix		I	I
San Miguel Huautla	Mg		M	SM
San Lorenzo Cuaunecuiltitla	Lo			
San Jerónimo Tecoatl	Te	SJ	T	T

of Pennsylvania by Calvin Rensch. His study will undoubtedly show more clearly the position of Popolocan within the larger grouping.

Twelve languages are cited in this study: Mazatlán de Flores (Mz), San Bartolomé Ayautla (Ay), San Juan Chiquihuitlán (Cq), Jalapa de Díaz (Ja), Santo Domingo del Río (Do), Huautla de Jiménez (Hu), Santa María Jiotes (Ji), San Miguel Soyaltepec (So), San Pedro Ixcatlán (Ix), San Miguel Huautla (Mg), San Lorenzo Cuanecuiltitla (Lo), and San Jerónimo Tecoatl (Te). I have introduced this systematic set of abbreviations to replace earlier inconsistent usage; the correspondence of my symbols to those in the Gudschinsky references is shown in Chart 2.

The present study goes beyond the previous works on PMaz in a number of ways.

- (1) The base is broadened to include twelve Mazatec languages and greater depth is afforded by expanding the number of cognate sets (cf. Chart 3).
- (2) Total accountability for the material is attempted and all problems are signalled in the notes following each cognate set (see Appendix). In Gudschinsky's work there are important cases where she overlooked details and therefore made ambiguous or unjustifiable reconstructions. The more careful consideration of detail should provide a firmer basis for comparison with other reconstructed languages.

## CHART 3

SUMMARY OF THE TOTAL NUMBER OF PMAZ ETYMA  
AND REFLEXES CITED FROM EACH LANGUAGE

	Gudschinsky 1953 (34 etyma)	Gudschinsky 1956 (93 etyma)	Gudschinsky 1959 (253 etyma)	Kirk 1966 (731 etyma)
Mz	.	81	249	338
Ay				578
Cq		20	1	480
Ja		2		606
Do				586
Hu	34	93	348	578
Ji		75		271
So	29	85	291	442
Ix	34	75		570
Mg	30	77		318
Lo				508
Te		68	217	537

(3) Distributional features of the proto-system have been carefully considered; this contrasts with earlier studies where such matters were left aside. (There are in particular numerous cases where obviously metathesis is involved.) Gudschinsky says in respect to the broad picture of Povolocan-Amuzgo-Mixtecan that "reassignments of allophones which affect only the distribution of the phonemes and not the inventory have been ignored as outside the scope of this survey" (Gudschinsky 1959:49). Although she makes no such explicit statement for her treatment of PMaz, her handling of the data suggests that she was guided by the same principle.

(4) It has been possible to show that only four vowels need to be reconstructed for PMaz, where Gudschinsky posited six (for discussion see §5).

(5) In a number of cases where Gudschinsky found it necessary to posit alternations in the proto-language it is now possible to demonstrate regular developments (see, for example, §4.4.1 and 4.11.1.3).

(6) It has been possible to determine that neither \*l nor \*r need be posited for the proto-language, although elements of this sort appear in all the daughter languages (see §4.4.2,. Gudschinsky omitted them from discussion because of uncertainties of reconstruction (1959:5), but

implies that one such element should be reconstructed (1959: 12).

(7) Gudschinsky reconstructed \*? in two positions in the syllable, but it now seems indicated in only one (see §4.1.2),

The consonants of PMaz are: stops \*t, \*t<sup>y</sup>, \*k, \*k<sup>w</sup>, \*c, \*č; spirants \*s, \*š; nasals \*m, \*n, \*ñ; semivowels \*y, \*w; laryngeals \*h, \*?.

Gudschinsky (1959:5) posited in her inventory of proto-consonants a prenasalized series of stops and affricates. However, she says "for simplicity of comparative statement, the prenasalized stops and affricates are treated in this paper as clusters of nasal plus stop or affricate" (1959:5). In the present study these elements are considered clusters on a par with other reconstructed clusters.

The consonants and consonantal clusters reconstructed for PMaz are presented schematically in Chart 4.

PMaz has four vowels: \*i, \*e, \*a, and \*u. Apparently vowel clusters had developed at the PMaz horizon (for an alternative interpretation that potentially eliminates vowel clusters for perhaps an earlier horizon, see §5.2). These clusters have either \*i or \*u as one of the members of the cluster: \*ia, \*iu; \*ei, \*ai, \*ui; \*ue, \*ua, \*au.

The tone inventory of PMaz consists of four level pitches: high (\*<sup>1</sup>), mid-high (\*<sup>2</sup>), mid (\*<sup>3</sup>), and low (\*<sup>4</sup>),

and three up-glides beginning with various pitches: \*<sup>31</sup>, \*<sup>41</sup>, and \*<sup>43</sup>.

PMaz had two degrees of stress: heavy stress occurred on the last syllable of the stem; weak stress occurred elsewhere.

In a formula, parentheses ( ) are to be read "choose optionally any one item set off by commas within them"; braces { } are to be read "obligatorily choose any one item set off by commas within them".

## CHART 4

## PMAZ CONSONANTS AND CONSONANTAL CLUSTERS

(in this chart asterisks are omitted)

t	$t^y$	k	$k^w$	c	$\check{c}$	s	$\check{s}$	m	n	$\tilde{n}$	y	w	h	?
th	$t^y h$	kh	$k^w h$	ch	$\check{c}h$	sh	$\check{sh}$							
nt	$nt^y$	nk	$nk^w$	nc	$\check{n}\check{c}$									
nth	$nt^y h$	nkh	$nk^w h$	nch	$n\check{c}h$									
hnt	$hnt^y$	hnk									hm	hn	$h\tilde{n}$	hy hw
?nt		?nk				?n $\check{c}$					?m	?n	? $\tilde{n}$	?y ?w
st		sk	$sk^w$	sc	$s\check{c}$									
		skh												
št		šk												
šth	$št^y h$	škh	$šk^w h$											=
tk	$t^y k$													
	$t^y kh$													
	$nt^y k$													
	$nt^y kh$													
	$t^y k^w$													
	$tk^w h$													

## CHAPTER II

### PHONOLOGICAL SYSTEMS OF MODERN MAZATEC LANGUAGES

A brief outline of the phonological system of each of the languages compared is presented in the following sections. Of the twelve languages seven are represented by my own materials. For the remaining five I have relied on earlier works. The analysis of Mazatlán (Mz), Jiotics (Ji), Soyaltepec (So), and Miguel Huautla (Mg) is taken from Gudschinsky (1956, 1959). The list of individual consonants and vowels is gleaned from her descriptions, but the summary of consonant and vowel clusters comes from inspection of the data itself. The summary of the Huautla (Hu) phonemic system is taken from Pike and Pike (1947). However, I have standardized with Gudschinsky's (1956, 1959) orthographic representations, writing /u/ rather than /o/ and /w/ rather than /v/.

A few changes in analysis have been made in some of the languages on the basis of further research:

- (a) The /?/ in Te appears to be in the process of change. Gudschinsky (1956, 1959) recorded /?/ as both initial and final member of consonantal clusters and inter-vocalic. One of my informants had /?/ only between vowels;

the other had alternant forms with and without /?/ as the initial member of a consonantal cluster. The latter informant, however, did not have /?/ occurring as the final member of consonantal clusters.

(b) In Ix I find no contrast between [u] and [o]; see §2.13 for the distribution of these phones. Gudschinsky (1956) treated these as contrastive. Also it seems unnecessary to set up consonantal clusters with /y/ as the final member.

(c) I have omitted /š/ in the Mz inventory and follow Gudschinsky (1959:6-8). Gudschinsky (1956) said that "the retroflexed phone is a separate phoneme which contrasts with the non-retroflexed alveopalatal before /a/" (p.4). Since I find no evidence for it in the cognate sets, I assume Gudschinsky's 1959 work represents a re-analysis on this point.

All of the Mazatec languages have tone systems--probably with three or four registers and glides. Detailed tone analysis has been made for Hu (Pike and Pike 1947), So (Pike 1956), and Ja (my own analysis); for the other nine languages it would be misleading to write the approximate tones without detailed analysis (note, for example, the complicated system of So described by Pike, 1956). For this reason, tones have not been written on the reflexes of the less studied languages.

Tones are indicated by superscript numerals with <sup>1</sup> indicating high level tone, and <sup>2</sup>, <sup>3</sup>, and <sup>4</sup> indicating successively lower tones. Clusters of numerals written without hyphen indicate tone glides between levels; a hyphen between numerals indicates syllable division. Thus <sup>3</sup> - <sup>41</sup> is to be read as level mid tone <sup>3</sup> on the first syllable and a glide from low tone <sup>4</sup> to high tone <sup>1</sup> on the second syllable. In the modern Mazatec languages (and also in PMaz) there is no correlation between the number of vowels and the presence or absence of tone glides (see K. Pike and E. Pike 1947:82-83, and E. Pike 1956).

All the languages have two degrees of stress with heavy stress occurring on the last syllable of the stem; weak stress occurs elsewhere. Heavily stressed syllables are marked orthographically with acute accent (') over the vowel (or final vowel of complex syllable nuclei); weakly stressed syllables are regularly unmarked. A few of the Cq forms seem aberrant in placement of stress and need further checking.

The vowel systems presented in the following pages indicate only oral vowels. However, each language has nasalized vowels that correspond to its oral vowel inventory. The vowel in the nucleus of the syllable are either all oral or all nasalized.

2.1

## 2.1 Mazatlán de Flores (Mz)

### Consonants and Consonantal Clusters:

-	t	c	č	k	s	š	m	n	ň	l	r	w	y	h
	th	ch	čh	kh		šh								
	ht	hc	hč	hk			hm	hn	hň			hw		
		c?	č?	k?	s?	š?		n?		l?		w?		
							’m		’ň	’l		’w	’y	
	nt	nc	nč	nk										
	ty	cy		ky	sy									hy
				kw	sw									
						sk								
	št					šk								
	thy	chy				khy								
	thw	chw				khw								
	nty					nky								
	nt?	nc?	nč?	nk?										
	nth	nch	nčh		’nč	’nk								
						kh?								
						k?y								
	c?w						w?y							
								hnk						
		ncw												
								hkw						
								sky						
								skw						
								šky						
								škw						
	šth													
	šthy													
	nt?y													
		nchy						hmy						
												hwy		

### Vowels and Vowel Clusters:

i	u
e	o
a	ei

2.2

2.2 San Bartolomé Ayautla (Ay)

Consonants and Consonantal Clusters:

t	c	č	č	k	k <sup>w</sup>	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	čh	kh	k <sup>w</sup> h	sh	šh									
								hm	hn	hñ			hw			
c?	č?			k?	k <sup>w</sup> ?	s?	š?		n?				w?	h?		
						?	m	?	n	?	ñ		?	w		
nt	nc	nč				nk		nk <sup>w</sup>								
st						sk		sk <sup>w</sup>								
št						šk		šk <sup>w</sup>				šn				
nth	nch					nkh										
						kh?										
?	nt		?	nč		?	nk									
nt?	nc?	nč?				nk?							hw?			
sth																
šth						škh										
						šk?										
hnt																

Vowels and Vowel Clusters:

i	u		ie	ia	io	iu
e	o		ei	ai		
a						

## 2.3

2.3 San Juan Chiquihuitlán (Cq)Consonants and Consonantal Clusters:

t	c	č	k	s	š	m	n	ñ	l	r	y	w	h	?
th	ch	čh	kh						hm	hn	hñ		hw	
													h?	
		č?		k?										
						?	m	?	n	?	ñ			
nt	nc	nč	nk											
st				sk										
št		šč	šk				šn							
				rk				rm	rn					
?nt		?nč	?nk											
		nch												
		šth												
				rkh										

Vowels and Vowel Clusters:

i	u		ui	ue	ua	uo	
e	o				ia	io	iu
a			ai	ei			
			iei	iai			
			uei				

2.4 San Felipe Jalapa de Díaz (Ja)Consonants and Consonantal Clusters:

t	c	č	k	k <sup>w</sup>	d	j	ǰ	g	g <sup>w</sup>	s	š	m	n	ñ	l	r	w	y	h?
th	ch	čh	kh	k <sup>w</sup> h				gh		sh	šh	mh	nh	ñh			wh	yh	
												hm	hn	hñ			hw		
t?	c?	č?	k?	k <sup>w</sup> ?	d?					s?	š?		n?			w?	y?	h?	
												?	n	?	ñ		?	w	
nt	nc	nč	nk	nk <sup>w</sup>	nd	nj	nj	ng											
st			sk	sk <sup>w</sup>															
			šk																
th?		čh?	kh?	k <sup>w</sup> h?															
nth	nch	nčh	nkh	nk <sup>w</sup> h	ndh	njh	nj	ng <sup>w</sup> h											
nt?	nc?	nč?	nk?		nd?														
st?			sk <sup>w</sup> ?													hw?			
sth			skh																
			škh	šk <sup>w</sup> h															
			šk?																

Vowels and Vowel Cluster:

ñ (syllabic nasal)

i	u		ie	ia	io	iu
e	o		ei	ai		ui
a			iei			

Tones:

1	1s	21	sis
2	2s	31	s2s
3	3s	22	21s

## 2.5

### 2.5 Santo Domingo del Río (Do)

#### Consonants and Consonantal Clusters:

t	c	č	k	k <sup>w</sup>	d	j	ǰ	g	g <sup>w</sup>	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	kh	k <sup>w</sup> h				sh	šh											
										hm	hn	hñ				hw				
t?	c?	č?	k?	k <sup>w</sup> ?						s?	š?		n?			w?		h?		
nt	nc	nč	nk		nd	nj	nǰ	ng	ng <sup>w</sup>											
st		sk																		
		šk																		
th?			kh?	k <sup>w</sup> h?																
nth	neh	nčh	nkh	nk <sup>w</sup> h																
nt?	nc?	nč?	nk?		nd?										hw?					
sth		skh																		
		škh																		
		šk?																		

#### Vowels and Vowel Clusters:

i	u	ie	ia	io	iu
e	o	ei	ai		
a		iei			

## 2.6

2.6 Huautla de Jiménez (Hu)Consonants and Consonantal Clusters:

t	c	č	č	k	s	š	m	n	ñ	l	r	y	w	h?
ht	hc	hč	hč	hk			hm	hn	hñ			hy	hw	
th	ch	čh	čh	kh	sh	šh	mh	nh				wh		
t?	c?	č?	č?	k?	s?	š?	m?	n?	ñ?	l?		y?	w?	
					?	?	?	?	?	?		?	?	
nt	nc	nč	nč	nk										
st				sk										
št				šk										
?	nt	?	nc	?	nč	?	nk							
hnt			hnč	hnč	hnk									
nth	nch	nčh	nčh	nkh	nkh									
nt?	nc?	nč?	nč?	nk?										
	hc?	hč?			sk?									
št?				šk?										

Vowels and Vowel Clusters:

i	u		ie	ia	iu
e	a		ai		au
			ui	ue	ua
					iai
			uia		iau uau

Tones:

1	13
2	14 32
3	23 42 423
4	34 43 424

2.7 Santa María Jíotes (Jí)Consonants and Consonantal Clusters:

t	c	č	č	k	s	š	m	n	ñ	l	r	w	y	h	?
ht		hč			hk			hm	hn	hñ		hw			
th	ch	čh	čh	kh		sh									
c?	č?			k?	s?	š?						w?			
							?	m	?	n	?	?	w	?	y
nt		nč	nč		nk										
					sk										
št					šk										
?	nt		?	nč		?	nk								
nt?	nc?	nč?			nk?										
hnt		hnč			hnk										
					škw										

Vowels and Vowel Clusters:

i	u	ie	ia	iu
e	o		ai	ui
	a			ue
				ua

2.8 San Miguel Soyaltepec (So)Consonants and Consonantal Clusters:

t	c	č	č	k	f	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	čh	kh				hm	hn	hñ			hw			
t?	c?	č?		k?		s?	š?				?m	?n	?ñ		?w	?y
nt	nc	nč			nk											
ty				ky				šy								
tk						sk										
st						šk										
		čhw				khw										
tyk																
nty					nky											
						k?y										
thy						khy										
	c?w	č?w					škw									
								škw								

Vowels and Vowel Clusters:

i	u		ui	ue	ua
e	o			e <sup>i</sup>	a <sup>i</sup>
a					

Tones:

1	21
2	24 31
3	32
4	41
	42
	43

2.9 San Pedro Ixcatlán (Ix)Consonants and Consonantal Clusters:

t	c	č	č̄	k	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	č̄h	kh		šh						hm	hn	hñ	
														hw	
t?	c?	č?			k?	s?	š?					?	?	?	?
								?	?	?		?	?	?	?
nt	nc	nč					nk								
st	sc	sč					sk								
št							šk								
št?							šk?								
nt?	nc?	nč?					nk?								
nth	nch	nčh					nkh								
ntr															
šth							škh								

Vowels and Vowel Clusters:

ñ (syllabic nasal)

i	u	ie	ai	ui
e	a	ia		ue
		iu		ua

## 2.10

2.10 San Miguel Huautla (Mg)Consonants and Consonantal Clusters:

t	c	č	k	$k^W$	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	kh	$k^W h$											
											hm	hn	hñ		hw
t?	c?	č?	k?		s?	š?	m?		ñ?		w?	y?	h?		
nt	nc	nč	nk		sk		sk <sup>W</sup>								
					št										
						šk									
nt?		nč?	nk?												
th?				kh?											
					nčh									hw?	

Vowels and Vowel Clusters:

i		u		ie	ia	io	iu
e		o				a <sup>i</sup>	
	a						

2.11

2.11 San Lorenzo Cuaunecuilton (Lo)

Consonants and Consonantal Clusters:

t	c	č	č	k	k <sup>w</sup>	f	s	š	m	n	ñ	l	r	w	y	h?			
th	ch	čh	čh	kh	k <sup>w</sup> h														
										hm	hn	hñ			hw				
										?	m	?	ñ	?	l	?	w	?	y
nt	nc	nč	nč	nk	nk <sup>w</sup>														
		sč			sk														
				šk															
?	nt	?	nč	?	nč	?	nk												
							hnk												

Vowels and Vowel Clusters:

i	?		ia
e	o		ai
	a		

2.12 San Jerónimo Tecoatl (Te)Consonants and Consonantal Clusters:

t	c	č	չ	k	s	š	m	n	ñ	l	r	w	y	h	?
th	ch	čh	չh	kh	sh										
ht	hc	hč					hm	hn	hñ			hw	hy		
nt	nc	nč	nč												
st		sč			sk										
št				šk											
hnt		hnč		hnk											
				hsk											
		hčh													

Vowels and Vowel Clusters:

i	u			ie	ia	iu
e	a			ui	ue	ua
				ai		

2.13 Principal Allophones of Phonemes  
with More Than One Allophone in the  
Mazatec Languages

All Mazatec languages (Mz, Ay, Cq, Hu, Ji, So, Ix, Mg, Lo, and Te) except Ja and Do have voiced lenis stop (includes affricated stop) allophones after /n/ when the stop is not immediately followed by /h/ or, in Ay /ʔ/. Mz, Ay, Cq, Hu, Ji, So, Ix, Mg, Te have voiceless fortis stop allophones elsewhere. Lo has voiced lenis stop allophones that fluctuate with voiceless fortis stop allophones when the stop is not in cluster with other consonants immediately after pause or in a stressed syllable; elsewhere in Lo voiceless fortis allophones occur.

In Ay, Ja, Do, Hu, Ji, So, Ix, Mg, and Te /š/ has a retroflexed allophone [ʂ] before non-front vowels; [ʂ] occurs elsewhere. In Cq /š/ has a retroflexed allophone [ʂ] before non-front vowels, a fronted palatalized allophone [ʂ<sup>y</sup>] when followed by /h/ before front vowels, and an allophone [ʂ] elsewhere.

In all the languages /n/ has a dorsal allophone [ɳ] before dorsal stops; [ɳ] occurs elsewhere.

In all the languages /h/ is voiceless anticipation of a following phoneme; there are thus voiceless nasal allophones [M N N̪] before corresponding voiced nasals and voiceless vowel allophones before corresponding voiced vowels:

[I E A O U] in Mz, Ay, Cq, Ji, So, and Mg; [I E A O U ɿ] in Lo; and [I E A U] in Hu, Ix, and Te. In Ja and Do the voiceless anticipation of vowels [I E ɿ A O U ɿ] appears in syllable initial and following voiceless consonant, but sometimes the vowel that is anticipated is separated from /h/ by /?. In Ja the anticipation is a murmured vowel following voiced consonants; and in Ja and Do before /w/ the allophone is a flat bilabial voiceless fricative [ɸ].

There are problems in stating the allophones of /?. For one thing, apart from Hu, Ja, and probably So, the analysis may not be sufficiently precise; and secondly, Gudschninsky's description (1956:5) does not mention the phonetic quality of /?/ in some environments. However, the general patterns can be summarized.

In all languages /?/ appears as non-clustered initial in the allophone [?] sharply released; a similar firm glottal closure appears as the first member of a consonantal cluster in Ay, Cq, Ja, Do, Hu, Ix, and Lo. Laryngealized vowel (which varies from laryngealization of the entire nucleus to weak rearticulation) represents a preceding /?/ as final member of a consonantal cluster in Ay, Cq, Ja, Do, Hu, Ix, and Mg.

So, Mz, and Ji present special problems. In these languages Gudschninsky (1956:5) says that in heavily stressed syllables /?/ is sharply released as the onset member to the

cluster; weakly stressed syllables of nasal or semivowel followed by a laryngealized nucleus are interpreted as /?/ plus nasal or semivowel (it complements the [?] plus nasal or semivowel of heavily stressed syllables). For Ji it can be deduced that consonants other than nasals and semivowel followed by laryngealized vowel are interpreted by Gudschinsky as /C?/; the phonetic quality of /C?/ in So and Mz is not specified by Gudschinsky; the Mz phonetic quality of /?l/ and /l?/ also is unstated. Mz and Ji have a sharply released allophone [?] when /?/ is the onset member of a three consonant cluster.

In Ja, Do, and Te /w/ has a flat bilabial fricative allophone [b] before front vowels; a more rounded semivowel allophone [w] occurs elsewhere. In Lo /w/ has a tense flat bilabial fricative allophone before /o/, /i/, and before /a/ when the /w/ follows pause or glottal catch; a more lax rounded semivowel allophone occurs elsewhere.

In Ja /d/ has a fricative allophone [d̪] when not in cluster with other consonants; [d] occurs elsewhere.

In Cq /r/ has a voiced flap allophone [ɾ] between vowels; a voiced trilled allophone [ɾ̡] occurs initially after pause when not in cluster with other consonants; a voiceless trilled allophone [ɾ̥] occurs in cluster with other consonants.

In Cq /y/ has an allophone with heavy friction in initial position after pause; an allophone with less friction occurs elsewhere.

In Cq, Ja, and Do /e/ has a higher allophone [e] when followed by /i/; a lower allophone [æ] occurs elsewhere. In Lo /e/ has a higher allophone [e] after /y/; a lower allophone [æ] occurs elsewhere. In Ix /e/ has an allophone [<sup>i</sup>ɛ] when immediately preceded by /t, k, c, č, s/ in a heavily stressed syllable; an allophone [æ] occurs when it is oral and preceded by /h/ in cluster with another consonant in a stressed syllable; an allophone [ɛ] occurs elsewhere.

In Ix /u/ has an allophone [u] when it is the first member of a /VV/ cluster, or when it is preceded by /hñ, ?ñ/, or when it is nasalized and preceded by /h/ not in cluster with other consonants in the syllable, or when it is preceded by /th, čh/ in a weakly stressed syllable; a lower allophone [o] occurs elsewhere.

In Ja /a/ has a higher fronted allophone [ə] when followed by /i/; a lower centralized allophone [a] occurs elsewhere.

In Ja /u/ has a central allophone [ɨ] when followed by /i/; the back allophone [u] occurs elsewhere.

In Ja /t d c j č ž k g kʷ gʷ/ have backed allophones [t̪ d̪ c̪ j̪ č̪ ž̪ k̪ g̪ k̪ʷ g̪ʷ] before the vocalic cluster /ui/.

## CHAPTER III

### INTERMEDIARY RECONSTRUCTION

In a number of etymologies, the reconstructed proto-form, taken together with internal evidence in certain languages has made possible the reconstruction of earlier forms for those languages intermediate between them and the protolanguage; such forms are listed parenthetically in the appendix following the attested form and labeled with the appropriate pre-language. Several general aspects of such intermediary reconstruction are discussed here in order to provide a clearer picture of the developments involved.

#### 3.1 Pre-Ja and Pre-Do Reconstruction

3.1.1 In PMaz some sets are reconstructed both with and without a nasal in cluster with other consonants; cf. 232, 284, 285, 294, 295, 298, 301, 346, 348, and 594. Apparently by analogy, Ja and Do extended this pattern of  $n \sim \emptyset$  to other forms, although it could also be argued that this alternation constitutes archaic residue preserved in these two languages. However, since further evidence for such an alternation seems absent from the other languages I have

### 3.1.1

treated it as analogical extention in Ja and Do.

The alternate without the nasal occurs phrase initially in Ja and Do; the alternate with the nasal occurs phrase medially. It seems reasonable that this alternation developed from Pre-Ja and Pre-Do forms with a nasal. Note the following examples: 98, 143, 146, 150, 180, 288, 289, 290, 292, 294, 302, 328, 344, 345, 350, 351, 369, 385, 414, 415, 482, 538, 692, 704, 705, 709, 710, 712, and 714.

3.1.2 In Ja a class of nouns have phonological alternation of /a/ and unglided tone ~ /o/ and falling tone from the pitch level of the /a/ form to tone <sup>3</sup>, unless the tone of the /a/ form is itself tone <sup>3</sup>. The form with /o/ and falling tone occurs phrase final; the alternate with /a/ and unglided tone occurs elsewhere. Inspection of the corresponding reflexes in all other sister languages shows that the vowel in this position developed from \*a and not \*au which > Ja /o/. From this one can conclude that the alternate in Ja with /o/ and falling tone is the locally innovated form. The Pre-Ja form is thus reconstructed with \*a and unglided tone in sets 100, 276, 324, 352, 359, 392, 428, and 472.

3.1.3 Do and Pre-Ja disyllables with a syllable structure of  $*ha^T-$  + -n{stop}(h)v<sup>T'</sup> > Ja ñ<sup>T</sup>- + -{stop}(h)v<sup>T'</sup> (where <sup>T</sup> and <sup>T'</sup> represent tones and + represents syllable division). In Ja the consonant and vowel of the first

### 3.1.3

syllable were lost and the tones of the earlier first syllable were shifted to the \*n- initial of the second syllable; a new disyllable was then created in Ja with contrastive tones carried by the syllabic nasal.

This reconstruction from Ja syllabic nasals is made possible, to a large degree, by noting that in all forms where Ja has a syllabic nasal Do (the language most closely related to Ja) has /ha- + -n-/. The fact that various other languages give sporadic evidence of /ha-/ or /kha-/ further substantiates the hypothesis that Ja syllabic nasals came from an earlier \*ha- + -n-. The lack of regular correspondences (outside the Ja /n-/: Do /ha- + -n-/) suggests that \*kha- ~ \*ha- may have been a PMaz nominal prefix that marked a small noun class. Besides the sets that are represented by Do and Pre-Ja \*ha-, the \*kha- ~ \*ha- alternation before \*-ma<sup>4</sup> in set 182 may be evidence of another member of this class.

The following sets are reconstructed with Pre-Ja \*ha-: 124, 125, 183, 184, 186, 352, and 713.

## 3.2 Pre-Ix Reconstruction

3.2.1 A pattern of unstressed \*nV > /ñ/ (syllabic nasal) appears to be emerging in Ix. Evidence of /nV/ ~ /ñ/ can be seen in cognate sets 249, 256, 259, 261, 279, 318, 374, and 379. Sets 255, 263, and 353 show only a form with /ñ/. How-

### 3.2.1

ever, for all of these sets it seems reasonable to suggest that the Pre-Ix form was \*nV.

3.2.2 Ix generated a vowel between the cluster of non-palatalized apical stop plus dorsal stop; this generated vowel is identical to the Ix vowel immediately following the dorsal stop. Sets 596, 597, 598, and 599 are reconstructed as coming from a Pre-Ix cluster of non-palatalized apical stop plus dorsal stop without a vowel between them. (The palatalized apical stop plus dorsal stop shows regular development of becoming Ix /ti-/ plus dorsal stop, see §4.9.2.)

### 3.3 Pre-So Reconstruction

So Mazatec has an intricate system of tonally conditioned allomorphs. The basic system has been characterized by Pike as follows (1956:57-58):

(1) Morphemes with tone clusters have progressive influence only; morphemes with single tones have regressive perturbing influence only...

(2) When morphemes with single tones perturb the tone of another morpheme, they are not themselves perturbed; but when morphemes comprised of a syllable containing a tone cluster perturb the tone of another morpheme..., they themselves are reciprocally affected in their tonal content...

(3) The phonemic height of a single-tone morpheme radically affects its perturbing characteristic:

(a) Regressive perturbation which is caused by morphemes with tone 1 affects, exclusively, those morphemes which are within that same grammatical word...; whereas progressive perturbation which is caused by morphemes with tone 1 affects, exclusively, those morphemes which are in the following word... (b) A morpheme with tone 2

### 3.3

has no perturbing influence whatever and, but for a small residue, allomorphs with tone 2 occur exclusively as the result of perturbations. (c) Morphemes with tone 3 or 4 cause regressive perturbation exclusively, and that perturbation is only of morphemes within the same grammatical word...

(4) The analyst must take account of crisscrossing combinations: (a) of the particular tone of the morpheme which causes the perturbation, and (b) of the specific place of occurrence in some larger grammatical and/or phonological unit.

Gudsinsky (1959:19) points out that in polysyllables the correspondence of Hu tones is with the So basic tones rather than the actually occurring ones. The So basic tones can be reconstructed by applying Pike's (1956) rules in reverse. However, it should be noted that to reverse the rules in a number of instances creates ambiguity; the So occurring tone may be derived from different sources, e.g., basic <sup>3</sup> + <sup>4</sup>, <sup>1</sup> + <sup>4</sup>, and <sup>24</sup> + <sup>4</sup> all become present day So <sup>2</sup> - <sup>4</sup>. A summary of the possible Pre-So disyllabic tones that can be chosen from present day So tones is presented in Chart 5. In cases where different Pre-So tones may be chosen, selection is made in terms of correspondence to Ja and Hu tones, cf. §6.2, particularly Chart 19. When my choice differs from Gudsinsky's (1959), this fact is so indicated in the explanatory paragraph that follows each cognate set.

A summary of the Pre-So tone intermediate reconstruction is now presented. In sets 591 and 672 So <sup>1</sup> - <sup>1</sup> is

## CHART 5

PRE-SO AND SYNCHRONIC SO DISYLLABIC  
TONE CORRESPONDENCES

<u>Synchronous So</u>	<u>Pre-So</u>
1 - 1	*21 - 1
1 - 1	*32 - 1
1 - 1	*2 - 1
2 - 3	*1 - 3
2 - 4	*1 - 4
2 - 4	*3 - 4
2 - 4	*24 - 4
3 - 2	*21 - 3
3 - 24	*21 - 4
3 - 24	*32 - 4
4 - 24	*42 - 4
41 - 1	*42 - 1

### 3.3

reconstructed as from Pre-So \*<sup>21</sup> - <sup>1</sup>; in sets 556 and 720 So <sup>2</sup> - <sup>3</sup> is reconstructed as from Pre-So \*<sup>1</sup> - <sup>3</sup>; in sets 350 and 351 So <sup>2</sup> - <sup>4</sup> is reconstructed as from Pre-So \*<sup>1</sup> - <sup>4</sup>; in set 637 So <sup>2</sup> - <sup>4</sup> - <sup>4</sup> is reconstructed as from Pre-So \*<sup>3</sup> - <sup>4</sup> - <sup>4</sup>; in set 664 So <sup>3</sup> - <sup>2</sup> - <sup>4</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>4</sup> - <sup>4</sup>; in sets 46, 171, 178, 437, 449, 455, 459, and 554 So <sup>3</sup> - <sup>2</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>3</sup>; in sets 30, 593, and 624 So <sup>3</sup> - <sup>2</sup> - <sup>3</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>3</sup> - <sup>3</sup>; in set 663 So <sup>3</sup> - <sup>2</sup> - <sup>4</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>3</sup> - <sup>4</sup>; in set 470 So <sup>3</sup> - <sup>2</sup> - <sup>32</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>3</sup> - <sup>32</sup>; in sets 424 and 644 So <sup>3</sup> - <sup>3</sup> - <sup>2</sup> is reconstructed as from Pre-So \*<sup>3</sup> - <sup>21</sup> - <sup>3</sup>; in set 29 So <sup>21</sup> - <sup>3</sup> - <sup>2</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>21</sup> - <sup>3</sup>; in sets 123, 205, 480, 490, 568, 590, 649, and 650 So <sup>3</sup> - <sup>24</sup> is reconstructed as from Pre-So \*<sup>21</sup> - <sup>4</sup>; in sets 4 and 652 So <sup>3</sup> - <sup>3</sup> - <sup>24</sup> is reconstructed as from Pre-So \*<sup>3</sup> - <sup>21</sup> - <sup>4</sup>; and in set 219 So <sup>4</sup> - <sup>3</sup> - <sup>24</sup> is reconstructed as from Pre-So \*<sup>4</sup> - <sup>21</sup> - <sup>4</sup>.

### 3.4 Pre-Te Reconstruction

It seems that \*ya- in unstressed syllable (when not followed by \*-hu) is shifting to Te /?i-/.. \*ya- followed by \*-hu regularly > Te /yi-/ (see §5.1.3); but unstressed \*ya- in other environments apparently has not yet stabilized in Te. Sets 345, 666, 671, 672, and 674 give /?i-/; sets 662

3.4

664, 668, 670, and 673 give /ya-/; set 675 gives /?a-/.  
It seems reasonable to suppose that all of these come from  
Pre-Te \*ya-; sets 345, 663, 666, 671, 672, 674, and 675 are  
reconstructed as coming from Pre-Te \*ya-.

## CHAPTER IV

### RECONSTRUCTION OF PROTO-MAZATEC CONSONANTS

This chapter along with the two that follow, explains the bases of the reconstructed etyma found in the appendix. The contrasts and complementations between sets of correspondences are presented here in detail to make explicit the hypotheses that underlie and support the reconstructed forms.

#### 4.1 Laryngeals (\*h, \*?)

The laryngeals \*h and \*? are presented first because of their importance to the general understanding of PMaz reconstructions. Both \*h and \*? occurred as simple syllable initials, and as the first member of onset clusters involving nasals and semivowels; \*h (but not \*?) also occurred as the final member of consonantal margins following stops and spirants. The importance of these two laryngeals in the reconstruction of PMaz is signaled both by their breadth of distribution and by the fact that they are either involved in sound changes or else they are significant reference points.

4.1.1 \*h as a simple syllable initial onset is reconstructed here; subsequent sections reconstruct \*h in cluster with other consonants.

The environment \*-VhV, where the vowels of PMaz were

#### 4.1.1

either both front or both back, is of considerable importance in explaining both consonantal and vowel developments in the various daughter languages. The general characteristics of sound developments in the \*-VhV environments are outlined here so that the system can be seen as a unified whole.

(1) The \*-VhV environment gives a reasonable explanation for the development of the voiced lenis vs. the voiceless fortis contrasts for all Ja synchronic stops and for Do apical stops. It appears that PMaz stops had two allophones. The voiced lenis allophone occurred when stops were preceded by \*n and followed by V in weakly stressed syllables; the voiceless fortis allophone occurred elsewhere. The development of the stops from this hypothesized proto-system is as follows: (a) Cq maintains the distribution of stop allophones characteristic of PMaz. (b) Mz, Hu, Ji, So, Ix, Mg, and Te closely parallel the distribution of the PMaz stop allophones except that the voiceless allophone is redistributed to occur in the \*nTV?V \*[nDV?V] environment (where T represents any voiceless stop and D any voiced stop) which became /nT?V/ [nT?V] in many of these languages, also heavily stressed \*nTV \*[nTV] > /nTV/ [nDV]. (c) Lo merged the distribution of the proto-allophones and used the voiced lax allophone as the general norm, although a voiceless allophone appears to fluctuate with the voiced allophone in stressed syllables. (d) The development of phonemic contrast in Do

#### 4.1.1

and Ja was in three stages. First, \*-hV was lost (under obscure conditions) in set 32 \*-nta<sup>3</sup>há<sup>2</sup> constructs, makes and set 358 \*nta<sup>3</sup>há<sup>2</sup> good (these two etyma likely are related). However, it is important that Lo gives evidence for \*-hV. With the loss of this syllable, the newly heavily stressed monosyllable [ndá] then contrasted with \*<sup>2</sup>i<sup>3</sup>ntá<sup>4</sup>s \*<sup>2</sup>i<sup>3</sup>ntá<sup>4</sup>s] soft (695) > Ja /ntá<sup>2</sup>/.

Apparently the next sound change that served to strengthen this weak phonemic contrast was the loss of phrase initial nasals in Ja and Do (cf. §3.1.1). The loss of the nasal in these \*n{stop} clusters in which the stops were phonetically voiced thus created a contrast with the voiceless stops. This weak phonemic contrast was further reinforced in Ja by another sound change. \*h metathesized with preceding vowel in the \*-VhV environment when the consonantal margin was semivowel (\*y, \*w), nasal (\*m, \*n, \*ñ), or nasal plus stop (\*n{t, t<sup>y</sup>, c, č, k, k<sup>w</sup>}). The new Ja monosyllable of {n} + {voiced lenis stop} + {h} then contrasted with older monosyllables of \*{n} + {stop (where the original allophone was voiceless fortis)} + {h}, e.g., Ja /ndhé<sup>3</sup>/ < \*nte<sup>4</sup>hé<sup>4</sup> deer (378) contrasts with Ja /nthé<sup>3</sup>/ < \*nthé<sup>4</sup> seed (385). A number of contrasts of this type can be found by comparing §4.1.1.1 (where the disyllabic proto-form is evidenced by disyllabic reflexes in all languages except Ja, which metathesized \*h, and Hu and Mg, which lost \*h in this

#### 4.1.1

environment) with §4.5 (where the monosyllabic reflexes in all daughter languages attest a proto-monosyllable of the shape \*{n} + {stop (phonetically voiceless)} + {h}).

Other hypotheses can, of course, be suggested to explain the Ja fortis-lenis stop contrasts. It might be suggested that Ja evidence reflects a contrast that existed in PMaz and that other dialects lost this contrast. Or as a simple restatement of this same general hypothesis, one might suggest that PMaz had three laryngeals rather than two, the third laryngeal having a voiced quality (\*h̥) that could be used to explain the voiced lenis quality of Ja stops as well as the anticipated murmured quality of the Ja vocalic nucleus in these types of syllables. However, if the third laryngeal hypothesis were selected, the third laryngeal would need to be reconstructed in two different places in the syllable since voiced stops in Ja (and Do) also occur without the presence of an anticipated murmured vowel (see §4.4).

Either one of these two alternate hypotheses accounts for the reflexes of the daughter languages (what I have posited as proto-disyllables with \*-VhV could be treated as monosyllables, and disyllabic reflexes would be considered a development in the daughter languages). However, these alternate hypotheses are not as satisfactory for several reasons. In the first place, at the present stage in the development of Otomanguean studies there appears to be no

#### 4.1.1

evidence from other language families of a proto-fortis-lenis contrast (or the alternative of this, a third contrastive laryngeal). Most importantly, there appears to be no evidence for this in Proto-Popolocan (PMaz, Popoloca, Ixcatec, and Chocho), the next layer back. It is unsafe to project such a system back in the proto-layers, with infinite regress, without further substantiation, especially when the evidence comes primarily from only one Mazatec language and when at the same time a plausible hypothesis is available to explain it as a development in that language.

Another consideration in favor of rejecting these two alternate hypotheses is that consonant clusters appear regularly to result in the Otomanguean language families from the loss of earlier intervening vowels. The alternate hypotheses suggest precisely the opposite and complicate the explanation of development from earlier layers. Many etyma reconstructed as \*-VhV have identical vowels and tones in both syllables; this might suggest that the disyllables in the daughter languages developed from proto-monosyllables with reassignment of \*[h]. If this \*[h] is interpreted as \*h (a third laryngeal) it could be postulated as the final member of the consonant cluster; if it is equated with \*h then it cannot be interpreted as the final member in a consonant cluster because of contrast (see §4.3). It could be postulated as post-syllabic \*-h following the vocalic

#### 4.1.1

nucleus; however, all the daughter languages have only open syllables, and to postulate such a closed syllable for PMaz seems unwise when another adequate hypothesis is available. It should also be observed that not all PMaz etyma reconstructed with \*-VhV have identical vowels and tones in both syllables; note the following examples: \*ntu<sup>4</sup>hú<sup>4</sup> soap (400), \*ntu<sup>3</sup>hú<sup>2</sup> long (397), \*má<sup>3</sup>ntu<sup>4</sup>hú<sup>1</sup> fulfill (235); \*wa<sup>3</sup>há<sup>1</sup> hits (632), \*wa<sup>3</sup>hú<sup>2</sup> hungry (633); ya<sup>3</sup>hú<sup>3</sup> meat (678), \*ya<sup>3</sup>hú<sup>2</sup> sharp (677); \*nča<sup>3</sup>há<sup>1</sup> corn drink (297), \*mę<sup>3</sup>hé<sup>2</sup> wants (239), \*mí<sup>3</sup>hf<sup>2</sup> upgrade (240). Although hypotheses such as those mentioned above can be suggested for deriving these disyllables from monosyllables they leave unaccounted the development of Ja and Do voiced stops in many of the \*n{stop}V environments (§4.3) where no laryngeal is present in the environment.

Then, too, Ja and Do are more closely related to each other than either is to other Mazatec languages. The alternate hypotheses blur this fact. The hypothesis adopted here neatly accounts for initial parallel development of Ja and Do of the fortis-lenis stop contrast, with Ja innovating (as it does on other points also when compared with Do) the \*h metathesis that reinforced the contrast in Ja.

However, the one most important reason for rejecting the alternate hypotheses is the limited distribution that would be set up in PMaz for the voiced stops (or the third

#### 4.1.1

laryngeal); they would be reconstructed primarily in the environment \*n\_h. The limited distribution of contrast is better accounted for as a development in Ja and Do rather than a feature of PMaz.

(2) Another important feature of the \*-VhV environment is that it provides an explanation for the vowels in the sequence \*-ahu. In certain daughter languages the cluster \*au > /o/, cf. §5.2.7. For some Mazatec languages \*h in the sequence \*-ahu provided sufficient phonological barrier so that the vowels developed separately parallel to \*a and \*u elsewhere. For detailed development of the vowels consult §5.

In summary then, the frequency of identical vowels and tones in both syllables of the \*-VhV sequences may raise questions about these reconstructions, however, the broad hypothesis involved accounts for a number of apparently diverse phenomena--the voicing of stops in Ja and Do, metathesis of \*h in Ja, loss of \*h in Hu, Mg, and Ji, and peculiar vowel developments of the postulated \*-ahu sequence. Also, it reflects in a natural way the structure of present-day Mazatec languages. Alternate hypotheses seem to require a development stage such as is postulated here for PMaz in order to account for the data. There seems to be no reason to assign this stage to a period earlier or later than PMaz.

#### 4.1.1

Unclustered \*h is reconstructed from four types of non-contrastive sets. The complementary environments are summarized in Chart 6.

(1) In syllables in which \*h is immediately preceded and immediately followed by only front vowels or only back vowels and when the consonants of the preceding syllable margin are \*y, \*w, \*n{t, t<sup>y</sup>, c, č, k, k<sup>w</sup>}, \*m, or \*ñ, \*h is reconstructed from Mz h : Ay h : Cq h : Ja h (metathesized with preceding vocalic nucleus): Do h : Hu Ø : Ji h : So h : Ix h : Mg Ø : Lo h : Te h as in set 426 \*ñy<sup>s</sup>hú<sup>2</sup> four:

Mz	ñyhu	Ji	ñjhu
Ay	ñyhu	So	ñy <sup>s</sup> hú <sup>1</sup>
Cq	ñyhu	Ix	ñjhu
Ja	ñhu <sup>2</sup>	Mg	ñy
Do	ñyhu	Lo	ñjhi
Hu	ñy <sup>4s</sup>	Te	ñjhu

Additional examples: 218, 232, 235, 236, 239, 240, 297, 299, 300, 301, 346, 363, 378, 397, 400, 404, 405, 406, 413, 421, 427, 443, 564, 632, 633, 669, 670, 677, 678, 679, 680, 685, and 687.

(2) In syllables in which \*h is immediately preceded and followed by only front vowels or only back vowels and when the consonant in the preceding syllable is \*n not in cluster with other consonants, \*h is reconstructed from

4.1.1

Mz h : Ay h : Cq h : Ja h (metathesized with preceding vocalic nucleus) : Do h : Hu h : Ji h : So h : Ix h : Mg h : Lo h : Te h as in set 329 \*nihí<sup>4</sup> corn (dry ear):

Mz	nihí	Ji	nihí
Ay	nihí	So	ní <sup>4</sup> hí <sup>4</sup>
Cq	nihí	Ix	nihí
Ja	nihí <sup>s</sup>	Mg	nihí
Do	nihí	Lo	néhé
Hu	ní <sup>4</sup> hí <sup>4</sup>	Te	nihí

Additional examples: 109, 264, 310, and 313.

(3) In syllables in which \*h is immediately preceded and followed by only front vowels or only back vowels and when the consonant in the preceding syllable is unclustered \*š, \*c, or \*č, \*h is reconstructed from Mz h : Ay h : Cq h : Ja h : Do h : Hu Ø : Ji Ø : So h : Ix h : Mg Ø : Lo h : Te h as in set 560 \*šuhý<sup>4</sup> paper:

Mz	šuhý	Ji	šú
Ay	šuhý	So	šu <sup>4</sup> hý <sup>4</sup>
Cq	šuhý	Ix	šuhý
Ja	šu <sup>s</sup> hý <sup>s</sup>	Mg	šú
Do	šuhý	Lo	šihí
Hu	šú <sup>4</sup>	Te	šuhý

Additional examples: 15, 54, 66, 298, and 301.

(4) In environments other than the three mentioned above, \*h is reconstructed from identical reflexes of /h/

4.1.1

in all daughter languages as in set 128 \*haú<sup>2</sup> two:

Mz	hó	Ji	hó
Ay	hó	So	hó <sup>1</sup>
Cq	hó	Ix	hó
Ja	hó <sup>2</sup>	Mg	hó
Do	hó	Lo	hwí
Hu	haú <sup>2</sup>	Te	hu

Additional examples: 43, 120, 121, 122, 123, 124, 125, 127, 129, 130, 131, 132, 159, 162, 228, 342, 382, 464, 530, 582, 601, and 663.

CHART 6

CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF \*h

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	h	h	h	~h	h	Ø	h	h	h	Ø	h	h
(2)	h	h	h	~h	h	h	h	h	h	h	h	h
(3)	h	h	h	h	h	Ø	Ø	h	h	Ø	h	h
(4)	h	h	h	h	h	h	h	h	h	h	h	h

~h signifies that h metathesized with the preceding vocalic nucleus

- (1) In syllables in which \*h is immediately preceded and followed by only front vowels or only back vowels and when the consonants of the preceding syllable are \*y, \*w, \*n {t, t<sup>y</sup>, c, č, k, k<sup>w</sup>}, \*m, or \*ñ

#### 4.1.1

- (2) In syllables in which \*h is immediately preceded and followed by only front vowels or only back vowels and when the consonant in the preceding syllable is \*n.
- (3) In syllables in which \*h is immediately preceded and followed by only front vowels or only back vowels and when the consonant in the preceding syllable is \*š, \*c, or \*č.
- (4) In other environments.

4.1.2 There are problems in the reconstruction of \*\* that are not neatly resolved in this study. Much of the difficulty undoubtedly lies in the quality of some of the data. For many of the daughter languages, one cannot be certain of correct phonemicization of contrast or complementation between monosyllabic laryngealized vowel and disyllabic rearticulated vowels with glottal catch between the vowels. Hu and Ja, however, reflect the most detailed and accurate analyses.

Gudschinsky, in both 1956 and 1959, reconstructed \*\* in two positions in the syllable--as the initial element of the syllable, with or without other consonants following before the vowel; and as the final member of a consonant cluster preceding the vocalic nucleus. The latter environment is poorly attested in both her 1956 and 1959 PMaz etyma. In 1956 (p.22) she posits \*t?, \*t<sup>y</sup>?, \*k?, \*k<sup>w</sup>?, \*c?, \*č?, \*s?,

#### 4.1.2

\*š?. Her cognate sets PMS 12, 15, 20, 28, 36, 43, 52, and 88 contain her only examples. \*k<sup>w</sup>? is nowhere attested and \*t? is found only in the \*nt? cluster in PMS 20.

In the 1959 work (p.5) she again posits \*t?, \*t<sup>y</sup>?, \*k?, \*k<sup>w</sup>?, \*c?, \*č?, \*s?, \*š?, although the evidence is no more extensive. In the array of cognate sets involved, \*t?, \*t<sup>y</sup>?, \*k<sup>w</sup>? are not reconstructed in any PMaz etyma. On the other hand, \*hw? (PPn 224) and \*w? (PPn 356) are reconstructed, although they are not listed in her inventory of clusters with \*? (1959:5). Only the etyma PPn 61, 124, 150, 173, 224, 230, and 356 are reconstructed with glottal catch as the final member of a consonantal cluster before the vocalic nucleus. This seems limited attestation for \*? as the final member of consonantal clusters.

A further point of interest in Gudschinsky's treatment of \*? is her seemingly ambivalent reconstruction of the position of \*? in the etyma. In PPn 224 she reconstructs \*CC?V, but from parallel reflexes in PPn 59 she reconstructs \*CCV?V. Of interest along this line is that she makes a parenthetical note in PPn 356 that her reconstructed \*C?V is from an earlier \*CV?V; she gives no explanation of the suggested development.

I have reconstructed \*? in only one position in the syllable (it is thus not parallel to the other laryngeal, \*h, which also occurs as the final member of consonantal clusters).

#### 4.1.2

\*? occurs as a simple initial or the first member of an onset cluster; there appears to be no clear contrast that requires reconstructions of the type \*C?V.

In a few sets I have not attempted to explain the development of \*?, namely: sets 26, 27, 28, 29, 30, 31, and 33 which all involve the same morpheme \*-ci<sup>1</sup>?i<sup>1</sup>-; and sets 32, 94, 162, 464, and 650.

Unclustered \*? is reconstructed from two types of non-contrastive sets (for treatment in clusters see §4.7 and §4.11.3).

(1) Initially in the word, \*? is reconstructed from identical reflexes of /?/ in all daughter languages as in set 690 \*?á<sup>3</sup> unoccupied:

Ay	?á	So	?á <sup>3</sup>
Cq	?ái	Ix	?á
Ja	?á <sup>2</sup>	Lo	?ó
Do	?á	Te	?á
Hu	?á <sup>3</sup>		

Additional examples: 691, 692, 693, 694, 695, and 696.

(2) When not initial in the word, \*? is reconstructed from Mz ? : Ay ? : Cq ? : Ja ? : Do ? : Hu ? : Ji ? : So ? : Ix ? : Mg ? : Lo ? : Te Ø as in set 45 \*cu<sup>1</sup>?ú<sup>1</sup> blouse:

#### 4.1.2

Mz	c'ú	Ji	c'ú
Ay	c'ú	So	c'ú
Cq	cu'ú	Ix	c'ú
Ja	c'ú <sup>1</sup>	Mg	c'ú
Do	c'ú	Lo	c'ú <sup>2</sup>
Hu	c'ú <sup>1</sup>	Te	cú

Additional examples: 1, 2, 5, 10, 16, 37, 38, 40, 44, 59, 60, 65, 69, 70, 93, 101, 103, 116, 117, 120, 122, 163, 174, 178, 181, 185, 195, 199, 251, 285, 286, 343, 357, 372, 373, 374, 383, 384, 407, 411, 412, 423, 445, 456, 463, 468, 486, 492, 500, 506, 512, 515, 522, 531, 536, 558, 577, 595, 600, 612, 628, 629, 652, 681, 683, and 688.

#### 4.2 Non-clustered Oral Stops

(\*t, \*t<sup>y</sup>, \*k, \*k<sup>w</sup>, \*c, \*χ)

4.2.1 \*t is reconstructed from an identical set of reflexes in each of the twelve daughter languages as in set 570 \*té<sup>3</sup> ten:

Mz	té	Ji	té
Ay	té	So	té <sup>3</sup>
Cq	té	Ix	té
Ja	té <sup>2</sup>	Mg	té
Do	té	Lo	tá
Hu	té <sup>3</sup>	Te	té

#### 4.2.1

Additional examples: 33, 36, 43, 49, 58, 91, 113, 210, 212, 221, 249, 280, 304, 308, 408, 422, 424, 494, 561, 562, 564, 565, 566, 567, 568, 569, 571, 572, 573, 589, 591, 592, 593, 594, 595, 600, 601, 602, 603, 604, 605, 606, 607, 642, 643, 644, 646, 647, and 674.

4.2.2 \*t<sup>y</sup> is reconstructed from two types of non-contrastive sets. Although one of these types is based on only one example, nevertheless it seems justifiable in that what is lost in Mz, Ay, Cq, So, Ix, and Mg is the evidence of palatalization before the vowel \*i; and in this same environment Lo evidences /č/ rather than /č/. Also, the conditioning effect of front vowels on \*t<sup>y</sup> can be seen in two etyma of the \*nt<sup>y</sup> cluster, cf. §4.4.2.

Although vowel clusters are posited for PMaz, \*t<sup>y</sup> can not be treated as \*tiV because of the contrast with set 586. Also an interpretation of \*t<sup>y</sup> as \*ti would set up a cluster of identical vowels (\*ii); such a cluster would be unique since there appears to be no evidence for any other identical vowel clusters in PMaz. Nor do any of the present-day Mazatec languages thus far investigated show clusters of identical vowels.

(1) Before \*i, \*t<sup>y</sup> is reconstructed from Mz t :  
Ay t : Cq t : Ja t : Do t : Hu č : Ji č : So t :  
Ix t : Mg t : Lo č : Te č in set 621 \*t<sup>y</sup>i<sup>sñá'31</sup> near:

#### 4.2.2

Mz	tiñá	Ji	čiñá
Ay	tiñá	So	ti <sup>s</sup> ñá <sup>s</sup> <sup>2</sup>
Cq	tiñá	Ix	tiñá
Ja	ti <sup>1</sup> ñá <sup>2</sup>	Mg	tiñá
Do	tiñá	Lo	čiñó
Hu	čiá <sup>s</sup>	Te	čiñá

(2) Before vowels other than \*i, \*t<sup>y</sup> is reconstructed from Mz ti : Ay ti : Cq ti : Ja t : Do t : Hu č : Ji č : So ty : Ix ti : Mg ti : Lo č : Te č as in set 608 \*t<sup>y</sup>a<sup>s</sup>wá<sup>s</sup>, \*t<sup>y</sup>u<sup>s</sup>wá<sup>s</sup> white:

Ay	tiwá	So	tya <sup>s</sup> wá <sup>2</sup>
Cq	tiawá	Ix	tiwá
Ja	ta <sup>s</sup> wá <sup>2</sup>	Mg	tiá
Do	tawá	Lo	čiwo
Hu	čuá <sup>s</sup>	Te	čuwá
Ji	čá		

Additional examples: 281, 353, 609, and 628.

4.2.3 \*k is reconstructed from identical reflexes in all daughter languages as in set 175 \*ká<sup>4</sup><sup>s</sup> twenty:

Mz	ká	Ji	ká
Ay	ká	So	ká <sup>s</sup> <sup>2</sup>
Cq	ká	Ix	ká
Ja	ká <sup>2</sup>	Mg	ká
Do	ká	Lo	kó
Hu	ká <sup>4</sup> <sup>s</sup>	Te	ká

#### 4.2.3

Additional examples: 18, 27, 28, 62, 68, 88, 89, 108, 171, 172, 173, 174, 176, 177, 178, 204, 205, 207, 208, 209, 210, 211, 212, 213, 214, 219, 258, 284, 295, 343, 346, 348, 386, 438, 474, 566, 573, 602, 634, 635, 636, 662, 663, 679, and 710.

4.2.4 In §5.2 I have posited vowel clusters as a feature of PMaz. This then raises the question of whether  $*k^WV$  should not then be interpreted as  $*kuV$ . At the PMaz horizon, the contrast between  $*k^WV$  and  $*kuV$  appears to have been fully developed; note the contrast between  $*ncu^skui^s$ ,  $*cu^4kui^s$  foot (you sg.) (295) with  $*k^Wf^s$  this, he (225). However, at a Pre-PMaz horizon the vowel cluster of PMaz  $*kui$  may have been interrupted by  $*h$  or  $*?$ . If such a laryngeal was subsequently lost it then would account for the contrast in PMaz between  $*kuV$  and  $*k^WV$ .

$*k^W$  is reconstructed from Mz kw : Ay  $k^W$  : Ja  $k^W$  : Do  $k^W$  : Hu ku : Ji ku : So kw : Ix ku : Mg  $k^W$  : Te ku as in set 255  $*k^Wf^s$  this, he:

Mz kwí	Do $k^Wf$
Ay $k^Wf$	Hu $kui^s$
Ja $k^Wf^2$	Ix $kui$

Additional examples: 215, 218, 226, and 410.

4.2.5 \*c is reconstructed from two types of non-contrastive sets. One of these types is poorly attested in

#### 4.2.5

that all of the examples involve the morpheme  $*\text{-ci}^1\text{?i}^1\text{- do}$ . However, in defense of what appears to be unwarranted generalization from a single morpheme in an apparently questionable environment the following considerations are presented: (a) In these sets there appears to be regular correspondence of Mz, Ay, Cq, Ja, Do, So, Ix /c/ to /s/ in Hu, Ji, Mg, and Lo; (b) there appears to be no evidence in PMaz of  $*c \sim *s$  so it seems unwise to posit such an alternation for this etymon; (c) the evidence in Proto-Popolocan, though scanty at present, gives evidence for only  $*c$  in this morpheme, cf. Ixcatec forms in Gudschinsky (1959) sets PPn 47 and 336; and (d) the environment posited, that of antepenult syllable preceding  $*\text{-i}^1\text{icV}$ , has plausibility in that laryngeal environments frequently affect consonant and vowel developments. It appears that  $*V^oV$  in some respects resembled a single syllable; thus it is not surprising that  $*c$  in unstressed environment before  $*\text{-i}^1\text{i-} >$  lax and merged with  $*s$  in Hu, Ji, Mg, and Lo.

(1) In antepenult syllables preceding  $*\text{-i}^1\text{icV}$ ,  $*c$  is reconstructed from Mz c : Ay c : Cq c : Ja c : Do c : Hu s : Ji s : So c : Ix c : Mg s : Lo s : Te s as in set 26  $*\text{-ci}^1\text{?i}^1\text{- do}$ :

#### 4.2.5

Mz	ticiská <u>plays</u>	Ji	sik'aškí <u>criticize</u>
Ay	tic'inta <u>construct</u>	So	ci <sup>21</sup> ntá <sup>s1</sup> <u>construct</u>
Cq	ticintahá <u>construct</u>	Ix	tic'inta <u>construct</u>
Ja	ti <sup>1</sup> c <sup>2</sup> i <sup>1</sup> kh <sup>2</sup> á <sup>2</sup> <u>purges</u>	Mg	sikejá <u>lends</u>
Do	tic'ikh <sup>2</sup> á <u>purges</u>	Lo	sikañá <u>lends</u>
Hu	si <sup>1</sup> kha <sup>3</sup> ,á <sup>3</sup> <u>purges</u>	Te	tisikhá <u>purges</u>

Additional examples (all with \*-ci<sup>1</sup>?i<sup>1</sup>-): 27, 28, 29, 30, 31, 32, and 33.

(2) In all environments other than in antepenult syllables preceding \*-i<sup>2</sup>iCV, \*c is reconstructed from identical reflexes of /c/ in all daughter languages as in set 256 \*na<sup>4</sup>cf<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) grind stone:

Mz	naci	Ji	naci
Ay	naci	So	na <sup>3</sup> cf <sup>21</sup>
Cq	naci	Ix	naci, ncé (Pre-Ix *naci)
Ja	na <sup>2</sup> cf <sup>1</sup>	Lo	ncé
Do	naci	Te	naci
Hu	na <sup>4</sup> cf <sup>1</sup>		

Additional examples: 1-17, 34, 35, 36, 37, 39-53, 96, 161, 204, 232, 254, 255, 284, 285, 294, 295, 323, 374, 376, 377, 468, 600, 616, and 631.

4.2.6 \*č is reconstructed from identical reflexes of /č/ in all daughter languages as in set 107 \*čú<sup>4</sup> animal:

#### 4.2.6

Mz	čú	Ji	čú
Ay	čú	So	čú <sup>4</sup>
Cq	čú	Ix	čú
Ja	čú <sup>3</sup>	Mg	čú
Do	čú	Lo	čí
Hu	čú <sup>4</sup>	Te	čú

Additional examples: 54-72, 88-106, 108-119, 201, 208, 231, 258, 259, 262, 263, 298, 301, 351, 424, 425, 457, 529, 561, 637, 643, 666, and 720.

#### 4.3 Stop Plus \*h

(\*th, \*t<sup>y</sup>h, \*kh, \*k<sup>w</sup>h, \*ch, \*čh)

4.3.1 \*th is reconstructed from an identical set of reflexes as in 318 \*ni<sup>s</sup>thá<sup>s</sup> clay griddle:

Mz	níthá	Ji	níthá
Ay	níthá	So	ní <sup>s</sup> thá <sup>s</sup>
Cq	níthá	Ix	níthá, ñíthá (< Pre-Ix *nítá)
Ja	ní <sup>2</sup> thá <sup>2</sup>		
Do	níthá	Mg	níthá
Hu	ní <sup>s</sup> thá <sup>s</sup>	Lo	níthó
		Te	níthá

Additional examples: 19, 92, 145, 222, 279, 379, 574-588, 657, and 680.

#### 4.3.2

4.3.2 \*t<sup>y</sup>h is reconstructed from Mz thy : Ay thi :  
 Cq thi : Ja thi : Do thi : Hu čh : Ji čh : So thy :  
 Ix thi : Mg thi : Lo čh : Te čh as in set 610 \*t<sup>y</sup>há<sup>s</sup> arm,  
shoulder:

Mz	thyá	Ji	čhá
Ay	thiá-	So	thyá <sup>s</sup>
Cq	thiá-	Ix	thiána <u>my arm</u>
Ja	thiá <sup>2</sup>	Mg	thiá
Do	thiá	Lo	čhó-
Hu	čhá <sup>s</sup>	Te	čhá-

Additional examples: 612-620, 658, and 675.

4.3.3 \*kh is reconstructed from identical reflexes in all daughter languages as in set 202 \*khi<sup>s1</sup> far:

Mz	khi	Ji	khi
Ay	khi	So	khi <sup>s2</sup>
Cq	khi	Ix	khi
Ja	khi <sup>2</sup>	Mg	khi
Do	khi	Lo	khi
Hu	khi <sup>s</sup>	Te	khi

Additional examples: 2, 3, 8, 29, 30, 31, 53, 63, 124, 125, 179, 180, 181, 185, 187-200, 203, 352, 370, 647, and 713.

4.3.4 \*k<sup>w</sup>h is reconstructed from Mz khw : Ay k<sup>w</sup>h :  
 Cq khu : Ja k<sup>w</sup>h : Do k<sup>w</sup>h : Hu khu : Ji khu : So khw :

#### 4.3.4

Ix khu : Mg k<sup>w</sup>h : Lo k<sup>w</sup>h : Te khu as in set 216 \*k<sup>w</sup>há<sup>4</sup>  
abstract thing:

Mz	khwathú <u>gift</u>	So	khwa <sup>4</sup> ki <sup>2</sup> sí <sup>4</sup> <u>law</u>
Ay	k <sup>w</sup> hačá <u>war</u>	Ix	khuasčá <u>war</u>
Cq	khuačá <u>war</u>	Mg	k <sup>w</sup> haweyá <u>death</u>
Ja	k <sup>w</sup> há <sup>3</sup> <u>thing</u> ,	Lo	k <sup>w</sup> hočq <u>war</u>
	k <sup>w</sup> ha <sup>3</sup> čá <sup>1</sup> <u>war</u>	Te	khuasčá <u>war</u> ,
Do	k <sup>w</sup> hačá <u>war</u>		khuakiší <u>truth</u>
Hu	khuá <sup>4</sup> <u>abstract thing</u> ,		
	khua <sup>4</sup> wi <sup>3</sup> yá <sup>3</sup> <u>death</u>		
Ji	khuathó <u>gift</u>		

Additional examples: 217, 220, 219, 221, 222, 223, 224, 307,  
and 458.

4.3.5 \*ch is reconstructed from identical reflexes in  
all daughter languages as in set 23 \*chú<sup>2</sup> toasted:

Mz	chú	So	chú <sup>1</sup>
Ay	chú	Ix	chú
Cq	chú	Mg	chú
Ja	chú <sup>2</sup>	Lo	chí
Hu	chú <sup>2</sup>	Te	chú
Ji	s'ichú		

Additional examples: 17-22, 24, 25, and 217.

4.3.6 \*čh is reconstructed from two types of non-  
contrastive sets:

(1) Preceding front vowels \*i and \*e, \*čh is reconstructed from identical reflexes of /čh/ in all daughter languages as in set 78 \*čhí<sup>2</sup> ripens:

Mz	tičhí	So	ki <sup>s</sup> čhí <sup>1</sup>
Ay	kičhí	Ix	kičhí
Cq	kičhí	Mg	kičhí
Ja	ki <sup>s</sup> čhí <sup>2</sup>	Lo	kičhí
Do	kičhí	Te	kičhí
Hu	ki <sup>s</sup> čhí <sup>2</sup>		

Additional examples: 76, 77, 79-83, 229, 230, 381, and 523.

(2) Preceding back vowels \*a and \*u, \*čh is reconstructed from Mz čh : Ay čh : Cq čh : Ja čh : Do čh : Hu čh : Ji čh : So čh : Ix čh : Mg čh : Lo čh : Te čh as in set 261 \*na<sup>4</sup>čhú<sup>1</sup> (\*<sup>s</sup> - <sup>1</sup>) thread:

Mz	načhú	Ji	načhú
Ay	načhú	So	na <sup>s</sup> čhú <sup>21</sup>
Cq	načhú	Ix	načhú, ičhú (< Pre-Ix *načhú)
Ja	na <sup>s</sup> čhú <sup>1</sup>	Lo	nočhí
Do	načhú	Te	načhú
Hu	na <sup>4</sup> čhú <sup>1</sup>		

Additional examples: 73, 74, 75, 84, 85, 86, 87, 260, 387, 562, 668, and 679.

4.4 \*n Plus Stop(\*nt, \*nt<sup>y</sup>, \*nk, \*nk<sup>w</sup>, \*nc, \*nč)

The development of voiced lenis vs. voiceless fortis stop contrasts in Ja and Do has been discussed in §4.1.1. In the following sections, the regularity of the development can be noted in weakly stressed syllables wherever the stop is not lost.

4.4.1 A few observations should be made regarding the reconstruction of \*nt. Gudschinsky's statement (1956:13) that "the two simple prenasalized stops, \*<sup>n</sup>t and \*<sup>n</sup>k are also very stable except in certain clusters...[and] are reconstructed...from identical reflexes..." is now seen to be an over-simplification. While it seems likely that in PMaz \*nt ~ \*n in some environments, on the other hand it seems certain that in other environments the alveolar stop \*t was simply lost. Gudschinsky in PPn 79, 346, 349, and 353 (my 394, 366, 389, and 367, respectively) posited etyma of \*nt ~ \*n. It is no longer necessary to posit \*nt ~ \*n in these etyma since the development is regular from \*nt (cf. complementary environments (2) and (3) of Chart 7).

\*nt is reconstructed from four types of non-contrastive sets. The complementary environments are summarized in Chart 7.

4.4.1

(1) In stressed syllables, \*nt is reconstructed from /nt/ in all Mazatec languages as in set 271 \*na<sup>4</sup>ntá<sup>4</sup> cactus (nopal):

Mz	nantá	So	na <sup>4</sup> ntá <sup>4</sup>
Ay	nantá	Ix	nantá
Cq	nánta	Mg	nantá
Ja	na <sup>3</sup> ntá <sup>3</sup>	Lo	nontó
Do	nantá	Te	nantá
Hu	na <sup>4</sup> ntá <sup>4</sup>		

Additional examples: 82, 112, 183, 193, 270, 276, 317, 319, 320, 321, 330, 331, 481, 482, 483, 645, 695, and 696.

(2) In unstressed syllables followed by \*-{y, w, s, c}V, \*nt is reconstructed from Mz nt : Ay nt : Cq nt : Ja ny : Do nd : Hu nt : Ji nt : So nt : Ix nt : Mg nt : Lo nt : Te nt as in set 392 \*nti<sup>4</sup>yá<sup>1</sup> road:

Mz	ntiyá	Hu	ntiá <sup>4</sup> <sup>2</sup>
Ay	ntiyá	Ji	ntiyá
Cq	ntiyá	So	nti <sup>4</sup> yá <sup>21</sup>
Ja	ni <sup>3</sup> yá <sup>1</sup> , ni <sup>3</sup> yá <sup>13</sup> (< Pre-Ja *ni <sup>3</sup> yá <sup>1</sup> )	Mg	ntiaté <u>main road</u>
Do	ndiyá	Ix	ntiyá
		Lo	ntiyá
		Te	ntiyá

Additional examples: (a) with \*y in the following syllable 250, 316, 360, 380, 381, 382, 393, 396, and 408; (b) with \*w in the following syllable 111, 354, 355, 359, 364, 365, and

#### 4.4.1

401; (c) with \*s in the following syllable 375, 388, and 398; and (d) with \*c in the following syllable 374, 376, and 377.

(3) In unstressed syllables followed by \*-i<sup>2</sup>yu, \*nt is reconstructed from Mz n<sup>2</sup>V : Ay n<sup>2</sup>V : Cq nt : Ja n<sup>2</sup>V : Do nd : Hu n<sup>2</sup>V : Ji n<sup>2</sup>V : So n<sup>2</sup>V : Ix nt : Mg n<sup>2</sup>V : Lo n<sup>2</sup>V : Te n<sup>2</sup>V as in set 394 \*nti<sup>4</sup>, yú<sup>3</sup> ant:

Mz	n <sup>2</sup> yú	Ji	n <sup>2</sup> yú
Ay	n <sup>2</sup> iú, niyú	So	n <sup>2</sup> i <sup>4</sup> , yú <sup>3</sup>
Cq	nti <sup>2</sup> iú	Ix	nti <sup>2</sup> iú
Ja	n <sup>2</sup> i <sup>3</sup> , iú <sup>2</sup>	Mg	n <sup>2</sup> yú
Do	ndi <sup>2</sup> iú	Lo	n <sup>2</sup> yí
Hu	n <sup>2</sup> i <sup>4</sup> , yú <sup>3</sup>	Te	niyú

Additional examples: 361, 366, 369, 389, 390, 399, and 413.

(4) In other unstressed syllables (in environments not those of (2) and (3) above), \*nt is reconstructed from Mz nt : Ay nt : Cq nt : Ja nd : Do nd : Hu nt : Ji nt : So nt : Ix nt : Mg nt : Lo nt : Te nt as in set 397 \*ntu<sup>3</sup>hú<sup>2</sup> long:

Mz	ntuhú	Ji	ntuhú, ntú
Ay	ntuhú	So	ntu <sup>3</sup> hú <sup>1</sup>
Cq	ntuhú	Ix	ntuhú
Ja	ndhú <sup>2</sup>	Mg	ntú
Do	nduhú	Lo	ntihí
Hu	ntú <sup>4</sup> s	Te	ntuhú

Additional examples: 32, 125, 235, 339, 353, 356, 357, 358, 362, 363, 370, 373, 378, 379, 383, 384, 387, 388, 400, 442,

#### 4.4.1

564, 668, and 670.

#### CHART 7

##### CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF \*nt

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
(2)	nt	nt	nt	nY	nd	nt						
(3)	nY	nY	nt	nY	nd	nY	nY	nt	nY	nY	nY	nY
(4)	nt	nt	nt	nd	nd	nt						
	(1) In stressed syllables											
	(2) In unstressed syllables when followed by *-{y, w, s, c}V											
	(3) In unstressed syllables when followed by *-?yV											
	(4) In other unstressed syllables, environments other than (2) and (3)											

4.4.2 \*nt<sup>y</sup> is reconstructed basically from four types of non-contrastive sets; the complementary environments are summarized in Chart 8. Environments other than those presented on the chart are relevant to the development of \*nt<sup>y</sup>: (a) when \*nt<sup>y</sup> was in unstressed syllable and followed by a semivowel in the following syllable consonantal margin, \*t<sup>y</sup> > Ø in Ja and Do in set 417 (this is parallel to Ja, Do

#### 4.4.2

\*t > Ø in the \*nt cluster, cf. §4.4.1); (b) in other unstressed environments, \*nt<sup>y</sup> > Ja, Do /nd/ in set 403 (for \*nt > Ja, Do /nd/ with \*h metathesis in Ja, cf. §4.1.1). These intersecting environments have been omitted from Chart 8 presentation because it would obscure the development of \*t<sup>y</sup> as conditioned before front and back vowel (cf. also §4.2.2).

Gudsinsky (1956:18, 1959:5) postulated at least one liquid, probably \*l, in PMaz. However, it was "omitted from the discussion because of uncertainties in the reconstruction" (Gudsinsky 1959:5).

/l/ and/or /r/ occur in all of the Mazatec languages. However, several considerations are important in determining their status in PMaz: (a) both /l/ and /r/ have low frequency of occurrence in morphemes; (b) in rapid speech, Ja /s/ in weakly stressed syllables following the heavily stressed syllable of the word has an allophone [ř]; (c) Hu li<sup>2</sup>kui<sup>3</sup> does not (410) has an alternant form ndi<sup>2</sup>kui<sup>3</sup> in precise speech; and, (d) most importantly, apart from Spanish loans (such as Ja rá<sup>2</sup>sá<sup>3</sup> orange) neither /l/ nor /r/ occur in heavily stressed syllables.

The fact that Hu has alternate forms with /l/ ~ /nt/ (sets 386 and 410) might suggest that \*l > /nt/ rather than the converse hypothesis that \*nt<sup>y</sup> > /l/. However, the fact that /l/, apart from Spanish loan words, never occurs in heavily stressed syllables is an important distributional

#### 4.4.2

consideration; it is this particular fact that makes it seem highly probable that /l/ is a development in the daughter languages rather than a PMaz phoneme.

In the present study neither \*l nor \*r are reconstructed for PMaz. The presence of these liquids in the daughter languages is accounted for in the following ways: (a) Mz, Hu, Ji, Mg /l/ < \*nt<sup>y</sup> in weakly stressed syllables preceding \*i as in sets 410, 411, 412, 413, and 457; (b) Mz, Hu, Ji, Mg /l/ < \*nt<sup>y</sup> in weakly stressed syllables followed by \*-ahu in set 406; and (c) Cq /r/ < \*t when in cluster with \*k and \*k<sup>w</sup> as in sets 597, 598, and 599.

There is a small residue that is still unexplained either with or without proto-liquids: Cq /l/ in set 247; Ay /l/ in set 429; Mz /l/ in set 143; Te /l/ in set 510; and Mz, Ja, Do, Hu, Te /l/, So, Ix /r/ in set 386.

(1) In unstressed syllables preceding \*-ahu, \*nt<sup>y</sup> is reconstructed from Mz l : Ay nti : Cq nti : Ja nd...i (\*h metathesized in Ja, cf. §4.1.1) : Do ndi : Hu l : Ji l : So nty : Ix nti : Mg l : Lo ny : Te nt in set 406  
\*nt<sup>y</sup>a<sup>4</sup>hú<sup>4</sup> stone, rock:

4.4.2

Mz    'lahó, yahú	Ji    lohó
Ay    ntihó	So    ntya <sup>4</sup> hó <sup>4</sup>
Cq    ntiohó	Ix    ntihú
Ja    ndhió <sup>s</sup>	Mg    ló
Do    ndiohó	Lo    nōhwí
Hu    laú <sup>4</sup> , la <sup>4</sup> haú <sup>4</sup>	Te    ntuhú

(2) Preceding \*i, \*nt<sup>y</sup> is reconstructed from Mz l :

Ay nt : Cq nt : Ja nd : Do nd : Hu l : Ji l : So nt :  
 Ix nt : Mg l : Lo nV : Te nV as in set 411 \*nti<sup>s</sup>?f<sup>1</sup> fire:

Mz    l?í	Ji    l?í
Ay    nti?í	So    nti <sup>s</sup> ?f <sup>21</sup>
Cq    nti?í	Ix    nti?í
Ja    nd?f <sup>1</sup>	Mg    l?í
Do    nd?f <sup>1</sup>	Lo    ni?yé
Hu    l?í <sup>1</sup>	Te    ni?í

Additional examples: 410, 412, and 413.

(3) Preceding \*e, \*nt<sup>y</sup> is reconstructed from Mz nt :

Ay nt : Cq nt : Pre-Ja \*nt : Pre-Do \*nt : Hu nč :  
 So nt : Ix nt : Mg nt : Lo nč : Te nč as in set 407  
 \*nt<sup>y</sup>e<sup>1</sup>?e<sup>1</sup>/\*<sup>s</sup> - <sup>s</sup>) hears:

Mz    nt?í	Ix    nte?é
Ay    tint?é-	So    t?é <sup>21</sup> <u>he hears</u> , nt?é
Ja    (ti <sup>1</sup> )nt?é <sup>2</sup>	<u>he will hear</u>
Do    tint?é	Te    khinčé
Hu    nč?ué <sup>1</sup>	

#### 4.4.2

Additional example: 408.

(4) Preceding back vowels (\*a, \*u) other than \*-ahu, \*nt<sup>y</sup> is reconstructed from Mz nti : Ay nti : Cq nti : Ja nti : Do nti : Hu nč : Ji nč : So nty : Ix nti : Mg nti : Lo nč : Te nč as in set 416 \*-nt<sup>y</sup><sub>ú</sub><sup>1</sup> (\*<sup>4</sup>) marker, boundary:

Cq	šintiu	Ix	cintiu
Ja	či <sup>2</sup> ntiu <sup>1</sup>	Mg	cintiu
Do	čintiu	Lo	cinčí
Hu	či <sup>4</sup> nču <sup>4</sup>	Te	cinčú

Additional examples: 198, 404, 405, and 418.

#### CHART 8

#### PRINCIPAL CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF \*nt<sup>y</sup>

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	l	nti	nti	nd...i	ndi	l	l	nty	nti	l	nV	nt
(2)	l	nt	nt	nd	nd	l	l	nt	nt	l	nV	nV
(3)	nt	nt	nt	nt	nt	nč		nt	nt	nt		nč
(4)	nti	nti	nti	nti	nti	nč	nč	nty	nti	nti	nč	nč
(1)	In unstressed syllables preceding *-ahu											
(2)	Preceding *i											
(3)	Preceding *e											
(4)	Preceding back vowels (except in *-ahu)											

#### 4.4.3

4.4.3 \*nk is reconstructed from two types of non-contrastive sets.

(1) In stressed syllables, \*nk is reconstructed from identical reflexes in all daughter languages as in set 100  
\*či<sup>4</sup>nká<sup>4</sup> pig:

Mz činká	Hu či <sup>4</sup> nká <sup>4</sup>
Ay činká	Ji činká
Cq činká	So či <sup>4</sup> nká <sup>4</sup>
Ja či <sup>3</sup> nká <sup>3</sup> , či <sup>3</sup> nkó <sup>3</sup>	Ix činká
(< Pre-Ja *či <sup>3</sup> nká <sup>3</sup> )	Mg činká
Do činká	Lo činkó
	Te činká

Additional examples: 3, 9, 80, 99, 188, 233, 244, 245, 269, 430, 434, 435, 455, 499, 581, 617, 619, and 639.

(2) In unstressed syllables, \*nk is reconstructed from Mz nk : Ay nk : Cq nk : Ja ng : Do ng : Hu nk : Ji nk : So nk : Ix nk : Mg nk : Lo nk : Te nk as in set 349 \*nki<sup>3</sup>?wá<sup>3</sup> chin, jaw:

Mz nki?wá	Ji cha?anki?wá
Ay nki?wá	So nanki?wá
Cq nki?uá	Ix nkiwá
Ja ngi <sup>2</sup> ?wá <sup>2</sup>	Mg nkiwá
Do ngi?wá	Lo nki?wó
Hu nki <sup>3</sup> ?wá <sup>3</sup>	Te nkiwá

Additional examples: 340, 341, 342, 343, 345, 346, 347, 348, 350, 351, and 640.

#### 4.4.4

4.4.4 \*nk<sup>w</sup> is reconstructed only in two sets (which may be related) in unstressed syllables. The justification for reconstructing this poorly attested cluster is based on two considerations: (a) \*n plus stop appears to have been a well developed pattern in PMaz; and (b) \*k<sup>w</sup> itself seems well enough attested, cf. §4.2.4.

In unstressed syllables, \*nk<sup>w</sup> is reconstructed from Ay nk<sup>w</sup> : Cq nku : Ja ng<sup>w</sup> : Lo nk<sup>w</sup> as in set 632 \*nk<sup>w</sup>a<sup>s</sup>há<sup>1</sup>  
hits (l p.):

Ay nk <sup>w</sup> aháre	Ja ng <sup>w</sup> há <sup>s</sup>
Cq nkuahári	Lo nk <sup>w</sup> ahá

Additional example (though perhaps related): 218.

4.4.5 \*nc is reconstructed from two types of non-contrastive sets:

(1) In unstressed syllables, \*nc is reconstructed from Mz nc : Ay nc : Cq nc : Ja nj : Do nj : Hu nc : Ji nc : Ix nc : Mg nc : Lo nc : Te nc as in set 294 \*ncu<sup>s</sup>?wá<sup>s</sup> (\*<sup>s</sup> - <sup>1</sup>) mouth:

Mz ncuwá	Hu nc?uá <sup>s</sup>
Ay ncu?wá	Ji ncu?wá
Cq ncuwá	Ix nc?uá
Ja nju <sup>s</sup> ?wá <sup>1</sup> , ju <sup>s</sup> ?wá <sup>1</sup>	Mg ncuw?á
(<Pre-Ja *nju <sup>s</sup> ?wá <sup>1</sup> ) <u>lips</u>	Lo ncu?wó
Do nju?wá, ju?wá (< Pre- Do *nju?wá)	Te ncuwá

#### 4.4.5

Additional example: 232.

(2) In stressed syllables, \*nc is reconstructed from identical reflexes of /nc/ in all daughter languages as in set 568 \*te<sup>1</sup>ncú<sup>4</sup> goat:

Mz	tencú	So	te <sup>3</sup> ncú <sup>24</sup> (< Pre-So
Ay	tencú		* <sup>21</sup> - <sup>4</sup> )
Cq	teincú	Ix	tincú
Ja	te <sup>1</sup> ncú <sup>3</sup>	Mg	tencú
Do	čutencú	Lo	tancí
Hu	ti <sup>2</sup> ncú <sup>4</sup>	Te	tencú

Additional examples: 265, 286, 287, 292, and 293.

4.4.6 \*nč is reconstructed from three types of non-contrastive sets:

(1) In weakly stressed syllables preceding \*-VhV, \*nč is reconstructed from Mz nč : Ay nč : Cq nč : Ja nј : Do nј : Hu nč : Ji nč : So nč : Ix nč : Mg nč : Lo nč : Te nč as in set 297 \*nča<sup>3</sup>há<sup>1</sup> corn drink (atole):

Mz	nčahá	Hu	nčá <sup>21</sup>
Ay	nčahá	Ji	nčá
Cq	nčahá	So	nča <sup>3</sup> há <sup>21</sup>
Ja	nјha <sup>1</sup> šú <sup>1</sup>	Ix	nčihá
	<u>chocolate drink</u>	Mg	nčá
Do	nјahašú	Lo	nčohó
	<u>chocolate drink</u>	Te	nčihá

Additional examples: 298, 299, 300, and 301.

4.4.6

(2) In weakly stressed syllables preceding \*-VCV when C is neither \*h nor \*?w, \*nč is reconstructed from Mz nč :  
 Ay nč : Cq nč : Ja č : Do č : Hu nč : So nč : Ix nč :  
 Mg nč : Lo nč : Te nč as in set 308 \*nču<sup>4</sup>tʃ<sup>4</sup> corn on the  
cob:

Mz nčutʃ	Hu nču <sup>4</sup> tʃ <sup>4</sup>
Ay nčutʃ	So nču <sup>4</sup> tʃ <sup>4</sup>
Cq nčutʃ	Ix nčitʃ
Ja ču <sup>3</sup> tʃ <sup>3</sup>	Lo nčitʃ
Do čutʃ	Te nčitʃ

Additional examples: 306, 307, and 388.

(3) In stressed syllables, and unstressed syllables preceding \*-?wV, \*nč is reconstructed from identical reflexes of /nč/ in all daughter languages as in set 302 \*nčé<sup>41</sup> cooked corn:

Mz nčé	Hu nčé <sup>42</sup>
Ay nčé	Ji nčé
Cq nčé	So nčé <sup>42</sup>
Ja nčé <sup>s1</sup> , čé <sup>s1</sup> (< Pre-Ja *nčé <sup>s1</sup> )	Ix nčé
Do nčé, čé (< Pre-Do *nčé)	Lo nčá
	Te nčé

Additional examples: 296 and 683.

## 4.4.6

CHART 9  
CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*nč

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	nč	nč	nč	nj	nj	nč						
(2)	nč	nč	nč	č	č	nč						
(3)	nč	nč	nč	nč	nč	nč	nč	nč	nč	nč	nč	nč
	(1)	In weakly stressed syllables preceding *-VhV										
	(2)	In weakly stressed syllables preceding *-VCV when C is neither *h nor *w										
	(3)	Elsewhere										

4.5 \*n Plus Stop Plus \*h  
(\*nth, \*nt<sup>y</sup>h, \*nkh, \*nk<sup>w</sup>h, \*nch, \*nčh)

The evidence for \*nt<sup>y</sup>h, \*nk<sup>w</sup>h, and \*nčh is sparse; \*nt<sup>y</sup>h is reconstructed in two etyma, \*nk<sup>w</sup>h in one, and \*nch in three. The clusters \*nth, \*nkh, and \*nch are more adequately attested, however. In all of the cases the development of the stops parallels the development of their counterparts in the \*n-plus-stop sequences; cf. §4.4. On this basis it seems reasonable to reconstruct the entire series. Cq regularly loses \*n in the \*n-plus-stop-plus-h environments.

#### 4.5.1

4.5.1 \*nth is reconstructed from a complementary set of non-identical reflexes of Mz nth : Ay nth : Cq th : Ja nth : Do nth : Hu nth : Ji th : So th : Ix nth : Mg th : Lo th : Te th as in set 369 \*nthau<sup>4</sup> wind:

Mz thó (< Pre-Mz	Hu nthau <sup>4</sup>
*nthó)	Ji thó
Ay nthó	So thó <sup>4</sup>
Cq thó	Ix nthú
Ja nthó <sup>3</sup> , thó <sup>3</sup>	Mg w <sup>o</sup> ethá <u>he blows</u>
(< Pre-Ja *nthó <sup>3</sup> )	Lo thé
Do nthó, thó	Te thu
(< Pre-Do * nthó)	

Additional examples: 230, 352, 368, 385, and 650.

4.5.2 \*nt<sup>y</sup>h is reconstructed from Ja nth : Do nth : Hu nčh : Ix nth : Lo čh : Te čh as in set 409 \*nt<sup>y</sup>hi<sup>3</sup> (\*<sup>4</sup>) forked stick:

Ja ya <sup>1</sup> nthí <sup>3</sup>	Ix yanthy, yinthí
Do yanthy	Lo hwíčhí
Hu nčhí <sup>3</sup> <u>divided like</u>	Te yačhé
<u>a cow's hoof</u>	

Additional example: 184.

4.5.3 \*nkh is reconstructed from Mz kh : Ay kh : Cq kh : Ja nkh : Do nkh : Hu kh : Ji kh : So kh : Ix nkh : Mg kh : Lo kh : Te kh as in set 4 \*ca<sup>3</sup>nkhú<sup>1</sup>, \*cu<sup>3</sup>nkhú<sup>1</sup> fears:

#### 4.5.3

Mz	cakhú	So	ca <sup>3</sup> khu <sup>3</sup> re <sup>24</sup> (< Pre-So
Ay	cakhú		* <sup>3</sup> - <sup>21</sup> - <sup>4</sup> ),
Cq	cakhú		we <sup>31</sup> tykú <sup>32</sup>
Ja	ca <sup>2</sup> nkhú <sup>1</sup>	Mg	ticakhú
Do	cankhú	Lo	cokhú
Hu	cu <sup>3</sup> khú <sup>1</sup>	Te	ticakhú
Ji	cukhú		

Additional examples: 124, 234, 344, and 602.

4.5.4 Only one etymon with \*nk<sup>W</sup>h cluster is reconstructed; it is reconstructed from Pre-Ja nk<sup>W</sup>h : Do nk<sup>W</sup>h as in set 352 \*kha<sup>4</sup>nk<sup>W</sup>ha<sup>4</sup>nthuá<sup>4</sup> door:

Ja ñ<sup>3</sup>k<sup>W</sup>há<sup>3</sup>, ñ<sup>3</sup>k<sup>W</sup>hó<sup>3</sup>      Do hank<sup>W</sup>há  
(< Pre-Ja \*ha<sup>3</sup>nk<sup>W</sup>há<sup>3</sup>)

4.5.5 \*nch is reconstructed from Mz nch : Ay nch : Cq ch : Ja nch : Do nch : Hu nch : Ji ch : So ch : Ix nch : Mg ch : Lo ch : Te ch as in set 288 \*nchá<sup>4</sup> hair:

Mz	nchá	Hu	nchá <sup>4</sup>
Ay	nchá	Ji	chá
Cq	chá	So	chá <sup>4</sup>
Ja	nchá <sup>3</sup> , chá <sup>3</sup>	Ix	nchá
	(< Pre-Ja *nchá <sup>3</sup> )	Mg	chá
Do	nchá, chá (< Pre-	Lo	chó
	Do *nchá)	Te	chá

#### 4.5.5

Additional examples: 265, 287, 289, 290, 291, and 598.

4.5.6 \*nčh is reconstructed from Mz nčh : Ay nčh :  
Cq čh : Ja nčh : Do nčh : Hu nčh : Ji čh : So čh :  
Ix nčh : Mg čh : Lo čh : Te čh as in set 303 \*nčhá<sup>4</sup> talks:

Mz tinčhá	Ji čhá
Ay tinčhayá	So čhá <sup>4</sup>
Cq čhá	Ix cančhayá
Ja ti <sup>1</sup> nčha <sup>3</sup> yá <sup>2</sup>	Mg čhá
Do tinčhayá	Lo čhó
Hu nčhá <sup>4</sup>	Te tičhá

Additional examples: 304 and 305.

#### 4.6 \*hn Plus Stop (\*hnt, \*hnt<sup>y</sup>, \*hnk)

4.6.1 \*hnt is reconstructed from Ay ?nt : Cq nt :  
Ja nt : Do nt : Hu hnt : Ji hnt : So nt : Ix nt : Mg nt :  
Lo ?nt : Te hnt as in set 527 \*ška<sup>3</sup>hntí<sup>3</sup> (\*<sup>3</sup> - <sup>2</sup>) cricket:

Ay naška?ntí	So čha <sup>3</sup> ntí <sup>3</sup>
Cq čuntiká	Ix čhuntí
Ja čha <sup>2</sup> ntí <sup>2</sup>	Mg čikantí
Do čhintí	Lo ško?nté
Hu ču <sup>4</sup> ška <sup>3</sup> hntí <sup>2</sup>	Te škahntí

Additional examples: 148 and 207.

4.6.2 \*hnt<sup>y</sup> is reconstructed from Mz nty : Ay šti :  
Cq šči : Ja nti : Do nti : Hu hnč : So nty : Ix nti :

#### 4.6.2

Mg nti : Lo nč : Te hnč as in set 149 \*hntyá<sup>3</sup> salty:

Mz	ntyá	So	ntyá <sup>3</sup>
Ay	štiá	Ix	ntiá
Cq	ščiá	Mg	ntiá
Ja	ntiá <sup>2</sup>	Lo	nčó
Do	ntiá	Te	hnčá
Hu	hnčá <sup>3</sup>		

Additional example: 150.

4.6.3 \*hnk is reconstructed from Mz hnk : Ay nk :

Cq nk : Ja nk : Do nk : Hu hnk : Ji hnk : So nk :  
 Ix nk : Mg nk : Lo nk : Te nk as in set 143 \*hnká<sup>4</sup> (\*<sup>3</sup>)  
wing:

Mz	lahnká	Hu	hnká <sup>3</sup>
Ay	nká-	Ji	hnká
Cq	thiunká	So	thyu <sup>4</sup> nká <sup>4</sup>
Ja	ncha <sup>3</sup> nká <sup>3</sup> , cha <sup>3</sup> nká <sup>3</sup>	Ix	nká
(< Pre-Ja *ncha <sup>3</sup> nká <sup>3</sup> )		Mg	nká
Do	nchanká	Lo	nkó
		Te	nká

Additional examples: 67, 106, 144, 145, and 146.

## 4.7 \*?n Plus Stop (\*?nt, \*?nk, \*?nč)

4.7.1 \*?nt is reconstructed from Mz nt : Ay ?nt :  
 Cq ?nt : Ja nt : Do nt : Hu ?nt : Ji ?nt : So nt :  
 Ix nt : Mg nt? : Lo ?nt : Te nt as in set 523 \*ši<sup>4</sup>?nté<sup>4</sup>,  
 \*čhi<sup>4</sup>?nté<sup>4</sup> (\*<sup>s</sup> - <sup>s</sup>) adobe:

Mz	šintí	Ji	ši <sup>2</sup> nté
Ay	ši <sup>2</sup> nté	So	ni <sup>s</sup> nte <sup>s</sup> tha <sup>f</sup> <sub>6</sub>
Cq	ši <sup>2</sup> nté	Ix	čhinté
Ja	čhi <sup>3</sup> nté <sup>3</sup>	Mg	šint <sup>2</sup> é
Do	čhinté	Lo	ši <sup>2</sup> ntá
Hu	ši <sup>4</sup> ?nté <sup>4</sup>	Te	šinté

Additional examples: 95, 115, 197, 207, 327, 338, 473, 490, 502, 517, 533, 676, 713, 714, 715, 716, and 717.

4.7.2 The reconstruction of \*?nk appears problematical in that the reflexes of \*?n in cluster with \*k do not parallel the reflexes found in cluster with \*t (§4.7.1). To complicate matters further, the Lo reflexes with /nkV<sup>2</sup>V/ would seem to indicate reconstruction of \*nkV<sup>2</sup>V rather than \*?nkV. But on the other hand, Cq and Ji parallel the reflexes found for \*?nt by having /?nkV/ which seems to favor the reconstruction of \*?nkV. I have chosen to reconstruct the latter even though it could be reconstructed \*nkV<sup>2</sup>V.

#### 4.7.2

Gudschinsky (1959) reconstructed two PMaz sets with \*?nk (cf. PPn 60 and 278), and one set \*nkV?V (cf. PPn 69). Her evidence not only is scanty, but apparently parallel kinds of reflexes in the placement of glottal catch in the syllable were assigned to different syllable structure in PMaz, cf. PPn 60 which has \*?nk and PPn 69 which has \*nkV?V. It seems that Gudschinsky assigned \*? to different positions to avoid having vowel clusters in PMaz. But this sort of reconstruction looks dubious, especially when based on one etymon.

The evidence that I have does not suggest positing a contrast of \*nkV?V with \*?nkV. But neither is it clear which of the two should be reconstructed. On the basis of parallel proto-structure I have chosen to reconstruct \*?nk from Mz nk? : Ay nk? : Cq ?nk : Ja nk? : Do nk? : Hu nk? : Ji ?nk : So k? : Ix nk? : Mg nk? : Lo nkV?V : Te nk as in set 709 \*?nká<sup>3</sup> high, tall:

Mz -nk?á	Ji -?nká
Ay nk?á	So nka <sup>3</sup> k?á <sup>3</sup>
Cq heirku?nká	Ix nk?á
Ja nk?á <sup>2</sup> , k?á <sup>2</sup>	Mg nk?á
(< Pre-Ja *nk?á <sup>2</sup> )	Lo nko?ó
Do nk?á, k?á (< Pre-	Te ?inká <u>high, sky</u> ;
Do *nk?á)	nká <u>roof</u>
Hu nk?á <sup>3</sup>	

#### 4.7.2

Additional examples: 201, 495, 706, 710, 711, and 712.

4.7.3 The reconstruction of \*?nč is also problematical; it is attested by only two etyma and one of these has few reflexes. However, in many respects \*?nč seems to parallel the development of \*?nt. In the appendix I have reconstructed sets 625 and 704 with \*?nč also, but the development of \*? is unexplained (perhaps they should be reconstructed \*nčV?V, but that is not clear either).

\*?nč is reconstructed from Mz ?nč : Ay ?nč : Cq ?nč : Ja nč : Do nč : Hu ?nč : Ji ?nč : So nč : Ix nč : Mg nč? : Lo ?nč : Te nč as in set 705 \*?nčí<sup>4</sup> wet:

Mz kama?nčí	Hu ?nčí <sup>4</sup>
Ay ?nčí	Ji ?nčí
Cq ?nčí	So nčí <sup>4</sup>
Ja nčí <sup>s</sup> , čí <sup>s</sup> (< Pre-Ja *nčí <sup>s</sup> )	Ix nčí
Do nčí, čí (< Pre-Do *nčí)	Mg nč?í
Lo ?nčí	Te nčí

Additional example: 706.

#### 4.8 Spirant Plus Stop

Gudschinsky (1956:20, 1959:5) posited clusters of \*h with certain obstruents (\*ht, \*ht<sup>y</sup>, \*hc, \*hč, \*th, \*t<sup>y</sup>h, \*kh, \*k<sup>w</sup>h, \*ch, \*čh). However, in neither her 1956 nor 1959 sets

is an etymon reconstructed with \*ht<sup>y</sup>; for lack of evidence this cluster may safely be set aside. Of interest, too, is the fact that Gudschinsky's \*h plus obstruent series does not parallel her obstruent plus \*h series. Since spirants (\*s, \*š) also occur initially in cluster with stops, the question naturally arises whether some of the cluster reflexes involving /h-/ may not reflect earlier spirants in cluster. The following arguments are marshalled for interpreting Gudschinsky's \*ht, \*hc, and \*hč as \*st, \*sc, and \*sč:

(1) Both \*st and \*sth seem well enough attested (cf. §4.8.2.1 and §4.8.2.2) and contrast with Gudschinsky's \*ht; the complementation is not between \*[h] and \*[š].

(2) There is complementation in initial clusters between sC- and hC-.

(3) There are a number of phonetic facts in the daughter languages that favor a reconstruction of \*s rather than \*h in this position: in Hu Eunice Pike has phonemicized preaspirated onsets before /c, č/ as involving /h/, but she has commented in private discussion that these onsets have a sibilant-like quality; similar cases appear in Ix and Lo where I have phonemicized rather Ix /sc, sč/ and Lo /sč/. Before velars in all the languages the aspirated onsets have a clear sibilant quality (and are handled as /sk, skh, skʷ/).

(4) In terms of development it is easier to account for \*s > h than the inverse; it seems less convincing to suppose

## 4.8

that original \*h has taken on sibilant quality in certain cases.

(5) In distributional terms, clusters involving \*h both before and after obstruents (\*hth, \*hch, etc.) would suggest broader clustering habits for \*h than for other elements. On the other hand the lack of certain parallel clusters beginning with \*š- (no \*šc, \*šč) seems no compelling argument against reconstruction of \*sc, \*šč.

### 4.8.1 \*s Plus Stop

(\*st, \*sk, \*skh, \*sk<sup>w</sup>, \*sc, \*šč)

4.8.1.1 \*st is reconstructed from Mz ht : Ay t :  
Cq t : Ja t : Do t : Hu ht : Ji ht : So t : Ix t :  
Mg t : Lo t : Te ht as in set 485 \*stí<sup>4</sup> fish:

Ay	tí	Ji	htí <sup>2</sup>
Cq	tí	So	tí <sup>4</sup>
Ja	tí <sup>3</sup>	Ix	tí
Do	tí	Mg	tí
Hu	htí <sup>4</sup>	Lo	té

Additional examples: 193, 481, 482, 483, 484, and 722.

4.8.1.2 \*sk is reconstructed from identical reflexes in the daughter languages as in set 126 \*ha<sup>4</sup>ská<sup>3</sup>  
afterwards:

#### 4.8.1.2

Mz	haská	Ji	?askáni
Ay	haská	So	ha <sup>4</sup> ská <sup>8</sup>
Cq	nkaská	Ix	haská
Ja	?i <sup>8</sup> ská <sup>2</sup>	Lo	koskó
Do	haská	Te	?iska, kiska
Hu	ha <sup>4</sup> ská <sup>8</sup>		

Additional examples: 351, 380, 472, 473, 474, 475, 477, 478, and 672.

4.8.1.3 \*skh is reconstructed from Mz sk : Cq sk : Ja skh : Do skh : Hu sk : Ji sk : So sk : Ix sk : Mg sk : Lo sk : Te sk in set 476 \*skhú<sup>1</sup> left (adj.):

Mz	skú	So	-skú
Cq	ncaskú	Ix	skú
Ja	skhú <sup>1</sup>	Mg	skú
Do	skhú	Lo	nkoski
Hu	skú <sup>1</sup>	Te	skú
Ji	sku		

4.8.1.4 \*sk<sup>w</sup> is reconstructed from Mz skw : Ay sk<sup>w</sup> : Cq sku : Ja k<sup>w</sup> : Do k<sup>w</sup> : Hu sku : So skw : Ix ku : Mg sk<sup>w</sup> : Lo sk : Te sku as in set 480 \*sk<sup>w</sup>á<sup>4</sup> powder:

4.8.1.4

Mz	skwá	So	skwá <sup>4</sup>
Ay	sk <sup>w</sup> á	Ix	nčukuyá
Cq	skuá	Mg	sk <sup>w</sup> á
Ja	k <sup>w</sup> ás	Lo	skó
Do	k <sup>w</sup> á	Te	skuá
Hu	skuá <sup>4</sup>		

Additional example: 479.

4.8.1.5 \*sc is reconstructed from Mz hc : Ay c :

Cq c : Ja c : Do c : Hu hc : Ji hc : Ix sc : Mg c :  
Lo c : Te c as in set 452 \*scí<sup>1</sup> rain:

Mz	hcí	So	cí <sup>21</sup>
Ay	cí	Ix	scí
Cq	cí	Mg	cí
Ja	cí <sup>1</sup>	Lo	cé
Do	cí	Te	cí
Hu	hcí <sup>1</sup>		

Additional examples: 94, 395, 447-451, and 453.

4.8.1.6 \*sč is reconstructed from Mz hč : Ay č :

Cq č : Ja č : Do č : Hu hč : Ji hč : So č : Ix sč :  
Mg č : Lo č : Te sč as in set 454 \*sčá<sup>1</sup> old:

#### 4.8.1.6

Mz -hčá	Ji -hčá
Ay čá	So čá <sup>21</sup>
Cq čanká <u>old</u> , <u>big</u>	Ix sčá
Ja čá <sup>1</sup>	Mg -čá
Do čá	Lo kočonkó
Hu -hčá <sup>1</sup>	Te -sčá

Additional examples: 220, 273, 455, 456, 457, and 458.

#### 4.8.2 \*š Plus Stop

(\*št, \*sth, \*st<sup>Y</sup>h, \*šk, \*škh, \*šk<sup>W</sup>h)

4.8.2.1 \*št is reconstructed from Mz št : Ay st :

Cq št : Ja st : Do st : Hu ht : Ji ht : So t : Ix št :  
 Mg št : Lo t : Te ht as in set 550 \*sty<sup>s</sup> (\*<sup>1</sup>) behind:

Mz nkaštý	Hu htý <sup>s</sup>
Ay nkastý	So nkató
Cq nkaštý	Ix nkaštý
Ja ?i <sup>s</sup> sty <sup>1</sup>	Lo nkotý
Do ngastý	Te hahtó-

Additional examples: 541, 546, 547, 548, 549, and 641.

4.8.2.2 \*sth is reconstructed from Mz šth : Ay šth :

Cq šth : Ja sth : Do sth : Hu th : Ji th : So th :  
 Ix šth : Mg th : Lo th : Te th as in set 543 \*sthé<sup>1</sup>  
rubbish:

#### 4.8.2.2

Mz	šthíre	<u>his nest</u>	Ji	thé
Ay	šthé		So	thé <sup>21</sup>
Cq	šthé		Ix	šthé
Ja	sthè <sup>1</sup>		Lo	thá
Do	sthè		Te	thé
Hu	thé <sup>1</sup>			

Additional examples: 336, 542, 544, and 545.

4.8.2.3 \*št<sup>y</sup>h is suggested by Ay šth : Cq št : Ja sth : Do sth : Hu čh : Ji čh : So th : Ix št : Mg th : Lo sč as in set 337 \*ni<sup>4</sup>št<sup>y</sup>hī<sup>3</sup> day:

Ay	ništhī	Ji	ničhī
Cq	ništī	So	ni <sup>4</sup> thī <sup>3</sup>
Ja	ni <sup>3</sup> sthī <sup>2</sup>	Ix	ništī
Do	ništī	Mg	nižthī
Hu	ni <sup>4</sup> čhī <sup>3</sup>	Lo	njsče

Although I have but one example that evidences the \*št<sup>y</sup>h cluster, it nevertheless seems justifiable to reconstruct such a cluster since the development of \*t<sup>y</sup> is what is expected before \*i (cf. §4.2.2) and the development of \*s before \*t<sup>y</sup>h parallels that of \*s before \*th (cf. §4.8.2.2).

4.8.2.4 \*šk is reconstructed from Mz šk : Ay šk : Cq šk : Ja šk : Do k : Hu šk : Ji šk : So šk : Ix šk : Mg šk : Lo šk : Te šk as in set 528 \*šká<sup>4</sup> leaf:

#### 4.8.2.4

Mz Šká	Ji Šká
Ay Šká	So Šká <sup>4</sup>
Cq Šká	Ix Šká
Ja Šká <sup>3</sup>	Mg Šká
Do ká	Lo Škó
Hu Šká <sup>4</sup>	Te Šká

Additional examples: 412, 526, 527, 529, 530, 531, 536, 537, 538, 539, and 649.

#### 4.8.2.5 \*škh is reconstructed from Mz Šk : Ay Škh :

Cq Šk : Ja Škh : Do kh : Hu Šk : Ji Šk : So Šk :  
 Ix Škh : Mg Šk : Lo Šk : Te Šk as in set 532 \*škhá<sup>3</sup>  
alligator:

Ay Škhá	Ix Škhá
Ja Škhá <sup>2</sup>	Mg Šká
Do khá	Lo Škó
Hu Škhá <sup>3</sup>	Te Šká
So Šká <sup>3</sup>	

Additional examples: 533, 534, and 535.

4.8.2.6 \*šk<sup>W</sup>h is reconstructed from Mz Škw : Ay Šk<sup>W</sup>h :  
 Cq Šku : Ja Šk<sup>W</sup>h : Hu Šku : So Škw : Ix Škhu : Lo Šk :  
 Te Šku in set 540 \*sk<sup>W</sup>hé<sup>1</sup> unripe, raw:

#### 4.8.2.6

Mz	škwí	So	škwe <sup>21</sup>
Ay	šk <sup>W</sup> hé	Ix	škhue
Cq	škuéf	Lo	škié
Ja	šk <sup>W</sup> hé <sup>1</sup>	Te	škué
Hu	škué <sup>1</sup>		

Even though I have but one example to support the reconstruction of the \*šk<sup>W</sup>h cluster it seems justifiable; \*š and \*h parallel the development found in the \*škh cluster (cf. §4.8.2.5) and \*k<sup>W</sup> also is regular in development (cf. §4.2.4).

#### 4.9 Apical Stop Plus Dorsal Stop

Following Gudschinsky (1956, 1959) I have reconstructed clusters of apical stop plus dorsal stop. These clusters contrast with sibilant plus stop clusters, cf. §4.8.1 (Gudschinsky's \*h plus stop and \*s plus stop).

Without question an older layer of Mazatec had clusters of apical stops plus dorsal stops. For example, it is these apical stops when in cluster with dorsal stops that > Cq /r/ plus dorsal stop; this is the only source of /r/ in Cq. In certain other languages the apical stop in this environment merged with \*s or \*š; in still others, it continued as an apical stop.

Although there is this clear evidence for reconstructing apical stop plus dorsal stop clusters for an earlier

stage of Mazatec, a nagging question comes from the Ix reflexes (which uniformly show a vowel between the apical stop and dorsal stop): should an earlier stage be postulated for PMaz of \*{apical stop} {V} {dorsal stop}? When the apical is \**t*<sup>y</sup> the quality of the vowel would be indeterminate since Ix loses back vowels in this environment (cf. §4.2.2).

Such a hypothesis with intervening vowel between the stops seems plausible and probable on several counts:

(a) even with the broader base of this monograph, only 14 etyma are reconstructed with apical stop plus dorsal stop and these 14 etyma reflect 6 different clusters; (b) patterns of development in the Otomanguean languages suggest that earlier stages had fewer consonant clusters than later stages; (c) the contrast in the daughter language between {apical stop} {dorsal stop} and {apical stop} {V} {dorsal stop} perhaps can be accounted for in terms of shift of stress on compound elements after the intervening vowel was lost. There appear to be no contrasts between forms with and without intervening vowel where the palatalized stop is involved; this means that in the majority of the cases (10 of the 14) contrast is lacking. The {nonpalatalized apical stop} {dorsal stop} cluster shows contrast with \**ta*<sup>4</sup>*kú*<sup>3</sup>, \**tu*<sup>4</sup>*kú*<sup>3</sup> show me (566), \**te*<sup>4</sup>*ký*<sup>3</sup> appearance, similarity (573), \**tu*<sup>3</sup>*ku*<sup>3</sup>*nkhá*<sup>3</sup> papaya (602), and compounds of \**ti*<sup>1</sup>-continuative aspect plus verbal roots with initial dorsal

stop such as \*kha<sup>1</sup> (\*<sup>4</sup>) fights (187). \*tu<sup>3</sup>- of \*tu<sup>3</sup>ku<sup>3</sup>nkhá<sup>3</sup> (602) is clearly a compounding element related to \*tú<sup>31</sup> fruit (605); \*ta-, \*tu- of \*ta<sup>4</sup>kú<sup>3</sup>, \*tu<sup>4</sup>kú<sup>3</sup> show me (566) may be an imperative previx; and \*te<sup>4</sup>- of \*te<sup>4</sup>kú<sup>3</sup> (573) may be a compounding element (at present unidentified).

As it can readily be seen, to push the \*{apical stop} {dorsal stop} back to an earlier \*{apical stop} {V} {dorsal stop} depends for adequate validation on extensive reconstruction of PMaz grammar, which is not yet available. For the present I choose to reconstruct clusters of \*{apical stop} {dorsal stop} (which seems clearly justifiable at least as an intervening stage), even though I strongly suspect that these clusters reflect the loss of intervening vowel at an horizon earlier than PMaz. See §3.2.2 for a discussion of the generation of Ix vowels in the apical stop plus dorsal stop environment.

#### 4.9.1 \*t Plus Dorsal Stop (\*tk, \*tk<sup>w</sup>h)

4.9.1.1 \*tk is reconstructed from Mz hk : Ay k : Cq rk : Ja k : Do k : Hu hk : Ji hk : So tk : Pre-Ix \*tk : Mg k : Lo k : Te sk as in set 597 \*tkú<sup>4</sup> head (for analysis of compound elements in the daughter languages consult the notes after this set in the appendix):

#### 4.9.1

Mz	hkú	Ji	hkú
Ay	níntakú <u>3p.</u> ,	So	tkú <sup>4</sup>
	níntak <sup>wá</sup> <u>lp.</u>	Ix	níntatukú (< Pre-Ix
Cq	níntarkúča		*níntatkú)
Ja	ní <sup>2</sup> nda <sup>2</sup> kú <sup>3</sup>	Mg	kú
Do	níndakú <u>3p.</u> ,	Lo	ké <u>3p.</u> , ké <u>lp.</u>
	níndak <sup>wá</sup> <u>lp.</u>	Te	skuú <u>3p.</u> , skuá <u>lp.</u>
Hu	hkú <sup>4</sup>		

Additional examples: 596 and 598.

4.9.1.2 \*tk<sup>w</sup>h is reconstructed from one complementary set (but note parallelism to §4.9.1.1): Ay k<sup>w</sup>h : Cq rkhu : Ja k<sup>w</sup>h : Do k<sup>w</sup>h : Hu hku : Pre-Ix \*tkhu : Mg k<sup>w</sup> : Te sku in set 599 \*tk<sup>w</sup>hé<sup>3</sup> rough:

Ay	k <sup>w</sup> hé	Ix	tukhué (< Pre-Ix
Cq	rkhué		*tkhué)
Ja	k <sup>w</sup> hé <sup>2</sup>	Mg	k <sup>w</sup> é
Do	k <sup>w</sup> hé	Te	skué
Hu	hkué <sup>s</sup>		

#### 4.9.2 \*t<sup>y</sup> Plus Dorsal Stop

(\*t<sup>y</sup>k, \*nt<sup>y</sup>k, \*t<sup>y</sup>kh, \*t<sup>y</sup>k<sup>w</sup>)

4.9.2.1 \*t<sup>y</sup>k is reconstructed from Mz hk : Ay k : Cq rk : Ja k : Do k : Hu šk : Ji šk : So tyk : Ix tik : Mg šk : Lo šk : Te šk as in set 623 \*t<sup>y</sup>kú<sup>1</sup> knee, joint:

#### 4.9.2.1

Ay	kú	So	tykú <sup>21</sup>
Cq	rkú-	Ix	tikuncukú
Ja	kú <sup>1s</sup>	Mg	škú
Do	kú	Lo	škí <sup>á</sup> <u>3p.</u> , škíno <u>1p.</u>
Hu	škú <sup>1</sup>	Te	škú
Ji	škú		

Additional examples: 622, 623, and 624.

4.9.2.2 \*nt<sup>y</sup>k is reconstructed from Mz hk : Ay k :

Cq rk : Ja nk : Do nk : Hu šk : So tk : Ix ntik :  
 Lo šk : Te šk as in set 415 \*nt<sup>y</sup>kí<sup>43</sup> medicine:

Mz	hkí	Hu	škí <sup>43</sup>
Ay	kí	So	tkí <sup>s2</sup>
Cq	rkí	Ix	ntikí
Ja	nkí <sup>2</sup> , kí <sup>2</sup> (< Pre-	Lo	šké
	Ja *nkí <sup>2</sup> )	Te	škí
Do	nkí, kí (< Pre-		
	Do *nkí)		

Additional example: 680.

4.9.2.3 \*t<sup>y</sup>k<sup>w</sup> is reconstructed from Mz hkw : Ay k<sup>w</sup> :

Cq rku : Ja k<sup>w</sup> : Do k<sup>w</sup> : Hu šku : Ji škw : So tykw :  
 Ix tiku : Lo šk : Te šku as in set 627 \*t<sup>y</sup>k<sup>w</sup><sup>á1</sup> snail:

#### 4.9.2.3

Mz	hkwá	Ji	škwá
Ay	k <sup>w</sup> á	So	tykwá <sup>21</sup>
Cq	rkuá	Ix	tikuá
Ja	k <sup>w</sup> á <sup>1</sup>	Lo	ntoškó
Do	k <sup>w</sup> á	Te	škuá
Hu	škuá <sup>1</sup>		

Additional example: 626.

4.9.2.4 \*nt<sup>y</sup>kh is reconstructed from Ay k : Cq rk : Ja nkh : Do nkh : Hu šk : Ix ntik : Lo šk : Te šk as in set 651 \*we<sup>s</sup>nt<sup>y</sup>khú<sup>1</sup> worships:

Ay	wekú	Ix	wentikú
Ja	we <sup>s</sup> nkhú <sup>1</sup> <u>respect</u>	Lo	wašké
Do	wenkhú	Te	weškú
Hu	we <sup>s</sup> škú <sup>1</sup> <u>he worships</u>		

Additional example: 414.

#### 4.10 Spirants

Spirants in cluster with stops are reconstructed in §4.8. In this section simple spirants (\*s, \*š) and clusters of spirant plus \*h (\*sh, \*šh) are reconstructed.

##### 4.10.1 Simple Spirants (\*s, \*š)

4.10.1.1 \*s is reconstructed from identical reflexes of /s/ in all daughter languages as in set 446 \*ság<sup>s</sup> acid:

#### 4.10.1.1

Mz	sá	Ji	sá
Ay	sá	So	sá <sup>3</sup>
Cq	sá	Ix	sá
Ja	sá <sup>2</sup>	Mg	sá
Do	sá	Lo	só
Hu	sá <sup>3</sup>	Te	sá

Additional examples: 57, 90, 171, 237, 324, 325, 326, 333, 334, 335, 341, 345, 375, 388, 390, 398, 436-445, 459-464, 468-471, 486-490, 667, 727, and 729.

4.10.1.2 \*š is reconstructed from identical reflexes of /š/ in all daughter languages as in set 491 \*šá<sup>1</sup> work:

Mz	šá	Ji	šá
Ay	šá	So	šá <sup>21</sup>
Cq	šá	Ix	šá
Ja	šá <sup>1</sup>	Mg	šá
Do	šá	Lo	šó
Hu	šá <sup>1</sup>	Te	šá

Additional examples: 108, 205, 209, 219, 221, 226, 247, 248, 275-278, 347, 365, 492, 493-506, 515-525, 551-563, 613, 656, 664, 673, and 728.

#### 4.10.2 Spirant Plus \*h (\*sh, \*šh)

This larger body of data supports Gudschinsky's (1959) \*sh and \*šh cluster reconstructions. However, even with this broader corpus, only Cq gives evidence for the \*šh cluster;

#### 4.10.2

all other languages lose \*š in this environment. In Gudschinsky's \*šh reconstructions (sets PPn 183, 187, 192, 204, and 238), only PPn 238 cites the crucial Cq evidence. The evidence for the \*šh reconstruction in Gudschinsky's sets, as well as for additional ones, now can be found in the Appendix (see also §4.10.2.2).

4.10.2.1 \*sh is reconstructed from Mz ch : Ay sh :  
Cq s : Ja sh : Do sh : Hu sh : Ji sh : So ch : Ix s :  
Mg s : Lo ch : Te ch as in set 465 \*shá<sup>s</sup> bitter, gall:

Mz	chá	So	chá <sup>s</sup>
Ay	shá	Ix	sá
Cq	sá	Mg	sá
Ja	shá <sup>2</sup>	Lo	chó
Do	shá	Te	chá
Hu	shá <sup>s</sup>		

Additional examples: 466, 467, 671, and 706.

4.10.2.2 \*šh is reconstructed from Mz h : Ay h :  
Cq šh : Ja h : Do h : Hu h : Ji h : So h : Ix h :  
Mg h : Lo h : Te h as in set 508 \*šhá<sup>2</sup> three:

Mz	há	So	há <sup>1</sup>
Ay	há	Ix	há
Cq	šhá	Mg	há
Ja	há <sup>2</sup>	Lo	hó
Do	há	Te	há
Hu	há <sup>2</sup>		

#### 4.10.2.2

Additional examples: 356, 507, 509, 510, 511, 512, 513, and 514.

#### 4.11 Nasals

One general problem in the reconstruction of nasals deserves mention. In the reconstruction now accomplished \*m and \*ñ are in complementary distribution with \*w and \*y. Since it seems likely that nasalized vowels had developed prior to the PMaz horizon (see §5), it then is problematical whether \*m and \*ñ (plus optional preceding laryngeal) should be postulated for PMaz: the nasals precede only nasalized vowels and the semivowels precede only oral vowels. Furthermore, it can be seen that for certain environments some languages have the reflex /ñ/ and others /y/ (see §4.11.1.3). It seems plausible, then to suggest that later cases of /m, ñ/ developed from earlier \*w, \*y in the environment of nasalized vowels. However, this solution is open to question when viewed from greater depth. If nasalized vowels are shown at the level where Amuzgo is related to other Otomanguean languages to be developed from nasals in the immediate environment (Longacre 1957:27-28), then eliminating \*m and \*ñ at the PMaz level may obscure important information for such further reconstruction. For the present, it seems preferable to reconstruct both \*m and \*ñ, even though contrast with \*w and \*y is lacking.

\*n, \*hn, and \*?n in cluster with stops are reconstructed in §4.4 - 4.7. In the immediate following sections the non-clustered nasals (\*m, \*n, \*ñ), \*h plus nasal (\*hm, \*hn, \*hñ), and \*? plus nasal (\*?m, \*?n, \*?ñ) are reconstructed.

#### 4.11.1 Non-clustered Nasals

(\*m, \*n, \*ñ)

4.11.1.1 \*m is reconstructed from identical reflexes of /m/ in all daughter languages as in set 51 \*cu<sup>3</sup><sub>m</sub><sup>f1</sup> (\*<sup>4</sup> - <sup>1</sup>) sand:

Mz	cum <sup>f</sup>	Hu	cu <sup>4</sup> <sub>m</sub> <sup>f1</sup>
Ay	cum <sup>f</sup>	So	cu <sup>3</sup> <sub>m</sub> <sup>f21</sup>
Cq	cum <sup>f</sup>	Ix	cum <sup>f</sup>
Ja	cu <sup>2</sup> <sub>m</sub> <sup>f1</sup>	Mg	cum <sup>f</sup>
Do	cum <sup>f</sup>	Te	cum <sup>f</sup>

Additional examples: 182, 221, 227-240, 390, 428, 429, 433, and 624.

4.11.1.2 \*n is reconstructed from two types of non-contrastive sets:

(1) Preceding \*e, \*n is reconstructed from Mz n :

Ay n : Cq n : Ja n : Do n : Hu n : Ji n : So n :

Ix ñ : Mg n : Lo n : Te n as in set 469 \*si<sup>3</sup><sub>né</sub><sup>2</sup>  
yellow:

#### 4.11.1.2

Mz	siní	Ji	sine
Ay	siné	So	si <sup>s</sup> né <sup>1</sup>
Cq	sinéf	Ix	siñé
Ja	si <sup>s</sup> né <sup>2</sup>	Mg	sine
Do	siné	Lo	siná
Hu	si <sup>s</sup> né <sup>2</sup>	Te	sine

Additional examples: 30, 81, 109, 160, 231, 309, 519, and 638.

(2) Preceding vowels other than \*e, \*n is reconstructed from identical reflexes of /n/ in all daughter languages as in set 253 \*ná<sup>4</sup> mother:

Mz	ná	Ji	ná
Ay	ná	So	ná <sup>4,2</sup>
Cq	ná	Ix	ná
Ja	ná <sup>3</sup> <u>3o.</u>	Mg	ná
Do	ná	Lo	nó
Hu	ná <sup>4</sup>	Te	ná

Additional examples: 34, 98, 110, 211, 215, 242-283, 306, 310, 311, 313-339, 353, 419, 431, 432, 637, 644-667, and 726.

4.11.1.3 \*ñ is reconstructed from four types of non-contrastive sets. The complementary environments are summarized in Chart 10.

There are problems in the reconstruction of \*ñ and its development in the daughter languages. However, there seem to be general patterns, even though in some cases the evidence

#### 4.11.1.3

is meager; these must be carefully noted.

The first environment of unstressed syllable preceding \*-V(C)N(C)V, in which N is nasal consonant, gives predominantly the reflexes /ni/ in the daughter languages. It seems plausible that \*ñV > niV > ni in these languages; the retention of primarily the nasal feature is accounted for by the influence of the nasal consonant in the following syllable.

The attestation of the second environment is weak in that it rests upon two etyma, one with \*t (422) posited as the conditioning factor, the other with \*č (425). In this environment many of the languages give reflexes of /y/. But the grouping of \*t and \*č in the posited conditioning environment, i.e., preceding \*-V{t, č}V, appears questionable. However, it is possible that \*t in this environment had a palatal allophone; in support of this suggestion it can be noted that Te has an /i/ onglide to the vowel that, though unexplained, may be a retention of the palatal allophonic feature of the stop. The retention of a palatal feature of development in many daughter languages rather than the nasal feature of environment (1), could well be conditioned by the palatal feature in the syllable margin of the following syllable. At the present stage of PMaz study this appears to be the best accounting of the data.

The reflexes in environment (3) as compared with (4) differ only in the loss of \*ñ in Hu. The loss of certain

#### 4.11.1.3

intervocalic consonants in Hu is a general pattern: cf. §4.1.1 where the laryngeal \*h is regularly lost and §4.1.2 where semivowels are lost. The loss of \*ñ when preceded by \*{t<sup>y</sup>, n}V- is but a further extention of this general Hu pattern. It is attested by sets 246, 332, and 621. The presence of /ñ/ in the Hu form of set 110 /ču<sup>4</sup>ñy<sup>3</sup>/ is accounted for by the fact that \*ču<sup>4</sup>n<sub>i</sub><sup>3</sup>ñy<sup>3</sup> (\*ču<sup>4</sup>- animal, \*n<sub>i</sub><sup>3</sup>- nominal) > Pre-Hu \*ču<sup>4</sup>ñy<sup>3</sup> with the loss of the \*n<sub>i</sub><sup>3</sup>- nominal before the sound change \*ñ > Hu Ø when preceded by \*t<sup>y</sup> or \*n in the preceding syllable margin (see environment 3). The presence of /ñ/ in the Hu forms in sets 322 /n<sub>i</sub><sup>3</sup>ñy<sup>3</sup>/ and 323 /n<sub>i</sub><sup>3</sup>ñycé<sup>3</sup>/ (clearly related to 322) seems explicable only on the basis of borrowing, although there appears no way of documenting this. It seems that Hu loss of \*ñ in set 332 (Hu /n<sub>i</sub>y<sup>4</sup>/ < \*n<sub>i</sub><sup>4</sup>ñy<sup>4</sup>)--homophonous, apart from tone, with set 322 \*n<sub>i</sub><sup>3</sup>ñy<sup>3</sup>--reflects the general Hu pattern; set 322 with Hu /n<sub>i</sub><sup>3</sup>ñy<sup>3</sup>/ seems to be irregular.

The development suggested here for \*ñ in the daughter languages seems plausible when viewed in perspective. Note that in this I differ from Gudschinsky, who reconstructed etyma with both \*ñ and \*y (sets PPn 22, 232, 233, 282, and 286) to handle what I consider to be regular development from \*ñ. It appears that Gudschinsky reconstructed this \*ñ ~ \*y in PMaz from the present day alternation in Hu. It seems to me that the alternation in Hu is better accounted for in

#### 4.11.1.3

terms of influence from the developments in neighboring Mazatec languages. If the \*ñ ~ \*y hypothesis is adopted it must be extended to sets such as 431, where Hu shows no alternation with /y/; here Cq evidences /y/, as is true of all occurring forms in environment (2).

The loss of \*ñ in the Hu forms found in environment (4) is simply left unmentioned by Gudschinsky. It can be accounted for by the hypothesis that I have suggested.

The evidence for some of the complementation that I have suggested is sparse. However, it seems both strong and plausible.

(1) In unstressed syllables preceding \*-V(C)N(C)V, in which N is a nasal consonant, \*ñ is reconstructed from Mz nj̥ :  
Ay nj̥ : Cq y : Ja nj̥ : Do nj̥ : Hu ñ/y oral vowel:  
Ji ?i : So ñ : Ix nj̥ : Mg y oral vowel : Lo y oral vowel:  
Te ?i as in set 430 \*ñy<sup>s</sup>nkú<sup>s</sup> fingernail:

Mz	njnkú	Ji	?inkú
Ay	njnkú	So	ñ <u>y<sup>s</sup>nkú<sup>s</sup></u>
Cq	yunkú	Ix	njnkú
Ja	nj <sup>s</sup> nkú <sup>s</sup>	Lo	yinkí-
Do	njnkú	Te	?inkú
Hu	ñ <u>a<sup>s</sup>nkú<sup>s</sup></u> , <u>yu<sup>s</sup>nkú<sup>s</sup></u> ,		
	ya <sup>s</sup> nkú <sup>s</sup>		

Additional examples: 428, 429, 431, 432, 433, 434, and 435.

4.11.1.3

(2) In unstressed syllables preceding \*-{t, č}V, \*ñ is reconstructed from Mz y oral vowel : Ay y oral vowel : Cq y oral vowel : Ja y oral vowel : Do y oral vowel : Hu ñ : Ji ñ : So y oral vowel : Ix y oral vowel : Mg y oral vowel : Lo y oral vowel : Te ?i as in set 422 \*ñ<sup>a</sup>tú<sup>4s</sup> seven:

Mz	yatú	Ji	ñítú
Ay	yetú	So	ya <sup>a</sup> tú <sup>sa</sup>
Cq	yatú	Ix	yitú, yatú
Ja	ya <sup>a</sup> tú <sup>2</sup>	Mg	yatú
Do	yatú	Lo	yotí
Hu	ñ <sup>a</sup> tú <sup>4s</sup>	Te	?itiú

Additional examples: 424 and 425.

(3) In syllables preceded by \*-{t<sup>y</sup>, n}V-, \*ñ is reconstructed from Mz ñ : Ay ñ : Cq ñ : Ja ñ : Do ñ : Hu Ø : Ji ñ : So ñ : Ix ñ : So ñ : Mg ñ : Lo ñ : Te ñ as in set 621 \*t<sup>y</sup>i<sup>s</sup>ñ<sup>a</sup>s<sup>1</sup> near:

Mz	tiñá	Ji	čiñá
Ay	tiñá	So	ti <sup>s</sup> ñá <sup>sa</sup>
Cq	tiñá	Ix	tiñá
Ja	ti <sup>1</sup> ñá <sup>2</sup>	Mg	tiñá
Do	tiñá	Lo	čiñó
Hu	čia <sup>a</sup>	Te	čiñá

Additional examples: 110, 246, 321, 323, and 332.

4.11.1.3

(4) In stressed syllables not preceded by \*{t<sup>y</sup>, n}V-, or in unstressed syllables in environments other than (1) and (2), \*ñ is reconstructed from identical reflexes of /ñ/ in all daughter languages as in set 426\*ñ<sup>s</sup>h<sup>z</sup> four:

Mz	ñ <sub>g</sub> hú	Ji	ñ <sub>g</sub> hú
Ay	ñ <sub>g</sub> hú	So	ñ <sub>g</sub> <sup>s</sup> h <sup>z</sup> <sup>1</sup>
Cq	ñ <sub>g</sub> hú	Ix	ñ <sub>g</sub> hú
Ja	ñh <sup>z</sup> <sup>2</sup>	Mg	ñ <sub>g</sub>
Do	ñ <sub>g</sub> hú	Lo	ñ <sub>g</sub> hí
Hu	ñ <sub>g</sub> <sup>4</sup> <sup>3</sup>	Te	ñ <sub>g</sub> hú

Additional examples: 35, 236, 313, 420, 421, 423, 427, 556, and 644.

CHART 10  
CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*ñ

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	n <sub>g</sub>	n <sub>g</sub>	y <sub>V</sub>	n <sub>g</sub>	n <sub>g</sub>	ñ/y <sub>V</sub>	'i	ñ	n <sub>g</sub>	y <sub>V</sub>	y <sub>V</sub>	'i
(2)	y <sub>V</sub>	ñ	ñ	y <sub>V</sub>	y <sub>V</sub>	y <sub>V</sub>	y <sub>V</sub>	'i				
(3)	ñ	ñ	ñ	ñ	ñ	∅	ñ	ñ	ñ	ñ	ñ	ñ
(4)	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ	ñ

In this chart, V signifies oral vowel

- (1) In unstressed syllables preceding \*-V(C)N(C)V  
in which N is nasal consonant
- (2) In unstressed syllables preceding \*-V{t, č}V

#### 4.11.1.3

- (3) In syllables preceded by \*{t<sup>y</sup>, n}V-
- (4) In stressed syllables not preceded by \*{t<sup>y</sup>, n}V-,  
or in unstressed syllables in environments  
other than (1) and (2)

#### 4.11.2 \*h Plus Nasal

(\*hm, \*hn, \*hñ)

4.11.2 \*hm is reconstructed from identical reflexes of /hm/ in all daughter languages as in set 135 \*hma<sup>á</sup><sup>2</sup> black:

Mz hmá	So hmá <sup>1</sup>
Ay hmá	Ix hmá
Cq hmá	Mg hmá
Ja hmá <sup>2</sup>	Lo hmó
Do hmá	Te hmá
Hu hmá <sup>2</sup>	

Additional examples: 136, 137, 138, 431, 432, 555, and 618.

4.11.2.2 \*hn is reconstructed from two types of non-contrastive sets:

- (1) Preceding front vowels \*i and \*e, \*hn is reconstructed from Mz h : Ay h : Cq hn : Ja hn : Do hn : Hu nh : Ji hn : So h : Ix h : Mg h : Lo hn : Te hn as in set 142 \*hni<sup>1</sup> blood:

#### 4.11.2.2

Mz	hi <sup>č</sup>	So	hi <sup>č<sup>21</sup></sup>
Ay	hi <sup>č</sup>	Ix	hi <sup>č</sup>
Cq	hní	Mg	hi <sup>č</sup>
Ja	hní <sup>1</sup>	Lo	hne <sup>č</sup>
Do	hní	Te	hní
Hu	nhí <sup>1</sup>		

Additional examples: 140, 141, and 266.

(2) Preceding back vowels \*ə and \*u, \*hn is reconstructed from identical reflexes of /hn/ in all daughter languages as in set 154 \*hný<sup>4</sup> cornfield:

Mz	hný	Ji	hný
Ay	hný	So	hný <sup>4</sup>
Cq	hný	Ix	hný
Ja	hný <sup>3</sup>	Mg	hný
Do	hný	Lo	hní
Hu	hný <sup>4</sup>	Te	hný

Additional examples: 56, 97, 139, 151, 152, 153, 265, 267, and 694.

4.11.2.3 \*hñ is reconstructed from four types of non-contrastive sets. The complementary environments are summarized in Chart 11.

A fifth environment, preceding \*au, could be postulated. But since only one \*hñ etymon (552) occurs with this cluster, the /hn/ reflexes in Hu, Ji, Mg, Lo, and Te are left unexplained. They may reflect regular development, but without

#### 4.11.2.3

further attestation these reflexes are better left unexplained.

Three of the environments postulated for \*hñ when viewed singly appear weakly attested. However, they are stronger when viewed in pairs and combined with considerations of parallel development found in \*?ñ.

Two intersecting environments are postulated to account for the reflexes of \*hñ. One is position in the word, i.e., initial in the word vs. not initial in the word; the other involves the quality of following vowel, i.e., whether it is \*a or \*u.

Word initial \*hñ > Hu nh̄j [cf. environments (1) and (2) with (3) and (4)]. Note also that \*h metathesized in Hu in the \*hn cluster preceding front vowels (§ 4.11.2.2). It would appear that the relative chronology of sound development of this \*hñ cluster when initial in the word is as follows: \*hñ > Pre-Hu \*hñj; then the sound shift of Hu \*h metathesis preceding front vowels occurred and Pre-Hu \*hñj (which had fallen together with other PMaz \*hñj forms) > Hu nh̄j. What at first would seem difficult to explain and poorly attested (two etyma) can now be seen as an integral mosaic in the pattern.

Preceding \*u, \*hñ > Ja, Do /h̄j/ [cf. environments (1) and (3) with (2) and (4)]. Although there are only three etyma that evidence this sound change with \*hñ, the validity of positing this environment is increased by noting the

4.11.2.3

parallel development of \*<sup>2</sup>hñ > Ja /<sup>2</sup>h/<sup>1</sup> in sets 339 and 721  
(§4.11.3.3).

It is of interest to note that environments that at first appeared to be supported by only one etymon are adequately attested when viewed in depth.

(1) Initial in the word preceding \*u, \*hñ is reconstructed from Mz hñ : Ay hñ : Cq hñ : Ja h<sub>2</sub><sup>1</sup> : Do h<sub>2</sub><sup>1</sup> : Hu nh<sub>2</sub><sup>1</sup> : Ji hñ : So hñ : Ix hñ : Mg hñ : Lo hñ : Te hñ in set 158  
\*hñú<sup>2</sup> dark:

Mz	hñú	Ji	hñú
Ay	hñú	So	hñú <sup>1</sup>
Cq	hñú	Ix	-hñú
Ja	h <sub>2</sub> <sup>1</sup> ú <sup>1</sup>	Mg	hñú
Do	h <sub>2</sub> <sup>1</sup> ú	Lo	hñí
Hu	nh <sub>2</sub> <sup>1</sup> ú <sup>2</sup>	Te	-hñú

(2) Initial in the word preceding \*a, \*hñ is reconstructed from Mz hñ : Ay hñ : Cq hñ : Ja hñ : Do hñ : Hu nh<sub>2</sub><sup>1</sup> : Ji hñ : So hñ : Ix hñ : Mg hñ : Lo hñ : Te hñ in set 157 \*hñá<sup>4</sup> chile pepper:

Mz	hñá	Ji	hñá
Ay	hñá	So	hñá <sup>4</sup>
Cq	hñá	Ix	hñá
Ja	hñá <sup>3</sup>	Mg	hñá
Do	hñá	Lo	hñó
Hu	nh <sub>2</sub> <sup>1</sup> á <sup>4</sup>	Te	hñá

4.11.2.3

(3) Not initial in the word preceding \*u, \*hñ is reconstructed from Mz hñ : Ay hñ : Cq hñ : Ja hij : Do hij : Hu hñ : Ji hñ : So hñ : Ix hñ : Mg hñ : Te hñ as in set 268 \*na<sup>4</sup>hñy<sup>4</sup>, \*ni<sup>4</sup>hñy<sup>4</sup> turkey (female):

Mz	nahñú	Ji	nahñú
Ay	nahñú	So	na <sup>4</sup> hñy <sup>4</sup>
Cq	nahñú	Ix	nihñú
Ja	na <sup>3</sup> hiy <sup>3</sup>	Mg	nahñú
Do	nahiyú	Te	nahñú
Hu	na <sup>4</sup> hñy <sup>4</sup>		

Additional example: 243.

(4) Not initial in the word preceding \*a, \*hñ is reconstructed from identical reflexes of /hñ/ in all daughter languages as in set 315 \*ni<sup>3</sup>hñá<sup>3</sup> mat:

Mz	nihñá	Ji	nihñá
Ay	nihñá	So	nihñá
Cq	nihñá	Ix	nihñá
Ja	ni <sup>3</sup> hñá <sup>3</sup>	Mg	nihñá
Do	nihñá	Lo	nihñó
Hu	ni <sup>3</sup> hñá <sup>3</sup>	Te	nihñá

Additional examples: 155, 156, 242, 314, 350, 552, and 684.

### 4.11.2.3

#### CHART 11

##### CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF \*hñ

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	hñ	hñ	hñ	hj	hj	nhi	hñ	hñ	hñ	hñ	hñ	hñ
(2)	hñ	hñ	hñ	hñ	hñ	nhi	hñ	hñ	hñ	hñ	hñ	hñ
(3)	hñ	hñ	hñ	hj	hj	hñ	hñ	hñ	hñ	hñ	hñ	hñ
(4)	hñ	hñ	hñ	hñ	hñ	hñ	hñ	hñ	hñ	hñ	hñ	hñ
	(1)	Initial in the word preceding *u										
	(2)	Initial in the word preceding *a										
	(3)	Not initial in the word preceding *u										
	(4)	Not initial in the word preceding *a										

#### 4.11.3 \*? Plus Nasal

(\*?m, \*?n, \*?ñ)

The sets that evidence \*? plus nasal, apart from \*?n plus stop (§4.7), are not numerous and it is difficult, in certain instances, to assess whether or not generalizations from limited evidence are warranted. The weak evidence will be clearly indicated so that low validity can be assigned to these generalizations until further Mazatec research substantiates or refutes them.

4.11.3.1 \*?m is reconstructed from two types of non-contrastive sets. The first environment contiguous to \*u

#### 4.11.3.1

is attested by only two etyma, one with \*u preceding and the other with \*u following. However, it seems significant that Cq evidences /'m/. Also, Ixcatec (one of the three other languages besides PMaz used to reconstruct Proto-Popolocan) has the reflex /'m/, cf. Gudschinsky PPn 226.

(1) Contiguous to \*u, \*'m is reconstructed from Ay ? :  
 Cq ?m : Ja ? : Do ? : Hu ? : Ji ? : So ? : Ix ? :  
 Mg ? : Lo ?m : Te ? as in set 702 \*'mú sore, hurt:

Ay ?	Hu ?
Cq ?m	Ix ?
Ja ?	Te ?
Do ?	

Additional example: 104.

(2) In environments other than contiguous to \*u, \*'m is reconstructed from Mz ?m : Ay ?m : Cq ?m : Ja ?m : Do ?m : Hu ?m : Ji ?m : So ?m : Ix ?m : Mg m? : Lo ?m : Te m as in set 701 \*'m<sub>1</sub>? named:

Mz kwi'm <sub>1</sub>	So ?m <sub>1</sub> <sup>1</sup>
Ay ?m <sub>1</sub>	Ix ?m <sub>1</sub>
Cq ?m <sub>1</sub> -	Mg m?
Ja ?m <sub>1</sub> <sup>2</sup>	Lo ?m <sub>1</sub>
Do ?m <sub>1</sub>	Te m <sub>1</sub>
Hu ?m <sub>1</sub> <sup>2</sup>	

Additional examples: 282, 501, 698, 699, and 700.

#### 4.11.3.2

4.11.3.2 \*?n is reconstructed from two types of non-contrastive sets. The first environment is weakly attested (only two etyma). It seems unwise, however, to ignore the presence of the nasal consonant in the Cq reflex, especially when all other languages have nasalized vowels. The second environment is attested in only one etymon.

\*?n preceding vowels is evidenced in only these three sets; however, the \*?n cluster is amply attested when in cluster with \*t (§4.7.1).

(1) Preceding \*e, \*?n is reconstructed from Mz ? :

Ay ? : Cq ?n : Ja ? : Do ? : Hu ? : Ji ? : So ? :

Ix ? : Lo ? : Te ? as in set 708 \*?ne<sup>1</sup> language, word:

Mz	?i	Ji	?é
Ay	?é-	So	?é <sup>21</sup>
Cq	?ne <sup>1</sup> -	Ix	?é
Ja	?é <sup>1</sup>	Lo	?á
Do	?é	Te	?é
Hu	?é <sup>1</sup>		

Additional example: 707.

(2) Preceding \*a, \*?n is reconstructed from Ay ?n :

Ja ?n : Do ?n : Hu ?ñ : So ?n : Ix ?n in set 703 \*?na<sup>4</sup> brilliant, shiny:

Ay	?ná	Hu	čhu <sup>42</sup> ?ñá <sup>4</sup> <u>shiny supernatural woman</u>
Ja	?ná <sup>3</sup>	So	?ná <sup>4</sup>
Do	?ná	Ix	?ná

#### 4.11.3.3

4.11.3.3 \* $\tilde{n}$  is reconstructed from three types of non-contrastive sets. Not one of the environments in itself is well attested. The reflexes of environment (1) differ from those of environment (2) only in that \* $\tilde{n}$  > Ja /? $\mathfrak{t}$ /. The development of \* $\tilde{n}$  > /? $\mathfrak{t}$ / preceding \*u, attested by sets 339 and 721, is parallel to that of \* $\tilde{n}$  in the \*h $\tilde{n}$  cluster (cf. §4.11.2.3). Of the sets listed for the \*- $\tilde{n}u$  environment, some do not give the expected reflexes for Ja: set 200 has no Ja reflex as the word has been lost in Ja; sets 252 (and 722 with the same morpheme) and 715 give Ja reflexes that are unexplained. In spite of these difficulties, the combined evidence of environments (1) and (2) along with parallel development of \* $\tilde{n}$  in the \*h $\tilde{n}$  cluster (§4.11.2.3) presents a substantial basis for the reconstruction of \* $\tilde{n}$ .

The third environment postulated in the reconstruction of \* $\tilde{n}$  is based on one etymon (a compound of it may be seen in another set). However, again it seems unwise to ignore the presence of the nasal reflex /? $\tilde{n}$ / in Cq, especially when this is considered in the light of the presence of a nasal stop in Popoloca (one of the languages used along with PMaz to reconstruct the next deeper layer beyond PMaz), cf. Gudschinsky's set PPn 297. In this set Gudschinsky reconstructs \* $\tilde{n}$  for PMaz but gives no evidence for it in the data she cites; it would appear that she had data from Cq which she simply failed to give or else projected this back to

### 4.11.3.3

PMaz from Popoloca data. The evidence for this third postulated environment, though weak, is far too suggestive simply to write off as unexplained.

(1) Preceding \*u, \*?ñ is reconstructed from Mz ?ñ :

Ay ?ñ : Cq ?ñ : Ja ?í : Do ?ñ : Hu ?ñ : Ji ?ñ :  
 So ?ñ : Ix ?ñ : Mg ñ? : Lo ?ñ : Te ñ as in set 339  
 \*ni<sup>4</sup>?ñú<sup>4</sup>, \*na<sup>4</sup>?ñú<sup>4</sup> teeth:

Mz ni <sup>4</sup> ?ñú	Ji ni <sup>4</sup> ?ñú
Ay nte?ñá	So na <sup>4</sup> ?ñú <sup>4</sup>
Cq neí?ñú	Ix ni <sup>4</sup> ?ñú
Ja ni <sup>2</sup> ?íú <sup>2</sup>	Mg neñ?ñú
Do ni <sup>4</sup> ?ñú	Te niñú
Hu ni <sup>4</sup> ?ñú <sup>4</sup> , ni <sup>3</sup> ?ñú <sup>4</sup>	

Additional examples: 200, 252, 715, 721, and 722.

(2) Preceding \*a, \*?ñ is reconstructed from Ay ?ñ :

Cq ?ñ : Ja ?ñ : Do ?ñ : Hu ?ñ : Ji ?ñ : Ix ?ñ : Mg ñ? :  
 Lo ?ñ : Te ñ as in set 718 \*?ñá<sup>4</sup> dusk:

Ay thima <sup>2</sup> ?ñá	Ji ka?ñá
Cq kamá <sup>2</sup> ?ñá	Ix kamá <sup>2</sup> ?ñá
Ja ka <sup>2</sup> ma <sup>2</sup> ?ñá <sup>3</sup>	Lo komo <sup>2</sup> ?ñó
Do kamá <sup>2</sup> ?ñá	Te khima <sup>2</sup> ?ñá
Hu kua <sup>3</sup> ?ñá <sup>4</sup>	

Additional example: 328.

(3) Preceding \*au, \*?ñ is reconstructed from Ma ? :

Ay ? : Cq ?ñ : Ja ? : Do ? : Hu ? : Ji ? : So ? :

### 4.11.3.3

Ix ? : Mg ? : Lo ? : Te ? as in set 719 \*<sup>2</sup>ñau<sup>2</sup> five:

Mz	?ó	Ji	?ó
Ay	?ó	So	?ó <sup>1</sup>
Cq	?ñú	Ix	?ú
Ja	?ú <sup>2</sup>	Mg	?ú
Do	?ú	Lo	?é
Hu	?au <sup>2</sup>	Te	?ó

Additional example: 720.

CHART 12  
CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*<sup>2</sup>ñ

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
--	----	----	----	----	----	----	----	----	----	----	----	----

(1) ?ñ ?ñ ?ñ ?j ?ñ ?ñ ?ñ ?ñ ?ñ ?ñ ?ñ ?ñ

(2) ?ñ ?ñ

(3) ? ? ?ñ ? ? ? ? ? ? ? ? ?

(1) Preceding \*u

(2) Preceding \*a

(3) Preceding \*au

### 4.12 Semivowels

Since Hu and Mg reflexes have vowel clusters rather than interrupting semivowel it is well to ask an important question: which should be reconstructed, \*CVYV (where

Y represents semivowel) or \*CVV? PMaz \*CVYV should be reconstructed for the following reasons: (a) Hu and Mg reflexes would be poor evidence on which to conjecture that the disyllabic reflexes developed from proto-monosyllables since both of these have a clear pattern of consonantal loss, cf. §4.1.1; and (b) more importantly, the converse hypothesis that requires the generation of semivowels in this environment makes impossible an explanation of the vowel development. If one postulates that the semivowels were generated, one must then account for that fact that semivowels are generated in some \*ua, \*ia, \*iu syllables but not in others (see §5.2.8, §5.2.1, and §5.2.2).

#### 4.12.1 Non-clustered Semivowels (\*y, \*w)

4.12.1.1 \*y is reconstructed from two types of non-contrastive sets:

(1) In syllables preceded by \*nt{i, e}- or \*ti-, \*y is reconstructed from Mz y : Ay y : Cq y : Ja y : Do y : Hu Ø : Ji y : So y : Ix y : Mg Ø : Lo y : Te y as in set 392 \*nti<sup>4</sup>yá<sup>1</sup> road:

#### 4.12.1

Mz	ntiyá	Ji	ntiyá
Ay	ntiyá	So	nti <sup>4</sup> yá <sup>21</sup>
Cq	ntiyá	Ix	ntiyá
Ja	ní <sup>3</sup> yá <sup>1</sup> , ní <sup>3</sup> yó <sup>13</sup>	Mg	ntiaté <u>main road</u>
	(< Pre-Ja *ní <sup>3</sup> yá <sup>1</sup> )	Lo	ntiyó
Do	ndiyá	Te	ntiyá
Hu	ntiá <sup>4</sup> <sup>2</sup>		

Additional examples: 360, 380, 381, 382, 393, and 593.

(2) In environments other than the one mentioned above, \*y is reconstructed from identical reflexes of /y/ in all daughter languages as in set 686 \*yé<sup>4</sup> snake:

Mz	yé	Ji	yé
Ay	yé	So	yé <sup>4</sup>
Cq	yé	Ix	yé
Ja	yé <sup>3</sup>	Mg	yé
Do	yé	Lo	yá
Hu	yé <sup>4</sup>	Te	yé

Additional examples: 27, 29, 64, 102, 203, 250, 316, 396, 401, 402, 478, 541, 572, 584, 640, 659, 660, 661, 677, 678, 679, 680, 683, 685, 687, and 688.

4.12.1.2 \*w is reconstructed from two types of non-contrastive sets:

(1) In the environment \*u\_{a, e}, \*w is reconstructed from Mz w : Ay w : Cq w : Ja w : Do w : Hu Ø : Ji Ø :

#### 4.12.1.2

So w : Ix w : Mg Ø : Lo w : Te w as in set 417 \*nt<sup>y</sup>u<sup>3</sup>wá<sup>1</sup>  
comes:

Ay	hentiwá	So	ntyu <sup>3</sup> wá <sup>21</sup>
Cq	sei <sup>7</sup> eintuwá	Ix	cintiwá
Ja	ní <sup>2</sup> wá <sup>1</sup>	Mg	ntiá
Do	ní <sup>2</sup> wá	Lo	yančiwo
Hu	nčua <sup>21</sup>	Te	nčuwá
Ji	nčá		

Additional examples: 53, 84, 85, 111, 114, 354, 355, 359, 364, 441, 488, 549, 607, 608, 609, 611, and 613.

(2) Elsewhere \*w is reconstructed from identical reflexes of /w/ in all daughter languages as in set 646  
\*wa<sup>3</sup>té<sup>s</sup> cuts:

Mz	tiweteyá	Ji	waté
Ay	tiwate	So	wa <sup>3</sup> té <sup>s</sup>
Cq	tiwate	Ix	c'awaté
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>2</sup> yá <sup>2</sup>	Mg	waté
Do	tiwateyá	Lo	tiwotá
Hu	wa <sup>3</sup> té <sup>s</sup>	Te	waté

Additional examples: 32, 63, 84, 106, 365, 390, 401, 557, 629-644, 647-654, 656, 657, and 658.

#### 4.12.2 \*h Plus Semivowel (\*hy, \*hw)

4.12.2.1 \*hy is reconstructed from only one partial set.  
Although it is thus poorly attested there seems to be no

#### 4.12.2.1

reason to discard this set. \*hy is suggested from Ja y :

Hu hy : So y : Mg y in set 170 \*hyú<sup>s</sup> willing:

Ja yú <sup>as</sup>	So yú <sup>s-</sup>
Hu hyú <sup>s</sup>	Mg yú

4.12.2.2 There are a few problems in the reconstruction of \*hw. For one thing, Gudschinsky (1959) did not account for the fact that in her cognate sets PPn 180, 181, 184, 221, and 224 the Hu reflex is /wh/, but in her sets PPn 220, 223, and 273 the Hu reflex is /hw/; she reconstructed both types of reflexes as developments from \*hw.

Rather than suggest that \*hw contrasted with \*wh it does seem preferable to consider that both developments in Hu are from \*hw. To account for this Hu metathesis it seems reasonable to suppose that when initial in the word \*hw > Hu /wh/ and that when not initial in the word \*hw > Hu /hw/.

The plausibility of this hypothesis is further substantiated by noting another parallel metathesis in Hu. \*ñh when not initial in the word > Pre-Hu \*nhi, which was followed by the sound shift that metathesized /nh/ preceding front vowels to > Hu /hn/ (cf. §4.11.2.3 and §4.11.2.2).

Two sets, 164 and 168 present apparent difficulty for this hypothesis--in these sets the reconstructed forms are monosyllables, with \*hw initial in the word, but the Hu reflexes are /hw/ and not /wh/. However, these are accounted for by observing that in both sets the Hu reflexes have an

#### 4.12.2.1

additional compounding morpheme preceding the \*hw. It is reasonable to suppose that this compounding preceded the word-initial metathesis of \*hw.

Another problem in the reconstruction of \*hw is found in the So and Lo reflexes. Some are recorded with /f/ and others with /hw/. In So it seems that /f/ developed when word initial and that in Lo the /f/ developed when not initial in the word. Further rechecking of the original data may resolve this problem.

\*hw is reconstructed from two types of non-contrastive sets:

(1) In word initial position, \*hw is reconstructed from Mz hw : Ay hw : Cq hw : Ja hw : Do hw : Hu wh : Ji hw : So f : Ix hw : Mg hw : Lo hw : Te hw as in set 163 \*hwa<sup>s</sup>,á<sup>s</sup> passes by:

Ay	tihwa <sup>á</sup>	Ji	hwa <sup>á</sup>
Cq	hwa <sup>á</sup>	So	fa <sup>s</sup> ,á <sup>s</sup>
Ja	ti <sup>1</sup> hw <sup>á</sup> <sup>23</sup>	Mg	hw <sup>á</sup>
Do	tihw <sup>á</sup>	Lo	hwo <sup>ó</sup>
Hu	wha <sup>s</sup> ,á <sup>s</sup>	Te	tihwá

Additional examples: 160, 161, 162, 165, 166, 167, and 169.

(2) When not in initial position in the word, \*hw is reconstructed from Mz hw : Ay hw : Cq hw : Ja hw : Do hw : Hu hw : Ji hw : So hw : Ix hw : Mg hw : Lo f : Te hw as in set 689 \*yu<sup>s</sup>hwí<sup>s</sup> cloud:

#### 4.12.2.1

Mz	yuhwí	So	yuhwí <sup>s</sup>
Ay	yuhwí	Mg	yuhwí
Cq	yuhwí	Lo	yifé
Hu	yuhwí <sup>s</sup>	Te	yuhwí
Ji	yuhwí		

Additional examples: 164, 168, 173, and 418.

#### 4.12.3 \*? Plus Semivowel (\*?y, \*?w)

4.12.3.1 \*?y is reconstructed from two types of non-contrastive sets:

(1) In unstressed syllables, \*?y is reconstructed from Mz ? : Ay ? : Cq ? : Ja syllable Ø : Do syllable Ø : Hu syllable Ø : Ji syllable Ø : So ? : Ix ? : Mg ? : Lo y : Te ? as in set 726 \*?ya<sup>3</sup>níf<sup>2</sup> red:

Mz	?aní	So	?aní
Ay	?ini	Ix	?ini
Cq	?aní	Mg	?aní
Ja	níf <sup>2</sup>	Lo	yoní
Do	níf	Te	?ini
Hu	níf <sup>2</sup>		

Additional examples: 727, 728, and 729.

(2) Elsewhere, \*?y is reconstructed from Mz ?y : Ay ?i : Cq ?i : Ja ?i : Do ?i : Hu ?y : Ji ?y : So ?y : Ix ?i : Mg y? : Lo ?y : Te y as in set 394 \*nti<sup>4</sup>?yú<sup>s</sup> ant:

#### 4.12.3.1

Mz	ni <sup>2</sup> yú	Ji	ni <sup>2</sup> yú
Ay	ni <sup>2</sup> iu	So	ni <sup>2</sup> ?yú <sup>3</sup>
Cq	nti?iu	Ix	nti?iu
Ja	ni <sup>3</sup> ?iu <sup>2</sup>	Mg	ni <sup>3</sup> yú
Do	ndi?iu	Lo	ni <sup>2</sup> yí
Hu	ni <sup>2</sup> ?yú <sup>3</sup>	Te	niyú

Additional examples: 58, 83, 117, 262, 361, 365, 366, 367, 371, 389, 390, 391, 399, 504, 521, 730, and 731.

In addition to the two environments mentioned above, perhaps an additional one should be posited for the reconstruction of set 682. Neither the reflexes of \*y nor those of \*?y neatly fit this etymon \*ya?yi heavy. The uniqueness of the reflexes of this etymon may stem from the fact that both \*y and \*?y are in adjacent syllables. The Lo form of yo?yi and So form of yi<sup>3</sup>?i<sup>32</sup> seem to indicate quite clearly that the proto-form was disyllabic. Gudschinsky (1959:85) posited \*ye<sup>3</sup>?i<sup>31</sup> and I posit, with heavy reliance on the Lo form, that it was \*ya<sup>3</sup>?yi<sup>31</sup>. Regardless of what etymon is posited, this apparently reduplicated form remains unique for both the development of \*y and \*?y.

#### 4.12.3.2 \*?w is reconstructed from two types of non-contrastive sets:

(1) Preceding the cluster \*au, \*?w is reconstructed from Mz ? : Ay ?w : Cq ? : Ja ? : Do ? : Hu w? : So ? : Ix ?w : Lo w : Te ? in set 723 \*?waú<sup>3</sup> grinds:

4.12.3.2

Mz	ti <sup>?</sup> ó	Hu	w <sup>?</sup> au <sup>?</sup> s
Ay	thi <sup>?</sup> wó	So	o <sup>?</sup> s
Cq	ko <sup>?</sup> ó	Ix	c <sup>?</sup> a <sup>?</sup> wú
Ja	ti <sup>1</sup> o <sup>?</sup> s <sup>2</sup>	Lo	wí
Do	ti <sup>?</sup> ó	Te	te <sup>?</sup> ú

Although the environment postulated here is attested by only one etymon, it seems justified because of phonetic plausibility. The difference in the reflexes in environment (1) as compared with (2) is that in (1) many languages have lost \*w; it seems plausible that \*au > /o/ (§5.2.7) before this loss and that there was simply homorganic diphthongization of \*w.

(2) Elsewhere, \*\*w is reconstructed from Mz ?w :

Ay ?w : Cq ?u : Ja ?w : Do ?w : Hu ?w : Ji ?w : So ?w :  
 Ix ?w : Mg w? : Lo ?w : Te w as in set 590 \*ti<sup>1</sup>?wá<sup>4</sup> pig louse:

Ay	ti <sup>?</sup> wá	So	ti <sup>3</sup> ?wá <sup>24</sup> (< Pre-So * <sup>21</sup> - <sup>4</sup> )
Cq	ti <sup>?</sup> uá		
Ja	ti <sup>1</sup> ?wá <sup>3</sup>	Ix	ti <sup>?</sup> wá
Do	ti <sup>?</sup> wá	Mg	tiw <sup>?</sup> á
Hu	ti <sup>1</sup> ?wá <sup>4</sup>	Lo	ti <sup>?</sup> wó
		Te	tiwá

Additional examples: 46, 52, 226, 294, 349, 496, 503, 559, 563, 620, and 724.

## CHAPTER V

### RECONSTRUCTION OF PROTO-MAZATEC VOWELS

The treatment of PMaz vowels differs considerably from that of Gudschinsky (1951, 1956, 1959). Her 1951 work posited \*i, \*e, \*a, \*u, \*o and (perhaps with some reservations, since they are enclosed in parentheses) \*a<sup>o</sup> and \*a<sup>i</sup>--both oral vowels and their corresponding nasalized counterparts. The 1956 treatment gives the same inventory, except for the omission of oral and nasalized \*a<sup>o</sup>; the discussion of the vowel system is limited to the following brief statement (1956:18-19):

In general the vowels were stable in stressed syllable; in non-stressed syllable a great variety of conditioned sound changes occurred in the different dialects. These will not be discussed in detail here.

\*ai and \*a<sup>i</sup> are interpreted as complex vowels rather than vowel clusters since there are no other vowel clusters. They are rare in occurrence, as are also \*o and \*ø. It seems possible that the few items in which these phonemes occur might, with further study, prove to be reconstructable as disyllabic sequences with two simple vowels separated by a consonant which has been lost in all the dialects so far studied.

In 1959 she retains the same analysis and includes an extended discussion (1959:13-16) of PMaz vowels and their reflexes in the daughter languages. However, it is curious that in this she does not mention the low frequency of

occurrence of her posited \*a<sup>i</sup> and \*o. Nor does she repeat the notion advanced at the end of the above citation. If she had studied more carefully the low frequency of occurrence of her \*o and \*a<sup>i</sup> as compared with the other four vowels in her inventory, and if at the same time she had attempted to account for the vowel development in the \*-ahu environment, she might well have arrived at a system similar to the one presented here.

For PMaz I posit a simple two-by-two vowel inventory (plus the nasalized counterparts):

*i	*u
*e	*a

Of these, \*i and \*u occurred in clusters as follows (each cluster represents a set of two vowel sequences, oral and nasalized):

	*ei	*ue
*ia	*ai	*au
*iu	*ui	*ua

Gudschinsky's \*a<sup>i</sup> corresponds to the \*ai of this system, and her \*o to the \*au. The other clusters, however, are not represented in her reconstructions by any regular correspondences. In order to make clear that this is not simply an arbitrary alternative analysis of vocalic elements, it is important to set forth the following points:

(1) There are here posited eight cluster sets, of which only two can be fitted into Gudschinsky's vowel scheme. If one wishes to reconstruct only unit vowels (no clusters), twelve additional units (six oral, six nasalized) will be necessary. The alternative is to posit four primes and clusters--the solution chosen here.

(2) According to Gudschinsky (1959:14), \*o in Hu fell together with \*a and \*u and > /au/ in all environments. Hu also has /ua/ clusters, which she did not attempt to treat. Clearly \*o cannot account for both /au/ and /ua/ in similar environments; cf. sets 25 and 75.

(3) As mentioned above, Gudschinsky pointed out that her \*<sup>a</sup><sup>i</sup> and \*o occurred infrequently (in comparison to \*i, \*e, \*a, and \*u). While it is not unusual for some phonemes to be of low frequency, relative rarity of correspondences also suggests that clusters are reasonable to reconstruct. Although not by itself conclusive, the fact that the elements under discussion here are represented by far fewer examples seems to support a cluster solution.

(4) Gudschinsky (1959) reconstructed one cluster with \*w (PPn 316); however, it is not accounted for in her inventory of consonantal clusters (p.5), nor is there any discussion of this unique sequence. A vowel cluster treatment allows what would be a unique consonantal cluster

to be treated as simply another vowel cluster, \*ue. Although this vowel cluster is unique in the respect that at present it is supported only by the single example, it would appear to fit naturally the established pattern \*VV (with either \*i or \*u as one of the members), while the other solution postulates a unique consonantal cluster involving \*w.

(5) The most important argument for positing a four vowel system with clusters comes from a pattern hidden quite deep in the structure of Mazatec itself. This Gudschinsky failed to see, apparently for two reasons: (a) she did not account for the loss of \*h in Hu cf. §4.1.1; (b) she seems not to have recognized that \*-ahu > /-aho/ in So. Her assumption was that "all of the vowel phonemes of PMaz continued essentially unchanged in [So]" (1959:15). Apparently for this reason (or perhaps it was to account for the Hu /au/ clusters, since she did not account for the loss of \*h), she reconstructed \*ča<sup>3</sup>hu<sup>3</sup>, \*čo<sup>3</sup> in PPn 123 (my set 298). In any event, her hypothesis does require an alternate with \*o to account for the So reflex with /o/ in this set. (Apparently she also failed to see that her two alternates still failed to account for the disyllabic reflex of So.) Similarly, \*o is required by her hypothesis for PPn 344 (my set 677) and PPn 345 (my set 678). Yet unaccountably she did not reconstruct alternant forms with \*o in these two parallel sets. Had she done so she would perhaps have noted the necessity of

alternates in \*o wherever \*-ahu was reconstructed.

If the disyllabic reconstruction of many PMaz words with \*-V{laryngeal}V is recognized as valid (cf. §4.1 for reasons supporting it), then both parallel and non-parallel development of \*-a{laryngeal}u with \*au are easily accounted for. Where the development in some languages parallels the \*au cluster then it is easy to suppose that laryngeals did not provide sufficient barrier to preclude the cluster development (\*au > o). In languages where the sound change does not parallel the cluster \*au the two vowels developed independently as they do elsewhere, except that in So, \*-ahu > /-aho/ suggests an intermediate sort of development. The strength of the laryngeal hypothesis (§4.1) lies, in part, in its ability to account for seemingly diverse structures from a broad generalization.

In all Mazatec languages there is no contrast of oral and nasalized vowels after nasals; in this environment all vowels are nasalized. The question then arises: Can Mazatec nasalized vowels be accounted for from a nasal environment? While it is true that nasalized vowels in some of the daughter languages can be accounted for in this way (cf. §4.11), most of them cannot be at the PMaz horizon. See, for example, the contrasts where there are no nasals in the environment, cf. \*šá<sup>1</sup> work (491) with \*šá<sup>1</sup> liquor (505); \*šhá<sup>4</sup> hawk (507) with \*šhá<sup>2</sup> three (508); \*sá<sup>3</sup> more (437)

with \*sa<sup>3</sup> acid (446); \*sé<sup>3</sup> thick (liquid) (459) with \*sé<sup>1</sup> candle (461); \*si<sup>4s</sup> dirt (470) with \*-sí<sup>3</sup> tick (471); \*su<sup>3</sup>(\*<sup>1</sup>) vomit (487) with \*sy<sup>2</sup> on, above (489); \*zá<sup>3</sup> unoccupied (690) with \*zá<sup>3</sup> I (693); etc.

Nasalized vowels seem to have been fully developed at the PMaz horizon. It seems likely that at a much earlier horizon they developed from a nasal stop environment, but the layer in which only oral vowels may be postulated would appear to be quite remote. Evidently nasalized vowels were also part of the Proto-Mixtec horizon. However, at the level at which Amuzgo ties into the Otomanguean family there is evidence that nasalized vowels developed from a post-syllabic nasal, Longacre posits \*-m (1957:27-28).

The discussion that follows is in terms of oral vowels, but it is to be understood as applying to PMaz nasalized vowels as well.

### 5.1 Non-clustered Vowels (\*i, \*e, \*a, \*u)

5.1.1 \*i is reconstructed from four types of non-contrastive sets; the complementary environments are summarized in Chart 13.

(1) (a) In stressed syllables of polysyllabic words when the vocalic nucleus preceding the stressed syllable contains a back vowel (\*a, \*u) unless \*y also occurs in the consonantal margin preceding the back vowel; or (b) following

### 5.1.1

clusters of \*{s,š}{stop}(C) or \*hN(C), \*i is reconstructed from Mz i : Ay i : Cq i : Ja i : Do i : Hu i : Ji i : So i : Ix i : Mg i : Lo e : Te i as in set 277 \*na<sup>4</sup>ši<sup>4</sup>  
deer:

Mz	naši <u>horse</u>	Ji	naši <u>horse</u>
Ay	naši <u>horse</u>	So	na <sup>4</sup> ši <sup>3</sup> <sup>2</sup> <u>horse</u>
Cq	naši <u>horse</u>	Ix	naši
Ja	na <sup>3</sup> ši <sup>1</sup>	Mg	naši <u>horse</u>
Do	čanaši	Lo	noše
Hu	na <sup>4</sup> ši <sup>1</sup> <u>horse</u>	Te	naši <u>horse</u>

Additional examples: 8, 49, 51, 52, 68, 96, 104, 120, 122, 136, 137, 138, 142, 144, 148, 162, 171, 185, 211, 226, 244, 245, 249, 251, 256, 266, 275, 277, 279, 280, 282, 304, 308, 337, 398, 415, 418, 423, 452, 457, 485, 486, 494, 496, 527, 536, 537, 538, 546, 547, 557, 562, 603, 613, 620, 625, 635, 641, 649, 654, 665, 676, and 722.

(2) When \*h in the environment of \*-ihi was lost or metathesized with preceding vowel (cf. §4.1.1) the weakly stressed vowel merged with the homorganic heavily stressed vowel; in weakly stressed syllables in such an environment, \*i is reconstructed from Mz i : Ay i : Cq i : Ja Ø : Do i : Hu Ø : Ji i : So i : Ix i : Mg Ø : Lo i : Te i as in set 240 \*mi<sup>3</sup>hi<sup>2</sup> upgrade, slope up:

5.1.1

Hu $m\overset{f}{i}^4$	Ix $m\overset{f}{i}^4$
Ji $m\overset{f}{i}^4$	Lo $m\overset{f}{i}^4$
So $m\overset{g}{i}^3 h\overset{f}{i}^3$	Te $m\overset{f}{i}^4$

Additional examples: 346, 413, 594, and 669.

(3) In weakly stressed syllables followed by \*-?i,  
 $*i$  is reconstructed from Mz  $\emptyset$  : Ay i : Cq i : Ja  $\emptyset$  : Do  
 $\emptyset$  : Hu  $\emptyset$  : Ji  $\emptyset$  : So  $\emptyset$  : Ix  $\emptyset$  : Mg  $\emptyset$  : Lo i : Te  $\emptyset$  as  
inset 522  $*\overset{g}{s}i^4$  man:

Mz $\overset{g}{s}i^4$	Hu $\overset{g}{s}i^4$
Ay $\overset{g}{s}i^4$	Ji $\overset{g}{s}i^4$
Cq $\overset{g}{s}i^4$	Mg $\overset{g}{s}i^4$
Ja $\overset{g}{s}i^4$	Lo $\overset{g}{s}i^4$
Do $\overset{g}{s}i^4$	Te $\overset{g}{s}i^4$

Additional examples: 28, 37, 38, 93, 94, 101, 199, 374,  
411, 412, 468, 515, 595, and 600.

(4) In environments other than the three preceding,  $*i$   
is reconstructed from identical reflexes of /i/ in all  
daughter languages as in set 202  $*k\overset{f}{h}\overset{g}{i}^3$  far:

Mz $k\overset{f}{h}\overset{g}{i}$	Ji $k\overset{f}{h}\overset{g}{i}$
Ay $k\overset{f}{h}\overset{g}{i}$	So $k\overset{f}{h}\overset{g}{i}^2$
Cq $k\overset{f}{h}\overset{g}{i}$	Ix $k\overset{f}{h}\overset{g}{i}$
Ja $k\overset{f}{h}\overset{g}{i}^2$	Mg $k\overset{f}{h}\overset{g}{i}$
Do $k\overset{f}{h}\overset{g}{i}$	Lo $k\overset{f}{h}\overset{g}{i}$
Hu $k\overset{f}{h}\overset{g}{i}^3$	Te $k\overset{f}{h}\overset{g}{i}$

### 5.1.1

Additional examples: 34-36, 39-42, 76-83, 88-92, 95, 97-100, 108, 110, 133, 134, 168, 169, 195-198, 200-202, 204-209, 215, 219, 225, 231, 240, 242, 243, 252, 254, 262, 268, 276, 281, 292, 293, 305, 306, 311-339, 344-349, 360, 373, 376, 381, 387, 388, 389-394, 408-410, 413, 445, 453, 464, 469-471, 514, 516-525, 581-585, 589-594, 621, 655-658, 663, 666-669, 679, 682, 689, 694-696, 701, 705, 706, 714-716, 724, 726, and 728.

### CHART 13

#### CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF \*i

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	i	i	i	i	i	i	i	i	i	i	e	i
(2)	i	i	i	Ø	i	Ø	i	i	i	Ø	i	i
(3)	Ø	i	i	Ø	Ø	Ø	Ø	Ø	Ø	Ø	i	Ø
(4)	i	i	i	i	i	i	i	i	i	i	i	i

- (1) (a) In heavily stressed syllables of polysyllabics when the vocalic nucleus preceding the heavily stressed syllable contains a back vowel (\*a, \*u) unless \*y also occurs in the consonantal margin preceding the back vowel; or (b) following clusters of \*{s, š}{stop}(C) or \*hN(C)
- (2) In weakly stressed syllables when \*h in the environment \*-hi was lost or metathesized with

## 5.1.2

the preceding vowel (cf. §4.1.1)

- (3) In weakly stressed syllables followed by \*-?i
- (4) Elsewhere

5.1.2 Gudschinsky (1959:15) in both the extended discussion and the chart of development says that the development of \*e > Mz /e/ is unchanged. However, inspection of her own cognate sets does not support her assertion. Her sets PPn 14, 98, 145, and 183 give Mz reflexes of both /i/ and /e/ for \*e; her sets PPn 27, 28, 30, 94, 95, 221, 242, 256, and 268 give Mz reflexes of /i/ for \*e; and her sets PPn 9, 10, 29, 96, 106, 144, 147, 163, 184, 185, 199, 205, 229, 240, 245, and 293 give Mz reflexes of /e/ for \*e. Such similar environments as found in her sets PPn 242 and 245 give one with a reflex /i/ and the other with /e/.

The data for Mz cited in my cognate sets is taken from material gathered by Gudschinsky. For this reason, although the cognates are much more numerous than hers, it still leaves the same sort of indeterminacy as to the development of \*e in Mz.

It seems likely that in heavily stressed syllables, and CV?V syllables, \*e is merging with \*i in Mz. The fact that some reflexes show alternation of /i/ and /e/, others only /e/, and still others only /i/, may simply reflect the fact that the sound change had not stabilized when Gudschinsky did field research.

### 5.1.2

The status of \*e in heavily stressed syllables and CV?V syllables in Mz also remains unresolved in this study. As reflexes both /i/ and /e/ appear in sets 10, 254, 333, 483, and 511; the reflex /i/ appears in sets 12, 44, 72, 82, 160, 166, 286, 323, 327, 336, 372, 407, 424, 444, 463, 469, 490, 523, 543, 544, 578, 599, 638, and 674; the reflex /e/ appears in sets 14-16, 20, 32, 161, 167, 178, 229, 237, 239, 289, 290, 301, 302, 309, 325, 326, 373, 385, 388, 390, 432, 451, 460, 461, 510, 512, 519, 530, 531, 545, 570, 577, 580, 624, 646, 652, 686, 688, and 708.

In weakly stressed syllables other than those preceding ?V, Mz reflexes of \*e are predominantly /e/, as in sets 27, 371, 376, 377, 379, 380, 382, 408, 568, 572, 644, 645, and 649; only three sets (15, 239, and 301) show /i/.

Because of this problem in Mz, the reconstruction of \*e is based on the other eleven languages.

\*e is reconstructed from seven types of non-contrastive sets. The complementary sets are summarized in Chart 14.

(1) In stressed syllables when the vocalic nucleus is nasalized, \*e is reconstructed from Ay e : Cq ei : Ja e : Do e : Hu e : Ji e : So e : Ix e : Mg e : Lo a : Te e as in set 519 \*ši<sup>8</sup>ne<sup>1</sup> (\*<sup>1</sup> - <sup>1</sup>) lard:

5.1.2

Ay Šiné	So Ši <sup>s</sup> né <sup>z1</sup>
Cq Šine <sup>i</sup>	Ix Šiñé
Ja Ši <sup>z</sup> né <sup>1</sup>	Mg Šiné
Do Šiné	Lo Šina
Hu Ši <sup>1</sup> né <sup>1</sup>	Te Šiné
Ji Šiné	

Additional examples: 15, 30, 57, 72, 81, 90, 132, 140, 141, 160, 178, 191, 192, 194, 229, 231, 232, 237, 239, 290, 325, 388, 390, 432, 440, 461, 462, 463, 469, 519, 531, 545, 579, 580, 589, 624, 638, 699, 700, 707, and 708.

(2) In stressed syllables preceded by \*(š){k, k<sup>w</sup>}hV-, \*e is reconstructed from Ay e : Cq e : Ja e : Do e : Hu e : Ji e : So e : Ix e : Mg e : Lo ia : Te e as in set 190  
\*khé<sup>s</sup> not yet:

Ay khé	Ji khé
Cq khé	So khyé
Ja khé <sup>s</sup> <sup>z</sup>	Ix khé
Do khé	Lo khaí
Hu khé <sup>s</sup>	Te khé

Additional examples: 191-194, 534, and 540.

(3) In weakly stressed syllables when \*h in the sequence \*-ehe was lost or metathesized with the preceding vowel (cf. §4.1.1), \*e is reconstructed from Ay e : Cq ei : Ja Ø : Do e : Hu Ø : Ji e : So e : Ix i : Mg Ø : Lo a : Te e as in set 239 \*mē<sup>s</sup>hé<sup>s</sup> wants:

5.1.2

Ay    m <sub>e</sub> hé	So    m <sub>e</sub> <sup>3</sup> hé <sup>1</sup>
Cq    m <sub>e</sub> ihei	Ix    m <sub>e</sub> ihe
Ja    m <sub>e</sub> h <sup>2</sup>	Mg    m <sub>e</sub>
Do    m <sub>e</sub> hé	Lo    m <sub>a</sub> há-
Hu    m <sub>e</sub> <sup>3</sup>	Te    m <sub>e</sub> hé

Additional examples: 109, 232, 301, 310, 378, 685, and 687.

(4) In weakly stressed syllables contiguous to \*y or when preceded by word initial \*t or \*nt and not followed by \*?V, \*e is reconstructed from Ay e : Cq ei : Ja e : Do e : Hu i : Ji i : So e : Ix i : Mg e : Lo a : Te i as in set 376 \*nte<sup>4</sup>cí<sup>4</sup> market:

Ay    nteci	So    nte <sup>4</sup> cí <sup>4</sup>
Cq    nteici	Ix    ntici
Ja    n <sup>2</sup> e <sup>3</sup> cí <sup>3</sup>	Mg    nteci
Do    nd <sup>2</sup> eci	Lo    ntaci
Hu    nti <sup>4</sup> cí <sup>4</sup>	Te    ntaci
Ji    ntici	

Additional examples: 370, 371, 374, 375, 377, 379, 380, 381, 382, 568, 572, and 684.

(5) In the environment \*c  e, \*e is reconstructed from Ay e : Cq ei : Ja Ø : Do Ø : Hu Ø : Ji Ø : So e : Ix i : Mg Ø : Lo a : Te Ø as in set 16 \*ce<sup>4</sup>?é<sup>4</sup> his:

Ay    k <sup>w</sup> ice?é	So    ce?é
Ja    k <sup>w</sup> i <sup>1</sup> c?é <sup>3</sup>	Ix    ci?é
Do    k <sup>w</sup> ic?é	Lo    ca?á
Hu    c?é <sup>4</sup>	Te    cé

### 5.1.2

Additional examples: 10, 285, and 286.

(6) In the environment \*C(C)<sup>?</sup>e where C is other than \*c, \*e is reconstructed from Ay e : Cq e : Ja e : Do e : Hu e : Ji e : So e : Ix e : Mg e : Lo a : Te e as in set 577 \*the<sup>s</sup>?é<sup>s</sup> magic, sorcery:

Ay the <sup>s</sup> ?é	Ix the <sup>s</sup> ?é
Ja th <sup>s</sup> ?é <sup>s</sup>	Mg th <sup>s</sup> ?é
Do th <sup>s</sup> ?é	Lo tha?á
So the <sup>s</sup> ?é <sup>s</sup>	

Additional examples: 32, 178, 215, 372, 383, 384, 407, 463, 464, 512, 650, 652, and 688.

(7) In environments other than the six preceding, \*e is reconstructed from Ay e : Cq e : Ja e : Do e : Hu e : Ji e : So e : Ix e : Mg e : Lo a : Te e as in set 570 \*té<sup>s</sup> ten:

Ay té	So té <sup>s</sup>
Cq té	Ix té
Ja té <sup>s</sup>	Mg té
Do té	Lo tá
Hu té <sup>s</sup>	Te té
Ji té	

Additional examples: 11-15, 20, 27, 33, 44, 82, 94, 95, 113, 129-132, 161, 166, 167, 201, 215, 221, 223, 229, 231, 254, 255, 289, 302, 323, 327, 333, 339, 348, 356, 373, 385, 393, 395, 408, 424, 443, 444, 451, 459, 460, 483, 484, 490,

5.1.2

510, 511, 523, 543, 544, 563, 569, 571, 573, 578, 581, 599, 607, 611, 616, 631, 642-647, 649, 651, 653, 667, 674, and 686.

CHART 14

CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*e

	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	e	ei	e	e	e	e	e	e	e	a	e
(2)	e	e	e	e	e	e	e	e	e	ia	e
(3)	e	ei	Ø	e	Ø	e	e	i	Ø	a	e
(4)	e	ei	e	e	i	i	e	i	e	a	i
(5)	e	ei	Ø	Ø	Ø	Ø	e	i	Ø	a	Ø
(6)	e	ei	Ø	Ø	Ø	Ø	e	e	Ø	a	Ø
(7)	e	e	e	e	e	e	e	e	e	a	e

Note: Mz reflexes are not considered in the reconstruction of \*e; see the discussion at the beginning of this section.

- (1) In heavily stressed syllables when the vocalic nucleus is nasalized
- (2) In heavily stressed syllables preceded by \*(š){k, k<sup>w</sup>}hv-
- (3) In weakly stressed syllables when \*h in the sequence \*-ehe was lost or metathesized with the preceding vowel (cf. §4.1.1)

### 5.1.2

- (4) In weakly stressed syllables contiguous to \*y or when preceded by word initial \*t or \*nt
- (5) In the environment \*c\_?e
- (6) In the environment \*C(C)\_?e where C is other than \*c
- (7) In other environments

5.1.3 \*a is reconstructed from thirteen types of non-contrastive sets; the complementary environments are summarized in Chart 15.

This complexity in the correspondence sets is caused by the intersection of only a few basic environmental factors in each language. It should also be noted that of the thirteen types of non-contrastive environments, the first twelve are in weakly stressed position.

It would seem that many of these correspondence sets are poorly attested. This is true only if one examines each of the thirteen environments independently; but examined in groups their collective strength is readily apparent. Complementary set-types (1) through (7) have in common the environment \*-hV; these are further sub-divided on the basis of vowel quality \*u (1 - 3) and \*a (4 - 7).

The first three environments with \*-hu following are sub-divided on the basis of the preceding consonantal margin that correlates with the difference in vowel reflexes in Ay, Ix, and Lo. Environment (3) is attested by only one form,

### 5.1.3

which shows a difference of reflexes only in Ix and Lo. Yet the development appears natural in that the chronology of sound development in Lo can be accounted for in the following way: (a) \*-ahu > Pre-Lo \*-uhu > \*-ihɪ; then (b) in weakly stressed syllable with \*č in the consonantal margin Pre-Lo \*ɪ > Lo /i/ (cf. §5.1.4 and also, more importantly, the Lo vowel development of the \*au cluster in §5.2.7). This hypothesis accounts neatly for the presence of Lo /i/ in environment (3), and /i/ in the palatal (\*č, \*y) environment (1); at the same time it answers the question of why /o/ and not /i/ in the \*č environment of (5) and (6) (the latter are derived from \*a, the former from \*u).

The \*nt<sup>y</sup> environment in (2) can be compared with (4). However, in Mz a difference is present which is accounted for by the probability that \*nt<sup>y</sup> in this environment became /l/ before the sound change that involved \*nt<sup>y</sup>- in environment (4)

Environment (7), (9), (10) have in common the consonantal margin \*ñ-; they differ in what follows the weakly stressed \*a. This difference seems to correlate with the reflexes for \*a--environment (7) has a non-palatal environment following and the development is what is expected for \*-hV (cf. §4.1.1); also, Ix gives the expected reflex /i/ after a palatal consonantal margin (unless \*-hu follows). Environments (9) and (10) seem to be somewhat alike in that

### 5.1.3

weakly stressed \*a is between palatal-like environments (for the argument that \*t here may have had a more palatal allophone cf. §4.11.1.3). Ay gives the reflex /e/ in both (9) and (10); Ja and Do give /ei/ in the \*ñ\_\_č- environment but /a/ in the \*ñ\_\_t- environment.

The remainder of the correspondence types may be studied in a similar way; the interlocking of the environments should be apparent.

(1) In the environment \*{(n)č-, y-}\_\_hu, \*a is reconstructed from Mz a : Ay o : Cq o : Ja Ø : Do o : Hu a : Ji o : So a : Ix u : Mg Ø : Lo i : Te i as in set 298 \*nča<sup>3</sup>hú<sup>3</sup>, \*ča<sup>3</sup>hú<sup>3</sup> dust:

Mz čahú	So ča <sup>3</sup> hó <sup>3</sup>
Ay čohó	Ix čuhú
Cq čohó	Mg čó
Ja nžhó <sup>2</sup>	Lo čihí
Do nžohó	Te čihú
Hu čau <sup>3</sup>	

Additional examples: 54, 299, 300, and 677-680.

(2) In the environment \*nt<sup>y</sup>\_\_hu, \*a is reconstructed from Mz a : Ay Ø : Cq o : Ja Ø : Do o : Hu a : Ji o : So a : Ix Ø : Mg Ø in set 406 \*nt<sup>y</sup>a<sup>4</sup>hú<sup>4</sup> stone:

5.1.3

Mz    'lahó	Hu    laú <sup>4</sup>
Ay    ntihó	Ji    lohó
Cq    ntiohó	So    ntaya <sup>4</sup> hó <sup>4</sup>
Ja    ndhió <sup>s</sup>	Ix    ntihú
Do    ndiohó	Mg    ló

(3) In the environment \*w     hu, \*a is reconstructed from Mz a : Ay o : Cq o : Ja Ø : Do o : Hu a : So a : Ix a : Lo i : Te i in set 633 \*wa<sup>s</sup>hú<sup>2</sup> hungry:

Mz    wahóra	Hu    waú <sup>s</sup>
Ay    wohó	So    wa <sup>s</sup> hó <sup>1</sup> re <sup>4</sup>
Cq    wohó	Ix    wahú
Ja    whó <sup>s</sup>	Lo    wíhí
Do    wohó	

(4) In the environment \*nty     ha, \*a is reconstructed from Mz Ø : Ay Ø : Cq a : Ja Ø : Do a : Hu Ø : Ji a : So a : Ix Ø : Lo o : Te a as in set 405 \*nty<sup>a</sup>há<sup>4</sup> horn (animal):

Mz    ntihá	Ji    nčahá
Ay    ntiháre	So    ntaya <sup>4</sup> há <sup>4</sup>
Cq    ntiahá	Ix    ntihá
Ja    ndhiá <sup>s</sup>	Lo    nčohó
Do    ndiahá	Te    nčahá
Hu    nčá <sup>4</sup>	

Additional example: 404.

5.1.3

(5) In the environment \*nč̥\_ha, \*a is reconstructed from Mz a : Ay a : Cq a : Ja Ø : Do a : Hu Ø : So a : Ix i : Mg Ø : Lo o : Te i in set 297 \*nč̥a<sup>3</sup>há<sup>1</sup> corn drink (atole):

Mz	nčahá	So	nča <sup>3</sup> há <sup>21</sup>
Ay	nčahá	Ix	nčihá
Cq	nčahá	Mg	nčá
Ja	njha <sup>1</sup> -	Lo	nčohó
Do	njahá-	Te	nčihá
Hu	nčá <sup>21</sup>		

(6) In the environment \*č̥\_ha, \*a is reconstructed from Ay a : Cq a : Ja a : Do a : Hu Ø : Ix i : Mg Ø : Lo o : Te i in set 66 \*ča<sup>4</sup>há<sup>1</sup> cramp:

Ay	čahá	Ix	čihá
Cq	čahá	Mg	čá
Ja	ča <sup>2</sup> há <sup>1</sup>	Lo	čohó
Do	čahá	Te	čihá
Hu	čá <sup>4</sup> a		

(7) In the environment \*ñ̥\_ha, \*a is reconstructed from Mz a : Ay a : Cq a : Ja Ø : Do a : Hu Ø : Ji a : So a : Ix i : Mg Ø : Lo o : Te Ø as in set 421 \*ñ̥a<sup>3</sup>há<sup>43</sup> nine:

5.1.3

Mz	ñahá	Ji	ñahá
Ay	ñahá	So	ñahá <sup>32</sup>
Cq	ñahá	Ix	ñihá
Ja	ñhá <sup>2</sup>	Lo	ñohó
Do	ñahá		

Additional examples: 236 and 313.

(8) In the environment \*<sup>2</sup>y\_CV, \*a is reconstructed from Mz a : Ay Ø : Cq a : Ja syllable Ø : Do syllable Ø : Hu syllable Ø : Ji syllable Ø : So a : Ix Ø : Mg a : Lo o : Te Ø as in set 728 \*<sup>2</sup>ya<sup>s</sup>ší<sup>43</sup> sweet:

Mz	'aší	So	'a <sup>s</sup> ší <sup>s</sup> <sup>2</sup>
Ay	'iší	Ix	'iší
Cq	'aší	Mg	'aší
Ja	ší <sup>2</sup>	Lo	yoší
Hu	ší <sup>43</sup>	Te	'iší
Ji	ší		

Additional examples: 725, 726, 727, and 729.

(9) In the environment \*ñ\_CV, \*a is reconstructed from Mz a : Ay e : Cq a : Ja ei : Do ei : Hu a : Ji i : So a : Ix i : Lo o : Te Ø as in set 425 \*ñá<sup>4</sup>čá<sup>3</sup> (\*<sup>3</sup> - <sup>1</sup>, \*<sup>1</sup> - <sup>1</sup>) forty:

Ay	yečá	Ji	ñičá
Cq	yačá	So	ya <sup>21</sup> čá <sup>21</sup>
Ja	yei <sup>2</sup> čá <sup>1</sup>	Ix	yičá
Do	yeičá	Lo	yočotá <u> fifty</u>
Hu	ñá <sup>4</sup> čá <sup>3</sup>	Te	'ičá

### 5.1.3

Additional example (same morpheme): 423.

(10) In the environment \*ñ\_tV, \*a is reconstructed from Mz a : Ay e : Cq a : Ja a : Do a : Hu a : Ji i : So a : Ix i : Mg a : Lo o : Te Ø in set 422 \*ñ<sup>a</sup>s<sup>tú</sup><sup>4s</sup> seven:

Mz	yatú	Ji	ñ <sup>i</sup> tú
Ay	yetú	So	ya <sup>a</sup> s <sup>tú</sup> <sup>sa</sup>
Cq	yatú	Ix	yitú
Ja	ya <sup>a</sup> tú <sup>2</sup>	Mg	yatú
Do	yatú	Lo	yatí
Hu	ñ <sup>a</sup> s <sup>tú</sup> <sup>4s</sup>	Te	?itiú

(11) In the environment \*č\_CV when C is not a laryngeal (\*h, \*?), \*a is reconstructed from Mz a : Ay a : Cq a : Ja a : Do a : Hu a : Ji a : So a : Ix i : Mg a : Te i as in set 64 \*ča<sup>a</sup>yá<sup>a</sup> forgets:

Mz	čayá	Hu	ča <sup>a</sup> yá <sup>a</sup>
Ay	-čayá	So	ča <sup>a</sup> yá <sup>a</sup>
Cq	-čayá-	Ix	-čiyá
Ja	-ča <sup>a</sup> yá <sup>a</sup>	Mg	čayá-
Do	-čayá		

Additional examples: 55, 56, 57, and 58.

(12) In weakly stressed syllables preceding \*-?a, \*a is reconstructed from Mz a : Ay a : Cq a : Ja Ø : Do Ø : Hu a : Ji a : So a : Ix a : Mg Ø : Lo o : Te Ø as in set 163 \*hwa<sup>a</sup>?á<sup>a</sup> passes by:

5.1.3

Ay	-hwa <sup>?</sup> á	Ji	hwa <sup>?</sup> á
Cq	-hwa <sup>?</sup> á	So	fa <sup>?</sup> , á <sup>?</sup>
Ja	-hw <sup>?</sup> á <sup>23</sup>	Mg	hw <sup>?</sup> á
Do	-hw <sup>?</sup> á	Lo	hwo <sup>?</sup> ó
Hu	wha <sup>?</sup> , á <sup>?</sup>	Te	tihwá

Additional examples: 2, 31, 59, 60, 69, 161, 162, 174, 181, 357, 456, 500, 506, 629, and 681.

(13) In weakly stressed syllables other than (1) through (12), and in all stressed syllables, \*a is reconstructed from Mz a : Ay a : Cq a : Ja a : Do a : Hu a : Ji a : So a : Ix a : Mg a : Lo o : Te a as in set 491  
\*šá<sup>1</sup> work:

Mz	šá	Ji	šá
Ay	šá	So	šá <sup>21</sup>
Cq	šá	Ix	šá
Ja	šá <sup>1</sup>	Mg	šá
Do	šá	Lo	šó
Hu	šá <sup>1</sup>	Te	šá

Additional examples: 3, 4, 6-9, 17, 27, 29, 30, 32, 35, 40, 43, 46, 53, 61-63, 67, 68, 73, 74, 83, 85, 91, 99, 100, 102, 103, 106, 111, 114, 115, 120-123, 126, 135, 139, 143, 147, 149, 155-157, 160, 164, 171-173, 179, 180, 182, 185-187, 193, 195, 197, 198, 201, 203, 207, 208, 213, 216, 218-221, 227, 229, 231-233, 235, 237, 241-263, 265-282, 284, 287, 288, 294, 296, 303, 304, 306, 307, 314-318, 324, 328, 330, 339-343, 345,

### 5.1.3

349, 350, 352-356, 358-361, 362, 364-367, 370, 371, 380, 381,  
387, 390, 392, 393, 395, 396, 401-403, 417, 418, 420, 428,  
431-433, 436-444, 446-450, 453-455, 458, 465, 466, 472-475,  
478-482, 488, 493, 494, 496-499, 501-505, 507, 508, 521,  
526-530, 532, 533, 536, 541, 549, 555, 556, 559, 561, 563-566,  
572, 584, 590, 593, 596, 598, 602, 604, 609-611, 613, 618,  
621, 622, 624, 626-628, 630-632, 634-648, 656-670, 672, 673,  
676, 683, 684, 690-695, 698, 703, 704, 709, 710, 713, 718,  
and 730.

## 5.1.3

## CHART 15

CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*a

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	a	o	o	Ø	o	a	o	a	u	Ø	i	i
(2)	a	Ø	o	Ø	o	a	o	a	Ø	Ø		
(3)	a	o	o	Ø	o	a		a	a		‡	
(4)	Ø	Ø	a	Ø	a	Ø	a	a	Ø		o	a
(5)	a	a	a	Ø	a	Ø		a	i	Ø	o	i
(6)		a	a	a	a	Ø			i	Ø	o	i
(7)	a	a	ə	Ø	a	Ø	a	a	i	Ø	o	Ø
(8)	a	Ø	a	SØ	SØ	SØ	SØ	a	Ø	a	o	Ø
(9)	a	e	a	ei	ei	a	i	a	i		o	Ø
(10)	a	e	a	a	a	a	i	a	i	a	o	Ø
(11)	a	a	a	a	a	a	a	a	i	a		i
(12)	a	a	a	Ø	Ø	a	a	a	a	Ø	o	Ø
(13)	a	a	a	a	a	a	a	a	a	a	o	a

SØ represents syllable zero

- (1) In the environment \*{(n)č-, y-}\_\_hu
- (2) In the environment \*nt<sup>y</sup>\_\_hu
- (3) In the environment \*w\_\_hu
- (4) In the environment \*nt<sup>y</sup>\_\_ha
- (5) In the environment \*nč\_\_ha
- (6) In the environment \*č\_\_ha

### 5.1.3

- (7) In the environment \*ñ\_\_ha
- (8) In the environment \*?y\_\_CV
- (9) In the environment \*ñ\_\_čV
- (10) In the environment \*ñ\_\_tV
- (11) In the environment \*č\_\_CV where C is not a laryngeal (\*h, \*)
- (12) Preceding \*\_\_?a
- (13) In other weakly stressed syllables and in all heavily stressed syllables

5.1.4 \*u is reconstructed from fourteen types of non-contrastive sets; Chart 16 summarizes the complementary environments. This large number of non-contrastive sets is composed of the complex intersection of a relatively small number of basic parameters. Presence or absence of palatal environments (\*č, \*ñ, \*y) in the consonantal margin intersect with heavily stressed or weakly stressed syllables, with presence or absence of a following laryngeal, and with difference of vowel quality following the laryngeal.

Some of the environments are weakly attested when inspected individually. But when compared with the total pattern their validity can be seen because of their perfect fit.

Environment (1) accounts both for heavily stressed vowels with palatals preceding them and for one weakly stressed set with \*št- in the consonantal margin. It might

#### 5.1.4

seem that \*št- weakly stressed should be excluded, but close inspection indicates that it fits perfectly--\*št > Lo /č/ before \*u > Lo /i/ when /č/ was in the consonantal margin; the apparently aberrant form fits perfectly.

The reflexes of environment (2) parallel (14) except for Te which gives /iu/ rather than /u/, but environment (2) seems adequately attested and may reflect an earlier palatal-like allophonic quality of \*t in some environments (cf. §4.11.1.3).

Environments (3) and (4) differ only in presence or absence of palatal consonantal onset and this difference is reflected in the expected Lo reflex of /i/ after palatals and /ɨ/ elsewhere.

Environments (5) and (6) show the development after non-palatal initials before \*-hu. The difference between them is reflected in the development of \*h (cf. §4.1.1). Although environment (6) is attested by only two sets, the results fit the expected pattern.

Environment (7) accounts for the development in weakly stressed syllables after an initial cluster containing \*č when the following syllable is not {\*h, \*}V [environment (3)]; it has both parallels and expected differences (because of the stress difference) as compared with environment (1). Environment (7) is well attested.

#### 5.1.4

Environments (8) and (9) have in common the presence of \*ñ- initial and differ in the presence or absence of \*-hu. Environment (8) has parallels with (5) and (6) because of the presence of \*-hu but differs, as would be expected, because of the presence of the palatal initial.

Environments (10) and (11) have in common the presence of \*t<sup>y</sup> and differ in the presence or absence of \*w following the vowel. As would be expected, the environment with \*w shows homorganic assimilation with \*w and thus the loss of evidence of \*u in some languages (cf. §4.12.1.2). \*u is also lost after \*t<sup>y</sup> (cf. §4.2.2).

Environments (12) and (13) have in common weakly stressed environment preceding \*-?a. They differ in presence or absence of \*č-onset, which correlates with expected differences in the Lo reflexes.

Environment (14) shows the typical expected reflexes and includes environments other than (1) through (13).

(1) (a) In heavily stressed syllables preceded by \*č(h)-, \*(h, ?)y-, \*(h, ?)ñ-, or \*ñuh-; or (b) in weakly stressed syllables with \*st in the consonantal margin, \*u is reconstructed from Mz u : Ay u : Cq u : Ja u : Do u : Hu u : Ji u : So u : Ix u : Mg u : Lo i : Te u as in set 107 \*čú<sup>4</sup> animal:

5.1.4

Mz	čú	Ji	čú
Ay	čú	So	čú <sup>4</sup>
Cq	čú	Ix	čú
Ja	čú <sup>3</sup>	Mg	čú
Do	čú	Lo	čí
Hu	čú <sup>4</sup>	Te	čú

Additional examples: 86, 105, 110, 118, 158, 170, 200, 243, 252, 261, 263, 268, 322, 332, 339, 367, 391, 394, 426, 427, 549, 556, 668, 715, 721, and 731.

(2) In heavily stressed syllables preceded by \*(?)nt-, \*u is reconstructed from Mz u : Ay u : Cq u : Ja u : Do u : Hu u : Ji u : So u : Ix u : Mg u : Lo i : Te iu as in set 112 \*ču<sup>4</sup>ntú<sup>s1</sup> worm:

Mz	čuntú	Ji	čuntú
Ay	čintú	So	ču <sup>4</sup> ntú <sup>s2</sup>
Cq	čuntú	Ix	čuntú
Ja	čhu <sup>s</sup> ntú <sup>2</sup>	Mg	čuntú
Do	čhintú	Lo	čintí
Hu	ču <sup>4</sup> ntú <sup>s</sup>	Te	čintiu

Additional examples: 183, 319-321, 331, 696, and 717.

(3) Following \*{(n)č, y}a{h, ?}-, \*u is reconstructed from Mz u : Ay o : Cq o : Ja o : Do o : Hu u : Ji o : So o : Ix u : Mg o : Lo i : Te u as in set 298 \*nča<sup>s</sup>hú<sup>s</sup>, ča<sup>s</sup>hú<sup>s</sup> dust:

5.1.4

Mz	čahú	Ji	čó
Ay	čohó	So	ča <sup>3</sup> hó <sup>3</sup>
Cq	čohó	Ix	čuhú
Ja	njho <sup>2</sup>	Mg	čó
Do	njohó	Lo	čihí
Hu	čau <sup>3</sup>	Te	čihu

Additional examples: 54, 65, 70, 300, and 677-680.

(4) Following \*Ca{h, ?}- where C is other than \*(n)č- or \*y-, \*u is reconstructed from Mz u : Ay o : Cq o : Ja o : Do o : Hu u : Ji o : So o : Ix u : Mg o : Lo ɿ : Te u as in set 633 \*wa<sup>3</sup>hú<sup>2</sup> hungry:

Ay	wohó	So	wa <sup>3</sup> hó <sup>1</sup> re <sup>4</sup>
Cq	wohó	Ix	wahú
Ja	whó <sup>2</sup>	Lo	wihí
Do	wohó	Te	?ihu
Hu	waú <sup>3</sup>		

Additional examples: 1, 5, 43, 406, 492, and 612.

(5) In the environment \*nt  hu, \*u is reconstructed from Mz u : Ay u : Cq u : Ja Ø : Do u : Hu Ø : Ji u : So u : Ix u : Mg Ø : Lo ɿ : Te u as in set 397 \*ntu<sup>3</sup>hú<sup>2</sup> long:

Mz	ntuhú	Ji	ntuhú
Ay	ntuhú	So	ntu <sup>3</sup> hú <sup>1</sup>
Cq	ntuhú	Ix	ntuhú
Ja	ndhú <sup>2</sup>	Mg	ntú
Do	nduhú	Lo	ntihí
Hu	ntú <sup>4</sup> <sup>3</sup>	Te	ntuhú

### 5.1.4

Additional examples: 235, 400, and 670.

(6) In the environment \*{t, š}\_\_hu, \*u is reconstructed from Mz u : Ay u : Cq u : Ja u : Do u : Hu Ø : Ji Ø : So u : Ix u : Mg Ø : Lo i : Te u as in set 560 \*šu<sup>4</sup>hý<sup>4</sup> paper:

Mz	šuhý	Ji	šý
Ay	šuhý	So	šu <sup>4</sup> hý <sup>4</sup>
Cq	šuhý	Ix	šuhý
Ja	šu <sup>3</sup> hý <sup>3</sup>	Mg	šý
Do	šuhý	Lo	šihí
Hu	šý <sup>4</sup>	Te	šuhý

Additional example: 601.

(7) In the environment \*{(C)č(C), y}\_\_C'(C)V where C' is other than non-clustered laryngeal, \*u is reconstructed from Mz u : Ay u : Cq u : Ja u : Do u : Hu u : Ji i : So u : Ix u : Mg u : Lo i : Te i as in set 96 \*ču<sup>4</sup>cí<sup>1</sup> glass:

Mz	čuciʃ	Ji	čiciʃ
Ay	čuciʃ	So	ču <sup>4</sup> cí <sup>21</sup>
Ja	ču <sup>3</sup> cí <sup>1</sup>	Mg	čhuciʃ
Do	čuciʃ	Lo	čicé
Hu	ču <sup>4</sup> cí <sup>1</sup>	Te	čiciʃ

Additional examples: 85, 102, 106, 108, 109, 111, 113, 114, 116, 307, 308, 458, 561, 562, and 689.

(8) In the environment \*ñ\_\_hv, \*u is reconstructed from Mz u : Ay u : Cq u : Ja Ø : Do u : Hu Ø : Ji i :

5.1.4

So u : Ix i : Mg Ø : Lo i : Te i as in set 426 \*ñy<sup>3</sup>hy<sup>2</sup>  
four:

Mz	ñy <sup>3</sup> hú	Ji	ñj <sup>3</sup> hú
Ay	ñy <sup>3</sup> hy	So	ñy <sup>3</sup> hy <sup>1</sup>
Cq	ñy <sup>3</sup> hy	Ix	ñj <sup>3</sup> hy
Ja	ñhy <sup>2</sup>	Mg	ñy
Do	ñy <sup>3</sup> hy	Lo	ñj <sup>3</sup> hy
Hu	ñy <sup>4</sup> s	Te	ñj <sup>3</sup> hy

(9) In the environment \*ñ CV where C is not \*h, \*u is reconstructed from Mz i : Ay i : Cq u : Ja i : Do i : Hu u : Ji i : So u : Ix i : Mg u : Lo i : Te i as in set 430 \*ñy<sup>3</sup>nkú<sup>3</sup> fingernail:

Mz	nj <sup>3</sup> nkú	Ji	?inkú
Ay	nj <sup>3</sup> nký	So	ñy <sup>3</sup> nkú <sup>3</sup>
Cq	yunkú	Ix	nj <sup>3</sup> nkú
Ja	nj <sup>3</sup> nký <sup>2</sup>	Mg	ñy <sup>3</sup> nkú
Do	nj <sup>3</sup> nký	Lo	yikí-
Hu	yu <sup>3</sup> nkú <sup>3</sup>	Te	?inkú

Additional examples: 428-436.

(10) In the environment \*(C)t<sup>y</sup>(C)wV, \*u is reconstructed from M<sub>7</sub> Ø : Ay Ø : Cq u : Ja Ø : Do Ø : Hu u : Ji Ø : So u : Ix Ø : Mg Ø : Lo ± : Te u as in set 417 \*nt<sup>y</sup>u<sup>3</sup>wá<sup>1</sup> comes:

5.1.4

Ay	hentiwá	So	ntyu <sup>s</sup> wá <sup>z1</sup>
Cq	sei <sup>e</sup> eintuwá	Ix	cintiwá
Ja	nj <sup>2</sup> wá <sup>1</sup>	Mg	ntiá
Do	njwá	Lo	yančiwó
Hu	nčuá <sup>z1</sup>	Te	nčuwá

Additional examples: 608, 609, 611, and 613.

- (11) In the environment \*(C)t<sup>y</sup>(C)\_\_(C)C'V where C' is other than non-clustered \*w, \*u is reconstructed from Mz Ø :
- Ay Ø : Cq u : Ja Ø : Do e : Hu u : Ji u : So u : Ix Ø :  
Mg u : Lo i : Te u as in set 617 \*t<sup>y</sup>hu<sup>s</sup>nkú<sup>1</sup> gum:

Ay	thinkú	Ji	čhunkú
Cq	thiunkú	Ix	thinkú
Ja	thi <sup>2</sup> nkú <sup>1</sup>	Mg	thiunkú
Do	thenkú	Lo	čhi <sup>2</sup> nkí
Hu	šu <sup>s</sup> nkú <sup>1</sup>	Te	čhunkú

Additional examples: 418, 616, 618, 619, and 620.

- (12) In the environment \*(C)č<sup>?</sup>a, \*u is reconstructed from Mz u : Ay Ø : Cq u : Ja Ø : Do Ø : Hu u : Ji Ø :  
So u : Ix u : Mg Ø : Lo i : Te i as in set 683 \*ya<sup>4</sup>nču<sup>s</sup>čá<sup>1</sup> fence:

Mz	yanču <sup>?</sup> á	So	č <u>?</u> uá <sup>z1</sup>
Ay	yanč <sup>?</sup> á	Ix	nč <u>?</u> uá
Cq	nčuá	Mg	yanč <sup>?</sup> á
Ja	?i <sup>3</sup> ya <sup>2</sup> nč <sup>?</sup> á <sup>1</sup>	Lo	nči <sup>?</sup> wó
Do	č <sup>?</sup> á	Te	?inčiwá
Hu	nč <sup>?</sup> uá <sup>1</sup>		

5.1.4

Additional example: 103.

(13) In the environment \*(C)C''a where C' is other than \*č, \*u is reconstructed from Ay Ø : Cq u : Ja Ø : Do Ø : Hu u : Ji Ø : So u : Ix u : Mg Ø : Lo ɿ : Te u as in set 343 \*nka<sup>4</sup>ncu<sup>4</sup>á<sup>4</sup>, \*ka<sup>4</sup>ncu<sup>4</sup>á<sup>4</sup>, \*-cu<sup>4</sup>á<sup>4</sup> stomach:

Ay	kanc'á	So	nka <sup>4</sup> c'ua <sup>4</sup>
Cq	ka <sup>3</sup> nčuá	Ix	nkac'uaá
Ja	ka <sup>3</sup> nc'á <sup>1</sup>	Mg	c'á
Do	kac'á	Lo	konciwó
Hu	c'ua <sup>4</sup>	Te	kancuwá
Ji	c'á		

Additional example: 628.

(14) In environments other than (1) through (13), \*u is reconstructed from Mz u : Ay u : Cq u : Ja u : Do u : Hu u : Ji u : So u : Ix u : Mg u : Lo ɿ : Te u as in set 419 \*ný<sup>1</sup> year:

Mz	ný	Ji	ný
Ay	ný	So	ný <sup>21</sup>
Cq	ný	Ix	ný
Ja	ný <sup>1</sup>	Mg	ný
Do	ný	Lo	ní
Hu	ný <sup>1</sup>	Te	ný

Additional examples: 3, 4, 23, 24, 46-51, 53, 56, 58, 62, 92, 97, 119, 145, 146, 150-154, 159, 203, 209-214, 221, 226, 248, 250, 257, 258, 267, 272, 278, 281, 284, 291, 294, 326,

#### 5.1.4

341, 347, 350, 354, 355, 359, 364, 365, 375, 379, 380, 395,  
396, 398, 401, 402, 412, 414, 416, 422, 438, 441, 444, 473,  
476, 478, 487-490, 496, 499, 501-503, 535, 539, 548, 550, 551,  
553-555, 557, 559, 563, 566, 568, 573, 587, 588, 597, 598,  
600, 602-607, 623, 636, 640, 651, 662-664, 672, 702, 710, and  
729.

## 5.1.4

## CHART 16

CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*u

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	u	u	u	u	u	u	u	u	u	u	i	u
(2)	u	u	u	u	u	u	u	u	u	u	‡	iu
(3)	u	o	o	o	o	u	o	o	u	o	i	u
(4)	u	o	o	o	o	u	o	o	u	o	‡	u
(5)	u	u	u	∅	u	∅	u	u	u	∅	‡	u
(6)	u	u	u	u	u	∅	∅	u	u	∅	‡	u
(7)	u	u	u	u	u	u	i	u	u	u	i	i
(8)	u	u	u	∅	u	∅	i	u	i	∅	i	i
(9)	i	i	u	i	i	u	i	u	i	u	i	i
(10)	∅	∅	u	∅	∅	u	∅	u	∅	∅	‡	u
(11)	∅	∅	u	∅	e	u	u	u	∅	u	‡	u
(12)	u	∅	u	∅	∅	u	∅	u	u	∅	i	i
(13)	∅	u	∅	∅	u	∅	u	u	∅	∅	‡	u
(14)	u	u	u	u	u	u	u	u	u	u	‡	u

- (1) (a) In heavily stressed syllables preceded by  
       \*(č(h)-, \*(h, ?)y-, \*(h, ?)ñ-, or \*ñuh-; or (b)  
       in weakly stressed syllables with \*st in the  
       consonantal margin
- (2) In heavily stressed syllables preceded by \*(?)nt-
- (3) Following \*{(n)č, y}a{h, ?}-

#### 5.1.4

- (4) Following \*Ca{h, ?}- where C is other than \*(n)č-, \*y-
- (5) In the environment \*nt\_\_hu
- (6) In the environment \*{t, š }\_\_hu
- (7) In the environment \*{(C)č(C), y}\_\_C'(C)V where C' is other than non-clustered laryngeal
- (8) In the environment \*ñ\_\_hV
- (9) In the environment \*ñ\_\_CV where C is not \*h
- (10) In the environment \*(C)t<sup>y</sup>(C)\_wV
- (11) In the environment \*(C)t<sup>y</sup>(C)\_(C)C'V where C' is other than non-clustered \*w
- (12) In the environment \*(C)č\_\_?a
- (13) In the environment \*(C)C'\_\_?a where C' is other than \*č
- (14) In environments other than (1) through (13)

#### 5.2 Vowel Clusters

(\*ia, \*iu, \*ei, \*ai, \*ui, \*ue, \*au, \*ua)

Since a detailed reconstruction of PMaz grammar is yet to be written, the evidence for some of the vowel clusters is meager. For example, only one etymon is presented in this monograph with a \*ui cluster. However, this is simply one example of a class of nouns ending in third person possessive \*-u which form second person possessive with the suffix \*-i (cf. set 284 with 295). Other nouns have third person

## 5.2

possessive endings in \*a or \*e, with second person possessive forms in \*-ai and \*-ei respectively. Adequate attestation of some of these clusters must await the reconstruction of PMaz grammar.

It seems likely that vowel clusters developed from the loss of an intervening consonant. But at the present stage of study it appears that this loss was probably earlier than the PMaz horizon. Gudschinsky in 1956 conjectured that her \*a<sup>i</sup> and \*o might "with further study prove to be reconstructed as disyllabic sequences with two simple vowels separated by a consonant which has been lost in all dialects so far studied" (Gudschinsky 1956:19).

From the extended breadth and depth of the present study it is possible to suggest that this lost consonant was one of the laryngeals, probably \*h. In support of this conjecture the following observations seem pertinent:

(a) fifty-five of the fifty-nine etyma in which vowel clusters are reconstructed have these clusters in the heavily stressed syllable; this suggests the consonant that was lost was in the syllable following the heavily stressed syllable of the word; (b) many of the modern Mazatec languages have weakly stressed personal suffixes following the heavily stressed syllable of the word: e.g., -hi second person sg., -hi 1st person pl. exclusive, -hy second person pl.; (c) in Hu \*-ahú > /au/ (cf. §4.1.1). From these observations a

## 5.2

plausible hypothesis can be suggested: just as \*-VhV > VV, so at an earlier stage \*-VhV > VV. If this can later be demonstrated for the PMaz horizon, then what is presented here as \*VV can simply be restated as \*VhV. But for the present, vowel clusters are postulated for PMaz.

5.2.1 \*ia is reconstructed from Mz ia : Cq e :

Ja ia : Do ia : Hu ia : Ji ia : So a<sup>1</sup> : Ix ia : Mg ia :  
Lo ia : Te ia as in set 586 \*thiá<sup>3</sup>(\*<sup>1</sup>) let's go:

Mz thiá	So tháis̃nas̃s̃
Ja thiá <sup>21</sup>	Ix thiá
Do thiá	Mg thiá
Hu thiá <sup>1</sup>	Te thiá
Ji thiá	

Additional examples: 21, 224, 351, and 477.

5.2.2 \*iu is reconstructed from Mz yu : Ay iu :

Cq iu : Ja iu : Do iu : Hu iu : Ji iu : So yu : Ix iu:  
Mg io : Lo í : Te iu as in set 712 \*nkíu<sup>1</sup> cocoa bean:

Mz nk <sup>2</sup> yú	So k <sup>2</sup> yú <sup>21</sup>
Ay nk <sup>2</sup> iú	Ix nk <sup>2</sup> iú
Cq nkíu	Mg nk <sup>2</sup> io
Ja nk <sup>2</sup> iú <sup>1</sup>	Lo nki <sup>2</sup> i (< Pre-Lo
Do nk <sup>2</sup> iú	*nki <sup>2</sup> í)
Hu nk <sup>2</sup> iú <sup>1</sup>	Te nkiú

Additional examples: 22, 495, 513, and 706.

### 5.2.3

5.2.3 \*ei is reconstructed from Ay e : Ja ei : Do ei :  
 Hu e : Ji i : So e : Ix e : Mg e : Lo i : Te e as in  
 set 84 \*čhu<sup>s</sup>wei<sup>1</sup>(\*<sup>4</sup> - <sup>3</sup>) take it:

Ay	čhuwé	Ji	čhuwi
Ja	čhu <sup>s</sup> wei <sup>2</sup>	Ix	čhuwé
Do	čhuwei	Lo	ntiwi
Hu thue <sup>21</sup> , thu <sup>s</sup> wé <sup>1</sup>			

Additional examples: 264 and 399.

5.2.4 \*ai is reconstructed from two types of non-contrastive sets. The first postulated environment (preceded by \*t<sup>y</sup>h) is attested by only one example. Yet this set fits the development of the \*t<sup>y</sup> environment with its loss of back vowels, cf. §4.2.2.

(1) When preceded by \*t<sup>y</sup>h, \*ai is reconstructed from Ay ai : Cq ai : Ja i : Do i : Hu ai : Ji ai : So i : Ix i : Mg e : Lo e : Te ai as in set 675 \*ya<sup>1</sup>t<sup>y</sup>hai<sup>1</sup> corn stalk:

Ay	yathai	So	ya <sup>21</sup> thi <sup>21</sup>
Cq	yathai	Ix	yathi
Ja	ya <sup>1</sup> thi <sup>1</sup>	Mg	yathé
Do	yathi	Lo	yočhé
Hu	ya <sup>1</sup> čhai <sup>1</sup>	Te	čačhai
Ji	yačhai		

(2) Elsewhere, \*ai is reconstructed from Mz e :  
 Ay ai : Cq ei : Ja ai : Do ai : Hu ai : Ji ai : So ai :

5.2.4

Ix ai : Mg e : Lo e : Te i as in set 466 \*-shai<sup>2</sup> look for:

Ay	tihwinkankishai	Ji	kihnčishai
Cq	kuankasei	So	ti <sup>4</sup> nči <sup>4</sup> chaf <sup>1</sup>
Ja	ti <sup>1</sup> hwí <sup>2</sup> ngi <sup>2</sup> shai <sup>2</sup>	Ix	c'ahwinkisai
Do	tihwingishai	Lo	kowikoche <sup>2</sup> e
Hu	wa <sup>21</sup> shai <sup>2</sup>	Te	khuinčishé

Additional examples: 124, 125, 176, 188, 228, 230, 234, 283, 363, 368, 542, 574, and 671.

5.2.5 \*ui is reconstructed from Ja ui : Hu ui : Lo i in set 295 \*ncu<sup>4</sup>kui<sup>3</sup>, \*cu<sup>4</sup>kui<sup>3</sup> foot (your sg.):

Ja	cu <sup>3</sup> kui <sup>2</sup>	Lo	ncokí
Hu	ncu <sup>4</sup> kui <sup>3</sup>		

5.2.6 \*ue at present is attested in only one set [for discussion see §5(1)]; it is reconstructed from Mz ie : Ay e : Cq ue : Ja e : Do e : Hu ue : Ji e : So ue : Ix ue : Mg e : Lo a : Te e in set 467 \*shué<sup>2</sup> hot:

Mz	chié	Ji	shé
Ay	shé	So	sue <sup>1</sup>
Cq	sué	Ix	sué
Ja	shé <sup>2</sup>	Mg	sé
Do	shé	Lo	cháyo
Hu	shué <sup>2</sup> , shé <sup>2</sup>	Te	ché

5.2.7 \*au is reconstructed from three types on non-contrastive sets. The complementary environments are

5.2.7

summarized in Chart 17.

(1) When preceded by \*šh or \*Cñ, \*au is reconstructed from Mz o : Ay o : Cq u : Ja u : Do u : Hu au : Ji o : So o : Ix u : Mg u : Lo i : Te u as in set 509 \*šhay<sup>48</sup> six:

Mz	šhó	Ji	hó
Ay	hó	So	hó <sup>49</sup>
Cq	šhy	Ix	hy
Ja	hy <sup>2</sup>	Mg	hy
Do	hy	Lo	hi
Hu	hay <sup>48</sup>	Te	hy

Additional examples: 552, 719, and 720.

(2) When preceded by \*č or \*čh, \*au is reconstructed from Mz o : Ay o : Cq o : Ja o : Do o : Hu au : Ji o : So o : Ix u : Mg o : Lo i : Te u as in set 75 \*čhaú<sup>41</sup> egg:

Mz	čhó	Ji	čhó
Ay	čhó	So	čhó <sup>42</sup>
Cq	čhó	Ix	čhú
Ja	čhó <sup>41</sup>	Mg	čhó
Do	čhó	Lo	čhí
Hu	čhaú <sup>43</sup>	Te	čhú

Additional example: 71

(3) Elsewhere, \*au is reconstructed from Mz o : Ay o : Cq o : Ja o : Do o : Hu au : Ji o : So o : Ix u : Mg o : Lo i : Te u as in set 614 \*t<sup>y</sup>haú<sup>1</sup> cornhusk:

5.2.7

Mz	thyó	Ji	čhó
Ay	thió	So	thyó <sup>21</sup>
Cq	thió	Ix	thiú
Ja	thió <sup>1</sup>	Mg	čhó, thió
Do	thió	Lo	čhf
Hu	čhau <sup>1</sup> , šhau <sup>1</sup>	Te	čhú

Additional examples: 18, 19, 128, 165, 177, 184, 189, 217, 222, 238, 342, 350, 575, 576, 615, and 723.

CHART 17

CORRESPONDENCE SETS FOR THE  
RECONSTRUCTION OF \*au

	Mz	Ay	Cq	Ja	Do	Hu	Ji	So	Ix	Mg	Lo	Te
(1)	o	o	u	u	u	au	o	o	u	u	‡	u
(2)	o	o	o	o	o	au	o	o	u	o	i	u
(3)	o	o	o	o	o	au	o	o	u	o	‡	u

(1) When preceded by \*šh or \*čñ

(2) When preceded by \*č or \*čh

(3) Elsewhere

5.2.8 \*ua is reconstructed from Mz ua : Ay a : Cq ua : Ja a : Do a : Hu ua : Ji a : So ua : Ix ua : Mg a : Lo o : Te a as in set 25 \*chuá<sup>3</sup> gives:

### 5.2.8

Mz	chuá	So	chwá
Ay	shá	Ix	chuá
Cq	suá-	Mg	kichá
Ja	chá <sup>2</sup>	Lo	chó
Do	chá	Te	chá-
Hu	chuá <sup>3</sup>		

Additional examples: 87, 217, and 352.

## CHAPTER VI

### RECONSTRUCTION OF PROTO-MAZATEC STRESSES AND TONES

PMaz had two degrees of word stress with heavy stress on the last syllable of the stem; weak stress occurred elsewhere. This system of stress is patterned after the system found in the daughter languages. In Cq a few forms have a stress different from this general pattern; the stress of these Cq forms is not accounted for in this study.

Gudschinsky (1959:18-20) reconstructed PMaz tones from two daughter languages, Hu and So. The present study further substantiates her word in two ways: (1) it expands the corpus to include a number of additional cognate sets; and (2) it broadens the base to include an additional daughter language, Ja. (See §2 and §3.3 for discussion of tone systems and tone symbols.)

For the most part the new tone data from Ja fit neatly into the PMaz tone system presented by Gudschinsky (1959). In a few places, however, I have posited different tone etyma, because of the possibility of choosing various internal tone reconstructions in So to match with the Hu and Ja reflexes. (For discussion of the So evidence see §3.3.) This

has permitted reconstruction of tone glides only with stressed syllables. Horizons earlier than PMaz may not have had tone glides at all (if this is true it accounts for the difficulty of finding extensive sets to justify the tone glide reconstructions). PMaz tone glides may well have developed from syllable fusion due to loss of an intervening consonant (which may have been one of the laryngeals \*h or \*?). This conjecture is based on the fact that a few glides arise in such a way in daughter Mazatec languages from PMaz; cf. set 594. Gudschinsky (1959:48-49) reconstructs only a register system without glides for Proto-Popolocan-Mixtecan, but the details of how the PMaz tone glides fit into this system remain to be worked out.

In the tone reconstruction in this chapter I have not attempted to account for the CV<sup>0</sup>V environments because of the difficulty of interpreting the syllable structure of the reflexes (cf. §4.1.2).

In the discussion that follows I have listed as examples only the more certain tone reconstructions. In the cognate sets in the Appendix, I have reconstructed tones on etyma that are to some extent indeterminate because of the lack of decisive evidence. In these instances I have chosen the most likely reconstruction and indicated other alternatives in the notes following the reflexes.

For simplicity of presentation, the discussion that follows treats tone reconstruction of monosyllables before disyllables, although the underlying patterns of tone correspondences are the same for both. However, complications caused by syllable loss in some modern Mazatec languages and the innovation of an intricate tone sandhi system in Soyaltepec Mazatec (see §3.3) make it expedient to present the proto-disyllables after the tone correspondences in monosyllables are clearly seen.

### 6.1 Monosyllables

#### 6.1.1 Level Tones on Monosyllables

6.1.1.1 \*<sup>1</sup> in monosyllables is reconstructed from Ja<sup>1</sup>:

Hu<sup>1</sup> : So<sup>21</sup> as in set 419 \*ný<sup>1</sup> year:

Ja	ný <sup>1</sup>	So	ný <sup>21</sup>
Hu	ný <sup>1</sup>		

Additional examples: 17, 71, 103, 127, 136, 142, 148, 153, 155, 165, 179, 187, 305, 416, 436, 452, 454, 457, 461, 483, 491, 505, 510, 526, 540, 543, 550, 551, 585, 586, 614, 623, 627, 654, 661, 704, 708, 712, and 721.

6.1.1.2 \*<sup>2</sup> in monosyllables is reconstructed from Ja<sup>2</sup>:

Hu<sup>2</sup> : So<sup>1</sup> as in set 135 \*hmá<sup>2</sup> black:

Ja	hmá <sup>2</sup>	So	hmá <sup>1</sup>
Hu	hmá <sup>2</sup>		

### 6.1.1.2

Additional examples: 23, 24, 47, 74, 78, 87, 128, 152, 166, 169, 291, 344, 466, 467, 489, 508, 516, 524, 569, 591, 701, and 719.

6.1.1.3 \*<sup>3</sup> in monosyllables is reconstructed from Ja <sup>2</sup>:

Hu <sup>3</sup> : So <sup>3</sup> as in set 570 \*té<sup>3</sup> ten:

Ja té <sup>2</sup>	So té <sup>3</sup>
Hu té <sup>3</sup>	

Additional examples: 11, 12, 50, 61, 79, 105, 137, 143, 144, 149, 165, 167, 176, 227, 287, 296, 309, 409, 437, 446, 449, 450, 459, 465, 482, 487, 493, 511, 532, 542, 545, 546, 550, 554, 574, 583, 586, 592, 596, 610, 690, 692, 698, 699, 709, 717, and 723.

6.1.1.4 \*<sup>4</sup> in monosyllables is reconstructed from  
Ja <sup>3</sup> : Hu <sup>4</sup> : So <sup>4</sup> as in set 107 \*čú<sup>4</sup> animal:

Ja čú <sup>3</sup>	So čú <sup>4</sup>
Hu čú <sup>4</sup>	

Additional examples: 7, 14, 22, 39, 72, 73, 123, 141, 143, 154, 157, 177, 182, 187, 216, 253, 288, 289, 293, 303, 369, 385, 403, 409, 416, 479, 480, 482, 485, 497, 498, 507, 511, 525, 528, 534, 535, 537, 539, 551, 579, 580, 597, 622, 686, 700, 703, 705, 716, 718, and 730.

### 6.1.2 Tone Glides on Monosyllables

Gudschinsky (1959:18) reconstructed six tone glides,

## 6.1.2

which may well be correct. However, three of these glides are poorly attested. \*<sup>21</sup> with the correspondence of Ja <sup>1</sup> : Hu <sup>1</sup> : So <sup>32</sup> is attested only by sets 538 and 553; \*<sup>32</sup> with the correspondence of Ja <sup>2</sup> : Hu <sup>2</sup> : So <sup>32</sup> is attested only by set 6; \*<sup>42</sup> with the correspondence Ja <sup>2</sup> : Hu <sup>43</sup> : So <sup>31</sup> is attested only by one monosyllable (653) and one disyllable (639). These are tentatively reconstructed in this manner in the Appendix although they are not included in the following discussion of the better attested glides. All the poorly attested glides involve tone <sup>2</sup>; the better attested glides are \*<sup>31</sup>, \*<sup>41</sup>, and \*<sup>43</sup>.

6.1.2.1 \*<sup>31</sup> in monosyllables is reconstructed from Ja <sup>2</sup> : Hu <sup>3</sup> : So <sup>32</sup> in set 301 \*khí<sup>31</sup> far:

Ja khí <sup>2</sup>	So khí <sup>32</sup>
Hu khí <sup>3</sup>	

Additional examples: 119, 146, 164, 514, and 605.

6.1.2.2 \*<sup>41</sup> in monosyllables is reconstructed from Ja <sup>31</sup> : Hu <sup>42</sup> : So <sup>42</sup> as in set 86 \*čhú<sup>41</sup> woman, wife:

Ja čhú <sup>31</sup>	So čhú <sup>42</sup>
Hu čhú <sup>42</sup>	

Additional examples: 75, 283, and 302.

6.1.2.3 \*<sup>43</sup> in monosyllables is reconstructed from Ja <sup>2</sup> : Hu <sup>43</sup> : So <sup>32</sup> as in set 578 \*thé<sup>43</sup> itch:

### 6.1.2.3

Ja thé<sup>2</sup>

So thé<sup>3 2</sup>

Hu thé<sup>4 3</sup>

Additional examples: 20, 42, 175, 194, 415, 460, 470, 509, 648, 711, and 724.

### CHART 18

#### CORRESPONDENCE SETS FOR THE RECONSTRUCTION OF TONE IN MONOSYLLABLES

PMaz	Ja	Hu	So
* <sup>1</sup>	1	1	2 1
* <sup>2</sup>	2	2	1
* <sup>3</sup>	2	3	3
* <sup>4</sup>	3	4	4
* <sup>3 1</sup>	2	2	3 2
* <sup>4 1</sup>	3 1	4 2	4 2
* <sup>4 3</sup>	2	4 3	3 2

### 6.2 Disyllables

Some disyllabic tone combinations are poorly attested and are not treated in the following discussion although they are tentatively reconstructed in the Appendix:

\*<sup>4</sup> - <sup>2</sup> is poorly attested; expected reflexes are Ja <sup>3</sup> - <sup>2</sup>: Hu <sup>4</sup> - <sup>2</sup>: So <sup>4</sup> - <sup>1</sup>, which are reflected in part in sets 15, 69, 222, and 383.

## 6.2

\*<sup>3</sup> - <sup>4</sup> is only partially evidenced in set 603.

\*<sup>2</sup> - <sup>3</sup> is only partially evidenced in set 410.

\*<sup>1</sup> - <sup>2</sup> is only partially evidenced in set 672.

\*<sup>4</sup> - <sup>4<sub>3</sub></sup> is only partially evidenced in set 304.

\*<sup>3</sup> - <sup>4<sub>3</sub></sup> may be evidenced in set 639.

6.2.1 \*<sup>4</sup> - <sup>4</sup> is reconstructed from four types of non-contrastive sets (the first three involve the loss or metathesis of \*h, cf. §4.1.1):

(1) In environments of \*šVhV and \*CV{w, n}V, \*<sup>4</sup> - <sup>4</sup> is reconstructed from Ja <sup>3</sup> - <sup>3</sup> : Hu <sup>4</sup> : So <sup>4</sup> - <sup>4</sup> as in set 560 \*šu<sup>4</sup>hú<sup>4</sup> paper:

Ja	šu <sup>3</sup> hú <sup>3</sup>	So	šu <sup>4</sup> hú <sup>4</sup>
Hu	šú <sup>4</sup>		

Additional examples: 85, 114, 332, 364, and 609.

(2) In environments of \*{y, nC}VhV when the vowels contiguous to \*h are both front or both back, \*<sup>4</sup> - <sup>4</sup> is reconstructed from Ja <sup>3</sup> : Hu <sup>4</sup> : So <sup>4</sup> - <sup>4</sup> as in set 406 \*nty<sup>4</sup>a<sup>4</sup>hú<sup>4</sup> stone:

Ja	ndhió <sup>3</sup>	So	ntyá <sup>4</sup> hó <sup>4</sup>
Hu	lau <sup>4</sup>		

Additional examples: 218, 300, 342, 378, 400, 405, 413, and 687.

(3) In the environment \*nVhV when the vowels contiguous to \*h are both front or both back, \*<sup>4</sup> - <sup>4</sup> is reconstructed from Ja <sup>3</sup> : Hu <sup>4</sup> - <sup>4</sup> : So <sup>4</sup> - <sup>4</sup> as in set 329 \*ni<sup>4</sup>hí<sup>4</sup> corn:

### 6.2.1

Ja nhí<sup>3</sup>

So ni<sup>4</sup>hi<sup>4</sup>

Hu ni<sup>4</sup>hi<sup>4</sup>

Additional examples: 264 and 310.

(4) In environments other than (1) through (3), \*<sup>4</sup> - <sup>3</sup> is reconstructed from Ja <sup>3</sup> - <sup>3</sup> : Hu <sup>4</sup> - <sup>4</sup> : So <sup>4</sup> - <sup>4</sup> as in set 275 \*na<sup>4</sup>ší<sup>4</sup> cliff, mountain:

Ja na<sup>3</sup>ší<sup>3</sup>

So na<sup>4</sup>ší<sup>4</sup>

Hu na<sup>4</sup>ší<sup>4</sup>

Additional examples: 9, 67, 81, 83, 97, 100, 183, 204, 208, 209, 255, 257, 260, 263, 267-269, 271, 274, 278, 279, 284, 308, 330, 334-336, 338, 339, 352, 367, 377, 379, 433, 435, 444, 501-504, 523, 561-563, 619, and 620.

6.2.2 \*<sup>4</sup> - <sup>3</sup> is reconstructed from two types of non-contrastive sets:

(1) In the environment \*ntVhV when the vowels contiguous to \*h are both front or both back, \*<sup>4</sup> - <sup>3</sup> is reconstructed from Ja <sup>3</sup> : So <sup>4</sup> - <sup>3</sup> in set 375 \*nta<sup>4</sup>haf<sup>3</sup> sugar cane:

Ja ndhai<sup>3</sup>

So nta<sup>4</sup>hi<sup>3</sup>

(2) elsewhere, \*<sup>4</sup> - <sup>3</sup> is reconstructed from Ja <sup>3</sup> - <sup>3</sup> : Hu <sup>4</sup> - <sup>3</sup> : So <sup>4</sup> - <sup>3</sup> as in set 363 \*ni<sup>4</sup>sé<sup>3</sup> bird:

Ja ni<sup>3</sup>sé<sup>3</sup>

So ni<sup>4</sup>sé<sup>3</sup>

Hu ni<sup>4</sup>sé<sup>3</sup>

Additional examples: 125, 126, 186, 201, 259, 282, 295, 331, 337, 366, 394, 402, 418, 425, and 566.

### 6.2.3

6.2.3 \*<sup>4</sup> - <sup>1</sup> is reconstructed from three types of non-contrastive sets:

(1) In environments of \*nCVhV when the vowels contiguous to \*h are both front or both back, \*<sup>4</sup> - <sup>1</sup> is reconstructed from Ja <sup>s1</sup> : Hu <sup>42</sup> : So <sup>4</sup> - <sup>21</sup> in set 594 \*ti<sup>4</sup>hí<sup>1</sup>, \*nti<sup>4</sup>hí<sup>1</sup> cooking pot:

Ja	ndhi <sup>s1</sup>	So	ti <sup>4</sup> hí <sup>21</sup>
Hu	ti <sup>4</sup> 2		

(2) In environments \*CVyV or \*CVhV when the vowels contiguous to \*h are both front or both back, \*<sup>4</sup> - <sup>1</sup> is reconstructed from Ja <sup>s</sup> - <sup>1</sup> : Hu <sup>42</sup> : So <sup>4</sup> - <sup>21</sup> as in set 392 \*nti<sup>4</sup>yá<sup>1</sup> road:

Ja	ni <sup>s</sup> yá <sup>1</sup>	So	nti <sup>4</sup> yá <sup>21</sup>
Hu	ntiá <sup>4</sup> 2		

Additional example: 66.

(3) In environments other than the preceding two, \*<sup>4</sup> - <sup>1</sup> is reconstructed from Ja <sup>s</sup> - <sup>1</sup> : Hu <sup>4</sup> - <sup>1</sup> : So <sup>4</sup> - <sup>21</sup> as in set 277 \*na<sup>4</sup>sí<sup>1</sup> deer:

Ja	na <sup>s</sup> sí <sup>1</sup>	So	na <sup>4</sup> sí <sup>21</sup> <u>horse</u>
Hu	na <sup>4</sup> sí <sup>1</sup> <u>horse</u>		

Additional examples: 8, 68, 82, 96, 184, 220, 254, 256, 261, 266, 270, 272, 273, 280, 281, 306, 408, 431, 432, 434, 443, 499, 530, 616, and 618.

6.2.4 \*<sup>8</sup> - <sup>3</sup> is reconstructed from three types of non-contrastive sets:

## 6.2.4

(1) In environments \*CV{w, ñ}V, \*<sup>s</sup> - <sup>s</sup> is reconstructed from Ja <sup>z</sup> - <sup>z</sup> : Hu <sup>s</sup> : So <sup>s</sup> - <sup>s</sup> as in set 608 \*tya<sup>s</sup>wá<sup>s</sup>, \*tyu<sup>s</sup>wá<sup>s</sup> white:

Ja	ta <sup>z</sup> wá <sup>z</sup>	So	tya <sup>s</sup> wá <sup>s</sup>
Hu	čuá <sup>s</sup>		

Additional examples: 322 and 611.

(2) In environment \*{y, ñ, nC}VhV when the vowels contiguous to \*h are both front or both back, \*<sup>s</sup> - <sup>s</sup> is reconstructed from Ja <sup>z</sup> : Hu <sup>s</sup> : So <sup>s</sup> - <sup>s</sup> as in set 678

\*ya<sup>s</sup>hu<sup>s</sup> meat:

Ja	yhó <sup>z</sup>	So	ya <sup>s</sup> hó <sup>s</sup>
Hu	yaú <sup>s</sup>		

Additional examples: 298, 427, and 685.

(3) In environments other than the preceding two, \*<sup>s</sup> - <sup>s</sup> is reconstructed from Ja <sup>z</sup> - <sup>z</sup> : Hu <sup>s</sup> - <sup>s</sup> : So <sup>s</sup> - <sup>s</sup> as in set 62 \*ča<sup>s</sup>ký<sup>s</sup> holy:

Ja	ča <sup>z</sup> ký <sup>z</sup>	So	ča <sup>s</sup> ký <sup>s</sup>
Hu	či <sup>s</sup> ký <sup>s</sup>		

Additional examples: 63, 64, 90, 160, 203, 237, 243, 244, 294, 307, 318, 324, 327, 345, 348, 375, 388, 389, 429, 430, 473, 478, 490, 527, 533, 556, 593, 604, 631, 642, 646, 689, and 720.

6.2.5 \*<sup>s</sup> - <sup>z</sup> is reconstructed from three types of non-contrastive sets:

## 6.2.5

(1) In the environment \*CVwV, \*<sup>3</sup> - <sup>2</sup> is reconstructed from Ja <sup>2</sup> - <sup>2</sup> : Hu <sup>4s</sup> : So <sup>3</sup> - <sup>1</sup> as in set 441 \*su<sup>3</sup>wá<sup>2</sup>, \*sa<sup>3</sup>wá<sup>2</sup> ashamed:

Ja	su <sup>3</sup> wá <sup>2</sup>	So	sa <sup>3</sup> wá <sup>1</sup>
Hu    suá <sup>4s</sup>			

Additional example: 488.

(2) In environments \*{ñ, m, y, w, nC}VhV, \*<sup>3</sup> - <sup>2</sup> is reconstructed from Ja <sup>2</sup> : Hu <sup>4s</sup> : So <sup>3</sup> - <sup>1</sup> as in set 426 \*ñy<sup>3</sup>hy<sup>2</sup> four:

Ja	ñhy <sup>2</sup>	So	ñy <sup>3</sup> hy <sup>1</sup>
Hu    ñy <sup>4s</sup>			

Additional examples: 228, 239, 240, 299, 346, 397, 633, and 677.

(3) In environments other than the preceding two, \*<sup>3</sup> - <sup>2</sup> is reconstructed from Ja <sup>2</sup> - <sup>2</sup> : Hu <sup>3</sup> - <sup>2</sup> : So <sup>3</sup> - <sup>1</sup> as in set 469 \*si<sup>3</sup>né<sup>2</sup> yellow:

Ja	si <sup>2</sup> né <sup>2</sup>	So	si <sup>3</sup> né <sup>1</sup>
Hu    si <sup>3</sup> né <sup>2</sup>			

Additional examples: 145, 207, 319, and 347.

6.2.6 \*<sup>3</sup> - <sup>1</sup> is reconstructed from three types of non-contrastive sets:

(1) In environments \*CV{y, w}V, \*<sup>3</sup> - <sup>1</sup> is reconstructed from Ja <sup>2</sup> - <sup>1</sup> : Hu <sup>21</sup> : So <sup>3</sup> - <sup>21</sup> as in set 417 \*nt<sup>y</sup>u<sup>3</sup>wá<sup>1</sup> comes:

## 6.2.6

Ja  $n\acute{i}^2wá^1$

So  $ntyu^3wá^21$

Hu  $n\acute{c}uá^21$

Additional examples: 250, 260, 549, and 607.

(2) In environments \*{w, nC}VhV when the vowels contiguous to \*h are both front or both back, \*<sup>s</sup> - <sup>1</sup> is reconstructed from Ja <sup>1</sup> : Hu <sup>21</sup> : So <sup>s</sup> - <sup>21</sup> as in set 297  
\*nča<sup>s</sup>há<sup>1</sup> corn drink (atole):

Ja  $n\acute{j}há^1$

So  $n\acute{c}a^s há^21$

Hu  $n\acute{c}á^21$

Additional examples: 301 and 632.

(3) In environments other than the preceding two, \*<sup>s</sup> - <sup>1</sup> is reconstructed from Ja <sup>2</sup> - <sup>1</sup> : Hu <sup>s</sup> - <sup>1</sup> : So <sup>s</sup> - <sup>21</sup> as in set 248 \*na<sup>s</sup>šú<sup>1</sup> flower:

Ja  $n\acute{a}^2\acute{š}ú^1$

So  $n\acute{a}^s \acute{š}ú^21$

Hu  $n\acute{a}^s \acute{š}ú^1$

Additional examples: 4, 19, 35, 51, 84, 95, 197, 198, 229, 234, 242, 247, 249, 324, 361, 399, 428, 438, 440, 494, 495, 519, 521, 555, 557, 572, 617, 634, 636, 638, 651, and 658.

6.2.7 \*<sup>2</sup> - <sup>4</sup> is reconstructed from Ja <sup>2</sup> - <sup>s</sup> : Hu <sup>2</sup> - <sup>4</sup> : Pre-So-\*<sup>1</sup> - <sup>4</sup> as in set 350 \*nku<sup>2</sup>hñá<sup>4</sup> yesterday:

Ja  $n\acute{g}u^2hñá^3$

So  $n\acute{k}u^2hñá^4$  (< Pre-So

Hu  $n\acute{k}u^2hñá^4$

\*<sup>1</sup> - <sup>4</sup>)

Additional examples: 205, 351, and 517.

6.2.8 \*<sup>1</sup> - <sup>4</sup> is reconstructed from Ja <sup>1</sup> - <sup>s</sup> : Hu <sup>1</sup> - <sup>4</sup> : Pre-So \*<sup>21</sup> - <sup>4</sup> as in set 590 \*ti<sup>1</sup>wa<sup>4</sup> pig louse:

## 6.2.8

Ja	ti <sup>1</sup> wa <sup>s</sup>	So	ti <sup>3</sup> wa <sup>24</sup> (< Pre-So
Hu	ti <sup>1</sup> wa <sup>4</sup>		* <sup>21</sup> - <sup>4</sup> )

Additional examples: 56, 88, 356, 453, 458, 552, 568, 649, and 715.

6.2.9 \*<sup>1</sup> - <sup>3</sup> is reconstructed from Ja <sup>1</sup> - <sup>2</sup> : Hu <sup>2</sup> - <sup>3</sup> : Pre-So \*<sup>21</sup> - <sup>3</sup> as in set 46 \*cu<sup>1</sup>wa<sup>s</sup> walk:

Ja	cu <sup>1</sup> wa <sup>2</sup>	So	cu <sup>3</sup> wa <sup>2</sup> (< Pre-So
Hu	cu <sup>2</sup> wa <sup>3</sup>		* <sup>21</sup> - <sup>3</sup> )

Additional examples: 57, 102, 171, 188, 455, 625, 671, and 676.

6.2.10 \*<sup>1</sup> - <sup>1</sup> is reconstructed from Ja <sup>1</sup> - <sup>1</sup> : Hu <sup>1</sup> - <sup>1</sup> : So <sup>21</sup> - <sup>21</sup> as in set 210 \*ku<sup>1</sup>tú<sup>1</sup> toad:

Ja	ča <sup>1</sup> ku <sup>1</sup> tú <sup>1</sup>	So	ku <sup>21</sup> tú <sup>21</sup>
Hu	ku <sup>1</sup> tú <sup>1</sup>		

Additional examples: 386, 395, 396, 673, 675, and 722.

6.2.11 \*<sup>4</sup> - <sup>31</sup> is reconstructed from Ja <sup>3</sup> - <sup>2</sup> : Hu <sup>4</sup> - <sup>3</sup> : So <sup>4</sup> - <sup>32</sup> as in set 112 \*ču<sup>4</sup>ntú<sup>31</sup> worm:

Ja	čhu <sup>3</sup> ntú <sup>2</sup>	So	ču <sup>4</sup> ntú <sup>32</sup>
Hu	ču <sup>4</sup> ntú <sup>3</sup>		

Additional example: 113.

6.2.12 \*<sup>3</sup> - <sup>31</sup> is reconstructed from two types of non-contrastive sets:

(1) In the environment \*CVñV, \*<sup>3</sup> - <sup>31</sup> is reconstructed from Hu <sup>3</sup> : So <sup>3</sup> - <sup>32</sup> in set 621 \*t<sup>y</sup>i<sup>3</sup>ñá<sup>31</sup> near:

### 6.2.12

Hu čjá<sup>s</sup>

So ti<sup>s</sup>ñá<sup>s<sub>2</sub></sup>

(2) Elsewhere, \*<sup>s</sup> - <sup>s<sub>1</sub></sup> is reconstructed from Ja <sup>s</sup> - <sup>s</sup> :

Hu <sup>s</sup> - <sup>s</sup> : So <sup>s</sup> - <sup>s<sub>2</sub></sup> as in set 326 \*ni<sup>s</sup>sú<sup>s<sub>1</sub></sup> gourd:

Ja ni<sup>s</sup>sú<sup>s</sup>

So ni<sup>s</sup>sú<sup>s<sub>2</sub></sup>

Hu ni<sup>s</sup>sú<sup>s</sup>

Additional examples: 34, 317, 321, and 541.

6.2.13 \*<sup>s</sup> - <sup>4s</sup> is reconstructed from three types of non-contrastive sets:

(1) In the environment \*?VCV, \*<sup>s</sup> - <sup>4s</sup> is reconstructed from Ja <sup>s</sup> : Hu <sup>s</sup> - <sup>4s</sup> : So <sup>s</sup> - <sup>s<sub>2</sub></sup> as in set 695 \*?i<sup>s</sup>ntá<sup>4s</sup> soft:

Ja ntá<sup>s</sup>

So ?i<sup>s</sup>ntá<sup>s<sub>2</sub></sup>

Hu ?i<sup>s</sup>ntá<sup>4s</sup>

Additional example: 696.

(2) In the environment \*ñVhV when the vowels contiguous to \*h are both front or both back, and in the environment \*?yVCV, \*<sup>s</sup> - <sup>4s</sup> is reconstructed from Ja <sup>s</sup> : Hu <sup>4s</sup> :

So <sup>s</sup> - <sup>s<sub>2</sub></sup> as in set 728 \*ya<sup>s</sup>ší<sup>4s</sup> sweet:

Ja ší<sup>s</sup>

So ?a<sup>s</sup>ší<sup>s<sub>2</sub></sup>

Hu ší<sup>4s</sup>

Additional examples: 421 and 729.

(3) In environments other than the preceding two, \*<sup>s</sup> - <sup>4s</sup> is reconstructed from Ja <sup>s</sup> - <sup>s</sup> : Hu <sup>s</sup> - <sup>4s</sup> :

So <sup>s</sup> - <sup>s<sub>2</sub></sup> as in set 422 \*ñá<sup>s</sup>tú<sup>4s</sup> seven:

Ja ya<sup>s</sup>tú<sup>s</sup>

So ya<sup>s</sup>tú<sup>s<sub>2</sub></sup>

Hu ñá<sup>s</sup>tú<sup>4s</sup>

Additional examples: 211 and 641.

6.2.14

Additional example: 582.

**CHART 19**

CORRESPONDENCE SETS FOR THE RECONSTRUCTION  
OF TONE IN DISYLLABLES

The environments are indicated in the table by letters in the far right column. Four classes of environments are relevant in the reconstruction of tone:

- (a) (1) \*{š, c, č}VhV with the vowels contiguous to  
       \*h both front or both back; (2) \*{nti-, nte-,  
       ti-}yV; (3) \*CV{y, w}V; (4) \*{t<sup>y</sup>, n}VñV

(b) (1) \*{y, w, m, ñ, nC}VhV with the vowels contiguous  
       to \*h both front or both back; (2) \*?yVCV

(c) (1) \*nVhV with the vowels contiguous to \*h both  
       front or both back; (2) \*?VCV

(d) Environments other than (a) through (c) (except  
       that environment \*CV?V is not treated in this  
       study)

6.2.14

<u>PMaz</u>	<u>Ja</u>	<u>Hu</u>	<u>So</u>	<u>Environment</u>
* <sup>4</sup> - 4	s - s	4	4 - 4	a
	s	4	4 - 4	b
	s	4 - 4	4 - 4	c
	s - s	4 - 4	4 - 4	d
* <sup>4</sup> - 3	s 2		4 - s	b
	s - 2	4 - s	4 - s	d
* <sup>4</sup> - 1	s 1	4 2	4 - 21	b
	s - 1	4 2	4 - 21	a
	s - 1	4 - 1	4 - 21	d
* <sup>3</sup> - 3	s - s	s	s - s	a
	s	s	s - s	b
	s - s	s - s	s - s	d
* <sup>3</sup> - 2	s - s	4 3	s - 1	a
	s	4 3	s - 1	b
	s - s	s - 2	s - 1	d
* <sup>3</sup> - 1	s - 1	s 1	s - 21	a
	1	s 1	s - 21	b
	s - 1	s - 1	s - 21	d
* <sup>2</sup> - 4	s - s	s - 4	Pre-So * <sup>1</sup> - 4	d
* <sup>1</sup> - 4	1 - s	1 - 4	Pre-So * <sup>21</sup> - 4	d

6.2.14

<u>PMaz</u>	<u>Ja</u>	<u>Hu</u>	<u>So</u>	<u>Environment</u>
* <sup>1</sup> - 3	1 - 2	2 - 3	Pre-So * <sup>21</sup> - 3	d
* <sup>1</sup> - 1	1 - 1	1 - 1	21 - 21	d
* <sup>4</sup> - 21	3 - 2	4 - 3	4 - 32	d
* <sup>3</sup> - 31		3	3 - 32	a
	2 - 2	3 - 3	3 - 32	d
* <sup>3</sup> - 43	2	3 - 43	3 - 32	c
	2	43	3 - 32	b
	2 - 2	3 - 43	3 - 32	d
* <sup>1</sup> - 43	1 - 2	1 - 43	21 - 32	d

CHAPTER VII  
REFLEXES OF PROTO-MAZATEC PHONEMES IN  
THE DAUGHTER LANGUAGES

This chapter outlines the development of PMaz phonemes in each daughter language. Illustrative examples of sound developments are not cited since these may easily be found by consulting the appropriate section in the reconstruction chapters (Chapters IV through VI). Nor does this discussion treat the plausibility of environments (also covered in the reconstruction chapters), or the intermediary reconstructions, for which see Chapter III. The development of tones and stresses is not included since this can readily be seen in Chapter VI, particularly Charts 18 and 19.

In the following discussion N represents any nasal, C any consonant, V any vowel, V oral vowel replacing its nasalized counterpart, and ~ preceding a sound indicates metathesis. The absence of an environmental statement after the first reflex for the proto-phoneme indicates that this reflex occurs in environments other than those specified immediately below.

7.1 Mazatlán Reflexes

<u>PMaz</u>	<u>Mz</u>	<u>Environment</u>
*t	t	
Ø		In *nt- clusters followed by *-V <sup>y</sup> V̄
h		In cluster with dorsal stops
*t <sup>y</sup>	t	Before front vowels
	ti/y	Before back vowels
	h	In cluster with dorsal stops
	l	The *nt <sup>y</sup> cluster > /l/ preceding *i or *-ahu
*k	k	
*k <sup>w</sup>	kw	
*c	c	
*χ	χ	
*s	s	
	h	In cluster with *c or *χ
	c	In the *sh cluster
Ø		In the *st cluster
*g	g	
Ø		In the *gh cluster
*m	m	
*n	n	
Ø		In the *{h, }n clusters preceding front vowels, or in the clusters *nkh and *nt <sup>y</sup> k
l		The *nt <sup>y</sup> cluster > /l/ preceding *i or *-ahu

## 7.1

<u>PMaz</u>	<u>Mz</u>	<u>Environment</u>
*ñ	ñ	
	n̄	Unclustered preceding *-V(C)N(C)V
	yV	Unclustered preceding *-V{t, ð}V
	Ø	In the *?ñ cluster preceding *au
*y	y	
	Ø	In the *?y cluster in weakly stressed syllables
*w	w	
	Ø	In the *?w cluster preceding *au
*h	h	
	Ø	In the clusters *hnt <sup>y</sup> , *skh, and *š{k, k <sup>w</sup> }h
*?	?	
	Ø	In the *?nt cluster
	~	Metathesized in the *?nk cluster > /nk~/
*i	i	
	Ø	Followed by *-?i
	e	The *ai cluster > /e/
*e		For problems in development see §5.1.2
*a	a	
	Ø	In the environment *nt <sup>y</sup> _ha
	e	The *ai cluster > /e/
	o	The *au cluster > /o/
*u	u	
	i	In the environment *ñ_CV where C is not *h; also the cluster *ue > /i/
	Ø	In weakly stressed syllables with consonantal margin *(C)t <sup>y</sup> (C)-
	o	The *au cluster > /o/

7.2 Ayautla Reflexes

<u>PMaz</u>	<u>Ay</u>	<u>Environment</u>
*t	t	
Ø		In the *ntV <sup>y</sup> yV sequence, or in cluster with dorsal stops
*t <sup>y</sup>	t	Before front vowels
	ti	Before back vowels
Ø		In cluster with dorsal stops
*k	k	
*k <sup>w</sup>	kw	
*c	c	
*č	č	
	č	Preceding back vowels in the *čh cluster
*s	s	
Ø		In cluster with *t, *c, or *č
*š	š	
Ø		In the *šh cluster
	s	In the *št cluster
*m	m	
Ø		In *?m cluster contiguous to *u
*n	n	
Ø		In the *{h, ?}n cluster preceding front vowels; or in the clusters *nkh and *nt <sup>y</sup> k(h)
	š	The *hn cluster in the *hnt <sup>y</sup> sequence > /š/
*ñ	ñ	
ni		Unclustered preceding *-V(C)N(C)V
yV		Unclustered preceding *-V{t, č}V
Ø		In the *?ñ cluster preceding *au

## 7.2

<u>PMaz</u>	<u>Ay</u>	<u>Environment</u>
*y	y	
	i	In the *?y cluster
*w	w	
*h	h	
	?	In the *hnt cluster
	s	In the *hnt <sup>y</sup> cluster
Ø		In the clusters *hnk and *nt <sup>y</sup> kh
*?	?	
	~?	Metathesized in the *?nk cluster > /nk?/
*i	i	
Ø		In the *ei cluster
*e	e	
*a	a	
	o	In the environment *{(n)ɛ, y, w}__hu; also, the *au cluster > /o/
Ø		In the environments *nt <sup>y</sup> _hV and *?y_CV
*u	u	
o		Following *Ca{h, ?}-; also, the *au cluster > /o/
i		In the environment *ñ_CV where C is not *h
Ø		In the clusters *ue and *ua; or in weakly stressed syllables preceded by *(C)t <sup>y</sup> (C)-; or in weakly stressed syllables followed by *-?a

7.3 Chiquihuitlán ReflexesPMaz    CqEnvironment

*t	t	
r		In cluster with dorsal stops
*t <sup>y</sup>	t	Before front vowels
	ti	Before back vowels
r		In cluster with dorsal stops
č		In the *hnt <sup>y</sup> cluster
*k	k	
*k <sup>w</sup>	ku	
*c	c	
*č	č	
*s	s	
Ø		In cluster with *t, *c, or *č
*š	š	
*m	m	
*n	n	
Ø		In the clusters *n{stop}h and *nt <sup>y</sup> k
š		The *hn of the *hnt <sup>y</sup> cluster > /š/
*ñ	ñ	
y\underline{v}		Unclustered preceding *-V{t, -č}V and *-V(C)N(C)V
*y	y	
Ø		In the **y cluster in weakly stressed syllables
i		In the **y cluster in heavily stressed syllables
*w	w	
Ø		In the **w cluster preceding *au
u		In the **w cluster preceding vowels other than *au

PMaz    Cq    Environment

\*h    h

Ø    In the clusters \*hn{t, k}, \*skh, \*š{t<sup>y</sup>, k, k<sup>w</sup>}h,  
and \*sh

š    In the \*hnt<sup>y</sup> cluster

\*?    ?

\*i    i

e    The \*ia cluster > /e/

\*e    e

ei    (1) In heavily stressed syllables when the vocalic nucleus is nasalized; or (2) in weakly stressed syllables where \*h was lost in the clusters \*hn{t, k}, \*skh, \*š{t<sup>y</sup>, k, k<sup>w</sup>}h, and \*sh; or (3) in weakly stressed syllables when \*e was contiguous to \*y or was preceded by word-initial \*t or \*nt; or (4) followed by \*-?e'

\*a    a

o    In the environment \*{(n)š, y, w, nt<sup>y</sup>}\_\_hu; also the \*au cluster > /o/ unless preceded by \*šh- or \*Cñ-

Ø    In the \*au cluster preceded by \*šh- or \*Cñ-

\*u    u

o    Preceded by \*Ca{h, ?}-; also, the \*au cluster > /o/ unless preceded by \*šh- or \*Cñ-

7.4 Jalapa Reflexes

<u>PMaz</u>	<u>Ja</u>	<u>Environment</u>
*t	t	
Ø		In the *nt cluster followed by *-V{ (?)y, w, s, c}V'; or in cluster with dorsal stops
d		In the *nt cluster not followed by *-V{ (?)y, w, s, c}V'
*t <sup>y</sup>	t	
Ø		In cluster with dorsal stops
ti		In the *(n)t <sup>y</sup> (h) clusters before back vowels
*k	k	
g		In the *nk cluster in weakly stressed syllables
*k <sup>w</sup>	k <sup>w</sup>	
g <sup>w</sup>		In the *nk <sup>w</sup> cluster in weakly stressed syllables
*c	c	
j		In the *nc cluster in weakly stressed syllables
*č	č	
j		In the *nč cluster in weakly stressed syllables
*s	s	
Ø		In cluster with *t, *c, *č, or *k <sup>w</sup>
*š	š	
Ø		In the *šh cluster
s		In the *š{t, t <sup>y</sup> }(h) clusters
*m	m	
Ø		In the *?m cluster contiguous to *u

<u>PMaz</u>	<u>Ja</u>	<u>Environment</u>
*n	n	
Ø		In the * <sup>o</sup> n cluster preceding *e, or in the *nč cluster in weakly stressed syllables when the consonantal margin of the following syllable is neither *h or * <sup>o</sup> w
*ñ	ñ	
ni		Unclustered preceding *-V(C)N(C)V
yV		Unclustered preceding *-V{t, č}V
Ø		In the * <sup>o</sup> ñ cluster preceding *au
í		In the *{h, ?}ñ cluster preceding *u
*y	y	
i		In the * <sup>o</sup> y cluster in heavily stressed syllables
Ø		The syllable * <sup>o</sup> yV when weakly stressed > Ø
*w	w	
Ø		In the * <sup>o</sup> w cluster preceding *au
*h	h	
Ø		In the *hn{stop} and *hy clusters
~h		In the *-VhV sequence when the vowels contiguous to *h were both front or both back and when the consonantal margin preceding it was *y, *w, *m, *n(stop), or *ñ
*?	?	
Ø		In the * <sup>o</sup> n{t, č} clusters
~?		Metathesized in * <sup>o</sup> nk cluster > /nk?/
*i	i	
Ø		In weakly stressed syllables when *h metathisized and the vowel following *h was *i

PMaz    Ja    Environment

\*e    e

Ø    In weakly stressed syllables when \*h metathesized  
and the vowel following \*h was \*e; or when  
followed by \*-?e'

\*a    a

Ø    In weakly stressed syllables where \*h metathesized  
and the vowel following \*h was \*a; or when  
followed by \*?á; or in the \*ai cluster preceded  
by \*t<sup>y</sup>h-; or in the \*au cluster preceded by  
\*šh-, \*Cñ-

ei    In the environment \*ñ\_\_CV

o    In the \*au cluster when not preceded by \*šh-  
or \*Cñ-

\*u    u

o    Preceded by \*Ca{h, ?}-; also the \*au cluster > /o/  
when the consonantal margin was other than \*?sh-  
or \*Cñ-

Ø    In the \*ue or \*ua clusters; or in the environments  
\*{ñ, nt}\_\_hu, \*(C)t<sup>y</sup>(C)\_\_(C)CV, and \*(C)C\_\_?a

i    In the environment \*ñ\_\_CV where C is not \*h

7.5 Domingo Reflexes

<u>PMaz</u>	<u>Do</u>	<u>Environment</u>
*t	t	
d		In the *nt cluster in weakly stressed syllables
*t <sup>y</sup>	t	
Ø		In cluster with dorsal stops
ti		In the *(n)t <sup>y</sup> (h) cluster before back vowel
*k	k	
g		In the *nk cluster in weakly stressed syllables
*k <sup>w</sup>	k <sup>w</sup>	
*c	c	
j		In the *nc cluster in weakly stressed syllables
*č	č	
j		In the *nč cluster in weakly stressed syllables
*s	s	
Ø		In cluster with *t, *c, *č, or *k <sup>w</sup>
*š	š	
Ø		In the *šh, *š{k, k <sup>w</sup> } (h) clusters
s		In the *š{t, t <sup>y</sup> } (h) clusters
*m	m	
Ø		In the *m cluster contiguous to *u
*n	n	
Ø		In the *n cluster preceding *e; or in the nč cluster in weakly stressed syllables when the consonantal margin of the following syllable is neither *h nor *w

<u>PMaz</u>	<u>Do</u>	<u>Environment</u>
*ñ	ñ	
ni		Unclustered preceding *-V(C)N(C)V'
yV		Unclustered preceding *-V{t, č}V'
Ø		In the *ñ cluster preceding *au
i		In the *hñ cluster preceding *u
*y	y	
i		In the *y cluster in heavily stressed syllables
Ø		The *yV weakly stressed syllable > Ø
*w	w	
Ø		In the *w cluster preceding *au
*h	h	
Ø		In the *hn{stop} clusters
*n	?	
Ø		In the *n{t, č} clusters
~		Metathesized in *nk cluster > /nk~/
*i	i	
Ø		Followed by *-?í
*e	e	
Ø		Followed by *-?é
*a	a	
o		In the environment *{(n)č, nt <sup>y</sup> , y, w}_hu; also, the *au cluster > /o/ unless preceded by *šh- or *čh-
Ø		Followed by *-?á; or in the *au cluster preceded by *šh- or *čh-
ei		In the environment *ñ_čV

PMaz Do Environment

- \*u u
- o Preceded by \*Ca{h, ?}-; also, the \*au cluster > /o/ when the consonantal margin was other than \*sh- or \*Ch-
- ø In the \*ue or \*ua clusters; or in the environment \*(C)t<sup>y</sup>(C)wV; or when followed by \*-?á
- i In the environment \*ñCV where C is not \*h

7.6 Huautla ReflexesPMaz Hu Environment

*t	t	
Ø		Followed by *-V <sup>y</sup> V <sup>h</sup>
h		In cluster with dorsal stops
*t <sup>y</sup>	č	
š		In cluster with dorsal stops
l		The *nt <sup>y</sup> cluster > /l/ preceding *i and *-ahu
*k	k	
*k <sup>w</sup>	ku	
*c	c	
s		Unclustered in antepenult syllables preceding *-i?iCV
*č	č	
*s	s	
h		In cluster with *t, *c, or *č
*š	š	
Ø		In the clusters *šh and *š{t, t <sup>y</sup> }h
h		In the *št cluster
*m	m	
Ø		In the * <sup>y</sup> m cluster contiguous to *u
*n	n	
Ø		In the * <sup>y</sup> n cluster preceding *e; or in the clusters *nkh and *nt <sup>y</sup> k(h)
l		The *nt <sup>y</sup> cluster > /l/ preceding *i and *-ahu

<u>PMaz</u>	<u>Hu</u>	<u>Environment</u>
*ñ	ñ	
ni		In the *hñ cluster initial in the word
Ø		Unclustered and preceded by *{t <sup>y</sup> , n}V-; or in the *?ñ cluster preceding *au
*y	y	
Ø		Unclustered and preceded by *(n)t{i, e}-; also, the *?yV weakly stressed syllable > Ø
*w	w	
Ø		Unclustered in the environment *-u <u>{a, e}</u>
*h	h	
Ø		In the *-VhV sequence with vowels contiguous to *h either both front or both back and when the consonantal margin was *y, *w, *n{stop}, *m, *ñ, *š, *c, *č; or in the *{s, š}{k, k <sup>w</sup> }h clusters
~h		Metathesized with following consonant in *hn cluster preceding front vowels and in the *hñ and *hw clusters when word initial
*?	?	
~?		Metathesized in the *?nk and *?w clusters to > /nk?/ and /w?/ respectively
*i	i	
Ø		In the *-ihi sequence when *h was lost; or when followed by *-?í
*e	e	
Ø		In the *-ehe sequence when *h was lost; or when followed by *-?é

PMaz Hu Environment

\*a a

Ø In the environment \*{nt<sup>y</sup>, (n)č, ň}\_\_ha

\*u u

Ø In the environment \*{nt, t, š, ň}\_\_hu

7.7 Jiotes Reflexes

<u>PMaz</u>	<u>Ji</u>	<u>Environment</u>
*t	t	
Ø		Followed by *-v <sup>y</sup> yV
h		When in cluster with dorsal stops
*t <sup>y</sup>	č	
	•	
	š	In cluster with dorsal stops
l		The *nt <sup>y</sup> cluster > /l/ preceding *i and *-ahu
*k	k	
*k <sup>w</sup>	ku	
*c	c	
s		Unclustered in antepenult syllables preceding *-i?iCV
*č	č	
*s	s	
h		In cluster with *t, *c, or *č
*š	š	
Ø		In the *šh, *š{t, t <sup>y</sup> }h clusters
h		In the *št cluster
*m	m	
Ø		In the *?m cluster contiguous to *u
*n	n	
Ø		In the *?n cluster preceding *e; or in the *n{stop}h clusters
l		The *nt <sup>y</sup> cluster > /l/ preceding *i and *-ahu

<u>PMaz</u>	<u>Ji</u>	<u>Environment</u>
*ñ	ñ	
?i		Preceding *-V(C)N(C)V'
Ø		In the *?ñ cluster preceding *au
*y	y	
Ø		Weakly stressed *?yV syllable > Ø
*w	w	
Ø		In the environment *-u_{a, e}
*h	h	
Ø		In the *-VhV sequence with vowels contiguous to *h either both front or both back and with the preceding consonantal margin *š, *c, *č; or in the *{s, š}kh clusters
*?	?	
*i	i	
Ø		Followed by *-?i'
*e	e	
Ø		Followed by *-?é, or in the *ei cluster
*a	a	
o		In the environment *{(n)č, nt <sup>y</sup> , y}_hu; also, the *au cluster > /o/
i		In the environment *ñ_{č, t}V
*u	u	
o		Following *Caſh, ?}-; also, the *au cluster > /o/
Ø		In the *ue and *ua clusters; or in the environment *{t, s}_hu, *(C)t <sup>y</sup> (C)_wV; or when followed by *-?á
i		In the environment *{(C)č(C), y}_C'(C)V where C' is other than unclustered laryngeal; or in weakly stressed syllables with the consonantal margin *ñ-

7.8 Soyaltec ReflexesPMaz So Environment

\*t t

∅ Followed by \*-V<sup>y</sup>V'\*t<sup>y</sup> t Before front vowels

ty Before back vowels

\*k k

\*k<sup>w</sup> kw

\*c c

\*č č

∅ Preceding back vowels when in the \*čh cluster

\*s s

c In the \*sh cluster

∅ In cluster with \*t, \*c, or \*č

\*š š

∅ In the \*šh, \*š{t, t<sup>y</sup>}(h) clusters

\*m m

∅ In the \*?m cluster contiguous to \*u

\*n n

∅ In the \*{h, ?}n clusters preceding front vowels,  
or in the clusters \*n{stop}h and \*nt<sup>y</sup>k

\*ñ ñ

yV' Preceding \*-V{t, č}V'

∅ In the \*?ñ cluster preceding \*au

<u>PMaz</u>	<u>So</u>	<u>Environment</u>
*y	y	
	Ø	In the *?y cluster in weakly stressed syllables
*w	w	
	Ø	In the *?w cluster preceding *au
	f	The *hw cluster > /f/ word initial
*h	h	
	Ø	In the clusters *hn{stop}, *{s, š}{k, k <sup>w</sup> }h and *hy
	f	The *hw cluster > /f/ word initial
*?	?	
	Ø	In the *?n{t, č} clusters
	~?	Metathesized in the *?nk cluster > /k?/
*i	i	
	Ø	In the *ei cluster, or when followed by *-?j
*e	e	
*a	a	
	o	The cluster *au > /o/
	a <sup>i</sup>	The cluster *ia > /a <sup>i</sup> /
*u	u	
	o	In the environment *{(n)č, nt <sup>y</sup> , y}__hu; also the *au cluster > /o/

7.9 Ixcatlán ReflexesPMaz Ix Environment

*t	t	
*t <sup>y</sup>	t	Before front vowels
	ti	Before back vowels or in cluster with dorsal stops
*k	k	
*k <sup>w</sup>	ku	
*c	c	
*č	č	
	č	In the *čh clusters preceding back vowels
*s	s	
	ø	In cluster with *t or *k <sup>w</sup>
*š	š	
	ø	In the *šh cluster
*m	m	
	ø	In the *?m cluster contiguous to *u
*n	n	
	ø	In the *{h, ?}n clusters preceding front vowels
	ñ	Unclustered when *c occurred in the following syllable margin
*ñ	ñ	
	y <sub>V</sub>	Unclustered preceding *-V{t, č}V
	ø	In the *?ñ cluster preceding *au
*y	y	
	ø	In *?y weakly stressed syllables
	i	In *?y heavily stressed syllables

PMaz    Ix    Environment

*w	w	
*h	h	
∅		In the clusters *hn{stop}, *skh, *st <sup>y</sup> h, and *sh
?	?	
∅		In the *?n{t, č} clusters
~?		Metathesized in *?nk cluster > /nk~/
*i	i	
∅		In the *ei cluster; or when followed by *?i
*e	e	
i		In weakly stressed syllables of the type where *h metathesized or was lost (see §4.1.1); or in weakly stressed syllables when *e was contiguous to *y; or preceded by *t or *nt word initial; or in the environment *c_?e
*a	a	
u		In the environment *{(n)č, y}_hu
∅		In the *au cluster; or in the environment *nt <sup>y</sup> _hv or *?y_CV
i		In the environments *{nč, ň}_ha, *n_{č, t}v, and *č_CV (where C is not a laryngeal)
*u	u	
∅		In weakly stressed syllables when the consonantal margin was *(C)t <sup>y</sup> (C)-
i		In weakly stressed syllables when the consonantal margin was *ň-

7.10 Miguel Reflexes

<u>PMaz</u>	<u>Mg</u>	<u>Environment</u>
*t	t	
Ø		In the *nt cluster followed by *-V <sup>y</sup> yV; or in cluster with dorsal stop
*t <sup>y</sup>	t	Before front vowels
	ti	Before back vowels
	š	In cluster with dorsal stops
	l	The cluster *nt <sup>y</sup> > /l/ preceding *i and *-ahu
*k	k	
*k <sup>w</sup>	k <sup>w</sup>	
*c	c	
	s	In antepenult syllables preceding *-i <sup>y</sup> icv
*č	č	
*s	s	
Ø		In cluster with *t, *c, or *č
*š	š	
Ø		In the *šh, *š{t, t <sup>y</sup> }h clusters
*m	m	
Ø		In the * <sup>y</sup> m cluster contiguous to *u
*n	n	
Ø		In the *hn cluster preceding front vowels; or in the *n{stop}h clusters
l		The *nt <sup>y</sup> cluster > /l/ preceding *i and *-ahu
*ñ	ñ	
yV		Preceding *-V{t, č}V or *-V(C)N(C)V
Ø		In the * <sup>y</sup> ñ cluster preceding *au

<u>PMaz</u>	<u>M<sub>E</sub></u>	<u>Environment</u>
*y	y	
	Ø	Unclustered and preceded by *(n)t{i, e}-; or in *?y weakly stressed syllables
*w	w	
	Ø	In the environment *-u__{a, e}
*h	h	
	Ø	In the *-VhV sequence when the vowels contiguous to *h are both front or both back and when the preceding consonantal margin is *y, *w, *n{stop}, *m, *ñ, *š, *c, *č; or in the clusters *hn{stop}, *{s, š}{k, k <sup>W</sup> }h, *sh, and *hy
*?	?	
	~?	Metathesized in the *?C(C) clusters > /C(C)?/
*i	i	
	Ø	In weakly stressed syllables when *h was lost (see §4.1.1); or when followed by *-?i
	e	The *ai cluster > /e/
*e	e	
	Ø	In weakly stressed syllables when *h was lost (see §4.1.1); or when followed by *-?é
*a	a	
	Ø	In the environment *{(n)č, ntY, y, ñ}__hV; or in the *au cluster when preceded by *šh-, *čñ- in the consonantal margin
	e	The *ai cluster > /e/
	o	The *au cluster > /o/ when the consonantal margin was other than *šh- or *čñ-

PMaz Mg Environment

\*u u

o Following \*Ca{h, ?l-; also the \*au cluster > /o/ when the consonantal margin was other than \*šh- or \*Cñ-

ø In the clusters \*ue and \*ua; or in the environment \*{(n)t, š, ñ}\_\_hu and \*(C)t<sup>y</sup>(C)\_\_\_wV; or followed by \*-?á

7.11 Lorenzo ReflexesPMaz Lo Environment

*t	t	
Ø		In the *nt cluster when followed by *-v <sup>y</sup> yV; or in cluster with dorsal stops
*t <sup>y</sup>	č	Preceding front vowels
	č	Preceding back vowels
	š	In cluster with dorsal stops
Ø		In the *nt <sup>y</sup> cluster preceding *i and *-ahu
*k	k	
*k <sup>w</sup>	k <sup>w</sup>	
	k	In cluster with spirants (*s, *š)
*c	c	
s		Unclustered in antepenult syllables preceding *-i <sup>y</sup> iCV
*č	č	
*s	s	
	c	In the *sh cluster
Ø		In cluster with *t, *c, and *č
*š	š	
Ø		In the clusters *šh, *št(h)
s		In the *št <sup>y</sup> h cluster
*m	m	
*n	n	
Ø		In the clusters *n{stop}h and *nt <sup>y</sup> k(h); or in the *n cluster preceding *e

<u>PMaz</u>	<u>Lo</u>	<u>Environment</u>
*ñ	ñ	
	y	Preceding *-V{t, č}V or *-V(C)N(C)V
	Ø	In the *?ñ cluster preceding *au
*y	y	
*w	w	
	f	The *hw cluster not initial in the word > /f/
*h	h	
	?	In the *hnt cluster
	Ø	In the clusters *hnſt <sup>y</sup> , k <sup>l</sup> , *ſt <sup>y</sup> h, and *ſkh
	f	The *hw cluster not initial in the word > /f/
*?	?	
	~?	Metathesized in *?nkV cluster > /kV?-/
	Ø	In the *?y cluster in weakly stressed syllables; or in *?w clusters preceding *au
*i	i	
	e	Preceded by *{s, ſ}{stop}(C)- or *hN(C)-; or in heavily stressed syllables of polysyllabic words when the vocalic nucleus preceding the heavily stressed syllable contained a back vowel unless *y also occurred in the consonantal margin preceding the back vowel; also, the *ai cluster > /e/
*e	a	
	Ø	In the *ei cluster
	ia	In heavily stressed syllables preceded by *(ſ){k, k <sup>w</sup> }hv-

PMaz    Lo    Environment

- |    |   |  |
|----|---|--|
| *a | o |  |
| i  |   | In the environment *{(n)č, y}__hu; or in the *au cluster preceded by *č(h)-  |
| Ø  |   | In the *au cluster and not preceded by *č(h)-  |
| ‡  |   | In the environment *w__hu  |
|    |   |  |
| *u | ‡ |  |
| i  |   | In heavily stressed syllables preceded by *č(h)-, *(h, ?){y, ñ}-, *ñuh- or *{(n)č, y}af{h, ?}-; or in weakly stressed syllables with *st in the consonantal margin; or in the environment *{(C)č(C), y}__C'(C)V where C' is other than unclustered laryngeal; or in weakly stressed syllables with *ñ- in the consonantal margin |
| a  |   | The *ue cluster > /a/  |
| o  |   | The *ua cluster > /o/  |

7.12 Tecatl ReflexesPMaz Te Environment

*t	t	
∅	In the *nt cluster followed by *-V <sup>y</sup> V <sup>ˊ</sup>	
	s In cluster with dorsal stops	
*t <sup>y</sup>	č	
	š	In cluster with dorsal stops
	∅	In the *nt <sup>y</sup> cluster preceding *i or *-ahu
*k	k	
*k <sup>w</sup>	ku	
*c	c	
	s	Unclustered in antepenult syllables preceding *-i <sup>y</sup> iCV
*č	č	
*s	s	
	c	In the *sh cluster
	∅	In cluster with *t or *č
*š	š	
	∅	In the clusters *šh and *šth
	h	In the *št cluster
*s	s	In the *št <sup>y</sup> h cluster
	m	
*m	m	
∅		In the *šm cluster contiguous to *u
*n	n	
	∅	In the *šn cluster preceding *e; or in the clusters *n{stop}h and *nt <sup>y</sup> k(h)

<u>PMaz</u>	<u>Te</u>	<u>Environment</u>
*ñ	ñ	
?i		Preceding *-V{t, č}V or *-V(C)N(C)V
Ø		In the *?ñ cluster preceding *au
*y	y	
Ø		In the *?y cluster in weakly stressed syllables
*w	w	
Ø		In the *?w cluster preceding *au
*h	h	
Ø		In the clusters *hnk and *{s, š}{k, kʷ}h
*?	?	
Ø		Unclustered and not initial in the word; or in cluster with consonants
*i	i	
Ø		Followed by *-?i; or in the *ei cluster
*e	e	
i		In weakly stressed syllables contiguous to *y or preceded by *t or *nt
Ø		Followed by *-?é
*a	a	
Ø		In the *au cluster; or in weakly stressed syllables which have as consonantal margin *ñ- or *?y-
i		In the environment *{(n)č, y}__CV
*u	u	
iu		In stressed syllables preceded by *(?)nt-
Ø		In the *ue and *ua clusters
i		In the environment (C)č(C)___C'(C)V where C' is other than unclustered laryngeal; or in weakly stressed syllables with *ñ in the consonantal margin; or in the environment *(C)č__?a

## APPENDIX

### LIST OF COGNATE SETS

The cognate sets are arranged according to their reconstructed form. Normal alphabetical order is followed apart from the following exceptions: 1) č follows c, k<sup>w</sup> follows k, ñ follows n, š follows s, t<sup>y</sup> follows t, and ? occurs last; 2) tone, indicated by superscript numerals with (¹) high, (²) mid-high, (³) mid, (⁴) low, is alphabetized according to the order just given and is considered prior to the consonant of the following syllable or to the vowel of the syllable to which it is attached, if that vowel is nasalized; 3) tone glides are alphabetized according to the beginning point of the glide and follow the single tone of that beginning point; 4) nasalized vowels are alphabetized following their respective homorganic oral vowel and precede vowel clusters; and, 5) vowel clusters are alphabetized following the vowel of the first member of that cluster. In short, words similar to these would be alphabetized as follows: \*tá⁴, \*tá⁴¹, \*tá⁳, \*taí¹.

The format used in the presentation of each cognate set is to first give the reconstructed etymon followed by an analysis of its constituent parts when it is complex in form.

Next is given the English gloss of the reconstructed form.

The various language reflexes used to support the reconstruction are presented in tabular form below the etymon. Next follows a system of cross references to previous Mazatec reconstructions. PPn followed by a numeral refers to cognate sets in Gudschinsky (1959); PMS followed by a numeral refers to cognate sets in Gudschinsky (1956). Numerals without a prefixed PPn or PMS refer to cognate sets in this work. When necessary or deemed useful, a paragraph of supplementary information outlines difficulties encountered in the reflexes; when possible, any part of a form in any of the languages that does not figure in the reconstruction is explained.

Reflexes from the following twelve Mazatec languages are cited: Mazatlán de Flores (Mz), San Bartolomé Ayautla (Ay), San Juan Chiquihuitlán (Cq), San Felipe Jalapa de Díaz (Ja), Santo Domingo del Río (Do), Huautla de Jiménez (Hu), Santa María Jiotes (Ji), San Miguel Soyaltepec (So), San Pedro Ixcatlán (Ix), San Miguel Huautla (Mg), San Lorenzo Cuaunecuilititla (Lo), and San Jerónimo Tecatl (Te).

1. \*ca<sup>u</sup> limps.

Ay khic <sup>o</sup> -	Ix c <sup>o</sup> ihwikicu <sup>u</sup> <u>1p.</u> ,
Ja ti <sup>1</sup> hwi <sup>2</sup> ki <sup>3</sup> c <sup>o</sup> <sup>3</sup> s <sup>2</sup>	c <sup>o</sup> ihwikicu <sup>u</sup> <u>3p.</u>
Do tihwikic <sup>o</sup>	Te hekiciú

Expected reflexes: Ay -co<sup>o</sup>; Ix c<sup>o</sup>u; it is clear that the reflexes are derived from \*a - u, but the precise

development is not explained. Ja, Do, Ix -hwí- < \*hwí<sup>2</sup> goes 169; Ay khi- < \*khi<sup>3</sup>- completive aspect 196; Ja, Do, Ix, Te ki- < \*ki<sup>3</sup>- completive aspect 206; Te he- < \*hé<sup>3</sup> finished 131. The tone reconstruction is rather indeterminate from simply a Ja tone 3 reflex.

2. \*ca<sup>3</sup>kha<sup>1,2</sup>á<sup>3</sup> (\*<sup>2</sup>á<sup>3</sup> opening 692) stutters.

Mz	sakha <sup>2</sup> á	So	cakha <sup>2</sup> á
Ay	cakha <sup>2</sup> á	Ix	cakha <sup>2</sup> á
Ja	ca <sup>2</sup> kha <sup>1,2</sup> á <sup>2</sup>	Te	cakha <sup>2</sup> á
Hu	ca <sup>3</sup> kha <sup>1,2</sup> á <sup>3</sup>		

Expected reflexes: Ja -kh<sup>2</sup>a; Te -kha; Mz ca-. Mz, Ay lack of nasalization unexplained; perhaps contamination with \*kha<sup>3,2</sup>á<sup>1</sup> 181.

3. \*ca<sup>3</sup>nká<sup>3</sup>, \*thu<sup>3</sup>khá<sup>4,2</sup> runs.

Ay	timankacanká	So	tho <sup>3</sup> khá <sup>3,1</sup>
Cq	tiwanká	Ix	c <sup>2</sup> amanká
Ja	ti <sup>1</sup> wa <sup>2</sup> nka <sup>2</sup> ca <sup>2</sup> nká <sup>2</sup>	Lo	conkó
Do	tiwankacanká	Te	tiwanká
Hu	má <sup>3</sup> nká <sup>3</sup> <u>chases, flees;</u> tu <sup>3</sup> ká <sup>4,3</sup> , thu <sup>3</sup> ká <sup>4,3</sup> <u>runs</u>		

PPn 284. Expected reflex: So thu-. Ix c<sup>2</sup>a- probably continuative aspect; loss of /n/ probably a development in Hu; Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Cq, Ja, Do -wanka < \*wa<sup>3</sup>nká<sup>4,2</sup> flees 639. So /o/ unexplained,

the expected reflex is /u/. Gudschinsky also reconstructed \**thu<sup>s</sup>ká<sup>4</sup>*<sup>2</sup>, but this is suspect as being a development in Hu.

4. \**ca<sup>s</sup>nkhú<sup>1</sup>*, \**cu<sup>s</sup>nkhú<sup>1</sup>* fears.

Mz	cakhú	So	<i>ca<sup>s</sup>khy<sup>s</sup>re<sup>s4</sup></i> (< Pre-So * <sup>s</sup> - <sup>s1</sup> - <sup>4</sup> ), <i>we<sup>s1</sup>tykú<sup>s2</sup></i>
Ay	cakhú		
Cq	cakhú	Ix	cakhú
Ja	<i>ca<sup>s</sup>nkhú<sup>1</sup></i>	Mg	<i>ticakhú</i>
Do	cankhú	Lo	<i>cakhí</i>
Hu	<i>cu<sup>s</sup>khy<sup>1</sup></i>	Te	<i>ticakhú</i>
Ji	cukhú		

PPn 80. Expected reflex: Ix cankhú. Ji oral /u/ unexplained. Gudschinsky reconstructed \*-khy<sup>1</sup> rather than \*-nkhú<sup>1</sup>; in addition she also reconstructed \*t<sup>y</sup>kú<sup>s</sup> apparently from one of the So forms.

5. \**ca<sup>s</sup>?ú<sup>s</sup>* goes out (fire).

Hu	<i>whi<sup>s</sup>c<sup>s</sup>au<sup>s</sup></i> <u>he puts out</u>	Mg	<i>hwec<sup>s</sup>ó</i> <u>he puts out</u>
Ji	<i>kawic<sup>s</sup>ó</i> <u>he puts out</u>	Lo	<i>kici<sup>s</sup>í</i>
So	<i>kic<sup>s</sup>ó</i> <u>he puts out</u>	Te	<i>kiciú</i> <i>ni<sup>s</sup>í</i>
Ix	<i>kic<sup>s</sup>uya</i>		

Expected reflexes: So -ca<sup>s</sup>ú; Ix -cu<sup>s</sup>ú; it is clear that the reflexes are derived from \*a - u, but the precise development is unexplained. Ix -ya < \*yá inside 660; Hu hwi<sup>s</sup>- verb auxiliary, cf. 717; Ji -wi < \*wi<sup>s</sup>- verb auxiliary 655; Mg hwe- < \*whé<sup>s</sup> use up 167; So, Ix, Lo, Te ki- < \*ki<sup>s</sup>-

completive aspect 206; Ji ka- < \*ka<sup>2</sup>- completive aspect 172.

The tone reconstruction is partially indeterminate; it may be reconstructed as \*<sup>3</sup> - <sup>3</sup>, \*<sup>3</sup> - <sup>31</sup>, or \*<sup>3</sup> - <sup>42</sup>.

6. \*ca<sup>32</sup> if.

Ay	cá	So	ca <sup>32</sup>
Cq	cá	Ix	cá
Ja	ca <sup>2</sup>	Lo	có
Do	cá	Te	cá
Hu	ca <sup>2</sup>		

PPn 101. Expected reflex: Hu tone 3.

7. \*ca<sup>4</sup> fast.

Ay	kicá	So	ki <sup>4</sup> ca <sup>4</sup>
Ja	ki <sup>3</sup> ca <sup>3</sup>	Ix	cá
Do	kicá	Lo	kimqcá-

Expected reflex: Lo -co-. Lo mq- < \*má<sup>3</sup> do 227; Ay, Ja, Do, So, Lo ki- < \*ki<sup>3</sup>- completive aspect 206.

8. \*ca<sup>4</sup>khí<sup>1</sup> girl.

Ja	ca <sup>3</sup> khí <sup>1</sup>	So	cakhí <sup>1</sup>
Do	cakhí <sup>1</sup>	Ix	cakhí <sup>1</sup>

9. \*ca<sup>4</sup>nka<sup>4</sup> cotton.

Mz	canká	Ji	canká
Ay	canká	So	ca <sup>4</sup> nka <sup>4</sup>
Cq	čánka	Ix	canká
Ja	ca <sup>s</sup> nka <sup>s</sup>	Lo	conkó
Do	canká	Te	canká
Hu	ca <sup>4</sup> nka <sup>4</sup>		

10. \*ce<sup>2</sup>é<sup>2</sup> lazy.

Mz	c <sup>?</sup> í, c <sup>?</sup> é	Hu	c <sup>?</sup> é <sup>2</sup>
Ay	ce <sup>?</sup> é	So	ce <sup>?</sup> é
Cq	ce <sup>?</sup> é	Ix	ci <sup>?</sup> é
Ja	c <sup>?</sup> é <sup>2</sup>	Lo	čoca <sup>?</sup> á
Do	ce <sup>?</sup> é	Te	cé

Expected reflexes: Cq cei<sup>?</sup>é; Do c<sup>?</sup>é.

11. \*cé<sup>3</sup> big.

Hu	cé <sup>s</sup> ( <u>sg.</u> )	Ix	cé
Ji	cé	Mg	cé
So	cé <sup>s</sup>	Lo	čá

PPn. 94. This etymon likely is related to \*cé<sup>s</sup> full 12.

12. \*cé<sup>3</sup> full.

Mz	kici	So	ki <sup>s</sup> cé <sup>s</sup>
Ay	kicé	Ix	kicé
Cq	kicé	Mg	kicé
Ja	ki <sup>2</sup> cé <sup>2</sup>	Lo	kicá
Do	kicé	Te	kicé
Hu	ki <sup>3</sup> cé <sup>3</sup>		

PPn 94. In all languages ki- < \*ki<sup>3</sup>- completive aspect 206. This etymon likely related to \*cé<sup>3</sup> big ll.

13. \*cé<sup>3</sup> lights (a fire).

Ay	tecé	Hu	w <sup>o</sup> e <sup>1</sup> cé <sup>s</sup>
Cq	cicé	Ix	wacé
Ja	te <sup>2</sup> cé <sup>2</sup>	Te	teci
Do	k <sup>W</sup> ecé		

PPn 97. Expected reflex: Te -ce. Ix wa- < \*wa<sup>3</sup>- verb auxiliary 630; Hu w<sup>o</sup>e<sup>1</sup>- < \*we<sup>3</sup>?é<sup>1</sup> hits 652; Ay, Ja te-, Do k<sup>W</sup>e- probably imperative. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>s1</sup>.

14. \*-cé<sup>4</sup> new.

Mz	čacé	Ji	thacé
Ay	cacé	So	tha <sup>4</sup> cé <sup>4</sup>
Cq	šacá	Ix	thacé
Ja	ce <sup>s</sup> cé <sup>s</sup>	Mg	čacé
Do	cecé	Lo	čocá
Hu	ču <sup>4</sup> cé <sup>4</sup>	Te	šicé

## A.15

Expected reflex: Cq -ce. First syllable ča-, ca-, ša-, ce-, ču-, tha-, čo-, ši- unexplained.

15. \*ce<sup>4</sup>hé<sup>2</sup> coyote.

Mz	cihé	Mg	ncehé
Ay	thiučehé	Lo	cahá
Hu	cé <sup>4</sup> <sup>2</sup>	Te	cihé
Ji	cé		

Expected reflex: Te cé. Mg /n/ in /nc/ cluster unexplained; Ay thiu- < \*t<sup>Y</sup>hu-<sup>3</sup>(\*<sup>4</sup>) nominal 616-620.

16. \*ce<sup>4</sup>?é<sup>4</sup> his.

Mz	c?é	Ji	ce?é
Ay	k <sup>W</sup> ice?é	So	ce?é
Ja	k <sup>W</sup> i <sup>1</sup> c?é <sup>s</sup>	Ix	ci?é
Do	k <sup>W</sup> ic?é	Lo	ca?á
Hu	c?é <sup>4</sup>	Te	cé

Expected reflex: Ji c?é. Ay, Ja, Do k<sup>W</sup>i- < \*k<sup>W</sup>i<sup>s</sup>- this 224.

17. \*chá<sup>1</sup> coati.

Ay	thiuchá	So	chá <sup>21</sup>
Cq	čuchá	Ix	chá
Ja	chá <sup>1</sup>	Lo	chó
Do	chá	Te	chá
Hu	chá <sup>1</sup>		

Cq ču- < \*čú<sup>4</sup> animal 107; Ay thiu- < \*t<sup>y</sup>hu<sup>s</sup>-(\*<sup>4</sup>)  
nominal 616-620.

18. \*chau<sup>s</sup>ku<sup>í</sup><sup>3</sup> pretty (animals, books)

Ay ntakú	Do chokú
Cq ntakú	Ix chakú
Ja cho <sup>2</sup> ku <sup>í</sup> <sup>2</sup>	Te cukú

Expected reflexes: Ix chukú; Te chukú. Ja, Do cho-, Ix cha-, Te cu- < \*-chau<sup>s</sup> happiness 217; Ay, Cq nta- < \*nta<sup>s</sup>há<sup>2</sup> good 358. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>3</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

19. \*chau<sup>s</sup>thí<sup>1</sup> pretty (persons).

Ay ntathi	Hu na <sup>s</sup> ská <sup>1</sup> thi <sup>1</sup>
Ja cho <sup>2</sup> thí <sup>1</sup>	Te cuthí
Do chothí	

Expected reflex: Te chutí. Ja, Do cho-, Te cu- < \*-chau<sup>s</sup> happiness 217; Hu ska < \*ská<sup>1</sup> plays 472; Hu na<sup>s</sup>- < \*ná<sup>s</sup>- nominal 241; Ay nta- < \*nta<sup>s</sup>há<sup>2</sup> good 358.

20. \*ché<sup>4</sup><sup>3</sup> clean.

Mz ché	So ché <sup>3</sup> <sup>2</sup>
Ay hé	Ix ché
Ja hé <sup>2</sup>	Mg ché
Do hé	Lo chá
Hu ché <sup>4</sup> <sup>3</sup>	Te ché
Ji ché	

PMS 27. Loss of /c/ in Ay, Ja, Do unexplained.

21. \*chia<sup>1</sup> moss

Ja	chia <sup>1</sup> <u>rusty</u> , <u>dirty</u>	Hu	chia <sup>1</sup> <u>moss</u>
Do	chia <sup>1</sup> <u>rusty</u> , <u>dirty</u>		

The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

22. \*chiú<sup>4</sup> tobacco.

Ja	chiú <sup>3</sup>	So	chyú
Do	chiú <sup>3</sup>	Ix	chiú <sup>3</sup>

23. \*chu<sup>2</sup> toasted.

Mz	chu	So	chu <sup>1</sup>
Ay	chu	Ix	chu
Cq	chu	Mg	chu
Ja	chu <sup>2</sup>	Lo	chi <sup>1</sup>
Hu	chu <sup>2</sup>	Te	chu
Ji	s'ichu		

Ji s'i- probably < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26, but the /?/ is unexplained.

24. \*chu<sup>2</sup> kicks.

Ay	tichú	So	chu <sup>2</sup>
Cq	tichú	Ix	c'achú
Ja	ti <sup>1</sup> chu <sup>2</sup>	Lo	chi <sup>1</sup>
Do	tichú	Te	tichú
Hu	chu <sup>2</sup>		

Expected reflex: So tone 1. Ix. c<sup>2</sup>a- probably continuative aspect; Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

25. \*chuá<sup>s</sup> gives.

Mz	chuá	So	chwá
Ay	shá	Ix	chuá
Cq	suá-	Mg	kichá
Ja	chá <sup>2</sup>	Lo	chó
Do	chá	Te	chá-
Hu	chuá <sup>s</sup>		

Expected reflexes: Ay chá; Cq chuá. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

26. \*-ci<sup>1</sup>?i<sup>1</sup>- do.

Mz	ticiská <u>plays</u>	Ji	sik <sup>2</sup> aškí <u>criticize</u>
Ay	tic <sup>2</sup> intá <u>construct</u>	So	ci <sup>2</sup> ntá <sup>s1</sup> <u>construct</u>
Cq	ticintahá <u>construct</u>	Ix	tic <sup>2</sup> intá <u>construct</u>
Ja	ti <sup>1</sup> c <sup>2</sup> i <sup>1</sup> kh <sup>2</sup> á <sup>2</sup> <u>purges</u>	Mg	sikeýá <u>lends</u>
Do	tic <sup>2</sup> ikh <sup>2</sup> á <u>purges</u>	Lo	sikañá <u>lends</u>
Hu	si <sup>1</sup> kha <sup>2</sup> ?á <sup>2</sup> <u>purges</u>	Te	tisikhá <u>purges</u>

Development of \*\* unexplained.

27. \*ci<sup>1</sup>?i<sup>1</sup>ke<sup>3</sup>ya<sup>3</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26) lends.

Mz	ticikeyá	So	ti <sup>4</sup> kye <sup>3</sup> yé <sup>13</sup> ( <u>lend!</u> )
Ay	sik <sup>2</sup> eyá-	Ix	ci <sup>2</sup> ikiya <sup>2</sup> á
Ja	c <sup>2</sup> i <sup>1</sup> ke <sup>3</sup> ya <sup>2</sup>	Mg	sike <sup>2</sup> yá
Do	c <sup>2</sup> ikeyá	Lo	sikañá
Hu	si <sup>1</sup> ki <sup>3</sup> ya <sup>3</sup>	Te	sikiñá

PPn 45. Expected reflexes: So -ya; Lo -yo; Ay si- is perhaps borrowed from Hu since expected reflex is c<sup>2</sup>i-; So tones are unexplained; Lo, Te /ñ/ unexplained, expected /y/; development of ?? unexplained. Mz, So ti- < \*ti<sup>1</sup>- continuative aspect 589.

28. \*ci<sup>1</sup>?i<sup>1</sup>ki<sup>3</sup>?í<sup>2</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26) paints.

Mz	k?í	Hu	si <sup>1</sup> k?í <sup>4</sup> s dye, <u>paint</u>
Ay	ticik?iyá	So	k?í
Cq	cikí-	Ix	thiña <sup>2</sup> ak?iyá
Ja	ti <sup>1</sup> c <sup>2</sup> i <sup>1</sup> k?í <sup>2</sup>	Lo	siki?iyó
Do	tic?ikí	Te	ticikinká

PPn 47. Expected reflexes: Ay -c<sup>2</sup>iki?i-; Cq -ki?í-; Do -k?í-; Te -siki?i-. Development of ?? in \*ci<sup>1</sup>?i<sup>1</sup>- unexplained. Ay, Ix -ya, Lo -yo < \*ya inside 660; Ay, Ja, Do, Te ti- < ti<sup>1</sup>- continuative aspect 589.

29. \*ci<sup>1</sup>?i<sup>1</sup>kha<sup>1</sup>yá<sup>3</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26) rests.

Mz	ticikhayá	So	ci <sup>21</sup> kha <sup>3</sup> yá <sup>2</sup> (< Pre-So
Ay	sikh <sup>o</sup> ayá		* <sup>21</sup> - <sup>21</sup> - <sup>3</sup> )
Ja	ti <sup>1</sup> c <sup>?</sup> i <sup>1</sup> kha <sup>1</sup> yá <sup>2</sup>	Ix	tic <sup>?</sup> ikhayá
Do	tic <sup>?</sup> ikhayá	Lo	sikhoyo <sup>o</sup>
Hu	si <sup>1</sup> kha <sup>1</sup> yá <sup>3</sup>	Te	tisikhayá

PPn 336. Lo -<sup>o</sup> unexplained; Ay kh<sup>o</sup> cluster unexplained, but perhaps lag from larynealized c<sup>?</sup>i in preceding syllable; Ay si- apparently a loan from Hu since c<sup>?</sup>i- is the expected reflex. Development of \*<sup>o</sup> unexplained. Mz, Ja, Do, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

30. \*ci<sup>1</sup>?i<sup>1</sup>kha<sup>3</sup>né<sup>3</sup> (\*<sup>1</sup> - <sup>1</sup> - <sup>1</sup> - <sup>3</sup>) (\*ci<sup>1</sup>?i<sup>1</sup>- do 26) plays (an instrument).

Ay	ticikhané	So	ci <sup>3</sup> kha <sup>2</sup> né <sup>3</sup> (< Pre-So
Cq	cihané <sup>1</sup>		* <sup>21</sup> - <sup>3</sup> - <sup>3</sup> )
Ja	ti <sup>1</sup> c <sup>?</sup> i <sup>1</sup> kha <sup>2</sup> né <sup>2</sup>	Ix	khihwañé
Do	tic <sup>?</sup> ikhané	Lo	sikhoná
Hu	si <sup>1</sup> kha <sup>3</sup> né <sup>3</sup>	Te	tisikháné

PPn 241. Expected reflexes: Ay -c<sup>?</sup>i<sup>1</sup>-; development of \*<sup>o</sup> unexplained; Cq -khane<sup>1</sup>. Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Ix -hwa- < \*wha<sup>3</sup>?á<sup>3</sup> passes by 163; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

31. \*ci<sup>1</sup>?i<sup>1</sup>kha<sup>s</sup>?á<sup>3</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26) purges.

Ay	tic?ikh?ahé	Hu	si <sup>1</sup> kha <sup>s</sup> ?á <sup>3</sup> <u>he makes to pass</u>
Ja	ti <sup>1</sup> c?i <sup>1</sup> kh?á <sup>2</sup>	Te	tisikhá
Do	tic?ikh?á		

Expected reflex: Ay -kha?á. Development of \*? in \*ci<sup>1</sup>?i<sup>1</sup>- unexplained. Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>s1</sup>.

32. \*ci<sup>1</sup>?i<sup>1</sup>nta<sup>s</sup>há<sup>2</sup>, \*we<sup>1</sup>?e<sup>1</sup>nta<sup>s</sup>há<sup>2</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26; \*we<sup>s</sup>?e<sup>1</sup>- hits 652) constructs, makes.

Mz	tiw?entá	Hu	w?e <sup>1</sup> ntá <sup>s</sup> <sup>3</sup>
Ay	tic?intá	So	ci <sup>2</sup> ntá <sup>s1</sup> , ?we <sup>2</sup> ntá <sup>s1</sup>
Cq	ticintahá	Ix	tic?intá
Ja	ti <sup>1</sup> c?i <sup>1</sup> ndá <sup>2</sup>	Lo	khinowantohó
Do	tic?indá	Te	satisintiá

Expected reflexes: So we?e-; Lo -wo?o-. Te /i/ of /ia/ cluster unexplained; development of \*? unexplained; the condition under which the final syllable was lost is obscure. Mz, Ay, Cq, Ja, Do, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Lo khi- < \*khi<sup>3</sup>- completive aspect 172; Lo -wa- < \*wa<sup>3</sup>- verb auxiliary 630.

33. \*ci<sup>1</sup>?i<sup>1</sup>té<sup>4s</sup> (\*ci<sup>1</sup>?i<sup>1</sup>- do 26; \*té<sup>4s</sup> wide 572) pats  
(corn cakes).

Ja	ti <sup>1</sup> c?i <sup>1</sup> té <sup>8</sup>	Lo	sítá
Do	tic?ité	Te	tisité
Hu	si <sup>1</sup> té <sup>4s</sup>		

Development of \*? unexplained. Ja, Do, Te ti- < \*ti<sup>1</sup>-  
continuative aspect 589. The tone on the last syllable is  
partially indeterminate; it is either \*<sup>4s</sup> or \*<sup>4z</sup>.

34. \*ci<sup>3</sup>ní<sup>31</sup> uncle.

Ay	ciní	So	ci <sup>3</sup> ní <sup>32</sup>
Cq	ciní	Ix	ciní
Ja	ci <sup>2</sup> ní <sup>2s</sup>	Mg	ciní
Do	ciní	Lo	ciní
Hu	ci <sup>3</sup> ní <sup>3</sup>	Te	ciní
Ji	ciní		

Ja tone 3 probably phrase final glide.

35. \*ci<sup>3</sup>ñá<sup>1</sup> shrimp.

Ay	ciñá	So	ci <sup>3</sup> ñá <sup>21</sup>
Cq	ciñá	Ix	ciñá
Ja	ci <sup>2</sup> ñá <sup>1</sup>	Lo	ciñó
Do	ciñá	Te	ciñá
Hu	ci <sup>3</sup> ñá <sup>1</sup>		

36. \*ci<sup>s</sup>ti<sup>3</sup> crooked.

Ay	ci <sup>s</sup> ti <sup>3</sup>	Hu	ci <sup>s</sup> ti <sup>3</sup>
Ja	ci <sup>s</sup> ti <sup>3</sup>	Lo	ci <sup>s</sup> ti <sup>3</sup>
Do	ceit <sup>3</sup>	Te	cit <sup>3</sup>

Expected reflexes: Lo ci<sup>s</sup>ti<sup>3</sup>; Do /e/ of /ei/ cluster unexplained. Ay khi<sup>3</sup>i < \*khi<sup>s</sup>?i<sup>3</sup> appearance of 199. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>43</sup>.

37. \*ci<sup>s</sup>?i<sup>3</sup> everything.

Mz	nkaci	Mg	nkac?i
Ay	nkaci?i	Lo	nkoce?é
Hu	nka <sup>3</sup> c?i <sup>3</sup>	Te	nkaci

Expected reflex: Lo -ci<sup>s</sup>?i. Mz, Ay, Hu, Mg, Te nka-, Lo nko- < \*nka<sup>3</sup>- subordinating conjunction 340. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

38. \*ci<sup>s</sup>?i<sup>3</sup> nausea.

Ay	timac?i-	Hu	c?i <sup>3</sup>
Cq	ci?i	Ix	c?i
Ja	c?i <sup>3</sup>	Mg	c?i
Do	c?i	Te	ci

Expected reflex: Ay ci?i. Mg nasalization of /i/ unexplained. Ay ti- < \*ti<sup>1</sup>- continuative aspect 589; Ay -ma- < \*má<sup>3</sup> able 227.

39. \*ci<sup>4</sup> yours (sg.).

Mz	cihí, ci	Ji	ci
Ay	ci	So	ci
Cq	cíhi	Ix	hicí
Ja	hi <sup>1</sup> ci <sup>3</sup>	Lo	cihí
Do	hicí	Te	cihí
Hu	ci <sup>4</sup>		

Mz, Cq, Ja, Do, Ix, Lo, Te -hi- < \*hí<sup>3</sup> you (sg.) 133.

40. \*ci<sup>1</sup>?á<sup>2</sup> penis.

Ay	c'já	So	cjá <sup>1</sup>
Cq	cjá <sup>2</sup>	Ix	c'já <sup>1</sup>
Ja	c'já <sup>2</sup>	Lo	cjá <sup>2</sup>
Do	cjá <sup>2</sup>	Te	cjá <sup>2</sup>
Hu	cjá <sup>1</sup> <sup>3</sup>		

Expected reflexes: Hu, So c'já; Te cjá; Cq, So, Ix  
cjá.

41. \*ci<sup>2</sup> non-existant.

Hu	ci <sup>2</sup>	Mg	ci
Ji	ci	Te	ci

The tone reconstruction is partially indeterminate; it  
is either \*<sup>2</sup> or \*<sup>3</sup><sup>2</sup>.

42. \**cí<sup>4s</sup>* born.

Ay	<i>kicí</i>	So	<i>kicí</i>
Cq	<i>kaci</i>	Ix	<i>kici</i>
Ja	<i>ki<sup>2</sup>ci<sup>2</sup></i>	Lo	<i>kici</i>
Do	<i>kici</i>	Te	<i>kici</i>
Hu	<i>ki<sup>3</sup>ci<sup>4s</sup></i>		

Ay, Ja, Do, Hu, So, Ix, Lo, Te ki- < \*ki<sup>3</sup>- completive aspect 206; Cq ka- < \*ka<sup>2</sup>- completive aspect 172.

43. \**cutahú* plays with.

Ja	<i>ti<sup>1</sup>cu<sup>s</sup>tó<sup>3</sup></i>	So	<i>cu<sup>1</sup>tó<sup>s</sup>hó<sup>2</sup></i>
Do	<i>ticutó</i>		

PPn 24. Ja, Do loss of \*hú is obscure; So expected -tahó, but the vowel reflexes make it clear that it came from \*-ahu. Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

The tone development is obscure.

44. \**cu<sup>1</sup>e<sup>1</sup>* curassow.

Mz	<i>c'í</i>	Ji	<i>c'é</i>
Ay	<i>nísec'é</i>	So	<i>c'ué</i>
Cq	<i>náhñuc'ué</i>	Ix	<i>c'ué</i>
Ja	<i>c'é<sup>1</sup></i>	Lo	<i>ca'á</i>
Do	<i>c'é</i>	Te	<i>cé</i>
Hu	<i>c'é<sup>1</sup></i>		

Expected reflexes: Ay -cv'é; development of unstressed \*u is not explained; Cq cué. Ay níse- < \*ní<sup>4</sup>sé<sup>3</sup> bird 333;

Cq nāhñy- < \*nā<sup>4</sup>hñy<sup>4</sup> turkey 268.

45. \*cu<sup>1</sup>?ú<sup>1</sup> blouse.

Mz	c?ú	Ji	c?ú
Ay	c?ú	So	c?ú
Cq	cu?ú	Ix	c?ú
Ja	c?ú <sup>1</sup>	Mg	c?ú
Do	c?ú	Lo	c??
Hu	c?ú <sup>1</sup>	Te	cú

Development of unstressed \*u is not explained.

46. \*cu<sup>1</sup>?wá<sup>s</sup> walk.

Mz	cuwá	So	cu <sup>s</sup> ?wá <sup>2</sup> (< Pre-So * <sup>21</sup> - <sup>s</sup> )
Ay	cu?wá	Ix	cuwá
Ja	cu <sup>1</sup> ?wá <sup>2</sup>	Mg	cuw?ó
Do	cu?wá	Lo	c?wó
Hu	cu <sup>2</sup> ?wá <sup>s</sup>	Te	cuwá
Ji	cu?wá, cuwá		

Expected reflexes: Mz, Ix cu?wá. Development of Hu tone 2 is obscure. Gudschinsky (1959:20) reconstructed this etymon with tones \*43 - 3 which she derived from Pre-So \*32 - 4. But Pre-So \*21 - 3 can also yield So 3 - 2, I posit Pre-So \*21 - 3 as the source of this modern So 3 - 2 which makes possible the reconstruction of the PMaz etymon as \*1 - 3. This solution seems preferable since it fits the reconstruction of tone clusters on only heavily stressed syllables.

47. \*cú<sup>2</sup> says.

Mz	ticú	Ji	cú
Ay	ticú	So	cú <sup>1</sup>
Ja	ti <sup>1</sup> cú <sup>2</sup>	Ix	c'ucú
Do	ticú	Mg	cú
Hu	cú <sup>2</sup>	Lo	nícf

PPn 102. Lo ní- < \*ní<sup>3</sup>- (\*<sup>4</sup>) nominal 312; Mz, Ay, Ja,  
Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

48. \*-cú<sup>2</sup> (\*cú<sup>2</sup> says 47) pretty (music, sound).

Ay	ntacú	Hu	ná <sup>3</sup> ska <sup>1</sup> cú <sup>2</sup>
Ja	cho <sup>2</sup> cú <sup>2</sup>	Ix	chacú
Do	chocú	Te	ntacú

Ay, Te nta- < \*nta<sup>3</sup>há<sup>2</sup> good 358; Ja, Do cho-, Ix cha-  
< \*-chau<sup>3</sup>- hapiness 316; Hu ska < \*ská<sup>1</sup> plays 472; Hu ná<sup>3</sup>-  
< \*ná<sup>3</sup>-(\*<sup>4</sup>) nominal 241. The tone reconstruction is partially  
indeterminate; it is either \*<sup>2</sup> or \*<sup>3</sup><sup>2</sup>.

49. \*cu<sup>2</sup>ti<sup>3</sup> girl.

Hu	cu <sup>2</sup> ti <sup>3</sup>	Mg	cutí
Ji	cutí	Lo	cíté

50. \*-cú<sup>s</sup> raft, boat.

Ay	šucú	So	cocó
Cq	šucú	Ix	thucú
Ja	cu <sup>2</sup> cú <sup>2</sup>	Lo	čicí <sup>f</sup>
Do	cucú	Te	čiciú
Hu	či <sup>s</sup> cú <sup>s</sup>		

Expected reflex: So -cú; reflexes of the first syllable (šu-, cu-, či-, thu-) unexplained; development of /i/ in Te /iu/ cluster unexplained. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

51. \*cu<sup>s</sup>mi<sup>f1</sup> (\*<sup>4</sup> - <sup>1</sup>) sand.

Mz	cumi <sup>f</sup>	Hu	cu <sup>4</sup> mi <sup>f1</sup>
Ay	cumi <sup>f</sup>	So	cu <sup>s</sup> mi <sup>f21</sup>
Cq	cumi <sup>f</sup>	Ix	cumi <sup>f</sup>
Ja	cu <sup>2</sup> mi <sup>f1</sup>	Mg	cumi <sup>f</sup>
Do	cumi <sup>f</sup>	Te	cumi <sup>f</sup>

52. \*cu<sup>s</sup>?wi<sup>f1</sup> sun.

Ay	na <sup>?</sup> aic <sup>?</sup> uwi	So	cu <sup>s</sup> ?wi <sup>f21</sup>
Cq	cu <sup>?</sup> i	Ix	c <sup>?</sup> ui
Ja	c <sup>?</sup> iu <sup>1</sup>	Mg	c <sup>?</sup> i
Do	c <sup>?</sup> i, na <sup>?</sup> mīc <sup>?</sup> ína <sup>?</sup>	Lo	cí <sup>?</sup> wé
Hu	c <sup>?</sup> ui <sup>1</sup>	Te	cí-
Ji	c <sup>?</sup> i, cu <sup>?</sup> wí		

PPn 303. Ay, Cq, Ja, Do, So, Hu, Ix, Mg do not display the expected reflex of \*<sup>2</sup>w after /cu/, see walk 46; however, it could be argued that this is the unique development when \*<sup>2</sup>w follows /cu/ and precedes /i/. Note also the unexplained vowel metathesis in Ja. Ay nā- < \*nā<sup>s</sup>-(\*<sup>4</sup>) nominal 241.

53. \*cu<sup>4</sup>wa<sup>3</sup>kha<sup>1</sup> (\*<sup>s</sup> - <sup>s</sup> - <sup>1</sup>) hugs.

Ay	ticuwakhá-	Hu	cua <sup>4s</sup> kha <sup>1</sup>
Cq	ticuwakhá	Ix	cahwani <sup>s</sup> kha
Ja	ti <sup>1</sup> cu <sup>2</sup> wa <sup>2</sup> kha <sup>1</sup>	Lo	kiciwokhó
Do	ticuwakhá	Te	ticuwakhá

Ix ca-hwa-nj- < ca- continuative aspect, \*-wha<sup>s</sup>?a<sup>3</sup> passes by 163, \*nj<sup>s</sup>-(\*<sup>4</sup>) nominal 312; Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

54. \*čahú (likely same morpheme as \*ča<sup>s</sup>hú<sup>s</sup> dust 298 with extension of semantic area) ashes.

Mz	čahú	Lo	čihí
Ay	čahó	Te	čihú
Hu čau <sup>s</sup> l <sup>2</sup> i <sup>1</sup> s			

Expected reflex: Ay čohó. Hu l<sup>2</sup>i<sup>1</sup>s < \*nt<sup>y</sup>i<sup>s</sup>o<sup>1</sup> fire

412. The tone reconstruction is indeterminate but likely \*<sup>s</sup> - <sup>s</sup>.

55. \*ča<sup>1</sup>- person prefix (singular male).

Mz	čahnú <u>squirrel</u>	Do	čá
Ay	čanayí <u>devil</u>	Hu	ča- (followed by person's
Cq	ča- <u>male or female</u> <u>speaker with male</u> <u>referent</u>		name); čá <sup>1</sup> <u>male</u>
		Ji	čahnú <u>squirrel</u>
		Ix	čá <u>female speaker with</u> <u>male referent</u>
Ja	čá <sup>1</sup> <u>female speaker with</u> <u>male referent</u>	Mg	čihnú <u>squirrel</u>
		Lo	čiyohní <u>squirrel</u>
		Te	čihnú <u>squirrel</u>

Expected reflexes: Ix či-; Lo čo-. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

56. \*ča<sup>1</sup>hnú<sup>4</sup> (\*ča<sup>1</sup>- person prefix 55) squirrel.

Mz	čahnú	Ix	čihnú
Ay	čašnú	Mg	čihnú
Cq	šnú	Lo	čiyohní
Hu	ča <sup>1</sup> hnú <sup>4</sup>	Te	čihnú
Ji	čahnú		

PPn 206; PMS 30. Expected reflexes: Mg ča-, Lo čo-; Ay, Cq -hnú.

57. \*ča<sup>1</sup>se<sup>3</sup> (\*ča<sup>1</sup>- person prefix 55) opossum.

Ja	ča <sup>1</sup> se <sup>2</sup>	Do	časé
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58. \*ča<sup>1</sup>tu<sup>4</sup>, yá<sup>1</sup> (\*ča<sup>1</sup>- person prefix 55) squirrel.

Ja	ča <sup>1</sup> tu <sup>3</sup> , yá <sup>1</sup>	Do	čatu?yá
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59. \*ča<sup>1</sup>čá<sup>1</sup> load.

Ay	ččá	So	ččá <sup>21</sup>
Cq	ččá	Ix	ččá
Ja	ččá <sup>1</sup>	Mg	ččá
Do	ččá	Lo	ččó
Hu	ččá <sup>1</sup>	Te	ččá
Ji	ččá		

PMS 36. Expected reflexes: Ay, Hu, Ji, So, Ix ččá; Do ččá.

60. \*ča<sup>1</sup>čá<sup>1</sup> parent-in-law.

Hu	-čá <sup>1</sup>	So	ččá <sup>21</sup>
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PPn 124. Expected reflexes: Hu, So -ččá.

61. \*čá<sup>3</sup> brown.

Ay	čá	So	čá
Cq	čá	Ix	čá
Ja	čá <sup>2</sup>	Lo	čó
Do	čá	Te	čá
Hu	čá <sup>3</sup>		

The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

62. \*ča<sup>s</sup>ký<sup>s</sup>, \*či<sup>s</sup>ký<sup>s</sup> holy.

Mz	čaký	Ji	ntačiký
Ay	čiký	So	ča <sup>s</sup> ký <sup>s</sup>
Cq	čačaký	Ix	čiký
Ja	ča <sup>s</sup> ký <sup>s</sup> <u>baotize</u>	Mg	čiký
Do	čaký	Lo	škí
Hu	či <sup>s</sup> ký <sup>s</sup>	Te	čiký

PPn 71; PMS 29. Lo /š/ in /šk/ cluster unexplained; perhaps contraction of ča- > š. Mg expected reflex ča-. Ji nta- perhaps < \*na<sup>4</sup>nta<sup>1</sup>(\*<sup>s</sup> - <sup>1</sup>) water 270.

63. \*ča<sup>s</sup>khá<sup>s</sup>, \*či<sup>s</sup>khá<sup>s</sup>, \*wa<sup>s</sup>khá<sup>1</sup> (\*wa<sup>s</sup>- verb auxiliary 630) breaks, broken.

Mz	tiwakhá <u>breaks</u>	Hu	či <sup>s</sup> khá <sup>s</sup> <u>broken</u> ; wa <sup>s</sup> khá <sup>1</sup>
Ay	cikhá <u>broken</u> ; tiwakhá <u>breaks</u>	So	ca <sup>s</sup> khá <sup>s</sup> <u>broken</u>
Cq	čakhá <u>broken</u> ; kuakhá <u>breaks</u>	Ix	čakhá
Ja	ča <sup>s</sup> khá <u>broken</u> ; ti <sup>1</sup> wa <sup>s</sup> khá <sup>1</sup> <u>breaks</u>	Mg	čakhá <u>broken</u>
Do	čakhá <u>broken</u> ; tiwakhá <u>breaks</u>	Lo	čokhó <u>broken</u> ; hakowokhó <u>breaks</u>
		Te	nčikhá <u>broken</u> ; tiwukhá <u>breaks</u>

PPn 77. Expected reflexes: Ay cikhá; Te /n/ of /nč/ cluster unexplained. Mz, Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

64. \*ča<sup>s</sup>yaá<sup>s</sup> forgets.

Mz	čayá <u>forget</u> ( <u>lose</u> <u>inside</u> )	So	ča <sup>s</sup> yá <sup>s</sup>
Ay	kičayá-	Ix	kičiyá
Cq	kačayá-	Mg	čayále, čahí
Ja	k <sup>w</sup> a <sup>2</sup> ča <sup>2</sup> yá <sup>2s</sup>	Lo	kočiyó
Do	k <sup>w</sup> ačayá	Te	kičayá
Hu	ča <sup>s</sup> yá <sup>s</sup>		

Expected reflexes: Lo -čo-; Te -čiya. Ja, Do k<sup>w</sup>a- may have developed from \*ka- completive aspect 172; Ay, Ix, Te ki- < \*ki<sup>s</sup>- completive aspect 206; Cq ka-, Lo ko- < \*ka<sup>2</sup>- completive aspect 172. Ja tone 3 of 23 glide probably is an analogical development in phrase final position.

65. \*ča<sup>s</sup>oú<sup>s</sup> bad, wicked.

Ay	čoó	Hu	č'au <sup>s</sup> čy <sup>s</sup> <u>bad place</u> ,
Cq	čoó		č'au <sup>s</sup> nhe <sup>4</sup> <u>stink</u>
Ja	čoó <sup>2</sup>	Ix	čoú
Do	čoó	Lo	či'ici
		Te	čo

Expected reflexes: Ay, Cq čoó; Do čoó; Ix čoú; Te čiu; it is clear that the reflexes come from \*a - u but the exact development of \*a is not explained. Hu -čy<sup>s</sup> < \*čy<sup>s</sup> place 118; Hu -nhe<sup>4</sup> < \*hné<sup>4</sup> smells 141.

66. \*ča<sup>4</sup>há<sup>1</sup> cramp.

Ay	čahá	Ix	čihá <u>rheumatism</u>
Cq	čahá	Mg	čá
Ja	ča <sup>2</sup> há <sup>1</sup> <u>rheumatism</u>	Lo	čohó
Do	čahá	Te	čihá
Hu	čá <sup>4</sup> <sup>2</sup>		

67. \*ča<sup>4</sup>hnká<sup>4</sup>, \*či<sup>4</sup>hnká<sup>4</sup> liver.

Mz	čahnká	Hu	ču <sup>4</sup> hnká <sup>4</sup>
Ay	čhu <sup>2</sup> nká	So	ča <sup>4</sup> nká <sup>4</sup>
Cq	čanká	Ix	činkantá
Ja	čha <sup>3</sup> nká <sup>3</sup>	Lo	čohnkó
Do	čhanká	Te	čihnká

Expected reflexes: Ay činká; Hu čihnká; Lo nkó; Te činká; Ay, Ja, Do /h/ unexplained. Ix -ntá < \*nta<sup>3</sup>há<sup>2</sup> good 358.

68. \*ča<sup>4</sup>kí<sup>1</sup>, \*či<sup>4</sup>kí<sup>4</sup> (\*<sup>3</sup> - <sup>1</sup>) firewood.

Mz	čiki	Ji	čiki
Ay	čiki	So	ča <sup>3</sup> kí <sup>21</sup>
Cq	čaki	Ix	čiki
Ja	či <sup>2</sup> kí <sup>1</sup>	Mg	čaki
Do	čiki	Lo	čoké
Hu	či <sup>4</sup> kí <sup>1</sup>	Te	čiki

69. \*ča<sup>4</sup>?á<sup>2</sup> armadillo.

Mz	ča?á	Ji	ča?á
Ay	če?á	So	ča <sup>4</sup> ?á <sup>1</sup>
Cq	ča?á	Ix	ča?á
Ja	č?á <sup>3</sup> <sup>2</sup>	Lo	či?ó
Do	ča?á	Te	či?á
Hu	ča <sup>4</sup> ?á <sup>2</sup>		

PMS 31. Expected reflexes: Ay ča?á; Do č?á;  
Ix či?á; Lo či?ó; Te čá.

70. \*ča<sup>4</sup>?ý<sup>4</sup> thunder-lightning.

Ay	čq?ó	So	ča <sup>4</sup> ?ý <sup>4</sup>
Cq	čý?ú	Ix	či?ý
Ja	č?ó <sup>3</sup>	Mg	č?ý
Do	č?ó	Te	čý
Hu	č?ay <sup>4</sup>		

PMS 32. Expected reflexes: Cq čq?ó; So -?ó; Mg č?ó;  
Te či?ý; it is clear that the reflexes result from \*a - u, but  
the precise development is not explained. Gudschinsky  
reconstructed the etymon of these reflexes as \*ča?ný but I  
reconstruct \*?nV from sets such as 703, 707, and 708, none of  
which Gudschinsky reconstructed.

71. \*čay<sup>1</sup> earthquake.

Ay	čó	So	čó <sup>21</sup>
Ja	čó <sup>1</sup>	Ix	čú
Do	čó	Mg	čú
Hu	čay <sup>1</sup>	Lo	čí
Ji	čó	Te	čó

72. \*čé<sup>4</sup> trap.

Mz	čí	Hu	čé <sup>4</sup>
Ay	čé	Ji	čié
Cq	čé	So	čé <sup>4</sup>
Ja	čé <sup>s</sup>	Ix	čé
Do	čé	Te	čá-

Expected reflexes: Te čé; Cq čéi; Ji /i/ or /ié/ cluster unexplained.

73. \*čhá<sup>4</sup> brother of spouse.

Ay	čhá	So	čhá <sup>4</sup>
Cq	čačhá-	Ix	čhá
Ja	nda <sup>s</sup> čhé <sup>s</sup> ha <sup>1</sup> -, ča <sup>1</sup> -, hni <sup>1</sup> -Mg	čhá	
Do	ndačhé ha-, ča-, hmi-	Lo	čhá
Hu	čhá <sup>4</sup>	Te	sačhá-

Expected reflexes: Ja, Do -čhá; Lo čhó.

74. \*čhá<sup>2</sup> cooks.

Ay	tiwečhá	Ji	tičhá
Cq	tiwačhá	So	čhá <sup>1</sup>
Ja	ti <sup>1</sup> we <sup>1</sup> čhá <sup>2</sup>	Ix	ticičhá
Do	tiwečhá	Lo	kingčhó
Hu	si <sup>1</sup> čhá <sup>1</sup>	Te	tiwičhá

PPn 134; PMS 34. Ay, Ja, Do -we- perhaps < \*wé<sup>42</sup> knows 653; Lo ki- < \*ki<sup>3</sup>- completive aspect 206; Lo -no- unexplained; Cq -wa- < \*wa<sup>3</sup>- verb auxiliary 630; Te -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Hu si-, Ix ci- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26; Ay, Cq, Ja, Do, Ji, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. Hu expected reflex tone 1 - 2.

75. \*čhaú<sup>41</sup> egg.

Mz	čhó	Ji	čhó
Ay	čhó	So	čhó <sup>42</sup>
Cq	čhó	Ix	čhú
Ja	čhó <sup>s1</sup>	Mg	čhó
Do	čhó	Lo	čhí
Hu	čhaú <sup>42</sup>	Te	čhú

PPn 189. Expected reflex: So čhó<sup>42</sup>.

76. \*čhí<sup>1</sup> expensive.

Ay	čhí	Hu	čhí <sup>1</sup>
Cq	nkačhí-	Ix	čhí
Ja	čhí <sup>1</sup>	Lo	čhí
Do	čhí	Te	čhí

Cq nka- < \*nka<sup>s</sup>- subordinating conjunction 340. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

77. \*čhi<sup>1</sup> pays.

Mz	tiw <sup>?</sup> ečhi	Ji	w <sup>?</sup> ečhi
Ay	tiw <sup>?</sup> ečhi	So	?we <sup>21</sup> čhi <sup>21</sup>
Cq	kuačhé	Ix	c <sup>?</sup> a <sup>?</sup> wičhi
Ja	ti <sup>1</sup> w <sup>?</sup> e <sup>1</sup> čhi <sup>1</sup>	Mg	cew <sup>?</sup> ičhi
Do	tiw <sup>?</sup> ečhi	Lo	cew <sup>?</sup> ičhi
Hu	w <sup>?</sup> e <sup>1</sup> čhi <sup>1</sup>	Te	tiwičhi

PMS 93. Expected reflexes: Cq -čhi; Ix c<sup>?</sup>awičhi; Lo cewa<sup>?</sup>ačhi. Ay kua- future aspect; Mz, Ay, Ja, Do, Hu, Ji w<sup>?</sup>e-, So ?we- < \*we<sup>3</sup>?é<sup>1</sup> hits 652; Mg, Lo w<sup>?</sup>i-, Te -wi- perhaps < \*we<sup>3</sup>?é<sup>1</sup> hits 652, but vowel contaminated by verb auxiliary \*wi<sup>3</sup>- 655; Mz, Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

78. \*čhi<sup>2</sup> ripens.

Mz	tičhi	So	ki <sup>s</sup> čhi <sup>1</sup>
Ay	kičhi	Ix	kičhi
Cq	kičhi	Mg	kičhi
Ja	ki <sup>s</sup> čhi <sup>2</sup>	Lo	kičhi
Do	kičhi	Te	kičhi
Hu	ki <sup>s</sup> čhi <sup>2</sup>		

PPn 131. Ay, Cq, Ja, Do, Hu, So, Ix, Mg, Lo, Te ki- < \*ki<sup>3</sup>- completive aspect 206; Mz ti- < \*ti<sup>1</sup>- continuative aspect 589.

79. \*čhi<sup>3</sup> chirimoya.

Mz	čhi	Hu	čhi <sup>3</sup>
Ay	čhi	So	čhi <sup>3</sup>
Cq	čhi	Ix	čhi
Ja	čhi <sup>2</sup>	Lo	čhé
Do	čhi	Te	čhi

PPn 142. Expected reflex: Lo čhi.

80. \*čhi<sup>3</sup>nki<sup>3</sup> iguana.

Ay	čhia <sup>2</sup> nki	So	činkí
Ja	čhi <sup>2</sup> nki <sup>2</sup>	Ix	činkí
Do	čhinkí		

Expected reflexes: So, Ix čhi-; Ay /a/ of /ia/ cluster unexplained; Ay /?/ unexplained. The tone reconstruction on the last syllable is rather indeterminate, it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

81. \*čhi<sup>4</sup>né<sup>4</sup> (\*<sup>3</sup> - <sup>3</sup>) sews, embroideries.

Ay	čhiné	So	čhi <sup>4</sup> né <sup>4</sup>
Ja	čhi <sup>2</sup> né <sup>2</sup>	Ix	čhiñé
Do	čhiné		
Hu	čhiné	lace	

82. \*čhi<sup>4</sup>nté<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) zavote.

Mz	šintí	Hu	čhi <sup>4</sup> nté <sup>1</sup>
Ay	čhinté	So	čhi <sup>3</sup> nté <sup>21</sup>
Cq	čhinté	Ix	čhinté
Ja	čhi <sup>2</sup> nté <sup>1</sup>	Lo	či <sup>2</sup> ntá
Do	čhinté	Te	čhinté

PPn 256. Expected reflexes: Mz čhintí; Lo čintá.

83. \*čhi<sup>4</sup>?yá<sup>4</sup> (\*<sup>3</sup> - <sup>4</sup>) cherry.

Cq	čhi	Ix	čhi?ia
Ja	čhi <sup>2</sup> ?ia <sup>3</sup>	Mg	čhiy?á
Do	čhi?ia	Lo	čhi?yo
Hu	čhi <sup>4</sup> ?yá <sup>4</sup>	Te	čhiyá

84. \*čhu<sup>s</sup>wei<sup>1</sup> (\*<sup>4</sup> - <sup>s</sup>) take it.

Ay	čhuwé	Ji	čhuwí
Ja	čhu <sup>s</sup> wei <sup>2</sup>	Ix	čhuwé
Do	čhuwei	Lo	ntiwi
Hu	thué <sup>21</sup> , thu <sup>s</sup> wé <sup>1</sup> <u>he takes</u>		

PPn 305. Hu /th/, Lo nti- unexplained; Ay expected reflex čhuwé; Ji čhuwí.

85. \*čhu<sup>4</sup>wá<sup>4</sup>, \*čha<sup>4</sup>wá<sup>4</sup> grasshopper, locust.

Ay	thiučhawá	-	Do	čhuwá
Cq	thiuwá		Hu	ču <sup>4</sup> wá <sup>4</sup>
Ja	čhu <sup>3</sup> wá <sup>3</sup>		Ix	čhuwá

Expected reflexes: Ay čhawá; Hu čhuá. Ay, Cq thiu- <  
 \*t<sup>y</sup>hu<sup>s</sup>-(\*<sup>4</sup>) nominal 616 through 620.

86. \*čhú<sup>41</sup> woman, wife.

Mz	čhú	Ji	čhú
Ay	čhú	So	čhú <sup>42</sup>
Cq	čhú	Ix	čhú
Ja	čhú <sup>31</sup>	Lo	čhí
Do	čhú	Te	čhú-
Hu	čhú <sup>42</sup>		

PPn 111; PMS 35.

87. \*čhuá<sup>2</sup> closes, shuts.

Mz	tiwečhá	So	’we <sup>1</sup> čhiá <sup>1</sup>
Ay	tiwečhá	Ix	cawičhá
Cq	kueičhá	Mg	w <sup>o</sup> ečhó
Ja	thi <sup>1</sup> čhá <sup>2</sup> <u>it is closed</u>	Lo	tičhó
Do	thičhá		
Hu	w <sup>o</sup> e <sup>1</sup> čhuá <sup>2</sup> ntiá <sup>1</sup> <u>closed</u>		

road

Expected reflexes: Mz -čhuá, Cq -čhuá, Ix -čhuá, So -čhwa, Mg -čhá, unless these are the reflexes after \*čh, cf. gives 25; Mz, Ay -we-, So ’we-, Hu, Mg w<sup>o</sup>e- < \*we<sup>3</sup>’é<sup>1</sup> hits 652; Mz, Ay, Lo ti- < \*ti<sup>1</sup>- continuative aspect 589; Ja, Do thi- unexplained.

88. \*či<sup>1</sup>ki<sup>4</sup> parrot.

Ay načikí	Do čiki
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Ja či <sup>1</sup> ki <sup>3</sup>	Ix čiki
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Ay na- < \*na<sup>3</sup>-(\*<sup>4</sup>) nominal 241.

89. \*či<sup>3</sup>ki<sup>3</sup> breast.

Ay čiki	So čiki
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Cq čiki	Ix čiki
---------	---------

Ja či <sup>2</sup> ki <sup>2</sup>	Mg čiki
------------------------------------	---------

Do čiki	Lo čiki-
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Hu či <sup>3</sup> ki <sup>3</sup> <u>nipples</u>	Te čiki
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The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

90. \*či<sup>3</sup>se<sup>3</sup> fly (n).

Ay thiúčuse	Ji čisé
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Cq čusej	So či <sup>3</sup> se <sup>3</sup>
----------	------------------------------------

Ja či <sup>2</sup> se <sup>2</sup>	Ix čisé
------------------------------------	---------

Do čisé	Mg čisé
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Hu či <sup>3</sup> se <sup>3</sup>	Lo čisé <u>spider</u>
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PPn 149. Expected reflex: Lo čisá. Ja /?/ in /č?/ cluster unexplained; Ay, Cq ču- < \*čú<sup>4</sup> animal 107; Ay thiú- < \*t<sup>y</sup>hu<sup>3</sup>-(\*<sup>4</sup>) nominal 616 through 620.

91. \*či<sup>3</sup>ta<sup>3</sup> uvula.

Ay čitá

Ix čitá

Ja či<sup>2</sup>ta<sup>23</sup>

Te čitiá

Do čitá

Te /i/ in /ja/ cluster unexplained. Ja tone 3 probably developed analogically in phrase final position. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

92. \*či<sup>3</sup>thú<sup>3</sup> hunchback.Ja či<sup>2</sup>thú<sup>2</sup>

Do čithú

The tone reconstruction on the second syllable is partially indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

93. \*či<sup>3</sup>?j<sup>3</sup> fever.Ay či<sup>2</sup>jíSo či<sup>3</sup>?j<sup>3</sup>Cq či<sup>2</sup>jíIx či<sup>2</sup>jíJa č?j<sup>2</sup>Mg č?int?é malaria, č?íDo č?j<sup>2</sup>

sickness

Hu č?j<sup>3</sup>Lo či<sup>2</sup>jíJi č?inte?é malaria,

Te čí

či<sup>2</sup>jí sickness

PPn 230. Expected reflexes: So, Ix č?j<sup>3</sup>; Mg oral /i/ unexplained.

94. \*či<sup>s</sup>?i<sup>s</sup>scé<sup>1</sup> (\*či<sup>s</sup>?i<sup>s</sup> fever 93) cold (sickness).

Ay	č?icé	So	č?i <sup>s</sup> cé <sup>21</sup>
Cq	čicé	Ix	či?i <sup>s</sup> scé
Ja	č?i <sup>s</sup> ce <sup>1</sup> ký <sup>23</sup>	Mg	č?icé
Do	č?i <sup>s</sup> ceký	Lo	čicá
Hu	č?i <sup>s</sup> hce <sup>1</sup>	Te	čihcé

PPn 230. Expected reflexes: Ay, Cq, Lo či?i-; Ix č?i-; development of \*\* unexplained; Te -hce perhaps borrowed from Hu; expected -ce; Do -ký unexplained.

95. \*či<sup>s</sup>nté<sup>1</sup>, \*čhi<sup>s</sup>nté<sup>1</sup> unmatured.

Ay	či?nté	Ji	či?nté
Cq	či?nté	Ix	čhinté
Ja	čhi <sup>s</sup> nté <sup>1</sup>	Mg	čint <sup>s</sup> é
Do	čhinté	Lo	či?ntá
Hu	či <sup>s</sup> nté <sup>1</sup>	Te	čhinté

Expected reflexes: Mg, Lo čhi-; Hu či?nté.

96. \*ču<sup>4</sup>ci<sup>1</sup> glass.

Mz	čuci	Ji	čici
Ay	čuci	So	ču <sup>4</sup> ci <sup>21</sup>
Cq	ntiohocí	Ix	čici
Ja	ču <sup>s</sup> ci <sup>1</sup>	Mg	čhuci
Do	čuci	Lo	čicé
Hu	ču <sup>4</sup> ci <sup>1</sup>	Te	čici

Expected reflexes: Ix čuci; Mg /h/ in /čh/ cluster unexplained. Cq ntiho- < \*nt<sup>y</sup>a<sup>4</sup>hú<sup>4</sup> stone 406.

97. \*či<sup>4</sup>hný<sup>4</sup> arrow.

Cq yančišný	So čihý
Ja či <sup>3</sup> hný <sup>3</sup> <u>bow and arrow</u>	Ix čuhnó
Do čihny	

Expected reflexes: Cq, So, Ix čihny. Cq ya- < \*yá<sup>1</sup> tree 662.

98. \*či<sup>4</sup>ní<sup>3</sup> dream.

Ay čini	Do čini
Ja nči <sup>3</sup> ní <sup>2</sup> , či <sup>3</sup> ní <sup>2</sup> (< Pre-	Ix čini
Ja *nči <sup>3</sup> ní <sup>2</sup> )	Lo činé

Lo expected reflex čini; Ja /n/ in /nč/ cluster unexplained. The reconstruction of tone on the last syllable is indeterminate, either \*<sup>3</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup> is possible.

99. \*či<sup>4</sup>nká<sup>3</sup> shirt.

Ay činká	Hu či <sup>4</sup> nká <sup>3</sup>
Cq činká	So sinká
Ja či <sup>3</sup> nká <sup>2</sup>	Ix činká
Do činká	Mg činká

So expected reflex činká. The tone reconstruction is partially indeterminate; it is either \*<sup>4</sup> - <sup>3</sup> or \*<sup>4</sup> - <sup>31</sup>.

100. \*či<sup>4</sup>nká<sup>4</sup> pig.

Mz	činká	Ji	činká
Ay	činká	So	či <sup>4</sup> nká <sup>4</sup>
Cq	činká	Ix	činká
Ja	či <sup>3</sup> nká <sup>3</sup> , či <sup>3</sup> nkó <sup>3</sup> (< Pre- Ja *činká)	Mg	činká
Do	činká	Lo	činkó
Hu	či <sup>4</sup> nká <sup>4</sup>	Te	činká

101. \*či<sup>4</sup>?f<sup>4</sup> drunk, intoxicated.

Mz	č?í	Ji	č?í
Ay	č?í	So	č?í <sup>4</sup>
Cq	či?ičá	Ix	č?í
Ja	č?í <sup>3</sup>	Mg	č?í
Do	č?í	Lo	či?í
Hu	č?í <sup>4</sup>	Te	čí

PPn 302. Expected reflexes: Ay či?í; Cq -ča unexplained.

102. \*ču<sup>1</sup>yá<sup>3</sup> wait (imper. pl.)

Ay	čuyá	So	čuyai
Ja	ču <sup>2</sup> yá <sup>222</sup>	Ix	čiyé
Do	čuyá	Lo	čiñó
Hu	ču <sup>1</sup> yá <sup>3</sup>	Te	čiñá-
Ji	čuyá		

Expected reflexes: Ji či-; Ix ču-; So /ai/, Ix /e/ probably imperative; Lo, Te /ñ/ unexplained, expected /y/; Ja tones unexplained, expected <sup>1</sup> - <sup>2</sup>.

103. \*ču<sup>1</sup>na<sup>1</sup> parrot.

Ay	č'ani <sup>č</sup>	Ji	č'aá
Cq	ču'áni <sup>č</sup>	So	čuaní <u>red parrot</u>
Ja	č'a <sup>1</sup> ní <sup>2</sup>	Ix	nč'yaá
Do	č'ani <sup>č</sup>	Mg	č'aá
Hu	č'uá <sup>1</sup> <u>green parrot</u>	Lo	či'wo

Expected reflex: So č'ua-; Ix /n/ of /nč/ cluster unexplained. Ay, Cq, Ja, Do, So -ni<sub>t</sub> < \*čya<sup>3</sup>ní<sup>2</sup> red 726.

104. \*ču<sup>1</sup>mí<sup>1</sup> chayote.

Ay	č'í	So	č'úf <sup>21</sup>
Cq	ču'mí <sup>č</sup>	Ix	nč'úf <sup>č</sup>
Ja	č'í <sup>1</sup>	Mg	č'í <sup>č</sup>
Do	č'í <sup>č</sup>	Lo	čo'mé
Hu	č'úf <sup>1</sup>	Te	čí <sup>č</sup>
Ji	č'í <sup>č</sup>		

PPn 226. Expected reflex: Lo či-; Ix /n/ of /nč/ cluster unexplained. An additional difficulty in the reconstruction of this etymon is that Ay, Ja, Do, Ji, and Mg do not show the expected reflexes of \*u; however, the environment preceding \*m could be posited.

105. \*čú<sup>3</sup>(\*<sup>1</sup>) arrives at, reaches.

Ay	he <sup>2</sup> ečú	So	fi <sup>3</sup> čú <sup>1</sup>
Ja	k <sup>w</sup> i <sup>2</sup> čú <sup>2</sup>	Ix	khuačú
Do	k <sup>w</sup> ičú	Mg	k <sup>w</sup> ečú <u>he will arrive</u>
Hu	whi <sup>3</sup> čú <sup>1</sup>	Lo	yakačí
Ji	?ičú	Te	hesčú

Ay he<sup>2</sup>e- perhaps < \*he<sup>s</sup>hé<sup>s</sup> finished 131; Ja, Do k<sup>w</sup>i-, Mg k<sup>w</sup>e- unexplained, perhaps < \*k<sup>w</sup>hí<sup>3</sup>(\*<sup>1</sup>) will go 225; Hu whi-, So fi- < \*hwí<sup>2</sup> goes 169; Ji ?i- unexplained. So tone is unexplained.

106. \*ču<sup>s</sup>t<sup>y</sup>ha<sup>s</sup>wa<sup>s</sup>hnká<sup>s</sup> (\*čú<sup>4</sup> animal 107; \*t<sup>y</sup>ha<sup>s</sup>wa<sup>s</sup> skin 613; \*hnká<sup>s</sup> wing 143) bat.

Ja	ču <sup>s</sup> tha <sup>s</sup> wa <sup>s</sup> nká <sup>s</sup>	Do	čuthawanká
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107. \*čú<sup>4</sup> animal.

Mz	čú	Ji	čú
Ay	čú	So	čú <sup>4</sup>
Cq	čú	Ix	čú
Ja	čú <sup>3</sup>	Mg	čú
Do	čú	Lo	čí
Hu	čú <sup>4</sup>	Te	čú

PPn 66.

108. \*ču<sup>4</sup>ki<sup>3</sup>šú<sup>3</sup> (\*čú<sup>4</sup> animal 107; \*ki<sup>3</sup>- completive aspect 206; \*šú<sup>3</sup> foam 551) weevil.

Ay	näčukišú	Ix	čukišú
Cq	čukišú	Lo	čikišé
Ja	ču <sup>3</sup> ki <sup>2</sup> šú <sup>2</sup>	Te	čukišú
Do	čukišú		

Expected reflex: Te čukišú; Cq nasalized /u/ unexplained.  
 Ay nä- < \*na<sup>3</sup>-(\*<sup>4</sup>) nominal 241. The tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

109. \*ču<sup>4</sup>né<sup>1</sup>hé<sup>4</sup> (\*čú<sup>4</sup> animal 107) centipede.

Ay	thiunéhé	Lo	čiñahá <u>centipede</u> <u>that</u>
Ja	ču <sup>3</sup> nu <sup>1</sup> nhé <sup>3</sup>		<u>bites</u>
Do	čunéhé	Te	čuncehé
Ix	čunihé		

Expected reflex: Te či-; Ix -ñ-; Lo /ñ/ unexplained, expected /n/; Te /c/ unexplained. Ay thiu- < \*t<sup>y</sup>hu<sup>3</sup>-(\*<sup>4</sup>) nominal 616-620.

110. \*ču<sup>4</sup>ní<sup>3</sup>ñý<sup>3</sup> (\*čú<sup>4</sup> animal 107; ní<sup>3</sup>- nominal 312) porcupine.

Mz	čuniñú	Ix	čuniñú
Ay	čuniñú	Lo	čiñí
Cq	čuniñú	Te	čiñý
Hu	ču <sup>4</sup> ñý <sup>3</sup>		

The tone on the last syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>. Note that \*-ni- was lost before \*ñ < Ø in Hu when preceded by /n/, cf. dog 246.

111. \*ču<sup>4</sup>nta<sup>s</sup>wá<sup>1</sup>, \*ču<sup>4</sup>ntu<sup>s</sup>wá<sup>1</sup>, ča<sup>4</sup>- (\*nta<sup>s</sup>wá<sup>1</sup>, \*ntu<sup>s</sup>wá<sup>1</sup> sunshine 370) hot season.

Ay	čuntawá	So	čontawá
Cq	čantawá	Ix	čuntuwá
Ja	ču <sup>s</sup> nu <sup>2</sup> wá <sup>1</sup>	Lo	čintiwó
Do	čunduwá	Te	chentuwá
Hu	ča <sup>4</sup> ntuá <sup>s1</sup>		

Expected reflexes: Lo, Te či-.

112. \*ču<sup>4</sup>ntú<sup>s1</sup> (\*čú<sup>4</sup> animal 107, \*ntu<sup>s1</sup> probably derived from \*ntu<sup>s</sup>hú<sup>1</sup> long 397) worm.

Mz	čuntú	Ji	čuntú
Ay	čintú	So	ču <sup>4</sup> ntú <sup>s2</sup>
Cq	čuntú	Ix	čuntú
Ja	čhu <sup>s</sup> ntú <sup>s</sup>	Mg	čuntú
Do	čhintú	Lo	čintí
Hu	ču <sup>4</sup> ntú <sup>s</sup>	Te	čintiu

PPn 266. Ja, Do /h/ in /čh/ cluster unexplained; Ay, Do expected reflex čuntú.

## A.113

113. \*ču<sup>4</sup>te<sup>s1</sup> (\*čú<sup>4</sup> animal 107, te<sup>4s</sup> wide 572) cockroach.

Ay	načuté	So	ču <sup>4</sup> te <sup>s2</sup>
Ja	ču <sup>s</sup> te <sup>s2</sup>	Ix	čuté
Do	čuté		

Ay na<sup>s</sup>< \*na<sup>s</sup>-(\*<sup>4</sup>) nominal 241.

114. \*ču<sup>4</sup>wá<sup>4</sup> measure, mark.

Mz	čuwá	Hu	čua <sup>4</sup> , ču <sup>4</sup> wá <sup>4</sup>
Ay	čuwá	Ix	čuwá
Cq	čuwá	Lo	čiwó
Ja	ču <sup>s</sup> wá <sup>s</sup>	Te	čuwá
Do	čuwá		

PPn 313. Expected reflex: Te čiwá.

115. \*ču<sup>4</sup>ntá<sup>s</sup> servant.

Ay	ču <sup>s</sup> ntá	Mg	čunt <sup>?</sup> á
Hu	ču <sup>4</sup> ntá <sup>s</sup>	Lo	či <sup>?</sup> ntó
Ji	ču <sup>s</sup> ntá	Te	čintiá

Expected reflex: Ji či-. Te /i/ of /ia/ cluster unexplained. The tone reconstruction of the final syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

116. \*ču<sup>4</sup>?ú<sup>1</sup> (\*čú<sup>4</sup> animal 107) bedbug.

Ay	thiuči?ú	Hu	ču <sup>4</sup> ?ú <sup>1</sup>
Ja	ču <sup>s</sup> ?ú <sup>s</sup>	Ix	ču?ú
Do	ču?ú	Te	či?ú

Expected reflex: Te čiuú; development of unstressed \*u unexplained. Ay thiu- < \*t<sup>y</sup>hu<sup>s</sup>-(\*<sup>4</sup>) nominal 616-620.

117. \*ču<sup>4</sup>?ú<sup>4</sup>, \*-?yú bud.

Ay	č?ú-	Ix	našu?íú
Ja	na <sup>s</sup> šu <sup>s</sup> ?íú <sup>s</sup>	Mg	č?ý
Do	našu?íú	Lo	či?á
Hu	č?ú <sup>4</sup>	Te	yú

Expected reflexes: Lo či?yí; Ay či?ú; Hu ču?ú; development of unstressed \*u unexplained. Ja, Do, Ix našu- < \*na<sup>s</sup>šú<sup>1</sup> flower 248. The tone reconstruction is partially indeterminate; it is either \*<sup>4</sup> - <sup>4</sup>, or \*<sup>4</sup> - <sup>3</sup>.

118. \*čý<sup>3</sup> time, place.

Ay	č?očý	Ix	č?učý
Ja	č?o <sup>s</sup> čý <sup>s</sup>	Lo	či?jčí <u>bad place</u>
Do	č?očý	Te	čočý
Hu	č?au <sup>s</sup> čý <sup>s</sup>		

Ay, Ja, Do č?o-, Hu č?au-, Ix č?u-, Lo či?j-, Te čo- < \*ča<sup>s</sup>?ú<sup>3</sup> bad 65. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

119. \*čý<sup>s1</sup> appearance, similarity.

Hu	čý <sup>s</sup>	So	čý <sup>s2</sup>
Ji	čý		

120. \*ha<sup>?</sup>i name.

Mz	he <sup>?</sup> i	Ji	he <sup>?</sup> ére <u>his name</u>
Ay	ha <sup>?</sup> ai	So	hi <sup>?</sup> <sup>21</sup>
Ja	h <sup>?</sup> a <sup>?</sup> <sup>13</sup>	Ix	ha <sup>?</sup> ai
Do	h <sup>?</sup> ai	Mg	h <sup>?</sup> i
Hu	ha <sup>?</sup> ai <sup>1</sup>		

PMS 70. Expected reflexes: Ay, Ji, Mg h<sup>?</sup>ai; So, Ix ha<sup>?</sup>i; Mz /e/ unexplained. Gudschinsky reconstructed this etymon as \*ha<sup>?</sup>mi but such reconstruction seems doubtful for PMaz though it may be correct for a more remote layer and may be related to \*<sup>?</sup>mi named 701. The tone development in these reflexes is obscure.

121. \*ha<sup>1</sup>- person prefix (plural male referent, male speaker)

Ja	há <sup>1</sup> <u>male speaker</u>	Ix	hacini <sup>1</sup> <u>uncles with male</u>
Do			<u>with male referent</u> <u>speaker</u>

Do há

Ix -ciní < \*ci<sup>3</sup>ní<sup>31</sup> uncle 34. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

122. \*ha<sup>3</sup>í<sup>3</sup> arrives.

Ay	heha <sup>3</sup> á	Hu	ha <sup>3</sup> ai <sup>3</sup>
Cq	khueh <sup>3</sup> á	Ix	ha <sup>3</sup> ai
Ja	h <sup>?</sup> ai <sup>2</sup>	Te	há

A.123

PPn 190. Expected reflexes: Ay h<sup>a</sup>í, Cq -ha<sup>a</sup>í. Cq khue- unexplained; Te he < \*he<sup>s</sup>hé<sup>s</sup> finished 131.

123. \*-há<sup>4</sup> worm (intestinal).

Mz	yahá	Hu	ya <sup>1</sup> há <sup>4</sup>
Ay	yihá	So	ya <sup>s</sup> há <sup>24</sup> (< Pre-So * <sup>21</sup> - <sup>4</sup> )
Cq	yehé	Ix	yihá
Ja	ču <sup>s</sup> ka <sup>1</sup> há <sup>s</sup>	Lo	yohó
Do	čukahá	Te	yihá, *ihá

Expected reflex: Cq -há. Ja, Do ču- < \*čú<sup>4</sup> animal 107.

The unstressed syllable is not reconstructed because of the wide variety of unexplained reflexes.

124. \*ha<sup>4</sup>nkhái<sup>1</sup> face.

Ay	khai <sup>1</sup>	Ji	khai <sup>1</sup>
Ja	ň <sup>s</sup> khí <sup>1</sup> (< Pre-Ja *ha <sup>s</sup> nkhí <sup>1</sup> )	So	nka <sup>4</sup> khái <sup>21</sup>
Do	hankhái <u>3p.</u> , hankhiá <u>1p.</u>	Ix	nkhái <sup>1</sup>
Hu	nkhái <sup>1</sup>		

PPn 56. Hu /n/ of /nkh/ cluster unexplained; Ja, Do expected -ai. So nka- < \*nka<sup>s</sup>- subordinating conjunction 340.

125. \*ha<sup>4</sup>ntaí<sup>s</sup> around.

Ay	ntaí	So	nka <sup>4</sup> ntaí <sup>s</sup> , ntaí <sup>s1</sup>
Ja	ň <sup>s</sup> dai <sup>2</sup> (< Pre-Ja *ha <sup>s</sup> ndai <sup>2</sup> )	Ix	nkantai
Do	handai	Lo	kontí
Hu	ha <sup>4</sup> ntaí <sup>s</sup>	Te	nkathantí

Expected reflex: Lo -nte. So, Ix, Te nka- < \*nka<sup>s</sup>-  
subordinating conjunction 340. The development of the voiced stop /d/ in Ja and Do is obscure since such development is expected only in unstressed syllables. It seems likely that in PMaz there was an additional syllable--perhaps a laryngeal (that was lost in all languages) interrupted the vowel cluster.

126. \*ha<sup>4</sup>ská<sup>3</sup> afterwards.

Mz	haská	Ji	'askaní
Ay	haská	So	ha <sup>4</sup> ská <sup>3</sup>
Cq	nkaska	Ix	haská
Ja	?i <sup>3</sup> ská <sup>2</sup>	Lo	koskó
Do	haská	Te	?iska, kiska
Hu	ha <sup>4</sup> ská <sup>3</sup>		

PPn 15. Cq nka- < \*nka<sup>s</sup>- subordinating conjunction 340.

127. \*há<sup>1</sup> there.

Mz	hahá	Ji	há
Ay	há	So	há <sup>21</sup>
Cq	nkahá	Ix	há
Ja	há <sup>21</sup>	Lo	hó
Do	há	Te	há
Hu	há <sup>1</sup>		

Ja expected reflex tone 1. Cq nka- < \*nka<sup>s</sup>-  
subordinating conjunction 340.

128. \*haú<sup>2</sup> two.

Mz	hó	Ji	hó
Ay	hó	So	hó <sup>1</sup>
Cq	hó	Ix	hó
Ja	hó <sup>2</sup>	Mg	hó
Do	hó	Lo	hwí
Hu	haú <sup>2</sup>	Te	hú

PPn 352; PMS 71. Expected reflex: Ix hú.

129. \*hé long.

Ay	hé	Te	hé
----	----	----	----

130. \*hé<sup>2</sup> he, this.

Hu	hé <sup>2</sup>	Te	hé
----	-----------------	----	----

PPn 182. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>32</sup>.

131. \*he<sup>s</sup>hé<sup>s</sup> finished.

Ay	hehé	Ix	hehé
Ja	he <sup>z</sup> hé <sup>z</sup>	Lo	yahá
Do	hehé	Te	hyehyé
Hu	he <sup>s</sup> hé <sup>s</sup>		

PPn 184. Expected reflex: Ix hi-. Te /y/ unexplained in /hy/ cluster; Lo expected reflex hahá. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

132. \*hé<sup>3</sup> downward.

Ay	hwihé	Ix	kihwahé
Ja	si <sup>1</sup> hé <sup>z</sup> , hé <sup>z</sup>	Lo	wihá
Do	sihé, hé	Te	hwehé
Hu	t <sup>2</sup> a <sup>3</sup> hé <sup>3</sup>		

Ja, Do si- unexplained; Hu t<sup>2</sup>a<sup>3</sup>- unexplained.

Ix kihwa- < \*wha<sup>s</sup>?á<sup>s</sup> passes by 651; Ay hwi- < \*hwi<sup>z</sup> goes 177; Lo wi- < \*wi<sup>3</sup>- verb auxiliary 655; Te hwe- < \*hwé<sup>3</sup> use up 167. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

133. \*hi<sup>s</sup> you (sg.)Ay hi Hu hi<sup>s</sup>Ja hi<sup>2</sup> Ix hi

Do hi Te ?ahi

Te ?a- perhaps < \*?a<sup>s</sup>- interrogative 691. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

134. \*-hi<sup>4s</sup> (\*<sup>2</sup>, \*<sup>s</sup>) among.

Cf. 162, 240, 313, 464, 582.

135. \*hmá<sup>2</sup> black.Mz hmá So hmá<sup>1</sup>

Ay hmá Ix hmá

Cq hmá Mg hmá

Ja hmá<sup>2</sup> Lo hmá

Do hmá Te hmá

Hu hmá<sup>2</sup>

PPn 190.

136. \*hmí<sup>2</sup> thing.

Mz	cahmyá	Ji	cuhmí
Ja	ná <sup>2</sup> hmí <sup>2</sup> <u>no</u>	So	náhmí
Do	náhmí <sup>2</sup> <u>no</u>	Mg	cahmí
Hu	cu <sup>3</sup> hmí <sup>2</sup>		

PPn 197. Expected reflex: Mz -hmí. Mz, Mg ca-  
 perhaps < \*cá<sup>3</sup><sup>2</sup> if 6; Ja, Do, So ná- < \*ná<sup>3</sup>-(\*<sup>4</sup>) nominal  
 241; Hu, Ji cu- perhaps < \*cú<sup>2</sup> says 47. The tone  
 reconstruction is partially indeterminate; it is either  
 \*<sup>2</sup> or \*<sup>3</sup><sup>2</sup>.

137. \*hmí<sup>3</sup>(\*<sup>1</sup>) sky.

Mz	nkahmí	Hu	nk <sup>2</sup> a <sup>3</sup> hmí <sup>3</sup>
Ay	nk <sup>2</sup> ahmí	Ji	nkahmí
Ja	ndhio <sup>3</sup> hmí <sup>2</sup>	So	ntyu <sup>4</sup> hmí <sup>2</sup> <sup>1</sup>
Do	ndehmí	Ix	nk <sup>2</sup> ahmí

PPn 196; PMS 86. Expected reflexes: Mz nk<sup>2</sup>a-;  
 Ji <sup>2</sup>nka-. Mz, Ji nka-, Ay, Hu, Ix nk<sup>2</sup>a- < \*<sup>2</sup>nka<sup>3</sup>-  
high 709; Ja ndhio<sup>3</sup>-,

Do nde-, So ntyu<sup>4</sup>- perhaps < nt<sup>y</sup>a<sup>4</sup>hú<sup>4</sup> stone 406.

138. \*hmí<sup>4</sup>- person prefix (plural).

Ja hmí <sup>4</sup>	<u>female speaker:</u>	Do hmí <sup>4</sup>
	<u>women, men; male</u>	Ix hmíciní <sup>4</sup>
	<u>speaker: women</u>	<u>female speaker:</u>
<u>uncles</u>		
Ix -cini <sup>4</sup> < *ci <sup>s</sup> ní <sup>s1</sup> <u>uncle</u> 34.		

139. \*hná<sup>4</sup> light (in weight).

Ay kihñá	Ji hná
Cq nkikhná	So kikhná
Ja ki <sup>s</sup> hná <sup>s2</sup>	Lo hnó
Do kikhná	Te kikhná

Expected reflex: Ay kikhná; Cq nkikhná unexplained. Ay, Ja, Do, So, Te ki- perhaps < \*ki<sup>s</sup>- completive aspect 206.

The tone reconstruction is rather indeterminate; Ja tone 2 may < \*2, \*3, \*31, \*32, \*42, or \*43.

140. \*hné<sup>4</sup> falls (v.).

Cq khanenkí	<u>fall, tiwi hné</u>	Lo kihñó
	<u>to go down</u>	Te kawihhné-
Ja k <sup>w</sup> i <sup>s</sup> hné <sup>s2</sup>		

Expected reflexes: Cq -hné<sup>s</sup>; Lo -hná; Cq kha- unexplained. Lo ki- < \*ki<sup>s</sup>- completive aspect 206; Te ka- < \*ka<sup>s</sup>- completive aspect 172; Te -wi- < \*wi<sup>s</sup>- verb auxiliary 655.

The tone reconstruction is rather indeterminate; Ja tone 2 reflex may < \*2, \*3, \*31, \*32, \*42, \*43.

141. \*hne<sup>4</sup> smells.

Ay	tikuhé <u>smell</u> , c'ohé <u>stink</u>	Ix	c'ukuhé <u>smell</u> , č'uhe <u>stink</u>
Cq	teirkuhñei	Lo	kohná <u>smell</u> , čohná
Ja	ti <sup>1</sup> ku <sup>2</sup> hne <sup>3</sup> , hnē <sup>3</sup> <u>smell</u> (n.), č'o <sup>2</sup> hnē <sup>3</sup> <u>stink</u>	Te	tikihné- <u>smell</u> , čohné
Do	tikuhné		<u>stink</u>
Hu	ku <sup>3</sup> nhé <sup>4</sup> <u>smell</u> , č'au <sup>3</sup> nhé <sup>4</sup> <u>stink</u>		

Expected reflexes: Cq -hne<sup>4</sup>; Cq /r/ of /rk/ cluster unexplained. Ix c'u- probably continuative aspect; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; -ku- probably verb auxiliary; Ay, Ja č'o-, Hu č'au<sup>3</sup>-, Ix č'u-, Lo, Te čo- < \*ča<sup>3</sup>čú<sup>3</sup> bad 65.

142. \*hni<sup>1</sup> blood.

Mz	hi	So	hi <sup>21</sup>
Ay	hi	Ix	hi
Cq	hni	Mg	hi
Ja	hni <sup>1</sup>	Lo	hné
Do	hni	Te	hni
Hu	nhí <sup>1</sup>		

PPn 213; PMS 78. Gudschinsky reconstructed \*hñi<sup>1</sup> as the etymon of this set. There appears to be no basis for \*ñ in this set; Longacre (1962:239) is correct in revising Gudschinsky's reconstruction to \*hni.

143. \*hnká<sup>4</sup>(\*<sup>3</sup>) wing.

Mz	lahnká	Hu	hnká <sup>3</sup>
Ay	nká-	Ji	hnká
Cq	thiunká	So	thyu <sup>4</sup> nká <sup>4</sup>
Ja	ncha <sup>3</sup> nká <sup>3</sup> , cha <sup>3</sup> nká <sup>3</sup> (< Pre-Ja *ncha <sup>3</sup> nká <sup>3</sup> )	Ix	nká
Do	nchanká	Mg	nká
		Lo	nkó
		Te	nká

Mz la- unexplained. Ja, Do ncha- < \*nchá<sup>3</sup> hand 298;  
Cq thi-<sup>u</sup>, So thyu- < \*t<sup>y</sup>hu<sup>3</sup>- nominal 616-620.

144. \*hnki<sup>3</sup> day after tomorrow.

Ay	nkíni <sub>2</sub>	So	nkí <sup>3</sup> re <sup>4</sup>
Cq	nkíni <sub>2</sub>	Ix	nkí
Ja	nkí <sup>2</sup> ni <sub>2</sub> <sup>3</sup>	Mg	nkí
Hu	hnkí <sup>3</sup>	Lo	kíli
Ji	hnkí	Te	nkí

PPn 211. Expected reflexes: Lo nke-; So -re<sup>4</sup>, Lo -li  
unexplained. Ay, Cq, Ja -ni<sub>2</sub> < \*-ní<sup>3</sup> thing 311.

145. \*hnku<sup>3</sup>thú<sup>2</sup> (\*hnkú<sup>3</sup> one 146) moment.

Ay	nkuthú	So	nku <sup>3</sup> thú <sup>2</sup>
Ja	nku <sup>2</sup> thú <sup>2</sup>	Ix	nkuthú
Hu	hnku <sup>3</sup> thú <sup>2</sup>	Lo	nkotó
Ji	tuhnku <sup>3</sup> thú		

Expected reflexes: Lo nkíthí; So tones <sup>3</sup> - <sup>1</sup>; Ay, Ix  
nasalization of /u/ unexplained.

146. \*hnkú<sup>s1</sup> one.

Mz	hnkú	Ji	hnkú
Ay	nkú	So	nkú <sup>s2</sup>
Cq	nkú	Ix	nkú
Ja	nkú <sup>s2</sup> , kú <sup>s2</sup> (< Pre-Ja *nkú <sup>s2</sup> )	Mg	nkú
Do	nkú, kú (< Pre-Do *nkú)	Lo	nkí
Hu	hnkú <sup>s3</sup>	Te	hnkú
	---		

PPn 212; PMS 74. Expected reflex: Te nkú.

Gudschinsky reconstructed the tone as \*43 (PPn 212) although she states that from Hu <sup>s3</sup>: So <sup>s2</sup> she would reconstruct \*s1 (1959:18).

147. \*hntá we (incl.) sing.

Hu	hntá <sup>s2</sup>
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PPn 208. Hu tone is unexplained.

148. \*hntí<sup>1</sup> dirty.

Ay	né <sup>?</sup> ntí	Ji	hntí
Ja	ču <sup>s3</sup> ntí <sup>1</sup>	So	ntí <sup>s1</sup>
Do	čuntí	Ix	ntí
Hu	hntí <sup>1</sup>	Mg	ntí

PPn 209. Ay né- unexplained. Ja, Do ču- < \*čú<sup>4</sup> animal 107.

149. \*hnt<sup>yá³</sup> salty.

Mz	ntyá	So	ntyá³
Ay	štiá	Ix	ntiá
Cq	ščiá	Mg	ntiá
Ja	ntiá²	Lo	nčó
Do	ntiá	Te	hnčá
Hu	hnčá³		

PPn 210; PMS 73. Gudschinsky reconstructed \*ši³hnt<sup>yá³</sup> but Ay, Cq /š/ are regular reflexes of \*h in this environment and there is no evidence for Gudschinsky's \*ši-.

150. \*hnt<sup>yú³</sup> too long.

Ja	ntiu², tiú² (< Pre-Ja *ntiu²)	Hu	hnčú³
		Ix	ntiu
Do	ntiu, tiú (Pre-Do *ntiu)		

The tone reconstruction is partially indeterminate; it is either \*³ or \*³¹.

151. \*hnú smooth.

Ay	sinéhú	Ix	šiñéhú
Ja	ši <sup>2</sup> ne <sup>1</sup> hnú <sup>2</sup>	Lo	khihní <u>scratches</u>
Do	šinéhnú	Te	tikinihnú

Expected reflexes: Ay šinéhnú; Ix -hnú; Te tikini- unexplained. Ay, Ja, Do šiné-, Ix šiñé- < lard 519. The tone reconstruction is rather indeterminate; Ja tone 2 reflex may < \*2, \*3, \*3¹, \*3², \*4², or \*4³.

152. \*hnú<sup>2</sup> laugh.

Mz	tiwihnu	Hu	wi <sup>s</sup> hnú <sup>2</sup>
Ay	tiwehnu	So	mi <sup>s</sup> hnú <sup>1</sup>
Cq	tiweihnu	Ix	camahnú
Ja	ti <sup>1</sup> wa <sup>2</sup> hnú <sup>2</sup>	Lo	wahní
Do	tiwihnu	Te	tiwihnu

PPn 250. Expected reflexes: Ay, Te -hnu. Mz, Do, Hu, Te -wi- < \*wi<sup>s</sup>- verb auxiliary 655; Ja, Lo wa- < \*wa<sup>s</sup>- verb auxiliary 630; Ay we-, Cq wei- perhaps < \*wé<sup>4</sup><sup>2</sup> knows 653; Mz, Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

153. \*hnú<sup>1</sup> owl.

Mz	čohnú	Ji	hnú
Ay	thiuhnú	So	hnú <sup>21</sup>
Cq	hunú	Ix	hnú
Ja	khu <sup>1</sup> nú <sup>1</sup>	Mg	hnú
Do	čakhuhnu	Lo	hní
Hu	hnú <sup>1</sup>	Te	hnú

Expected reflexes: Ay, Cq, Ja -hnú; Ja, Do khu- unexplained. Mz čo- perhaps < \*čú<sup>4</sup> animal 107; Ay thiu- < \*t<sup>y</sup>hu<sup>s</sup>-(\*<sup>4</sup>) nominal 616-620; Do ča- < \*ča<sup>1</sup>- person prefix 55.

154. \*hnú<sup>4</sup> cornfield.

Mz	hnú	Ji	hnú
Ay	hnú	So	hnú <sup>4</sup>
Cq	hnú	Ix	hnú
Ja	hnú <sup>3</sup>	Mg	hnú
Do	hnú	Lo	hnú
Hu	hnú <sup>4</sup>	Te	hnú

PPn 251; PMS 77.

155. \*-hñá<sup>1</sup> woods, wild place.

Mz	hñá	Hu	hñá <sup>1</sup>
Ay	nkihñá	Ji	hñá
Cq	nkihñáčá	So	hñá <sup>21</sup>
Ja	hñá <sup>1</sup> čá <sup>1</sup> <u>woods</u> , hñá <sup>1</sup> <u>brush</u>	Ix	nk'ihñáčá
Do	hñáčá <u>woods</u>	Lo	kihñóčó
		Te	'ihñáčá

PPn 217; PMS 80. Ix /?/ unexplained. Gudschinsky reconstructed the etymon \*'ihñá<sup>1</sup> but there is insufficient evidence for reconstruction of the first syllable. Cq, Ja, Do -čá, Ix, Te -čá, Lo -čó < \*hčá<sup>1</sup> old 454.

156. \*-hñá<sup>3</sup> sits, is.

Ay	sehñá	Hu	ti <sup>1</sup> hñá <sup>3</sup>
Cq	kiseihñá	Ix	khihñású <u>on</u>
Ja	si <sup>1</sup> hñá <sup>2</sup>	Lo	sahñó
Do	sihñá	Te	sihñá

Ay se-, Ja, Do, Te si-, Lo sa- unexplained. Cq ki- < \*ki<sup>3</sup>- completive aspect 206; Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Ix -sú < \*sú<sup>2</sup> on 489; Hu ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction is partially indeterminate; it is either \*<sup>8</sup> or \*<sup>81</sup>.

157. \*hñá<sup>4</sup> chile pepper.

Mz	hñá	Ji	hñá
Ay	hñá	So	hñá <sup>4</sup>
Cq	hñá	Ix	hñá
Ja	hñá <sup>3</sup>	Mg	hñá
Do	hñá	Lo	hñó
Hu	nhiá <sup>4</sup>	Te	hñá

PPn 218; PMS 79.

158. \*hñú<sup>2</sup> dark.

Mz	hñú <u>dark</u> , tahñú <u>early morning</u>	Hu	nhiú <sup>2</sup>
Ay	hñú	Ji	hñú
Cq	hñú	Ix	khamahñú <u>it became dark</u>
Ja	hiú <sup>1</sup> <u>dark</u> , k <sup>w</sup> i <sup>s</sup> ta <sup>s</sup> hiú <sup>1</sup> <u>early morning</u>	Mg	hñú
Do	hiú	Lo	hñí
		Te	tahñú <u>early morning</u>

PMS 81. Ja expected reflex tone 2. Te ta- < \*ta<sup>4</sup>- no longer 565. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>32</sup>.

159. \*hú<sup>s</sup> on the surface.

Mz	-hú	Hu	-hú <sup>s</sup>
Ay	nahú <u>step-mother</u>	So	-hú
Cq	nuhú <u>step-mother</u>	Ix	nahú <u>step-mother</u>
Ja	na <sup>s</sup> hú <sup>2</sup> <u>step-mother</u>	Lo	nohí <u>step-mother</u>
Do	nahú <u>step-mother</u>	Te	nahú- <u>step-mother</u>

PPn 193. Cq ny- unexplained; expected na-. Ay, Ja, Do, Lo, Te na- < \*ná<sup>4</sup> mother 253. \*ná- + \*-hú was compounded after the vowel changes and \*h metathesis or loss in the \*-ahu environment. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

160. \*hwa<sup>s</sup>ne<sup>s</sup> sounds, resounds.

Mz	hwani	So	fa <sup>s</sup> ne <sup>s</sup>
Ay	tihwané	Ix	khihwane
Cq	hwáne	Mg	hwane
Ja	ti <sup>1</sup> hwa <sup>2</sup> ne <sup>2</sup>	Lo	hwana
Do	tihwané	Te	tiwané
Hu	wha <sup>s</sup> ne <sup>s</sup>		

Expected reflexes: Ix kihwane; Lo hwo-; Te tihwané. Ix khi- < \*khi<sup>s</sup>- completive aspect 196; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

161. \*hwa<sup>s</sup>?a<sup>1</sup>ce<sup>s</sup> (\*wha<sup>s</sup>?á<sup>1</sup> passes by 163) sighs.

Mz	tihwacye <sup>?</sup> <sub>g</sub>	So	hwece <sup>?</sup> <sub>g</sub>
Ay	tihwacé-	Ix	kihwaice <sup>?</sup> <sub>u</sub>
Ja	ti <sup>1</sup> hwei <sup>1</sup> ce <sup>2</sup> ? <sub>g</sub> <sup>2</sup>	Lo	kica <sup>?</sup> <sub>g</sub>
Do	tihweice <sup>?</sup> <sub>u</sub>	Te	tihwacé-
Hu	wha <sup>s</sup> ?a <sup>1</sup> ce <sup>s</sup> <u>breathe</u>		

PMS 83. Expected reflex: Mz, Ay, Ix hwa<sup>s</sup>a-; So fa<sup>s</sup>a-; Ja Do -ei- unexplained. Mz, So -<sup>?</sup><sub>g</sub>, Ja, Do, Ix -<sup>?</sup><sub>u</sub>, Lo -<sup>?</sup><sub>g</sub> < \*<sup>?</sup>mú hurt 702; Mz, Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix, Lo ki- < \*ki<sup>3</sup>- completive aspect 206. The tone on the last syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

162. \*hwa<sup>s</sup>?a<sup>1</sup>hi<sup>4</sup><sub>s</sub> (\*wha<sup>s</sup>?á<sup>1</sup> passes by 163, \*hi<sup>4</sup><sub>s</sub> among 134) chooses.

Mz	tikh <sup>?</sup> ahi <sub>s</sub>	Hu	wha <sup>s</sup> ?a <sup>1</sup> hi <sup>4</sup> <sub>s</sub>
Ay	tihwahí <sub>s</sub>	So	hwa <sup>s</sup> íhi <sup>3</sup> <sub>s</sub>
Cq	našihí <sub>s</sub>	Ix	cuhwahí <sub>s</sub>
Ja	ti <sup>1</sup> hwa <sup>1</sup> hi <sup>2</sup> <sub>s</sub>	Lo	hwohi <sub>s</sub>
Do	tihwahí <sub>s</sub>		

PPn 181. Expected reflexes: Mz, Ay kha<sup>s</sup>a-; So fa<sup>s</sup>a; Ix hwa<sup>s</sup>a-; Lo hwo<sup>s</sup>ohé; development of \*<sup>s</sup> unexplained. Mz -kh<sup>?</sup>a- < \*kha<sup>s</sup>?á<sup>1</sup> carries 181; Ix cu- continuative aspect; Cq na- < \*ná<sup>3</sup>- nominal 241; Mz, Ay, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589. Gudschinsky says (PPn 181) that So hwa<sup>s</sup>í- is probably a combining form of Pre-So \*fa<sup>s</sup>?á<sup>1</sup>.

163. \*hwa<sup>s</sup>, a<sup>s</sup> passes by.

Ay	tihwa <sup>á</sup> <u>diarrhea</u>	Ji	hwa <sup>á</sup> <u>diarrhea</u>
Cq	hwa <sup>á</sup> <u>diarrhea</u>	So	fa <sup>s</sup> , a <sup>s</sup> <u>passes by, diarrhea</u>
Ja	ti <sup>1</sup> hw <sup>á</sup> <sup>23</sup> <u>diarrhea</u>	Mg	hw <sup>á</sup>
Do	tihw <sup>á</sup> <u>diarrhea</u>	Lo	hwo <sup>ó</sup>
Hu	wha <sup>s</sup> , a <sup>s</sup> <u>passes by,</u> <u>diarrhea</u>	Te	tihwá

PPn 224. Ja tone 3 of 23 glide probably is an analogical development which indicates phrase final.

164. \*-hwá<sup>s1</sup> clear, clean.

Ay	'ihwá	So	ntyu <sup>21</sup> hwá <sup>32</sup> <u>drinking water</u>
Cq	yuhwá	Ix	ntahwá <u>water</u>
Ja	ní <sup>2</sup> hwá <sup>2</sup>	Lo	'ihwó
Do	níhwá	Te	'ihwá
Hu	nta <sup>1</sup> hwá <sup>3</sup> <u>clear water</u>		

PPn 223. Expected reflex: Lo -fó. Ay, Lo, Te 'i- unexplained; Cq yu- unexplained. Ja, Do ní- < \*ní<sup>3</sup>-(\*<sup>4</sup>) nominal 312. Gudschinsky reconstructed this set \*yu<sup>3</sup>hwá<sup>s1</sup>. Reflexes from Cq and So would seem to indicate this possibility; however, if this is \*yu- then the daughter languages do not reveal the expected reflexes.

165. \*hwau<sup>1</sup>(\*<sup>3</sup>) lonesome.

Ay	tihwó-	Hu	whau <sup>1</sup> <u>sad</u>
Ja	ti <sup>1</sup> hó <sup>23</sup>	Ix	khihwú
Do	tihó	Te	tihu

Expected reflex: Ix kihwú. Ix khi- < \*khi<sup>s</sup>- completive aspect 196; Ja, Do, Te loss of \*w unexplained. Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. Ja tone 3 of 23 glide probably developed by analogy to indicate phrase final.

166. \*hwé<sup>2</sup> sleeps.

Mz -hwí	Ji hwé
Ay kihwé	So -fél
Cq hiñahwé	Ix kihwé
Ja ki <sup>2</sup> hwé <sup>2</sup>	Mg hwé
Do kihwé	Lo kifá
Hu -whé <sup>2</sup>	Te kihwé

PPn 221; PMS 82. Expected reflex: Lo -hwá. Cq hiñá- unexplained. Ay, Ja, Do, Ix, Lo, Te ki- < \*ki<sup>s</sup>- completive aspect 206.

167. \*hwé<sup>s</sup> use up.

Mz hwyé <u>finish off</u>	Ja hwé <sup>2</sup>
Ay hwé	Hu whé <sup>s</sup> <u>finish off</u>
Cq kahwé	So fél <sup>s</sup>

PPn 184. Mz /y/ before /e/ unexplained; phonemically doubtful. Cq ka- < \*ka<sup>2</sup>- completive aspect 172.

168. \*-hwí<sup>2</sup> slowly.

Mz	tahwí	Ji	tahwí
Ay	tahwitahwí	So	tifí
Cq	tahwitahwí	Mg	tahwí
Ja	hwí <sup>2</sup> hwí <sup>2</sup>	Lo	fifí
Do	tuhwituhwí	Te	tuhwí
Hu	tu <sup>4</sup> hwí <sup>2</sup> , tuí <sup>4</sup> <sup>2</sup>		

PMS 2. Expected reflexes: Lo -fé; So -hwí. Mz, Ay, Cq, Ji, Mg ta- < \*ta<sup>4</sup>- no longer 565; Do, Hu, Te tu- unexplained unless related to \*ta<sup>4</sup>- 565 with a ~ u. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>4</sup><sup>2</sup>.

169. \*hwí<sup>2</sup> goes.

Mz	hwí	So	hwé <sup>1</sup> i
Ay	tihwí	Ix	c <sup>2</sup> ahwí
Ja	ti <sup>1</sup> hwí <sup>2</sup>	Lo	kohwí
Do	tihwí	Te	hwí
Hu	whí <sup>2</sup>		

PPn 180. Expected reflex: So fi. Ay, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 583; Ix c<sup>2</sup>a- probably continuative aspect. Lo ko- < \*kau<sup>4</sup>- and 177 was compounded after \*i > e when preceded by back vowels.

170. \*hyú<sup>3</sup> willing.

Ja	yú <sup>2</sup> s	So	yú <sup>3</sup> -
Hu	hyú <sup>3</sup>	Mg	yú

Ja tone 2 of 23 glide probably has developed by analogy and indicates phrase final. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

171. \*ka<sup>1</sup>sí<sup>3</sup> neck.

Ja	ka <sup>1</sup> sí <sup>2</sup>	So	ka <sup>s</sup> sí <sup>2</sup> (< Pre-So * <sup>21</sup> - <sup>3</sup> )
Do	kasi <sup>1</sup>	Ix	kasi <sup>1</sup>

PPn 139.

172. \*ka<sup>2</sup>- completive aspect.

Mz	kamanká <u>accustomed to</u>	Hu	ka <sup>2</sup> má <sup>3</sup> hnkú <sup>3</sup> <u>it became one</u>
Ay	kamahé <u>fulfilled</u>	Ix	kamantuhú <u>fulfilled</u>
Cq	kamachú <u>roasted</u>	Lo	yakomontohó <u>fulfilled</u>
Ja	ka <sup>s</sup> má <sup>3</sup> <u>finished</u>	Te	kamantuhú <u>fulfilled</u>
Do	kamanduhú <u>fulfilled</u>		

The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>21</sup>.

173. \*ka<sup>s</sup>hwá<sup>3</sup> curassow.

Ay	nakahwá	Ix	kahwá
Cq	ninkahwá	Lo	kohwó
Ja	ka <sup>2</sup> hwá <sup>2</sup>	Te	ntikahwá
Do	kahwá		

Expected reflexes: Cq níkahwá; Lo -fó; Te nti- unexplained. Ay na- < \*na<sup>s</sup>-(\*<sup>4</sup>) nominal 241. Cq ni- < \*ní<sup>s</sup>-(\*<sup>4</sup>) nominal 312. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>,

\*<sup>4</sup><sup>2</sup>, or \*<sup>4</sup><sup>3</sup>.

174. \*ka<sup>2</sup>?á<sup>2</sup> alone.

Mz	šutaká <u>person alone</u>	Ji	š'ík'á <u>widower</u>
Ay	k'á	Ix	k'á
Cq	ká?	Lo	kó?
Ja	k'á <sup>2</sup> <u>alone;</u> šu <sup>3</sup> ta <sup>3</sup> k'á <sup>2</sup>	Te	ká?
<u>person alone</u>			

Do k'á, ká?

Hu k'á<sup>2</sup>

PPn 61. Expected reflexes: Mz, Ay, Hu, Ji, Ix -ká?á; Te ká. Mz šuta- < \*šu<sup>4</sup>tá<sup>4</sup> person 561.

175. \*ká<sup>4</sup><sup>3</sup> twenty.

Mz	ká	Ji	ká
Ay	ká	So	ká <sup>3</sup> <sup>2</sup>
Cq	ká	Ix	ká
Ja	ká <sup>2</sup>	Mg	ká
Do	ká	Lo	kó
Hu	ká <sup>4</sup> <sup>3</sup>	Te	ká

PPn 57.

176. \*kai<sup>3</sup> unwilling.

Ay	kwimakaire	Hu	kai <sup>3</sup> le <sup>4</sup>
Ja	kai <sup>2</sup>	Mg	kéle
Do	kai		

Ay -re, Hu, Mg -le pronominal reference; Ay kwi- < \*nti<sup>2</sup>k<sup>W</sup>i<sup>3</sup> no 410; Ay -má- < \*má<sup>3</sup> do 227. The tone

reconstruction is partially indeterminate; it is either \*<sup>s</sup><sup>3</sup> or \*<sup>s</sup><sup>1</sup>.

177. \*kau<sup>4</sup>- and.

Ay	kó	So	kú
Cq	kó	Ix	kú
Ja	kó <sup>s</sup>	Lo	kó
Do	kó	Te	kú
Hu	kau <sup>4</sup>		

PPn 58. Expected reflexes: So kó; Lo kf. Gudschinsky's reconstruction of \*kahú (PPn 58) is possible, though unlikely; such an etymon requires a unique statement that \*h is lost in all dialects except Ix in the environment \*kau. The So form kho with which Gudschinsky included in this set is, in my judgment, misassigned. It should be included in set 189 together, with.

178. \*ke<sup>s</sup>·é<sup>s</sup> dead.

Mz	mik'yé	Ji	sik'é <u>he kills</u>
Ay	k'é	So	si <sup>s</sup> k'yé <sup>2</sup> (< Pre-So * <sup>s</sup> <sup>1</sup> - <sup>s</sup> )
Ja	k'é <sup>2</sup>		<u>he kills</u>
Do	k'é	Ix	k'é
Hu	k'é <sup>s</sup> <u>is dead</u> , si <sup>1</sup> k'é <sup>s</sup> <u>he kills</u>	Mg	sik'jé <u>he kills</u>
		Lo	kia'á
		Te	ké

PPn 230; PMS 15. Expected reflexes: Ay ke<sup>2</sup>é; So -ke<sup>2</sup>é; Ix ke<sup>2</sup>é; Mg -k<sup>2</sup>é; Lo ka<sup>2</sup>á. Mz /y/ before /e/ unexplained, phonemic status doubtful; Mz mi<sup>2</sup>- unexplained. Hu, Ji, Ix, Mg si- probably < \*-ci<sup>1</sup>·si<sup>1</sup>- do 26.

179. \*khá<sup>1</sup> skunk.

Mz	šikhá	Ji	šikhá
Ay	thiušikhá	-	So khá <sup>2</sup> í
Cq	čikhá	Ix	khá
Ja	ču <sup>3</sup> khá <sup>1</sup>	Lo	čikhó
Do	čukhá	Te	šikhá
Hu	ši <sup>1</sup> khá <sup>1</sup>		

PPn 78; PMS 45. Ay thiu- < \*t<sup>y</sup>hu<sup>3</sup>-(\*<sup>4</sup>) nominal 616-620; Cq či-, Ja, Do ču- < \*čú<sup>4</sup> animal 107; Mz, Ay, Hu, Ji, Lo, Te ši- < \*ši<sup>3</sup>- connective 518. PPn 78 gives So form as kah<sup>2</sup>í, but this is a typographical transposition since PMS 45 gives it as kha<sup>2</sup>í; the latter is the expected reflex.

180. \*khá<sup>1</sup> across.

Ay	nkuwahá	Ix	nkuwakhá
Cq	kuankeikhá	Lo	ko <sup>2</sup> okhó
Ja	nga <sup>2</sup> wa <sup>2</sup> khá <sup>1</sup> , ga <sup>2</sup> wa <sup>2</sup> khá <sup>1</sup> (< Pre-Ja *nga <sup>2</sup> wa <sup>2</sup> khá <sup>1</sup> )		

Expected reflexes: Ay -kha; Cq nasalized /a/ unexplained; Lo ko<sup>2</sup>o- unexplained; Cq kuankei- unexplained. Ay, Ja, Ix -wa- < \*wa<sup>3</sup>- verb auxiliary 630; Ay, Ix nku- < \*hnku<sup>3</sup>í one

146; Ja nka- < \*nka<sup>3</sup>- subordinating conjunction 340. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

181. \*kha<sup>s</sup>á<sup>1</sup>(\*<sup>3</sup> - <sup>3</sup>) carries, fetches.

Ay	tihwikha <sup>á</sup>	So	ki <sup>s</sup> kha <sup>s</sup> á <sup>s</sup> <sup>2</sup> <u>carried,</u>
Cq	khuiha <sup>a</sup> čá		?wa <sup>s</sup> k <sup>a</sup> s <u>carry</u>
Ja	ti <sup>1</sup> hwí <sup>2</sup> kh <sup>a</sup> <sup>1</sup> <u>to go get</u>	Ix	kikha <sup>á</sup> <u>fetches</u>
Do	tihwikh <sup>á</sup>	Lo	kikho <sup>ó</sup> <u>fetches</u>
Hu	kha <sup>s</sup> á <sup>1</sup>	Te	kikhá <u>grabs</u>

PPn 59. Expected reflex: Cq -kha<sup>a</sup>-; So ?wa- unexplained. Ay, Ja, Do, Ix -hwí- < \*hwí<sup>2</sup> goes 177; Ix, Lo, Te ki- < \*ki<sup>s</sup>- completive aspect 169; Cq khui- future aspect; Ay, Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

182. \*kha<sup>4</sup>má<sup>4</sup>, \*ha<sup>4</sup>má<sup>4</sup> root.

Mz	hamá	Ji	hamá
Ay	hamá	So	hamayá
Cq	thiamá	Ix	hamá
Ja	kha <sup>s</sup> má <sup>s</sup> yá <sup>1</sup>	Mg	hamá
Do	khamá	Lo	homó
Hu	ha <sup>4</sup> má <sup>4</sup>	Te	hamayá

PPn 231. Cq thia- unexplained, perhaps < \*t<sup>y</sup>ha<sup>s</sup> shoulder 610. Ja, Do, Te -ya < \*yá<sup>1</sup> wood 662.

183. \*kha<sup>4</sup>ntú<sup>4</sup>, \*ku<sup>4</sup>ntú<sup>4</sup>, \*ha<sup>4</sup>ntú<sup>4</sup> gourd (for carrying water).

Ay	kuntú	Hu	ku <sup>4</sup> ntú <sup>4</sup>
Cq	kuntú	Ix	khantú
Ja	ñ <sup>3</sup> tú <sup>3</sup> (< Pre-Ja *ha <sup>3</sup> ntú <sup>3</sup> )	Lo	káti
Do	hantú	Te	ntikatú

Expected reflex: Te ntikantiú.

184. \*kha<sup>4</sup>nt<sup>y</sup>haú<sup>1</sup>, \*ha<sup>4</sup>nthau<sup>1</sup> step (n.)

Ja	ñ <sup>3</sup> thio <sup>1</sup> (< Pre-Ja *ha <sup>3</sup> nthio <sup>1</sup> )	Do	hanthio
		Ix	khithiu

Expected reflex: Ix khanthiu. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

185. \*kha<sup>4</sup>?í<sup>21</sup> different.

Ay	kh <sup>2</sup> aí	So	kha <sup>4</sup> ?í <sup>32</sup>
Cq	khái	Ix	kha <sup>2</sup> aí
Ja	kh <sup>2</sup> aí <sup>21</sup>	Mg	kh <sup>2</sup> é
Do	kh <sup>2</sup> aí	Lo	khe <sup>2</sup> é
Hu	kha <sup>4</sup> ?aí <sup>1</sup>	Te	khái

Expected reflexes: Ay, Cq, Ix khái; Mg kh<sup>2</sup>aí.

186. \*kha<sup>4</sup>ntá<sup>3</sup>, \*ha<sup>4</sup>ntá<sup>3</sup> daughter-in-law.

Ay	kha <sup>2</sup> ntá	So	kha <sup>4</sup> ntá <sup>3</sup>
Cq	ha <sup>2</sup> ntá-	Ix	khantá
Ja	ñ <sup>3</sup> ntá <sup>3</sup> (< Pre-Ja *ha <sup>3</sup> ntá <sup>3</sup> )	Mg	hantá
Do	hantá-	Lo	kho <sup>2</sup> ntó
Hu	ha <sup>4</sup> ntá <sup>3</sup>	Te	khantá-

PPn 263.

187. \*khá<sup>1</sup>(\*)<sup>4</sup>) fights.

Mz	nčakhá	Hu	ti <sup>1</sup> khé <sup>1</sup>
Ay	nčakhá <u>anger</u>	Ji	thiukhá
Cq	tikhá	Ix	cakhá
Ja	ti <sup>1</sup> khá <sup>3</sup> <sup>2</sup>	Mg	cakhá
Do	tikhá	Te	tikhá

Mz, Ay nča- unexplained; Ji thiukhá unexplained; Ja <sup>32</sup> glide unexplained. Cq, Ja, Do, Hu, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix, Mg ca- may also be continuative aspect.

188. \*khai<sup>1</sup>nká<sup>3</sup> very.

Ay	hainká	Ix	khenká
Hu	khai <sup>1</sup> nká <sup>3</sup>	Mg	khinká
So	khainká		

Expected reflexes: Ay khainká; Ix khainká; Mg nasalized /i/ unexplained, perhaps < \*khi<sup>31</sup> far 202.

189. \*khaú<sup>3</sup> together, with.

Ay	tikikhó <u>fits together</u>	So	khó <u>with</u>
Ja	s <sup>2</sup> é <sup>2</sup> khó <sup>2</sup> <u>fits together</u>	Ix	síkhú <u>fits together</u>
Do	s <sup>2</sup> ékhó <u>fits together</u>	Lo	sákhi <sup>2</sup> ó <u>fits together</u>
Hu	s <sup>2</sup> é <sup>3</sup> khaú <sup>3</sup> <u>fits together</u>	Te	tikhú <u>fits together</u>
	Lo - <sup>2</sup> o unexplained; Ay -ki- unexplained. Ja, Do, Hu s <sup>2</sup> é-, Lo sa-, and perhaps Ix sí- < *s <sup>2</sup> é <sup>3</sup> ?é <sup>3</sup> <u>enters</u> 463;		

Ay, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction is partially indeterminate; it may be either \*<sup>3</sup> or \*<sup>31</sup>.

190. \*khé<sup>3</sup> not yet.

Ay khé	Ji khé
Cq khé	So khyé
Ja khé <sup>32</sup>	Ix khé
Do khé	Lo khaia
Hu khé <sup>3</sup>	Te khé

Cq and Ja /?/ unexplained; So /y/ unexplained; Ja tone 3 of 32 glide is unexplained. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

191. \*khé spins (thread).

Ay tikhé	Ji nikhé <u>cloth</u>
Cq tikhei	Lo nikhiá <u>cloth</u>
Ja ti <sup>1</sup> khé <sup>2</sup>	Te nikhé <u>cloth</u>
Do tikhé	

Ji, Te oral /e/ and Lo oral /ia/ unexplained; Cq /i/ of /ei/ cluster unexplained. Ji, Lo, Te ni<sub>č</sub>- < \*ni<sub>č</sub><sup>3</sup>-(\*<sup>4</sup>) nominal 312; Ay, Cq, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction is rather indeterminate; Ja tone 2 reflex may < \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>32</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

192. \*khé<sup>s</sup> retches, cramps, pulls.

Ay	tikhé	So	khenta <sup>?</sup> é <u>breath</u>
Ja	khé <sup>2</sup>	Ix	khé
Do	khé	Lo	khia <sup>?</sup>
Hu	khé <sup>s</sup> htá <sup>s</sup> <u>breath</u>	Te	khé

PPn 76. Ay ti- < \*ti<sup>1</sup>- continuative aspect 589; Hu htá<sup>s</sup>, So -nta<sup>?</sup>é < \*khé<sup>s</sup>hntá<sup>s</sup> breathes 193. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

193. \*khé<sup>s</sup>stá<sup>s</sup>, \*khé<sup>s</sup>ntá<sup>s</sup> (\*khé<sup>s</sup> pulls 192) breathes.

Ay	tikhéntá	Hu	khé <sup>s</sup> htá <sup>s</sup>
Cq	kahweintána	So	khenta <sup>?</sup> é
Ja	ti <sup>1</sup> khé <sup>2</sup> ntá <sup>2</sup> <u>he breathes</u>	Ix	cikhéntá
Do	tikhéntá	Te	tikhéntá-

So -<sup>?</sup>e unexplained. Ix ci- probably continuative aspect; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Cq -hwei- < \*hwé<sup>s</sup> use up 167. This etymon appears to be related to \*htá<sup>s</sup>, \*ntá<sup>s</sup> tired 481. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

194. \*khé<sup>43</sup> smokes (tobacco).

Mz	tikyé	Hu	khé <sup>43</sup>
Ay	tikhé	Ji	tikhé
Cq	tikhé	So	khyé <sup>s2</sup>
Ja	khé <sup>2</sup>	Lo	khiaší
Do	khé	Te	tikhé

Expected reflexes: Mz -khé; Cq -khei; So /y/ unexplained. Mz, Ay, Cq, Ji, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Lo -š‡ < \*šú<sup>1</sup>(\*<sup>4</sup>) foam 551.

195. \*khi<sup>1</sup>á<sup>1</sup> (\*<sup>3</sup> - <sup>3</sup>) when.

Mz	khyá	Hu	k?ia <sup>1</sup>
Ay	khi <sup>2</sup> á-	Ji	khé
Cq	khué	Ix	khi <sup>2</sup> áni
Ja	kh?ia <sup>2</sup>	Mg	k?ia
Do	kh?ia-	Te	khé-

Expected reflexes: Mz kh?á; Cq, Ji /e/ unexplained; Te khaí. Ix -ni<sup>3</sup> < \*-ni<sup>3</sup> thing 311.

196. \*khi<sup>3</sup>- completive aspect.

Mz	tikhintayá <u>cries</u>	So	khi <sup>3</sup> ntá <sup>s2</sup> <u>barks</u>
Ay	tikhi <sup>2</sup> ntá <u>cries</u>	Ix	c?akhintá <u>cries</u>
Ja	ti <sup>1</sup> khi <sup>2</sup> ntá <sup>1</sup> <u>cries, barks</u>	Mg	sikhintá <sup>2</sup> <u>cries</u>
Do	tikhintá <u>cries, barks</u>	Lo	khi <sup>2</sup> ntó <u>cries</u>
Hu	khi <sup>3</sup> ntá <sup>1</sup> <u>cries</u>	Te	khintayá <u>cries</u>
Ji	khi <sup>2</sup> ntá <u>cries</u>		

The specific function of this morpheme, although glossed as completive aspect, is questionable; perhaps it should be treated as a verb auxiliary.

197. \*khi<sup>s</sup>ntá<sup>1</sup> (\*khi<sup>s</sup>- completive aspect 196) cries.

Mz	tikhintayá	Ji	khi <sup>s</sup> ntá
Ay	tikhi <sup>s</sup> ntá	So	khi <sup>s</sup> ntá <sup>s</sup> <u>barks</u>
Cq	tihi <sup>s</sup> ntá	Ix	c <sup>a</sup> khintá
Ja	ti <sup>1</sup> khi <sup>s</sup> ntá <sup>1</sup> <u>cries</u> , <u>barks</u>	Mg	sikhintá
Do	tikhintá <u>cries</u> , <u>barks</u>	Lo	khi <sup>s</sup> ntó
Hu	khi <sup>s</sup> ntá <sup>1</sup>	Te	khintayá

Expected reflex: Cq khi<sup>s</sup>ntá. Mg si- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26; Ix c<sup>a</sup>- probably continuative aspect; Mz -yá perhaps < \*yá inside 660; Mz, Ay, Cq, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589. So expected tone reflexes <sup>s</sup> - <sup>s</sup>i.

198. \*khi<sup>s</sup>ntyá<sup>1</sup> (\*khi<sup>s</sup>- completive aspect 196) famine.

Ay	khintiá	Ix	khintiá
Cq	hintiá	Mg	khintiá
Ja	khi <sup>s</sup> ntiá <sup>1</sup>	Lo	khi <sup>s</sup> ntó
Do	khintiá	Te	khinčá
Hu	khi <sup>s</sup> nčá <sup>1</sup>		

Expected reflexes: Cq khintiá; Lo khinčó.

199. \*khi<sup>s</sup>?í<sup>s</sup> appearance of.

Mz	khi	Ix	chakhi?í <u>pretty person</u>
Ay	khi?í, khlí	Mg	kh?í
Cq	hi?í	Lo	khi?í
Hu	khi <sup>s</sup> ?í <sup>s</sup>	Te	khlí

PMS 13. Expected reflexes: Mz, Hu, Ix kh?í; Cq khlí.  
Ix cha- < \*-chua<sup>s</sup> happiness 227. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

200. \*khi<sup>s</sup>?ñú<sup>s</sup> (\*khi<sup>s</sup>- completive aspect 196) barks, howls.

Ay	thi?ñú	Lo	khi?ñí
Hu	khi <sup>s</sup> ?ñú <sup>s</sup>	Te	khiñú
Mg	khiñ?ú		

PMS 14. Expected reflex: Lo khi?ñí; Ay /th/ cluster unexplained. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

	201. *khi <sup>4</sup> ?nká <sup>s</sup> , *či <sup>4</sup> ?nké <sup>1</sup> (*-?nká <sup>s</sup> <u>high</u> 709) <u>lame.</u>
Ay	tikhink?á
Ja	ti <sup>1</sup> khe <sup>3</sup> nk?á <sup>2</sup>
Do	tikhank?á
Hu	či <sup>4</sup> ?nké <sup>1</sup>

Expected reflexes: Hu -nk?é; Ja, Do -khi-. Ay, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix c?a- continuative aspect.

202. \*khí<sup>s1</sup> far.

Mz	khí	Ji	khí
Ay	khí	So	khí <sup>s2</sup>
Cq	khí	Ix	khí
Ja	khí <sup>2</sup>	Mg	khí
Do	khí	Lo	khí
Hu	khí <sup>s</sup>	Te	khí

PPn 75.

203. \*khu<sup>s</sup>yá<sup>s</sup> sews.

Mz	tikhuyá <u>sews,</u> <u>weaves</u>	Hu	khy <sup>s</sup> yá <sup>s</sup>
Ay	tikhoyá	So	hy <sup>s</sup> há <sup>2s</sup>
Cq	tihwuyá	Ix	c'ukhuyá <u>weaves</u>
Ja	ti <sup>1</sup> khu <sup>2</sup> yá <sup>2</sup>	Te	tikuñá
Do	tikhuyá		

Expected reflexes: Ay -khu-; So khu<sup>s</sup>há<sup>s</sup>, Te khuyá; Cq /hw/ unexplained; Mz, Hu, So nasalized /y/ unexplained. Ix c'u- probably continuative aspect; Mz, Ay, Cq, Ja, Do, ti-< \*ti<sup>1</sup>- continuative aspect 589.

204. \*ki<sup>1</sup>ci<sup>4</sup> (\*4 - 4) ticklish.

Ay	kicí-	Hu	ki <sup>1</sup> ci <sup>4</sup>
Cq	kicí	Ix	kicé
Ja	ki <sup>3</sup> ci <sup>3</sup>	Mg	kic'i
Do	kicí	Lo	kicí

Expected reflex: Ix -ci; Mg, Lo nasalization of /i/ unexplained; Mg /?/ unexplained.

205. \*ki<sup>2</sup>ší<sup>4</sup>(\*<sup>1</sup> - <sup>4</sup>) straight, right (adj.).

Mz	kiší	Hu	ki <sup>2</sup> ší <sup>4</sup>
Ay	kiší	So	ki <sup>3</sup> ší <sup>24</sup> (< Pre-So * <sup>21</sup> - <sup>4</sup> )
Cq	kiší	Ix	kiší
Ja	ki <sup>2</sup> ší <sup>3</sup>	Lo	kiší
Do	kiší	Te	kiší

Gudschinsky (1959:20) reconstructs the tone as \*<sup>43</sup> - <sup>4</sup>, but So <sup>3</sup> - <sup>24</sup> can come from Pre-So \*<sup>21</sup> - <sup>4</sup> as well as Pre-So \*<sup>32</sup> - <sup>4</sup> which Gudschinsky chooses in her reconstruction. It seems to me more likely that the basic form was \*<sup>21</sup> - <sup>4</sup> which then permits the reconstruction of a single tone rather than a cluster on the weakly stressed syllable.

206. \*ki<sup>3</sup>- completive aspect.

cf. 7, 12, 42, 78, 516, 679.

207. \*ki<sup>3</sup>hntá<sup>2</sup> everywhere.

Hu	nka <sup>3</sup> ki <sup>3</sup> hntá <sup>2</sup>	Te	nkakihntá
Mg	nkakintá		

Hu, Mg, Te nka- < \*nka<sup>3</sup>- subordinating conjunction 241.

208. \*ki<sup>4</sup>čá<sup>4</sup> metal.

Mz	kičá	So	ki <sup>4</sup> čá <sup>4</sup>
Ay	kičá	Ix	kičá
Cq	kičá	Mg	kičá
Ja	ki <sup>3</sup> čá <sup>3</sup>	Lo	kičó
Do	kičá	Te	kičiá
Hu	ki <sup>4</sup> čá <sup>4</sup>		

PPn 118.

209. \*ki<sup>4</sup>šy<sup>4</sup> charcoal.

Ay	kišy	So	ki <sup>4</sup> šy <sup>4</sup>
Cq	kišy	Ix	kišy
Ja	ki <sup>3</sup> šy <sup>3</sup> s	Mg	kišy
Do	kišy	Lo	kišy
Hu	ki <sup>4</sup> šy <sup>4</sup>	Te	kišy
Ji	kišy		

210. \*ku<sup>1</sup>tú<sup>1</sup> toad.

Ay	nákutú	So	ku <sup>21</sup> tú <sup>21</sup>
Ja	ča <sup>1</sup> ku <sup>1</sup> tú <sup>1</sup>	Ix	kutú
Do	čakutú	Lo	kítí
Hu	ku <sup>1</sup> tú <sup>1</sup>	Te	kutú
Ji	katú		

PPn 25. Ix nasalization of /y/ unexplained; Ji /a/ unexplained. Ja, Do ča- < \*ča<sup>1</sup>- person prefix 55.

211. \*ku<sup>3</sup>ní<sup>4</sup>s monkey.

Mz	kuní	Ji	kuní
Ay	čakuní	So	ku <sup>3</sup> ní <sup>3</sup> s
Ja	ča <sup>1</sup> ku <sup>2</sup> ní <sup>2</sup>	Ix	kuní
Do	čakuní	Mg	kuní
Hu	ku <sup>3</sup> ní <sup>4</sup> s	Lo	kíné

Ay, Ja, Do ča- < \*ča<sup>1</sup>- person prefix 55.

212. \*ku<sup>s</sup>tú<sup>s</sup> truncated, limb (of person) cut off.

Ay	kutú	Ix	kutú
Ja	ku <sup>s</sup> tú <sup>s</sup>	Te	ntikutuchá <u>short hair</u>
Hu	ku <sup>s</sup> tú <sup>s</sup> <u>limb cut off,</u> <u>short hair</u>		

Ix nasalization of /u/ unexplained. Te cha- < \*nchá<sup>4</sup> hair 288; Te nti- < \*<sup>o</sup>ntí<sup>1</sup> little 714. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

213. \*ku<sup>s</sup>ntá<sup>s</sup> guards.

Ay	tiku <sup>s</sup> ntá	Ix	cukuntá
Ja	ti <sup>1</sup> ku <sup>s</sup> ntá <sup>s</sup>	Mg	kunt <sup>s</sup> á
Do	tikuntá	Lo	k <sup>1</sup> ntó
Hu	ku <sup>s</sup> ntá <sup>s</sup> <u>guards animals</u>		

PPn 262. Ix cu- probably continuative aspect; Ay, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

214. \*ký<sup>s</sup> alive, awake.

Ay	tihnaký	Ji	-ký
Cq	kahwekaký	Ix	tiký
Ja	ti <sup>1</sup> ký <sup>s</sup>	Lo	tin <sup>1</sup> kké
Do	tiký	Te	-ký, tihnaký
Hu	-ký <sup>s</sup> , tihna <sup>s</sup> ký <sup>s</sup>		

Cq kahweka- unexplained. Ay, Hu, Te -hnə-, perhaps Lo -nə- < \*-hñá<sup>s</sup> is 156; Ay, Ja, Do, Hu, Ix, Lo, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

215. \*k<sup>w</sup>e<sup>4</sup>ní<sup>s</sup> (\*-ní<sup>s</sup> thing 311) look.

Hu kue<sup>4</sup>ní<sup>s</sup>, nə<sup>s</sup>ní<sup>s</sup> Ji kuiní

PPn 244. Expected reflex: Ji kuení. The reconstruction of tone on the final syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

216. \*k<sup>w</sup>há<sup>4</sup> abstract thing.

Mz khwathú	<u>gift</u>	Ji khuathó	<u>gift</u>
Ay k <sup>w</sup> hačá	<u>war</u>	So khwa <sup>4</sup> ki <sup>2</sup> ší <sup>4</sup>	<u>law</u>
Cq khuačá	<u>war</u>	Ix khuasčá	<u>war</u>
Ja k <sup>w</sup> há <sup>s</sup>	<u>thing</u> , k <sup>w</sup> ha <sup>s</sup> čá <sup>1</sup>	Mg k <sup>w</sup> haweyá	<u>death</u>
	<u>war</u>	Lo k <sup>w</sup> hočó	<u>war</u>
Do k <sup>w</sup> hačá	<u>war</u>	Te khuasčá	<u>war</u> ,
Hu khuá <sup>4</sup>	<u>abstract thing,</u>		khuakiší <u>truth</u>
	khua <sup>4</sup> wi <sup>s</sup> yá <sup>s</sup> <u>death</u>		

PPn 86; PMS 17.

217. \*k<sup>w</sup>ha<sup>4</sup>chuá<sup>s</sup>, \*k<sup>w</sup>ha<sup>4</sup>chau<sup>s</sup> happiness.

Ay k <sup>w</sup> hachá	Ix khuachuá
Ja k <sup>w</sup> ha <sup>s</sup> chó <sup>2</sup>	Mg k <sup>w</sup> hachá
Do chó <u>he likes</u>	Lo khocho
Hu khua <sup>4</sup> chuá <sup>s</sup> <u>joy</u>	Te khuacha
Ji məchá <u>he is happy</u>	

## A.218

Lo expected reflex k<sup>W</sup>ho-. Ay, Ja, Mg k<sup>W</sup>ha-, Hu, Ix, Te khua- < \*k<sup>W</sup>há<sup>4</sup> abstract thing 216; Ji mág- < \*mág<sup>3</sup> able 227. The \*-chauú<sup>3</sup> etymon is reconstructed from Ja and Do reflexes. The reconstruction of tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

218. \*k<sup>W</sup>a<sup>4</sup>há<sup>4</sup>, \*nk<sup>W</sup>a<sup>4</sup>há<sup>4</sup> puts on.

Ay	k <sup>W</sup> ahá	So	kwa <sup>4</sup> há <sup>4</sup> <u>carries</u>
Ja	ng <sup>W</sup> há <sup>3</sup>	Ix	kuahá
Do	ng <sup>W</sup> ahá		

219. \*k<sup>W</sup>ha<sup>4</sup>ki<sup>2</sup>ší<sup>4</sup> (\*k<sup>W</sup>há<sup>4</sup> abstract thing 216, \*ki<sup>2</sup>ší<sup>4</sup> straight 205) truth.

Ay	šik <sup>W</sup> hakiší	So	khwa <sup>4</sup> ki <sup>3</sup> ší <sup>24</sup> (< Pre-So * <sup>4</sup> - 21 - 4)
Cq	khuakiší		
Ja	k <sup>W</sup> ha <sup>3</sup> ki <sup>2</sup> ší <sup>3</sup>	Ix	khuakiší
Do	k <sup>W</sup> hakiší	Lo	k <sup>W</sup> hokiší
Hu	khua <sup>4</sup> ki <sup>2</sup> ší <sup>4</sup>	Te	khuakiší

220. \*k<sup>W</sup>ha<sup>4</sup>sčá<sup>1</sup> (\*k<sup>W</sup>há<sup>4</sup> abstract thing 216) war.

Ay	k <sup>W</sup> hačá	Ix	khuasčá
Cq	khuasčá	Mg	k <sup>W</sup> ačá
Ja	k <sup>W</sup> ha <sup>3</sup> čá <sup>1</sup>	Lo	k <sup>W</sup> hočá
Do	k <sup>W</sup> hačá	Te	khuasčá
Hu	khua <sup>4</sup> hčá <sup>1</sup>		

221. \*k<sup>w</sup>ha<sup>4</sup>te<sup>1</sup>šu<sup>3</sup>má<sup>3</sup> (\*k<sup>w</sup>há<sup>4</sup> abstract thing 216) law, order, ruler.

Ay	k <sup>w</sup> hatešumá	Ix	khuatešumá
Cq	skantešumá	Mg	k <sup>w</sup> hatešomá
Ja	k <sup>w</sup> ha <sup>3</sup> te <sup>1</sup> šu <sup>2</sup> má <sup>2</sup>	Lo	wotašimó
Do	k <sup>w</sup> hatešumá	Te	khuatešumá
Hu	khua <sup>4</sup> te <sup>1</sup> šu <sup>3</sup> má <sup>3</sup>		

Expected reflexes: Cq -tei-; Ix -ti-; Mg -šu-; Lo k<sup>w</sup>hotašimó. Tone is partially indeterminate on the last syllable; it is either \*<sup>3</sup> or \*<sup>31</sup>.

222. \*k<sup>w</sup>ha<sup>4</sup>thaú<sup>2</sup> (\*k<sup>w</sup>há<sup>4</sup> abstract thing 216, \*thaú<sup>2</sup> loves 576) gift.

Mz	khwathó	So	thu <sup>1</sup> hí <sup>1</sup> re <sup>4</sup> <u>he gives</u>
Ay	k <sup>w</sup> hathó	Ix	khua <sup>?</sup> athú
Cq	kuathó	Mg	k <sup>w</sup> hathó
Hu	khua <sup>4</sup> thaú <sup>2</sup>	Lo	khotí
Ji	khuathó	Te	khuathú

PPn 18. Expected reflexes: Cq khuathó; So tho-; Lo k<sup>w</sup>hothí; Ix -<sup>2</sup>a- unexplained.

223. \*k<sup>w</sup>hé finish off.

Ja	he <sup>2</sup> k <sup>w</sup> é <sup>2</sup> <u>finish off</u>	Hu	khué <sup>21</sup> <u>he takes</u>
Do	hek <sup>w</sup> hé		

Ja, Do he- finished; Hu tone is unexplained. The reconstruction of the etymon is rather indeterminate from

a Ja tone 2 reflex; it may be derived from \*2, \*3, \*31, \*32, \*42, or \*43.

224. \*k<sup>w</sup>hi<sup>3</sup> 3o, \*k<sup>w</sup>hiá<sup>1</sup> lp. will go.

Ay	k <sup>w</sup> hiá	I <u>will go</u>	Hu	khuiá <sup>13</sup>	I <u>will go</u>
Cq	khué		So	khwe <sup>i1</sup>	
Ja	he <sup>2</sup> k <sup>w</sup> hi <sup>2</sup>	<u>he went</u> , k <sup>w</sup> hiá	Ix	khui	
		I <u>will go</u>	Te	khuiá	
Do	k <sup>w</sup> hi				

PPn 180. So expected reflex khwa<sup>i21</sup>; Hu tone <sup>3</sup> of <sup>13</sup> glide probably indicates phrase final; the tone reconstruction is quite indeterminate.

225. \*k<sup>w</sup>f<sup>3</sup> this, he.

Mz	kwí	Do	k <sup>w</sup> f
Ay	k <sup>w</sup> f	Hu	kuf <sup>3</sup>
Cq	wi <sup>2</sup> i	Ix	kuf
Ja	k <sup>w</sup> f <sup>2</sup>		

PMS 16. Cq form unexplained. Tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>s1</sup>.

226. \*k<sup>w</sup>i<sup>s</sup>šu<sup>s</sup>?wi<sup>4</sup> (\*k<sup>w</sup>f<sup>3</sup> this 225) this.

Ay	k <sup>w</sup> iki?wi	Ix	kuišu?wi
Ja	k <sup>w</sup> i <sup>2</sup> šu <sup>2</sup> ?wi <sup>s</sup>	Lo	hawi
Do	k <sup>w</sup> išu?wi	Te	tišuwé
Hu	kuf <sup>3</sup> <u>this</u> ( <u>previously</u> <u>referred to</u> )		

Expected reflexes: Lo -wé; Te -wí; Lo ha- unexplained;  
Te ti- unexplained.

227. \*má<sup>s</sup> do, able, make.

Mz	ʔakwimá-	Hu	má <sup>s</sup> -
Ay	má-	So	ku <sup>s</sup> má <sup>1</sup> -
Cq	má-	Ix	má
Ja	má <sup>2s</sup>	Lo	mó
Do	má-	Te	má-

Mz ʔa- < \*\*a<sup>s</sup>- interrogative 691; Mz -kwi- < \*k<sup>w</sup>f<sup>s</sup> he 225; So ku- perhaps < \*ka<sup>2</sup>- completive aspect 172. Ja tone 3 of 23 glide probably developed by analogy to indicate phrase final. So tone unexplained.

228. \*má<sup>s</sup>haí<sup>2</sup> (\*má<sup>s</sup> able 227) no.

Mz	nahí	Mg	máhí
Cq	máhí <u>it can't be done</u>	Lo	máhé
Hu	má <sup>s</sup> , má <sup>s</sup> haí <sup>2</sup>	Te	máhé
Ji	máhí		

Expected reflexes: Mz máhé; Cq -hei; Mg mé; Te -hi.

229. \*má<sup>s</sup>čhé<sup>1</sup> (\*<sup>s</sup> - <sup>s</sup>) (\*má<sup>s</sup> able 227) needs, uses.

Mz	timáčhéná <u>I need</u>	So	čhé <sup>21</sup>
Ay	máčhé	Ix	čhé
Ja	má <sup>2</sup> čhé <sup>2</sup>	Mg	máčhé
Do	máčhé	Lo	máčhá-
Hu	má <sup>s</sup> čhé <sup>21</sup> <u>needs</u>	Te	máčhé
Ji	máčhé <u>needs</u>		

PMS 33. Ay oral /e/ and Lo oral /a/ unexplained. Mz  
 ti- < \*ti<sup>1</sup>- continuative aspect 589.

230. \*mä<sup>s</sup>čhi<sup>1</sup>nthaí<sup>2</sup> (\*mä<sup>s</sup> able 227, \*čhi<sup>1</sup> expensive 76,  
 \*nthaí<sup>2</sup> over the edge 368) fine, tax.

Ay	mäčinthai	Hu	mä <sup>s</sup> čhi <sup>1</sup> nthaí <sup>2</sup>
Cq	mäčhituhú	Ix	mäčithé
Ja	mä <sup>2</sup> čhi <sup>1</sup> nthaí <sup>2</sup>	Lo	mögchithí
Do	kamačhinthai	Te	khuačhiti

Expected reflexes: Ix mäčinthai; Lo -thé; Te -čhithí.  
 Cq -tuhú perhaps < \*ntu<sup>s</sup>hú<sup>1</sup> long 397 but Cq nasalized /y/ is  
 unexplained; Te khua- < \*k<sup>W</sup>há<sup>4</sup> abstract thing 216.

Ay	mäčine	Ix	mäčiné
Cq	kumäšiné	Mg	mäčiné
Ja	mä <sup>2</sup> či <sup>2</sup> né <sup>2</sup>	Lo	mögčiná
Do	mäčiné	Te	mäčiné
Hu	mä <sup>s</sup> či <sup>3</sup> né <sup>3</sup>		

Expected reflexes: Cq -čine<sup>1</sup>; Ix -čiñé. The tone on  
 the last syllable is partially indeterminate; it is either  
 \*<sup>3</sup> or \*<sup>31</sup>.

232. \*má<sup>3</sup>nce<sup>3</sup>hé<sup>4<sup>3</sup></sup>, \*má<sup>3</sup>ce<sup>3</sup>hé<sup>4<sup>3</sup></sup> (\*má<sup>3</sup> able 227) visible.

Ay	timancehé	So	ce <sup>3</sup> hé <sup>3<sup>2</sup></sup>
Cq	macehé	Ix	kamacehé
Ja	njhé <sup>2</sup>	Mg	mácé
Do	timanjehé	Lo	'amočchicahá
Hu	má <sup>3</sup> cé <sup>3</sup>	Te	timacehé-

Expected reflexes: Cq -ceihe<sup>1</sup>; Ix -cihé; Ay, Cq, Do oral final /e/ unexplained. Lo 'a- < \*\*a<sup>3</sup>- interrogative 691; Ay, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix ka- < \*ka<sup>2</sup>- completive aspect 172. Hu expected tone reflexes 3 - 4<sup>3</sup>.

233. \*má<sup>3</sup>nká<sup>3</sup> (\*má<sup>3</sup> able 227) accustomed to.

Mz	kamanká	Hu	má <sup>3</sup> nká <sup>3</sup> li <sup>4</sup>
Ay	kamanká	Ix	kamanká
Cq	kamanká-	Mg	manká
Ja	ti <sup>1</sup> má <sup>2</sup> nká <sup>2<sup>3</sup></sup>	Lo	yakhonká
Do	kamanká		

Lo yakho- unexplained. Mz, Ay, Cq, Do, Ix ka- < \*ka<sup>2</sup>- completive aspect 172; Ja ti- < \*ti<sup>1</sup>- continuative aspect 589.

Ja tone <sup>3</sup> of <sup>2<sup>3</sup></sup> glide has probably developed by analogy to indicate phrase final. The tone reconstruction on the last syllable is partially indeterminate; it is \*<sup>3</sup>, \*<sup>3<sup>1</sup></sup>, or \*<sup>4<sup>2</sup></sup>.

234. \*ma<sup>3</sup>nkhai<sup>1</sup> (\*<sup>3</sup> - <sup>3</sup>) (\*ma<sup>3</sup> able 227) understand.

Mz	ma <sup>3</sup> khi <sup>1</sup> -	Ji	ma <sup>3</sup> khai <sup>1</sup> -
Ay	ma <sup>3</sup> khi <sup>1</sup>	Ix	mankhi <sup>1</sup>
Ja	ma <sup>2</sup> nkhī <sup>23</sup>	Mg	ma <sup>3</sup> khi <sup>1</sup> -
Do	mankhi <sup>1</sup>	Lo	ma <sup>3</sup> khi <sup>1</sup> -
Hu	ma <sup>3</sup> khai <sup>1</sup>	Te	timakhi <sup>1</sup>

Expected reflexes: Mz -khé-; Ay -khai<sup>1</sup>; Ja, Do -ai<sup>1</sup>; Ix -nkhai<sup>1</sup>; Mg, Lo -e. Ja tone <sup>3</sup> of <sup>23</sup> glide probably an analogical development indicating phrase final.

235. \*ma<sup>3</sup>ntu<sup>4</sup>hú<sup>1</sup> (\*ma<sup>3</sup> able 227) fulfill.

Ja	ka <sup>2</sup> ma <sup>2</sup> ndhú <sup>31</sup> <u>becomes</u> <u>fulfilled</u>	Ix	kamantuhú
Do	kamanduhú	Lo	yakomontohó

Expected reflex: Lo komontihí; Lo ya- unexplained.

Ja, Do, Ix, Te ka-, Lo ko- < \*ka<sup>2</sup>- completive aspect 172.

236. \*ma<sup>3</sup>ñá<sup>4</sup>há<sup>3</sup> (\*ma<sup>3</sup> able 227) gathered together.

Ja	ka <sup>2</sup> ma <sup>2</sup> ñhá <sup>32</sup>	Lo	komonqho
Do	kamañhá	Te	kamañhá
Hu	ma <sup>3</sup> ñá <sup>43</sup>		

Ja, Do, Te ka-, Lo ko- < \*ka<sup>2</sup>- completive aspect 172.

Te \*ñ word initial > yV, then > ?i.

237. \*ma<sup>3</sup>sé<sup>3</sup>, \*wa<sup>3</sup>sé<sup>3</sup> half.

Mz	wase <sup>3</sup>	Hu	wa <sup>3</sup> sé <sup>3</sup>
Ay	masé	So	wa <sup>3</sup> sé <sup>3</sup>
Cq	wase <sup>3</sup>	Ix	masé
Ja	ma <sup>2</sup> sé <sup>2</sup>	Lo	wosá
Do	masé	Te	?usé

238. \*ma<sup>3</sup>ú<sup>2</sup> clears land.

Ay	thimó	Hu	ma <sup>3</sup> sú <sup>2</sup>
Cq	timú	Ix	cumú
Ja	ti <sup>1</sup> mó <sup>2</sup>	Lo	timís <sup>1</sup>
Do	timó	Te	timusú

Expected reflexes: Ay, Cq timó. Hu, Te -sú, Lo -sí  
 < \*sú<sup>2</sup> level 489; Cq, Ja, Do, Lo, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix cu- probably continuative aspect. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>3</sup>.

239. \*mé<sup>3</sup>hé<sup>2</sup> wants.

Mz	mihé	Ji	mé
Ay	mehé-	So	me <sup>3</sup> hé <sup>1</sup>
Cq	meihei	Ix	mihé
Ja	mhé <sup>2</sup>	Mg	mé
Do	mehé	Lo	mahá-
Hu	mé <sup>3</sup>	Te	mehé

PMS 53. Expected reflex: Ji məhé; Ay, Cq, Do oral /e/, Lo oral /a/ in \*-hé<sup>3</sup> syllable unexplained. Hu expected tone reflex <sup>4s</sup>.

240. \*m̥i<sup>s</sup>hi<sup>2</sup> upgrade, slope up.

Hu	m̥i <sup>4s</sup>	Ix	m̥ihi <sup>2</sup>
Ji	m̥ihi <sup>2</sup>	Lo	m̥ihi <sup>2</sup>
So	m̥i <sup>s</sup> hi <sup>3</sup>	Te	m̥ihi <sup>2</sup>

So expected reflex <sup>3</sup> - <sup>1</sup>.

241. \*n̥a<sup>3</sup>-(\*<sup>4</sup>) nominal.

Cf. 242 -247, etc.

242. \*n̥a<sup>3</sup>hñá<sup>1</sup>, \*ni<sup>s</sup>hñá<sup>1</sup> (\*n̥a<sup>3</sup>- nominal 241, \*ni<sup>s</sup> - nominal 312) corn cob.

Mz	nahñá	Ji	nahná
Ay	nahñá	So	n̥a <sup>3</sup> hñá <sup>21</sup>
Cq	nahñá	Ix	n̥ihñá
Ja	n̥ <sup>2</sup> hñá <sup>1</sup>	Lo	n̥ohnó
Do	nahñá	Te	nahná
Hu	n̥a <sup>3</sup> hñá <sup>1</sup>		

PPn 216; PMS 60. Expected reflexes: Hu, Ji, Lo, Te  
-hñV.

243. \*na<sup>g</sup><sup>3</sup>hñú<sup>s</sup>, \*ni<sup>g</sup><sup>3</sup>hñú<sup>s</sup> (\*na<sup>g</sup><sup>3</sup>- nominal 241, \*ni<sup>g</sup><sup>3</sup>- nominal 312) cloth, clothes.

Ay	nahñúna	Ji	nahñú
Ja	na <sup>g</sup> <sup>2</sup> hiy <sup>2</sup>	So	na <sup>g</sup> <sup>3</sup> hñú <sup>s</sup>
Do	nahiy <sup>2</sup>	Ix	ni <sup>g</sup> hñú
Hu	na <sup>g</sup> <sup>3</sup> hñú <sup>s</sup>		

244. \*na<sup>g</sup><sup>3</sup>nki<sup>s</sup> (\*na<sup>g</sup>- nominal 241) land, country.

Mz	nankí <u>earth</u> , nki- <u>under</u>	So	na <sup>g</sup> <sup>3</sup> nki <sup>s</sup> <u>earth</u> , khit <sup>2</sup> nki <sup>s</sup>
Ay	nankí		<u>under</u>
Cq	nankí	Ix	nankí
Ja	na <sup>g</sup> <sup>2</sup> nki <sup>2</sup>	Lo	nónké
Do	nankí	Te	nankí <u>earth</u> , 'inkí
Hu	na <sup>g</sup> <sup>3</sup> nki <sup>s</sup> <u>earth</u> , <u>floor</u> ,		<u>under</u>
	nki <sup>s</sup> <u>under</u>		

PPn 275.

245. \*na<sup>g</sup><sup>3</sup>nki<sup>s</sup> (\*na<sup>g</sup><sup>3</sup>- nominal 241) low.

Ay	nankí	Hu	na <sup>g</sup> <sup>3</sup> nki <sup>s</sup> <u>below</u>
Cq	nankí	Ji	nki <u>under</u>
Ja	na <sup>g</sup> <sup>2</sup> nki <sup>2</sup>	Lo	nónké
Do	nankí	Te	'ankí <u>below</u>

Te /?/ seems to be in the process of replacing some initial consonants such as /n, y/. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>8</sup>, \*<sup>81</sup>, or \*<sup>42</sup>.

246. \*na<sup>3</sup>ñá<sup>1</sup> (\*<sup>2</sup> - <sup>1</sup>) (\*na<sup>3</sup>- nominal 241) dog.

Mz	nañá	Ji	nañá
Ay	thiunañá	So	na <sup>3</sup> ñá <sup>21</sup>
Cq	nañá	Ix	nañá
Ja	na <sup>2</sup> ñá <sup>1</sup>	Lo	noñó
Do	nañá	Te	nañá
Hu	njá <sup>21</sup>		

PPn 337. Gudschinsky reconstructed this etymon as \*na<sup>3</sup>ni<sup>3</sup>yá<sup>1</sup>; a similar set with \*-ñá 621 (PPn 294; PMS 4) she reconstructed as disyllabic rather than trisyllabic. It seems clear that both should be reconstructed disyllabic.

247. \*na<sup>3</sup>šá<sup>1</sup> (\*na<sup>3</sup>- nominal 241) net (square).

Cq	na <sup>3</sup> ia yalašá	So	na <sup>3</sup> šá <sup>21</sup>
Ja	na <sup>3</sup> ?ia <sup>2</sup> na <sup>2</sup> šá <sup>1</sup>	Ix	nta <sup>3</sup> iанаšá
Do	nda <sup>3</sup> iанаšá	Lo	nošó
Hu	na <sup>3</sup> šá <sup>1</sup>	Te	našá

PPn 168. Cq /l/ unexplained. Cq, Ja na<sup>3</sup>ia-, Do, Ix nta<sup>3</sup>ia- < \*nta<sup>4</sup>?yá<sup>3</sup> net bag 366. Gudschinsky reconstructed the tone \*<sup>4</sup> - <sup>1</sup>, but I find no evidence for this either in her data or in mine.

248. \*na<sup>3</sup>šú<sup>1</sup> (\*na<sup>3</sup>- nominal 241) flower.

Mz	našú	So	na <sup>3</sup> šú <sup>21</sup>
Ay	našú	Ix	našú
Cq	našú	Mg	našú
Ja	na <sup>2</sup> šú <sup>1</sup>	Lo	našé
Do	našú	Te	našú
Hu	na <sup>3</sup> šú <sup>1</sup>		

PPn 174.

249. \*na<sup>3</sup>ti<sup>1</sup> (\*na<sup>3</sup>- nominal 241) louse.

Mz	natí	Ji	natí
Ay	natí	So	na <sup>3</sup> ti <sup>21</sup>
Cq	šití	Ix	natí, ñtí (< Pre-Ix *natí)
Ja	na <sup>2</sup> ti <sup>1</sup>	Lo	nóte
Do	natí	Te	natí
Hu	na <sup>3</sup> ti <sup>1</sup>		

PPn 115. Cq Ši- < \*ši<sup>3</sup>- connective 518.250. \*na<sup>3</sup>ya<sup>1</sup>, \*ntu<sup>3</sup>ya<sup>1</sup> (\*na<sup>3</sup>- nominal 241) scorpion.

Mz	čunayá	Ji	čuna <sup>3</sup> yá
Ay	čanuyá	So	nayá
Cq	čunayá	Ix	ntayá
Ja	ča <sup>1</sup> na <sup>2</sup> ya <sup>1</sup>	Lo	nayó
Do	čanduyá	Te	čuna <sup>3</sup> yá
Hu	ču <sup>4</sup> na <sup>3</sup> ya <sup>1</sup>		

Hu, Ji, Te /ʔ/ in /'y/ cluster unexplained. Mz, Cq, Hu,  
 Ji ču- < \*čú<sup>4</sup> animal 107; Ay, Ja, Do ča- < \*ča<sup>1</sup>- person  
prefix 55.

251. \*ná<sup>3</sup>, f<sup>2</sup> father.

Ay	ná <sup>3</sup> aí-	Lo	nó?í-
Hu	nó?áí <sup>4s</sup>	Te	ná?í-
Mg	nó?áí		

PPn 227; PMS 61. Expected reflexes: Ay ná<sup>3</sup>; Hu ná<sup>3</sup>;  
 Lo nō?é; Te náí.

252. \*ná<sup>3</sup>?ñú<sup>1</sup>, \*ní<sup>3</sup>?ñú<sup>1</sup> (\*ná<sup>3</sup>- nominal 241, \*ní<sup>3</sup>  
nominal 312) vine.

Mz	ná?ñú, nó? <u>rope</u>	Ji	ná?ñú <u>rope</u>
Ay	ná?ñú	So	ná <sup>3</sup> ?ñú <sup>21</sup> <u>rope</u>
Cq	ná?ñú	Ix	ní <sup>3</sup> ?ñú
Ja	nó?ý <sup>1</sup>	Lo	nó?ñí
Do	ný?ý	Te	náñú
Hu	nó?ý <sup>1</sup> <u>vine</u> , <u>rope</u>		

PPn 253. Expected reflexes: Ja ?íý, Do ?ñý.

253. \*ná<sup>4</sup> mother.

Mz	ná	Ji	ná
Ay	ná	So	ná <sup>4s</sup>
Cq	ná	Ix	ná
Ja	ná <sup>3</sup> <u>3p.</u> , ?ei <sup>2</sup> ná <sup>2</sup> ná <sup>3</sup> <u>lo</u> .	Mg	ná
Do	ná	Lo	nó
Hu	ná	Te	ná

Ja <sup>2</sup>ei<sup>2</sup>- unexplained. Tone development of So is obscure; expected tone <sup>4</sup>.

254. \*na<sup>4</sup>ce<sup>1</sup>, \*ni<sup>4</sup>ce<sup>1</sup> (\*na<sup>4</sup>- nominal 241, \*ni<sup>4</sup>- nominal 312) rabbit.

Mz	naci, nacyé	So	na <sup>4</sup> ce <sup>21</sup>
Ay	nacé	Ix	nicé
Ja	ča <sup>1</sup> na <sup>3</sup> ce <sup>1</sup>	Mg	nacé
Do	čanacé	Lo	nocá
Hu	na <sup>4</sup> ce <sup>1</sup>	Te	nacé

PPn 98. Mz /y/ unexplained; it is phonemically doubtful. Ja, Do ča- < \*ča<sup>1</sup>- person prefix 56.

255. \*na<sup>4</sup>cé<sup>4</sup> (\*na<sup>4</sup>- nominal 241) coffee-fly.

Ay	nacé	Hu	na <sup>4</sup> cé <sup>4</sup>
Cq	nacé	Ix	ñcé (< Pre-Ix *nacé)
Ja	na <sup>3</sup> cé <sup>3</sup>	Lo	nocá
Do	nacé	Te	nacé

256. \*na<sup>4</sup>cí<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241) grind stone (metate).

Mz	naci	Ji	naci
Ay	naci	So	na <sup>3</sup> cí <sup>21</sup>
Cq	naci	Ix	naci, ñcé (< Pre-Ix *nací)
Ja	na <sup>2</sup> cí <sup>1</sup>	Lo	nocé
Do	naci	Te	naci
Hu	na <sup>4</sup> cí <sup>1</sup>		

PPn 88.

257. \*na<sup>4</sup>cú<sup>4</sup> (\*na<sup>4</sup>- nominal 241) cactus (maguey).

Mz	nacú	Hu	na <sup>4</sup> cú <sup>4</sup>
Ay	nacú	Ix	nacú
Cq	nácu	Mg	nacú
Ja	na <sup>3</sup> cú <sup>3</sup>	Lo	nočí
Do	nacú	Te	nacú

PPn 104.

258. \*na<sup>4</sup>ča<sup>3</sup>ký<sup>3</sup>, \*na<sup>4</sup>či<sup>3</sup>ký<sup>3</sup> (\*na<sup>4</sup> mother 253, \*ča<sup>3</sup>ký<sup>3</sup> holy 62) godmother.

Mz	načaký	Ix	načiký
Ay	načiký	Mg	načaký
Cq	načáky	Lo	nočokí
Ja	na <sup>3</sup> ča <sup>2</sup> ký <sup>23</sup>	Te	načaký
Hu	na <sup>4</sup> či <sup>3</sup> ký <sup>3</sup>		

Expected reflex: Te čiký. Ja tone <sup>3</sup> of <sup>23</sup> glide probably has developed by analogy and indicates phrase final. The tone on the final syllable is indeterminate. It is either \*<sup>3</sup> or \*<sup>31</sup>.

259. \*na<sup>4</sup>čá<sup>3</sup> (\*na<sup>4</sup>- nominal 241) bed, offering table.

Ay	načá	So	na <sup>4</sup> čá <sup>3</sup>
Cq	načá	Ix	načá, nčá (< Pre-Ix *načá)
Ja	na <sup>3</sup> čá <sup>2</sup>	Mg	načá
Do	načá	Lo	nočó
Hu	na <sup>4</sup> čá <sup>3</sup>	Te	načá
Ji	načá		

260. \*na<sup>4</sup>čhá<sup>4</sup> (\*na<sup>4</sup>- nominal 241) banana.

Ay	načhá	So	na <sup>4</sup> čhá <sup>4</sup>
Cq	načha	Ix	načhá
Ja	na <sup>3</sup> čhá <sup>s</sup>	Mg	načhá
Do	načhá	Lo	nočhó
Hu	na <sup>4</sup> čhá <sup>4</sup>	Te	načhá

PPn 122. It seems likely that the semantic range of mamey was extended to banana; parallels can be noted for deer > horse with the modern term for deer becoming a compound of deer + woods.

261. \*na<sup>4</sup>čhú<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241) thread.

Mz	načhú	Ji	načhú
Ay	načhú	So	na <sup>3</sup> čhú <sup>21</sup>
Cq	načhú	Ix	načhú, nčhú (< Pre-Ix *načhú)
Ja	na <sup>3</sup> čhú <sup>1</sup>		
Do	načhú	Lo	nočhí
Hu	na <sup>4</sup> čhú <sup>1</sup>	Te	načhú

PPn 136.

262. \*na<sup>4</sup>či<sup>1</sup>?yá<sup>3</sup> (\*na<sup>4</sup> mother 253) mother-in-law.

Mz	na <sup>2</sup> yá	Ji	načhiyá
Ay	nači?ia-	Ix	nači?ia
Cq	na <sup>2</sup> ia-	Lo	noči?yomó
Ja	na <sup>3</sup> nči <sup>1</sup> ?ia <sup>2</sup>	Te	načiyá
Do	nanči?ia		

Expected reflex: Ji -<sup>2</sup>yá; Ja, Do /n/ of /nč/ cluster unexplained; Ji /h/ of /čh/ cluster unexplained; Lo -mq unexplained.

263. \*na<sup>4</sup>čú<sup>4</sup> (\*na<sup>4</sup>- nominal 241) squash.

Mz	načú	Ji	načú	-
Ay	načú	So	na <sup>4</sup> čú <sup>4</sup>	
Cq	náču	Ix	ňčú (< Pre-Ix *načú)	
Ja	na <sup>3</sup> čú <sup>3</sup>	Mg	načuyá	
Do	načú	Lo	nogčí	
Hu	na <sup>4</sup> čú <sup>4</sup>	Te	načú	

PPn 127. Mg -yá unexplained.

264. \*na<sup>4</sup>he<sup>4</sup> \*ni<sup>4</sup>he<sup>4</sup> (\*<sup>3</sup> - <sup>3</sup>) (\*na<sup>4</sup>- nominal 241; \*ni<sup>4</sup>- nominal 312) tongue.

Mz	nihé	So	na <sup>4</sup> hi <sup>4</sup> , ná <sup>1</sup> -
Ay	nahai	Ix	nahí
Cq	neihei	Mg	néhé
Ja	nhai <sup>3</sup>	Lo	nahé <u>lp.</u> , nahí <u>3p.</u>
Do	nahei <u>lp.</u> , <u>3p.</u>	Te	néhé
Hu	ni <sup>4</sup> hé <sup>4</sup> , ni <sup>3</sup> he <sup>3</sup>		

PPn 214. Expected reflexes: Ay, So, Ix -hé; Ja -hei; Lo néhé; Te nihé; Ay, Cq, Ja, Do oral vowel in stressed syllable unexplained.

265. \*na<sup>4</sup>hná<sup>1</sup>nacá<sup>4</sup>lp., \*na<sup>4</sup>hná<sup>1</sup>nchá<sup>4</sup>3p. (\*na<sup>4</sup>-nominal 241) finger.

Mz	nahnancá	Hu	na <sup>4</sup> hná <sup>1</sup> nchá <sup>4</sup>
Ay	nahmancá <u>lp.</u> , nahmanchá	Ix	nahnancá <sup>2</sup> a <u>lp.</u> ,
	<u>3p.</u>		nahnanchá <u>3p.</u>
Cq	ncá <u>lp.</u> , ncháča <u>3p.</u>	Mg	nahnancá
Ja	na <sup>3</sup> hná <sup>1</sup> ncá <sup>3</sup> <u>lp.</u> ,	Lo	kincáhá <u>lp.</u> , kichó <u>3p.</u>
	na <sup>3</sup> hná <sup>1</sup> nchá <sup>3</sup> <u>3p.</u>	Te	hnýncá <u>lp.</u> , hnýchá <u>3p.</u>
Do	nahnancá <u>lo.</u> , nahnanchá		
	<u>3v.</u>		

Expected reflexes: Cq chá; Lo kincóchá; Te hná-; Ix -<sup>2</sup>a unexplained; Ay expected reflex is /hn/ cluster rather than /hm/ cluster. Lo ki- perhaps < \*t<sup>y</sup>ku<sup>1</sup> knee 623.

266. \*na<sup>4</sup>hní<sup>1</sup>, \*ni<sup>4</sup>hní<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241, \*ni<sup>4</sup>- nominal 312) violin.

Ay	nahní	So	na <sup>3</sup> hní <sup>21</sup> <u>stringed instrument</u>
Ja	na <sup>3</sup> hní <sup>1</sup>		
Do	nahní	Ix	níhní
Hu	na <sup>4</sup> hní <sup>1</sup>	Mg	nahní <u>string music</u>
Ji	nahní		

PPn 203. There may be considerable borrowing since expected reflex for Ay, So, Ix, Mg is /n/ rather than /hn/, and for Hu /nh/ rather than /hn/.

267. \*nə<sup>4</sup>hnú<sup>4</sup> (\*nə<sup>4</sup>- nominal 241) tobacco.

Mz	nəhnú	Mg	nəhnú
Ay	škanəhñú	Lo	nəhné
Hu	nə <sup>4</sup> hnú <sup>4</sup>	Te	nəhnú
Ji	nəhnú		

PPn 252. Expected reflex: Ay -hnú. Ay ška- < \*šká<sup>4</sup> leaf 528.

268. \*nə<sup>4</sup>hñú<sup>4</sup>, \*ni<sup>4</sup>hñú<sup>4</sup> (\*nə<sup>4</sup>- nominal 241, \*ni<sup>4</sup>- nominal 312) turkey (female).

Mz	nəhñú	Ji	nəhñú
Ay	nəhñú	So	nə <sup>4</sup> hñú <sup>4</sup>
Cq	nəhñú	Ix	nīhñú
Ja	nə <sup>3</sup> hi <sup>4</sup> <sub>ü</sub>	Mg	nəhñú
Do	nəhi <sup>4</sup> <sub>ü</sub>	Te	nəhñú
Hu	nə <sup>4</sup> hñú <sup>4</sup>		

PPn 219.

269. \*nə<sup>4</sup>nká<sup>4</sup> (\*nə<sup>4</sup>- nominal 241) deep.

Mz	nənká	Hu	nə <sup>4</sup> nká <sup>4</sup>
Ay	nənká	So	nə <sup>4</sup> nká <sup>4</sup>
Cq	nýnku	Ix	nənká
Ja	nə <sup>3</sup> nká <sup>3</sup>	Lo	nənkó
Do	nənká	Te	nənká

PPn 283. Cq vowels /u...u/ unexplained; expected /a...a/.

270. \*na<sup>4</sup>ntá<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241) water, liquid.

Mz	nántá	Ji	nántá
Ay	nántá, nta <sup>2</sup> ihwá	So	na <sup>4</sup> ntá <sup>21</sup> <u>spring</u>
Cq	nántá	Ix	ntahwá
Ja	nté <sup>1</sup> , nda <sup>1</sup> ní <sup>2</sup> hwá <sup>2</sup>	Mg	nántá
Do	ndaníhwá	Lo	nontó
Hu	na <sup>3</sup> ntá <sup>1</sup>	Te	nántá

PPn 259. Ay -?ihwá, Ja, Do -níhwá, Ix -hwá < \*hwá<sup>31</sup>  
clear 164.

271. \*na<sup>4</sup>ntá<sup>4</sup> (\*na<sup>4</sup>- nominal 241) cactus (nopal).

Mz	nántá	So	na <sup>4</sup> ntá <sup>4</sup>
Ay	nántá	Ix	nántá
Cq	nánta	Mg	nántá
Ja	na <sup>3</sup> ntá <sup>3</sup>	Lo	nontó
Do	nántá	Te	nántá
Hu	na <sup>4</sup> ntá <sup>4</sup>		

PPn 258.

272. \*na<sup>4</sup>ný<sup>1</sup> (\*na<sup>4</sup>- nominal 241) duck.

Ja	na <sup>3</sup> ný <sup>1</sup>	Ix	náný
Do	čanáný		

Do ča- < \*ča<sup>1</sup>- person prefix 55.

273. \*na<sup>4</sup>sčá<sup>1</sup> (\*ná<sup>4</sup> mother 273, \*sčá<sup>1</sup> old 454)  
grandmother.

Cq	nčawá-	Ix	nasčá
Ja	na <sup>8</sup> čá <sup>1</sup> -	Lo	nogčó
Do	náčá-	Te	nasčá
Hu	na <sup>4</sup> hčá <sup>1</sup>		

Cq -wa unexplained; Cq ná- apparently contracted with  
 \*he > nč.

274. \*na<sup>4</sup>šá<sup>4</sup> (\*na<sup>4</sup>- nominal 241) salt.

Mz	našá	Ji	našá
Ay	našá	So	na <sup>4</sup> šá <sup>4</sup>
Cq	náša	Ix	našá
Ja	na <sup>8</sup> šá <sup>3</sup>	Lo	nogšó
Do	našá	Te	našá
Hu	na <sup>4</sup> šá <sup>4</sup>		

PPn 166.

275. \*na<sup>4</sup>ší<sup>4</sup> (\*na<sup>4</sup>- nominal 241) cliff, mountain.

Mz	naší <u>big rock</u>	Ji	naší
Cq	naši	So	na <sup>4</sup> ší <sup>4</sup>
Ja	na <sup>8</sup> ší <sup>3</sup>	Ix	naší
Do	naší	Lo	nogšé
Hu	na <sup>4</sup> ší <sup>4</sup>	Te	naší

276. \*na<sup>4</sup>ši<sup>4</sup>na<sup>3</sup>ntá<sup>1</sup> (\*na<sup>4</sup>ši<sup>4</sup> cliff 275, \*na<sup>3</sup>ntá<sup>1</sup> water town 270) town.

Mz	našinantá	Hu	na <sup>4</sup> ši <sup>4</sup> na <sup>3</sup> ntá <sup>1</sup>
Ay	našinantá	So	na <sup>4</sup> ši <sup>4</sup> na <sup>3</sup> ntá <sup>21</sup>
Cq	našinantá	Ix	našinantá
Ja	na <sup>3</sup> ši <sup>3</sup> na <sup>2</sup> ntá <sup>1</sup> , na <sup>3</sup> ši <sup>3</sup> na <sup>2</sup> ntó <sup>13</sup> (< Pre- Ja *na <sup>3</sup> ši <sup>3</sup> na <sup>2</sup> ntá <sup>1</sup> )	Mg	našinantá Lo nošinontó
Do	našinantá	Te	našantá

Expected reflex: Te našinantá.

277. \*na<sup>4</sup>ší<sup>1</sup> (\*na<sup>4</sup>- nominal 241) deer.

Mz	naší <u>horse</u> , našiní <u>deer</u>	Ji	naší <u>horse</u>
Ay	naší <u>horse</u> , našikihñá <u>deer</u>	So	na <sup>4</sup> ší <sup>21</sup> <u>horse</u>
Cq	naší <u>horse</u>	Mg	naší <u>horse</u>
Ja	na <sup>3</sup> ší <sup>1</sup>	Lo	nošé
Do	čanaší	Te	naší <u>horse</u>
Hu	na <sup>4</sup> ší <sup>1</sup> <u>horse</u>		

PPn 161. Ay oral /i/ unexplained. Do ča- < \*ča<sup>1</sup>- person prefix 55.

278. \*na<sup>4</sup>šú<sup>4</sup> (\*na<sup>4</sup>- nominal 241) throat.

Mz	na <sup>4</sup> šuhtá	Hu	na <sup>4</sup> ša <sup>4</sup> htá <sup>4</sup>
Ay	na <sup>4</sup> šuntá-	So	na <sup>4</sup> šó <sup>4</sup>
Cq	na <sup>4</sup> šuštá-	Ix	na <sup>4</sup> šú
Ja	na <sup>3</sup> šú <sup>3</sup>	Lo	na <sup>4</sup> šotó
Do	na <sup>4</sup> šú	Te	na <sup>4</sup> šustá-

Expected reflexes: Hu, So na<sup>4</sup>šú<sup>4</sup>; Lo noší. Mz -htá-, Ay -ntá-, Cq -štá-, Lo -tó, Te -stá < \*hntá<sup>s</sup> breathes 193; but the expected reflex for Cq is -ntá- and for Te -htá.

279. \*na<sup>4</sup>thí<sup>4</sup>, \*ni<sup>4</sup>thí<sup>4</sup> (\*na<sup>4</sup>- nominal 241, \*ni<sup>4</sup>- nominal 312) spindle.

Ay	nathí	Ix	níthí, ñthí (< Pre-Ix *níthí)
Cq	nethí		
Ja	na <sup>3</sup> thí <sup>3</sup>	Mg	nathí
Do	nethí	Lo	nothé
Hu	na <sup>4</sup> thí <sup>4</sup>	Te	nathí
So	nathí <sup>4</sup>		

Cq, Do ne- unexplained; Cq, Te nasalized /ñ/ in heavily stressed syllables unexplained.

280. \*na<sup>4</sup>ti<sup>1</sup>, \*ni<sup>4</sup>ti<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241, \*ni<sup>4</sup>- nominal 312) corn flower.

Mz	natí	Hu	na <sup>4</sup> ti <sup>1</sup>
Ay	natí	So	na <sup>3</sup> ti <sup>21</sup>
Cq	ntati	Ix	nítí
Ja	na <sup>3</sup> ti <sup>1</sup>	Lo	noté
Do	natí	Te	natí

Cq /t/ or /nt/ cluster unexplained.

281. \*na<sup>4</sup>t<sup>y</sup>ú<sup>1</sup>, \*n<sup>j</sup><sub>g</sub><sup>4</sup>t<sup>y</sup>ú<sup>1</sup> (\*na<sup>4</sup>- nominal 241, \*n<sup>j</sup><sub>g</sub><sup>4</sup>- nominal 312) coconut.

Ay	natiú	Do	natiú
Cq	natiú <u>small nut</u>	Ix	nitiú
Ja	na <sup>3</sup> tiú <sup>1</sup>	Te	na <sup>3</sup> čú

Ja, Do /i/ is unexplained.

282. \*na<sup>4</sup>mí<sup>s</sup> (\*<sup>4</sup> - <sup>1</sup>) (\*na<sup>4</sup>- nominal 241) father.

Mz	na <sup>3</sup> mí <u>priest, father</u>	Ji	na <sup>3</sup> mí <u>priest</u>
Ay	na <sup>3</sup> mí <u>priest</u>	So	na <sup>4</sup> mí <sup>21</sup> <u>priest</u>
Cq	na <sup>3</sup> mí <u>father, priest</u>	Ix	na <sup>3</sup> mí <u>father</u> , čan <sup>3</sup> mí
Ja	na <sup>3</sup> mí <sup>2</sup> <u>father,</u> {nda <sup>3</sup> -, ha <sup>1</sup> -, ča <sup>1</sup> -}		<u>priest</u>
	na <sup>3</sup> mí <sup>2</sup> <u>priest</u>	Mg	na <sup>3</sup> mí <u>priest</u>
Do	ndana <sup>3</sup> mí <u>priest</u>	Lo	nog <sup>3</sup> mé <u>priest</u>
Hu	na <sup>4</sup> mí <sup>s</sup> <u>priest</u>	Te	námí <u>priest</u>

PPn 227; PMS 61. Expected reflex: Mg nam<sup>3</sup>. Ja nda<sup>3</sup>- < \*nta<sup>4</sup>- person prefix 362; Ja ha<sup>1</sup>- < \*ha<sup>1</sup>- person prefix 121; Ja ča<sup>1</sup>- < \*ča<sup>1</sup>- person prefix 55.

283. \*nai<sup>4</sup><sup>1</sup> devil.

Mz	šutá né <u>demon</u>	Mg	nai
Ay	čanayí	Lo	čitonai
Hu	nai <sup>4</sup> <sup>2</sup>	Te	šitá nai
Ji	nai		

Expected reflexes: Ay -nai; Mg, Lo né; Te ni. Mz šutá, Lo čhito-, Te šitá < \*šu<sup>4</sup>tá<sup>4</sup>, \*ču<sup>4</sup>tá<sup>4</sup> person 56]; Ay ča- < \*ča<sup>1</sup>- person prefix 55. The tone reconstruction is partially indeterminate; it is either \*<sup>41</sup> or \*<sup>42</sup>.

284. \*nca<sup>4</sup>kú<sup>4</sup>, \*ncu<sup>4</sup>kú<sup>4</sup>, \*cu<sup>4</sup>kú<sup>4</sup> foot.

Mz ncakú	<u>his foot</u>	ncukwá	Hu ncu <sup>4</sup> kú <sup>4</sup>
	<u>our (incl.) feet</u>		Ji ncukú
Ay ncakú			Ix ncukú
Cq ncakú			Mg ncaká <u>our (incl.) feet</u>
Ja cu <sup>s</sup> kú <sup>s</sup>			Lo ncokí
Do cukú			Te ncukú <u>3p.</u> , ncukuá <u>1p.</u>

PPn 68; PMS 37.

285. \*nce<sup>s</sup>é<sup>s</sup>, \*ce<sup>s</sup>é<sup>s</sup> intestine.

Ay nce <sup>s</sup> é-		So c <sup>s</sup> é <sup>s</sup>
Cq nce <sup>s</sup> é <sup>s</sup>		Ix ci <sup>s</sup> é
Ja c <sup>s</sup> é <sup>s</sup>		Mg c <sup>s</sup> é <u>membrane</u>
Do ce <sup>s</sup> é		Lo č <sup>s</sup> ca <sup>s</sup> á
Hu c <sup>s</sup> é <sup>s</sup> <u>membrane</u>		Te ci <sup>s</sup> é

PPn 99. Expected reflexes: So ce<sup>s</sup>é; Do c<sup>s</sup>é; Te cé.  
Lo č<sup>s</sup>- unexplained.

286. \*nce<sup>4</sup>é<sup>4</sup> (\*<sup>1</sup> - <sup>1</sup>) brother.

Mz	(ča)nc?í	Do	ndanc?é, ha-, ti-, hmi-, ča-
Ay	c?ia	Hu	nc?é <sup>4</sup>
Cq	čacei?á (ča- prefix used by both male and female speakers)	Ji	nc?é
		So	c?é <sup>4</sup>
		Ix	nc?é
Ja	nda <sup>s</sup> nc?é <sup>1</sup> , ha <sup>1</sup> -, ti <sup>1</sup> -, hmi <sup>1</sup> -, ča <sup>1</sup> -	Lo	nca?á
		Te	nce

Expected reflexes: Ay nce?é; Cq -cei?é; So nce<sup>4</sup>é<sup>4</sup>;  
 Ix nci?é. Ja /c/ unexplained, expected /j/ in stressed  
 syllable; Cq /i/ of /ei/ cluster unexplained. Ja, Do  
 prefixes: \*nta<sup>4</sup>- 374; \*ha<sup>1</sup>- 121; \*ti<sup>1</sup>- 586; \*hmi<sup>1</sup>- 147;  
 \*ča<sup>1</sup>- 56.

287. \*nchá<sup>s</sup>, ncá<sup>4</sup> hand.

Mz	nchá, ncá	Do	nchá, chá (< Pre-Do *nchá)
Ay	nchá <u>ʒp.</u> , ncá <u>lp.</u>		<u>ʒp.</u> , ncá, cá (< Pre-Do
Cq	ncháča <u>ʒp.</u> , ncá <u>lp.</u> ,		*ncá) <u>lp.</u>
Ja	nchá <sup>2</sup> , chá <sup>2</sup> (< Pre-Ja *nchá <sup>2</sup> ) <u>ʒp.</u> , ncá <sup>s<sup>2</sup>, cá<sup>s<sup>2</sup> (&lt; Pre-Ja *ncá<sup>s<sup>2</sup>)</sup></sup></sup>	Hu	nchá <sup>s</sup> , ncá <sup>4</sup> So chá <sup>s</sup> , ncá <sup>4</sup>
	<u>lp.</u>	Ix	nchá <u>ʒp.</u> , nca?á <u>lp.</u>
		Lo	chó <u>ʒp.</u> , ncahá <u>lp.</u>

PPn 291. Expected reflexes: Cq chá; Lo ncohó. Ja  
 tone <sup>2</sup> of <sup>s<sup>2</sup> glide unexplained, perhaps emphasis.</sup>

288. \*nchá<sup>4</sup> hair.

Mz	nchá	Hu	nchá <sup>4</sup>
Ay	nchá	Ji	chá
Cq	chá	So	chá <sup>4</sup>
Ja	nchá <sup>s</sup> , chá <sup>s</sup> (< Pre-Ja *nchá <sup>s</sup> )	Ix	nchá
Do	nchá, chá (< Pre-Do *nchá)	Mg	chá
		Lo	chó
		Te	chá

PPn 172.

289. \*nché<sup>4</sup> huaje.

Mz	nchyé	Hu	nché <sup>4</sup>
Ay	nché	So	ché <sup>4</sup>
Cq	ché	Ix	nché
Ja	nché <sup>s</sup> , ché <sup>s</sup> (< Pre-Ja *nché <sup>s</sup> )	Lo	chá
Do	nché, ché (< Pre-Do *nché)	Te	ché

PPn 106. Mz /y/ before /e/ unexplained, phonemically doubtful.

290. \*nché<sup>1</sup> honey.

Mz	nchyé, chyé	Hu	nché <sup>1</sup>
Ay	nché	Ji	ché
Cq	ché	So	ché
Ja	nché <sup>1</sup> , ché <sup>1</sup> (<Pre-Ja *nché <sup>1</sup> )	Ix	nché
Do	nché, ché (< Pre-Do *nché)	Lo	ntochá
		Te	ché

PPn 163. Expected reflex: Cq ché<sup>1</sup>. Mz /y/ before /e/ unexplained, phonemically doubtful. Lo nto- < \*na<sup>4</sup>ntá<sup>1</sup>

liquid 270. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

291. \*nchú<sup>4</sup> (\*<sup>2</sup>) onion.

Mz	tunchú	Ji	tuchú
Ay	tunchú	So	chú <sup>4</sup>
Cq	tuchú	Ix	nchú
Ja	tu <sup>2</sup> nchú <sup>3</sup> , tú <sup>2</sup> <u>fruit</u>	Mg	tuchú
Do	tuncú	Lo	tíchí
Hu	tu <sup>3</sup> nchú <sup>2</sup>	Te	tuchú

Mz, Ay, Cq, Do, Hu, Ji, Mg, Te tu-, Lo tí- < \*tú<sup>31</sup> fruit

605. The root meaning of this etymon may well be roasted, toasted, brittle.

292. \*ncí narrow.

Ja	ncí, cí (< Pre-Ja *ncí)	Te	ncí
Do	ncí, cí (< Pre-Do *ncí)		

293. \*ncí<sup>4</sup> hummingbird.

Ay	ná tunčí	Ix	tuncí
Ja	tu <sup>2</sup> ncí <sup>3</sup> , ná <sup>2</sup>	Lo	ncikó
Do	turuncí	Te	nciká
Hu	tu <sup>3</sup> ncí <sup>4</sup>		

Expected reflex: Ay -ncí; Ay, Lo oral /i/ unexplained.

Do -ru- possibly < \*šu relator particle; Ay, Ja, Do, Hu, Ix  
 tu- < \*tú<sup>s1</sup> fruit 605; Ja -'ná<sup>2</sup> < \*'ná<sup>4</sup> brilliant 704, a  
 recent compound; Lo ko-, Te ka- perhaps < \*hnká<sup>4</sup> wing 143.

294. \*ncu<sup>s</sup>wa<sup>s</sup>, \*cu<sup>s</sup>wa<sup>s</sup> (\*<sup>s</sup> - <sup>1</sup>) mouth.

Mz	cu <sup>s</sup> á, c <sup>s</sup> wa <sup>s</sup> , ncuwá	Hu	ncuá <sup>s</sup> , c <sup>s</sup> uá <sup>s</sup> <u>mouth</u> ;
Ay	ncu <sup>s</sup> wa <sup>s</sup>		ča <sup>s</sup> ncu <sup>s</sup> wa <sup>s</sup> <u>lips</u>
Cq	ncuwá	Ji	ncu <sup>s</sup> wa <sup>s</sup> , c <sup>s</sup> á
Ja	nju <sup>s</sup> wa <sup>1</sup> , ju <sup>s</sup> wa <sup>1</sup> (< Pre- So	c <sup>s</sup> uá <sup>s</sup>	
	Ja *nju <sup>s</sup> wa <sup>1</sup> ) <u>lips</u> ,      Ix ncuá <u>3p.</u> , ncu <sup>s</sup> wa <sup>á</sup> <u>1p.</u>		
	<u>mouth</u>	Mg	ncuwá <sup>s</sup> , c <sup>s</sup> á
Do	nju <sup>s</sup> wa <sup>s</sup> , ju <sup>s</sup> wa <sup>s</sup> (< Pre-Do      Lo ncu <sup>s</sup> wo		
	*nju <sup>s</sup> wa <sup>s</sup> )	Te	ncuwá, cuwá

PPn 326. Expected reflexes: Cq -'uá; So, Ix cu<sup>s</sup>wa<sup>s</sup>;  
 Lo ncí.

295. \*ncu<sup>4</sup>kui<sup>3</sup>, \*cu<sup>4</sup>kui<sup>3</sup> foot (your sg.).Ja cu<sup>3</sup>kui<sup>2</sup> Lo ncokiHu ncu<sup>4</sup>kui<sup>3</sup>

Expected reflex: Lo ncí-.

296. \*nčá<sup>3</sup> swamp.

Ay nčasí So činčá

Ja ši<sup>3</sup>nčá<sup>2</sup>, ši<sup>3</sup>nčó<sup>23</sup> (< Pre- Ix ntačinčá  
Ja \*ši<sup>3</sup>nčá<sup>2</sup>) Lo sinčó

Do ndašinčá Te nčá

Hu ču<sup>3</sup>nčá<sup>3</sup>

Ja, Do -ši- unexplained; Hu ču<sup>3</sup>-, So, Ix, či- unexplained.  
 Ix nta- < \*na<sup>4</sup>ntá<sup>1</sup> liquid 270; Ay, Do, Lo -si- < \*si<sup>4</sup><sup>3</sup> dirt  
 470, recent compounds. The tone reconstruction is partially  
 indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

297. \*nčá<sup>3</sup>há<sup>1</sup> corn drink (atole).

Mz nčahá tawá Ji nčá

Ay nčahá So nčá<sup>3</sup>há<sup>21</sup>

Cq nčahá Ix nčihá

Ja nžha<sup>1</sup>šú<sup>1</sup> chocolate drink Mg nčá.Do nžahašú chocolate drink Lo nčohóHu nčá<sup>21</sup> Te nčihá

PMS 38. Expected reflex: Ji nčahá. Ja, Do -šú < \*šú<sup>1</sup>  
foam 551.

298. \*nča<sup>s</sup>hú<sup>s</sup>, \*ča<sup>s</sup>hú<sup>s</sup> dust.

Mz	čahú	Ji	čó
Ay	čohó	So	ča <sup>s</sup> hó <sup>s</sup>
Cq	čohó	Ix	čuhú
Ja	njho <sup>s</sup>	Mg	čó
Do	njohó	Lo	čihí
Hu	čau <sup>s</sup>	Te	čihú

PPn 123.

299. \*nča<sup>s</sup>hý<sup>s</sup>, \*nču<sup>s</sup>hý<sup>s</sup>, \*nči<sup>s</sup>hý<sup>s</sup> tomorrow.

Mz	nčahý	Ji	nčihý
Ay	nčuhý-	So	nča <sup>s</sup> hý <sup>1</sup>
Cq	nčuhýni	Ix	nčihý
Ja	njhy <sup>s</sup> ni <sup>s</sup>	Mg	nčý
Do	njuhýni	Lo	nčihý
Hu	nčay <sup>s</sup>	Te	nčihý

PPn 194. Expected reflexes: So -hó; Hu tones <sup>4s</sup>. Cq,  
 Ja, Do -ni < \*-ni<sup>s</sup> thing 311.

300. \*nča<sup>4</sup>hú<sup>4</sup> broom.

Ay	nčohó	Do	njohó
Cq	nteinčohó	Ix	nčuhú
Ja	njho <sup>s</sup>		

PPn 120.

## A.301

301. \*nče<sup>s</sup>hé<sup>1</sup>, \*ce<sup>s</sup>hé<sup>1</sup> secretly, thief.

Mz	čihé	Ji	čé
Ay	nčehé	So	če <sup>s1</sup> hé <sup>21</sup>
Cq	čehé	Ix	čihé
Ja	njhé <sup>1</sup> <u>thief</u> , njhé <sup>s2</sup> <u>steal</u>	Mg	čé
Do	njehé	Lo	čahá
Hu	čé <sup>21</sup>	Te	čihé <u>steal</u>

Expected reflexes: Cq čei-; Te če-. Do nasalized /e/ unexplained. So expected tone reflexes: <sup>s</sup> - <sup>21</sup>.

302. \*nčé<sup>41</sup> cooked corn.

Mz	nčé	Ji	nčé
Ay	nčé	So	nčé <sup>42</sup>
Cq	nčé	Ix	nčé
Ja	nčé <sup>s1</sup> , čé <sup>s1</sup> (< Pre-Ja *nčé <sup>s1</sup> )	Lo	nčá
Do	nčé, čé (< Pre-Do *nčé)	Te	nčé
Hu	nčé <sup>42</sup>		

303. \*nčhá<sup>4</sup> talks.

Mz	tinčhá	Ji	čhá
Ay	tinčhayá	So	čhá <sup>4</sup>
Cq	čhá	Ix	cančhayá
Ja	ti <sup>1</sup> nčha <sup>s</sup> yá <sup>2</sup>	Mg	čhá
Do	tinčhayá	Lo	čhó
Hu	nčhá <sup>4</sup>	Te	tičhá

PPn 133; PMS 39. Ay, Ja, Do, Ix -ya < \*yá inside 660;  
Mz, Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

304. \*nčha<sup>4</sup>ti<sup>43</sup> complain.

Cq	tičhatá	Hu	nčha <sup>4</sup> ti <sup>43</sup>
Ja	ti <sup>1</sup> nčha <sup>3</sup> ti <sup>2</sup> <u>scold</u>	Ix	cančhatí
Do	tinčhatí		

Cq, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

305. \*nčhí<sup>1</sup> women, wives.

Ay	yančhí	So	ya <sup>21</sup> čhí <sup>21</sup>
Cq	nayačhí	Ix	?inčhí
Ja	hmí <sup>3</sup> nčhí <sup>1</sup>	Lo	čočhí
Do	hmí <sup>3</sup> nčhí	Te	?ičhí
Hu	ya <sup>1</sup> nčhí <sup>1</sup>		

PPn 111. Ja, Do hmí-, Ix ?i- < \*hmí<sup>4</sup>- person prefix 138;  
Lo čo- < \*chú<sup>41</sup> woman 86, a recent compound after \*i > e when  
preceded by back vowel. Cq ná- < \*ná<sup>4</sup>- nominal 241; Ay, Hu,  
So ya-, Te ?i- unexplained; So oral /i/ unexplained.

306. \*nči<sup>4</sup>ná<sup>1</sup> rich.

Ay	nčiná	Ji	nčiná
Cq	nčiná	So	nčiná
Ja	či <sup>3</sup> ná <sup>1</sup>	Mg	nčiná
Do	činá	Te	nčiñá
Hu	nči <sup>4</sup> ná <sup>1</sup>		

Te expected reflex /n/ rather than /ñ/.

307. \*nču<sup>s</sup>k<sup>w</sup>há<sup>s</sup> aunt.

Ay	nčuk <sup>w</sup> há-	So	nču <sup>s</sup> khwá <sup>s</sup>
Cq	nčukhuá-	Ix	nčukhá
Ja	(na <sup>s</sup> )ču <sup>s</sup> k <sup>w</sup> há <sup>s</sup> -	Mg	nčuk <sup>w</sup> há
Do	čuk <sup>w</sup> há	Lo	nčikhó
Hu	nču <sup>s</sup> khuá <sup>s</sup>	Te	nčikhá

PPn 84. Expected reflex: Lo nčik<sup>w</sup>hó; Ay, Cq oral stressed vocalic nuclei unexplained.

308. \*nču<sup>4</sup>tí<sup>4</sup> corn on the cob.

Mz	nčutí	Hu	nču <sup>4</sup> tí <sup>4</sup>
Ay	nčutí	So	nču <sup>4</sup> tí <sup>4</sup>
Cq	nčutí	Ix	nčití
Ja	ču <sup>s</sup> tí <sup>s</sup>	Lo	nčité
Do	čutí	Te	nčiti

PPn 6. Expected reflex: Ix nčutí.

309. \*né<sup>s</sup> bite.

Mz	khiné	Ji	khiné
Ay	kiskiné	So	khi <sup>s</sup> né <sup>s</sup> eat
Cq	kahiné-	Ix	khiné
Ja	khi <sup>s</sup> né <sup>s</sup> <u>bite,</u> <u>eat,</u>	Mg	khiné
	ti <sup>1</sup> né <sup>s</sup> <u>eat</u>	Lo	khiná
Do	khiné	Te	kiskiné-
Hu	khi <sup>s</sup> né <sup>s</sup>		

PPn 240. Ix expected reflex /ñ/ rather than /n/; Te expected reflex /n/ rather than /ñ/; Cq expected reflex -ne<sup>1</sup>; Ay, Te -ski- unexplained; Mz expected reflex khini<sup>1</sup>. Mz, Do, Hu, Ji, So, Mg, Lo khi- < \*khi<sup>3</sup>- completive aspect 196; Ay, Te ki- < \*ki<sup>3</sup>- completive aspect 206; Cq ka- < \*ka<sup>3</sup>- completive aspect 172.

310. \*ni<sup>4</sup>hé<sup>4</sup> braids.

Ja ču <sup>3</sup> nhé <sup>3</sup>	So ne <sup>4</sup> hé <sup>4</sup>
Do čhanéhé	Ix ncanihé

So nasalized /e/ unexplained; Do čha- unexplained. Ja ču<sup>4</sup>- probably < \*čú<sup>4</sup> animal 107; Ix nca- < \*nchá<sup>4</sup> hair 288.

311. \*-ni<sup>3</sup> thing.

Ay nkíni <sup>1</sup> <u>day after tomorrow</u>	Hu hmé <sup>1</sup> ni <sup>3</sup> <u>what</u>
Cq nkíni <sup>1</sup> <u>day after tomorrow</u>	Ix míni <sup>3</sup> <u>what</u>
Ja míni <sup>3</sup> <u>what</u>	Lo máni <sup>3</sup> <u>what</u>
Do míni <sup>3</sup> <u>what</u>	Te méní <sup>3</sup> <u>what</u>

The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

312. \*ni<sup>3</sup>-(\*<sup>4</sup>) nominal.

Cf. 314-321, etc.

313. \*ni<sup>s</sup>hi<sup>2</sup>, \*na<sup>s</sup>hi<sup>2</sup> (\*ni<sup>s</sup>- nominal 312, \*na<sup>s</sup>- nominal, \*hi<sup>2</sup> among 134) buries.

Ay tiwisenyanihí (ti-	Hu w <sup>o</sup> e <sup>1</sup> ñají <sup>4</sup> s <u>he buries</u>
<u>present tense</u> )	So <sup>o</sup> we <sup>21</sup> ña <sup>s</sup> hi <sup>1</sup> <u>he buries</u>
Cq khueiseiyanihi	Ix khinihi
Ja ghi <sup>2</sup> ya <sup>s</sup> nhí <sup>2</sup>	Te kohwisahí
Do khiyanihí	

PPn 181. Ay -se-, Cq -sei- unexplained. Ay, Cq, Ja, Do -ya- < \*yá inside 660; khi- < \*khi<sup>s</sup>- completive aspect 196; Te -hwi- < \*hwí<sup>2</sup> goes 169; Hu w<sup>o</sup>e-, So <sup>o</sup>we<sup>21</sup>- < \*we<sup>s</sup>?e<sup>1</sup> hits 652.

314. \*ni<sup>s</sup>hñá<sup>1</sup>, \*na<sup>s</sup>hñá<sup>1</sup> (\*ni<sup>s</sup>- nominal 312; \*na<sup>s</sup>- nominal 241) sleepy.

Mz níhñá <u>dream</u>	So na <sup>s</sup> hñá <sup>21</sup> <u>dream</u>
Ay níhñá	Ix níhñá
Cq níhñá <u>sleepy, dream</u>	Mg níhñá <u>dream</u>
Ja ni <sup>2</sup> hñá <sup>1</sup>	Lo nohñó
Do níhñá	Te níhñá <u>sleep, dream</u>
Hu ni <sup>s</sup> hñá <sup>1</sup> <u>dream</u>	

PPn 215.

315. \*ni<sup>3</sup>hñá<sup>3</sup> (\*ni<sup>3</sup>- nominal 312) mat.

Mz	ni <sup>3</sup> hñá	Ji	ni <sup>3</sup> hñá
Ay	ni <sup>3</sup> hñá	So	ni <sup>3</sup> hñá
Cq	ni <sup>3</sup> hñá	Ix	ni <sup>3</sup> hñá
Ja	ni <sup>2</sup> hñá <sup>2</sup>	Mg	ni <sup>3</sup> hñá
Do	ni <sup>3</sup> hñá	Lo	ni <sup>3</sup> hñó
Hu	ni <sup>3</sup> hñá <sup>3</sup>	Te	ni <sup>3</sup> hñá

PPn 249. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

316. \*ni<sup>3</sup>nta<sup>3</sup>yá<sup>1</sup> (\*ni<sup>3</sup>ntá<sup>3</sup> bone 317, \*yá<sup>1</sup> inside 660)  
spinal column.

Ay	ntayá-	Hu	ni <sup>3</sup> nta <sup>3</sup> ya <sup>1</sup> c'í <sup>3</sup>
Cq	ntayá-	Ix	njnta?iyaci
Ja	ná <sup>2</sup> yá <sup>1</sup>	Lo	ntoyó- <u>waist</u>
Do	ndayá	Te	ntayá-

Expected reflex: Hu -ntia<sup>3</sup>-; Hu -c'í<sup>3</sup>; Ix -ci<sup>1</sup>. Ix -?i- unexplained, although perhaps < \*ya inside 660.

Mz	nintá	Hu	ni <sup>3</sup> ntá <sup>3</sup>
Ay	nintá	So	ni <sup>3</sup> ntá <sup>3</sup> <sup>2</sup>
Cq	nintá	Ix	njntá
Ja	ni <sup>2</sup> ntá <sup>2</sup>	Lo	njntó
Do	nintá	Te	njntá

PPn 269.

318. \*ni<sup>3</sup>thá<sup>s</sup> (\*ni<sup>3</sup>- nominal 312) clay griddle.

Mz	ni <sup>3</sup> thá	Ji	ni <sup>3</sup> thá
Ay	ni <sup>3</sup> thá	So	ni <sup>3</sup> thá <sup>s</sup>
Cq	ni <sup>3</sup> thá	Ix	ni <sup>3</sup> thá, ñthá (< Pre-Ix
Ja	ni <sup>3</sup> thá <sup>2</sup>		*ni <sup>3</sup> thá)
Do	ni <sup>3</sup> thá	Mg	ni <sup>3</sup> thá
Hu	ni <sup>3</sup> thá <sup>s</sup>	Lo	ni <sup>3</sup> thó
		Te	ni <sup>3</sup> thá

PPn 32.

319. \*ni<sup>3</sup>ntú<sup>2</sup> (\*ni<sup>3</sup>- nominal 312) slippery.

Ay	níntú	So	ni <sup>3</sup> ntú <sup>1</sup>
Cq	níntú	Ix	níntú
Ja	ni <sup>3</sup> ntú <sup>2</sup>	Mg	níntú
Do	níntú	Te	níntiu
Hu	ni <sup>3</sup> ntú <sup>2</sup>		

320. \*ni<sup>3</sup>ntú<sup>s</sup> (\*ni<sup>3</sup>- nominal 312) hill.

Mz	níntú	Ji	níntú
Ay	níntú	Mg	níntú
Ja	sy <sup>2</sup> ntú <sup>2</sup> <u>top of a hill</u>	Lo	níntí
Do	syntú <u>top of a hill</u>	Te	níntiu
Hu	ni <sup>3</sup> ntú <sup>s</sup>		

Ja, Do sy- < \*sy<sup>2</sup> on 489. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>3</sup><sup>1</sup>, or \*<sup>4</sup><sup>2</sup>.

321. \*ni<sup>3</sup>ntú<sup>s1</sup> (\*ni<sup>3</sup>- nominal 312) needle, spine.

Mz	níntá	Ji	níntú
Ay	níntú	So	ní <sup>3</sup> ntú <sup>s2</sup>
Cq	níntú	Ix	níntú
Ja	ní <sup>2</sup> ntú <sup>2</sup>	Mg	níntó
Do	níntú	Lo	níntí
Hu	ní <sup>3</sup> ntú <sup>3</sup>	Te	níntiú

Expected reflexes: Mz, Mg -ntú.

322. \*ni<sup>3</sup>ñy<sup>s</sup> (\*ni<sup>3</sup>- nominal 312) star.

Mz	níñy	Ji	níñy
Ay	níñy	So	ní <sup>3</sup> ñy <sup>s</sup>
Cq	níñy	Ix	níñy
Ja	ní <sup>2</sup> ñy <sup>2</sup>	Mg	níñy
Do	níñy	Lo	níñy
Hu	ní <sup>3</sup> ñy <sup>3</sup>	Te	níñy

PMS 55. Expected reflex: Hu níy<sup>s</sup>.

323. \*ni<sup>3</sup>ñy<sup>s</sup>ce<sup>s</sup> (\*ni<sup>3</sup>ñy<sup>s</sup> star 322, \*cé<sup>s</sup> big 12, full 13) morning star.

Mz	níñycí	Hu	ní <sup>3</sup> ñy <sup>s</sup> cé <sup>s</sup>
Ay	níñycé	Ix	níñycé
Ja	ní <sup>2</sup> ñy <sup>2</sup> cé <sup>2</sup>	Lo	níca
Do	níñycé	Te	níñycé

PPn 95; PMS 55. Expected reflex: Hu níy<sup>s</sup>cé<sup>s</sup>. Lo has lost the syllable \*-ñy-. The tone reconstruction is partially

indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>. \*-cé<sup>3</sup> was compounded after the sound shifts envolving unstressed \*ñy-.

324. \*ní<sup>s</sup>sá<sup>s</sup> (\*ní<sup>3</sup>- nominal 312) water jug.

Ay	ní <sup>s</sup> sá	Hu	ní <sup>s</sup> sá <sup>s</sup>
Cq	ní <sup>s</sup> sá	So	ní <sup>s</sup> sá <sup>s</sup>
Ja	ní <sup>2</sup> sá <sup>2</sup> , ní <sup>2</sup> só <sup>2</sup> <sup>3</sup> (< Pre- Ja *ní <sup>2</sup> sá <sup>2</sup> )	Ix	ní <sup>s</sup> sá
Do	ní <sup>s</sup> sá	Lo	ní <sup>s</sup> só
		Te	ní <sup>s</sup> sá

PPn 154. Te /i/ of /ia/ cluster unexplained.

325. \*ní<sup>s</sup>sé<sup>3</sup> (\*ní<sup>3</sup>- nominal 312) mouse.

Mz	nísyé <u>rat</u>	Ji	ní <sup>s</sup> sé
Ay	thiuni <sup>s</sup> sé	So	ní <sup>s</sup> sé
Cq	ní <sup>s</sup> sé	Ix	ní <sup>s</sup> sé
Ja	ča <sup>1</sup> ní <sup>2</sup> sé <sup>2</sup>	Lo	ní <sup>s</sup> sá
Do	čaní <sup>s</sup> sé	Te	ní <sup>s</sup> sé
Hu	ní <sup>s</sup> sé <sup>s</sup>		

Mz /y/ before /e/ unexplained, phonemically doubtful.

Ay thiui- < \*t<sup>y</sup>hu<sup>3</sup>- nominal 616-620; Ja, Do ča- < \*ča<sup>1</sup>- person prefix 55. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

326. \*ni<sup>3</sup>sú<sup>3</sup><sup>1</sup> (\*ni<sup>3</sup>- nominal 312) gourd.

Mz	ni <sub>2</sub> sú <sup>o</sup>	Ji	ni <sub>2</sub> sú
Ay	ni <sub>2</sub> sú	So	ni <sub>2</sub> <sup>3</sup> sú <sup>3</sup> <sup>2</sup>
Cq	ni <sub>2</sub> sú	Ix	ni <sub>2</sub> sú
Ja	ni <sub>2</sub> <sup>2</sup> sú <sup>2</sup>	Lo	ni <sub>2</sub> sí
Do	ni <sub>2</sub> sú	Te	ni <sub>2</sub> siú
Hu	ni <sub>2</sub> <sup>3</sup> sú <sup>3</sup>		

Mz /<sup>o</sup>/ final in syllable unexplained; Te /i/ in /iu/ cluster unexplained.

327. \*ni<sup>3</sup>?nté<sup>3</sup> (\*ni<sup>3</sup>- nominal 312) land.

Mz	nint?í	Ji	?nté
Ay	ni <sub>2</sub> ?nté	So	ni <sub>2</sub> <sup>3</sup> nté <sup>3</sup>
Cq	ni <sub>2</sub> ?nté	Ix	ninté
Ja	ni <sub>2</sub> <sup>2</sup> nté <sup>2</sup>	Mg	nint?é
Do	ninté	Lo	ni <sub>2</sub> ?ntá
Hu	ni <sub>2</sub> <sup>3</sup> ?nté <sup>3</sup>	Te	ninté

PPn 268; PMS 58. Expected reflex: Mz ninté.

328. \*ni<sup>3</sup>?ñá<sup>3</sup> (\*ni<sup>3</sup>- nominal 312) pen.

Ja	ncha <sup>3</sup> ni <sup>2</sup> ?ñá <sup>2</sup> , cha <sup>3</sup> ni <sup>2</sup> ?ñá <sup>2</sup>	Ji	ni <sub>2</sub> ?ñá
	(< Pre-Ja *ncha <sup>3</sup> ni <sup>2</sup> ?ñá <sup>2</sup> )	Ix	ni <sub>2</sub> ?ñá
Do	nchani <sub>2</sub> ?ñá, chani <sub>2</sub> ?ñá	Mg	ni <sub>2</sub> ?ñá
	(< Pre-Do *nchani <sub>2</sub> ?ñá)	Te	ni <sub>2</sub> ?ñá

Hu ni<sub>2</sub><sup>3</sup>?ñá<sup>3</sup>  
 Ja, Do ncha-, cha- < \*nchá<sup>4</sup> hair 288. Tone on the last syllable is partially indeterminate.

329. \*ni<sup>4</sup>hi<sup>4</sup> (\*ni<sup>4</sup>- nominal 312) corn (dry ear).

Mz	ni <sup>4</sup> hi <sup>4</sup>	Ji	ni <sup>4</sup> hi <sup>4</sup>
Ay	ni <sup>4</sup> hi <sup>4</sup>	So	ni <sup>4</sup> hi <sup>4</sup>
Cq	ni <sup>4</sup> hi <sup>4</sup>	Ix	ni <sup>4</sup> hi <sup>4</sup>
Ja	nhí <sup>3</sup>	Mg	ni <sup>4</sup> hi <sup>4</sup>
Do	ni <sup>4</sup> hi <sup>4</sup>	Lo	néhé
Hu	ni <sup>4</sup> hi <sup>4</sup>	Te	ni <sup>4</sup> hi <sup>4</sup>

PPn 239. Expected reflex: Lo ni<sup>4</sup>hi<sup>4</sup>.

330. \*ni<sup>4</sup>ntá<sup>4</sup> (\*ni<sup>4</sup>- nominal 312) fox.

Mz	níntá	So	ni <sup>4</sup> ntá <sup>4</sup> <u>coati</u>
Ay	thiuníntá	Ix	níntá <u>coati</u>
Cq	nínta	Mg	níntá
Hu	ni <sup>4</sup> ntá <sup>4</sup>	Lo	čoníntó
Ji	níntá	Te	?intiá

PPn 270. Ay thiuníntá < \*t<sup>y</sup>hu<sup>3</sup>- nominal 616-620; Lo čoníntó < \*čú<sup>4</sup> animal 107; Te /?i/ rather than expected ni<sup>4</sup>- probably due to present replacement of certain consonants by /?/.

331. \*ni<sup>4</sup>ntú<sup>3</sup> (\*ni<sup>4</sup>- nominal 312) pimple.

Ay	níntú	So	ni <sup>4</sup> ntú <sup>3</sup>
Cq	níntú	Ix	níntú
Ja	ni <sup>4</sup> ntú <sup>3</sup>	Mg	níntó
Do	níntú	Lo	níntí
Hu	ni <sup>4</sup> ntú <sup>3</sup>	Te	níntiú

Expected reflex: Mg -ntú.

332. \*ni<sup>4</sup>ñy<sup>4</sup> (\*ni<sup>4</sup>- nominal 312) corn cake.

Mz	niñy	Ji	niy
Ay	niñó	So	ni <sup>4</sup> ñy <sup>4</sup>
Cq	niñó	Ix	niñy
Ja	ni <sup>3</sup> ñy <sup>3</sup>	Lo	niñj
Do	niñy	Te	niñy
Hu	niy <sup>4</sup>		

PPn 351; PMS 56. Expected reflexes: Ay, Cq, Ji niñy.

333. \*ni<sup>4</sup>sé<sup>3</sup> (\*ni<sup>4</sup>- nominal 312) bird.

Mz	ni <sup>3</sup> syé, sí	So	ni <sup>4</sup> sé <sup>3</sup>
Ay	ni <sup>3</sup> sé	Ix	ni <sup>3</sup> sé
Cq	ni <sup>3</sup> sé	Mg	ni <sup>3</sup> sé
Ja	ni <sup>3</sup> sé <sup>2</sup>	Lo	ni <sup>3</sup> sá
Do	ni <sup>3</sup> sé	Te	ni <sup>3</sup> sé
Hu	ni <sup>4</sup> sé <sup>3</sup>		

PPn 145. Mz /y/ before /e/ unexplained, phonemically doubtful.

334. \*ni<sup>4</sup>si<sup>4</sup> (\*ni<sup>4</sup>- nominal 312) basket.

Mz	ni <sup>3</sup> siyá	Ji	ni <sup>3</sup> siyá
Ay	ni <sup>3</sup> si	So	ni <sup>4</sup> si <sup>4</sup>
Cq	ni <sup>3</sup> si	Ix	ni <sup>3</sup> si
Ja	ni <sup>3</sup> si <sup>3</sup> <u>small basket</u> , ni <sup>3</sup> si <sup>3</sup> yá <u>large basket</u>	Mg	ni <sup>3</sup> siyá
Do	ni <sup>3</sup> si	Lo	ni <sup>3</sup> siyó
Hu	ni <sup>4</sup> si <sup>4</sup> yá <sup>1</sup>	Te	ni <sup>3</sup> si <sup>3</sup> <u>small basket</u> , ni <sup>3</sup> siyá <u>large basket</u>

PPn 140. Mz oral vowel in -si- syllable unexplained;  
 Lo /i/ unexplained, expected /e/. Mz, Hu, Ji, Lo, Te -ya <  
 \*ya<sup>1</sup> wood 662.

335. \*ni<sup>4</sup>s<sup>f</sup><sup>4</sup> (\*ni<sup>4</sup>- nominal 312) rib.

Ay	nisi <u>chest</u>	Do	ngini <sup>f</sup> <u>epigastrium</u>
Cq	ntanisi <u>chest</u>	Hu	nta <sup>s</sup> ni <sup>4</sup> s <sup>f</sup> <sup>4</sup>
Ja	ngi <sup>s</sup> ni <sup>4</sup> s <sup>f</sup> <sup>3</sup> <u>epigastrium</u>		

Ay, Cq oral stressed vowel unexplained. Ja, Do ngi- <  
 \*na<sup>s</sup>nkf<sup>3</sup> low 245; Cq, Hu nta- < \*ni<sup>s</sup>nta<sup>s</sup><sup>1</sup> bone 317.

336. \*ni<sup>4</sup>s<sup>th</sup>e<sup>4</sup> (\*ni<sup>4</sup>- nominal 312) night.

Mz	nithi	Hu	ni <sup>4</sup> the <sup>4</sup>
Ay	nisthe	Ji	ni <sup>4</sup> the
Cq	ni <sup>s</sup> the <u>middle of the</u> night	So	ni <sup>4</sup> the <sup>4</sup>
Ja	ni <sup>s</sup> sthe <sup>3</sup>	Lo	nitha
Do	nisthe	Te	ni <sup>4</sup> the

PPn 30. Expected reflexes: Mz, Ay -sthV; Cq -sthei.

337. \*ni<sup>4</sup>st<sup>y</sup>hi<sup>3</sup> (\*ni<sup>4</sup>- nominal 312) day.

Mz	nithi	Ji	ni <sup>4</sup> chi
Ay	nisthi	So	ni <sup>4</sup> thi <sup>3</sup>
Cq	ni <sup>s</sup> ti	Ix	ni <sup>s</sup> ti
Ja	ni <sup>s</sup> sthi <sup>2</sup>	Mg	nithi
Do	nisthi	Lo	ni <sup>s</sup> če
Hu	ni <sup>4</sup> chi <sup>3</sup>	Te	ni <sup>s</sup> ti

PPn 38; PMS 54. Expected reflexes: Mz -sth-; Te nj̄thi.  
Lo, Te oral vowels in heavily stressed syllable are unexplained.

338. \*nj̄<sup>4</sup>-ntí<sup>4</sup> (\*nj̄<sup>4</sup>- nominal 312) smoke.

Mz	nj̄ <sup>2</sup> ntí	Ji	nj̄nté
Ay	nj̄ <sup>2</sup> ntí	So	nj̄ <sup>4</sup> ntí <sup>4</sup>
Cq	nj̄ <sup>2</sup> ntí	Ix	nj̄ntí
Ja	nj̄ <sup>3</sup> ntí <sup>3</sup> <u>smoke, cloud</u>	Mg	nj̄ntí <sup>4</sup>
Do	nj̄ntí	Lo	nj̄ <sup>2</sup> nté
Hu	nj̄ <sup>4</sup> ntí <sup>4</sup>	Te	nj̄ntí

PPn 7; PMS 57. Expected reflexes: Mz nj̄ntí; Ji, Lo nj̄<sup>2</sup>ntí.

339. \*nj̄<sup>4</sup>-ñú<sup>4</sup>, \*na<sup>4</sup>-ñú<sup>4</sup>, \*nte<sup>4</sup>-ñá<sup>4</sup> (\*<sup>3</sup> - <sup>3</sup>) (\*nj̄<sup>4</sup>- nominal 312, \*na<sup>4</sup>- nominal 241) teeth.

Mz	nj̄ <sup>2</sup> ñú	Ji	nj̄ <sup>2</sup> ñú
Ay	nte <sup>2</sup> -ñá	So	na <sup>4</sup> -ñú <sup>4</sup>
Cq	nej̄ <sup>2</sup> -ñú	Ix	nj̄ <sup>2</sup> ñú
Ja	nj̄ <sup>2</sup> -ñú <sup>2</sup>	Mg	neñ <sup>2</sup> ú
Do	nj̄ <sup>2</sup> ñú	Lo	na <sup>2</sup> í
Hu	nj̄ <sup>4</sup> -ñú <sup>4</sup> , nj̄ <sup>3</sup> -ñú <sup>4</sup>	Te	nj̄ñú

PPn 300. Lo na<sup>2</sup>í unexplained, expected nj̄<sup>2</sup>ñí.

340. \*nka<sup>3</sup>- subordinating conjunction.

Mz	nka-	Ji	nka <sup>3</sup> ñú <u>strong</u>
Ay	nkayehé <u>everything</u>	So	nka <sup>3</sup> -
Cq	nkahá <u>there</u>	Ix	nka-
Ja	nga <sup>3</sup> -	Mg	nkacá <u>cheek</u>
Do	nga-	Lo	nkosi <sup>3</sup> <u>level</u>
Hu	nka <sup>3</sup> -	Te	nkahyé <u>everything</u>

PPn 280.

341. \*nka<sup>3</sup>sú<sup>3</sup> leg.

Mz	nkasú	So	gasú
Ay	nkasú-	Hu	nka <sup>3</sup> sú <sup>3</sup>
Ja	ga <sup>3</sup> sú <sup>2</sup>	Te	kasú

Ja, Do, Te loss of \*n unexplained. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

342. \*nka<sup>4</sup>haú<sup>4</sup>, \*nki<sup>4</sup>haú<sup>4</sup> (\*<sup>3</sup> - <sup>3</sup>) cave.

Ay	nkihó	Ji	nkahó
Cq	nkeího	So	nki <sup>3</sup> hó <sup>3</sup>
Ja	ngi <sup>2</sup> hó <sup>2</sup>	Ix	nkihú
Do	ngihó	Lo	nkohwé
Hu	nka <sup>4</sup> haú <sup>4</sup>	Te	nkihó

PPn 191. Expected reflex: Te nkihú; Cq /e/ of /ei/ cluster unexplained; Lo /w/ of /hw/ cluster unexplained.

343. \*nka<sup>4</sup>ncu<sup>4</sup>á<sup>4</sup>, \*ka<sup>4</sup>ncu<sup>4</sup>á<sup>4</sup> (\*<sup>4</sup> - <sup>1</sup> - <sup>1</sup>), \*-cu<sup>4</sup>á<sup>4</sup>  
stomach.

Mz c <sup>2</sup> wá,	ncwá	Ji c <sup>2</sup> á,	nc <sup>2</sup> á
Ay kanc <sup>2</sup> á		So nka <sup>4</sup> c <sup>2</sup> uá <sup>4</sup>	
Cq ka <sup>2</sup> nčuá		Ix nkac <sup>2</sup> uá	
Ja ka <sup>3</sup> nc <sup>2</sup> á <sup>1</sup>		Mg c <sup>2</sup> á,	nc <sup>2</sup> á
Do kac <sup>2</sup> á		Lo konciwó	
Hu c <sup>2</sup> uá <sup>4</sup> ,	nc <sup>2</sup> uá <sup>4</sup>	Te kancuwá	

PFn 325. Expected reflex: Mz c<sup>2</sup>uá; Ja /c/ unexplained;  
Cq /č/ unexplained.

344. \*nkhi<sup>2</sup> many.

Mz mankhi <sup>2</sup>	<u>become many;</u>	Hu nkhi <sup>2</sup>	
	khí má <u>there are many</u>	Ji khí	
Ay nkhi <sup>2</sup>		So khí <sup>1</sup>	
Cq khí		Ix khí	
Ja nkhi <sup>2</sup> , khí <sup>1</sup> (< Pre-Ja *nkhi <sup>2</sup> )		Mg khí	
		Lo khí	
Do nkhi <sup>2</sup> , khí (< Pre-Do *nkhi <sup>2</sup> )		Te khí	

PMS 26. Expected reflexes: Mz, Ay, Hu kh-; Ix nkh-.  
Ja expected tone <sup>2</sup>.

345. \*nki<sup>1</sup>si<sup>3</sup>, \*ya<sup>1</sup>si<sup>3</sup> (\*<sup>3</sup> - <sup>3</sup>) neck.

Mz	nkisi <sup>1</sup>	Hu	ya <sup>1</sup> si <sup>3</sup>
Ay	nkisi <sup>1</sup>	Ji	yasi <sup>1</sup>
Cq	nkise <sup>1</sup> i	Ix	nkisi <sup>1</sup>
Ja	ngi <sup>2</sup> si <sup>2</sup> , gi <sup>2</sup> si <sup>2</sup> (< Pre-Ja Mg	yasi <sup>1</sup>	
	*ngi <sup>2</sup> si <sup>2</sup> <u>nape of the</u>	Lo	nkise <sup>1</sup>
	<u>neck</u>	Te	*isi <sup>1</sup> (< Pre-Te *yasi <sup>1</sup> )
Do	ngisi <sup>1</sup> , gisi <sup>1</sup> (< Pre-Do *ngisi <sup>1</sup> ) <u>nape of the</u> <u>neck</u>		

PPn 139. Cq /e/ in /e/ unexplained; Lo expected -si<sup>1</sup>.

346. \*nki<sup>3</sup>hi<sup>2</sup>, \*ki<sup>3</sup>hi<sup>2</sup> went.

Ay	kihi	So	ki <sup>3</sup> hi <sup>1</sup>
Cq	kihičá	Ix	kihi
Ja	ghi <sup>2</sup>	Lo	kihi
Do	kihi	Te	ki
Hu	ki <sup>4</sup> hi <sup>2</sup>		

PPn 180. Ja evidently developed from Pre-Ja \*ngihi  
< \*nkihi. Expected reflexes; Hu ki<sup>4</sup>hi<sup>2</sup>; Te kihí; Cq -čá  
unexplained.

347. \*nki<sup>s</sup>šy<sup>2</sup> afternoon afternoon.

Mz	nkišúra <u>afternoon</u> ,	Hu	má <sup>s</sup> šy <sup>2</sup>
	kyáŋkišy <u>evening</u>	Ji	nkišy
Ay	k <sup>w</sup> ankišó	So	nki <sup>s</sup> šy <sup>1</sup>
Cq	nkičy-, kišy-	Ix	kamáŋkišy
Ja	gi <sup>2</sup> šy <sup>1</sup>	Lo	kiš <sup>2</sup>
Do	gišy	Te	kyáŋkešy <u>evening</u>

PPn 70. Ja, Do, Lo loss of \*n unexplained. Ay k<sup>w</sup>a-unexplained; Ay expected reflex -šy; Hu má<sup>s</sup>- < \*má<sup>s</sup> do 227. Ja expected tones <sup>2</sup> - <sup>2</sup>.

348. \*nki<sup>s</sup>nté<sup>s</sup>, \*ki<sup>s</sup>nté<sup>s</sup> under.

Ay	ki <sup>s</sup> nté	Do	kinté
Cq	nki <sup>s</sup> nté	So	nki <sup>s</sup> nté <sup>s</sup>
Ja	ki <sup>s</sup> nté <sup>2</sup>	Ix	nkinté

349. \*nki<sup>s</sup>wá<sup>a</sup> chin, jaw.

Mz	nki <sup>s</sup> wá	Ji	cha <sup>?</sup> anki <sup>s</sup> wá
Ay	nki <sup>s</sup> wá	So	náŋki <sup>s</sup> wá
Cq	nki <sup>s</sup> uá	Ix	nkiwá
Ja	ngi <sup>2</sup> wá <sup>2</sup>	Mg	nkiwá <sup>a</sup>
Do	ngi <sup>s</sup> wá	Lo	nki <sup>s</sup> wó
Hu	nki <sup>s</sup> wá <sup>s</sup>	Te	nkiwá

Ix expected reflex nki<sup>s</sup>wá. Ji cha<sup>?</sup>a- perhaps < \*nchá<sup>4</sup> hair 288 + \*<sup>s</sup>á<sup>s</sup> opening 692; So ná- < \*ná<sup>s</sup>-(\*<sup>s</sup>) nominal 241. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s</sup><sup>1</sup>, or \*<sup>s</sup><sup>2</sup>.

350. \*nku<sup>2</sup>hñá<sup>4</sup> yesterday.

Mz	nkuhñá	Hu	nku <sup>2</sup> hñá <sup>1</sup>
Ay	nkuhñá	Ji	nkuhñá
Cq	nkuhñá	So	nku <sup>2</sup> hñá <sup>4</sup> (< Pre-So * <sup>1</sup> - <sup>4</sup> )
Ja	ngu <sup>2</sup> hñá <sup>3</sup> , gu <sup>2</sup> hñá <sup>3</sup> (< Pre-	Ix	nkuhñá
	Ja *ngu <sup>2</sup> hñá <sup>3</sup> )	Mg	nkuhñá
Do	nguhñá, guhñá (< Pre-	Te	nkuhñá
	Do *nguhñá)		

PMS 25.

351. \*nku<sup>2</sup>skiá<sup>4</sup>, \*nku<sup>2</sup>čá<sup>4</sup> day before yesterday.

Mz	nkuskiá	Hu	nku <sup>2</sup> skiá <sup>4</sup>
Ay	nkučá	Ji	nkuskié
Cq	nkučá	So	nku <sup>2</sup> čá <sup>4</sup> (< Pre-So * <sup>1</sup> - <sup>4</sup> )
Ja	ngu <sup>2</sup> čá <sup>3</sup> , gu <sup>2</sup> čá <sup>3</sup> (< Pre-	Ix	nkučá
	Ja *ngu <sup>2</sup> čá <sup>3</sup> )	Mg	nkuskiá
Do	ngučá, gučá (< Pre-Do	Lo	nkiskiό
	*ngučá)	Te	nkoské

Expected reflexes: Ji, Te nkuskiá, Lo nkiskiό; Lo nki-unexplained.

352. \*nk<sup>W</sup>ha<sup>4</sup>nthuá<sup>4</sup> door.

Mz	nkanthuá	Do	hank <sup>W</sup> há
Ay	šunthá	Hu	šu <sup>4</sup> nthuá <sup>4</sup>
Cq	níŋkothó	Ix	nkanthuá
Ja	ň <sup>s</sup> k <sup>W</sup> há <sup>3</sup> , ň <sup>s</sup> k <sup>W</sup> hó <sup>3</sup> (< Pre-	Mg	nkathá
	Ja *ha <sup>s</sup> nk <sup>W</sup> há <sup>3</sup>	Te	šuhtuá

PPn 265; PMS 22. Expected reflexes: Cq -nkhathuá; Te -thá; Ay, Hu, Te šu- unexplained. Cq ni- < \*ni<sup>3</sup>- nominal 312.

353. \*nta<sup>1</sup>na<sup>3</sup>t<sup>y</sup>á<sup>1</sup>, \*nta<sup>1</sup>na<sup>3</sup>té<sup>1</sup> (\*ntá<sup>1</sup> liquid 270, \*na<sup>3</sup>- nominal 241) saliva.

Mz	tyá	Ji	w <sup>o</sup> ečá <u>he spits</u>
Ay	ntatiá	So	nta <sup>21</sup> té <sup>21</sup>
Cq	na <sup>3</sup> tiá	Ix	ntaňtiá (< Pre-Ix *ntanatiá)
Ja	nda <sup>1</sup> na <sup>2</sup> té <sup>1</sup>	Mg	w <sup>o</sup> etiá <u>he spits</u>
Do	ndanaté	Lo	ntongčó
Hu	čá	Te	ntanačú

PPn 34. Te /u/ unexplained, expected /a/; So expected -tyá; Ji, Mg w<sup>o</sup>e- < \*we<sup>3</sup>čé<sup>1</sup> hits 652.

354. \*nta<sup>1</sup>ntu<sup>3</sup>wá<sup>1</sup> (\*ntá<sup>1</sup> liquid 270; \*ntu<sup>3</sup>wá<sup>1</sup> sunshine 359) sweat.

Ay	ntantuwaná	Ix	ntantuwa
Ja	nda <sup>1</sup> nu <sup>2</sup> wá <sup>1</sup>	Lo	nontiwo
Do	ndanywá		

Expected reflex: Do ndanduwá, the occurring form probably is borrowed from Ja. Lo no- < \*na<sup>3</sup>- (\*<sup>4</sup>) nominal 241.

355. \*nta<sup>1</sup>ntu<sup>4</sup>wá<sup>4</sup> (\*ntá<sup>1</sup> liquid 270, \*ntu<sup>4</sup>wá<sup>4</sup> nest 364) urine.

Ay	ntantuwa	So	ntantuwa
Cq	ntantuwa	Ix	ntantuwa
Ja	nda <sup>1</sup> nu <sup>3</sup> wá <sup>3</sup>	Lo	ntiwo
Do	ndanduwá	Te	ntantuwa
Hu	nta <sup>1</sup> ntuá <sup>4</sup>		

PPn 319.

356. \*nta<sup>1</sup>šhé<sup>4</sup> (\*ntá<sup>1</sup> liquid 270, \*šhé<sup>4</sup> big 511) river.

Mz	ntahyé	Hu	nta <sup>1</sup> hé <sup>4</sup>
Ay	ntahé	So	nantahé <u>swollen river</u>
Cq	ntašhé	Ix	ntahé
Ja	nda <sup>1</sup> hé <sup>3</sup>	Te	ntahé
Do	ndahé		

Mz /y/ before /e/ unexplained, perhaps not phonemic.

357. \*nta<sup>1</sup>ʔá<sup>s</sup> (ntá<sup>1</sup> liquid 270, \*ʔá<sup>s</sup> opening 692) saliva.

Ay	ntaʔá	Hu	nta <sup>1</sup> ʔá <sup>s</sup>
Ja	nta <sup>1</sup> ʔá <sup>2</sup> <u>slobber</u>	Te	ntaʔakhi
Do	ntaʔá		

Ja, Do /t/ unexplained; expected C<sup>2</sup>V; Te expected ntakhi.Te -khi perhaps < \*khi<sup>s</sup>?i<sup>3</sup> appearance of 199,358. \*nta<sup>s</sup>há<sup>2</sup> good.

Mz	ntathí <u>it is good</u>	Hu	ntá <sup>4</sup> s
Ay	ntá	So	ntá <sup>s</sup> i
Cq	ntá <u>good</u> ; ntahá <u>gentle</u> , <u>tame</u> ; ḡhontahá <u>good</u>	Ix	ntá
		Lo	ntohó, ntó <u>good</u> ;
	<u>egg</u>		čintohó <u>good egg</u>
Ja	ndá <sup>2</sup>	Te	ntá thí <u>it is good</u>
Do	ndá		

PPn 261. The conditions under which the final syllable was lost are obscure. I posit that So <sup>s</sup>i glide reflects a

Pre-So disyllabic tone pattern of <sup>3</sup> - <sup>1</sup>; the correspondence then of Ja <sup>2</sup>: Hu <sup>4<sub>s</sub></sup>: So <sup>3</sup> - <sup>1</sup> reflects a \*<sup>3</sup> - <sup>2</sup> analogous to sets long 397, went 346, buries 313, four 426. Gudschinsky reconstructed \*<sup>2</sup>ntá<sup>3</sup> as well as \*ntá<sup>4<sub>s</sub></sup> but I can find no support for an initial /ʔ/.

359. \*nta<sup>3</sup>wá<sup>1</sup>, \*ntu<sup>3</sup>wá<sup>1</sup> sunshine.

Ay	ntawá	Hu	ntuá <sup>2<sub>1</sub></sup>
Cq	ntawá	Ix	ntawá
Ja	ny <sup>2</sup> wá <sup>1</sup> , ny <sup>2</sup> wó <sup>1<sub>s</sub></sup> (< Pre-	Lo	ntíwó
	Ja *ny <sup>2</sup> wá <sup>1</sup> )	Te	ntuwá
Do	nduwá		

360. \*nta<sup>3</sup>yá<sup>3</sup>, nti<sup>3</sup>yá<sup>3</sup> waist.

Mz	ntayá	Ix	ntayá
Hu	kha <sup>1</sup> ntiá <sup>3</sup>	Mg	khantiá
Ji	ntayá	Lo	ntoyá
So	ntaiyá	Te	ntayá

Hu, Mg kha- < \*khá<sup>1</sup> across 180. Reconstruction of tone is partially indeterminate; it is either \*<sup>3</sup> - <sup>3</sup> or \*<sup>3</sup> - <sup>3<sub>1</sub></sup>.

361. \*nta<sup>3</sup>?yá<sup>1</sup> thorn.

Mz	nä <sup>?</sup> yá	Ji	nä <sup>?</sup> yá
Ay	nä <sup>?</sup> iá	So	nä <sup>3</sup> ?yá <sup>2<sub>1</sub></sup>
Cq	nä <sup>?</sup> iá	Ix	nta <sup>?</sup> iá
Ja	nä <sup>3</sup> ?iá <sup>2</sup>	Mg	nä <sup>?</sup> yá
Do	nda <sup>?</sup> iá	Lo	nä <sup>?</sup> yó
Hu	nä <sup>3</sup> ?yá <sup>1</sup>	Te	näyá

PPn 347; PMS 62. Mg expected reflex nay'á, occurring  
 Mg form likely is a loan form Hu; Cq expected nt-.

362. \*nta<sup>4</sup>- person prefix (singular male, male speaker)

Ja	ndá <sup>s</sup> , nda <sup>s</sup> ci <sup>s</sup> ní <sup>ss</sup>	Ix	ntá, ntacini
Do	ndá		

363. \*nta<sup>4</sup>hai<sup>s</sup> sugar cane.

Mz	ntahi	Ji	ntihí
Ay	ntahai	So	nta <sup>4</sup> hi <sup>s</sup>
Cq	nteihei	Ix	ntahé
Ja	ndhai <sup>ss</sup>	Lo	ntehé
Do	ndeihai	Te	ntihí
Hu	nta <sup>4</sup> hai <sup>s</sup>		

PPn 179. Expected reflexes: Mz -hé; Do ndahai; Hu ntai<sup>4s</sup>; Ji -hai; Ix -hai.

364. \*nta<sup>4</sup>wá<sup>4</sup>, \*ntu<sup>4</sup>wá<sup>4</sup> nest.

Ay	ntawá	Do	nduwá
Cq	ntawá	So	ntawá
Ja	nu <sup>s</sup> wá <sup>s</sup>	Ix	ntuwá

365. \*nta<sup>4</sup>wa<sup>4</sup>ša<sup>4</sup>?yá<sup>4</sup>, \*ntu<sup>4</sup>wa<sup>4</sup>ša<sup>4</sup>?yá<sup>4</sup> (\*nt{a, u}<sup>4</sup>wá<sup>4</sup> nest 364, \*ša<sup>4</sup>?yá<sup>4</sup> emanation 504) funeral.

Ay	ntawaša?ia	Do	nduwaša?ia
Cq	ša?ia	Ix	nti?iaša?ia
Ja	nu <sup>s</sup> wa <sup>s</sup> ?ša <sup>s</sup> ?ia <sup>s</sup>		

366. \*nta<sup>4</sup>?yá<sup>3</sup> net bag, hammock.

Mz	na <sup>?</sup> yá	Hu	na <sup>4</sup> ?yá <sup>3</sup>
Ay	na <sup>?</sup> iá	So	na <sup>4</sup> ?yá <sup>3</sup>
Cq	na <sup>?</sup> iá	Ix	nta?iá
Ja	na <sup>3</sup> ?iá <sup>2</sup>	Lo	nq <sup>?</sup> yo
Do	nda?iá	Te	nayá

PPn 346. Expected reflex: Cq nt-.

367. \*nta<sup>4</sup>?yú<sup>4</sup> dough.

Mz	na <sup>?</sup> yú	Ji	nayú, na <sup>?</sup> yú
Ay	na <sup>?</sup> iú	So	na <sup>4</sup> ?yú <sup>4</sup>
Cq	na <sup>?</sup> iú	Ix	nta?iú
Ja	na <sup>3</sup> ?iú <sup>3</sup>	Mg	nayú
Do	nda?iú	Lo	nq <sup>?</sup> i
Hu	na <sup>4</sup> ?yú <sup>4</sup>	Te	nayo

PPn 353. Expected reflexes: Lo nq<sup>?</sup>i; Te nayú.368. \*nthai<sup>2</sup> over the edge of.

Mz	ticikanthiyá	Do	nékontaiya
Ay	cikanthai <u>cross legs</u>	Hu	si <sup>2</sup> k <sup>?</sup> a <sup>3</sup> nthai <sup>2</sup>
Cq	nínteiyá	Ix	khi <sup>?</sup> wanthai <u>sun sets</u>
Ja	na <sup>3</sup> ko <sup>1</sup> nthai <sup>2</sup> yá <sup>1</sup> <u>exchange; ci<sup>1</sup>ka<sup>2</sup>nthai<sup>2</sup></u>	Mg	sik <sup>?</sup> athé Lo sikhothiyó
	<u>cross legs</u>	Te	sikathí-

Expected reflexes: Mz -nthe-; Lo -the-; Ay c<sup>?</sup>i-; Cq -tei-; Do -nthai-. Mz, Ay, Te -ka-, Ja, Do -ko-, Hu, Mg -k<sup>?</sup>a-,

Lo -kho- unexplained. Mz, Ay ci-, Hu, Mg, Lo, Te si- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26; Mz ti- < \*ti<sup>1</sup>- continuative aspect 589; Cq ni<sup>1</sup>-, Ja n<sup>1</sup>-, Do n<sup>1</sup>- perhaps nominals; Mz -yá, Cq -yá, Lo -yo perhaps < \*yá inside 660. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>3</sup>.

\*369. \*nthau<sup>4</sup> wind.

Mz	thó (< Pre-Mz *nthó)	Hu	nthau <sup>4</sup>
Ay	nthó	Ji	thó
Cq	thó	So	thó <sup>4</sup>
Ja	nthó <sup>3</sup> , thó <sup>3</sup> (< Pre-Ja *nthó <sup>3</sup> )	Ix	nthú
Do	nthó, thó (< Pre-Do *nthó)	Mg	w <sup>o</sup> ethá <u>he blows</u>
		Lo	thí
		Te	thú

PPn 273; PMS 21. Expected reflex: Mg -thó. Mg w<sup>o</sup>e < \*we<sup>3</sup>?é<sup>1</sup> hits 652. In Mz forms when /nth/ is not word initial as in 352 and 368 the /n/ is lost.

370. \*ntekhá, \*tekhá owl (small variety)

Ay	ntekhá	Ja	te <sup>2</sup> kha <sup>2</sup>
Cq	teikhá	Do	tekha

The tone reconstruction is rather indeterminate.

371. \*nte<sup>o</sup>yá<sup>4</sup> rainbow.

Mz	nte <sup>o</sup> yá	Ix	nti <sup>o</sup> iá
Hu	?yá <sup>4</sup>	Mg	y <sup>o</sup> á
So	?yá <sup>4</sup>		

PMS 19. Loss of Hu, So, Mg first syllable unexplained.

The reconstruction of tone on the first syllable is indeterminate.

372. \*nte<sup>1</sup>?é<sup>1</sup> gentle, tame.

Mz	nt?í	Ji	nt?é
Ay	nt?é	Ix	nt?é
Ja	nt?é <sup>1</sup>	Mg	nt?é
Do	nt?é	Te	nté
Hu	nt?é <sup>1</sup>		

Expected reflexes: Ay, Ix nte?é; Ja, Do /e/ unexplained.

373. \*nte<sup>1</sup>?í<sup>4</sup> steam, fever.

Mz	nte?í <u>steam</u>	Ji	nte?é <u>steam</u> , č?ínte?é
Ay	nt?ei		<u>malaria</u>
Cq	ntéira	So	t?á <sup>14</sup>
Ja	nt?ei <sup>2</sup> ntó <sup>13</sup>	Ix	nt?ai <u>fever</u>
Do	nt?eintó	Mg	č?ínt?é <u>malaria</u>
Hu	nt?ai <sup>4</sup>		

PMS 20. Expected reflexes: Mz nt?V; Ay nte?í; Cq ntei?í; Hu nt?ei<sup>4</sup>; Ji nte?í; So nte?í; Mg -nt?í; Ja, Do /t/ unexplained. Ji, Mg č?í- < \*či<sup>3</sup>?í<sup>3</sup> fever 93; Ja, Do -ntó < \*na<sup>4</sup>ntá<sup>1</sup> liquid 270.

374. \*nte<sup>3</sup>ci<sup>2</sup>?j<sup>3</sup> (\*nte<sup>3</sup>- perhaps related to buttocks  
384) tail.

Mz	škatoci	So	nj <sup>3</sup> c?j <sup>3</sup>
Ay	ntec?j	Ix	nac?j, ñc?j (< Pre-Ix
Cq	nteici?j		*nac?j
Ja	nj <sup>2</sup> c?j <sup>2</sup>	Mg	ntec?j
Do	nj <sup>2</sup> c?j	Lo	ntaci?j
Hu	nti <sup>3</sup> c?j <sup>3</sup>	Te	ntici

Expected reflex: Ay -ci?j; Mz škato- unexplained. Ja,  
Do, So nj- < \*nj<sup>3</sup>- nominal 312; Ix nac- < \*na<sup>3</sup>- nominal 241.

375. \*nte<sup>3</sup>sú<sup>3</sup> ashes.

Cq	nteisu	So	nte <sup>3</sup> sú <sup>3</sup>
Ja	né <sup>2</sup> sú <sup>2</sup>	Ix	ntisu

376. \*nte<sup>4</sup>ci<sup>4</sup> market.

Mz	nte ci	Ji	ntici
Ay	nteci	So	nte <sup>4</sup> ci <sup>4</sup>
Cq	nteici	Ix	ntici
Ja	né <sup>3</sup> ci <sup>3</sup>	Mg	nteci
Do	nd <sup>2</sup> eci	Lo	ntaci
Hu	nti <sup>4</sup> ci <sup>4</sup>	Te	ntici

PMs 18. Ja, Do /?/ unexplained.

377. \*nte<sup>4</sup>cí<sup>4</sup> (\*<sup>s</sup> - <sup>s</sup>, \*<sup>4</sup> - <sup>s</sup>) outside.

Mz	ntecyá	Ji	ntici
Ay	nkanteci	So	khi <sup>4</sup> nte <sup>4</sup> cí <sup>21</sup>
Cq	ntaceí	Ix	nteci
Ja	n <sup>2</sup> e <sup>3</sup> cí <sup>2</sup>	Lo	ntacé
Do	nd <sup>2</sup> eci	Te	ntici
Hu	nti <sup>s</sup> cí <sup>s</sup>		

Expected reflexes: Mz nteci; Cq nteici; Lo ntaci; Ja, Do /?/ unexplained; So khi- perhaps < \*khi<sup>31</sup> far 202; Ay nka- < \*nka<sup>3</sup>- subordinating conjunction 340.

378. \*nte<sup>4</sup>hé<sup>4</sup> deer.

Ja	ndhé <sup>3</sup> <u>horse</u> , ndhe <sup>4</sup> hñá <sup>1</sup>	So	nte <sup>4</sup> hé <sup>4</sup> <u>horse</u>
	<u>deer</u> (-hñá <sup>1</sup> <u>woods</u> )	Ix	ntihé <u>horse</u>
Do	ndehé <u>horse</u>		

379. \*nte<sup>4</sup>thy<sup>4</sup> nose.

Mz	ntethú	So	nte <sup>4</sup> thy <sup>4</sup> <u>his nose</u>
Ay	ntethú	Ix	náthú, ñthú (< Pre-Ix *náthú)
Cq	nteithú		
Ja	ná <sup>s</sup> thy <sup>s<sup>2</sup></sup>	Mg	ntethú
Do	néthú <u>his nose</u>	Lo	ntathi <sup>3p.</sup> , ntathé <u>1p.</u>
Hu	nti <sup>4</sup> thy <sup>4</sup>	Te	níthú
Ji	ntithú		

PPn 42. Ja, Ix ná-, Do né- perhaps < \*ná<sup>3</sup>- nominal 241;  
Te ní- < \*ní<sup>3</sup>- nominal 312. Ja expected reflex <sup>s</sup> - <sup>s</sup>.

380. \*nte<sup>4</sup>ya<sup>4</sup>, \*nte<sup>4</sup>ya<sup>4</sup>skú<sup>3</sup> herb.

Mz	nteskú	Hu	ntia <sup>4</sup> , ntia <sup>4</sup> skú <sup>3</sup>
Ay	nteyá	So	nté <sup>4</sup>
Cq	nteiskú	Ix	ntiyá
Ja	ní <sup>3</sup> ya <sup>3</sup> skú <sup>2</sup>	Lo	ntayó, ntaskí
Do	ndeyaskú	Te	ntiyá, ntiskú

PPn 341. Cq nasalization of /y/ unexplained. Ja ní<sup>3</sup> < \*ní<sup>3</sup>- nominal 312. The tone on -sku is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>3</sup>1

381. \*nte<sup>4</sup>ya<sup>4</sup>čhi<sup>4</sup> (\*nte<sup>4</sup>ya<sup>4</sup> herb 380) purslane.

So nte<sup>4</sup>čhi<sup>4</sup>

PPn 130. \*-ya<sup>4</sup>- in this set is reconstructed by analogy to \*nte<sup>4</sup>ya<sup>4</sup> herb 380; I assume that this is also that Gudschinsky did. However, it seems to me that the vowel in the first syllable was \*e rather than \*i.

382. \*nte<sup>4</sup>ya<sup>4</sup>hy<sup>1</sup> (\*nte<sup>4</sup>ya<sup>4</sup> herb 380; \*hy<sup>1</sup> on the surface of 159) saltwort.

Mz	ntehý	Hu	ntia <sup>4</sup> hy <sup>1</sup>
Ay	ntehý	So	ntyahó
Cq	nteihñý	Ix	ntihý
Ja	né <sup>3</sup> hy <sup>1</sup>	Lo	ntayó
Do	ndehý	Te	ntihý

PPn 195. Expected reflex: So nteyahý; Cq -ñ- unexplained. Apparently \*-hy<sup>1</sup> was compounded after the vowel shift that involved the \*-ahu environment.

383. \*nte<sup>4</sup>?é<sup>2</sup> herb-greens.

Ay	nte?é	Ix	nti?é
Ja	nd?é <sup>3</sup> <sup>2</sup>	Lo	nta?á
Do	nde?é	Te	nte?é
Hu	ntia <sup>4</sup> ?é <sup>2</sup>		

Expected reflexes: Do nd?é; Ix nte?é; Te nté. The Hu reflex is < Pre-Hu \*nteuya?é.

384. \*nte<sup>4</sup>?é<sup>4</sup> buttocks, bottom.

Ja	nd?é <sup>8</sup>	Do	nd?é
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The tone reconstruction is rather indeterminate from simply Ja tone 3 reflex; it is likely \*<sup>4</sup> - <sup>4</sup>.

385. \*nthé<sup>4</sup> seed.

Mz	thyé (< Pre-Mz *nthé)	Hu	nthé <sup>4</sup>
Ay	nthé	So	thé <sup>4</sup>
Cq	thé	Ix	nthé
Ja	nthé <sup>8</sup> , thé <sup>8</sup> (< Pre-Ja *nthé <sup>8</sup> )	Lo	thá
Do	nthé, thé (< Pre-Do *nthé)	Te	thé

PPn 255. Mz /y/ before /e/ unexplained, phonemically doubtful. In Mz when /nth/ is not word medial as in 352 and 368 the /n/ is lost.

386. \*nti<sup>1</sup>kié<sup>1</sup> buzzard.

Mz	likyí	So	tariskú
Ay	thiuníké	Ix	riké
Ja	li <sup>1</sup> kié <sup>1</sup> , ča <sup>1</sup> li <sup>1</sup> kié <sup>1</sup>	Mg	níké
Do	čalikié	Lo	níkiá
Hu	ní <sup>1</sup> ké <sup>1</sup> , ndí <sup>1</sup> ké <sup>1</sup> , li <sup>1</sup> ké <sup>3</sup>	Te	likié
Ji	níkyé		

PPn 48. So -skú unexplained. Development of \*nt is unexplained unless a special environment \*-iki is posited. The stressed vocalic nucleus is not explained; it is not clear whether a unique cluster \*ie should be reconstructed or whether simply \*e. Ay thiū- < \*t<sup>y</sup>hu<sup>s</sup>- nominal 616-620; Ja ča- < \*ča<sup>1</sup>- person prefix 55.

387. \*nti<sup>s</sup>čhá<sup>s</sup> sister.

Ay	ntičhá	Hu	nti <sup>s</sup> čhá <sup>s</sup>
Cq	tičhá	Ix	ntičhá
Ja	ní <sup>s</sup> čhá <sup>s</sup>	Te	ntičhá
Do	níčhá		

Expected reflex: Cq ntičhá. Ja, Do ní- < \*ní<sup>s</sup>- nominal 312. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

388. \*nti<sup>s</sup>se<sup>é</sup><sup>3</sup>, \*nči<sup>s</sup>se<sup>é</sup><sup>3</sup> midday.

Mz	ntisyé	Ix	ntisę <u>c'ue</u>
Ay	nčuse	Mg	ntisę
Cq	nčisej	Lo	nčisą
Hu	nči <sup>s</sup> se <sup>é</sup> <sup>3</sup> <sup>4</sup>	Te	nčisę
So	nči <sup>s</sup> se <sup>é</sup> <sup>3</sup>		

Expected reflex: Ay nčisę; Mz /y/ before /e/ is unexplained and is phonemically doubtful. Ix -c'ue < \*cu<sup>s</sup>?wi<sup>1</sup> sun 52; however the final /e/ is unexplained since the expected reflex is -c'ui. Hu tone <sup>4</sup> of <sup>s<sup>4</sup></sup> cluster probably phrase final glide.

389. \*nti<sup>s</sup>?yá<sup>s</sup> house.

Mz	nj <sup>s</sup> ?yá	So	nj <sup>s</sup> ?yá <sup>3</sup>
Ay	nj <sup>s</sup> ?iá	Ix	nti?iá
Cq	nti?iá	Mg	nt?iá
Ja	nj <sup>s</sup> ?iá <sup>2</sup>	Lo	nj <sup>s</sup> ?yó
Do	ndi?iá	Te	niyá
Hu	nj <sup>s</sup> ?yá <sup>s</sup> , nt?iá <sup>s</sup>		

PPn 349. Mg nt- cluster unexplained. Development of Hu nt?iá alternate unexplained.

390. \*nti<sup>s</sup>?yá<sup>s</sup>má<sup>s</sup>sé<sup>s</sup>, \*nti<sup>s</sup>?yá<sup>s</sup>wa<sup>s</sup>sé<sup>s</sup> (\*nti<sup>s</sup>yá<sup>s</sup> house  
389) town hall.

Mz	ní <sup>s</sup> ?yawasé	Ji	ní <sup>s</sup> ?yawasé
Ay	ní <sup>s</sup> iamasé	So	ša <sup>s</sup> wa <sup>s</sup> sé <sup>s</sup> <u>town work</u>
Cq	nti <sup>s</sup> iawasejí	Ix	nti <sup>s</sup> iamasé
Ja	ní <sup>s</sup> ?ia <sup>s</sup> má <sup>s</sup> sé <sup>s</sup> <u>town hall</u> ;	Mg	nti <sup>s</sup> iawasé
	má <sup>s</sup> sé <sup>s</sup> <u>unowned</u>	Lo	ní <sup>s</sup> yowosá
Hu	nti <sup>s</sup> ia <sup>s</sup> wa <sup>s</sup> sé <sup>s</sup>	Te	ní <sup>s</sup> yawasé

Ay, Ja, Hu, Ji oral /e/ is unexplained; Hu, Mg nt-cluster unexplained; Hu expected ní<sup>s</sup>ya-. So tone 2 is unexplained. \*-má<sup>s</sup>sé<sup>s</sup> probably is a recent compound.

391. \*nti<sup>s</sup>?yú<sup>s</sup> gopher.

Ay	tuní <sup>s</sup> iu	Hu	ní <sup>s</sup> ?yu <sup>s</sup> ?nté <sup>s</sup>
Cq	čunti <sup>s</sup> iu	Lo	ní <sup>s</sup> yí
Ja	ča <sup>1</sup> ní <sup>s</sup> iu <sup>s</sup>	Te	níyó
Do	čanda <sup>s</sup> iu		

Expected reflexes: Te níyú; Do -ndi<sup>s</sup>iu. Ay tu-unexplained; perhaps < \*t<sup>y</sup>hu<sup>s</sup>- nominal 616-620; Cq ču- < \*čú<sup>4</sup> animal 107; Ja, Do ča- < \*ča<sup>1</sup>- person prefix 55; Hu -?nte < \*ní<sup>s</sup>?nté<sup>s</sup> land 327. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

392. \*nti<sup>4</sup>yá<sup>1</sup> road.

Mz	ntiyá	Hu	ntiá <sup>4</sup> <sup>2</sup>
Ay	ntiyá	Ji	ntiyá
Cq	ntiyá	So	nti <sup>4</sup> yá <sup>21</sup>
Ja	ni <sup>3</sup> yá <sup>1</sup> , ni <sup>3</sup> yó <sup>1</sup> s (< Pre- Ja *ni <sup>3</sup> yá <sup>1</sup> )	Ix	ntiyá
Do	ndiyá	Mg	ntiaté <u>main road</u>
		Lo	ntiyo
		Te	ntiyá

PPn 338. Mg -te < \*té<sup>4</sup>s wide 572.393. \*nti<sup>4</sup>yá<sup>1</sup>té<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup> - <sup>1</sup>) (\*nti<sup>4</sup>yá<sup>1</sup> road 392, \*té<sup>1</sup> wide 572) road (main).

Ay	ntiyaté	Ix	ntiyaté, ntiyité
Cq	ntiyaté	Mg	ntiaté
Ja	ni <sup>2</sup> yá <sup>1</sup> té <sup>1</sup> <u>town center</u>	Lo	ntiyotá
Hu	ntia <sup>4</sup> <sup>2</sup> té <sup>1</sup>	Te	ntiyaté
So	ntyas <sup>2</sup> té <sup>3</sup> s		

PPn 338. Expected reflex: So ntiya-, cf. 392. So tone is unexplained.

394. \*nti<sup>4</sup>?yú<sup>3</sup> ant.

Mz	ni <sup>2</sup> yú	Ji	ni <sup>2</sup> yú
Ay	ni <sup>2</sup> iu	So	ni <sup>4</sup> ?yú <sup>3</sup>
Cq	nti <sup>2</sup> iu	Ix	nti <sup>2</sup> iu
Ja	ni <sup>3</sup> ?iu <sup>2</sup>	Mg	niyú
Do	ndi <sup>2</sup> iu	Lo	ni <sup>2</sup> yí
Hu	ni <sup>4</sup> ?yú <sup>3</sup>	Te	niyú

PPn 79.

395. \*ntu<sup>1</sup>scé<sup>1</sup>, \*nta<sup>1</sup>scé<sup>1</sup> sweet potato.

Ay	n <sup>9</sup> ycé	Hu	n <sup>9</sup> y <sup>1</sup> hcé <sup>1</sup>
Cq	n <sup>9</sup> cé	Ix	ntascié
Ja	n <sup>9</sup> y <sup>1</sup> ce <sup>1</sup>	Lo	n <sup>9</sup> cá
Do	nducé	Te	ntacé
	Ix /i/ in /ie/ cluster unexplained. Ay, Ja, Hu n <sup>9</sup> y-,		
Cq	n <sup>9</sup> -	Lo	n <sup>9</sup> - probably < *ni <sup>3</sup> ·n <sup>9</sup> y <sup>1</sup> <u>vine</u> 252.

396. \*ntu<sup>1</sup>yá<sup>1</sup>, \*nta<sup>1</sup>yá<sup>1</sup> cassava.

Ay	n <sup>9</sup> yá	Hu	n <sup>9</sup> y <sup>1</sup> yá <sup>1</sup>
Cq	n <sup>9</sup> yá	Ix	ntayá
Ja	n <sup>9</sup> y <sup>1</sup> yá <sup>1</sup>	Lo	n <sup>9</sup> yo
Do	nduyá	Te	ntuyá
	Ay, Cq, Lo n <sup>9</sup> -	Hu n <sup>9</sup> y-	perhaps < *ni <sup>3</sup> ·n <sup>9</sup> y <sup>1</sup> <u>vine</u> 252.

397. \*ntu<sup>3</sup>hú<sup>2</sup> long.

Mz	ntuhú	Ji	ntuhú, ntú
Ay	ntuhú	So	ntu <sup>3</sup> hú <sup>1</sup>
Cq	ntuhú	Ix	ntuhú
Ja	ndhú <sup>2</sup>	Mg	ntú
Do	nduhú	Lo	ntihí
Hu	ntú <sup>4</sup> <sup>3</sup>	Te	ntuhú

PPn 266.

398. \*ntu<sup>s</sup>si<sup>s</sup> sad.

Ja	ny <sup>2</sup> si <sup>3</sup>	Lo	khontuse
Do	ndusí	Te	timasi
Ix	ntusi		

Ja, Do nasalized /i/ unexplained; Lo kho- unexplained; Lo expected reflex -ntisé. Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Te -ma- < \*má<sup>3</sup> able 227. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

399. \*ntu<sup>s</sup>?yei<sup>1</sup>, \*nta<sup>s</sup>?yei<sup>1</sup> hear (2p. sg.).

Ay	?atenu <sup>2</sup> ?ia <sup>1</sup> -	So	ny <sup>2</sup> yé
Cq	ny <sup>2</sup> ?ieí	Ix	nta <sup>2</sup> ?ié
Ja	ny <sup>2</sup> ?ieí <sup>1</sup>	Lo	?any <sup>2</sup> ?yo-
Do	ndu <sup>2</sup> ?ieí	Te	nuya
Hu	ny <sup>2</sup> yé		

PPn 332. Ay, Lo ?a- < \*?a<sup>3</sup>- interrogative 691; Ay te- perhaps < \*ta<sup>4</sup>- no longer 565. Ay, Lo, and Te probably have 3p. forms < \*-a.

400. \*ntu<sup>4</sup>hú<sup>4</sup> soap.

Mz	ntuhú	Ji	ntuhú
Ay	ntuhú	So	ntu <sup>4</sup> hú <sup>4</sup>
Cq	ntuhú	Ix	ntuhú
Ja	ndhú <sup>3</sup>	Mg	ntuhú
Do	nduhú	Lo	ntihé
Hu	ntu <sup>4</sup> hú <sup>4</sup>	Te	ntuhú

Expected reflexes: Hu, Mg ntú<sup>4</sup>.

401. \*ntu<sup>4</sup>wa<sup>4</sup>yá<sup>1</sup>, \*nta<sup>4</sup>wa<sup>4</sup>yá<sup>1</sup> (\*nt{u, a}<sup>4</sup>wá<sup>4</sup> nest 364,  
\*yá<sup>1</sup> wood 661) jail.

Mz	ntuyá	Ji	ntuyá
Ay	ntuyá	So	ntu <sup>4</sup> yá <sup>21</sup>
Cq	ntawayá	Ix	ntuwaya <sup>á</sup>
Ja	nu <sup>3</sup> wa <sup>3</sup> yá <sup>1</sup>	Mg	ntuyá
Do	nduwayá	Lo	ntiyó
Hu	nta <sup>4</sup> yá <sup>1</sup>	Te	ntaya <sup>á</sup>

PPn 339.

402. \*ntu<sup>4</sup>yá<sup>3</sup> steam bath.

Mz	ntuyá	Ix	ntuyá
Ay	ntuyá	Mg	ntuyá
Cq	kuintuya <sup>á</sup>	Lo	kintiyó
Hu	ntu <sup>4</sup> yá <sup>3</sup>	Te	khintuya <sup>á</sup>
So	ntu <sup>4</sup> yá <sup>3</sup>		

PPn 340. Cq kui- perhaps future aspect; Te khi- < \*khi<sup>3</sup>-  
completive aspect 196; Lo ki- < \*ki<sup>3</sup>- completive aspect 206.

403. \*ntyá<sup>4</sup> boss.

Ja	nda <sup>3</sup> ntia <sup>á</sup> <sup>3</sup> , ha <sup>1</sup> -, ča <sup>1</sup> -, hmi <sup>1</sup> -	So	ntyá <sup>4</sup>
		Ix	ntia <sup>á</sup>
Do ndantia <sup>á</sup> , ha-, ča-, hmi-			

404. \*nt<sup>y</sup>a<sup>4</sup>há<sup>1</sup> crow.

Hu	nčá <sup>4</sup> <sup>2</sup>	Lo	nčó
Ji	nčá	Te	nčá
Mg	ntihá		

PPn 271. Expected reflexes: Ji nčahá; Mg ntiaá; Te nčahá; Lo nčohó; Ji, Lo, Te loss of -ha is obscure.

405. \*nt<sup>y</sup>a<sup>4</sup>há<sup>4</sup> horn (animal).

Mz	ntihá <u>cattle</u> , <u>horns</u>	Ji	nčahá <u>cattle</u>
Ay	ntiháre <u>horn</u> , <u>cattle</u>	So	ntyá <sup>4</sup> há <sup>4</sup> <u>cattle</u>
Cq	ntiahá	Ix	ntihá
Ja	ndhiá <sup>3</sup>	Lo	nčohó <u>cattle</u>
Do	ndiahá	Te	nčahá <u>horn</u> , <u>cattle</u>
Hu	nčá <sup>4</sup> <u>horn</u> , nčá <sup>4</sup> há <sup>4</sup> <u>cattle</u>		

PPn 269. Expected reflex: Ji nča-.

406. \*nt<sup>y</sup>a<sup>4</sup>hú<sup>4</sup> stone, rock.

Mz	'lahó, yahú	Ji	lohó
Ay	ntihó	So	ntyá <sup>4</sup> hó <sup>4</sup>
Cq	ntiohó	Ix	ntihuú
Ja	ndhió <sup>3</sup>	Mg	ló
Do	ndiohó	Lo	nohwí
Hu	laú <sup>4</sup> , la <sup>4</sup> hau <sup>4</sup>	Te	ntuhú

Expected reflex: Mz -hú. Mz /?/ unexplained. Lo no-< \*na<sup>3</sup>- nominal 241.

407. \*nt<sup>y</sup>e<sup>1</sup>é<sup>1</sup> (\*<sup>s</sup> - <sup>s</sup>) hears.

Mz	nt <sup>?</sup> i	So	t <sup>?</sup> é <sup>21</sup> <u>he hears</u> , nt <sup>?</sup> é
Ay	tent <sup>?</sup> é-		<u>he will hear</u>
Cq	wi <sup>?</sup> nté	Ix	cante <sup>?</sup> é
Ja	(ti <sup>1</sup> )nt <sup>?</sup> é <sup>2</sup>	Lo	kinča <sup>?</sup> á
Do	tint <sup>?</sup> é	Te	khinčé
Hu	nč <sup>?</sup> ué <sup>1</sup>		

PPn 332. Expected reflexes: Ay nte<sup>?</sup>e-; Cq -nti<sup>?</sup>é; Hu nč<sup>?</sup>é; So te<sup>?</sup>é; Lo -nč-. Ix ca- probably continuative aspect; Te khi- < \*khi<sup>3</sup>- completive aspect 196; Lo ki- < \*ki<sup>3</sup>- completive aspect 196; Cq wi- < \*wi<sup>3</sup>- verb auxiliary 655.

408. \*nt<sup>y</sup>e<sup>4</sup>ti<sup>1</sup> (\*<sup>3</sup> - <sup>1</sup>) comb.

Mz	nteti	Ji	nčutí
Ay	khinteti	So	khi <sup>4</sup> nte <sup>4</sup> ti <sup>21</sup>
Cq	nteiti	Ix	niti
Ja	nę <sup>2</sup> ti <sup>1</sup>	Mg	nteti
Do	nęti	Lo	khičoté
Hu	nča <sup>4</sup> ti <sup>1</sup>		

PPn 116. Expected reflex: Ji nču-; development of \*e in Mz, Hu, Ji, Ix, Lo unexplained. Ay, So, Hu, Lo khi- < \*khi<sup>3</sup>- completive aspect 196.

409. \*nt<sup>y</sup>hi<sup>s</sup> (\*<sup>4</sup>) forked stick.

Ja	ya <sup>1</sup> nthí <sup>s</sup>	Ix	yanthí, yinthí
Do	yanthí	Lo	hwíčhi
Hu	nčhí <sup>s</sup> <u>divided like a</u> <u>cows hoof</u>	Te	yačhé

Expected reflex: Te yačhé. Ja, Do, Ix, Te ya- < \*ya<sup>1</sup> tree 661. Lo hwí- unexplained, but compounded after \*i > \*e when preceded by back vowels.

410. \*nt<sup>y</sup>i<sup>2</sup>k<sup>w</sup>i<sup>s</sup> (\*k<sup>w</sup>i<sup>s</sup> this 225) no.

Ay	k <sup>w</sup> i	Ji	likui'
Hu	li <sup>2</sup> kui <sup>s</sup> <u>does not;</u> nti <sup>2</sup> kui <sup>s</sup> (alternant in overprecise speech)	Mg	lik <sup>w</sup> i

411. \*nt<sup>y</sup>i<sup>s</sup>?i<sup>1</sup> fire.

Mz	l?i	Ji	l?i
Ay	nti?i	So	nti <sup>s</sup> ?i <sup>21</sup>
Cq	nti?i	Ix	nti?i
Ja	nd?i <sup>1</sup>	Mg	l?i
Do	nd?i	Lo	ni?yé
hu	l?i <sup>1</sup>	Te	ni?j

PPn 303. Lo -?yé unexplained; Te nasalized /j/ unexplained, expected ni. Cq has reflex /nt/ when word initial and /'nt/ when not initial, see pupil of the eye 412; expected So, Ix nt?i.

412. \*nt<sup>y</sup><sub>i</sub><sup>1</sup>?í<sup>1</sup>škú<sup>4</sup> (\*nt<sup>y</sup><sub>i</sub><sup>1</sup>?í<sup>1</sup> fire 411, \*škú<sup>4</sup> eye 539)  
pupil (eye).

Mz ilíra škwá	Do nd'inkú
Ay nti?iškú	Hu tu <sup>s</sup> l?i <sup>1</sup> škú <sup>4</sup>
Cq ki?ntituškú	Ix nti?inčikú
Ja nd?i <sup>1</sup> nkú <sup>3</sup>	

Expected reflex: Ix nt?i-. Ja, Do, and Ix lack of expected reflexes of /š/ unexplained. Mz /-wá/ probably first person, expected /y/ for third person; Mz expected reflex -l?i-. Ix nči- unexplained. Cq, Hu tu- perhaps < \*tú<sup>s</sup><sub>1</sub> fruit 605. Cq has reflex /nt/ when word initial and /'nt/ when non-initial, see fire 411; expected -nti?i-. The reflexes of ?? indicate that -škú is a recent compound.

413. \*nt<sup>y</sup><sub>i</sub><sup>4</sup>hi<sup>4</sup> grass.

Ay ntihi	So ntihi
Cq ntihi	Ix ntihi
Ja ndhi <sup>3</sup>	Mg lihi
Do ndihí	Lo ntihithá
Hu li <sup>4</sup> hi <sup>4</sup>	Te ntihi

PPn 354. Expected reflex: Lo nihi-; nti- may be borrowed from Te.

414. \*nt<sup>y</sup>khú<sup>1</sup> weak.

Ay	ký	Do	nkhú, khú (< Pre-Do *nkhú)
Cq	heirkú	Ix	ntiký
Ja	nkhú <sup>1</sup> , khú <sup>1</sup> (< Pre-Ja *nkhú <sup>1</sup> )		

Cq oral /u/ unexplained. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

415. \*nt<sup>y</sup>ki<sup>43</sup> medicine.

Mz	hkí	Hu	škí <sup>43</sup>
Ay	ki	So	tki <sup>32</sup>
Cq	rki	Ix	ntikí
Ja	nki <sup>2</sup> , ki <sup>2</sup> (< Pre-Ja *nki <sup>2</sup> )	Lo	šké
Do	nki, ki (< Pre-Do *nki)	Te	škí

PPn 44; PMS 6. The \*t<sup>y</sup>k cluster > Lo šk before \*i > Lo /e/ in the {s, š}{stop} environment.

416. \*-nt<sup>y</sup>ú<sup>1</sup> (\*<sup>4</sup>) marker, boundary.

Ay	ci <sup>2</sup> ntiú	Ji	chinčú
Cq	šintiú	Ix	cintiú
Ja	či <sup>2</sup> ntiú <sup>1</sup>	Mg	cintiú
Do	čintiú	Lo	cinčí
Hu	či <sup>4</sup> nčú <sup>4</sup>	Te	cinčú

Expected reflex: Ji -nčú. Ay /?/ of /'nt/ cluster unexplained; development of consonants in first syllable is unexplained.

417. \*nt<sup>y</sup><sub>u</sub><sup>3</sup>wá<sup>1</sup> comes.

Ay	hentiwá	So	ntyu <sup>3</sup> wá <sup>21</sup>
Cq	sei <sup>?</sup> eintuwá	Ix	cintiwá
Ja	ni <sup>2</sup> wá <sup>1</sup>	Mg	ntiá
Do	niwá	Lo	yančíwó
Hu	nčuá <sup>21</sup>	Te	nčuwá
Ji	nčá		

PPn 320; PMS 23. Expected reflex: Cq ntiuwá. Lo ya-  
unexplained. Cq sei<sup>?</sup>ei- < \*sa<sup>4</sup>?f<sup>4</sup> soon 445.

418. \*nt<sup>y</sup><sub>u</sub><sup>4</sup>hwí<sup>3</sup>, \*nt<sup>y</sup><sub>a</sub><sup>4</sup>hwí<sup>3</sup> opossum.

Mz	ntehwí	So	ntyu <sup>4</sup> hwé <sup>1s</sup>
Ay	thiuntihwí	Ix	ntihwí
Cq	ntiuhwí	Mg	ntiuhwí
Hu	nča <sup>4</sup> hwí <sup>3</sup>	Lo	nčífē
Ji	nčuhwí	Te	nčahwí

PPn 272; PMS 24. Expected reflexes: Ay thinti-; So -hwí.  
Mz nte- unexplained.

419. \*ny<sup>1</sup> year.

Mz	ny <sup>1</sup>	Ji	ny <sup>1</sup>
Ay	ny <sup>1</sup>	So	ny <sup>1</sup> <sup>21</sup>
Cq	ny <sup>1</sup>	Ix	ny <sup>1</sup>
Ja	ny <sup>1</sup> <sup>1</sup>	Mg	ny <sup>1</sup>
Do	ny <sup>1</sup>	Lo	n <sup>1</sup>
Hu	ny <sup>1</sup> <sup>1</sup>	Te	ny <sup>1</sup>

420. \*ñá<sup>1</sup> we (incl.).

Ay	cañé	Hu	ñá <sup>1</sup>
Cq	nkaya <sup>2</sup> á	Ix	cañá
Ja	ñá <sup>1</sup>	Lo	nkohñó
Do	ñá		

Expected reflexes: Cq ñá, Lo ñó. Ay, Ix ca- possessive; Cq nka-, Lo nko- < \*nka<sup>3</sup>- subordinating conjunction 340. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

421. \*ñá<sup>3</sup>há<sup>43</sup> nine.

Mz	ñahá	Ji	ñahá
Ay	ñahá	So	ñá <sup>3</sup> há <sup>43</sup>
Cq	ñahá	Ix	ñihá
Ja	ñhá <sup>2</sup>	Mg	ñahá
Do	ñahá	Lo	ñohó
Hu	ñá <sup>3</sup> há <sup>43</sup>	Te	ñihá

PPn 295; PMS 63. Expected reflexes: Hu ñá<sup>3</sup>; Mg ñá; Te 'ihá. Ji oral stressed vowel unexplained.

422. \*ñá<sup>3</sup>tú<sup>43</sup> seven.

Mz	yatú	Ji	ñítú
Ay	yetú	So	ya <sup>3</sup> tú <sup>43</sup>
Cq	yatú	Ix	yitú, yatú
Ja	ya <sup>2</sup> tú <sup>2</sup>	Mg	yatú
Do	yatú	Lo	yotí
Hu	ñá <sup>3</sup> tú <sup>43</sup>	Te	'itiú

PPn 22. Te /i/ of /iu/ cluster unexplained.

423. \*ñ<sup>a</sup><sup>s</sup>?í<sup>s</sup> difficult.

Mz	ñ?í <sup>s</sup> , ñ?é	Ji	ñí?í <sup>s</sup>
Ay	n?áicú	So	ní <sup>s</sup> ?í <sup>s</sup>
Ja	n?í <sup>s</sup> cú <sup>2</sup>	Ix	ní <sup>s</sup> ?ícú
Do	n?ícú	Mg	ñ?í <sup>s</sup>
Hu	ñ?áí <sup>s</sup>	Lo	ñí?í <sup>s</sup>

PMS 64. Expected reflexes: Mz ñe?í<sup>s</sup>; Hu ná?ái; Lo  
ñí?é; Ay, Ja, Do, So, Ix /n/ unexplained. Development of  
\*a unexplained. Ay, Ja, Do, Ix -cu < \*cú<sup>2</sup> says 47.

424. \*ñ<sup>a</sup><sup>4</sup>ča<sup>2</sup>té<sup>3</sup> (\*ñ<sup>a</sup><sup>4</sup>čá<sup>2</sup> forty 425, \*té<sup>3</sup> ten 570) fifty.

Mz	yačatyí	So	?i <sup>s</sup> ča <sup>s</sup> té <sup>2</sup> (< Pre-So
Ay	yečaté		* <sup>s</sup> - <sup>s1</sup> - <sup>3</sup> )
Cq	yečaté	Ix	?ičité
Ja	ča <sup>1</sup> té <sup>2</sup>	Lo	yočotá
Do	čaté	Te	?ičíté
Hu	ñ <sup>a</sup> <sup>4</sup> ča <sup>2</sup> té <sup>3</sup>		

So, Ix /?/ unexplained; expected /y/. Expected reflexes:  
Cq, So ya-; Ix yi-. In all languages, nasalized vowel following /č/ is expected, see forty 425. Mz /y/ of /tyi/ cluster unexplained, it is phonemically doubtful.

425. \*na<sup>4</sup>čá<sup>s</sup> (\*<sup>3</sup> - <sup>1</sup>, \*<sup>1</sup> - <sup>1</sup>) forty.

Ay	yečá	Ji	ñičá
Cq	yačá	So	yae <sup>1</sup> čá <sup>21</sup>
Ja	yei <sup>e</sup> čá <sup>1</sup>	Ix	yičá
Do	yeičá	Lo	yečó
Hu	ñá <sup>4</sup> čá <sup>s</sup>	Te	'ičá

Expected reflex: Lo yo-.

426. \*ñy<sup>s</sup>hú<sup>2</sup> (\*ñy<sup>s</sup>- nominal) four.

Mz	ñyhú	Ji	ñihú
Ay	ñyhú	So	ñy <sup>s</sup> hú <sup>1</sup>
Cq	ñyhú	Ix	ñihú
Ja	ñhy <sup>2</sup>	Mg	ñy
Do	ñyhú	Lo	ñihí
Hu	ñy <sup>4</sup> s	Te	ñihú

PPn 298. Mz oral /u/ in stressed syllable is unexplained.

427. \*ñy<sup>s</sup>hú<sup>3</sup> ear.

Mz	ñyhú	Hu	šu <sup>4</sup> ñy <sup>s</sup>
Ay	ñahá <u>my ear</u>	So	ñá <sup>3</sup> hú <sup>3</sup>
Cq	thiawañyhú	Ix	thiwaniñhú
Ja	ta <sup>s</sup> wa <sup>s</sup> ši <sup>1</sup> ñhy <sup>2</sup>	Mg	thiñy
Do	tawašiñhú		

Expected reflexes: Ay, Do, So ñyhú; Ix -ñi-. Cq oral /u/ in stressed syllable is unexplained; Hu šu- is unexplained. Cq thiawa-; Ja, Do tawaši-; Ix thiwa-, Mg thi- < \*t<sup>y</sup>ha<sup>4</sup>wa<sup>4</sup>ši<sup>1</sup> skin 613.

428. *ñy<sup>s</sup>má<sup>1</sup>* avocado.

Mz	níma <sup>á</sup>	Hu	ñy <sup>s</sup> má <sup>1</sup> , yu <sup>s</sup> má <sup>1</sup>
Ay	níma <sup>á</sup>	So	ñy <sup>s</sup> má <sup>21</sup>
Cq	yumá <sup>á</sup>	Ix	níma <sup>á</sup>
Ja	ní <sup>2</sup> má <sup>1</sup> , ní <sup>2</sup> má <sup>1s</sup> (< Pre- Ja *ní <sup>2</sup> má <sup>1</sup> )	Lo	nímo <sup>á</sup>
Do	níma <sup>á</sup>	Te	yamá <sup>á</sup>

PPn 233. Expected reflexes: Lo yi-; Te ?i-.

429. \*ñy<sup>s</sup>mé<sup>3</sup> (\*<sup>3</sup> - <sup>1</sup>) bumblebee.

Ay	thiulimé <sup>á</sup>	So	ñy <sup>s</sup> mé <sup>1</sup>
Cq	yuhmé <sup>á</sup>	Ix	níme <sup>á</sup>
Ja	ní <sup>2</sup> mé <sup>2</sup>	Mg	yumé <sup>á</sup>
Do	níme <sup>á</sup>	Lo	yimá <sup>á</sup>
Hu	yu <sup>s</sup> mé <sup>2s</sup>	Te	?ime <sup>á</sup>

Expected reflexes: Ay -nímé<sup>á</sup>; Cq yume<sup>á</sup>. Ay thiulimé<sup>á</sup> < \*t<sup>y</sup>hu<sup>s</sup>- nominal 616-620. Hu tone <sup>2</sup> of <sup>2s</sup> glide unexplained.

430. \*ñy<sup>s</sup>nkú<sup>3</sup> fingernail.

Mz	nínkú	Ji	?inkú
Ay	nínkú	So	ñy <sup>s</sup> nkú <sup>3</sup>
Cq	yunkú	Ix	nínkú
Ja	ní <sup>2</sup> nkú <sup>2</sup>	Mg	ñynkú
Do	nínkú	Lo	yinkí
Hu	ñá <sup>s</sup> nkú <sup>3</sup> , yu <sup>s</sup> nkú <sup>3</sup> , ya <sup>s</sup> nkú <sup>3</sup>	Te	?inkú

PPn 285. Expected reflex: Mg y-. Ay, Ja, Do nasalization of /y/ unexplained. It is difficult to determine whether Hu /a/ is a development or whether it reflects the older alternation of a ~ u.

431. \*ñy<sup>4</sup>hma<sup>1</sup>, \*na<sup>4</sup>hma<sup>1</sup> (\*na<sup>4</sup>- nominal 241, \*ñy<sup>4</sup>- probably a nominal) bean.

Mz	níh <sup>á</sup> hma <sup>á</sup>	Ji	náh <sup>á</sup> ma <sup>á</sup>
Ay	níh <sup>á</sup> ma <sup>á</sup>	So	ñy <sup>4</sup> hma <sup>21</sup>
Cq	yuh <sup>á</sup> ma <sup>á</sup>	Ix	níh <sup>á</sup> ma <sup>á</sup>
Ja	ní <sup>3</sup> hma <sup>1</sup>	Mg	náh <sup>á</sup> ma <sup>á</sup>
Do	níh <sup>á</sup> ma <sup>á</sup>	Lo	nóh <sup>á</sup> ma <sup>á</sup>
Hu	na <sup>4</sup> hma <sup>1</sup>		

PPn 202. Hu, Ji, Mg, Lo witness the \*na<sup>4</sup>- prefix.

432. \*ñy<sup>4</sup>hmé<sup>1</sup>, \*na<sup>4</sup>hmé<sup>1</sup> (\*ñy<sup>4</sup>- nominal, \*na<sup>4</sup>- nominal 241) corn (kernel).

Mz	níhmyé	Ji	náhme
Ay	níhme	So	ñy <sup>4</sup> hmé <sup>21</sup>
Cq	yuhmey	Ix	níhme
Ja	ní <sup>3</sup> hmé <sup>1</sup>	Lo	nóhme
Do	níhme	Te	náhme
Hu	na <sup>4</sup> hmé <sup>1</sup>		

PPn 199; PMS 59. Mz /y/ before /e/ unexplained; it is phonemically doubtful. Hu, Ji, Lo, Te witness the \*na<sup>4</sup>- prefix.

433. \*ñy<sup>4</sup>má<sup>4</sup> poor.

Mz	níma <sup>á</sup>	So	ñá <sup>4</sup> má <sup>4</sup>
Ja	ni <sup>s</sup> má <sup>s</sup> <u>lame</u> , <u>deaf</u> , <u>dumb</u> , <u>poor</u>	Ix	níma <sup>á</sup>
Do	níma <sup>á</sup>	Mg	yumá <sup>á</sup>
Hu	ñá <sup>4</sup> má <sup>4</sup> , yu <sup>4</sup> má <sup>4</sup>	Te	?imá <sup>á</sup>

PPn 232. Expected reflex: So ñá<sup>4</sup>má<sup>4</sup>.

434. \*ñy<sup>4</sup>nkú<sup>1</sup> (\*<sup>s</sup> - <sup>1</sup>) bat.

Mz	nínkú	So	ñá <sup>s</sup> nkú <sup>21</sup>
Ay	thiunínkú	Ix	nínkú
Hu	ñá <sup>4</sup> nkú <sup>1</sup> , ñá <sup>4</sup> nkú <sup>1</sup> , ya <sup>4</sup> nkú <sup>1</sup>	Lo	yinkí
Ji	yunkú	Te	?inkú

PPn 286; PMS 65. Expected reflex: Ji ?inkú. Ay  
thiu- < \*t<sup>y</sup>hu<sup>s</sup>- nominal 616-620.

435. \*ñy<sup>4</sup>nkú<sup>4</sup> church.

Mz	nínkú	Ji	?inkú, yankú
Ay	nínkú	So	ní <sup>4</sup> nkú <sup>4</sup> ší <sup>4</sup>
Cq	yunkú	Ix	nínkusí
Ja	ni <sup>s</sup> nkú <sup>s</sup>	Mg	ñunkú
Do	nínkú	Lo	yinkí
Hu	ñá <sup>4</sup> nkú <sup>4</sup> , ñá <sup>4</sup> nkú <sup>4</sup> , yu <sup>4</sup> nkú <sup>4</sup> , ya <sup>4</sup> nkú <sup>4</sup>	Te	?inkú

PPn 287. Expected reflexes: So ñy-; Mg y-. So, Ix -ši  
perhaps < \*ší<sup>2</sup> apart 524.

436. \*sá<sup>1</sup> moon.

Mz	sá	Ji	sá
Ay	sá	So	sá <sup>21</sup>
Cq	sá	Ix	sá
Ja	sá <sup>1</sup>	Lo	só
Do	sá	Te	sá
Hu	sá <sup>1</sup>		

PPn 152.

437. \*sá<sup>3</sup> more.

Mz	nkisá	Ji	sá
Cq	sá	So	nki <sup>3</sup> sá <sup>2</sup> (< Pre-So * <sup>21</sup> - <sup>3</sup> )
Ja	sá <sup>2</sup>	Ix	nkisá
Do	sá	Lo	nkisó
Hu	nki <sup>3</sup> sá <sup>4</sup> , sá <sup>3</sup>	Te	sasá

PPn 151. Expected reflex: Lo kisó. Mz, Hu, So, Ix,  
 Lo nki- < \*nki<sup>3</sup>hi<sup>2</sup> went 346.

438. \*sa<sup>3</sup>kú<sup>1</sup>, \*su<sup>3</sup>kú<sup>1</sup> find.

Mz	kasakú	he <u>found</u>	Ji	kasukúle	he <u>found</u>
Ay	sakú		So	sa <sup>3</sup> kú <sup>21</sup>	
Cq	kasakú	he <u>finds</u>	Ix	kisakú	
Ja	sa <sup>2</sup> kú <sup>1</sup>		Mg	sakúnā	I <u>find</u>
Do	sakú		Lo	sokí	
Hu	su <sup>3</sup> kú <sup>1</sup>		Te	kasakú	

PMS 40. Mz, Cq, Ji, Te ka- < \*ka<sup>2</sup>- completive aspect  
 172; Ji -le third person; Mg -na first person.

439. \*sa<sup>s</sup>sá<sup>s</sup> fast.

Mz	sasá	Hu	sa <sup>s</sup> sá <sup>s</sup>
Ay	sasá	Ji	sasá
Cq	sasá	Lo	sosó
Ja	sa <sup>2</sup> sá <sup>2</sup>	Te	sasá
Do	sasá		

PPn 153. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>42</sup>.

440. \*sa<sup>s</sup>sé<sup>1</sup> likes.

Hu	sa <sup>s</sup> sé <sup>1</sup> le <sup>4</sup>	Mg	saséle
So	sa <sup>s</sup> sé <sup>21</sup>	Lo	sosá
Ix	sasé	Te	sasé

Hu, Mg -le third person.

441. \*sa<sup>s</sup>wá<sup>s</sup>, \*su<sup>s</sup>wá<sup>s</sup> ashamed, bashful, alone.

Mz	sawá	So	sa <sup>s</sup> wá <sup>1</sup>
Ay	suwá	Ix	suwá
Cq	kamásúwa	Mg	sawá
Ja	su <sup>s</sup> wá <sup>2</sup>	Lo	síwá
Do	suwá	Te	suwá
Hu	suá <sup>43</sup>		

PPn 323. Expected reflexes: Mg suá; Lo síwó. Cq ka-< \*ka<sup>2</sup>- completive aspect 172; -má- < \*má<sup>s</sup> able 227.

442. \*sa<sup>4</sup>nta<sup>3</sup>há<sup>2</sup> (\*<sup>1</sup> - <sup>3</sup> - <sup>3</sup>) (\*sa<sup>4</sup>- < \*sá<sup>3</sup> more 437,  
\*nta<sup>3</sup>há<sup>2</sup> good 358) better.

Ay	tosantá-	So	nkisantá
Cq	tušantahá	Ix	tasantá
Ja	to <sup>2</sup> sa <sup>1</sup> ndá <sup>2</sup>	Lo	tosontohó
Do	tosandá	Te	?isantá
Hu	nki <sup>2</sup> sa <sup>4</sup> ntá <sup>4</sup> 3		

Cq /š/ unexplained; expected /s/, cf. more 437; Ay, Ja, Do, Lo to-, Cq tu-, Ix ta-, Te ?i- unexplained. Hu, So nki- < \*nki<sup>3</sup>hi<sup>2</sup> went 346. The conditions under which the final syllable was lost are obscure.

443. \*sa<sup>4</sup>sé<sup>1</sup> clown.

Ja	ha <sup>1</sup> ču <sup>3</sup> sé <sup>1</sup>	Ix	sasé
Do	hasasé	Mg	sasé, susé
Hu	sa <sup>4</sup> sé <sup>1</sup> , su <sup>4</sup> sé <sup>1</sup>	Lo	sosá
Ja	sasé	Te	sasé
So	sasé		

Ja, Do ha- < \*ha<sup>1</sup>- person prefix 121; Ja ču- < \*čú<sup>4</sup> animal 107.

444. \*sa<sup>4</sup>sé<sup>4</sup>, \*su<sup>4</sup>sé<sup>4</sup> green (color).

Mz	susí	Ji	sasé
Ay	susé khipí	So	su <sup>4</sup> sé <sup>4</sup>
Cq	susé	Ix	sasé
Ja	se <sup>3</sup> sé <sup>3</sup>	Mg	susé
Do	sesé	Lo	sosá
Hu	sa <sup>4</sup> sé <sup>4</sup>	Te	sasé

Expected reflexes: Ja, Do susé; perhaps the presence of /e/ in unstressed syllable is due to anticipation of /e/ in stressed syllable. Ay khi<sup>2</sup>i < \*khi<sup>3</sup>?i<sup>3</sup> appearance of 199.

445. \*sa<sup>4</sup>?i<sup>4</sup> soon.

Ay	s <sup>2</sup> ei-	Ji	s <sup>2</sup> á
Cq	sei <sup>2</sup> ei	So	s <sup>2</sup> ai
Ja	?i <sup>3</sup> s <sup>2</sup> ei <sup>3</sup>	Ix	s <sup>2</sup> ai
Do	?as <sup>2</sup> ei	Mg	s <sup>2</sup> á
Hu	s <sup>2</sup> á <sup>4</sup> , s <sup>2</sup> ai <sup>4</sup>		

Expected reflexes: Ay, Ja, Do s<sup>2</sup>ai; Hu sa<sup>2</sup>ai; Cq, So, Ix sa<sup>2</sup>i; Ji, Mg s<sup>2</sup>ai. Ja ?i-, Do ?a- perhaps < \*?ya<sup>3</sup>-  
nominal 725.

446. \*sa<sup>3</sup> acid.

Mz	sá	Ji	sá
Ay	sá	So	sá <sup>3</sup>
Cq	sá	Ix	sá
Ja	sá <sup>2</sup>	Mg	sá
Do	sá	Lo	só
Hu	sá <sup>3</sup>	Te	sá

PPn 156.

447. \*scá<sup>1</sup> section (of an orange).

Ay	cá	Hu	hcá <sup>1</sup>
Ja	cá <sup>1</sup>	Ix	scá
Do	cá	Te	hcá

Te hcá perhaps borrowed from Hu; expected cá. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>e1</sup>.

448. \*scá<sup>s</sup> covers.

Hu wa<sup>e1</sup>hcá<sup>s</sup>

PPn 100. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>. Possibly this etymon is related to \*scá<sup>s</sup> bag 450.

449. \*scá<sup>s</sup> cheek.

Mz hcá	So nta <sup>s</sup> ca <sup>s</sup> (< Pre-So * <sup>e1</sup> - <sup>s</sup> )
Ay cá	Ix scána <u>my check</u>
Cq cá	Mg nkacá
Ja cá <sup>s</sup>	Lo conohó
Do cá	Te čuakhiá

Hu ha<sup>4</sup>hcá<sup>s</sup>

Te čua- unexplained; expected ca-; Lo -nohó unexplained; Hu ha<sup>4</sup>- unexplained. Te -khiá < \*kha<sup>4</sup>nkha<sup>1</sup> face 124; So ntá<sup>s</sup> < \*ni<sup>s</sup>ntá<sup>s</sup> bone 317; Mg nka- < \*nka<sup>s</sup>- subordinating conjunction 340. Ja expected tone 2.

450. \*scá<sup>s</sup> bag, pocket.

Cq cá-	Hu ši <sup>s</sup> hcá <sup>s</sup>
Ja cá <sup>s</sup>	Ix scá
Do cá	Lo šicó

Hu, Lo ši- < \*ši<sup>s</sup>- connective 518. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

451. \*scé<sup>s</sup> guayaba.

Mz	chyé	Ji	hcé
Ay	cé	So	cé <sup>s</sup>
Cq	cé	Ix	scé
Ja	cé <sup>2</sup>	Mg	cé
Do	cé	Lo	cá
Hu	hcé <sup>s</sup>	Te	cé

PPn 96. Expected reflex: Mz hecé

452. \*sci<sup>1</sup> rain.

Mz	hci	So	ci <sup>21</sup>
Ay	cí	Ix	scí
Cq	cí	Mg	cí
Ja	ci <sup>1</sup>	Lo	cé
Do	cí	Te	ci
Hu	hci <sup>1</sup>		

PPn 87; PMS 75.

453. \*sci<sup>1</sup>šá<sup>4</sup> (\*sci<sup>1</sup> rain 452; \*šá<sup>4</sup> faint 497) drizzle.

Ay	cinchá	So	cišahó
Cq	cišohó	Ix	scišá
Ja	ci <sup>1</sup> šás	Lo	cišó
Do	cišá	Te	cišá

Hu hci<sup>1</sup>šá<sup>4</sup> drizzle, šá<sup>4</sup> faint

Expected reflex: Cq čiša-; Ay -nchá unexplained but perhaps < \*nchá<sup>3</sup> hand 287. Cq, So -hó perhaps < \*hy<sup>3</sup> on the surface 159.

454. \*sčá<sup>1</sup> old.

Mz	-hčá	Ji	-hčá
Ay	čá	So	čá <sup>21</sup>
Cq	čanká <u>old</u> , <u>big</u>	Ix	sčá
Ja	čá <sup>1</sup>	Mg	-čá
Do	čá	Lo	kočonkó
Hu	-hčá <sup>1</sup>	Te	sčá

PPn 282; PMS 76.

455. \*sča<sup>1</sup>nká<sup>s</sup>, \*sči<sup>1</sup>nká<sup>s</sup> (\*sčá<sup>1</sup> old 454) big.

Ay	činká	So	ča <sup>s</sup> nká <sup>2</sup> <u>old</u> (< Pre-So
Cq	čanká		* <sup>21</sup> - <sup>s</sup> )
Ja	ča <sup>1</sup> nká <sup>2</sup> ( <u>sg.</u> )	Ix	šinká
Do	čanká	Mg	čanká
Hu	hči <sup>1</sup> nká <sup>s</sup> <u>old</u>	Lo	kočonká <u>old</u>

PPn 282; PMS 76. Expected reflexes: Ix sčinká, Lo -nkó.

456. \*sča<sup>4</sup>?á<sup>4</sup> orphan.

Hu	hč?á <sup>4</sup>	Te	ntisčá
Lo	ki'ntičq?ó		

PPn 61. Expected reflex: Hu hča?á. Lo ki'nti-,  
Te nti- < \*?ntí<sup>1</sup> child 714.

457. \*sčí<sup>1</sup> (\*<sup>4</sup>) little.

Mz	ličí-	Hu	hčí <sup>4</sup>
Ay	?ičí	So	čí <sup>21</sup>
Cq	?ičehační <sub>g</sub>	Ix	čičí
Ja	?i <sup>2</sup> čí <sup>1</sup> , čí <sup>1</sup>	Te	sčí
Do	hačí		

PPn 109. Expected reflexes: Mz lihčí; Ix -sčí; Ay, Cq, Ja ?i- unexplained; Mz /l/ unexplained unless from \*nt<sup>y</sup>. Cq -ni<sub>g</sub> < \*-ni<sup>3</sup> thing 311. Gudschinsky reconstructed \*-čí<sup>4</sup>(\*<sup>1</sup>), \*ntičí and \*ličí also.

458. \*sču<sup>1</sup>k<sup>w</sup>há<sup>4</sup> able.

Ay	čuk <sup>w</sup> háre	Ix	čukhuá
Ja	ču <sup>1</sup> k <sup>w</sup> há <sup>s</sup>	Mg	čuk <sup>w</sup> há
Do	čuk <sup>w</sup> há	Lo	čik <sup>w</sup> há
Hu	hču <sup>1</sup> khuá <sup>4</sup>	Te	čikhua

PPn 128. Expected reflexes: Ix, Te sč-; Lo -k<sup>w</sup>hó.

459. \*sé<sup>3</sup> thick (liquid).

Ay	sé	So	ci <sup>3</sup> sé <sup>2</sup> (< Pre-So * <sup>21</sup> - <sup>3</sup> )
Cq	sé		<u>thicken</u>
Ja	sé <sup>2</sup>	Ix	sé
Do	sé	Lo	sá
Hu	sé <sup>3</sup>	Te	sé

PPn 141. So ci- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26.

460. \*sé<sup>42</sup> sings.

Mz	tisyé	Ji	tisé
Ay	tisé-	So	thi <sup>21</sup> sé <sup>22</sup>
Cq	tisé	Ix	c'asé
Ja	ti <sup>1</sup> sé <sup>2</sup>	Lo	sá
Do	tisé	Te	tisé
Hu	ti <sup>1</sup> sé <sup>43</sup>		

PPn 144. Expected reflex: So ti<sup>21</sup>- . Mz /y/ before /e/ unexplained; it is phonemically doubtful. Ix c'a- continuative aspect; Mz, Ay, Cq, Ja, Do, Hu, Ji, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

461. \*sé<sup>1</sup> candle.

Mz	'aséri <u>your face</u>	Hu	ni <sup>4</sup> nča <sup>4</sup> sé <sup>1</sup> , ni <sup>4</sup> ča <sup>4</sup> sé <sup>1</sup>
Ay	séra	So	sé <sup>21</sup> <u>candle</u> , ?a <sup>3</sup> sé <sup>32</sup> <u>light</u>
Cq	nčase <sup>1</sup>	Ix	sé
Ja	sé <sup>1</sup>	Lo	sáro
Do	sé	Te	sé

PPn 147. Ay oral /e/ and Lo oral /a/ unexplained. Mz, So ?a-, Hu ?i- perhaps < \*?ya<sup>3</sup>- nominal 725. Mz -ri, Ay -ra, Lo -ro possessive pronoun.

462. \*sé<sup>3</sup> stench (like decayed flesh or copper).

Ay	sé-	Hu	sé <sup>3</sup> , nhé <sup>4</sup>
Cq	sé	Ix	sé
Ja	sé <sup>2</sup>	Lo	sá
Do	sé	Te	sé

Expected reflex: Cq *sei*. Hu nhé<sup>4</sup> < \*hné<sup>4</sup> smells 141.

The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>21</sup>.

463. \*se<sup>3</sup>?é<sup>3</sup> enters.

Mz	tihwas?	Ji	w?es?éle <u>he stabs him</u>
Ay	tihwas?	So	s?é <sup>3</sup>
Cq	kuise?	Ix	sawasé
Ja	hwa <sup>2</sup> s?é <sup>2</sup> <u>he enters</u> , s?é <u>enter</u>	Lo	tihwosa?
Do	kahwas?	Te	tihwase
Hu	s?é <sup>3</sup> <u>motion inward</u>		

PPn 150; PMS 43. Expected reflexes: Cq -sei?éi; Ay, So, Ix se?é-. Mz, Ay, Ja, Do, Te -hwa-, Lo -hwo- < \*hwa<sup>3</sup>?á<sup>3</sup> passes by 163; Mz, Ay, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Do ka- < \*ka<sup>2</sup>- completive aspect 172.

464. \*se<sup>3</sup>?é<sup>3</sup>hi<sup>3</sup> (\*se<sup>3</sup>?é<sup>3</sup> enters 463, \*hi<sup>3</sup> among 134)  
believes.

Ay	s?éhi-	So	c?éhi
Cq	cahi	Ix	síhi
Ja	s?é <sup>2</sup> hi <sup>23</sup>	Lo	sahí
Do	s?éhi	Te	síhi
Hu	wha <sup>3</sup> a <sup>3</sup> s?é <sup>3</sup> hi <sup>3</sup> <u>to enter in</u>		

Expected reflexes: Cq sei?éhi; Ay, So, Ix se?e-; Te se?éhi; Lo sa?á-; development of \*? unexplained. Hu hwa<sup>3</sup>a<sup>3</sup> -

< \*hwa<sup>s</sup>, á<sup>s</sup> passes by 163. Ja tone <sup>s</sup> of <sup>ss</sup> glide probably developed by analogy and indicated phrase final. The tone on the last syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

465. \*shá<sup>s</sup> bitter, gall.

Mz	chá	So	chá <sup>s</sup>
Ay	shá	Ix	sá
Cq	sá	Mg	sá
Ja	shá <sup>2</sup>	Lo	chó <u>bitter</u> , čikichó <u>gall</u>
Do	shá	Te	chá <u>bitter</u> , čikichá
Hu	shá <sup>s</sup> <u>bitter</u> , či <sup>s</sup> ki <sup>s</sup> shá <sup>s</sup>		<u>gall</u>
	<u>gall bladder</u>		

PPn 107. Hu, Lo, Te čiki- < \*či<sup>s</sup>ki<sup>s</sup> breast, nipple 89.

466. \*-shai<sup>s</sup> look for.

Ay	tihwinkankishai	So	ti <sup>4</sup> nči <sup>4</sup> chai <sup>1</sup>
Cq	kuankasei	Ix	c <sup>2</sup> ahwinkisai
Ja	ti <sup>1</sup> hwi <sup>2</sup> ngi <sup>2</sup> shai <sup>2</sup>	Mg	hwasó
Do	tihwingishai	Lo	kowikoche <sup>2</sup> é
Hu	wa <sup>s1</sup> shai <sup>s</sup>	Te	khuinčishé
Ji	kihnčishai		

PMS 42. Expected reflexes: Te -chi; Mg -sé; Lo -?é unexplained. Ix c<sup>2</sup>a- probably continuative aspect; Cq -nka-< \*nka<sup>s</sup>- subordinating conjunction 340; Ay -nki-, Ja, Do -ngi- < \*nki<sup>s</sup>hí<sup>s</sup> went 346; Hu wa- < \*wa<sup>s</sup>- verb auxiliary 630;

Ay, Ja, Do -hwi- < \*hwi<sup>2</sup> goes 169; Lo -wi- < \*wi<sup>3</sup>- verb auxiliary 630; Mg hwa- < \*hwa<sup>3</sup>?á<sup>3</sup> passes by 163; Ay, Ja, Do, So ti- < \*ti<sup>1</sup>- continuative aspect 589; Ji hnči-, So -nči-, Te -nči- unexplained.

467. \*shué<sup>2</sup> hot.

Mz chié	Ji shé ~
Ay shé	So sué <sup>1</sup>
Cq sué	Ix sué
Ja shé <sup>2</sup>	Mg sé
Do shé	Lo cháyo ~
Hu shué <sup>2</sup> , shé <sup>2</sup>	Te ché

PPn 316. Expected reflex: So chué<sup>1</sup>. Lo -yo < \*yá inside 660.

468. \*si<sup>3</sup>ci<sup>1</sup>?í<sup>1</sup> bothers.

Mz sitis?í	Hu si <sup>4</sup> s?í <sup>1</sup>
Ja si <sup>2</sup> c?í <sup>1</sup>	So sici <sup>2</sup> ?í <sup>21</sup>
Do sic?í	Ix sic?é

Expected reflexes: So, Ix sic?í; Mz, Hu /s/ in stressed syllable rather than expected /c/ probably is due to /s/ in preceding syllable; Mz -ti- unexplained; Ix Ši- unexplained; Ix /e/ unexplained; Ja, Do, So nasalized /j/ unexplained. Hu expected tone reflexes <sup>3</sup> - <sup>1</sup>.

469. \*si<sup>s</sup>né<sup>2</sup> yellow.

Mz	siné	Ji	siné
Ay	siné	So	si <sup>s</sup> né <sup>1</sup>
Cq	sinejé	Ix	siñé
Ja	si <sup>2</sup> né <sup>2</sup>	Mg	siné
Do	siné	Lo	siná
Hu	si <sup>s</sup> né <sup>2</sup>	Te	siné

PPn 242.

470. \*sí<sup>4s</sup> dirt.

Mz	ntasi <sup>1</sup> <u>mud</u>	So	nta <sup>s</sup> si <sup>2</sup> hi <sup>3s</sup> (< Pre-So
Ay	ntasihi <sup>1</sup> <u>mud</u>		* <sup>21</sup> - s - <sup>32</sup> ) <u>mud</u>
Cq	ntasi <sup>1</sup> <u>mud</u>	Ix	ntasi <sup>1</sup> <u>mud</u>
Ja	sí <sup>2</sup> <u>dirt</u> , nda <sup>1</sup> sí <sup>2</sup> <u>mud</u>	Mg	ntasi <sup>1</sup> <u>mud</u>
Do	sí <u>dirt</u> , ndasi <sup>1</sup> <u>mud</u>	Lo	ntosé <u>mud</u>
Hu	nta <sup>1</sup> sí <sup>4s</sup> <u>mud</u>	Te	ntasi <sup>1</sup> <u>mud</u>

Lo expected -sí; Ay, So -hi perhaps < \*hi<sup>4s</sup> among 134, but loss of nasalized vowel is unexplained. nta-, nda < \*na<sup>4</sup>ntá<sup>1</sup> is a recent compound. The tone correspondence between Hu and So is problematical for -si-; either Hu should have <sup>3</sup> or So <sup>32</sup>.

471. \*-sí<sup>s</sup> tick.

Ay	natesí	Hu	tu <sup>2</sup> sí <sup>3</sup>
Cq	teisi <sup>1</sup>	Ix	tisi <sup>1</sup>
Ja	te <sup>2</sup> sí <sup>2</sup>	Lo	tosé
Do	tesí	Te	tusi <sup>1</sup>

Ay, Ja, Do, Lo oral stressed vowel unexplained; expected nasalized vowel. Lo exnected -si unless back vowel occurred in front of \*-sí<sup>3</sup> when \*e > Lo /i/. Ay na- < \*na<sup>3</sup>- nominal 241. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>21</sup>.

472. \*ská<sup>1</sup> plays.

Mz	ticiská	Do	hminčhiská <u>prostitute</u>
Ay	ticiská	Hu	khua <sup>4</sup> ská <sup>1</sup> <u>play</u> , čhu <sup>4</sup> ská <sup>1</sup>
Cq	skarná <u>prostitute</u>		<u>prostitute</u>
Ja	hmi <sup>3</sup> nčhí <sup>1</sup> ská <sup>1</sup> , hmi <sup>3</sup> nčhí <sup>1</sup> skó <sup>14</sup> (< Pre-	Mg	ská <u>crazy</u>
	Ja *hmi <sup>3</sup> nčhí <sup>1</sup> ská <sup>1</sup> )	Lo	skó <u>crazy</u> , siskó <u>play</u>
	<u>prostitute</u>		čhiskó <u>prostitute</u>
		Te	tisiská <u>play</u> , 'ičhiská <u>prostitute</u>

Expected reflex: Ay tic'iská. Ja, Do hminčhí- < \*nčhí<sup>1</sup> women 305; Mz, Ay -ci- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26; Mz, Ay, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Hu khua<sup>4</sup>- < \*k<sup>W</sup>há<sup>4</sup> abstract thing 216. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

473. \*ska<sup>3</sup>ntá<sup>3</sup> until.

Ay	ska <sup>3</sup> ntá	So	sa <sup>3</sup> ntá <sup>3</sup>
Ja	sa <sup>3</sup> ntá <sup>2</sup>	Ix	nkantá
Do	santá	Lo	skíntó
Hu	sa <sup>3</sup> ntá <sup>3</sup>	Te	santá

Expected reflex: Lo sko<sup>3</sup>ntó. Loss of /k/ in Ja, Do, Hu,

So, and Te is unexplained. Ix nka- < \*nka<sup>3</sup>- subordinating conjunction 340.

474. \*ská<sup>4</sup> (future), \*ká<sup>4</sup> (present) (\*<sup>43</sup> or \*<sup>42</sup>) able (physically).

Ay	ká, ská	Hu	ká <sup>43</sup> ( <u>pres.</u> ); ská <sup>4</sup> ( <u>future</u> )
Cq	ská-	Ix	ská
Ja	ká <sup>23</sup> , ská <sup>23</sup>	Lo	skó-
Do	ká	Te	ká-

Ja tone <sup>s</sup> of <sup>23</sup> glide perhaps developed by analogy to indicate phrase final.

475. \*ská<sup>43</sup> falls.

Hu ki<sup>3</sup> ská<sup>43</sup>

Hu ki<sup>3</sup>- < \*ki<sup>3</sup>- completive aspect 206.

476. \*skhú<sup>1</sup> left (adj.).

Mz	skú	Ji	skú
Ay	thiaskú-	So	-skú
Cq	ncaskú	Ix	skú
Ja	skhú <sup>1</sup>	Mg	skú
Do	skhú	Lo	nkoskí
Hu	skú <sup>1</sup>	Te	skú

Expected reflex: Ay -skhú. Ji oral /u/ unexplained.

Ay thia- < \*t<sup>y</sup>há<sup>3</sup> arm 610; Cq nca- < \*nca<sup>4</sup> hand 287; Lo nko- < \*nka<sup>3</sup>- subordinating conjunction 340. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

477. \*skiá belch.

Ay	k <sup>w</sup> askiá	Do	timaskiá
Ja	ti <sup>1</sup> má <sup>2</sup> skiá <sup>2</sup>	Lo	koskí
Expected reflex: Lo -skió. Ja, Do ti- < *ti <sup>1</sup> -			
<u>continuative aspect</u> 589; Do mág- < *má <sup>3</sup> <u>able</u> 227. The tone reconstruction is rather indeterminate; Ja tone <sup>2</sup> reflex may be derived from any of the following: * <sup>2</sup> , * <sup>3</sup> , * <sup>s1</sup> , * <sup>s2</sup> , * <sup>42</sup> , or * <sup>43</sup> .			

478. \*sku<sup>s</sup>yá<sup>s</sup> wait for (imper. sg.).

Mz	kuyá	Hu	ku <sup>s</sup> yá <sup>s</sup>
Ay	skuyá	So	ku <sup>s</sup> yá <sup>s</sup>
Ja	ku <sup>2</sup> yá <sup>2s</sup>	Ix	skuyá
Do	kuyá-		

Loss of /s/ in Mz, Ja, Do, Hu, and So is unexplained. Ja tone <sup>s</sup> of <sup>2s</sup> glide is probably an analogical development which indicates phrase final.

479. \*sk<sup>w</sup>á<sup>4</sup> crane.

Ay	čakask <sup>w</sup> á	Hu	skuá <sup>4</sup>
Ja	sk <sup>w</sup> á <sup>3</sup>	So	skwá
Do	k <sup>w</sup> á	Ix	skuá

Ja sk<sup>w</sup>á<sup>3</sup> may be borrowed from Ay; expected reflex is k<sup>w</sup>á; Ay -ka- unexplained; Ix expected kuá. Ay ča- < \*ča<sup>1</sup>- person prefix 55.

480. \*sk<sup>w</sup>á<sup>4</sup> powder.

Mz	skwá	So	skwá <sup>4</sup> <u>powder</u> , nta <sup>3</sup> skwá <sup>24</sup>
Ay	sk <sup>w</sup> á		(< Pre-So * <sup>21</sup> - <sup>4</sup> ) <u>pinole</u>
Cq	skwá	Ix	nčukwá
Ja	k <sup>w</sup> á <sup>3</sup>	Mg	sk <sup>w</sup> á
Do	k <sup>w</sup> á	Lo	skó
Hu	skwá <sup>4</sup>	Te	skwá

PPn 83; PMS 41. So nta- < \*na<sup>4</sup>ntá<sup>1</sup> water, liquid 270;  
 Ix nču- unexplained.

481. \*stá<sup>s</sup>, \*ntá<sup>s</sup> tired.

Ay	tihwentá-	Hu	wi <sup>3</sup> htá <sup>3</sup>
Cq	kahwentá	Ix	kihwintá
Ja	ti <sup>1</sup> hwe <sup>2</sup> ntá <sup>2s</sup>	Te	tihwintiá-
Do	tihwentá		

Hu wi<sup>3</sup>- < \*wi<sup>3</sup>- verb auxiliary 655; Cq ka- < \*ka<sup>2</sup>-  
completive aspect 172; Ix ki- < \*ki<sup>3</sup>- completive aspect 206;  
 Ay, Cq, Ja, Do hwe- < \*hwé<sup>s</sup> use up 167; Ix, Te -hwi- < \*hwi<sup>2</sup>  
goes 169. Ja tone <sup>s</sup> of <sup>2s</sup> glide probably developed by  
 analogy to indicate phrase final. This etymon appears to be  
 related to \*khe<sup>3</sup>stá<sup>3</sup>, \*khe<sup>3</sup>ntá<sup>3</sup> breathes 193. The tone  
 reconstruction is partially indeterminate; it is either \*<sup>3</sup>  
 or \*<sup>31</sup>.

482. \*stá<sup>4</sup>, \*ntá<sup>4</sup>(\*<sup>s</sup>) voice.

Mz	htá	Hu	htá <sup>4</sup>
Ay	ntá	Ji	htá
Cq	štá-	So	ntá <sup>4</sup>
Ja	ntá <sup>2</sup> , tá <sup>2</sup> (< Pre-Ja *nta <sup>2</sup> )	Ix	ntá
Do	ntá	Mg	ta

PPn 35; PMS 72.

483. \*sté<sup>1</sup>, \*nté<sup>1</sup> sandal, shoe.

Mz	hté, htí	<u>sandal</u>	So	nté <sup>21</sup>
Ay	nté	<u>shoe</u>	Ix	nté
Ja	nté <sup>1</sup> , té <sup>1</sup> (< Pre-Ja *nté <sup>1</sup> )	Mg	té	
		<u>shoe</u>	Te	šahté
Hu	hté <sup>1</sup>	<u>sandal</u>		
Ji	hté			

PPn 14. Te ša- unexplained.

484. \*sté<sup>s</sup> wasp.

Ay	čhaté	Do	čuté
Cq	šaté	Hu	ču <sup>4</sup> hté <sup>s</sup>
Ja	čha <sup>3</sup> té <sup>3</sup>	Te	čušité

Expected reflex: Te -hté; Ay, Ja čha-, Cq ša- unexplained. Do, Hu, Te ču- < \*čú<sup>4</sup> animal 107; Te -ši- < \*ši- connective 518. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>s1</sup>.

485. \*sti<sup>4</sup> fish (n.).

Mz	ti	Ji	htí <sub>6</sub>
Ay	ti	So	ti <sup>4</sup>
Cq	ti	Ix	ti
Ja	ti <sup>3</sup>	Mg	ti
Do	ti	Lo	té
Hu	hti <sup>4</sup>	Te	ti <sub>6</sub>

PPn 114. Expected reflexes: Mz, Te htí; Ji, Te nasalized /i/ unexplained.

486. \*su<sup>1</sup>?f<sup>1</sup> holiday.

Mz	swí <sup>2</sup> , soí <sup>2</sup>	Ji	s?í
Ay	s?í	So	s?ui <sup>2</sup> i
Cq	sui <sup>2</sup> i	Ix	s?ui
Ja	s?í <sup>1</sup>	Mg	s?í
Do	s?í	Lo	se?é
Hu	s?ui <sup>1</sup>	Te	se

Cq /i/ of /ui/ cluster unexplained; Mz /w/ and /o/ unexplained; development of unstressed \*u is not explained; Mz /?/ final in syllable unexplained, perhaps should have been phonemicised as before the vowel, expected reflex s?í.

487. \*sú<sup>3</sup>(\*<sup>1</sup>) vomit.

Mz	tihwesú	Ix	khihwasú
Ay	tihwesú	Mg	wesú
Cq	kueisú-	Lo	wasí- <u>lp.</u> , wasiá <u>3p.</u>
Ja	ti <sup>1</sup> wi <sup>2</sup> sú <sup>2</sup>	Te	tiwisiú
Hu	wi <sup>3</sup> sú <sup>1</sup>		

Te /i/ in /iu/ cluster unexplained. Mz, Ay -hwe- < \*hwé<sup>3</sup> use up 167; Ix -hwa- < \*hwa<sup>3</sup>á<sup>3</sup> passes by 163; Ja, Hu, Te -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Mz, Ay, Ja, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Lo wa- < \*wa<sup>3</sup>- verb auxiliary 630.

488. \*su<sup>3</sup>wá<sup>2</sup> the same.

Hu	suá <sup>4</sup> s	So	su <sup>3</sup> wá <sup>1</sup> re <sup>4</sup> <u>himself</u>
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PPn 315. So -re probably a personal pronoun.

489. \*sý<sup>2</sup> on, above.

Mz	khísý <u>on</u>	Hu	nka <sup>3</sup> sý <sup>2</sup>
Ay	khihñásuyá <u>on,</u> nkasý <u>level</u>	Ji	sý <sup>2</sup> nká <u>above</u>
Cq	nkasý <u>level</u>	So	nka <sup>4</sup> sý <sup>1</sup>
Ja	khi <sup>2</sup> hñá <sup>2</sup> sý <sup>2</sup>	Ix	khihñásý
Do	khihñásý	Lo	tihñóší
		Te	?isýnká <u>on</u>
			Ay, Ja, Do, Ix -hñá, Lo -hñó < *-hñá <sup>3</sup> <u>sits</u> 156. Mz, Ay, Ja, Do, Ix khi- < *khi <sup>3</sup> - <u>completive aspect</u> 196; Lo ti- < *ti <sup>1</sup> - <u>continuative aspect</u> 589; Ay -ya < *yá <u>inside</u> 660.

490. \*sy<sup>s</sup>nté<sup>s</sup> (\*<sup>1</sup> - <sup>4</sup>) world.

Mz	nkasontí	Ji	sy <sup>s</sup> nté
Ay	nkasu <sup>n</sup> té	So	so <sup>s</sup> nté <sup>24</sup> (< Pre-So * <sup>21</sup> - <sup>4</sup> )
Cq	nkasu <sup>n</sup> té	Ix	nkasunté
Ja	?i <sup>s</sup> sy <sup>s</sup> nté <sup>2</sup>	Lo	nkosi <sup>s</sup> ntá
Do	?asunte, hasunte	Te	?asunte
Hu	sy <sup>s</sup> nté <sup>s</sup>		

PPn 268. Expected reflex: Mz -sunte; So su-; Mz, Ay, Cq, Do, So, Ix, Lo, Te expected nasalized vowels in the /sy/ syllable. Ja ?i-, Do, Te ?a- perhaps < \*?ya<sup>s</sup>- nominal 725; Mz, Ay, Cq, Ix nka-, Lo nko- < \*nka<sup>s</sup>- subordinating conjunction 340.

491. \*šá<sup>1</sup> work.

Mz	šá	Ji	šá
Ay	šá	So	šá <sup>21</sup>
Cq	šá	Ix	šá
Ja	šá <sup>1</sup>	Mg	šá
Do	šá	Lo	šó
Hu	šá <sup>1</sup>	Te	šá

PPn 171.

492. \*ša<sup>1</sup>ú<sup>1</sup> skirt.

Mz	š <sup>o</sup> thí	Hu	č <sup>o</sup> au <sup>1</sup>
Ay	š <sup>o</sup> io	So	š <sup>o</sup> ó
Cq	š <sup>o</sup> ó	Ix	š <sup>o</sup> iú
Ja	š <sup>o</sup> ó <sup>1</sup>	Mg	ch <sup>o</sup> ó
Do	š <sup>o</sup> ó	Te	šiú

Expected reflexes: Mz šu; Ay šoó; So šau; Ix šuú; it is clear that the reflexes developed from \*au but the precise development is unexplained. Hu /č/, Mg /ch/ unexplained, expected /š/. Mz thi- perhaps < \*thai<sup>3</sup> thick 574.

493. \*šá<sup>3</sup> jaguar.

Mz	ša <sup>?</sup> intú	<u>tiger</u>	Hu	šá <sup>3</sup>
Ay	thiušá		So	šá <sup>3</sup>
Cq	šá		Ix	šá
Ja	šá <sup>2</sup>		Lo	šó
Do	šá		Te	šá

Ay thiu- < \*t<sup>y</sup>hu<sup>3</sup>- nominal 616-620; Ay -<sup>?</sup>intu < \*<sup>?</sup>i<sup>3</sup>ntú<sup>43</sup> embroidery 696.

494. \*ša<sup>3</sup>ti<sup>1</sup> (\*<sup>1</sup> - <sup>1</sup>) early.

Ay	šati	So	ša <sup>3</sup> ti <sup>21</sup>
Cq	šáti	Ix	šáti
Ja	ša <sup>2</sup> ti <sup>1</sup>	Mg	šáti <u>soon</u>
Do	šati	Lo	šotí
Hu	ša <sup>1</sup> ti <sup>1</sup> , si <sup>1</sup> ti <sup>1</sup>	Te	šáti
Ji	šáti <u>fast</u>		

Expected reflex: Lo šoté.

495. \*ša<sup>3</sup>onkiú<sup>1</sup> (\*šá<sup>3</sup> jaguar 493) porcupine.

Ja	ša <sup>2</sup> nk <sup>?</sup> iu <sup>1</sup>	Do	šank <sup>?</sup> iu
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496. \*ša<sup>3</sup> wi<sup>3</sup>, \*šu<sup>3</sup> wi<sup>3</sup> monkey (small variety).

Ja ša<sup>2</sup> wi<sup>2</sup> Ix šu<sup>2</sup> wi<sup>2</sup>

Do ša<sup>2</sup> wi<sup>2</sup>

The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>s1</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

497. \*šá<sup>4</sup> faint (barely visible).

Ay šá Hu šá<sup>4</sup> fuzz (on a peach)

Ja šá<sup>3</sup> faint, ni<sup>2</sup> ya<sup>1</sup> šá<sup>3</sup> So šá<sup>4</sup> loose —  
small path Ix šá

Do šá Te šá

Ja niya < \*nti<sup>4</sup> yá<sup>4</sup> road 392.

498. \*šá<sup>4</sup> mildew.

Ay hešá Ix kithušá

Ja ne<sup>2</sup> šá<sup>3</sup> Lo kitisó

Do nešá Te titušá

Hu šá<sup>4</sup>

Ay he-, Ja, Do ne-, Ix kithu-, Lo kitis-, Te titu-  
unexplained.

499. \*ša<sup>4</sup> nká<sup>1</sup>, \*šu<sup>4</sup> nká<sup>1</sup> ravine, gorge, gully.

Ay šanká Hu šu<sup>4</sup> nká<sup>1</sup>

Cq. šanká So šanká

Ja ša<sup>3</sup> nká<sup>1</sup>, ša<sup>3</sup> nkó<sup>1</sup>s (< Pre- Ix šunká  
Ja \*ša<sup>3</sup> nká<sup>1</sup>) Lo šonkó

Do šunká Te šunká

PPn 54. Gudschinsky reconstructed this etymon with tones \*<sup>3</sup> - <sup>1</sup>. The Vocabulario Mazateco (1957) lists the Hu form as <sup>4</sup> - <sup>1</sup> although in PPn 54 Gudschinsky gives the Hu tones as <sup>3</sup> - <sup>1</sup>.

500. \*ša<sup>4</sup>?á<sup>4</sup>(\*<sup>1</sup> - <sup>1</sup>) opens.

Mz	tišá	Hu	š?á <sup>4</sup>
Ay	tišá	So	khye <sup>1</sup> š?á <sup>21</sup> <u>open</u> , ti <sup>4</sup> šá <sup>4</sup>
Cq	tišá'a		<u>hole</u>
Ja	ti <sup>3</sup> šá <sup>3</sup> <u>hole</u> , te <sup>3</sup> ti <sup>3</sup> šá <sup>3</sup>	Ix	tišá
	<u>it is open</u>	Lo	tišo <sup>3</sup> ó
Do	tetišá	Te	tišá

PPn 173. Expected reflexes: Mz, Ay, Hu, So, Ix -ša?á; Ja, Do, Ix -š?á. So khye- perhaps < \*khé<sup>3</sup> not yet 190.

501. \*ša<sup>4</sup>?má<sup>4</sup>, \*šu<sup>4</sup>?má<sup>4</sup> bridge.

Mz	ša?má	Mg	šam?á
Ja	šu <sup>3</sup> ?má <sup>3</sup> <u>full of holes</u>	Lo	ši <sup>3</sup> má
Hu	šu <sup>4</sup> ?má <sup>4</sup>	Te	šumá

502. \*ša<sup>4</sup>?ntá<sup>4</sup>, \*šu<sup>4</sup>?ntá<sup>4</sup> chicken.

Mz	šantá	Ji	šo?ntá
Ay	thiušu?ntá	Ix	šantá
Cq	ša?ntá	Mg	šant?á
Ja	ša <sup>3</sup> ntá <sup>3</sup>	Lo	šo?ntó
Do	šantá	Te	šantá
Hu	šu <sup>4</sup> ?ntá <sup>4</sup>		

Expected reflex: Ji šu-. Ay thiu- < \*t<sup>y</sup>hu<sup>3</sup>- nominal  
616-620.

503. \*ša<sup>4</sup>wa<sup>4</sup>, \*šu<sup>4</sup>wa<sup>4</sup> lace.

Mz	ša <sup>?</sup> wá, šawá?	Ji	šu <sup>?</sup> wá
Ay	šu <sup>?</sup> wá	So	šo <sup>?</sup> wá
Cq	ša <sup>?</sup> uá	Ix	šu <sup>?</sup> wá
Ja	šu <sup>3</sup> wa <sup>3</sup>	Mg	šowá
Do	ša <sup>?</sup> wá	Lo	ši <sup>?</sup> wó
Hu	šu <sup>4</sup> wa <sup>4</sup>	Te	šuwá

PPn 328. Expected reflex: Mg šuwá; Mz /?/ final unexplained.

504. \*ša<sup>4</sup>yá<sup>4</sup> emanation (from non-edible dead body).

Ay	ša <sup>?</sup> iá	Ix	nti <sup>?</sup> iaša <sup>?</sup> iá <u>funeral</u>
Cq	ša <sup>?</sup> iá	Mg	šay <sup>?</sup> á
Ja	ša <sup>3</sup> ia <sup>3</sup>	Lo	šo <sup>?</sup> yó
Do	ša <sup>?</sup> iá	Te	šaya-
Hu	ša <sup>4</sup> yá <sup>4</sup>		

Ix nti<sup>?</sup>ia- < \*nti<sup>4</sup>yá<sup>1</sup> road 392; but the Ix /?/ is unexplained.

505. \*šá<sup>1</sup> liquor.

Mz	šá	So	šá <sup>21</sup>
Ay	šá	Ix	šá
Ja	šá <sup>1</sup>	Mg	šá
Do	šá	Lo	šó
Hu	šá <sup>1</sup>	Te	šá

PPn 170.

506. \*ša<sup>4</sup>á<sup>4</sup> poor.

Ay	š'já	Do	š'a
Cq	ša'á-	So	š'a <sup>4</sup> <u>orphan</u>
Ja	š'a <sup>3</sup>	Ix	š'já

PPn 61. Expected reflexes: Ay, So, Ix ša'á.

507. \*šhá<sup>4</sup> hawk.

Mz	hyá	Ji	šihá
Ay	thiuhá	So	há <sup>4</sup>
Cq	šhá	Ix	há
Ja	há <sup>3</sup>	Mg	há
Do	há	Lo	hó
Hu	há <sup>4</sup>	Te	há

PPn 187. Mz /y/ before /a/ unexplained, phonemic status doubtful. Ji ši- < \*ši<sup>3</sup>- connective 518; Ay thiu- < \*t<sup>y</sup>hu<sup>3</sup>- nominal 616-620.

508. \*šhá<sup>2</sup> three.

Mz	há	So	há <sup>1</sup>
Ay	há	Ix	há
Cq	šhá	Mg	há
Ja	há <sup>3</sup>	Lo	hó
Do	há	Te	há
Hu	há <sup>2</sup>		

PPn 238.

509. \*šhay<sup>4s</sup> six.

Mz	šhȏ	Ji	hó̑
Ay	hó̑	So	hó̑ <sup>22</sup>
Cq	šhú̑	Ix	hú̑
Ja	hú̑ <sup>2</sup>	Mg	hú̑
Do	hú̑	Lo	hí̑
Hu	hay <sup>4s</sup>	Te	hú̑

PPn 192. Expected reflex: Mz hó̑.

510. \*šhé<sup>1</sup> sin.

Mz	hyé	Ji	hé
Ay	nihé	So	hé <sup>21</sup>
Cq	šhé	Ix	hé
Ja	hé <sup>1</sup>	Mg	hé
Do	hé	Lo	há
Hu	hé <sup>1</sup>	Te	lahé

PPn 185. Mz /y/ before /e/ unexplained, perhaps it is not phonemic; Te la- unexplained.

511. \*šhé<sup>3</sup> (\*<sup>4</sup>) big.

Mz	hyé, hí	So	hé <sup>3</sup>
Ay	ntahé <u>river</u>	Ix	ntahé <u>river</u>
Cq	šhé	Mg	hé
Ja	nda <sup>1</sup> hé <sup>3</sup> <u>river</u>	Lo	há
Do	ndahé <u>river</u>	Te	hé
Hu	hé <sup>3</sup> <u>big</u> , nta <sup>1</sup> hé <sup>4</sup> <u>river</u>		

PPn 183. Mz /y/ before /e/ unexplained, perhaps it is not phonemic. Ay, Ix nta-, Ja, Do nda- < \*na<sup>4</sup>ntá<sup>1</sup> water 270.

512. \*šhe<sup>4</sup>?é<sup>4</sup> corn (young ear).

Mz	hyé?	Ji	he?é
Ay	he?é	So	he <sup>4</sup> ?é <sup>4</sup>
Cq	šhe?é	Ix	he?é
Ja	h?é <sup>2</sup>	Mg	h?é
Do	h?é	Lo	ha?á
Hu	he <sup>4</sup> ?é <sup>4</sup>	Te	hé

PMS 69. Expected reflexes: Cq šhei?é; Hu, Ji h?é. Mz syllable final /?/ is unexplained; /y/ of /hy/ cluster is also unexplained but its phonemic status is doubtful; the Mz expected reflex is h?V. Ja expected tone reflex <sup>s</sup>.

513. \*šhiú<sup>3</sup> quiet.

Ay	šiú	Ji	hyú (< Pre-Ji *hiú)
Cq	šhú	So	šyú
Ja	hiú <sup>2</sup>	Ix	šiú
Do	hiú	Te	hiú
Hu	hyú <sup>3</sup> (< Pre-Hu *hiú <sup>3</sup> )		

PMS 47. Expected reflex: Cq šhiú; Ay, So, Ix expected /h/ rather than /š/. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>s1</sup>.

514. \*šhi<sup>s1</sup> eight.

Mz	hi <sup>1</sup>	Ji	hi <sup>1</sup>
Ay	hi <sup>1</sup>	So	hi <sup>s2</sup>
Cq	šhi <sup>1</sup>	Ix	hi <sup>1</sup>
Ja	hi <sup>2</sup>	Mg	hi <sup>1</sup>
Do	hi <sup>1</sup>	Lo	šhi <sup>1</sup>
Hu	hi <sup>s</sup>	Te	hi <sup>1</sup>

PPn 204. Lo /š/ in /šh/ cluster unexplained unless this is the reflex before \*i.

515. \*si<sup>1</sup>?i<sup>4</sup> mosquito.

Ay	naši?i	Do	ši?i
Cq	ši?i	Hu	ča <sup>1</sup> na <sup>4</sup> ši <sup>4</sup> ?i <sup>3</sup>
Ja	ši <sup>1</sup> ?iu <sup>3</sup>		

Ja, Do, Hu expected reflex š?i, explanation may be that // was lost when later compounded with \*-yú drinkable 731.

Ay, Hu na- < \*na<sup>4</sup> nominal 241.

516. \*ši<sup>2</sup> dry.

Mz	kiší	Ji	kiší
Ay	kiší	So	ki <sup>s</sup> ší <sup>1</sup>
Cq	kiší	Ix	kiší
Ja	ki <sup>2</sup> ší <sup>2</sup> , ti <sup>1</sup> ší <sup>2</sup>	Lo	kiší
Do	kiší	Te	tisí-
Hu	ki <sup>s</sup> ší <sup>2</sup>		

PPn 164. Mz, Ay, Cq, Ja, Do, Hu, Ji, So, Ix, Lo ki-  
 < \*ki<sup>3</sup>- completive aspect 206; Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

517. \*ši<sup>2</sup>ntí<sup>4</sup> belch.

Hu	ši <sup>2</sup> ntí <sup>4</sup>	Mg	šintí
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518. \*ši<sup>3</sup>- connective (that).

Mz	ši-	Ji	ši-
Ay	ši <sup>2</sup> nkú <u>another</u>	So	ši-
Cq	ši <sup>2</sup> nkú <u>another</u>	Ix	ši-
Ja	ši <sup>3</sup> -	Mg	ši-
Do	ši-	Lo	ši <sup>2</sup> nkí <u>another</u>
Hu	ši <sup>3</sup> -	Te	ši-

PPn 160. Ay /?/ in /?nk/ cluster unexplained; Ay, Cq -nkú, Lo -nkí < \*hnkú one 146. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>2</sup><sup>1</sup>.

519. \*ši<sup>3</sup>né<sup>1</sup>(\*<sup>1</sup> - <sup>1</sup>) lard.

Mz	šiné	Ji	šiné
Ay	šiné	So	ši <sup>3</sup> né <sup>2</sup> <sup>1</sup>
Cq	šiné	Ix	šiné
Ja	ši <sup>2</sup> né <sup>1</sup>	Mg	šiné
Do	šiné	Lo	šiná
Hu	ši <sup>1</sup> né <sup>1</sup>	Te	šiné

PPn 245; PMS 46.

520. \*ši<sup>s</sup>ši<sup>s</sup> small.

Ja	ši <sup>s</sup> ši <sup>s</sup>	Ix	šiši
Do	šiši	Te	?iši

Te /?/ unexplained. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

521. \*ši<sup>s</sup>?yá<sup>1</sup>(\*<sup>1</sup> - <sup>1</sup>) flea.

Mz	ši <sup>s</sup> yá	Hu	ši <sup>1</sup> ?yá <sup>1</sup>
Ay	ši <sup>s</sup> iá	So	ši <sup>s</sup> ?yá <sup>21</sup>
Cq	ši <sup>s</sup> iá	Ix	ši <sup>s</sup> iá
Ja	ši <sup>2</sup> ?iá <sup>1</sup>	Lo	ši <sup>s</sup> yó
Do	ši <sup>s</sup> iá	Te	šiyá

PPn 348.

522. \*ši<sup>4</sup>?i<sup>3</sup> man.

Mz	š?i <sup>1</sup>	Ji	š?i <sup>1</sup>
Ay	ši <sup>s</sup> i <sup>1</sup>	So	ši <sup>4</sup> ?i <sup>3</sup>
Cq	ši <sup>s</sup> i <sup>1</sup>	Ix	ši <sup>s</sup> i <sup>1</sup>
Ja	š?i <sup>1</sup> <sup>3</sup>	Mg	š?i <sup>1</sup>
Do	ši <sup>s</sup> i <sup>1</sup> , š?i <sup>1</sup>	Lo	ši <sup>s</sup> i <sup>1</sup>
Hu	š?i <sup>1</sup> <sup>4</sup>	Te	ši <sup>1</sup>

PPn 227; PMS 52. Expected reflexes: So, Ix š?i<sup>1</sup>; Cq, Lo nasalization of unstressed /i/ is unexplained except by contiguous nasalized environment.

523. \*ši<sup>4</sup>nté<sup>4</sup>, \*čhi<sup>4</sup>nté<sup>4</sup>(\*<sup>3</sup> - <sup>3</sup>) adobe.

Mz	šintí	Ji	ši <sup>2</sup> nté
Ay	ši <sup>2</sup> nté	So	ní <sup>3</sup> nte <sup>3</sup> thai <sup>3</sup> s
Cq	ši <sup>2</sup> nté	Ix	čhinté
Ja	čhi <sup>3</sup> nté <sup>3</sup> <u>wall</u> ( <u>of a</u> <u>house</u> ), <u>adobe</u>	Mg	šint <sup>2</sup> e
Do	čhinté	Lo	ši <sup>2</sup> ntá
Hu	ši <sup>4</sup> nté <sup>4</sup>	Te	šinté
	So -thai <sup>3</sup> s < *thai <sup>3</sup> <u>thick</u> 574; So ní <sup>3</sup> - < *nì <sup>3</sup> - <u>nominal</u> 312.		

524. \*ší<sup>2</sup> apart.

Ay	ší <sup>1</sup>	So	ší <sup>1</sup>
Cq	ší <sup>1</sup>	Ix	ší <sup>1</sup>
Ja	ší <sup>2</sup>	Lo	ší <sup>1</sup>
Do	ší <sup>1</sup>	Te	ší <sup>1</sup>
Hu	wha <sup>3</sup> a <sup>1</sup> ší <sup>2</sup> <u>separate</u> ; ší <sup>2</sup> <u>apart</u>		
	Hu wha <sup>3</sup> a <sup>1</sup> - perhaps < *hwa <sup>3</sup> a <sup>3</sup> <u>passes by</u> 163.		

525. \*ší<sup>4</sup> hunt.

Ay	ší <sup>1</sup>	Ix	ší <sup>1</sup>
Cq	nañashí	Mg	ní <sup>2</sup> ší <sup>4</sup> <u>hunting dog</u>
Ja	ší <sup>3</sup>	Lo	ší <sup>1</sup>
Do	ší <sup>1</sup>	Te	ší <sup>1</sup>
Hu	ní <sup>2</sup> ší <sup>4</sup> <u>hunting dog</u>		
	Cq nañashí-, Hu, Mg ní <sup>2</sup> ší <sup>4</sup> < *na <sup>3</sup> ñashí <sup>1</sup> <u>dog</u> 246.		

526. \*šká<sup>1</sup> trousers.

Mz	šká	Hu	šká <sup>1</sup>
Ay	šká	So	šká <sup>21</sup>
Cq	ška <sup>?</sup> ntá	Ix	šká
Ja	šká <sup>1</sup>	Lo	škó
Do	ká	Te	šká

PPn 119. Cq -<sup>?</sup>ntá unexplained.

527. \*ška<sup>3</sup>hntí<sup>3</sup>(\*<sup>3</sup> - <sup>2</sup>) cricket.

Ay	náška <sup>?</sup> ntí	So	čha <sup>3</sup> ntí <sup>3</sup>
Cq	čuntiká	Ix	čhuntí
Ja	čha <sup>2</sup> ntí <sup>2</sup>	Mg	čikanti
Do	čhıntı	Lo	ško <sup>?</sup> nté
Hu	ču <sup>4</sup> ška <sup>3</sup> hntí <sup>2</sup>	Te	škahntí

Cq, Hu ču-, Mg či- < \*čú<sup>4</sup> animal 107; Ja, So čha-, Do čhi- unexplained; Cq, Mg -ka- perhaps < \*tka<sup>3</sup> bald 596.

528. \*šká<sup>4</sup> leaf.

Mz	šká	Ji	šká
Ay	šká	So	šká <sup>4</sup>
Cq	šká	Ix	šká
Ja	šká <sup>3</sup>	Mg	šká
Do	ká	Lo	škó
Hu	šká <sup>4</sup>	Te	šká

PPn 52.

529. \*ška<sup>4</sup>čá<sup>3</sup> (\*šká<sup>4</sup> leaf 528, \*čá<sup>3</sup> sweeps 643) broom.

Mz	škačá	Mg	škačá
Ay	k <sup>w</sup> hečašká	Lo	škočó
Ja	k <sup>w</sup> he <sup>3</sup> čá <sup>2</sup> <u>swept</u>	Te	škačá
Hu	ška <sup>4</sup> čá <sup>3</sup>		

Ay, Ja k<sup>w</sup>he- finished. The reconstruction of tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>21</sup>.

530. \*ška<sup>4</sup>hé<sup>1</sup> (\*šká<sup>4</sup> leaf 528) palm leaf.

Mz	škahyé	So	ška <sup>4</sup> hé <sup>21</sup>
Ay	škahé	Ix	škahé
Cq	hnéj	Mg	škahé
Ja	ška <sup>3</sup> hé <sup>1</sup>	Lo	škihá
Do	kihé	Te	škahé
Hu	ška <sup>4</sup> hé <sup>1</sup>		

PPn 205. Mz /y/ before /e/ unexplained, perhaps not phonemic; Do, Lo /i/ unexplained, expected /a/. Gudschinsky reconstructed \*hné<sup>4</sup> (PPn 205) as an alternate form; however, the only support for such a form is from Cq which does not appear in her data; Cq hnéj may not be cognate and possibly may be derived from \*hné<sup>3</sup> smells 150.

531. \*ške<sup>s</sup>?é<sup>1</sup> thin.

Mz	škyé	So	ške <sup>s</sup> ?é <sup>21</sup> <u>pale</u>
Ay	šk?é	Ix	šk?é
Cq	škei?éi	Mg	šk?é
Ja	šk?é <sup>1</sup>	Lo	škia?á <u>women giving birth</u>
Do	k?é	Te	šké
Hu	šk?é <sup>1</sup>		

PMS 51. Expected reflexes: Mz šk?v; Ay, Ix ške?é; Lo ška?á. Mz /y/ before /e/ unexplained, its phonemic status is doubtful; Ja oral /e/ is unexplained.

532. \*škhá<sup>s</sup> alligator.

Ay	škhá	Ix	škhá
Ja	škhá <sup>2</sup>	Mg	šká
Do	khá	Lo	škó
Hu	šká <sup>3</sup>	Te	šká
So	šká <sup>3</sup>		

533. \*škha<sup>s</sup>?ntá<sup>3</sup> spouse of sister or daughter.

Ay	ška?ntá	So	ška <sup>s</sup> ntá <sup>3</sup>
Cq	ška?ntá	Ix	škantá
Ja	škha <sup>s</sup> ntá <sup>2</sup>	Mg	škant?á
Do	khantá	Lo	kho?ntó
Hu	ška <sup>s</sup> ntá <sup>3</sup>	Te	škantá

PPn 263. Expected reflexes: Ay, Ix škh-; Lo šk-.

534. \*škhé<sup>4</sup> frog.

Mz	šké	So	šké <sup>4</sup>
Ay	náškhé	Ix	škhé
Ja	ča <sup>1</sup> šhé <sup>s</sup>	Mg	šké
Hu	šké <sup>4</sup>	Lo	škiá
Ji	škié	Te	šké

PMS 50. Ja ča- < \*ča<sup>1</sup>- person prefix 55; Ji /i/ of /ie/ cluster unexplained.

535. \*škhú<sup>4</sup> weak.

Mz	škú <u>thin</u>	Do	khú
Ay	škhú <u>narrow</u>	Ix	škhú <u>narrow</u>
Cq	škú	Lo	?intoški
Ja	škhú <sup>s</sup>		

Lo ?into- unexplained.

536. \*ški<sup>s</sup>á<sup>2</sup> glutton.

Ay	ski?á	So	ški <sup>s</sup> á <sup>2</sup>
Ja	škai <sup>2</sup> á <sup>2</sup>	Ix	ške?á
Do	kai?á	Mg	ški?á
Hu	ški <sup>s</sup> á <sup>2</sup>		

Expected reflexes: Ja, Hu šk?iá; Do k?iá; Ix ški?á;  
So <sup>3</sup> - <sup>1</sup>.

537. \*ški<sup>4</sup> numeral.

Ay	ški	Hu	w <sup>o</sup> e <sup>1</sup> ški <sup>4</sup> <u>he counts</u>
Cq	ški	Ix	ški
Ja	ški <sup>s</sup>	Lo	šké
Do	ki	Te	máŋa wišké
Expected reflex: Te -ski. Te máŋa < *má <sup>3</sup> <u>able</u> 227, -na <u>first person</u> ; Hu w <sup>o</sup> e- < *we <sup>3</sup> ?é <sup>1</sup> <u>hits</u> 645; Te wi- < *wi <sup>3</sup> - <u>verb auxiliary</u> 652.			

538. \*ški<sup>21</sup> whirlwind.

Ay	ški	Hu	ški <sup>1</sup>
Ja	nki <sup>1</sup> , ki <sup>1</sup> (< Pre-Ja *nki <sup>1</sup> ) <u>whirlpool,</u> <u>whirlwind</u>	So	ški <sup>a</sup> e
Do	nki <sup>1</sup> , ki <sup>1</sup> (< Pre-Do *nki <sup>1</sup> )	Te	ški <sup>1</sup>
Ja, Do, So, Ix oral /i/ unexplained. Ja, Do, and Ix do not evidence the expected reflex of *š. Ix nči- unexplained but perhaps same morpheme as found in the unexplained morph of Ix <u>eye</u> 539.			

539. \*šký<sup>4</sup> eye.

Ay	šký <u>3p.</u> , šk <sup>w</sup> á <u>1p.</u>	Ji	šký
Cq	tušký	So	šký <sup>4</sup>
Ja	tu <sup>2</sup> nký <u>3p.</u> , tu <sup>2</sup> nká <sup>s</sup> <u>1p.</u>	Ix	nčiký
Do	stunký <u>3p.</u> , tunk <sup>w</sup> á <u>1p.</u>	Lo	ški <sup>1</sup> <u>3p.</u> , šké <u>1p.</u>
Hu	šký <sup>4</sup>	Te	šký

PPn 69. Ja, Do, Ix do not give the expected reflex for  
 \*š. Cq, Ja, Do tu-, Do stu- unexplained; Ix nči- unexplained.

540. \*škʷhé<sup>1</sup> unripe, raw.

Mz	škwíš	Hu	škué <sup>1</sup>
Ay	škʷhé	So	škwé <sup>21</sup>
Cq	škué <sup>1</sup>	Ix	škhué
Ja	škʷhé <sup>1</sup>	Lo	škiá
Do	kʷé	Te	škué

PPn 85. Expected reflex: Do kʷhé.

541. \*sta<sup>3</sup>yá<sup>31</sup> deaf.

Mz	štayá	So	te <sup>3</sup> yá <sup>32</sup>
Ay	štayá	Ix	štiyá
Ja	sta <sup>2</sup> yá <sup>2</sup>	Mg	tayá
Do	stayá	Lo	tayó
Hu	hta <sup>3</sup> yá <sup>3</sup> <u>deaf (voice not)</u>	Te	tayá

PPn 35. Expected reflexes: Ay st-; Te htayá; So /e/, Ix /i/ unexplained.

542. \*sthai<sup>3</sup> mushroom.

Mz	šthé	So	thai <sup>3</sup>
Ay	štheí	Ix	šthai <sup>1</sup>
Cq	šta <sup>2</sup> i <sup>2</sup>	Mg	thai <sup>1</sup>
Ja	stheí <sup>2</sup>	Lo	thai <sup>1</sup>
Do	stheí <sup>1</sup>	Te	thai <sup>1</sup>
Hu	thai <sup>3</sup>		

PPn 17; PMS 44. Expected reflexes: Ay -<sup>a</sup><sub>g</sub>; Cq <sup>s</sup>th<sup>e</sup><sub>g</sub>; Ja, Do -<sup>a</sup><sub>g</sub>; Mg, Lo -<sup>g</sup>; Te <sup>i</sup>--these vowel irregularities may be conditioned by the preceding \*sth- environment.

543. \*sthé<sup>1</sup> rubbish.

Mz	sthíre	<u>his nest</u>	Ji	thé
Ay	sthé		So	thé <sup>21</sup>
Cq	sthé		Ix	sthé
Ja	sthé <sup>1</sup>		Lo	thá
Do	sthé		Te	thé
Hu	thé <sup>1</sup>			

PPn 28. Mz -re 3p.

544. \*sthé<sup>1</sup> nest.

Mz	sthíra	nísoí	Lo	thá
Hu	thé <sup>1</sup> le <sup>4</sup>	ní <sup>4</sup> se <sup>3</sup>	Te	ntithé
Ji	théle	nísé		

Te nti- is unexplained. Hu nísé < \*ní<sup>4</sup>se<sup>3</sup> bird 333.

Mz -ra, Hu, Ji -le 3p. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

545. \*sthé<sup>3</sup> forehead.

Mz	sthýé		Ji	thé
Ay	sthé		So	thé <sup>3</sup>
Cq	sthé <sup>1</sup> ičá		Ix	sthé
Ja	sthé <sup>2</sup>		Mg	thé
Do	sthé		Lo	tithé <sup>3</sup>
Hu	thé <sup>3</sup>		Te	túthé

PPn 29. Expected reflex: Ay *šthé*; Cq -*?ičá* unexplained; Mz /y/ before /e/ unexplained, its phonemic status is doubtful; Lo -*?a* unexplained.

546. \**šti<sup>3</sup>* children.

Ja	<i>?i<sup>2</sup>sti<sup>2</sup></i>	Ix	<i>?isti</i>
Hu	<i>šti<sup>3</sup></i>	Mg	<i>?asti</i>
Ji	<i>šti</i>	Lo	<i>čiti</i>
So	<i>ni<sup>4</sup>sti<sup>3</sup></i>	Te	<i>ntišti</i>

Expected reflexes: Hu, Ji, Te -*hti*; So *niti*; Mg -*ti*; Lo -*te*. Lo *či-* unexplained. Ja, Ix *?i-*, Mg *?a-* perhaps < \*ya- nominal 725.

547. \**šti<sup>3</sup>* disrobes.

Ay	<i>k<sup>W</sup>hasti</i>	Hu	<i>ti<sup>1</sup>hna<sup>3</sup>hti<sup>3</sup></i>
Cq	<i>kišti</i>	Ix	<i>khi?isti</i>
Ja	<i>k<sup>W</sup>ha<sup>2</sup>sti<sup>2</sup></i>	Te	<i>kihtiá</i>
Do	<i>khisti</i>		

PPn 3. Hu *ti<sup>1</sup>hna<sup>3</sup>-* < \*-*hñá<sup>3</sup>* is 156; Cq, Hu, Ix, Te oral /i/ unexplained; Do, Ix *khi-* < \**khi<sup>3</sup>-* completive aspect 196; Ja *k<sup>W</sup>ha-* < \**k<sup>W</sup>há<sup>4</sup>* abstract thing 216; Te /a/ of /ia/ probably 1st person. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

548. \*štú rotten.

Ay	stú	Ix	štú
Ja	stú <sup>2</sup>	Lo	tí
Do	stú	Te	htú

The tone reconstruction is rather indeterminate; Ja tone <sup>2</sup> may < \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>s1</sup>, \*<sup>s2</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

549. \*štu<sup>s</sup>wá<sup>1</sup> short.

Mz	štuwá	Ji	htuwá
Ay	štuwá	Ix	štuwá
Cq	štuwá	Mg	towá
Ja	stu <sup>2</sup> wá <sup>1</sup> <u>round</u>	Lo	čiwó
Do	stuwá, tuwá <u>round</u>	Te	thuwá
Hu	htuá <sup>21</sup>		

PPn 310. Expected reflexes: Ay st-; Ji hta; Mg tuá; Lo ti-.

550. \*štý<sup>s</sup>(\*<sup>1</sup>) behind.

Mz	nkaštý	Hu	htý <sup>s</sup>
Ay	nkastý	So	nkatō
Cq	nkaštý	Ix	nkaštý
Ja	?i <sup>s</sup> stý <sup>1</sup>	Lo	nkotí <u>back</u>
Do	ngastý	Te	hahtō-

PPn 23. Expected reflexes: So -tý; Te -htý; Ja ?i<sup>s</sup>- unexplained. Mz, Ay, Cq, Ix nka-, Do nga-, Lo nko- < \*nka<sup>s</sup>- subordinating conjunction 340.

551. \*šú<sup>1</sup>(\*<sup>4</sup>) foam, spray.

Mz	šú	Hu	šu <sup>1</sup> ntú <sup>4</sup>
Ay	thišú	So	šú <sup>21</sup>
Cq	seišú	Ix	tišú
Ja	ti <sup>1</sup> šú <sup>3</sup>	Lo	ntoší
Do	tišú	Te	tišó

Expected reflex: Te -šú; Ay thi-, Cq sei- unexplained.  
Hu -ntu, Lo nto- < \*nág<sup>4</sup>ntá<sup>1</sup> water 270; Ja, Do, Ix, Te ti- <  
\*ti<sup>1</sup>- continuative aspect 589.

552. \*šu<sup>1</sup>hñay<sup>4</sup> lime.

Mz	šuhñý	Ji	šuhnó
Ay	šuhñý	Ix	šuhñý
Cq	šuhñý	Mg	šuhný
Ja	šu <sup>1</sup> hñó <sup>3</sup>	Lo	šihni <sup>1</sup>
Hu	šu <sup>1</sup> hny <sup>4</sup>	Te	suhny

PPn 159. Te /s/ unexplained; expected /š/. Mz, Ay, Ja,  
Hu reflexes of \*au unexplained; Hu, Ji, Mg, Lo and Te reflexes  
of \*hñ unexplained, cf. §4.11.2.3.

553. \*šú<sup>21</sup> landslide.

Ay	tiwišuyá	Hu	ki <sup>3</sup> šú <sup>1</sup>
Cq	tiwišuškareiyá	So	ki <sup>3</sup> šú <sup>3</sup> <sup>2</sup>
Ja	kwi <sup>2</sup> šu <sup>2</sup> yá <sup>2</sup> , t <sup>1</sup> i <sup>2</sup> wi <sup>2</sup> šu <sup>2</sup> yá <sup>2</sup>	Ix	khiwišuyá
Do	k <sup>w</sup> išuyá, tiwišuyá	Mg	kišú
		Te	kišú

Ay, Cq, Ja, Do, Ix -yá < \*yá inside 660; Cq -ška- unexplained; Ay, Cq, Ja, Do, Ix -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Hu, So, Mg, Te ki- < \*ki<sup>3</sup>- completive aspect 206; Ay ti- < \*ti<sup>1</sup>- continuative aspect 589. Ja expected tone <sup>1</sup> on -šu-. This etymon is perhaps related to foam 551.

554. \*šú<sup>3</sup> boils.

Mz	-šú	So	ci <sup>3</sup> šú <sup>2</sup> (< Pre-So * <sup>21</sup> - <sup>3</sup> )
Cq	sešú		<u>boil</u> .
Ja	ti <sup>1</sup> šu <sup>2</sup> hi <sup>2</sup>	Ix	tišú
Do	tišú	Lo	khini <sup>1</sup> ší
Hu	si <sup>1</sup> šú <sup>3</sup>	Te	tišú

PPn 11. Lo khi- < \*khi<sup>3</sup>- completive aspect 196; Lo -ni<sup>2</sup>- unexplained; Ja, Do, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The etymon is perhaps related to foam 551.

555. \*šu<sup>3</sup>hma<sup>1</sup> seed.

Ay	šuhmá <sup>2</sup> <u>small seed</u>	Ix	šuhmá <sup>2</sup>
Cq	šumá <sup>2</sup>	Lo	šihmá <sup>2</sup>
Ja	šu <sup>2</sup> hma <sup>1</sup> <u>small seed</u>	Te	šuhmá <sup>2</sup>
Do	šuhmá <sup>2</sup> <u>small seed</u>		
Hu	šu <sup>3</sup> hma <sup>1</sup> <u>chile seed</u>		

PPn 158. Expected reflex: Cq -hma<sup>2</sup>.

	556. *šu <sup>3</sup> ñú <sup>3</sup> , *ša <sup>3</sup> ñú <sup>3</sup> (* <sup>1</sup> - <sup>3</sup> ) <u>dew.</u>		
Ay	šuñú	Ji	šuñú
Cq	šuñú	So	šu <sup>2</sup> ñú <sup>3</sup> (< Pre-So * <sup>1</sup> - <sup>3</sup> )
Ja	šu <sup>2</sup> ñú <sup>2</sup>	Ix	šuñú
Do	šuñú	Lo	šoñí
Hu	šu <sup>3</sup> ñú <sup>3</sup>	Te	šañú

	557. *šu <sup>3</sup> wí <sup>1</sup> (*šu <sup>3</sup> <u>foam</u> 551) <u>termite.</u>		
Ay	thiušuwí	Do	šuwí
Cq	čiruwí	Ix	šuwí
Ja	šu <sup>2</sup> wí <sup>1</sup>		
	Cq /r/ may be regular development of *š following /č/ of preceding syllable. Cq či- probably < *čú <sup>4</sup> <u>animal</u> 107;		
Ay	thiu- < *t <sup>y</sup> hu <sup>3</sup> - <u>nominal</u> 616-620.		

	558. *šu <sup>3</sup> øú <sup>3</sup> <u>navel.</u>		
Ay	šuøú	Hu	šu <sup>3</sup> øú <sup>3</sup>
Cq	šuøú	Ix	šuøú
Ja	šøú <sup>21</sup>	Lo	šøøí
Do	šuøú	Te	šuøú

Expected reflex: Te šú; development of unstressed \*u unexplained. Ja tone <sup>1</sup> probably is an emphasis glide.

	559. *šu <sup>3</sup> øwá <sup>3</sup> , *ša <sup>3</sup> øwá <sup>3</sup> <u>lot (house site).</u>		
Ay	šuøwá	Hu	šu <sup>3</sup> øwá <sup>3</sup>
Cq	šaøuá	Ix	šuøwá
Ja	šøøwá <sup>2</sup>	Lo	šøøwó
Do	šuøwá	Te	šuwá

The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

560. \*šu<sup>4</sup>hy<sup>4</sup> paper.

Mz	šuhú	Ji	šy
Ay	šuhú	So	šu <sup>4</sup> hy <sup>4</sup>
Cq	šuhú	Ix	šuhú
Ja	šu <sup>s</sup> hý <sup>s</sup>	Mg	šy
Do	šuhú	Lo	ših <sup>f</sup>
Hu	šy <sup>4</sup>	Te	šuhú

PPn 177; PMS 48.

561. \*šu<sup>4</sup>tá<sup>4</sup>, \*ču<sup>4</sup>tá<sup>4</sup> person.

Mz	šutá	Ji	čitá
Ay	šutá	So	šu <sup>4</sup> tá <sup>4</sup>
Cq	šutá	Ix	šutá
Ja	šu <sup>s</sup> tá <sup>s</sup>	Lo	čhitó
Do	šutá	Te	šítá
Hu	ču <sup>4</sup> tá <sup>4</sup> , čhu <sup>4</sup> tá <sup>4</sup>		

PPn 198, 318. Expected reflex: Te either čitá or šutá; Lo /h/ in /čh/ cluster is unexplained.

562. \*šu<sup>4</sup>ti<sup>4</sup>, \*čhu<sup>4</sup>ti<sup>4</sup> tomato.

Mz	čhuti	So	šu <sup>4</sup> ti <sup>4</sup>
Ay	šuti	Ix	šuti
Cq	šúti	Mg	čhuti
Ja	čhu <sup>3</sup> ti <sup>3</sup>	Lo	čhité
Do	čhuti	Te	šiti
Hu	čhu <sup>4</sup> ti <sup>4</sup>		

PPn 2. Expected reflex: Ix šuti; Mg, Te nasalized /j/ unexplained.

563. \*šu<sup>4</sup>?wé<sup>4</sup>, \*ša<sup>4</sup>?wé<sup>4</sup> wasp.

Ja	tha <sup>8</sup> ?wé <sup>3</sup>	Ix	šu <sup>8</sup> wé
Do	tha <sup>8</sup> wé	Mg	še <sup>8</sup> wé
Hu	šu <sup>4</sup> ?wé <sup>4</sup>	Lo	kišo <sup>8</sup> wá
Ji	ša <sup>8</sup> wé	Te	šuwé
So	šu <sup>4</sup> ?wé <sup>4</sup>		

PPn 307; PMS 49. Expected reflex: Mg šuwé.

Development of tha- in Ja and Do unexplained. Lo ki- < \*ki<sup>s</sup>- completive aspect 206.

564. \*tahá, \*ntahá tough, hard.

Mz	tahá	So	ta <sup>8</sup> há <sup>21</sup>
Cq	táha	Ix	tahá
Ja	ndhá <sup>s</sup> <sup>2</sup>	Mg	tahá
Do	tahá	Lo	tohó
Hu	ta <sup>8</sup> há <sup>4</sup> <sup>s</sup>	Te	tahá
Ji	tahá		

Tone development in these reflexes is obscure.

565. \*ta<sup>4</sup>- no longer.

Ay	tah <sup>j</sup> ú <u>early</u>	Hu	ta <sup>4</sup> nhi <sup>j</sup> ú <sup>2</sup> <u>early (no longer</u>
Cq	tehñú <u>early</u>		<u>dark)</u>
Ja	ta <sup>4</sup> - <u>no longer</u> ; ta <sup>4</sup> hi <sup>j</sup> ú <sup>1</sup> <u>early</u>	So	tahnó <u>early</u>
Do	ta- <u>no longer</u> ; tahi <sup>j</sup> ú <sup>1</sup> <u>early</u>	Ix	tahñú <u>early</u>
		Lo	tohñí
		Te	tá

Ay expected reflex -hñú; Cq /e/ unexplained, expected /a/. This is a recent compound since Hu -nhi<sup>j</sup>ú is a reflex for initial position. Second syllable of disyllables < \*hñú<sup>2</sup> dark 158.

566. \*ta<sup>4</sup>ku<sup>3</sup>, \*tu<sup>4</sup>ku<sup>3</sup> (\*<sup>4</sup> - <sup>1</sup>) show me.

Ay	ta <sup>4</sup> ku <sup>3</sup> yá <sup>3</sup> -	Hu	ta <sup>4</sup> ku <sup>3</sup> nai <sup>13</sup>
Cq	takúmej <sup>1</sup>	Ix	tukuyé
Ja	ta <sup>3</sup> ku <sup>1</sup> yá <sup>2</sup>	Lo	tokinq <sup>2</sup> ó
Do	takuyá-	Te	takú

PPn 1. Te nasalization of /y/ unexplained; Hu -nai<sup>13</sup>, Lo -nq<sup>2</sup>ó unexplained; Cq -mej<sup>1</sup> unexplained; Ix -ye unexplained. Ay, Ja, Do -ya < \*yá inside 660.

567. \*taú money.

Mz	tó	Ji	tó
Ay	tó	So	tú <sup>4s</sup>
Cq	tuhú	Ix	tú
Ja	tó <sup>s2</sup>	Mg	tó
Do	tó	Lo	tí
Hu	taú <sup>4</sup>	Te	tú

Cq -hú < \*hú<sup>3</sup> on the surface 159; Cq expected reflex to-, but /y/ may have developed by anticipation of following /y/; So expected reflex tó. The tone development of these reflexes is obscure. This word may be borrowed from Spanish tomín a silver coin.

568. \*te<sup>1</sup>ncú<sup>4</sup> goat.

Mz	tencú	So	te <sup>3</sup> ncú <sup>24</sup> (< Pre-So * <sup>21</sup> - <sup>4</sup> )
Ay	tencú	Ix	tincú
Cq	teincú	Mg	tencú
Ja	te <sup>1</sup> ncú <sup>3</sup>	Lo	tancí
Do	čutencú	Te	tencú
Hu	ti <sup>2</sup> ncú <sup>4</sup>		

Expected reflex: Te tincú; Cq nasalization of /y/ unexplained. Hu expected tone <sup>1</sup>.

569. \*té<sup>2</sup> dances.

Ay	tité	Ji	té
Cq	tité	So	té <sup>1</sup>
Ja	ti <sup>1</sup> te <sup>2</sup> nki <sup>3</sup>	Ix	caté
Do	titenkí	Lo	kitá
Hu	ti <sup>1</sup> té <sup>2</sup>	Te	tité

PPn 12. Ix ca- probably continuative aspect; Ja, Do -nki < \*na<sup>3</sup>nki<sup>3</sup> land 254; Lo ki- < \*ki<sup>3</sup>- completive aspect 206; Ay, Cq, Ja, Do, Hu, Te ti- < \*ti<sup>3</sup>- continuative aspect 589.

570. \*té<sup>3</sup> ten.

Mz	té	Ji	té
Ay	té	So	té <sup>3</sup>
Cq	té	Ix	té
Ja	té <sup>2</sup>	Mg	té
Do	té	Lo	ta
Hu	té <sup>3</sup>	Te	té

PPn 9.

571. \*té<sup>3</sup> brilliant, shiny.

Ay	waté <u>to shine</u>	Ix	kihwaté
Cq	tiwaté	Mg	hwaté
Ja	ti <sup>1</sup> wa <sup>2</sup> tei <sup>3</sup> <u>to shine</u>	Lo	hwotá
Do	tiwateí	Te	tiwuté
Hu	wha <sup>3</sup> té <sup>3</sup>		

Ja, Do /i/ of /ei/ cluster unexplained. Hu, Ix, Mg -hwa-, Lo hwo- perhaps < \*hwa<sup>s</sup>,á<sup>s</sup> passes by 163; Ay, Cq, Ja, Do -wa-, perhaps Lo -wu- < \*wa<sup>s</sup>- verb auxiliary 630; Ix ki- < \*ki<sup>s</sup>- completive aspect 206; Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

572. \*te<sup>s</sup>yá<sup>1</sup> (\*<sup>4</sup> - <sup>s</sup>), \*té<sup>4s</sup> wide.

Mz	teyá	So	te <sup>s</sup> yá <sup>21</sup> , té <sup>s2</sup>
Ay	teyá	Ix	tiyá
Cq	teiyá	Mg	té
Ja	ta <sup>s</sup> yá <sup>2</sup>	Lo	tayó
Do	tayá	Te	tiyá
Hu	te <sup>4s</sup> yá <sup>s</sup> , té <sup>4s</sup>		
Ji	teyá		

PPn 335. Expected reflex: Hu, Ji ti-. Ja, Do development of /a/ in first syllable may be due to anticipation of /a/ in second syllable. Hu <sup>4s</sup> glide is unexplained.

573. \*te<sup>4</sup>ký<sup>s</sup> appearance, similarity.

Cq	tankoký	Lo	takokhi'íni
Ja	wa <sup>s</sup> te <sup>s</sup> ký <sup>2</sup>	Te	kuateký
Do	wateký		

Expected reflexes: Lo takí-; Cq ta- unexplained, expected tei-. Cq -nkó- perhaps < \*hnkú<sup>s1</sup> one 146; Ja, Do wa- < \*wa<sup>s</sup>- verb auxiliary 630; Lo -khi'í < \*khi<sup>s</sup>?<sup>s</sup>

appearance of 199. The reconstruction of tone on the final syllable is somewhat indeterminate; it may be \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

574. \*thaí<sup>3</sup> thick.

Mz	-thé	Ji	thaí, thé
Ay	thaí	So	thaí <sup>3</sup>
Cq	thaí	Ix	thaí
Ja	thaí <sup>2</sup>	Lo	thí
Do	thaí	Te	thaí
Hu	thaí <sup>3</sup>		

PPn 16. Expected reflexes: Cq theí; Lo thé; Te thí.

575. \*thaú<sup>2</sup> guards.

Ay	skhewethó	Hu	khue <sup>31</sup> thaú <sup>2</sup>
Ja	ti <sup>1</sup> we <sup>1</sup> thó <sup>2</sup>	Ix	c'iwíthú
Do	tiwethó	Lo	tinithí

Ay, Ja, Do /e/ unexplained; expected /i/; Ay skhe-unexplained. Ay, Ja, Do -we- < \*we<sup>3</sup>?é<sup>1</sup> hits 652; Ix -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Ix c'i- probably continuative aspect. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>32</sup>.

576. \*thaú<sup>2</sup> loves.

Ay	thó-	Mg	thú <u>love</u> , nathú- <u>the virgin</u>
Ja	thó <sup>2</sup>		<u>Mary</u>
Do	thó-	Lo	thí-
Hu	thau <sup>2</sup> ké <sup>43</sup>		

Expected reflex: Mg thó; Hu -ké<sup>43</sup> unexplained. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>32</sup>.

577. \*the<sup>3</sup>?é<sup>3</sup> magic, sorcery.

Mz	thé	So	the <sup>3</sup> ?é <sup>3</sup>
Ay	the?é	Ix	the?é
Ja	th?é <sup>2</sup>	Mg	th?é
Do	th?é, the?é	Lo	tha?á
Hu	thi <sup>3</sup> ?é <sup>3</sup>		

Expected reflexes: Mz th?V; Hu th?é<sup>3</sup>.

578. \*thé<sup>43</sup> itch.

Mz	thí	Ji	thé
Ay	thé	So	thé <sup>32</sup>
Cq	thé	Ix	thé
Ja	thé <sup>2</sup>	Mg	thé
Do	thé	Te	thé
Hu	thé <sup>43</sup>		

PPn 27.

579. \*-thé<sup>4</sup> arises.

Ay	*esethé	Ix	hwasuthé
Ja	wi <sup>2</sup> si <sup>2</sup> thé <sup>3</sup>	Lo	wosathá
Do	wisithé	Te	tiwisithé
Hu	wi <sup>3</sup> su <sup>1</sup> thé <sup>4</sup>		

Ay ?e- unexplained; -SV- in all forms unexplained. Ix hwa- < \*hwa<sup>3</sup>?á<sup>3</sup> passes by 163; Ja, Do, Hu, Te -wi- < \*wi<sup>s</sup>- verb auxiliary 655; Lo wo- < \*wa<sup>s</sup>- verb auxiliary 630; Te ti- < \*ti<sup>1</sup>- continuative aspect 589. This etymon probably is related to flies, follows 580.

580. \*thé<sup>4</sup> flies, follows.

Mz	tiwit <sup>y</sup> <sub>é</sub>	So	kithé
Ay	kithuthé	Ix	c'ahwithé
Cq	tiwithe	Mg	hwithe
Ja	ti <sup>1</sup> hwi <sup>2</sup> thé <sup>3</sup>	Lo	tithá
Do	tihwithe	Te	tuthe
Hu	whi <sup>2</sup> thé <sup>4</sup>		

Expected reflexes: Mz -thé; Cq -theí. Ay -thú, Lo tì-, Te tu- perhaps < \*t<sup>y</sup>hu<sup>s</sup>- nominal 616-620. Ay, So ki- < \*ki<sup>s</sup>- completive aspect 206; Ja, Do, Ix, Mg hwi- < \*hwi<sup>2</sup> goes 169; Mz, Cq -wi- < \*wi<sup>s</sup>- verb auxiliary 655; Mz, Cq, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589; Ay, So ki- < \*ki<sup>s</sup>- completive aspect 206. This etymon probably is related to arises 579.

581. \*thé<sup>4</sup>nkí<sup>s</sup> (\*thé<sup>4</sup> follows 580) behind.

Ay	tihwithenkiá	Hu	whi <sup>2</sup> thé <sup>4</sup> nkí <sup>s</sup> <u>pursue</u>
Cq	kuithenkí	Ix	c'ahwithenki
Ja	k <sup>w</sup> i <sup>2</sup> thé <sup>3</sup> nkí <sup>s</sup>	Lo	withankí
Do	k <sup>w</sup> ithenkíá lp.	Te	kuithenkí-

Expected reflexes: Cq -the<sup>1</sup>hi<sup>2</sup>-; Ix -thi<sup>1</sup>-; Lo hwi-. Ay, Hu, Ix -hwi-, Lo -wi- < \*hwi<sup>2</sup> goes 169; Ay /a/ of /ia/ cluster probably first person; Ix c<sup>2</sup>a- probably continuative aspect. The reconstruction of tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>21</sup>.

582. \*thi<sup>1</sup>hi<sup>2</sup><sup>4s</sup> (\*hi<sup>2</sup><sup>4s</sup> among 134) mixes.

Ay nkata <th>hi</th>	hi	So 'wehi'
Cq kaseikhašikhi'	Ix ñakhithihī'	
Ja n <sup>2</sup> e <sup>2</sup> thi <sup>1</sup> hi <sup>1</sup> <sup>2</sup>	Lo sikithihī'	
Do n <sup>2</sup> e <sup>2</sup> thi <sup>1</sup> hi <sup>1</sup>	Te tewathihī'	
Hu w <sup>2</sup> e <sup>1</sup> hi <sup>2</sup> <sup>4s</sup>		

PPn 181. Lo si- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26; Cq -ši- < \*ši<sup>3</sup>- connective 518; Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Lo ki- < \*ki<sup>3</sup>- completive aspect 206; Ja, Do n<sup>2</sup>e- unexplained; Hu w<sup>2</sup>e-, So 'we- < \*we<sup>3</sup>?é<sup>1</sup> hits 652. Ja expected tone reflexes <sup>1</sup> - <sup>2</sup>.

583. \*thi<sup>3</sup> round.

Mz thi	Ji thi
Ay thihi' <u>circle</u>	So thi <sup>3</sup> tu <sup>1</sup> wá <sup>21</sup>
Ja thi <sup>2</sup> <u>circle</u>	Mg thi
Do thi' <u>circle</u>	Lo cathi
Hu thi's	Te lithi

PPn 37. Te li- unexplained. Lo ca- perhaps < \*ca<sup>3</sup><sup>2</sup> if 6 and compounded after \*e > /i/ when preceded by back vowel. So -tu<sup>1</sup>wá<sup>21</sup> perhaps < \*štu<sup>3</sup>wá<sup>1</sup> short 549.

584. \*thi<sup>3</sup>yá<sup>3</sup> goes and comes.

Ay	tiwethiyá	Ix	cuhwathi <sup>2</sup> á
Cq	withiyá	Lo	wathiyó
Ja	ti <sup>1</sup> we <sup>1</sup> thi <sup>2</sup> yá <sup>2</sup>	Te	tiwithiyá
Do	tiwethiyá		

Ix expected reflex -yá rather than -<sup>2</sup>á; Ay, Ja, Do /e/ unexplained, expected /i/. Ix -hwa- < \*hwa<sup>3</sup>, <sup>2</sup>á<sup>3</sup> passes by 163; Ix cu- probably continuative aspect; Ay, Ja, Do -we- < \*we<sup>3</sup>, <sup>2</sup>é<sup>1</sup> hits 652; Cq, Te -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Lo -wa- (expected -wo-) < \*wa<sup>3</sup>- verb auxiliary 630; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

585. \*thi<sup>1</sup> there are.

Mz	thyé, thi <sub>2</sub>	Ji	thi <sub>2</sub>
Ay	thi <sub>2</sub>	So	thi <sup>21</sup>
Cq	thi <sub>2</sub>	Ix	thi <sub>2</sub>
Ja	thi <sup>1</sup>	Mg	thi <sub>2</sub>
Do	thi <sub>2</sub>	Lo	thi <sub>2</sub>
Hu	thi <sup>1</sup>	Te	thi <sub>2</sub>

PPn 137. Mz /y/ before /e/ is unexplained; its phonemic status is doubtful.

586. \*thia<sup>3</sup>(\*<sup>1</sup>) let's go.

Mz	thia <sup>á</sup>	So	thá <sup>is</sup> ñá <sup>ss</sup>
Ja	thia <sup>á<sup>21</sup></sup>	Ix	thia <sup>á</sup>
Do	thia <sup>á</sup>	Mg	thia <sup>á</sup>
Hu	thia <sup>á<sup>1</sup></sup>	Te	thia <sup>á</sup>
Ji	thia <sup>á</sup>		

PPn 180. So -ñá<sup>ss</sup> appears to be lp. pl. incl.

587. \*thú<sup>2</sup> first.

Mz	tithú	Ji	tithú
Ay	thú	So	thú, sithó, thó
Cq	thú	Ix	thú
Ja	thú <sup>2</sup>	Lo	ki <sup>nti</sup> tih <sup>í</sup> <u>oldest child</u>
Do	thú	Te	thú
Hu	ti <sup>1</sup> thú <sup>2</sup>		

Lo ki<sup>nti</sup>- < \*<sup>2</sup>nti<sup>1</sup> young 714; Mz ti- perhaps < \*ti<sup>3</sup> boy 592. The tone reconstruction is partially indeterminate; it is either \*<sup>2</sup> or \*<sup>3</sup>.

588. \*thú<sup>3</sup> out of.

Mz	thuyá <u>swells</u>	Hu	wi <sup>3</sup> thú <sup>3</sup> <u>goes out</u>
Ay	tiwethú <u>it drips</u>	Ji	withú <u>goes out</u>
Cq	khueithú	So	hathú <u>out of</u> , tithú <u>to</u>
Ja	k <sup>w</sup> hi <sup>2</sup> thú <sup>2</sup> <u>he comes out of</u> , <u>drip</u>		
	ti <sup>1</sup> wi <sup>2</sup> thú <sup>2</sup> <u>he goes out</u> , Lo wathí		
	ti <sup>1</sup> thú <sup>2</sup> <u>it drips</u>	Te	withú <u>goes out</u>
Do	k <sup>w</sup> hithú		

Mz -yá < \*yá inside 660; Cq khue-, Ja, Do k<sup>w</sup>hi- < \*hwí<sup>2</sup>  
goes 169; Ja, Hu, Ji, So, Te wi- < \*wi<sup>3</sup>- verb auxiliary 655;  
Lo wa- (expected wo-) < \*wa<sup>3</sup>- verb auxiliary 630; Ja, Ix ti-  
< \*ti<sup>1</sup>- continuative aspect 589; Ix ha- unexplained. The  
tone reconstruction is partially indeterminate; it is  
either \*<sup>3</sup> or \*<sup>31</sup>.

589. \*ti<sup>1</sup>- continuative aspect.

Mz tisé	<u>he sings</u>	Ji tisé	<u>he sings</u>
Ay tisé	<u>he sings</u>	So tifí	<u>he goes</u>
Cq tisé	<u>he sings</u>	Ix tisenthé	<u>he plants</u>
Ja ti <sup>1</sup> sé <sup>3</sup>	<u>he sings</u>	Lo tiwotakhó	<u>he cuts</u>
Do tisé	<u>he sings</u>	Te tisé	<u>he sings</u>
Hu ti <sup>1</sup> sé <sup>43</sup>	<u>he sings</u>		

590. \*ti<sup>1</sup>?wá<sup>4</sup> pig louse.

Ay ti?wá		So ti <sup>3</sup> ?wá <sup>24</sup>	(< Pre-So
Cq ti?uá		* <sup>21</sup> - <sup>4</sup> )	
Ja ti <sup>1</sup> ?wá <sup>3</sup>		Ix ti?wá	
Do ti?wá		Mg tiwá	
Hu ti <sup>1</sup> ?wá <sup>4</sup>		Lo ti?wó	
		Te tiwá	

591. \*tí<sup>s</sup> burns (y.).

Mz	tí	Ji	títí
Ay	títí	So	*we <sup>1</sup> tfí <sup>1</sup> (< Pre-So * <sup>s1</sup> - <sup>1</sup> )
Cq	seítí	Ix	títí
Ja	ti <sup>1</sup> tí <sup>s</sup>	Mg	tí
Do	títí	Lo	khingtí
Hu	w <sup>o</sup> e <sup>1</sup> ti <sup>s</sup>	Te	títí

PPn 113. Lo -no- unexplained; Cq sei- unexplained. Hu w<sup>o</sup>e-, So \*we- < \*we<sup>3</sup>é<sup>1</sup> hits 652; Lo khi- < \*khi<sup>3</sup>- completive aspect 196; Ay, Ja, Do, Ji, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

592. \*tí<sup>s</sup> boy.

Ja	tí <sup>s</sup> woman speaker with sg. <u>referent</u>	Ji	tí
Do	tí woman speaker with sg. <u>referent</u>	Mg	tí
Hu	tí <sup>s</sup>	Te	ntítí-

Te nti- < \*<sup>o</sup>ntí<sup>1</sup> little 714.

593. \*tís yá<sup>s</sup> empty.

Mz	kitiyá	Ji	khitiá
Ay	khitiyá	So	*we <sup>3</sup> ti <sup>s</sup> yá <sup>s</sup> (< Pre-So * <sup>s1</sup> - <sup>s</sup> - <sup>s</sup> )
Cq	tiyá	Ix	khitiyá
Ja	ti <sup>s</sup> yá <sup>s</sup>	Lo	khitiyó
Do	stiyá	Te	thiyá
Hu	khi <sup>s</sup> tiá <sup>s</sup>		

PPn 334. Expected reflex: Ji khitiyá; Te /h/ in /th/ cluster unexplained; Do /s/ in /st/ cluster unexplained. So ?we- < \*we<sup>3</sup>?é<sup>1</sup> hits 652; Ay, Hu, Ji, Ix, Lo khi- < \*khi<sup>8</sup>- completive aspect 196; Mz ki- < \*ki<sup>8</sup>- completive aspect 206.

594. \*ti<sup>4</sup>hí<sup>1</sup>, \*nti<sup>4</sup>hí<sup>1</sup> cooking pot.

Mz	tihí	Ji	tí
Ay	tihí	So	ti <sup>4</sup> hí <sup>21</sup>
Cq	tihí	Ix	tihí
Ja	ndhí <sup>31</sup>	Lo	tehé
Do	tihí	Te	tihí
Hu	tí <sup>4</sup> <sup>2</sup>		

PPn 39; PMS 1. Expected reflexes: Hu, Ji, Lo tihí. The presence of Ja nasal is difficult to explain. It was present in Ja before the \*h metathesis in the \*-VhV environment.

595. \*tí<sup>3</sup>?í<sup>3</sup> go (imperative).

Ay	tí <sup>3</sup>	Hu	tí <sup>3</sup> s
Cq	tí <sup>3</sup> í <sup>3</sup>	Ix	tí <sup>3</sup> í <sup>3</sup>
Ja	tí <sup>3</sup> <sup>2</sup>	Lo	tí <sup>3</sup> í <sup>3</sup>
Do	tí <sup>3</sup>	Te	tí <sup>3</sup>

Expected reflex: Ay tí<sup>3</sup>í<sup>3</sup>. Ix /a/ unexplained.

596. \*tká<sup>3</sup> bald, stubble.

Ay nkaká	<u>stubble</u>	Ix taká (< Pre-Ix *tká)
Ja ká <sup>2</sup>		
Do ká		Mg ká <u>stubble</u>
Hu hká <sup>3</sup>		Lo kó <u>bald</u> ; nkokó <u>stubble</u>
So tká <sup>3</sup> <u>bald</u> ; tka <sup>3</sup> tkú <sup>3</sup>		Te ?iská <u>stubble</u> <u>stubble</u>

Te ?i- unexplained. Ay nka- < \*nka<sup>3</sup>- subordinating conjunction 340.

597. \*tkú<sup>4</sup> head.

Mz hkú		So tkú <sup>4</sup>
Ay nintakú <u>3p.</u> , nintak <sup>Wá</sup> <u>lp.</u>	Ix nintatukú (< Pre-Ix	
Cq nintarkúča		*nintatkú)
Ja ní <sup>2</sup> nda <sup>2</sup> kú <sup>3</sup>	Mg kú	
Do níndakú <u>3p.</u> , níndak <sup>Wá</sup> <u>lp.</u>	Lo kí <u>3p.</u> , ké <u>lp.</u>	
Hu hkú <sup>4</sup>		Te skú <u>3p.</u> , skuá <u>lp.</u>
Ji hkú		

PPn 69; PMS 3. Ay, Cq, Ix ninta-, Ja, Do nínda- < \*ní<sup>3</sup>ntá<sup>3</sup> bone 317.

598. \*tku<sup>4</sup>nchá<sup>3</sup>, \*tku<sup>4</sup>ncá<sup>4</sup> (\*tkú<sup>4</sup> head 597) finger tip.

Mz kuncá		Hu hku <sup>4</sup> na <sup>4</sup> hma <sup>1</sup> nchá <sup>3</sup>
Ay skunchá <u>3p.</u> , skuncá <u>lp.</u>	Ix tukunchá <u>3p.</u> (< Pre-Ix *tku-),	
Cq rkunchá- <u>3p.</u> , rkuncá <u>lp.</u>		tukunca <sup>2</sup> á <u>lp.</u>
Ja ku <sup>3</sup> nchá <sup>2</sup> <u>3p.</u> , ku <sup>3</sup> ncá <sup>3</sup> <u>lp.</u>	Lo skuchá <u>3p.</u> , skuncá <u>lp.</u>	
Do kunchá <u>3p.</u> , kuncá <u>lp.</u>		

Expected reflexes: Mz hku-; Ay ku-; Lo ku-; Cq rkuchá; Lo ské-; Ix -'á is unexplained. Hu -na<sup>4</sup>hma<sup>1</sup>- < \*na<sup>4</sup>hma<sup>1</sup> bean 431. The tone reconstruction on -nchá is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

599. \*tk<sup>W</sup>hé<sup>s</sup> rough.

Mz	kwi	Hu	hkué <sup>s</sup>
Ay	k <sup>W</sup> hé	Ji	skué
Cq	rkhué	Ix	tukhué (< Pre-Ix *tkhué)
Ja	k <sup>W</sup> hé <sup>s</sup>	Mg	k <sup>W</sup> é
Do	k <sup>W</sup> hé	Te	skué

Expected reflexes; Mz hkwí; Ji hkué. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

600. \*tu<sup>2</sup>ci<sup>3</sup>?j<sup>8</sup> tree-trunk.

Ay	thuc?j	So	yatyok <sup>W</sup> ac?j
Ja	tu <sup>2</sup> c?j <sup>2</sup>	Ix	thuc?j
Do	tuc?j	Lo	tici?j
Hu	tu <sup>2</sup> c?j <sup>3</sup> <u>trunk, buttocks</u>	Te	tuc?j

Expected reflex: Ay -ci?j. So -tyock<sup>W</sup>ac?j is unexplained; Ay, Ix /h/ of /th/ cluster unexplained. So ya- < \*yá<sup>1</sup> wood 662. The tone on the last syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

601. \*tu<sup>s</sup>hú<sup>s</sup> dove (n.).

Ay	čatuhú	Do	čutuhú
Ja	ču <sup>s</sup> tu <sup>s</sup> hú <sup>s</sup>	Ix	tuhú
Ay ča- < *ča <sup>1</sup> - <u>person prefix</u> 55; Ja, Do ču- < *čú <sup>4</sup> <u>animal</u> 107. The tone reconstruction on the last syllable is rather indeterminate; it is either * <sup>2</sup> , * <sup>3</sup> , * <sup>31</sup> , * <sup>42</sup> , or * <sup>43</sup> .			

602. \*tu<sup>s</sup>ku<sup>4</sup>nkha<sup>s</sup> papaya.

Ja	tu <sup>2s</sup> nkha <sup>s</sup>	Ix	tukunkhá
Do	tunkhá		

The tone is partially indeterminate on the last syllable; it is either \*<sup>3</sup> or \*<sup>31</sup>.

603. \*tu<sup>s</sup>ntí<sup>4</sup> cherry.

Ay	yatuntí	So	yatontí
Ja	tu <sup>2</sup> ntí <sup>s</sup>	Ix	tuntí
Do	tuntí		

Expected reflex: So -tu-. Ay, So ya- < \*yá<sup>1</sup> wood 661.

604. \*tu<sup>s</sup>ta<sup>s</sup>, \*ta<sup>1</sup>ta<sup>s</sup> tree (yolosuchil).

Ay	yanašututá	Hu	ya <sup>1</sup> ta <sup>s</sup> <u>oak</u>
Cq	tutá	So	totahá
Ja	tu <sup>2</sup> ta <sup>s</sup>	Ix	yatutá
Do	yatutá	Te	tutahá
Ay, Do, Hu, Ix ya- < *yá <sup>1</sup> <u>wood</u> 661; Ay -našu- < *na <sup>3</sup> šú <sup>1</sup> <u>flower</u> 248.			

605. \*tú<sup>s1</sup> fruit.

Mz	tunchú	<u>onion</u>	Ji	tuchú	<u>onion</u>
Ay	tú		So	tú <sup>s2</sup>	
Cq	tú		Ix	tú	
Ja	tú <sup>2</sup>		Mg	tú	
Do	tú		Lo	tí	
Hu	tú <sup>s</sup> , tú <sup>2</sup>	<u>fruit, round</u>	Te	tú	
		<u>thing</u>			

PPn 36. Mz -nchú, Ji -chú < \*nchú<sup>4</sup> onion 291.

606. \*tu<sup>4</sup>- just, only.

Ay	tuk <sup>w</sup> áni <sub>č</sub>	Do	tumáni <sub>č</sub>
Cq	tuméni <sub>č</sub>	Hu	tu <sup>4</sup> -
Ja	tu <sup>s</sup> má <sup>1</sup> ní <sup>2</sup>	Ix	tahñáni <sub>č</sub> <u>everywhere</u>

PPn 21. Ay -k<sup>w</sup>a- is unexplained. Cq -me<sub>č</sub>, Ja, Do -ma<sub>č</sub>  
 Ix hñá<sub>č</sub> where; Ay, Cq, Ja, Do, Ix -ní<sub>č</sub> < \*-ní<sup>s</sup> thing 311.

607. \*ty<sup>s</sup>wé<sup>1</sup> fierce, angry.

Hu	tyá <sup>č</sup> <sup>21</sup>	<u>fierce</u>	So	tó <sup>s</sup> wé <sup>č</sup> <sup>21</sup>	<u>he hates</u>
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PPn 317. Hu /a/ unexplained, expected /e/; So expected reflex ty-.

608. \*tya<sup>3</sup>wá<sup>s</sup>, \*tyu<sup>3</sup>wá<sup>s</sup> white.

Mz	tawá	Ji	čá
Ay	tiwá	So	tya <sup>3</sup> wá <sup>s</sup>
Cq	tiawá	Ix	tiwá
Ja	ta <sup>2</sup> wá <sup>2</sup>	Mg	tiá
Do	tawá	Lo	čiwo
Hu	čuá <sup>s</sup>	Te	čuwá

PPn 312; PMS 5. Expected reflex: Mz tiwá.

609. \*tya<sup>4</sup>wá<sup>4</sup>, \*tyu<sup>4</sup>wá<sup>4</sup> plate.

Mz	tiwá	Ji	čuwá
Ay	tiwá	So	tyu <sup>4</sup> wá <sup>4</sup>
Cq	tiuwá	Ix	tiwá
Ja	ta <sup>3</sup> wá <sup>s</sup>	Mg	tiá, tiuwá
Do	tawá	Lo	čiwo
Hu	čuá <sup>4</sup>	Te	čuwá

PPn 311. Expected reflex: Ji čá.

610. \*thyá<sup>3</sup> arm, shoulder.

Mz	thyá	Ji	čhá
Ay	thiá-	So	thyá <sup>s</sup>
Cq	thiá-	Ix	thiána <u>my arm</u>
Ja	thiá <sup>2</sup>	Mg	thiá
Do	thiá	Lo	čhó-
Hu	čhá <sup>s</sup>	Te	čhá-

PPn 40. Ix -na first person singular.

## A.611

611. \*t<sup>y</sup>ha<sup>3</sup>wé<sup>3</sup>, \*t<sup>y</sup>hu<sup>3</sup>wé<sup>3</sup> transparent, thin.

Ay	thawé	So	thyawé
Cq	thiawé	Ix	thiwé
Ja	tha <sup>2</sup> wé <sup>2</sup>	Mg	thiawé
Do	thawé	Te	čuwé
Hu	čhué <sup>3</sup>		

Expected reflexes: Ay thi-; Mg thié; Te čhuwé. In Hu  
\*w > Ø before \*t<sup>y</sup>h > /čh/.

612. \*t<sup>y</sup>ha<sup>3</sup>?y<sup>2</sup> fifteen.

Mz	thyó	Ji	čhu?ý
Ay	thiø?ó	So	thyaø?ý
Cq	thiø?ó	Ix	thiø?ó
Ja	thiø <sup>2</sup>	Mg	thiø?ý
Do	thiø?ý	Lo	čhi?ý
Hu	čha <sup>3</sup> ?ay <sup>2</sup>	Te	čhó

Expected reflexes: Mz th?ý; Cq thiø?ó; Ja, Do th?ø<sup>2</sup>:  
Hu čh?ay<sup>2</sup>; Ji čh?ý; Ix thiø?ý; Mg th?ø<sup>2</sup>; Lo čh-; Te čhiy<sup>2</sup>.

It is clear that the reflexes developed from \*au, but the precise development is not explained.

613. \*t<sup>y</sup>ha<sup>4</sup>wa<sup>4</sup>ší<sup>1</sup>, \*t<sup>y</sup>hu<sup>4</sup>wa<sup>4</sup>ší<sup>1</sup> (\*<sup>3</sup> - <sup>3</sup> - <sup>1</sup>) skin.

Mz	thawá	Hu	čhuá <sup>4</sup>
Ay	thiuší	So	thyá <sup>3</sup>
Cq	thiuší	Ix	thisí
Ja	tha <sup>3</sup> wa <sup>3</sup> ší <sup>1</sup>	Te	čhuá
Do	thawaší		

PPn 322. Expected reflexes: Mz thiwá; Ay thiší; Ja, Do thia-; Te čhuwá. Ay, Cq, Ja, Do, Ix -ší < \*sí<sup>2</sup> apart 524. In Hu \*w > Ø before \*t<sup>y</sup>h > /čh/.

614. \*t<sup>y</sup>hau<sup>1</sup> cornhusk.

Mz	thyó	Ji	čhó
Ay	thió	So	thyó <sup>s1</sup>
Cq	thió	Ix	thiú
Ja	thió <sup>1</sup>	Mg	čhó, thió
Do	thió	Lo	čhé
Hu	čhau <sup>1</sup> , šhau <sup>1</sup>	Te	čhú

PPn 41; PMS 11.

615. \*t<sup>y</sup>hau<sup>s</sup> horn (musical instrument).

Ay	thió	Hu	čhau <sup>s</sup> , šhau <sup>s</sup>
Cq	thió	Ix	thiú
Ja	thió <sup>2</sup>	Te	čú
Do	thió		

Expected reflex: Te čhú. The tone reconstruction is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

616. \*t<sup>y</sup>hu<sup>s</sup>cé<sup>1</sup> (\*<sup>4</sup> - <sup>1</sup>) (\*t<sup>y</sup>hu<sup>s</sup>- nominal) pus.

Ay	thiuce	Ji	ntašicé
Cq	tice	Ix	thicé
Ja	thi <sup>s</sup> cé <sup>1</sup>	Lo	čhicá
Do	čicé	Te	ntašicé
Hu	nta <sup>1</sup> ši <sup>s</sup> cé <sup>1</sup>		

PPn 92; PMS 9. Expected reflexes: Cq, Ja, Do thiū-; Lo čhič-. Do či- unexplained. Ji, Te -ši- probably borrowed from Hu or else < \*ši<sup>3</sup>- connective 518. Hu, Ji, Te nta- < \*na<sup>4</sup>ntá<sup>1</sup> water 270.

617. \*t<sup>y</sup>hu<sup>3</sup>nkú<sup>1</sup> (\*t<sup>y</sup>hu<sup>3</sup>- nominal) gum.

Ay	thinkú	Ji	čhunkú
Cq	thiunkú	Ix	thinkú
Ja	thi <sup>2</sup> nkú <sup>1</sup>	Mg	thiunkú
Do	thenkú	Lo	čhič'nkí
Hu	šu <sup>3</sup> nkú <sup>1</sup>	Te	čhunkú

PPn 288. Expected reflexes: Ja, Do thi-; Hu čh-; Ji čhunkú; Lo čhinkí.

618. \*t<sup>y</sup>hu<sup>4</sup>hma<sup>1</sup> (\*t<sup>y</sup>hu<sup>4</sup>- nominal) mucus.

Ay	thiohmá	So	thyu <sup>4</sup> ma <sup>1</sup> <sup>2</sup>
Cq	thiumá	Ix	tihmá
Ja	te <sup>3</sup> hma <sup>1</sup>	Mg	šuhmá
Do	tehmá	Lo	čihmá
Hu	šu <sup>4</sup> hma <sup>1</sup>	Te	šuhmá

PPn 201. Expected reflexes: Ay thihmá, Cq thiuhmá; Ja thiū-; Do the-; Hu čh-; Ix thihmá; Lo čhihmá. Mg, Te šu- probably borrowed from Hu or else < \*šú<sup>1</sup>(\*<sup>4</sup>) foam, spray 551. Ja, Do te- < \*nta<sup>1</sup>na<sup>3</sup>té<sup>1</sup> saliva 353. So expected tone reflexes <sup>4</sup> - <sup>21</sup>.

619. \**t<sup>y</sup>hu<sup>4</sup>nkú<sup>4</sup>* (\**t<sup>y</sup>hu<sup>4</sup>- nominal*) fist.

Mz	thinkú	Ji	čhunkú
Ay	thinkú	So	thyu <sup>4</sup> nkú <sup>4</sup>
Cq	thiunkú	Ix	thinkú
Ja	thi <sup>s</sup> nkú <sup>s</sup>	Mg	thiunkú
Do	thenkú	Lo	č̥inkí
Hu	šu <sup>4</sup> nkú <sup>4</sup>	Te	čhankú

PMS 10. Expected reflexes: Ja, Do thiu-; Hu čh-;  
Lo čhinkí.

620. \**t<sup>y</sup>hu<sup>4</sup>wí<sup>4</sup>* (\**t<sup>y</sup>hu<sup>4</sup>- nominal*) cradle.

Ay	thi <sup>s</sup> wí	So	thyu <sup>s</sup> wí
Hu	šu <sup>4</sup> wí <sup>4</sup>	Mg	thiuw <sup>s</sup> i

Expected reflex: Hu čh-.

621. \**t<sup>y</sup>i<sup>s</sup>ñá<sup>s</sup>i* near.

Mz	tiñá	Ji	čiñá
Ay	tiñá	So	ti <sup>s</sup> ñá <sup>s</sup> í
Cq	tiñá	Ix	tiñá
Ja	ti <sup>1</sup> ñá <sup>2</sup>	Mg	tiñá
Do	tiñá	Lo	čiñó
Hu	čiñá <sup>3</sup>	Te	čiñá

PPn 294; PMS 4. Ja expected tones <sup>2</sup> - <sup>2</sup>.

622. \*<sup>t</sup><sub>y</sub>ká<sup>4</sup> blind.

Mz	hká	Hu	šká <sup>4</sup>
Ay	ká	So	tyká
Cq	rká	Ix	tiká
Ja	ká <sup>3</sup>	Te	šká
Do	ká		

623. \*<sup>t</sup><sub>y</sub>kú<sup>1</sup> knee, joint.

Mz	kú	Ji	škú
Ay	kú	So	tykú <sup>21</sup>
Cq	rkú-	Ix	tikuncukú
Ja	kú <sup>13</sup>	Mg	škú
Do	kú	Lo	ški <sup>2</sup> á <u>3p.</u> , škíng <u>1p.</u>
Hu	škú <sup>1</sup>	Te	škú

PMS 7. Expected reflex: Mz hkú. Ix -ncukú < \*nca<sup>4</sup>kú<sup>4</sup> foot 284, Ja expected tone <sup>1</sup>.

624. \*<sup>t</sup><sub>y</sub>ku<sup>1</sup>nca<sup>3</sup>mé<sup>3</sup>, \*<sup>t</sup><sub>y</sub>ku<sup>1</sup>ncu<sup>3</sup>mé<sup>3</sup> (\*<sup>t</sup><sub>y</sub>ku<sup>1</sup>- joint 623)  
elbow.

Mz	ncamé	So	tyku <sup>3</sup> nta <sup>2</sup> mé <sup>3</sup> (< Pre-So * <sup>21</sup> - <sup>3</sup> - <sup>3</sup> )
Ay	nkuncá		
Cq	ncá	Ix	tikunca <sup>2</sup> á <u>1p.</u> , tikunchá <u>3o.</u>
Ja	ku <sup>2</sup> ncá <sup>3</sup> <sup>2</sup>	Lo	škincahá
Do	kuncá	Te	škuncá
Hu	ncu <sup>3</sup> mé <sup>3</sup>		

PPn 229. Lo -ha unexplained, also expected -nco-.  
 Expected reflex in Ay ku- rather than nku-. Ja expected tone  
 reflexes <sup>2</sup> - <sup>3</sup>.

625. \*t<sup>y</sup>ku<sup>1</sup>nčí<sup>3</sup> (\*t<sup>y</sup>ku<sup>1</sup> joint 623) kneels.

Ay	tisekunčí	Hu	wa <sup>3</sup> sé <sup>2</sup> škú <sup>1</sup> nčí <sup>3</sup>
Cq	tiškunčíčá	Ix	sekú tiku
Ja	ti <sup>3</sup> sí <sup>3</sup> ky <sup>1</sup> nčí <sup>3</sup>	Lo	sahngskí <sup>2</sup> nčí
Do	tiwasikunčí	Te	siskunčí-

PPn 112. Expected reflex: Lo -<sup>2</sup>nčé, Cq expected /rk/ rather than /šk/ unless this is the development of \*t<sup>y</sup>k in word non-initial position, cf. 623; Lo, Te expected /šk/.  
 Development of \*<sup>2</sup> unexplained. Do, Hu wa- < \*wa<sup>3</sup>- verb auxiliary 630; Ay, Hu -sé-, Ja -sí-, Do, Te -si-, Ix se-verbal element; Ay, Cq, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

626. \*t<sup>y</sup>k<sup>wá</sup> short.

Cq	skuá	Do	k <sup>wá</sup>
Ja	k <sup>wá</sup> <sup>2</sup>	Ix	tikuá

Expected reflex: Cq rkuá. The tone reconstruction is rather indeterminate. Ja tone <sup>2</sup> reflex may < \*<sup>2</sup>, \*<sup>3</sup>, \*<sup>31</sup>, \*<sup>32</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

627. \*t<sup>y</sup>k<sup>w</sup>á<sup>1</sup> snail.

Mz	hkwa	Ji	škuá
Ay	k <sup>w</sup> á	So	tykwá <sup>21</sup>
Cq	rkuá	Ix	tikuá
Ja	k <sup>w</sup> á <sup>1</sup>	Lo	ntoškó
Do	k <sup>w</sup> á	Te	škuá
Hu	škuá <sup>1</sup>		

PPn 82; PMS 8. Gudschinsky notes that the Ji form is probably borrowed since this is the only occurrence of /kw/ in her Ji data.

628. \*t<sup>y</sup>u<sup>1,2</sup>á<sup>1</sup> pieces (n.).

Hu	č <u>?</u> ua <sup>1</sup>	Mg	t <sup>y</sup> ia
Ji	č <u>?</u> á		

PMS 12. Expected reflex: Ji č?á.

629. \*wa<sup>2</sup>á weave.

Ay	tiwa <sup>2</sup> á	Ix	c <sup>y</sup> awa <sup>2</sup> á
Ja	ti <sup>1</sup> wha <sup>1,2</sup> á <sup>3</sup>	Lo	wo <sup>2</sup> ó
Do	tihwa <sup>2</sup> á	Te	tiwa <sup>2</sup> á
Hu	wa <sup>21,2</sup> á <sup>3</sup>		

PPn 324. Expected reflex: Te tiwá. Ja -wha- obscure, seems related to Ixcatec form ba<sup>3</sup>ha<sup>3</sup> (PPn 324) and perhaps PMaz form should be reconstructed \*waha<sup>2</sup>á; Do -hwa- < \*hwa<sup>3,2</sup>á<sup>3</sup> passes by 163; Ix c<sup>y</sup>a- probably continuative aspect; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589. Tone development in these reflexes is obscure.

630. \*wa<sup>s</sup>- verb auxiliary.

Cf. 631, 633-642, etc.

631. \*wa<sup>s</sup>cé<sup>s</sup> (\*wa<sup>s</sup>- verb auxiliary 630) buys.

Mz	tiwaci	Hu	wa <sup>s</sup> cé <sup>s</sup>
Ay	tiwacé	So	?wa <sup>s</sup> cé <sup>s</sup>
Cq	kawacé	Ix	cuwacé
Ja	ti <sup>1</sup> wa <sup>s</sup> cé <sup>s</sup>	Mg	wacé
Do	tiwacé	Te	tiwucé

PPn 91. So /?/ unexplained; Mz, Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

632. \*wa<sup>s</sup>há<sup>1</sup> 3p., \*nk<sup>w</sup>a<sup>s</sup>há<sup>1</sup> 1p. hits.

Ay	tiwaháre <u>3p.</u> , nk <sup>w</sup> aháre <u>1p.</u>	Do	tiwahára
Cq	tiwahá <u>3p.</u> , nkuahári <u>1p.</u>	Lo	tiwahá <u>3p.</u> , nk <sup>w</sup> ahá <u>1p.</u>
Ja	ti <sup>1</sup> whá <sup>2</sup> <u>3p.</u> , ng <sup>w</sup> há <sup>3</sup> <u>1p.</u>	Te	tiwahára

PPn 309. Lo expected reflex -ohó; Ja expected tone <sup>1</sup>.Ay, Cq, Ja, Do, Lo, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.633. \*wa<sup>s</sup>hú<sup>s</sup> (\*wa<sup>s</sup>- verb auxiliary 630) hungry.

Mz	wahóra	Hu	wau <sup>s</sup>
Ay	wohó-	So	wa <sup>s</sup> hó <sup>1</sup> re <sup>4</sup>
Cq	wohó	Ix	wahú
Ja	whó <sup>2</sup>	Lo	wíhí
Do	wohó	Te	?ihú

Expected reflex: Mz -hú. Te /?/ unexplained, perhaps part of the apparently growing pattern of initial consonant replacement by glottal. Hu expected tone reflex <sup>43</sup>.

634. \*wa<sup>s</sup>ka<sup>1</sup> (\*wa<sup>s</sup>- verb auxiliary 630) burns.

Ay	tiwaká	Te	tiwaká
Hu	wa <sup>s</sup> ka <sup>1</sup>		

PPn 53. Ay, Te ti- < \*ti<sup>1</sup>- continuative aspect 583.

635. \*wa<sup>s</sup>ki<sup>s</sup> (\*wa<sup>s</sup>- verb auxiliary 630) suckles, nurses.

Mz	kwaki	Hu	wa <sup>s</sup> ki <sup>s</sup>
Ay	tiwaki	So	khiwaki
Cq	tiwaki	Ix	c'uwaki
Ja	ti <sup>1</sup> wa <sup>s</sup> ki <sup>s</sup>	Lo	woki
Do	tiwaki	Te	tiwaki

Lo expected -ké unless \*wa- was compounded after \*i > Lo /e/ when preceded by back vowel. Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; So khi- < \*khi<sup>s</sup>- completive aspect 196; Ix c'u- probably continuative aspect. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

636. \*wa<sup>3</sup>kú<sup>1</sup> (\*wa<sup>3</sup>- verb auxiliary 630) shows, teaches.

Mz	tiwakuyá	<u>he is teaching</u>	So	wa <sup>3</sup> kú <sup>21</sup>
Ay	tiwakuyá-		Ix	c <sup>2</sup> uwukuyá
Cq	tiwikuyá		Mg	wakú
Ja	ti <sup>1</sup> wa <sup>3</sup> kú <sup>1</sup>		Lo	wokiyó
Do	tiwakú		Te	tiwakú
Hu	wa <sup>3</sup> kú <sup>1</sup>			

PPn 62. Mz, Ay, Cq, Ix -ya', Lo -yo' < \*yá inside 660;  
Mz, Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589;  
Ix c<sup>2</sup>u continuative aspect.

637. \*wa<sup>3</sup>na<sup>4</sup>čá<sup>4</sup> (\*wa<sup>3</sup>- verb auxiliary 630) falsehood.

Ay	tiwanačá	So	wa <sup>3</sup> na <sup>4</sup> čá <sup>4</sup> (< Pre-So
Ja	ti <sup>1</sup> wa <sup>3</sup> na <sup>4</sup> čá <sup>2</sup>		* <sup>3</sup> - <sup>4</sup> - <sup>4</sup> )
Do	tiwanačá	Te	tikunačá
Hu	w <sup>2</sup> a <sup>3</sup> na <sup>4</sup> čá <sup>4</sup>		

Hu, So /?/ unexplained. Te tiku- perhaps < \*ky<sup>3</sup> alive 214; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

638. \*wa<sup>3</sup>né<sup>1</sup> (\*wa<sup>3</sup>- verb auxiliary 630) washes (clothes).

Mz	twané	Hu	wa <sup>3</sup> né <sup>1</sup>
Ay	tiwané	Ji	wané
Cq	khuekuanejé	Ix	cumañé
Ja	ti <sup>1</sup> wa <sup>3</sup> né <sup>1</sup>	Mg	wané
Do	tiwané		

PPn 243. Cq khwekua- unexplained. Ix cu- probably continuative aspect; Ix ma<sup>g</sup>- < \*má<sup>s</sup> able 227; Ay, Ja, Do ti- < \*ti<sup>1</sup>- continuative aspect 589.

639. \*wa<sup>3</sup>nká<sup>42</sup> (\*wa<sup>3</sup>- verb auxiliary 630) flees.

Ay	ca <sup>8</sup> nká <sup>8</sup>	Hu	ma <sup>3</sup> nká <sup>8</sup> <u>chase</u> , <u>flee</u> ; tu <sup>8</sup> ká <sup>8</sup> ,
Cq	tiwanká		thu <sup>8</sup> ká <sup>43</sup> <u>run</u>
Ja	ti <sup>1</sup> wa <sup>2</sup> nká <sup>2</sup>	So	tho <sup>8</sup> khá <sup>81</sup>
Do	tiwanká	Ix	camanká
		Lo	conkó
		Te	tiwanká

PPn 284. Expected reflex: So thu<sup>8</sup>nká<sup>81</sup>. Loss of /n/ in Hu probably a development in Hu. Ay, Ix ca- and Lo co-probably continuative aspect; Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Hu, Ix ma<sup>g</sup>- < \*má<sup>s</sup> able 227.

640. \*wa<sup>3</sup>nku<sup>2</sup>yá<sup>8</sup> (\*wa<sup>3</sup>- verb auxiliary 630, \*yá<sup>s</sup> inside 660) bathes.

Mz	ticikankuyá <u>he is</u> <u>bathing someone</u>	Hu	wa <sup>8</sup> nku <sup>2</sup> yá <sup>8</sup> <u>bathe</u>
		So	mj <sup>8</sup> nku <sup>1</sup> <u>bathe</u>
Ay	tihwikintú	Ix	cuhwinkuyá
Cq	khuintuyá	Mg	wankuyá
Ja	k <sup>W</sup> hi <sup>2</sup> ngu <sup>2</sup> yá <sup>2</sup>	Lo	kohwikintiyó
Do	k <sup>W</sup> inguyá	Te	khuinkuyá

PPn 73. So mj<sup>8</sup>- unexplained; Ay, Cq, Lo ntu-, ntí- unexplained. Ix cu- probably continuative aspect; Ix, Lo

-hwi- < \*hwí<sup>2</sup> goes 169; Mz, Ay ti- < \*ti<sup>1</sup>- continuative aspect 589; Mz ci- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26. Tone on the last syllable is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

641. \*wa<sup>3</sup>sti<sup>4s</sup> (\*wa<sup>3</sup>- verb auxiliary 630) defecates.

Ay	tihwatí	Hu	wa <sup>3</sup> hti <sup>4s</sup>
Cq	kiwaští	Ix	c <sup>2</sup> uhwati
Ja	ti <sup>1</sup> wa <sup>2</sup> ti <sup>2</sup>	Lo	wotí
Do	tiwati	Te	tiwati

PPn 4. Expected reflexes: Ay, Ja, Do -stí; Ix -ští; Lo -té; Te -htí. Ix c<sup>2</sup>u- probably continuative aspect; Ay, Ix -hwa- < \*hwa<sup>3</sup>?á<sup>3</sup> passes by 163; Cq ki- < \*ki<sup>3</sup>- completive aspect 206; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

642. \*wa<sup>3</sup>te<sup>1</sup> (\*<sup>3</sup> - <sup>3</sup>) (\*wa<sup>3</sup>- verb auxiliary 630) thatches.

Ay	tiwaté	Hu	ti <sup>1</sup> wa <sup>3</sup> te <sup>1</sup>
Cq	tiwaté	Ix	c <sup>2</sup> awaté
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>2</sup>	Lo	wotá
Do	tiwaté	Te	tiwaté

Ix c<sup>2</sup>a- probably continuative aspect; Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

643. \*wa<sup>s</sup>te<sup>1</sup>čá<sup>3</sup> (\*wa<sup>s</sup>té<sup>1</sup> thatch 642, \*-čá<sup>3</sup> broom

529) sweeps.

Ay	tiwečá	Hu	wa <sup>s</sup> te <sup>1</sup> čá <sup>3</sup>
Cq	kuiteičá	Ix	c <u>w</u> uwatičá
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>1</sup> čá <sup>2</sup>	Lo	wotačó
Do	tiwatečá	Te	tiwitičá

Expected reflexes: Ay -watečá; Te -tečá. Te wi- < \*wi<sup>3</sup>-  
verb auxiliary 655; Ix cw- probably continuative aspect; Cq  
kui- unexplained; Ay, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

644. \*wa<sup>s</sup>te<sup>1</sup>ná<sup>s</sup>, \*wa<sup>s</sup>te<sup>1</sup>ñá<sup>s</sup> (\*wa<sup>s</sup>- verb auxiliary 630)  
sells.

Mz	tiwateñá	So	wa <sup>s</sup> te <sup>s</sup> ñá <sup>2</sup> (< Pre-So
Ay	tiwateñá		* <sup>3</sup> - <sup>21</sup> - <sup>3</sup> )
Cq	tiwiteiñá	Ix	cuwateñá
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>1</sup> ñá <sup>2</sup>	Mg	watena
Do	tiwateñá	Lo	watano
Hu	wa <sup>s</sup> te <sup>1</sup> ná <sup>s</sup>	Te	tiwatihñá

PPn 247, 304. Expected reflex: Ix cuwateñá; Te /h/  
in /hn/ cluster unexplained, expected -tená. Cq wi- < \*wi<sup>3</sup>-  
verb auxiliary 655; Ix cu- probably continuative aspect; Mz,  
Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

645. \*wa<sup>s</sup>te<sup>1</sup>ntá<sup>1</sup> (\*wa<sup>s</sup>- verb auxiliary 630, \*ntá<sup>1</sup>  
water 270) baptize.

Mz	tiwatentá	Hu	wa <sup>s</sup> te <sup>1</sup> ntá <sup>1</sup>
Ay	tiwatentá	So	wa <sup>s</sup> te <sup>21</sup> ntá <sup>21</sup>
Cq	šteintá	Ix	tisutintá
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>1</sup> ntá <sup>1</sup>	Lo	sotantó
Do	tiwatentá	Te	tiwatentá

646. \*wa<sup>s</sup>te<sup>3</sup> (\*wa<sup>s</sup>- verb auxiliary 630) cuts.

Mz	tiweteyá	Ji	waté
Ay	tiwate	So	wa <sup>s</sup> te <sup>3</sup>
Cq	tiwate	Ix	c <sup>o</sup> awaté
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>2</sup> ya <sup>2</sup>	Mg	waté
Do	tiwateyá	Lo	tiwotá
Hu	wa <sup>s</sup> té <sup>3</sup> , si <sup>1</sup> ka <sup>s</sup> te <sup>3</sup>	Te	waté

Mz /e/ in -we- unexplained; the expected reflex /a/.

Mz, Ja, Do -yá < \*yá inside 660; Hu si- < \*-ci<sup>1</sup>?i<sup>1</sup>- do 26;  
-ka- < \*ka<sup>2</sup>- completive aspect 172; Ix c<sup>o</sup>a- probably  
continuative aspect; Mz, Ay, Cq, Ja, Do, Lo ti- < \*ti<sup>1</sup>-  
continuative aspect 589.

647. \*wa<sup>s</sup>te<sup>s</sup>khá<sup>1</sup> (\*wa<sup>s</sup>te<sup>3</sup> cuts 646, \*khá<sup>1</sup> across 180)  
cuts.

Ay	kičakhašnijá	Hu	wa <sup>s</sup> khá <sup>1</sup> <u>cut down</u>
Cq	tiwatekhá	Ix	cawatikhá
Ja	ti <sup>1</sup> wa <sup>2</sup> te <sup>2</sup> khá <sup>1</sup>	Lo	tiwotakhó
Do	tiwatakhá	Te	tiwatekhá <u>splitt</u>

Expected reflexes: Cq tiwateikhá; Do -te-; Hu wa<sup>s</sup>te<sup>s</sup>khá<sup>1</sup>; Ay -šniá unexplained; Hu, Te nasalized /ə/ unexplained. Ix ca- probably continuative aspect; Ay ki- < \*ki<sup>3</sup>- completive aspect 206; Cq, Ja, Do, Lo, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

648. \*wá<sup>4</sup><sup>s</sup> lonesome.

Ay	tiwáwá	Hu	wá <sup>4</sup> <sup>s</sup> le <sup>4</sup>
Cq	wá	Ix	khimáwá
Ja	wá <sup>2</sup> <sup>s</sup>	Te	timawá-
Do	wá		

Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Ay, Ix, Te mág-, Lo mó- < \*mág- able 227; Hu -le<sup>4</sup> pronominal. Ja tone<sup>3</sup> of <sup>2</sup><sup>s</sup> glide probably developed analogically to indicate phrase final.

649. \*we<sup>1</sup>ški<sup>4</sup> (\*we<sup>1</sup> probably derived from knows 653, \*ški<sup>4</sup> numeral 537) counts.

Mz	tiweški	So	?we <sup>3</sup> ški <sup>2</sup> <sup>4</sup> (< Pre-So * <sup>2</sup> 1- <sup>4</sup> )
Ay	tiweški	Ix	cawiški
Cq	tiweiški	Lo	waškiyo
Ja	ti <sup>1</sup> we <sup>1</sup> ški <sup>3</sup>	Te	tiweške
Do	tiweški		
Hu	ti <sup>1</sup> w <sup>o</sup> e <sup>1</sup> ški <sup>4</sup>		

Expected reflexes: Do -ki; Lo šké (cf. 537); Te -weški. Ix, Te -wi- < \*wi<sup>3</sup>- verb auxiliary 655; Hu w<sup>o</sup>e-, So ?we- <

\*we<sup>3</sup>e<sup>1</sup> hits 652; Ix ca- probably continuative aspect; Mz, Ay, Cq, Ja, Do, Hu, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Lo -yo < \*yá inside 660.

650. \*we<sup>1</sup>e<sup>1</sup>nthé<sup>4</sup> (\*we<sup>1</sup>e<sup>1</sup> hits 652, \*nthé<sup>4</sup> seed 385) plants.

Ay nthé	So "we <sup>3</sup> thé <sup>24</sup> (< Pre-So
Cq thé	* <sup>21</sup> - <sup>4</sup> )
Ja ti <sup>1</sup> w <sup>2</sup> e <sup>1</sup> nthé <sup>3</sup>	Ix tisenthé
Do tiw <sup>2</sup> enthé	Mg w <sup>2</sup> enthai
Hu nthé <sup>4</sup> w <sup>2</sup> e <sup>1</sup> , w <sup>2</sup> e <sup>1</sup> nthé <sup>4</sup>	Lo wa <sup>2</sup> athá
Ji w <sup>2</sup> ethé	Te tisithé

Expected reflexes: So we<sup>2</sup>e-; Mg -thé; So /? unexplained, cf. 652. Ja, Do, Ix, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

651. *we <sup>3</sup> nt <sup>y</sup> khú <sup>1</sup> (*we <sup>4</sup> <sup>2</sup> <u>knows</u> 653) <u>worships</u> .	
Ay wekú	Ix wetikú
Ja we <sup>2</sup> nkhu <sup>1</sup> <u>respect</u>	Lo waški
Do wenku <sup>1</sup>	Te wešku <sup>1</sup>
Hu we <sup>3</sup> šku <sup>1</sup> <u>he worships</u>	

PPn 80. Expected reflex: Ix wi-.

652. \*we<sup>s</sup>é<sup>1</sup> hits, gives birth to.

Mz	w <sup>?</sup> yé	So	we <sup>s</sup> é <sup>s</sup> re <sup>24</sup> (< Pre-So
Ay	tiwe <sup>?</sup> é		* <sup>s</sup> - <sup>s1</sup> - <sup>4</sup> )
Cq	tiwečú	Ix	cawe <sup>?</sup> é <u>lp.</u> , cawe' <u>3v.</u>
Ja	ti <sup>1</sup> w <sup>?</sup> é <sup>1</sup>	Mg	kaw <sup>?</sup> éle <u>he hit him</u>
Do	tiw <sup>?</sup> é	Lo	wa <sup>?</sup> á
Hu	w <sup>?</sup> é <sup>1</sup>	Te	tiwé
Ji	ka <sup>?</sup> wé <u>she gave birth to</u>		

PPn 306; PMS 92. Expected reflexes: Cq -wei<sup>?</sup>é; Ji -w<sup>?</sup>é.

Mz /y/ before /e/ unexplained; its phonemic status is doubtful. Cq -čú perhaps < \*čú<sup>3</sup> arrives at 105; Ix ca- probably continuative aspect; Ay, Cq, Ja, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ji ka- < \*ka<sup>2</sup>- completive aspect 172; So -re, Mg -le 3v. pronoun.

653. \*wé<sup>42</sup> knows.

Ay	wé-	Ji	?wé
Cq	?ué	So	wé <sup>s1</sup>
Ja	wé <sup>2</sup>	Ix	wé
Do	wé	Lo	wá
Hu	wé <sup>43</sup>	Te	wé

Cq, Ji /?/ unexplained.

654. \*wi<sup>1</sup> come here.

Mz	hawi	So	ha <sup>4</sup> wi <sup>1</sup>
Ay	hawi, ntiwi	Ix	hawi
Cq	ntuwá	Mg	hewí
Ja	ha <sup>3</sup> wi <sup>1</sup>	Lo	hawi
Do	hawi	Te	nčuwi
Hu	ha <sup>4</sup> wi <sup>1</sup> s		

PPn 186. Lo expected -wé unless ha- is a recent compound. Te nču- unexplained; Cq ntu- unexplained; Cq /a/ unexplained, but may reflect different aspect. Mz, Ay, Ja, Do, Hu, So, Ix, Lo ha- probably imperative. So expected tone <sup>4</sup> - <sup>21</sup>; Hu tone <sup>3</sup> of <sup>18</sup> glide unexplained, perhaps indicates phrase final.

655. \*wi<sup>3</sup>- verb auxiliary.

Cf. 656-658 etc.

656. \*wi<sup>3</sup>šá<sup>3</sup> (\*wi<sup>3</sup>- verb auxiliary 655) mates.

Mz	kwišasú	<u>marry</u>	Hu	khua <sup>4</sup> wi <sup>3</sup> šá <sup>3</sup>	<u>marriage</u>
Ay	tiwišá		Ix	c'awišá	
Cq	tiwišá		Lo	tiwišó	
Ja	ti <sup>1</sup> wi <sup>2</sup> šá <sup>2</sup>		Te	tiwišá	<u>marry</u>
Do	tiwišá				

Mz kwi-, Mz -su unexplained. Hu khua- < \*kʷha<sup>4</sup> abstract thing 216; Ay, Cq, Ja, Do, Lo, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix c'a- probably continuative aspect. The tone

reconstruction on the last syllable is partially indeterminate; it is either \*<sup>s</sup>, \*<sup>s1</sup>, or \*<sup>s2</sup>.

657. \*wi<sup>s</sup>thá<sup>s</sup> (\*wi<sup>s</sup>- verb auxiliary 655) passable.

Ay withá	Lo mowithá
Ja mág wi <sup>s</sup> thá <sup>s1</sup>	Te mawithá
Do mawithá	

Expected reflex: Lo mowithó. Ja, Do, Te mág-, Lo mó- < \*mág able 227. Ja tone <sup>1</sup> may be emphasis glide. The tone reconstruction on the last syllable is rather indeterminate; it is either \*<sup>s</sup>, \*<sup>s</sup>, \*<sup>s1</sup>, \*<sup>s2</sup>, or \*<sup>s3</sup>.

658. \*wi<sup>s</sup>t<sup>y</sup>há<sup>1</sup> (\*wi<sup>s</sup>- verb auxiliary 655) harvests.

Mz tiwithyá	Hu wi <sup>s</sup> čhá <sup>1</sup>
Ay tiwithiá	Ix t <sup>o</sup> awithiá
Cq tiwithiá	Lo wočhá
Ja ti <sup>1</sup> wi <sup>s</sup> thiá <sup>1</sup>	Te tiwičhá
Do tiwithiá	

PPn 5. Expected reflex: Lo wičhó. Mz, Ay, Cq, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Ix t<sup>o</sup>a- perhaps continuative aspect.

659. \*yá wears.

Hu yá <sup>4s</sup>	Mg yále <u>possesses</u>
So ya <sup>s</sup> há <sup>1</sup>	

PPn 343. Mg -le third person. The tone development is obscure.

660. \*yá inside.

Ay	tinčhayá <u>talks</u>	Do	tinčhayá <u>talks</u>
Ja	?i <sup>s</sup> yá <sup>2</sup> <u>inside</u> ,	Ix	cančhayá
	ti <sup>1</sup> nčha <sup>s</sup> yá <sup>2</sup> <u>talks</u>		

The tone reconstruction is rather indeterminate; Ja tone <sup>2</sup> may < \*<sup>2</sup>, \*<sup>s</sup>, \*<sup>s1</sup>, \*<sup>s2</sup>, \*<sup>42</sup>, or \*<sup>43</sup>.

661. \*yá<sup>1</sup> wood, tree, stick.

Mz	yá	Ji	yá
Ay	yá	So	yá <sup>s1</sup>
Cq	yá	Ix	yá
Ja	yá <sup>1</sup>	Lo	yo
Do	yá	Te	yá
Hu	yá <sup>1</sup>		

PPn 248; PMS 67.

662. \*ya<sup>1</sup>ka<sup>4</sup>kú<sup>3</sup> (\*yá<sup>1</sup> wood 661) cedar.

Mz	yakakó	So	yakakú
Ja	ya <sup>1</sup> s kú <sup>2</sup>	Ix	yakú
Do	yakú	Lo	yokokí
Hu	ya <sup>1</sup> 4kú <sup>3</sup>	Te	yakú

Expected reflex: Mz yakakú. Te ya- ~ ?i; see §3.4.

Tone on the last syllable is partially indeterminate; it is either \*<sup>s</sup> or \*<sup>s1</sup>.

663. \*ya<sup>1</sup>ki<sup>3</sup>hú<sup>4</sup> (\*<sup>1</sup> - <sup>3</sup> - <sup>3</sup>) (\*yá<sup>1</sup> wood 661) ladder.

Mz	yakihú	So	ya <sup>3</sup> ki <sup>2</sup> hú <sup>4</sup> (< Pre-So
Ay	yakihú		* <sup>21</sup> - <sup>3</sup> - <sup>4</sup> )
Cq	yankihñú	Ix	yaikihú
Ja	ya <sup>1</sup> ki <sup>3</sup> hú <sup>3</sup>	Mg	yakihú
Do	yakihí	Lo	kíké
Hu	ya <sup>1</sup> ki <sup>3</sup> hú <sup>3</sup>	Te	?ikihú (< Pre-Te *yakihú)
Ji	yakihú		

Expected reflex: Lo kihí; Cq -ñ- unexplained.

664. \*ya<sup>1</sup>na<sup>4</sup>šú<sup>4</sup> (\*<sup>1</sup> - <sup>3</sup> - <sup>1</sup>) (\*yá<sup>1</sup> wood 661, \*na<sup>4</sup>šú<sup>4</sup> throat 278) bamboo-like reed.

Mz	našú	So	ya <sup>3</sup> na <sup>2</sup> šú <sup>4</sup> (< Pre-So
Ay	yanašú		* <sup>21</sup> - <sup>4</sup> - <sup>4</sup> )
Cq	yanašú	Ix	yanašú
Ja	ya <sup>1</sup> na <sup>2</sup> šú <sup>1</sup>	Lo	yonóší
Do	yanašú	Te	yanašú
Hu	na <sup>4</sup> šú <sup>4</sup>		

PPn 176. Te ya- ~ ?i-; see §3.4.

665. \*ya<sup>1</sup>na<sup>4</sup>?ní<sup>4</sup> (\*yá<sup>1</sup> wood 661, \*na<sup>4</sup>- nominal 241) tree (chaca).

Ay	yana <sup>2</sup> ní	Do	ya <sup>2</sup> ní
Cq	yana <sup>2</sup> ní	Ix	ya <sup>2</sup> ní
Ja	ya <sup>1</sup> ?ní <sup>3</sup>		

Tone <sup>4</sup> on -na<sup>4</sup>- is internally reconstructed from the nominal 241; it could also be reconstructed \*<sup>3</sup>.

666. \*ya<sup>1</sup>ni<sub>2</sub><sup>s</sup>čá<sup>s</sup> (\*yá<sup>1</sup> wood 661, \*ni<sub>2</sub><sup>s</sup>- nominal 312)  
pine tree.

Mz	ničá	So	ni <sub>2</sub> <sup>s</sup> čá <sup>s</sup>
Ay	yaničá	Ix	yaničá
Cq	yaničá	Mg	ničá
Ja	ya <sup>1</sup> ni <sub>2</sub> <sup>s</sup> čá <sup>s</sup>	Lo	yoničó
Do	yaničá	Te	?iničá (< Pre-Te *yaničá)
Hu	ya <sup>1</sup> ni <sub>2</sub> <sup>s</sup> čá <sup>s</sup>		

PPn 120.

Ay	yanisé	Hu	ya <sup>1</sup> ni <sub>2</sub> <sup>s</sup> se <sup>s</sup>
Ja	ya <sup>1</sup> ni <sub>2</sub> <sup>s</sup> se <sup>s</sup>	Ix	yanisé
Do	yanisé	Lo	yonisathá <u>planting stick</u>

PPn 146. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

Ay	yantičhú	So	ni <sub>2</sub> <sup>s</sup> čhú <sup>s</sup>
Cq	yakhi <sup>2</sup> ntičhú	Ix	yantičhú
Ja	ya <sup>1</sup> čhú <sup>s</sup>	Lo	yontičhí
Do	yačhú	Te	yantičhú
Hu	nti <sub>2</sub> <sup>s</sup> čhú <sup>s</sup>		

Expected reflexes: Ay -čh-, Cq -čh-. Cq /ʔ/ in /ʔnt/ cluster unexplained. So ni<sub>2</sub><sup>s</sup>- < \*ni<sub>2</sub><sup>s</sup>- nominal 312. Te ya- ~ ?i-; see §3.4.

669. \*ya<sup>1</sup>nti<sup>4</sup>hí<sup>4</sup> (\*yá<sup>1</sup> wood 661) tree (guayacán).

Ay	yantihí	Do	yandihí
Ja	ya <sup>1</sup> ndhí <sup>3</sup>		

670. \*ya<sup>1</sup>ntu<sup>3</sup>hú<sup>2</sup> (\*yá<sup>1</sup> wood 661, \*ntu<sup>3</sup>hú<sup>2</sup> long 397)  
stringer, beam.

Mz	yantuuhú	So	ya <sup>21</sup> ntu <sup>3</sup> hú <sup>1</sup>
Ay	yantuuhú	Ix	yantuuhú
Cq	yantuuhú	Lo	yontihí
Ja	ya <sup>1</sup> ndhú <sup>2</sup>	Te	yantahú
Do	yanduhú		

Te ya- ~ ?i-; see §3.4.

671. \*ya<sup>1</sup>shai<sup>3</sup> (\*yá<sup>1</sup> wood 661) post (house).

Mz	yashei	Hu	ya <sup>1</sup> shai <sup>3</sup>
Ay	yashai	So	yachai
Cq	yasei	Ix	yisé, yasé
Ja	ya <sup>1</sup> shai <sup>2</sup>	Lo	yoché
Do	yashai	Te	?ichi (< Pre-Te *yachi)

Expected reflex: Mz yaché; Ix -sai.

672. \*ya<sup>1</sup>sky<sup>2</sup> (\*yá<sup>1</sup> wood 661) bench.

Mz	yaskó	Ix	yancukó
Ay	yaskú	Mg	ya <sup>1</sup> skó
Cq	yaskú	Lo	yoskí
Hu	ya <sup>1</sup> skú <sup>2</sup>	Te	?iskú (< Pre-Te *yaskú)
So	ya <sup>1</sup> skú <sup>1</sup> (< Pre-So * <sup>21</sup> - <sup>1</sup> )		

Mz, Mg expected reflex -skú; Lo oral /t/ unexplained;  
 Ix /s/ lost in /sk/ cluster may be due to /c/ in preceding  
 syllable; Ix -ncu- unexplained.

673. \*ya<sup>1</sup>šá<sup>1</sup> (\*yá<sup>1</sup> wood 661) bamboo.

Ay	yašá	Ix	yašá, yišá
Cq	yašá	Lo	yašó
Ja	ya <sup>1</sup> šá <sup>1</sup>	Te	yašá
Do	yašá		

Te ya-~?i-; see §3.4.

674. \*ya<sup>1</sup>té<sup>43</sup> (\*yá<sup>1</sup> wood 661, \*té<sup>43</sup> wide 572) board.

Mz	yati	So	ya <sup>21</sup> té <sup>32</sup>
Ay	yate	Ix	yate, yité
Cq	yate	Mg	yate
Ja	ya <sup>1</sup> té <sup>2</sup>	Lo	yotá
Do	yate	Te	?ité (< Pre-Te *yate)
Hu	ya <sup>1</sup> té <sup>43</sup>		

675. \*ya<sup>1</sup>t<sup>Y</sup>hai<sup>1</sup> (\*yá<sup>1</sup> wood 661) corn stalk.

Ay	yathai	So	ya <sup>21</sup> thí <sup>21</sup>
Cq	yathai	Ix	yathí
Ja	ya <sup>1</sup> thí <sup>1</sup>	Mg	yathé
Do	yathí	Lo	yočhé
Hu	ya <sup>1</sup> čhai <sup>1</sup>	Te	?ačhai (< Pre-Te *yačhai)
Ji	yačhai		

Expected reflex: Ji -čhai. Te ya- ~ ?i-; see §3.4.

676. \*ya<sup>1</sup>ntí<sup>3</sup> (\*yá<sup>1</sup> wood 661) tree (manchillo).

Ay	ya <sup>2</sup> ntí	Do	yanti
Ja	ya <sup>1</sup> ntí <sup>3</sup>	Ix	yanti

677. \*ya<sup>3</sup>hú<sup>2</sup> sharp.

Mz	yihú, yuhú	So	ya <sup>3</sup> hó <sup>1</sup>
Ay	yohó	Ix	yihú
Cq	yuhú	Mg	yo
Ja	yhó <sup>2</sup>	Lo	yihí
Do	yohó	Te	yihú
Hu	yau <sup>3</sup>		

PPn 344. Expected reflexes: Mz ya-; Cq yohó; Ix yuhó;  
Hu <sup>4</sup>s.

678. \*ya<sup>3</sup>hú<sup>3</sup> meat.

Mz	yahó	Ji	yohó, yihó
Ay	yohó	So	ya <sup>3</sup> hó <sup>3</sup> <u>meat</u> , <u>body</u>
Cq	yohó	Ix	yuhú
Ja	yhó <sup>2</sup>	Mg	yo
Do	yohó	Lo	yihí
Hu	yau <sup>3</sup>	Te	yihú

PPn 345. Expected reflexes: Mz yahú; Ji yo.

679. \*ya<sup>3</sup>hu<sup>3</sup>ki<sup>3</sup>čhá<sup>3</sup>, \*ya<sup>3</sup>hu<sup>3</sup>há<sup>1</sup> (\*ya<sup>3</sup>hú<sup>3</sup> meat 678, \*čhá<sup>3</sup> cooks 74) meat (roasted).

Ay	yohohá	Ix	yuhukičhá
Ja	yho <sup>2</sup> ki <sup>2</sup> čhá <sup>2</sup>	Lo	yihihó
Do	yohokičhá	Te	yihukičhá
Hu	yau <sup>3</sup> há <sup>1</sup>		

PPn 188.

680. \*ya<sup>3</sup>hu<sup>3</sup>nt<sup>Y</sup>ký<sup>2</sup>, \*ya<sup>3</sup>hu<sup>3</sup>thý<sup>2</sup> (\*ya<sup>3</sup>hú<sup>3</sup> sharp 677, \*thú<sup>2</sup> first 587) pointed.

Ay	yohothý	Hu	yau <sup>3</sup> thý <sup>2</sup> <u>pointed</u> , thý <sup>2</sup>
Cq	yuhurkú		<u>finger tip</u>
Ja	yho <sup>2</sup> nký <sup>1</sup>	Ix	yuhunčiký
Do	yohonký	Lo	kichothé
		Te	yihuskú

PPn 33. Expected reflexes: Cq yoho-, Te -škú. Lo kicho- unexplained; Ix nči- unexplained.

681. \*ya<sup>3</sup>á<sup>3</sup> carries.

Ay	ya <sup>2</sup> á	Hu	y <sup>2</sup> á <sup>3</sup>
Cq	hiyá <u>pregnant</u>	So	ya <sup>2</sup> á, y <sup>2</sup> á
Ja	y <sup>2</sup> á <sup>2</sup> <u>carries</u> , ti <sup>1</sup> y <sup>2</sup> á <sup>2</sup>	Ix	ya <sup>2</sup> á
	<u>pregnant</u>	Lo	yo <sup>2</sup> ó
Do	y <sup>2</sup> á <u>carries</u> , tiy <sup>2</sup> á	Te	yá
	<u>pregnant</u>		

Expected reflexes: Cq, Hu ya<sup>2</sup>á.

682. \*ya<sup>s</sup>, yf<sup>s1</sup> heavy.

Mz	'eí	Ji	y'í, 'ai
Ay	'eyé	So	y <sup>s</sup> , i <sup>s2</sup> <u>heavy, fat</u>
Cq	'ai	Ix	'ai
Ja	'ai <sup>2</sup>	Mg	'é
Do	'ai	Lo	yo'yí
Hu	y'aí <sup>s</sup> , 'ai <sup>s1</sup>	Te	'í

PPn 331. Ay, Mg development of /e/ obscure unless this reflex is characteristic of this unique total environment. See discussion in §4.12.3.1 of the problems of reconstruction for this form. Development of \*y is unexplained.

683. \*ya<sup>4</sup>nču<sup>s</sup>, á<sup>1</sup> fence.

Mz	yanču <sup>á</sup> , yančwá	Ji	nč'á
Ay	yanč'á	So	č'uá <sup>s1</sup>
Cq	nčuá	Ix	nč'uá
Ja	'i <sup>3</sup> ya <sup>2</sup> nč'á <sup>1</sup>	Mg	yanč'á, nč'á
Do	č'á	Lo	nči'wo
Hu	nč'uá <sup>1</sup>	Te	nčá-, 'inčiwá

PPn 327. Expected reflexes: Cq nču<sup>á</sup>; Ja -č'á<sup>1</sup>; So nč'uá<sup>s1</sup>. Ja 'i<sup>3</sup>ya<sup>2</sup>- < \*yá inside 661. Gudschinsky phonemicized the So form as č'wá<sup>s1</sup>; I have re-phonemicized it so as to parallel her analysis of c'uá<sup>s</sup> mouth PPn 126, my set 294.

684. \*ychñá rainbow.

Ay	yehñá	Do	yehñá
Cq	yeihñá	Lo	yahñó
Ja	ye <sup>3</sup> hñá <sup>3</sup>		

The tone reconstruction is indeterminate.

685. \*ye<sup>3</sup>hé<sup>3</sup> everything.

Ay	nkayehé	Hu	nka <sup>3</sup> yí <sup>3</sup> hé <sup>3</sup>
Cq	yehé	So	nkye <sup>3</sup> hé <sup>3</sup>
Ja	nga <sup>2</sup> yhé <sup>2</sup>	Ix	nkayihé
Do	ngayehé	Mg	nkayé

Expected reflexes: Cq yei-; Hu yé. Ay, Hu, So, Ix, Mg nka-, Ja, Do nga- < \*nka<sup>3</sup>- subordinating conjunction 340.

686. \*yé<sup>4</sup> snake.

Mz	yé	Ji	yé
Ay	yé	So	yé <sup>4</sup>
Cq	yé	Ix	yé
Ja	yé <sup>3</sup>	Mg	yé
Do	yé	Lo	yá
Hu	yé <sup>4</sup>	Te	yé

PPn 293.

687. \*ye<sup>4</sup>hé<sup>4</sup> turtle.

Ay	thiuyehé	So	ye <sup>4</sup> hé <sup>4</sup>
Ja	ču <sup>3</sup> yhé <sup>3</sup>	Ix	yehé
Do	čuyehé		

Expected reflex: Ix yi-. Ay thiu-< \*t<sup>y</sup>hu<sup>3</sup>- nominal  
 616-620; Ja, Do ču- < \*čú<sup>4</sup> animal 107.

688. \*ye<sup>4</sup>?é<sup>4</sup> manure.

Mz	nuyé	<u>intestines</u>	Hu	y?é <sup>4</sup>
Ay	ye?é		So	ye?é
Cq	ye?é		Ix	ye?é
Ja	y?é <sup>3</sup>		Lo	ya?á
Do	y?é, ye?é		Te	yí

PPn 333. Expected reflexes: Mz -?V; Cq yei?é. Te ye;  
 Mz ny- unexplained.

689. \*yu<sup>3</sup>hwí<sup>3</sup> cloud.

Mz	yuhwí		So	yu <sup>3</sup> hwí <sup>3</sup>
Ay	yuhwí		Mg	yuhwí
Cq	yuhwí		Lo	yifé
Hu	yu <sup>3</sup> hwí <sup>3</sup>		Te	yuhwí, ?ihwí
Ji	yuhwí			

PPn 220; PMS 68. Expected reflexes: Ji yi-; Lo -fi.

690. \*?á<sup>3</sup> unoccupied.

Ay	?á		So	?á <sup>3</sup>
Cq	?ai		Ix	?á
Ja	?á <sup>2</sup>		Lo	?ó
Do	?á		Te	?á
Hu	?á <sup>3</sup>			

Cq /i/ unexplained.

691. \*<sup>2</sup>a<sup>3</sup>- interrogative.

Ay	'a-	Hu	?a <sup>3</sup> -
Cq	'a-	Ix	?a-
Ja	?a <sup>2</sup> -	Lo	?a-
Do	?a-	Te	?a-

The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

692. \*<sup>2</sup>a<sup>3</sup> opening.

Mz	cha?á	Hu	ncha <sup>4</sup> ?a <sup>3</sup>
Ay	ncha?á	So	cha <sup>4</sup> ?a <sup>3</sup>
Ja	ncha <sup>3</sup> ?á <sup>2</sup> , cha <sup>3</sup> ?á <sup>2</sup>	Ix	nca?á
	(< Pre-Ja *ncha <sup>3</sup> ?á <sup>2</sup> )	Lo	cho?ó
Do	ncha?á, cha?á (< Pre-Do *ncha?á)	Te	cha?á

Mz, So, Te cha-, Te cho-, Ay, Ja, Do, Hu ncha-, Ix nca- < \*nchá<sup>4</sup> hair 288, a recent compound.

693. \*<sup>2</sup>á<sup>3</sup> I.

Ay	?á	Hu	?á <sup>3</sup>
Cq	nka?á	Ix	?á
Ja	?á <sup>2</sup>	Lo	?ó
Do	?á	Te	?á

Cq nka- < \*nka<sup>3</sup>- subordinating conjunction 340. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

694. \*<sup>i</sup><sup>s</sup>hná<sup>3</sup> fern.

Ay	'ehná	Mg	'ihna
Cq	nīhná	Lo	'ihno
Hu	'i <sup>s</sup> hná <sup>3</sup>	Te	'ihna
Ix	'ihna		

Expected reflexes: Cq nīhná, Ay 'ihna. Cq nī- < \*nī<sup>s</sup>- nominal 312. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>s1</sup>, or \*<sup>4s</sup>.

695. \*<sup>i</sup><sup>s</sup>ntá<sup>4s</sup> soft.

Mz	'intá	Ji	'intá
Ay	'intá	So	'i <sup>s</sup> ntá <sup>s2</sup>
Cq	'intá	Ix	'intá <u>soft, weak</u>
Ja	ntá <sup>2</sup>	Mg	'intá
Do	'intá	Lo	'intó
Hu	'i <sup>s</sup> ntá <sup>4s</sup> <u>soft, weak</u>	Te	'intia

PPn 260. Te /i/ of /ia/ cluster unexplained.

696. \*<sup>i</sup><sup>s</sup>ntú<sup>4s</sup> embroidery.

Mz	ša'ntú <u>jaguar</u>	Ji	'intú
Ay	thiuša'ntú <u>jaguar</u>	So	ša'ntú <u>jaguar</u>
Ca	ša'ntú <u>jaguar</u>	Ix	ša'ntú <u>spotted</u>
Ja	ša <sup>2</sup> ntu <sup>2</sup> si <sup>2</sup> né <sup>2</sup> <u>jaguar</u>	Mg	'intú
Do	šantusiné <u>jaguar</u>	Lo	šoyintí
Hu	'i <sup>s</sup> ntú <sup>4s</sup>	Te	šantú

PPn 162; PMS 84. Do expected reflex ša'intú, the Do form probably borrowed from Ja; Te expected reflex ša'intiú; Lo /y/ unexplained, expected /ʔ/. Mz, Ay, Cq, Ja, Do, So, Ix, Te ša-, Lo šo- < \*šá<sup>3</sup> jaguar 493. The cluster /nt/ in a weak syllable in Ja and Do indicate that \*si<sup>2</sup>né<sup>2</sup> yellow (469) is a recent compound.

697. \*<sup>2</sup>iwá four-hundred.

Ja <sup>2</sup>iwá four-hundred (ears of corn) Te <sup>2</sup>iwá four hundred (ears of corn)

698. \*<sup>2</sup>má<sup>3</sup> hidden.

Ay tihñá <sup>2</sup> má	So <sup>2</sup> má <sup>3</sup>
Cq teihñá <sup>2</sup> má	Ix camañka <sup>2</sup> má
Ja <sup>2</sup> má <sup>2</sup>	Lo tihñó <sup>2</sup> mó
Hu ti <sup>1</sup> hna <sup>3</sup> <sup>2</sup> má <sup>3</sup>	Te tiwimá

PPn 234. Ay, Cq, Lo tVhñV < \*-hñá<sup>3</sup> is 156; Te tiwi- unexplained; Ix ca- probably continuative aspect; Ix -nka- < \*nka<sup>3</sup>- subordinating conjunction 340.

699. \*<sup>2</sup>mé<sup>3</sup> sick.

Ay ti <sup>2</sup> mé	Hu m <sup>2</sup> é <sup>3</sup> <u>he is sick, dying</u>
Cq ka <sup>2</sup> mé <u>is dead</u>	So khi <sup>2</sup> <sup>3</sup> mé <sup>3</sup> <u>he is sick,</u>
Ja ti <sup>1</sup> <sup>2</sup> mé <sup>2</sup> , <sup>2</sup> mé <sup>2</sup>	<u>dying</u>
Do ti <sup>2</sup> mé	Ix khi <sup>2</sup> mé

PPn 230; PMS 89. Expected reflexes: Cq ka<sup>2</sup>mef; Hu <sup>2</sup>mé. So, Ix khi- < \*khi<sup>3</sup>- completive aspect 196; Cq ka- <

\*ka<sup>2</sup>- completive aspect 172; Ay, Ja, Do ti- < \*ti<sup>1</sup>- continua-  
tive aspect 589.

700. \*<sup>o</sup>me<sup>4</sup> chest.

Ja	?me <sup>3</sup>	Hu	?me <sup>4</sup>
Do	?me <sup>1</sup>	Mg	m?e <sup>1</sup>

PMS 90.

701. \*<sup>o</sup>mi<sup>2</sup> named.

Mz	kwi?mi <sup>1</sup> <u>thus it is named</u>	So	?mi <sup>1</sup> <u>it is named</u>
Ay	?mi <sup>1</sup>	Ix	?mi <sup>1</sup>
Cq	?mi <sup>1</sup> -	Mg	m?i <sup>1</sup>
Ja	?mi <sup>1</sup> <sup>2</sup>	Lo	?mi <sup>1</sup>
Do	?mi <sup>1</sup>	Te	m?i <sup>1</sup> <u>he is named</u>
Hu	?mi <sup>1</sup> <sup>2</sup>		

PPn 225. Mz kwi- < \*k<sup>w</sup>i<sup>3</sup> this 225.

702. \*<sup>o</sup>my<sup>1</sup> sore, hurt.

Ay	?y <sup>1</sup>	Hu	?ay <sup>1</sup> <sup>3</sup>
Cq	?my <sup>1</sup>	Ix	?y <sup>1</sup>
Ja	?y <sup>1</sup> <sup>2</sup>	Te	?y <sup>1</sup>
Do	?y <sup>1</sup>		

Expected reflex: Ay ?y<sup>1</sup>. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

703. \*<sup>2</sup>ná<sup>4</sup> brilliant, shiny.

Ay	<sup>2</sup> ná <sup>2</sup>	Hu	čhu <sup>4</sup> <sup>2</sup> ná <sup>4</sup> <u>shiny supernatural</u>
Ja	<sup>2</sup> ná <sup>3</sup>		<u>woman seen at night</u>
Do	<sup>2</sup> ná <sup>2</sup>	So	<sup>2</sup> ná <sup>4</sup>
		Ix	<sup>2</sup> ná <sup>2</sup>

Hu čhu- < \*čhu<sup>4</sup> woman 86.

704. \*<sup>2</sup>nčá<sup>1</sup> cold (weather).

Mz	nč <sup>2</sup> á <sup>1</sup>	Hu	nč <sup>2</sup> á <sup>1</sup>
Ay	nč <sup>2</sup> á <sup>1</sup>	Ji	nč <sup>2</sup> á <sup>1</sup>
Cq	<sup>2</sup> nčá <sup>1</sup>	So	č <sup>2</sup> á <sup>2</sup> <sup>1</sup>
Ja	nč <sup>2</sup> á <sup>1</sup> , č <sup>2</sup> á <sup>1</sup> (< Pre-Ja *nč <sup>2</sup> á <sup>1</sup> )	Ix	nč <sup>2</sup> á <sup>1</sup>
Do	nč <sup>2</sup> á <sup>1</sup> , č <sup>2</sup> á <sup>1</sup> (< Pre-Do *nč <sup>2</sup> á <sup>1</sup> )	Mg	nč <sup>2</sup> á <sup>1</sup>
		Lo	nčo <sup>2</sup> ó
		Te	nčá <sup>1</sup>

PPn 126; PMS 88. Development of \*<sup>2</sup> unexplained.

705. \*<sup>2</sup>nčí<sup>4</sup> wet.

Mz	kamá <sup>2</sup> nčí <u>it got wet</u>	Ji	nčí
Ay	<sup>2</sup> nčí	So	nčí <sup>4</sup>
Cq	<sup>2</sup> nčí	Ix	nčí
Ja	nčí <sup>3</sup> , čí <sup>3</sup> (< Pre-Ja *nčí <sup>3</sup> )	Mg	nčí
Do	nčí, čí (< Pre-Do *nčí)	Lo	<sup>2</sup> nčí
Hu	<sup>2</sup> nčí <sup>4</sup>	Te	nčí

PMS 87. Mz ka- < \*ka<sup>2</sup>- completive aspect 172; Mz -má-  
< \*má<sup>3</sup> able 227.

706. \*<sup>2</sup>nčú<sup>3</sup>, \*<sup>2</sup>nkiú, \*shá blackberry.

Ay	čhishá	Hu	čhi <sup>3</sup> nčú <sup>3</sup>
Cq	tuši <sup>2</sup> nkiú	Ji	ši <sup>2</sup> nčú
Ja	čhi <sup>2</sup> shá <sup>2</sup>	Lo	ši <sup>2</sup> nčí
Do	čhink <sup>2</sup> iu	Te	šančó
			Ay, Ja, Do, Hu čhi- < *čhí <sup>3</sup> <u>chirimoya</u> 79; Ji, Lo ši-, Te ša- unexplained; Cq tu- < *tú <sup>21</sup> <u>fruit</u> 605; Cq -ši- < *ši <sup>3</sup> - <u>connective</u> 518. The tone reconstruction is indeterminate.

707. \*<sup>2</sup>né<sup>1</sup> bunch (of bananas).

Ay	?é	Hu	?é <sup>1</sup>
Cq	?neí	Ix	?é
Ja	?é <sup>1</sup>	Lo	?á
Do	?é	Te	?é

The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

708. \*<sup>2</sup>né<sup>1</sup> language, word.

Mz	?í	Ji	?é
Au	?éna	So	?é <sup>21</sup>
Cq	?neí-	Ix	?é
Ja	?é <sup>1</sup>	Lo	?á
Do	?é	Te	?é
Hu	?é <sup>1</sup>		

709. \*<sup>2</sup>nká<sup>3</sup> high, tall.

Mz	-nk <sup>2</sup> á	Ji	- <sup>2</sup> nká
Ay	nk <sup>2</sup> á	So	nka <sup>3</sup> k <sup>2</sup> á <sup>3</sup>
Cq	heirku <sup>2</sup> nká	Ix	nk <sup>2</sup> á
Ja	nk <sup>2</sup> á <sup>2</sup> , k <sup>2</sup> á <sup>2</sup> (< Pre-Ja *nk <sup>2</sup> á <sup>2</sup> )	Mg	nk <sup>2</sup> á
Do	nk <sup>2</sup> á, k <sup>2</sup> á (< Pre-Do *nk <sup>2</sup> á)	Lo	nko <sup>2</sup> ó
Hu	nk <sup>2</sup> á <sup>3</sup>	Te	?inká <u>high, sky;</u> <u>nká roof</u>

PPn 60; PMS 85. Cq heirku- unexplained; Te ?i-  
unexplained.

710. \*<sup>2</sup>nka<sup>3</sup>k<sup>2</sup>ú<sup>3</sup> (\*<sup>2</sup>nká<sup>3</sup> high 709) conceited.

Ay	kam <sup>2</sup> ank <sup>2</sup> ankakú	Hu	nk <sup>2</sup> a <sup>3</sup> k <sup>2</sup> ú <sup>3</sup>
Ja	nk <sup>2</sup> a <sup>2</sup> k <sup>2</sup> ú <sup>2</sup> , k <sup>2</sup> a <sup>2</sup> k <sup>2</sup> ú <sup>2</sup> (< Pre- Ja *nk <sup>2</sup> a <sup>2</sup> k <sup>2</sup> ú <sup>2</sup> )	Ix	kam <sup>2</sup> ank <sup>2</sup> akú
Do	nk <sup>2</sup> akú, k <sup>2</sup> akú (< Pre-Do *nk <sup>2</sup> akú)	Mg	nk <sup>2</sup> akú
		Lo	nko <sup>2</sup> otíkí
		Te	kamankakó

Expected reflex: Te -k<sup>2</sup>ú. Ay nka- < \*nka<sup>3</sup>- subordinating conjunction 340; Ay, Ix, Te mág- < \*mág<sup>3</sup> able 227; Ay, Ix, Te ka- < \*ka<sup>2</sup>- completive aspect 172. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

711. \*<sup>o</sup>nki<sup>4s</sup>, \*nči<sup>4s</sup> hoes.

Ay	tihwu <sup>o</sup> nki	So	m̥i <sup>3</sup> nči <sup>3s</sup> , m̥i <sup>3</sup> nki <sup>3s</sup>
Cq	tihwančá	Lo	wančí
Do	tihwančí	Te	tiwinčí
Hu	?nki <sup>4s</sup> , ?nči <sup>4s</sup>		

PPn 278. Expected reflexes: Ay -nk<sup>o</sup>i; Cq -nčí; Hu nk<sup>o</sup>i; Hu /?/ in /?nč/ cluster unexplained; So m̥i- unexplained; Lo wa- a recent compound after \*i > /e/. Ay, Cq, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Cq, Do -hwa-, perhaps Ay -hwu- perhaps < \*hwa<sup>3</sup>·á<sup>3</sup> passes by 163; Lo -wa- < \*wa<sup>3</sup>- verb auxiliary 630; Te wi- < \*wi<sup>3</sup>- verb auxiliary 655.

712. \*<sup>o</sup>nkiú<sup>1</sup> cocoa bean.

Mz	nk <sup>o</sup> yú	Hu	nk <sup>o</sup> iu <sup>1</sup>
Ay	nk <sup>o</sup> iu	So	k <sup>o</sup> yú <sup>21</sup>
Cq	?nkiú	Ix	nk <sup>o</sup> iu
Ja	nk <sup>o</sup> iu <sup>1</sup> , k <sup>o</sup> iu <sup>1</sup> (< Pre-Ja *nk <sup>o</sup> iu <sup>1</sup> )	Mg	nk <sup>o</sup> io
Do	nk <sup>o</sup> iu, k <sup>o</sup> iu (< Pre-Do *nk <sup>o</sup> iu)	Lo	nki <sup>o</sup> i (< Pre-Lo *nki <sup>o</sup> i)

PPn 69. Gudschinsky reconstructed this etymon as \*nki<sup>o</sup>u<sup>1</sup> but the reflexes are parallel to \*<sup>o</sup>nka<sup>3</sup> high 709 which she reconstructed as \*<sup>o</sup>nka<sup>3</sup>. I reconstruct both as \*<sup>o</sup>nk clusters.

713. \*<sup>o</sup>ntá<sup>3</sup> hello.

Ay ntana <sup>o</sup> ají	Hu <sup>o</sup> ntá <sup>3</sup> li <sup>2</sup>
Cq ku <sup>o</sup> ntári	Ix tintá
Ja <sup>h</sup> tei <sup>2</sup> (< Pre-Ja *ha <sup>1</sup> ntei <sup>2</sup> )	Lo ntana <sup>o</sup> ají, ntali <sup>1</sup>
Do hantári	Te ntale

Ja /ei/ is unexplained, expected /a/. Lo /?/ is lost when /<sup>o</sup>nt/ occurs word initial. The tone reconstruction is partially indeterminate; it is either \*<sup>3</sup> or \*<sup>31</sup>.

714. \*<sup>o</sup>ntí<sup>1</sup> young, little.

Ay ki <sup>o</sup> ntí <u>young, little,</u> <u>child, boy</u>	Hu <sup>o</sup> ntí <sup>1</sup> <u>baby, small, child</u> <u>child, boy</u>
Cq ki <sup>o</sup> ntí <u>young, child,</u> <u>baby</u>	Ix khintí <u>young, ntí child,</u> <u>boy</u>
Ja khi <sup>o</sup> ntí <sup>1</sup> <u>young; ntí<sup>1</sup>, tí<sup>1</sup></u> (< Pre-Ja *ntí <sup>1</sup> ) <u>child</u>	Lo ki <sup>o</sup> nté <u>little; ntí child</u> <u>little</u>
Do khintí <u>young; ntí, tí</u> (< Pre-Do *ntí)	Te khintí <u>young, child</u> <u>child</u>

PPn 267. Lo /e/ is unexplained, expected /i/. Lo /?/ is lost when word initial. Ja, Do, Ix, Te khi- < \*khi<sup>3</sup>- completive aspect 196; Ay, Cq, Lo ki- < \*ki<sup>3</sup>- completive aspect 206. The tone reconstruction is partially indeterminate; it is either \*<sup>1</sup> or \*<sup>21</sup>.

715. \*<sup>o</sup>nti<sup>1</sup>?ñú<sup>4</sup> (\*<sup>o</sup>ntí<sup>1</sup> child, little 714) twins.

Ay	kinti?ñú	Ji	ntisti?ñú
Ja	ti <sup>1</sup> ?ñú <sup>3</sup> (< Pre-Ja *nti <sup>1</sup> ?ñú <sup>3</sup> )	Ix	nti?ñú
Do	ti?ñú (< Pre-Do *nti?ñú)	Lo	ñi?í
Hu	?ñú <sup>4</sup> <u>double yolk egg</u> , nt?íy <sup>4</sup>	Te	kintiñú
		So	?ñú <sup>4</sup>

PPn 299. Expected reflexes: Ja ?íy; Lo ?í. Ji  
ntisti- < \*sti<sup>3</sup> children 546; Te ki- < \*ki<sup>3</sup>- completive aspect 206.

716. \*<sup>o</sup>ntí<sup>4</sup> sterile.

Ay	'ntí	Hu	'ntí <sup>4</sup>
Ja	hmí <sup>1</sup> ntí <sup>3</sup> <u>sterile woman</u>	Ix	ntí
Do	šutačhú ntí <u>sterile woman</u>	Te	ntí
	Ja hmí- < *hmí <sup>1</sup> - <u>person prefix</u> 138; Do šuta- < *šu <sup>4</sup> tá <sup>4</sup> <u>person</u> 561; Do -čhú, Lo čhí < *čhú <sup>4</sup> <u>woman</u> 86.		

717. \*<sup>o</sup>ntú<sup>3</sup> rots.

Mz	tehwentú	So	fi <sup>3</sup> ntú <sup>3</sup>
Ay	tihwe?ntú	Ix	khihwantú
Cq	hei?ntú	Mg	hwentú
Ja	ti <sup>1</sup> hwe <sup>2</sup> ntú <sup>2</sup>	Lo	hi?ntí
Do	tihwentú	Te	tihwintú
Hu	whi <sup>3</sup> ?ntú <sup>3</sup> <u>rots</u> ; ?ntú <sup>3</sup> <u>rotten</u>		

Expected reflex: Te -ntiu. Cq hei-, Lo hi- unexplained; So fi-, Hu whi-, Te hwi- perhaps < \*hwi<sup>2</sup> goes 169; Mz, Ay, Ja, Do, Mg hwe- < \*whé<sup>3</sup> use up 167.

718. \*<sup>2</sup>ñá<sup>4</sup> dusk.

Ay	thimá <sup>2</sup> ñá	Ji	ka <sup>2</sup> ñá
Cq	kama <sup>2</sup> ñá	Ix	kama <sup>2</sup> ñá
Ja	ka <sup>2</sup> ma <sup>2</sup> ñá <sup>3</sup>	Lo	komq <sup>2</sup> ñó
Do	kama <sup>2</sup> ñá	Te	khimañá-
Hu	kya <sup>2</sup> ñá <sup>4</sup>		

PPn 296. Ay thi- unexplained; Cq, Ja, Do, Ji, Ix ka-, Lo ko- < \*ka<sup>2</sup>- completive aspect 180; Ay, Cq, Ja, Do, Ix, Te -ma<sup>2</sup>-, Lo -mo- < \*má<sup>3</sup> able 227; Hu kya- probably contraction of \*ka<sup>2</sup>- completive aspect 172 + \*má<sup>3</sup> able 227; Te khi- < \*khi<sup>3</sup>- completive aspect 196.

719. \*<sup>2</sup>ñay<sup>2</sup> five.

Mz	’ó	Ji	’ó
Ay	’ó	So	’ó <sup>1</sup>
Cq	’ñú	Ix	’ú
Ja	’ú <sup>2</sup>	Mg	’ú
Do	’ú	Lo	’ú
Hu	’aú <sup>2</sup>	Te	’ó

PPn 297. Mz expected nasalized vowel; Te expected ’ú.

720. \*<sup>o</sup>ñg<sup>s</sup>čá<sup>s</sup> (\*<sup>1</sup> - <sup>3</sup>) hundred.

Ja 'y<sup>2</sup>čá<sup>2</sup> So 'y<sup>2</sup>čá<sup>s</sup> (< Pre-So \*<sup>1</sup> - <sup>3</sup>)

Do 'y<sup>2</sup>čá Ix 'y<sup>2</sup>čá

Expected reflex: So 'q-. The first syllable of this etymon is internally reconstructed by comparison with five 719.

721. \*<sup>o</sup>ñg<sup>1</sup> strong.

Mz 'ñú Ji nka'ñú

Ay 'ñú So 'ñú<sup>21</sup>

Cq 'íú Ix 'ñú

Ja 'íú<sup>1</sup> Mg nkañ'ú

Do 'íú Lo 'ñí

Hu n'íú<sup>1</sup> Te ñú

PMS 91. Expected reflexes: Cq, Do, Hu 'ñú, Ji, Mg nka- < \*nka<sup>3</sup>- subordinating conjunction 340.

722. \*<sup>o</sup>ñg<sup>1</sup>stí<sup>1</sup> (\*<sup>o</sup>ñg<sup>1</sup> vine 252) mecapal.

Ay na'íuti Hu n'íhtí<sup>1</sup>

Cq na'ñuti Ix ni'íuti

Ja n'íti<sup>1</sup> Lo níté

Do n'ísti Te ntati

Expected reflexes: Ay, Do, Hu 'ñu-; Ja 'y-; Ix 'ñ-.

Te nta- unexplained, expected -hti. Development in Do of /st/ for expected /t/ unexplained; perhaps contamination from baby clothes since children are carried by a cloth, often in

a way similar to a mecapal. Ay, Cq na- < \*na<sup>3</sup>- nominal 241; Ix, Lo ni- < \*ni<sup>3</sup>- nominal 312. The development of \*u in this etymon is unexplained unless the environment \*'ñ unstressed is posited to be significantly different from \*ñ unstressed.

723. \*'wau<sup>3</sup> grinds.

Mz	ti'ó	Hu	w'aú <sup>3</sup>
Ay	thi'wo	So	'ó <sup>3</sup>
Cq	ko'ó	Ix	c'a'wú
Ja	ti <sup>1</sup> o <sup>2</sup>	Lo	wí
Do	ti'ó	Te	ti'ú

PPn 356. Cq ko- unexplained. Ix c'a- probably continuative aspect; Mz, Ja, Do, Te ti- < \*ti<sup>1</sup>- continuative aspect 589.

724. \*'wi<sup>4</sup>s drinks (v.).

Mz	tiw'i	Ji	tiw'i
Ay	'wi	So	'wi <sup>3</sup> s
Cq	ti'ui	Ix	ca'wi
Ja	'wi <sup>2</sup>	Mg	w'i
Do	'wi	Lo	ki nq'wi
Hu	'wi <sup>4</sup> s <u>he drinks</u> , 'yu	Te	tiwi <u>we drink</u>

PPn 302. Expected reflexes: Mz, Ji -'wi; Lo -nq- unexplained, but it is a recent compound after \*i > /e/ when

preceded by back vowel. Ix ca- probably continuative aspect; Mz, Cq, Ji, Te ti- < \*ti<sup>1</sup>- continuative aspect 589; Lo ki- < \*ki<sup>3</sup>- completive aspect 206.

725. \*\*yá<sup>3</sup>- nominal.

Cf. 726-729.

726. \*\*ya<sup>3</sup>ni<sup>2</sup> (\*\*ya<sup>3</sup>- nominal 725) red.

Mz	'ani <sup>1</sup>	Ji	'ini <sup>1</sup>
Ay	'ini <sup>1</sup>	So	'ani <sup>1</sup>
Cq	'ani <sup>1</sup>	Ix	'ini <sup>1</sup>
Ja	ni <sup>2</sup>	Mg	'ani <sup>1</sup>
Do	nini <sup>1</sup> , ni <sup>2</sup>	Lo	yoni <sup>1</sup>
Hu	ni <sup>2</sup>	Te	'ini <sup>1</sup>

Expected reflex: Ji ni<sup>1</sup>. The reconstruction of tone on the first syllable is reconstructed by analogy with puckery 727, sweet 728, warm 729.

727. \*\*ya<sup>3</sup>si<sup>3</sup> (\*\*ya<sup>3</sup>- nominal 725) puckery.

Ay	'isi	Hu	'i <sup>3</sup> si <sup>3</sup>
Cq	'asi	Ix	'asi
Ja	si <sup>2</sup>	Lo	yosi
Do	si	Te	'isi

Expected reflexes: Hu si<sup>1</sup>; Ix 'isi<sup>1</sup>. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

728. \*<sup>o</sup>ya<sup>3</sup>ší<sup>43</sup> (\*<sup>o</sup>ya<sup>3</sup>- nominal 725) sweet.

Mz	’aší	Ji	ší
Ay	’iší	So	’a <sup>3</sup> ší <sup>32</sup>
Cq	’aší	Ix	’iší
Ja	ší <sup>2</sup>	Mg	’iší
Do	’iší	Lo	yoší
Hu	ší <sup>43</sup>	Te	’iší

PPn 163. Do ’iší probably borrowed from Ay, expected reflex is ší.

729. \*<sup>o</sup>ya<sup>3</sup>sú<sup>43</sup> (\*<sup>o</sup>ya<sup>3</sup>- nominal 725) warm.

Ay	’isú	So	’a <sup>3</sup> sú <sup>32</sup>
Cq	’usú	Ix	’asú
Ja	sú <sup>2</sup>	Lo	yosí
Do	sú	Te	’isú, ’asú
Hu	sú <sup>43</sup>		

PPn 316. Expected reflexes: Cq ’asú; Ix ’isú.

730. \*<sup>o</sup>yá<sup>4</sup> ant (leaf cutter).

Ay	nanta’iá	Hu	ni <sup>4</sup> yu <sup>3</sup> yá <sup>4</sup> <u>hook ant</u>
Cq	nta’iá	Ix	’iá
Ja	’iá <sup>3</sup>	Lo	ši’yó
Do	’iá	Te	šiyá

Ay nanta-, Cq nta- < \*na<sup>4</sup>ntá<sup>4</sup> water 270; Hu ni<sup>4</sup>- < \*ni<sup>4</sup>- nominal 312.

731. \*<sup>2</sup>yú<sup>3</sup> drinkable.

Ay	nta <sup>2</sup> iu	So	nta <sup>2</sup> yo
Cq	hamunta <sup>2</sup> iu	Ix	nta <sup>2</sup> iu
Ja	nda <sup>2</sup> iu <sup>2</sup>	Lo	nto <sup>2</sup> i
Do	nda <sup>2</sup> iu	Te	ntayú-
Hu	nta <sup>3</sup> , yú <sup>3</sup>		

Expected reflexes: So -<sup>2</sup>yú; Lo nto<sup>2</sup>i; Cq hamu- unexplained; nta-, nda-, nto- < \*nta<sup>3</sup>há<sup>3</sup> good 358 has recently been compounded with \*<sup>2</sup>yú<sup>3</sup> drinkable. The tone reconstruction on the last syllable is partially indeterminate; it is either \*<sup>3</sup>, \*<sup>31</sup>, or \*<sup>42</sup>.

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## INDICES

### Index of English Glosses

This index of English entries includes both the root meanings of the PMaz etymon and the derived meanings of the daughter reflexes. Numbers refer to the numbered cognate sets.

- |                           |                        |
|---------------------------|------------------------|
| Able, 227, 458            | Avocado, 428           |
| Able (physically), 474    | Awake, 214             |
| Above, 489                |                        |
| Abstract thing, 216       | Baby, 714              |
| Accustomed to, 332        | Back, 550              |
| Acid, 446                 | Bad, 65                |
| Across, 180               | Badger, see coati      |
| Adobe, 523                | Bag, 450               |
| Afternoon, 347            | Bald, 596              |
| Afterwards, 126           | Bamboo, 673            |
| Alive, 214                | Bamboo-like reed, 664  |
| Alligator, 532            | Banana, 260            |
| Alone, 174, 441           | Baptize, 62, 645       |
| Among, 134                | Barks, 197, 200        |
| And, 177                  | Bashful, 441           |
| Anger, 187, 607           | Basket, 334            |
| Animal, 107               | Bat, 106, 434          |
| Another, 518              | Bathes, 640            |
| Ant, 394                  | Beam, 670              |
| Ant (leaf cutter), 730    | Bean, 431              |
| Apart, 524                | Bed, 259               |
| Appearance, 119, 199, 573 | Bedbug, 116            |
| Arises, 579               | Behind, 550, 581       |
| Arm, 610                  | Belch, 477, 517        |
| Armadillo, 69             | Believes, 464          |
| Around, 125               | Below, 245             |
| Arrow, 97                 | Bench, 672             |
| Arrives, 105, 122         | Better, 442            |
| Ashamed, 441              | Big, 11, 454, 455, 511 |
| Ashes, 54, 375            | Bird, 333              |
| Aunt, 307                 |                        |

Bite, 309  
 Bitter, 465  
 Black, 135  
 Blackberry, 706  
 Blind, 622  
 Blood, 142  
 Blouse, 45  
 Blows, 369  
 Board, 674  
 Boat, 50  
 Boils, 554  
 Bone, 317  
 Born, 42  
 Boss, 403  
 Bothers, 468  
 Bottom, 384  
 Boundary, 416  
 Boy, 592  
 Braids, 310  
 Breaks, 63  
 Breast, 89  
 Breathes, 161, 193  
 Bridge, 501  
 Brilliart, 571, 703  
 Broken, 63  
 Broom, 300, 529  
 Brother, 286  
 Brother of spouse, 73  
 Brown, 61  
 Brush, 155  
 Bud, 117  
 Bumblebee, 429  
 Bunch (of bananas), 707  
 Euries, 313  
 Burns, 592, 634  
 Burp, 477, 517  
 Buttocks, 384, 600  
 Buys, 631  
 Buzzard, 386  
  
 Cactus (maguey), 257  
 Cactus (nopal), 271  
 Candle, 461  
 Carries, 181, 681  
 Cassava, 301  
 Cattle, 405  
 Cave, 342  
 Cedar, 662  
  
 Centipede, 109  
 Charcoal, 209  
 Chases, 3, 639  
 Chayote, 104  
 Cheek, 449  
 Cherry, 83, 603  
 Chest, 700  
 Chicken, 502  
 Child, 714  
 Children, 546  
 Chile pepper, 157  
 Chin, 349  
 Chirimoya, 79  
 Chocolate drink, 297  
 Chooses, 162  
 Church, 435  
 Circle, 583  
 Clay griddle, 318  
 Clean, 20, 164  
 Clear, 164  
 Clears land, 238  
 Cliff, 275  
 Closes, 87  
 Clothes, 191, 243  
 Cloud, 338, 689  
 Clown, 443  
 Coati 17, 330  
 Cockroach, 113  
 Cocoa bean, 712  
 Coconut, 281  
 Coffee-fly, 255  
 Cold (sickness), 94  
 Cold (weather), 704  
 Comb, 408  
 Come here, 654  
 Comes, 417  
 Complain, 304  
 Compleutive aspect, 172, 196, 206  
 Conceited, 710  
 Connective (that), 518  
 Constructs, 32  
 Continuative aspect, 589  
 Cooking pot, 594  
 Cooks, 74  
 Corn cake, 332  
 Corn cob, 242  
 Corn (cooked), 302  
 Corn drink (atole), 297  
 Corn (dry ear), 329

- Cornfield, 154  
 Corn flower, 280  
 Cornhusk, 614  
 Corn (kernel), 432  
 Corn on the cob, 308  
 Corn stalk, 675  
 Corn (young ear), 512  
 Cotton, 9  
 Country, 244  
 Counts, 649  
 Covers, 448  
 Coyote, 15  
 Cradle, 620  
 Cramps, 66, 192  
 Crane, 479  
 Crazy, 472  
 Cricket, 527  
 Crooked, 36  
 Crow, 404  
 Cries, 197  
 Curassow, 44, 173  
 Cuts, 646, 647  
  
 Dances, 569  
 Dark, 158  
 Daughter-in-law, 186  
 Day, 337  
 Day after tomorrow, 144  
 Day before yesterday, 351  
 Dead, 178, 699  
 Deaf, 433, 541  
 Deep, 269.  
 Deer, 277, 378  
 Defecates, 641  
 Demon, 283  
 Devil, 283  
 Dew, 556  
 Diarrhea, 163  
 Different, 185  
 Difficult, 423  
 Dirt, 470  
 Dirty, 21, 148  
 Disrobe, 547  
 Do, 26, 227, 228  
 Dog, 246  
 Door, 352  
 Dough, 367  
 Dove (n), 601  
  
 Downward, 132  
 Dream, 98, 314  
 Drinkable, 731  
 Drinks (v), 724  
 Drips, 588  
 Drizzle, 453  
 Drunk, 101  
 Dry, 516  
 Duck, 272  
 Dumb, 433  
 Dusk, 718  
 Dust, 298  
 Dying, 699  
  
 Ear, 427  
 Early, 494  
 Earth, 244  
 Earthquake, 71  
 Eat, 309  
 Edible, 331  
 Egg, 75  
 Eight, 514  
 Elbow, 624  
 Embroideries, 81  
 Embroidery, 696  
 Emanation (from non-edible  
     dead body), 504  
 Empty, 593  
 Enters, 463  
 Evening, 347  
 Everything, 37, 685  
 Everywhere, 207, 606  
 Expensive, 76  
 Eye, 539  
  
 Face, 124  
 Faint (barely visible), 497  
 Falls (v), 140, 475  
 Falsehood, 637  
 Famine, 198  
 Far, 202  
 Fast, 7, 439, 494  
 Father, 251, 282  
 Fears, 4  
 Feet, 284  
 Fence, 683  
 Fern, 694

Fetches, 181  
Fever, 93, 373  
Fierce, 607  
Fifteen, 612  
Fifty, 424  
Fights, 187  
Find, 438  
Fine, 230  
Finger, 265  
Fingernail, 430  
Finger tip, 598  
Finished, 131  
Finishes, 167  
Finish off, 223  
Fire, 411  
Firewood, 68  
First, 587  
Fish, 485  
Fist, 619  
Five, 719  
Flea, 521  
Flees, 3, 639  
Flies, 580  
Flower, 248  
Fly (n), 90  
Foam, 551  
Follows, 580  
Foot, 284, 295  
Forehead, 545  
Forgets, 64  
Forked stick, 409  
Forty, 425  
Four, 426  
Four-hundred, 697  
Fox, 330  
Frog, 534  
Fruit, 605  
Fulfill, 235  
Full, 12  
Funeral, 365  
Fuzz (on a peach), 497

Gall, 465  
Gall bladder, 466  
Gathered together, 236  
Gentle, 372  
Gets, 181  
Gift, 222

Girl, 8, 49  
Gives, 25  
Gives birth to, 652  
Glass, 96  
Glutton, 536  
Go, 224, 586  
Go (imperative), 595  
Goat, 568  
Goes, 169  
Goes and comes, 584  
Goes out (fire), 5  
Godmother, 258  
Good, 358  
Gopher, 391  
Gorge, 499  
Gourd, 183, 326  
Grabs, 181  
Grandmother, 273  
Grass, 413  
Grasshopper, 85  
Green (color), 444  
Grinds, 723  
Grind stone, 256  
Guards, 213, 575  
Gully, 499  
Gum, 617  
Guayaba, 451

Hair, 288  
Half, 237  
Hammock, 366  
Hand, 287  
Happiness, 217  
Hard, 564  
Harvest, 658  
Hates, 607  
Hawk, 507  
He, 130, 225  
Head, 597  
Hears, 399, 407  
Heavy, 682  
Hello, 713  
Herb, 380  
Herb - greens, 383  
Hidden, 698  
High, 709  
Hill, 320  
Himself, 488

His, 16  
Hits, 632, 652  
Hoes, 711  
Hole, 500  
Holiday, 486  
Holy, 62  
Honey, 290  
Horn (animal), 405  
Horn (musical instrument), 615  
Horse, 277, 378  
Hot, 467  
Hot season, 111  
House, 389  
Howl, 200  
Huaje, 289  
Hugs, 53  
Hummingbird, 293  
Hunchback, 92  
Hundred, 720  
Hungry, 633  
Hunt, 525  
Hurry, 494  
Hurt, 702

I, 693  
If, 6  
Iguana, 80  
Inside, 660  
Interrogative, 691  
Intestine, 285  
Intoxicated, 101  
Is, 156  
Itch, 578

Jaguar, 493, 696  
Jail, 401  
Jaw, 349  
Joint, 623  
Joy, 217  
Just, 606

Kicks, 24  
Kills, 178  
Knee, 623  
Kneels, 625  
Knows, 653

Lace, 503  
Ladder, 663  
Lame, 201, 433  
Land, 244, 327  
Landslide, 553  
Language, 708  
Lard, 519  
Laugh, 152  
Law, 221  
Lazy, 10  
Leaf, 528  
Left (adj), 476  
Leg, 341  
Lends, 27  
Let's go, 586  
Light, 461  
Light (in weight), 139  
Lightning-thunder, 70  
Lights (a fire), 13  
Likes, 217, 440  
Limb (of person) cut off, 212  
Lime, 552  
Limps, 1  
Liquid, 371  
Liquor, 505  
Little, 457, 714  
Liver, 67  
Load, 59  
Locust, 85  
Lonesome, 165, 648  
Long, 129, 397  
Look, 215  
Look for, 466  
Lot (house site), 559  
Louse, 249  
Loves, 576  
Low, 245

Magic, 577  
Makes, 32, 227  
Makes to pass, 31  
Malaria, 93, 337  
Man, 522  
Manure, 688  
Many, 344  
Mark, 114  
Marker, 416  
Market, 376

- Marries, 656  
 Mat, 315  
 Mates, 656  
 Measure, 114  
 Meat, 678  
 Meat (roasted), 679  
 Mecapal, 722  
 Medicine, 415  
 Membrane, 285  
 Metal, 208  
 Midday, 388  
 Middle of night, 336  
 Mildew, 498  
 Mixes, 582  
 Moment, 145  
 Money, 567  
 Monkey, 211  
 Monkey (small variety), 496  
 Moon, 436  
 More, 437  
 Morning-star, 323  
 Mosquito, 515  
 Moss, 21  
 Mother, 253  
 Mother-in-law, 262  
 Motion inward, 463  
 Mountain, 275  
 Mouse, 325  
 Mouth, 294  
 Mucus, 618  
 Mud, 470  
 Mushroom, 542  
  
 Name, 120  
 Named, 701  
 Nape of neck, 345  
 Narrow, 292, 535  
 Nausea, 38  
 Navel, 558  
 Near, 621  
 Neck, 171, 345  
 Needle, 321  
 Needs, 229  
 Nest, 364, 544  
 Net (square), 247  
 Net bag, 366  
 New, 14  
 Night, 336  
  
 Nine, 421  
 Nipples, 89  
 No, 136, 410  
 No longer, 565  
 Nominal, 241, 312, 725  
 Non-existent, 41  
 Nose, 379  
 Not yet, 190  
 Numeral, 537  
 Nurses, 635  
  
 Offering table, 259  
 Old, 454, 455  
 Oldest, 587  
 On, 489  
 On the surface, 159  
 One, 146  
 Onion, 291  
 Only, 606  
 Opening, 692  
 Opens, 500  
 Opossum, 57, 418  
 Order, 221  
 Orphan, 456, 506  
 Out of, 588  
 Outside, 377  
 Over the edge of, 368  
 Owl, 153  
 Owl (small variety), 370  
  
 Paints, 28  
 Pale, 531  
 Palm leaf, 530  
 Papaya, 602  
 Paper, 560  
 Parent-in-law, 60  
 Parrot, 88, 103  
 Passable, 657  
 Passes by, 163  
 Pats (corn cakes), 33  
 Pays, 77  
 Pen, 328  
 Penis, 40  
 Person, 561  
 Person prefix (plural), 138  
 Person prefix (plural male referent, male speaker), 121

Person prefix (singular male), 55  
Person Prefix (singular male, male speaker), 362  
Pheasant, see curassow  
Pieces (n), 628  
Pig, 100  
Pig louse, 590  
Pimple, 331  
Pine tree, 666  
Pinole, 480  
Place, 118  
Planting stick, 668  
Plants, 650  
Plate, 609  
Plays, 472  
Plays (an instrument), 30  
Plays with, 43  
Pocket, 450  
Pointed, 680  
Poor, 433, 506  
Porcupine, 110, 495  
Post (house), 671  
Powder, 480  
Pregnant, 681  
Pretty (animals, books), 18  
Pretty (music, sound), 48  
Pretty (persons), 19  
Priest, 282  
Prostitute, 472  
Puckery, 727  
Pulls, 192  
Pupil (eye), 412  
Purges, 31  
Purslane, 381  
Pus, 616  
Puts on, 218  
Puts out (fire), 5  
  
Quiet, 513  
  
Rabbit, 254  
Raft, 50  
Rain, 452  
Rainbow, 270, 684  
Ravine, 499  
Raw, 540  
Reaches, 105  
Red, 726  
Respect, 651  
Resounds, 160  
Rests, 29  
Retches, 192  
Rheumatism, 66  
Rib, 335  
Rich, 306  
Right (adj), 205  
Ripens, 78  
River, 356, 511  
Road, 392  
Road (main), 393  
Rock, 406  
Roots, 182  
Rope, 252  
Rots, 717  
Rotten, 548  
Rough, 599  
Round, 549, 583  
Rubber tree, 668  
Rubbish, 543  
Ruler, 221  
Runs, 3, 639  
Rusty, 21  
  
Sad, 398  
Saliva, 353, 357  
Salt, 274  
Saltwort, 382  
Salty, 149  
Same, 371  
Sand, 51  
Sandal, 483  
Says, 47  
Scorpion, 250  
Scratches, 151  
Secretly, 301  
Section (of an orange), 447  
Seed, 385, 555  
Sells, 644  
Separate, 524  
Servant, 115  
Seven, 422  
Sews, 81, 203  
Sharp, 677  
Shiny, 571, 703

Shirt, 99  
Shoe, 483  
Short, 549, 626  
Shoulder, 610  
Shows, 636  
Show me, 566  
Shrimp, 35  
Shuts, 87  
Sick, 93, 699  
Sighs, 161  
Similarity, 119, 573  
Sin, 510  
Sing (we incl.), 147  
Sings, 460  
Sister, 387  
Sits, 156  
Six, 509  
Skin, 613  
Skirt, 492  
Skunk, 179  
Sky, 137  
Sleeps, 166  
Sleepy, 314  
Slippery, 319  
Slobber, 357  
Slope up, 240  
Slowly, 168  
Small, 520  
Small path, 497  
Smells, 141  
Smoke, 338  
Smokes (tobacco), 194  
Smooth, 151  
Snail, 627  
Snake, 686  
Soap, 400  
Soft, 695  
Soon, 445, 494  
Sorcery, 577  
Sore, 702  
Sounds, 160  
Spine, 321  
Spinal column, 316  
Spindle, 279  
Spins (thread), 191  
Spits, 353  
Splits, 647  
Spouse of sister or  
daughter, 533

Spray, 551  
Spring, 270  
Squash, 263  
Squirrel, 56, 58  
Staff, 667  
Star, 322  
Steal, 301  
Steam, 373  
Steam bath, 402  
Stench (like decayed flesh or  
copper), 462  
Step (n), 184  
Step-mother, 159  
Sterile, 716  
Stick, 661  
Stink, 141  
Stomach, 343  
Stone, 406  
Straight, 205  
Stringed instrument, 266  
Stringer, 670  
Strong, 721  
Stubble, 596  
Stutters, 2  
Subordinating conjunction, 340  
Suckles, 635  
Sugar cane, 363  
Sun, 52  
Sunshine, 359  
Swamp, 296  
Sweat, 354  
Sweeps, 529, 643  
Sweet, 728  
Sweet potato, 395

Tail, 374  
Take it, 84  
Takes, 223  
Talks, 303  
Tall, 709  
Tame, 372  
Tax, 230  
Teaches, 636  
Teeth, 339  
Ten, 570  
Termite, 557  
Thatches, 642  
There, 127

- There are, 585  
 Thick, 574  
 Thick (liquid), 459  
 Thief, 301  
 Thin, 531, 535, 611  
 Thing, 1<sup>3</sup>6, 311  
 This, 130, 225, 226  
 Thorn, 361  
 Thread, 261  
 Three, 508  
 Throat, 278  
 Thunder-lightning, 70  
 Tick, 71  
 Ticklish, 204  
 Tiger, 493  
 Time, 118  
 Tired, 481  
 Toad, 210  
 Toasted, 23  
 Tobacco, 22, 267  
 Together, 189  
 Tomato, 562  
 Tomorrow, 299  
 Tongue, 264  
 Too long, 150  
 Tortilla, 332  
 Tough, 564  
 Town, 276  
 Town center, 393  
 Town hall, 390  
 Turkey (female), 268  
 Turtle, 687  
 Transparent, 611  
 Trap, 72  
 Tree, 661  
 Tree (chaca), 665  
 Tree (guayacán), 669  
 Tree (manchillo), 676  
 Tree-trunk, 600  
 Tree (yolosuchil), 604  
 Trouzers, 526  
 Truncated, 212  
 Truth, 219  
 Twenty, 175  
 Twins, 715  
 Two, 128  
 Uncle, 34  
 Under, 245, 348  
 Understand, 234  
 Unmatured, 95  
 Unoccupied, 690  
 Unripe, 540  
 Until, 473  
 Unwilling, 176  
 Upgrade, 240  
 Urine, 355  
 Uses, 226  
 Use up, 167  
 Uvula, 91  
 Verb auxiliary, 630, 655  
 Very, 188  
 Vine, 252  
 Violin, 266  
 Visible, 232  
 Voice, 482  
 Vomits, 487  
 Wait (imper pl), 102  
 Wait for (imper sg), 478  
 Waist, 360  
 Walk, 46  
 Wants, 239  
 War, 220  
 Warm, 729  
 Washes (clothes), 638  
 Wasp, 484, 563  
 Water, 270  
 Water jug, 324  
 We (incl), 420  
 Weak, 414, 535, 695  
 Wears, 659  
 Weaves, 203, 629  
 Weevil, 108  
 Went, 346  
 Wet, 705  
 When, 195  
 Whirlpool, 538  
 Whirlwind, 538  
 White, 608  
 Wicked, 65  
 Wide, 572  
 Wife, 86

Wild place, 155  
Willing, 170  
Wind, 369  
Wing, 143  
With, 189  
Wives, 305  
Woman, 86  
Women, 305  
Wood, 661  
Woods, 155  
Word, 708  
Work, 491  
World, 490  
Worm, 112  
Worm (intestinal), 123  
Worships, 651

Year, 419  
Yellow, 469  
Yesterday, 350  
You (sg), 133  
Young, 714  
Yours (sg), 39  
Yuca, see cassava

Zapote, 82

Index to Proto-Mazatec Structure

Sets (Gudschinsky 1956)

Almost one hundred cognate sets in this study contain data also cited by Gudschinsky (1956). For the convenience of the reader who is working with her materials, the overlapping data are indexed here. Numerals preceding the decimal point refer to Gudschinsky's (1956) sets; those following refer to the cognate sets in the appendix of this paper.

1. 594	26. 344	51. 531	76. 454, 455
2. 168	27. 20	52. 522	77. 154
3. 597	28. 45	53. 239	78. 142
4. 621	29. 62	54. 337	79. 157
5. 608	30. 56	55. 322, 323	80. 155
6. 415	31. 69	56. 332	81. 158
7. 623	32. 70	57. 338	82. 166
8. 627	33. 229	58. 327	83. 161
9. 616	34. 74	59. 432	84. 696
10. 619	35. 86	60. 242	85. 709
11. 614	36. 59	61. 282, 251	86. 137
12. 628	37. 284	62. 361	87. 705
13. 199	38. 297	63. 421	88. 704
14. 200	39. 303	64. 423	89. 699
15. 178	40. 438	65. 434	90. 700
16. 225	41. 480	66. 646	91. 721
17. 216	42. 466	67. 661	92. 652
18. 376	43. 463	68. 689	93. 77
19. 371	44. 542	69. 512	
20. 373	45. 179	70. 120	
21. 369	46. 519	71. 128	
22. 352	47. 513	72. 482	
23. 417	48. 560	73. 149	
24. 418	49. 563	74. 146	
25. 350	50. 534	75. 452	

## Index to Proto-Popotecan Sets

(Gudschinsky 1959)

Almost half of the sets in this study have at least one language form that is also cited by Gudschinsky (1959). Of ninety-three PMaz sets that occur in Gudschinsky's (1956) work, fifty-six of these sets also are included in her later reconstructions (1959). For the convenience of the reader who is working with her materials, the overlapping data are indexed here. Numerals preceding the decimal point refer to Gudschinsky's (1959) sets; if the numerals are underlined then this set also occurs in Gudschinsky (1956), but under a different cognate set number. The latter cognate set number can easily be located by consulting the beginning of the explanatory section following each cognate set in the appendix of this paper. Numerals following the decimal point refer to the cognate sets in the appendix of this paper.

1.	566	...	...
2.	562	14.	483
3.	547	15.	126
4.	641	16.	574
5.	658	17.	542
6.	308	18.	222
7.	338	...	...
...		21.	606
9.	570	22.	422
10.	646	23.	550
11.	554	24.	43
12.	569	25.	210
		27.	578
		28.	543
		29.	545
		30.	336
		32.	318
		33.	680
		34.	353
		35.	482
		36.	605
		37.	583

<u>38.</u>	337	75.	<b>212</b>	109.	457
<u>39.</u>	594	76.	<b>202</b>	...	
40.	610	77.	<b>63</b>	<u>111.</u>	86,305
<u>41.</u>	614	<u>78.</u>	<b>179</b>	<u>112.</u>	619
42.	379	79.	<b>394</b>	<u>113.</u>	591
...		80.	<b>4,651</b>	<u>114.</u>	485
<u>44.</u>	415	81.	<b>649</b>	<u>115.</u>	249
45.	27	<u>82.</u>	<b>629</b>	<u>116.</u>	408
...		<u>83.</u>	<b>480</b>	...	
47.	28	84.	<b>307</b>	<u>118.</u>	208
48.	386	85.	<b>540</b>	<u>119.</u>	526
...		<u>86.</u>	<b>216</b>	<u>120.</u>	300,666
52.	528	<u>87.</u>	<b>452</b>	...	
53.	634	88.	<b>256</b>	<u>122.</u>	260
54.	499	...		<u>123.</u>	298
...		91.	<b>631</b>	<u>124.</u>	60
56.	124	<u>92.</u>	<b>616</b>	...	
57.	175	...		<u>126.</u>	704
58.	177	94.	<b>11,12</b>	<u>127.</u>	263
59.	181	<u>95.</u>	<b>323</b>	<u>128.</u>	458
<u>60.</u>	709	96.	<b>451</b>	...	
61.	456,174,506	97.	<b>13</b>	<u>130.</u>	381
62.	636	98.	<b>254</b>	<u>131.</u>	78
...		99.	<b>285</b>	...	
66.	107	100.	<b>448</b>	<u>133.</u>	303
...		101.	<b>6</b>	<u>134.</u>	74
<u>68.</u>	284	102.	<b>47</b>	...	
<u>69.</u>	539,597,712	...		<u>136.</u>	261
70.	347	104.	<b>257</b>	<u>137.</u>	585
71.	62	...		...	
...		106.	<b>289</b>	<u>139.</u>	171,345
73.	640	107.	<b>465</b>	<u>140.</u>	334
...		...		<u>141.</u>	459

142.	79	...	208.	147	
...		176.	664	209.	148
144.	460	<u>177.</u>	560	<u>210.</u>	149
145.	333	...		<u>211.</u>	144
146.	667	179.	363	<u>212.</u>	146
147.	461	180.	169, 224, 346, 586	<u>213.</u>	142
...		181.	162, 313, 582	<u>214.</u>	264
149.	90	182.	130	<u>215.</u>	314
<u>150.</u>	463	<u>183.</u>	511	<u>216.</u>	242
151	437	184.	131, 167	<u>217.</u>	155
<u>152.</u>	436	185.	510	<u>218.</u>	157
153.	439	186.	654	<u>219.</u>	268
<u>154.</u>	324	187.	507	<u>220.</u>	689
...		188.	678	<u>221.</u>	166
156.	446	189.	75	...	
...		190.	122	<u>223.</u>	164
158.	555	191.	342	<u>224.</u>	163
159.	552	192.	509	<u>225.</u>	701
160.	518	193.	159	<u>226.</u>	104
161.	277	194.	299	<u>227.</u>	251, 282, 522
<u>162.</u>	493, 696	195.	382	...	
163.	290, 728	<u>196.</u>	137	<u>229.</u>	624
164.	516	197.	136	<u>230.</u>	93, 94, 178,
...		<u>198.</u>	561		699
166.	274	<u>199.</u>	432	<u>231.</u>	182
...		200.	135	<u>232.</u>	433
168.	247	201.	618	<u>233.</u>	428
...		202.	431	<u>234.</u>	698
170.	157	203.	266	...	
171.	491	204.	514	<u>238.</u>	508
172.	288	205.	530	<u>239.</u>	329
173.	500	<u>206.</u>	56	<u>240.</u>	309
174.	248	...		<u>241.</u>	30

242.	469	275.	244	310.	549	
243.	638		...	311.	609	
244.	215	278.	711	<u>312.</u>	608	
<u>245.</u>	519		...	313.	114	
...		280.	340		...	
247.	644		...	315.	488	
<u>248.</u>	661	<u>282.</u>	454, 455	316.	467, 729	
249.	315	283.	269	317.	607	
250.	152	284.	3, 639	318.	561	
<u>251.</u>	154	285.	430	319.	355	
252.	267	<u>286.</u>	434	<u>320.</u>	417	
253.	252	287.	435		...	
...		288.	617	322.	613	
255.	385		...	323.	441	
256.	82	291.	287	324.	629	
...			...	325.	343	
258.	271	293.	686	326.	294	
259.	270	<u>294.</u>	621	327.	683	
260.	695	<u>295.</u>	421	328.	503	
261.	358	296.	718		...	
262.	213	297.	719	331.	682	
263.	186, 533	298.	426	332.	399, 407	
...		299.	715	333.	688	
265.	352	300.	339	334.	593	
266.	112, 397		...	335.	572	
267.	714	302.	101, 724	336.	29	
<u>268.</u>	327, 490	303.	52, 411	337.	246	
269.	317, 405	304.	644	338.	392, 393	
270.	330	305.	84	339.	401	
271.	404	<u>306.</u>	652	340.	402	
<u>272.</u>	418	<u>307.</u>	533	341.	380	
<u>273.</u>	369		...		...	
...		-	309.	632	343.	659

344. 677

345. 678

346. 366

347. 361

348. 521

349. 389

350. 541

351. 332

352. 128

353. 367

354. 413

...

356. 723

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