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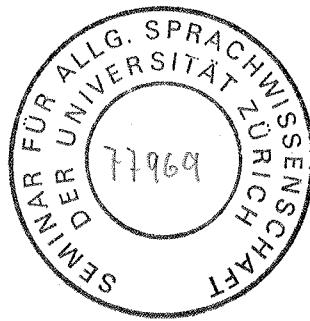
# COMPARATIVE STUDIES IN AMERINDIAN LANGUAGES

*by*

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## DEDICATION

Fifty years ago an Indian asked a question of a twenty-one year old Senior from Occidental College, on a Bible selling and distribution trip in Central America, "Why doesn't God speak MY language?" The fact that the Scriptures were not available to the 250,000 Cakchiquel Indians of Guatemala served to stimulate a program of pioneer linguistic work in that language. Through his diligent efforts in less than a decade God COULD speak to the Cakchiquel through His Scriptures.

This concern for his fellow men wedded to solid scientific endeavor has been effectively shared and passed on to the members of the now worldwide organization called the Summer Institute of Linguistics with linguistically trained personnel presently at work in 520 languages in twenty-three countries. It is to this man,

### WILLIAM CAMERON TOWNSEND

Co-founder and General Director that this work is dedicated on the occasion of the fiftieth anniversary of the beginnings of his work among the Indians of this hemisphere.

## ACKNOWLEDGMENTS

The authors are happy to acknowledge their indebtedness to the following for their long hours of patient and careful work in compiling data, and in typing and proofreading the manuscripts : Doris D. Svedberg, Neomi H. Johnson, Martha K. Anderson, Linda R. Howard, Albert House, Nela Cochran, Marion Kirk, and Florence Vance. We appreciate also the computation of relationships by Karen Z. McIntosh.

Special thanks are due to Professor Mary R. Haas of the University of California, not only for supplying data (See section 1.1), but also for examining the manuscripts in their early stages and offering valuable suggestions and information, particularly with regard to the Algonquian materials.

We are grateful too for the field notes made available to us by many of our colleagues of the Summer Institute of Linguistics. Their names will be found in the Bibliography.

Other colleagues, Doris Bartholomew, Timothy M. Sudo, and Carolyn E. Waltz read the manuscripts and made helpful suggestions.

Finally we wish to acknowledge with sincere gratitude the active participation of Clarence E. Church, Director of the Colombia Branch of the Summer Institute of Linguistics, who procured for us the necessary office, equipment, and staff, and who encouraged and counselled us throughout the entire period of research and preparation of the various manuscripts.

## PREFACE

The additional steps on the road toward Proto-Amerindian presented in this volume should come as no surprise to those whose speculations on the subject based on scattered observations have been presented from time to time.

That the authors of this work should be members of the Summer Institute of Linguistics likewise should not be surprising. With linguistic teams working in over 285 languages in North and South America, a growing corps of consultants in linguistics and anthropology, and a workshop program for pooling information and writing up results, members of this organization have contributed and will continue to contribute substantially to American Indian linguistics.

As Dr. Esther Matteson indicates, this work was inspired by the observed similarities between two language families of Colombia and two in Bolivia where she has had considerable experience as a consultant. Her broad acquaintance with Indian languages in these two countries and in Peru plus an eager young SIL team currently at work in Colombia proved a stimulating combination. Enthusiasm, inquisitiveness, determination and confidence in the handling of their materials made for a happy fellowship of teammates-in-discovery. It is hoped that something of this enthusiasm will show through the material here presented and that others will have the privilege of helping to push back the linguistic horizons still more in the near future.

Clarence E. Church  
Director  
Summer Institute of Linguistics  
Colombia

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## ABBREVIATIONS

### *Families, stocks, and other linguistic groups*

A	Algonkian
Ar	Arawakan
Chib	Chibchan
CM, OM	Chiapanec-Mangue, Otomanguean
Cur-Man, Ar	Curipaco-Maniba, Arawakan
ENew	Eastern Newiki, Arawakan
G	Gulf
H	Hokan
Har, Ar	Harakbut, Arawakan
IZ	Isthmus Zapotec, Otomanguean
M, G	Muskogean, Gulf
Mn, OM	Mixtecan, Otomanguean
My	Mayan
My-Cp	Mayan-Chipayan
New, Ar	Newiki, Arawakan
NM, G	Natchez-Muskogean, Gulf
OM	Otomanguean
OP, OM	Otopamean, Otomanguean
Pan	Panoan
Pn, OM	Popolocan, Otomanguean
Q	Quechuan
S	Siouan
Tac	Tacanan
T-G	Tupi-Guaranian
Tuc	Tucanoan
U-A	Uto-Aztecán
WNew, Ar	Western Newiki

### *Languages*

A, A	Arapaho
A, OM	Amuzgo
Amar, AR	Amaracaeri

Api, Ge	Apinayé
At, G	Atakapa
At, Pan	Atsahuaca
Ay, Q	Aymara
B, A	Blackfoot
B, Ar	Baure
BC, Ar	Black Carib
Bo	Bora
C, A	Cree
C, OM	Cuicatee
Cam	Camsá
Cas, Pan	Cashinahua
Cav, Tac	Cavineña
Ch, A	Cheyenne
Ch, OM	Chatino
Chac, Pan	Chacobo
Chan, Pan	Chaninahua
Chib	Chibchan
Chl, My	Chol
Chon, H	Chontal of Oaxaca
Chon, My	Chontal of Tabasco
Chr, My	Chorti
Cp, My	Chipaya
Cr, G	Creek
Cub, Tuc	Cubeo
Cul, Ar	Culina
D, A	Delaware
Des, Tuc	Desano
Ese, Tac	Ese'eja
Ess, H	Esselen
F, A	Fox
Gb	Guahibo
Gmb	Guambiano
Gn, Tuc	Guanano
Gr, Ar	Guajiro
Guar	Guaraní
Gyb, Gb	Guayabero
H, My	Huasteco
I, My	Ixil
J, My	Jacaltec
Jam, Ar	Jamamadi
Jic, H	Jicaque
K, My	Kekchí
Kar, Pan	Karipuna
Kin, Ar	Kinikinao
Kog, Chib	Kogui
Krk, H	Karok
M, A	Menoneme
Man, Ar	Maniba
Mar, Chib	Maracasero

Mg, Ar	Matsiguenga
M-SM, OM	Mixtec of San Miguel
Mot, Chib	Motilón
Mr, Pan	Marinawa
Ms, G	Muskogee
Mund, T-G	Mundurucú
Na/Nt, A	Natick
Nt, G	Natchez
Ot, OM	Otomi
P, Ar	Piro
Pap, U-A	Papago
Pia, Ar	Piapoco
Pm, My	Pokomchi
Pn, A	Penobscot
Pw, A	Powhatan
Q	Quechua
Rey, Tac	Reyesano
Sal, H	Salinana
Sh, A	Shawnee
Sir, T-G	Sirionó
Tac	Tacana
Ter, Ar	Tereno
Tn, G	Tunica
Toj, My	Tojolabal
Ton/Tonk, H	Tonkawa
Tso, My	Tsotsil
Tun, Chib	Tunebo
Tz, My	Tzeltal
Wal, H	Walapai
Was, H	Waso
Wit	Witoto/Huitoto (Muinane dialect)
Wit-T	Witoto of Tanemuca (by Minor)
Yue, Ar	Yucuna

*Abbreviations and Affiliations of Arawakan Languages*

Abbreviation	Language	Subgroup
Amar	Amarakaeri	PHar
Am	Amuesha	Isolate
Ap	Apuriná	PP-Ap
B	Baure	PShani
BC	Black Carib	Isolate
C	Campa	PAsh
Cab	Cabiyari	PWNew
Cul	Culina	PMadi
Cur	Curipaco	PCur-Man
G	Guajiro	Isolate
Jam	Jamamadi	PJam-Jar
Jar	Jaruará	PJam-Jar

Kin	Kinikinao	PShani
Man	Maniba	PCur-Man
Mg	Machiguenga	PAsh
Nom	Nomatsiguenga	PAsh
P	Piro	PP-Ap
Pal	Palicur	PENew
Par	Parecí	Isolate
Pau	Paumari	PMadi
Pia	Piapoco	PWNew
Sap	Sapateri	PHar
Tar	Tariano	PENew
Ter	Tereno	PShani
Wach	Wachipayri	PHar
Yuc	Yucuna	PWNew

Abbreviation	Subgroup
PAsh	Proto Ashaninka
PCur-Man	Proto Curipaco-Maniba (See PNew)
PENew	Proto Eastern Newiki (See PNew)
PHar	Proto Harakbut
PJam-Jar	Proto Jamamadi-Jaruará (See PMadi)
	Proto Madi
PNew	Proto Newiki
PP-Ap	Proto Piro-Apuriná
	Proto Shani
PWNew	Proto Western Newiki (See PNew)

*Authors and sources (See also BIBLIOGRAPHY)*

Ha: B	Bloomfield
F	Farfán
GE	<i>Gramáticas Estructurales de Lenguas Bolivianas</i> , I—III. See Instituto Lingüístico de Verano.
H	Hale
Ha	Haas
J	Jackson
M (Ha: M)	Michelson
O	Olson
R	Ross
R de Montaya	Ruiz de Montaya, P. Antonio
S (Ha: S)	Siebert
Sh	Shoemaker
V	Voegelin

*General terms*

C	Consonant
Cf	Compare
P	Proto

-Bol	of Bolivia
-Br	of Brasil
-Eq	of Ecuador
sp	species
V	vowel
~V	nasal vowel. Transcriptions of various authors have been modified to ~V for the sake of uniformity.

### Symbols

	in the environment of (referring to the environment in the protolanguage)
;	elsewhere, in ordered rules
-	in reflex formulas, position of phoneme under discussion with relation to the conditioning environment in the protolanguage in citations from the various languages, morpheme division
/	or
...	noncontiguous
→	is reflected by
←	from/reflecting
( )	(1) sequence of phonemes added or lost through phonological conditioning; i.e., without evidence of an optional morpheme; (2) the unique occurrence of a morpheme, or the unique substitution of one morpheme for another

In sections treating the conditioning of phoneme reflexes, rules are to be applied in the order presented. The absence of a language name in parentheses following an entry signifies that the formula holds for all languages under discussion, exceptions having preceded the formula. The formula  $*t \rightarrow \check{c} | i-i$  (PShani);  $t$  is to be read as follows:  $*t$  is reflected by  $\check{c}$  in PShani when both preceded and followed by  $i$ ; elsewhere (i.e. all other distributions in PShani, and all distributions in all other languages),  $t$ .

When in cognate sets part of a word is italicized and the remainder of the word is in roman print, only that part of the word in roman print is relevant to the set. An exception is stated in Section 2.5, p. 104.

PART ONE  
TOWARD PROTO AMERINDIAN

# 1. TOWARD PROTO AMERINDIAN

ESTHER MATTESON

## 1.1 INTRODUCTION

The purpose of this paper is to demonstrate by rigorous application of standard techniques of the comparative method, THE GENETIC RELATIONSHIP OF A WIDE SAMPLING OF GROUPS OF AMERICAN INDIAN LANGUAGES. Proto phonemes are postulated and their reflexes traced through a corpus large enough to reasonably confirm sets of phonological correspondences. Similarities in grammatical structure are implied in morpheme divisions of many of the proto words. Although discussed only briefly in this paper, these grammatical resemblances provide considerable material for a comparative study of morphologies.

The present comparison includes the following linguistic groups : Algonkian, Gulf (represented largely by Tunica), Hokan (represented by citations from particular languages), Uto-Aztecán, Arawakan, Mayan, Chibchan, Quechuan (represented by citations from particular dialects and/or languages), Guahiban, Tucanoan, Witotan (represented mainly by citations from Muinane Witoto), Boran (represented by citations from Muinane Bora), Tupi-Guaranian, Tacanan, Panoan, Siouan, and Ge (represented by citations from Apinayé) ; as well as three languages which are isolates or of uncertain classifications : Paez, Camsá, and Guambiano.

The particular list of language groups treated in this study was determined on the basis of competently recorded data and reliable reconstructions accessible to me on the field where the study was made. The scope of the paper was further limited by the time allotted for it. No aboriginal American language or family was consciously excluded because of apparent lack of genetic relationship. It may be that unrelated American languages will show up in the future, but none became evident during the investigation. In fact, similarities appeared upon brief inspection to be plentiful in several important groups such as the Carib languages and Eskimo-Aleut, which were not included for lack of data.

Access to libraries was so limited that secondary sources of information (i.e. materials cited by authors other than the linguists who did the field work) had to be utilized extensively, especially in the case of North American aboriginal languages. On the other hand, an unusually fine corpus of data from field notes of the Summer Institute of Linguistics staff was available, enhanced by the generous provision by Mary R. Haas, University of California, Berkeley, of a copy of her personal collection of Algonkian data and her reconstructions. The recent provision of Proto Tacanan reconstructions by Mary Ritchie Key, and of Panoan reconstructions by Olive Shell helped to complete the chain of evidence required to postulate a Proto Amerindian language.

The extent of the material available from each of the language groups is shown in Chart 1, Percentages of Shared Vocabulary. The number of vocabulary items shown to be available for comparison between a proto language and some other language represents its total number of reconstructions plus additional words from its daughter languages. Citations from the descendent languages or subgroups were included in the cognate sets of Section 1.6 when they provided regular correspondences other than those offered by reconstructions of the families or stocks they represented.

After the Proto Amerindian reconstructions of Section 1.6 had been completed, Otomanguean reconstructions by Calvin Rensch were made available in microfilm. Items which appeared to be similar were added to the cognate sets, and phoneme reflexes were postulated (1.4, 1.5), but the Proto Amerindian reconstructions were not revised to take into account evidences supplied by Otomanguean.

Entries from a few languages not included in the phonological comparison have been added irregularly : Sierra Popoluca, Taino, Pampa, Catío, Aguaruna, Itonama. The sources of such entries have been given in parentheses.

The initial stimulus for the comparative study was my discovery of structural similarities, both phonological and grammatical, between Guahiban languages of Colombia and Tacanan languages of Bolivia, and similarly between Tucanoan languages of Colombia and Guaranian languages of Bolivia. The discovery was due to the accident of working successively on a number of languages of Peru, Bolivia, and Colombia. At the same time Marianna Slocum and Florence Gerdel, analyzing Paez (Chibchan according to Mason, McQuown, *et al.*, but see Wheeler's discussion, section 2.1) were commenting on resemblants between Paez and the Tzeltal (Mayan) language they had previously studied. Subsequently most of the Paez-Mayan cognates were established and correspondences suggested by Frances Jackson (section 3), who also previously studied the Tojolobal and Tzeltal (Mayan) languages. The evidence of these various affinities, together with a scattering of inter-

family resemblants collected in field notes over a period of years, eventually led to the postulation of widespread Amerindian relationships.

The relationship between Tacanan and Panoan had been recognized by Mary Key in her "Comparative Phonology of the Tacanan Languages". She did not, however, include the Panoan in her reconstructions : "This form (reconstruction for cognate set) is Proto Tacanan, not Proto Pano-Tacanan, even though the sets contain Panoan cognates or presumed cognates." She did include as Tacanan the Huarayo or Guarayo language assumed (in conversation) by William Jackson, who is analyzing the language, to be Guaranian on the basis of both structural and lexical similarity to the Bolivian Guaraní. Thus Mary Key provided some evidence for a Tacanan-Panoan-Guaranian relationship.

Lists of inter-family cognate sets were contributed by the other authors of Part 2 : Alva Wheeler (sections 2, 4), Frances Jackson (section 3), and Nathan Waltz (section 4). The discoveries of sets of resemblants by other colleagues of the Summer Institute of Linguistics have been far too frequent for itemized acknowledgment. Among those whose suggestions were most numerous are Marianna Slocum, John Waller, Betty Welch, Birdie West, and Linda Howard.

As implied by the restricted statement of purpose, this paper has certain limitations. They are both serious and obvious :

(1) The selection of linguistic groups treated, in comparison to the total assumed to be potentially related, is too small and too scattered to represent any particular stage or subgroup of Proto Amerindian, or to help in the further classification of subgroups.

(2) The postulated proto phonological structure is complicated in more or less the same way as the first rough phonemic analysis of a particular language is complicated when based on too small a corpus. The protophonemes postulated here will necessarily be modified in years to come as additional families are considered and all of the data phonemicized. For the present they account for the data included in this paper. Any recognized deviations (i.e. all deviations barring error) are labeled.

(3) The total proto structure depends upon certain assumptions concerning the grammar which are warranted by experience with a number of individual languages, but are not specifically demonstrated for the proto language.

(4) There is a possibility of copyists' errors, from the initial transcription by the field worker through the entire process, in spite of the authors' concern for the accuracy of the work. These errors will be eliminated only in the course of many years of detailed study.

On the other hand, with all its limitations the paper still includes a sufficient number of languages and is based on vocabularies extensive enough to reasonably confirm the published hypothesis of Swadesh (1959) and the

vague impression of many other scholars that there exists a Proto Amerindian from which major established linguistic groups throughout the Americas have descended.

Proto Amerindian reconstructions are based on materials from the following sources (see also Bibliography) :

(1) Algonkian (PA) reconstructions are by Mary R. Haas, supplemented by vocabulary items from various Algonkian languages taken from her personal files. Her indications of source have been copied with the entries, as indicated in the list of Abbreviations. A few Algonkian entries are taken from the following, the identification of sources being copied from the authors : "What Algonquian is Really Like" by Charles Hockett, and "The Eastern Algonquian Intrusive Nasal" by Ives Goddard.

(2) Gulf entries are copied with identification from Table 4 of "Some Genetic Affiliations of Algonquian" by Mary R. Haas, and from the "Tunica Dictionary" by the same author. Abbreviations are as follows : At Atakapa, Cht Chitimacha, Cr Creek, Nt Natchez, Tn Tunica.

(3) Hokan materials are from the following sources :

William H. Jacobsen, Jr. "Washo & Karok : An Approach to Comparative Hokan" (*IJAL*).

Joseph H. Greenberg and Morris Swadesh, "Jicaque as a Hokan Language" (*IJAL*).

James E. Redden, "Walapai I : Phonology" (*IJAL*).

James E. Redden, "Walapai II : Morphology" (*IJAL*).

Edward Sapir and Morris Swadesh, "Yana Dictionary".

(4) Uto-Aztecán reconstructions are from Kenneth L. Hale (H), "Internal Diversity in Uto-Aztecán" (*IJAL*) and from C. F. and F. M. Voegelin and Kenneth L. Hale (V-H), "Typological and Comparative Grammar of Uto-Aztecán : I (Phonology)".

(5) Siouan reconstructions by Hans Wolff are taken from "Comparative Siouan III" (*IJAL*).

(6) Mayan reconstructions are either those by Ronald Olson (O) in "Mayan Affinities with Chipaya of Bolivia I : Correspondences" and "Mayan Affinities with Chipaya of Bolivia II : Cognates" (*IJAL*) or of Frances Jackson (J), section 3 of this volume.

(7) Quechua entries are taken from four sources (R), (F), (Wheeler), and (Orr), as follows :

Ellen M. Ross, *Quechua-English Dictionary*.

J. M. B. Farfán, "Estudio de un Vocabulario de las Lenguas Quechua, Aymara y Haqe-Aru".

Alva Wheeler, field notes on the Inga language.

Carolyn Orr, "Ecuador Quichua Phonology", *Studies in Ecuadorian Indian Languages* I (Summer Institute of Linguistics).

(8) The Muinane Witoto vocabulary is taken from field notes of Eugene and Dorothy Minor.

(9) Muinane Bora items are from the field notes of James and Janice Walton.

(10) With few exceptions, Tacanan materials are taken from the "Comparative Phonology of the Tacanan Languages" by Mary Ritchie Key. Those few exceptions are from a volume of grammars (GE) which includes Ese'eja materials of Jack and Nola Shoemaker, and the Tacana materials of John and Ida Ottaviano, or from field notes of those authors (Sh), (Ot).

(11) The Panoan reconstructions are by Olive Shell : "Pano Reconstruction" (Unpublished manuscript). Vocabulary items from particular Panoan languages when marked with (Key) are from the Tacanan volume by Mary Key.

(12) Huarayo, Tupi-Guaranian, items are likewise from the Tacanan volume by Key. Otherwise Tupi-Guaranian materials, reconstructions and citations from particular languages, are from an unpublished manuscript by Alva Wheeler. He acknowledges the sources of his data as follows :

Guaraní of Bolivia by Harry Rossbottom, and Sirionó by Perry and Anne Priest, in field notes, and in *Gramáticas Estructurales de Lenguas Bolivianas I* (1965) ; Emerillon, Oyampi, and Juruna from word-lists by I. Vaughn Collins of Gospel Recordings, Inc., Glendale, California ; Asurini from a word-list by Carl Harrison ; Cocama from the *Vocabulario breve del idioma Cocama* (1959) by Norma Faust (See also Faust and Pike, 1959); Diarroi from a word-list by Ivan Lowe ; Guajajara from a word-list by Margaret Bendor-Samuel ; Guaraní of Brazil from a word-list copied by Loraine I. Bridgeman from Curt Nimuendajú's field notes ; Kaiwa from field notes of Loraine I. Bridgeman (See also Bridgeman, 1961) ; Mundurucú from field notes of Ilsa Braun and Marjorie Crofts ; Parintintin from field notes of Helen Pease and LaVera D. Betts ; Sataré is from field notes of Albert and Susan Graham ; Tapirapé from a word-list taken by Sarah C. Gudschinsky ; Tenharim from a word-list taken by Arlo Heinrichs ; Xetá from a word-list taken by Sarah C. Gudschinsky and Loraine I. Bridgeman ; Yeral from a word-list taken by Alva Wheeler.

(13) The Apinayé (Ge) vocabulary is from *The Apinayé Language Phonology and Grammar* by John Campbell Callow.

(14) Vocabularies of the three isolates were provided by field notes of Marianna C. Slocum and Florence Gerdel for Paez, of Thomas and Judith Branks for Guambiano, and of Alice L. Clough and Linda R. Howard for Camsá.

## 1.2 GRAMMATICAL CORRESPONDENCES

A tentative reconstruction of the grammatical structure of Proto Amerindian may be possible now or in the near future. I am not attempting it here partly because of the limitation of time, but also in the hope that it may be under-

CHART I.

Percentages of Sp.

	PA	Par	Bo	Cam	PChib	G	PGb	Api, Ge	Gmb	H	P
PA		215 34.9	154 3.9	158 7.6	222 13.1	237 11.4	144 13.9	119 2.5	140 7.1	272 9.9	1
Par			237 6.3	231 12.1	405 18.3	360 14.4	224 33.5	182 11.0	209 11.9	416 16.1	2
Bo				184 0	311 4.8	262 1.9	202 3.9	134 2.2	236 1.7	252 3.6	3
Cam					232 9.9	317 2.5	166 4.8	166 1.2	202 4.0	337 3.9	4
PChib						416 6.0	272 15.8	194 5.2	264 6.8	593 6.6	5
G							219 6.8	239 2.9	238 7.1	627 6.7	6
PGb								114 8.8	186 5.4	228 9.2	7
Api, Ge									128 3.9	278 5.4	8
Gmb										242 7.4	9
H											10
PMy											11
Paez											12
PPan											13
Q											14
PS											15
PTac											16
PTG											17

In each cell of the chart, the upper figure gives the number of vocabulary items available for comparison; the lower figure gives the percentage of cognates in the vocabulary compared. These figures are intended to show only the scope of the present study. Percentages do not represent degree of relationship, and would not be valid for glottochronological calculations; they are heavily skewed by the authors' and their colleagues' familiarity with certain languages, and ignorance of others. This skewing is especially marked in the Paez-PMy and the various Par percentages. The percentages are further skewed by the use of reconstructions in some cases versus vocabularies of particular languages in other cases.

I.

*Shared Vocabulary*

PMy	Paez	PPan	Q	PS	PTac	PTG	PTue	PUA	Wit
2.9 20.0	165 10.0	160 10.5	190 8.4	249 8.3	48 16.7	209 10.8	148 15.0	153 9.2	160 3.8
3.1 40.3	258 16.9	249 26.0	288 11.2	373 20.4	54 32.3	355 27.3	227 37.7	252 27.6	252 13.1
3.6 3.3	180 2.3	264 2.8	214 3.2	248 1.9	54 3.9	231 3.0	202 5.3	243 5.4	302 1.0
3.9 10.7	196 7.4	216 7.1	225 5.4	334 3.3	60 6.7	270 4.2	166 4.6	197 5.7	329 1.7
3.6 18.9	291 14.5	324 12.0	316 6.4	500 10.9	55 11.6	421 13.0	276 6.4	326 17.9	342 5.0
3.7 15.0	287 7.5	279 7.6	356 4.3	560 6.8	73 5.0	483 5.4	221 7.9	266 10.8	275 3.6
3.2 21.3	157 9.9	201 12.0	192 9.9	223 9.9	46 6.5	223 19.3	179 13.4	211 14.7	220 9.6
3.4 10.9	120 7.4	35 5.5	182 7.0	243 8.9	45 9.3	204 10.2	127 10.1	149 7.5	134 6.0
3.4 12.0	158 5.2	252 5.4	186 7.4	230 6.2	48 6.7	193 6.2	176 6.8	205 8.9	246 3.3
3.9 17.9	313 8.6	303 6.6	332 4.1	681 19.7	76 5.4	516 8.6	243 9.1	263 8.4	263 4.9
	178 25.3	223 12.1	297 12.1	50 16.0	264 13.6	176 19.3	192 24.5	124 19.4	177 5.1
	219 7.3	271 11.8	53 5.7	237 11.8	194 14.8	191 8.9	243 15.5	121 11.8	284 2.1
		330 4.8	51 13.7	345 14.8	191 8.9	225 15.5	144 11.8	224 3.6	
			73 11.1	476 5.9	231 10.0	260 8.8	163 8.0	260 3.1	
				58 13.8	49 6.1	49 8.2	44 13.6	55 3.6	
					197 18.3	253 15.8	145 16.5	238 5.9	
						195 16.4	108 7.4	196 4.6	

taken as a major project of a scope at least comparable with that of the phonological study in this volume. It would be of great advantage to have a comparativist specializing in North American languages work in cooperation with one specializing in South American languages.

Several fairly comprehensive grammars of South American Indian languages are now available; for example, see the Summer Institute of Linguistics, *Ecuadorian Indian Languages I*, and *Peruvian Indian Languages I*; and Instituto Lingüístico de Verano, *Gramáticas Estructurales de Lenguas Bolivianas I—III*, listed in the Bibliography. The Bolivian studies, now in process of publication in English, may prove to be especially helpful to comparativists. The ten grammars contained in these volumes are presented in similar form with fairly uniform terminology and symbolization, utilizing the matrix charts suggested by Pike as units for comparison (Pike, 1962).

There are some implications of the proto grammatical structure even in this phonological study, for example, the feature of long words constructed by the compounding and affixation of numerous short morphemes. An illustration is found in 678 \**ko-si-yu-hi-ma-ti/si* 'rainbow'. The reconstruction of such a string of morphemes with posited variations in order and selection of morphemes is described by Wheeler for Chibchan in section 2, and by Waltz for Tucanoan in section 4. I have discussed it in considerable detail with reference to the Proto Arawakan grammar in section 6.2. The practice of uniting long strings of morphemes in this fashion has been used somewhat sparingly in Proto Amerindian due to my lack of familiarity with patterns of morpheme combinations in the North American Indian languages. Notice, however, the metathesis or varying morpheme orders in the Proto Hokan reconstructions by Haas (*Language*, 39 : 1). The practice has been used freely in Tucanoan and Arawakan, and to some extent in Chibchan, where the authors could justify the underlying hypotheses of morpheme combinations within languages with which they are quite familiar.

Closely related is a problem which has harried the analysts of Arawakan, Tacanan, Guaranian, Tucanoan, Guahiban, and Chibchan languages, as well as Paez — the problem of the determination of various morphemes which follow a head word as suffixes, or as enclitics which optionally carry some of the suffixes. Cognate sets of such suffixes and/or enclitics are to be found in section 1.6, numbers 52—55, 400, 453, 456—464, 531, 580—586, 595, 777, 802, 804, 840, 955—958.

Another important shared grammatical feature is that of similar noun classes postulated for all or most of the languages included in this study, by the establishing of the protomorphophoneme \**P*, which is limited in occurrence to a noun class which includes body parts, kin, and shapes. \**P* = \**b* or \**w* in possessed forms; \**p* in nonpossessed. In order to avoid overuse of the protomorphophoneme, it has been limited to nouns known to belong to the

corresponding class in Piro, Arawakan, the one language in which I am able to formally identify members of the class. See cognate sets 91, 296, 341, 439, 564, *et al.* For evidence within Arawakan, see sections 6.2 and 6.10.4. For a trace of the morphophoneme in Proto Tucanoan, see the comment by Waltz in section 4.1: "There appears to be a morphophonemic alternation between \**p* and \**b* or \**m* under certain conditions not yet determined . . .". Wheeler, in his unpublished manuscript on Proto Tupi-Guaranian, suggests morphophonemic alternation between PT-G \**p* and \**w*.

Less common protomorphophonemes are discussed under cognate set 387 'hair' in section 1.6.

A sampling of affixal pronominal paradigms which are available in the data of the various languages or language groups is given in the table on p. 30. The sources are the same as those for the cognate sets.

### 1.3 THE PHONEMES OF PROTO AMERINDIAN

* <i>p</i>	* <i>t</i>	* <i>t̪</i>	* <i>k̪</i>	* <i>k</i>	* <i>k̪</i>
* <i>p̪</i>	* <i>t̪</i>	* <i>t̪</i>	* <i>k̪</i>	* <i>k̪</i>	* <i>k̪</i>
* <i>b</i>	* <i>d</i>	* <i>d̪</i>		* <i>g</i>	* <i>g̪</i>
	* <i>t̪s</i>	* <i>c̪</i>	* <i>c̪</i>		
	* <i>t̪s̪</i>	* <i>c̪</i>	* <i>c̪</i>		
* <i>f</i>	* <i>s</i>	* <i>š</i>	* <i>š</i>	* <i>x</i>	* <i>h</i>
	* <i>z</i>		* <i>j</i>		
* <i>m</i>	* <i>n</i>		* <i>ñ</i>	* <i>ŋ</i>	
	* <i>r</i>				
	* <i>l</i>		* <i>ly</i>		
* <i>w</i>			* <i>y</i>		
			* <i>i</i>	* <i>i</i>	* <i>u</i>
			* <i>e</i>		* <i>o</i>
				* <i>a</i>	

Modification of the hypothetical list of protophonemes is expected to result from further comparative work on the families and stocks on which this paper is based, and from the inclusion of additional language groups. The back alveolar and back velar series of consonants (C) were added primarily to accomodate the Proto Mayan reconstructions of Olson, and Jackson following Olson. If the additional Proto Mayan phonemes suggested by McQuown (1955) are eventually added, the number of Proto Amerindian phonemes may be increased. On the other hand it might be possible even now to unite some sets of the protophonemes with statements of allophonic conditioning, but I have intentionally left the system somewhat loose for ease of comparison.

SINGULAR						PLURAL		
	1	2	3m or m-f	3f	1 incl.	1 excl.	2	3
PA	*ne-	*ke-	*we-	o-				
PAr	*n(V)-, *-nu	*p(V)-, *-pV	*r(V)-, *(h)i-, *-ri ; wa	'this	*w(V)-, *ha-, *-wV	*h(V), *-hV		*. . -na, *-na
Tn, G (Poss)	*pi-	wi-, hi-		ti-				
Tn, G (S of aux)	-ni	ni, hi-	nu	ø				
Nt, G (Poss)	-n-iš	-p-iš	-p-iš					
Gb	xá-ni	xa-mi	po-ni	po-wa	wa-xá-i-tsi	pa-xá-ma	pe-	
Tz, My	h   -C/k   -V	a   -C/aw   -V	s   -C/y   -V		h   -C/k   -V .. -tiš	a   -C/aw   -V... -išs	-C/y   -V .. -iš	
Chac, Pan	-p'i	-mi	-há, -va					
Q-Bol (GE)	-x ~ -y ~ -ni	-θ ~ -nqi	-θ ~ -n		-sun -sun-čix	-xqu -yqu -čix -sun-čix		
Ese, Tac (Key)	e, kwe	mi, ke	o					
Guar-Bol					name- ~ na-	ore- ~ ro-	pe-	
T-G (GE)	če- ~ Ha-	ne- ~ Re-	I ~ HO-					
Paez	ongy (m.) úpkwe (f.)	ingy (m.) ípkwe (f.)	kyáñ, kyax	kwáeš	iþkweš	kyáñ-weš		
	ihča (f. fami- liar)							

with additional language groups, expecting that new patterns of combinations will emerge as data are added.

An important unsolved problem in the phonology is revealed by occasional correspondences or apparent correspondences which are irregular between *m* and *b*, and between *n* and *l*, as in sets 564 and 565, 580 and 585; 369; 837. Allophonic relationship of nasals with homorganic stops (or flaps or laterals) will be found in the daughter languages of the Tupi-Guaranian and Tucanoan groups, and in Proto Harakbut (Arawakan).

In the reconstructions (Section 1.6) nasalization appears where indicated in any daughter language. It is not to be read as a protophoneme \**V̄*, but is to be taken to symbolize the occurrence of a nasal element in some daughter language(s).

No explanation has been attempted for particular cases of interchange of consonantal and vocalic reflexes of the high vocoids *i* and *u*. In general the interpretation depends upon the continually shifting CV and stress-pitch pattern of each individual language, or is due to unphonemicized data.

Conditioning, especially of vowel changes, necessarily appears inconsistent. The contributing factors are too numerous and complicated for a complete picture to be given. We (comparativists in general) usually mention one or two primary factors, such as proximate phones. Actually reinforcement by secondary factors may be required for assimilation. I have noticed occasionally in Proto Amerindian and frequently in Piro (Arawakan), that assimilation of -*e*- to a neighboring -*i*- is especially common in words with a couple of palatal or alveopalatal consonants. Frequency of occurrence of a morpheme in a particular environment in relation to its total frequency of occurrence is extremely important.

The symbol V in reconstructions often represents either a choice of inflectional affixes or morphophonemic change following such inflection.

Vowel loss in practically all languages is common. It is most frequent in the following environments: (1) word initially or finally; (2) when -*i*- follows a sibilant or occurs between two voiceless consonants; (3) when identical vowels occur noncontiguously in sequence.

Within VV, assimilation of vowels does not always occur when the vowels of the cluster are separated by a morpheme division, as in 876 'tooth'.

In Section 1.4 the lists show reflexes of PMy as given by Jackson in Section 3, except for PMy-Cp \*\**v* which is listed as a reflex of PAm \**b*.

#### 1.4 PHONEME REFLEXES

PAm	* <i>p</i>	* <i>t</i>	* <i>t̪</i>	* <i>k̪</i>	* <i>k</i>
PA	* <i>p</i>	* <i>t</i>		* <i>θk</i>	* <i>k</i>
Par	* <i>p</i> , * <i>b</i>	* <i>t</i>	* <i>t̪</i>	* <i>k</i>	* <i>k</i> , * <i>g</i>

Bo	<i>f</i>	<i>t</i>		<i>k</i>	
Cam	<i>b</i>	<i>t</i>			<i>k, g</i>
PChib	* <i>b</i>	* <i>t</i>	* <i>d</i>		* <i>k</i>
G (PM, Nt, Tn)	<i>p</i>	<i>t</i>	<i>t</i>		<i>k</i>
PGb	* <i>p</i>	* <i>t</i>	* <i>t</i>	* <i>k</i>	* <i>k</i>
Api, Ge	<i>p</i>	<i>t</i>	<i>t</i>	<i>k</i>	<i>k</i>
Gmb	<i>p</i>	<i>t</i>		<i>c̄</i>	<i>k</i>
PH, Yana, etc.	<i>p</i>	<i>t</i>	<i>d, t</i>		<i>k</i>
PMy	* <i>p</i>	* <i>t</i>	* <i>t̄</i>	* <i>k</i>	* <i>k</i>
POM	* <i>p</i> (POP)	* <i>t</i>	* <i>t</i>	* <i>k</i>	* <i>k</i>
Paez	<i>p</i>	<i>t</i>	<i>t̄</i>	<i>c̄</i>	<i>k</i>
PPan	* <i>p</i>	* <i>t</i>		* <i>k</i>	* <i>k</i>
Q	<i>p</i>	<i>t</i>	<i>t̄</i>	<i>k</i>	<i>k</i>
PS	* <i>p</i>	* <i>t</i>		* <i>k</i>	* <i>k, x</i>
PTac	* <i>p</i>	* <i>t̄</i>	* <i>c̄</i>		* <i>k</i>
PT-G	* <i>p</i>	* <i>t̄</i>	* <i>t̄</i>		* <i>k</i>
PTuc	* <i>p</i>	* <i>t̄</i>	* <i>t, d</i>		* <i>k, *g</i>
PU-A	* <i>p</i>	* <i>t̄</i>			* <i>k</i>
Wit	<i>p</i>	<i>d</i>	<i>d̄</i>		<i>k</i>
PAm	* <i>k</i>	* <i>p̄</i>	* <i>t̄</i>	* <i>t̄</i>	* <i>k̄</i>
PA	* <i>k</i>	* <i>p</i>			
Par	* <i>k</i>	* <i>p̄h</i>		* <i>t̄h</i>	
Bo	<i>k</i>				
Cam	<i>k</i>	<i>p</i>			
PChib	* <i>g</i>	* <i>b</i>			* <i>k</i>
G (PM, Nt, Tn)	<i>k, xw, g</i>	<i>p</i>	<i>t</i>	<i>t̄</i>	
PGb	* <i>x</i>	* <i>p̄h</i>			* <i>x</i>
Api, Ge	<i>k</i>				<i>k</i>
Gmb	<i>k</i>				<i>k</i>
PH, Yana, etc.	<i>k</i>	<i>p̄, b</i>	<i>t̄</i>		
PMy	* <i>k</i>	* <i>p̄</i>	* <i>t̄</i>		* <i>k̄</i>
POM	* <i>k</i>		* <i>t</i>		* <i>k</i>
Paez	<i>k</i>	<i>p</i>	<i>c̄</i>		<i>k</i>
PPan	* <i>k</i>		* <i>p̄t̄</i>		
Q	<i>k</i>	<i>p̄</i>			
PS	<i>g</i>				
PTac	* <i>k</i>	* <i>b</i>	* <i>t̄</i>		* <i>x</i>
PT-G	* <i>k</i>	* <i>ḡw</i>		* <i>t</i>	* <i>k</i>
PTuc	* <i>k</i>	* <i>b</i>			* <i>k</i>
PU-A	* <i>k</i>	* <i>w</i>			
Wit	<i>g</i>				

PAm	*k <sup>o</sup>	*k <sup>o</sup>	*b	*d	*d
PA	*h	*k	*w	*t	θ
Par	*k <sup>h</sup>	*k	*b	*d	d
Bo			b		
Cam			b		
PChib	*k	*k	*b	*d	d
G (PM, Nt, Tn)	k	k	p	t	t
PGb	*k	*k	*b	*t	
Api, Ge	k	k	p	t	
Gmb	k	k	p		
PH, Yana, etc.	k <sup>o</sup> , k	k	w, p <sup>o</sup> , b	t	d
PMy	*k <sup>o</sup>	*k <sup>o</sup>	*b, *p <sup>o</sup> , **v	*t	*t
POM	*k	*k	*w	*t	
Paez	k	p	m <sub>b</sub>	n <sub>d</sub>	ñdy
PPan	*k	*p	*b	*t	
Q	k <sup>o</sup> , q <sup>o</sup>	k	p <sup>o</sup>	t	
PS	*x				
PTac	*k	*k	*b	*d	*d
PT-G	*g <sup>w</sup>	*g <sup>w</sup>	*b	*d	*d
PTuc	*k	*k	*b	*d	*d
PU-A	*k	*k	*k <sup>w</sup>	*t	
Wit	k		b	d	

PAm	*g	*p	*ts	*č	*č
PA	*k	*θ	*c, *š	*č, *t	*θ
Par	*g	*θ	*ts	*č	*t
Bo	g	θ			
Cam			ts	č	ts
PChib	*g	*θ	*ts, *č	*č	*č
G (PM, Nt, Tn)	(h)k	p	c	č	č
PGb	*k	*θ	*ts	*s, *ts	*ts
Api, Ge	k		č	č	
Gmb	k		c	c	č
PH, Yana, etc.	g, k	p, θ	c	č, c	c
PMy	*k <sup>w</sup>	*p	*ts	*č, *č <sup>1</sup>	*č
POM	*k		*( <i>Y</i> )t	*t	*t
Paez		p	c	č	ts
PPan	*k	*p	*č, *č	*č	*č
Q	g			č	š
PS				*t	
PTac	*k	*p	*c	*č	*č

PT-G	*g	*p	*č	*č	*č
PTuc	*g	*p	*č	*č	*z
PU-A	*k	*p	*c		
Wit	g				
PAm	*ts <sup>p</sup>	*č <sup>p</sup>	*č <sup>p</sup>	*f	*s
PA	*s	*c	*s	*w	*θ, *š, *s
PAr	*s, *ts	*t, *č	*s	*p	*s
Bo				b	s
Cam	ts		š	b	s
PChib	*t, *s	*t	*s	*f, *b	*s
G (PM, Nt, Tn)	s, š		s	w	š, c
PGb	*ts		*s	*b	*s
Api, Ge					
Gmb			š		s
PH, Yana, etc.	č, č	d	č, s	b, p <sup>p</sup>	s, š
PMy	*ts <sup>p</sup>	*č <sup>p</sup>	*č <sup>p</sup>	*w	*s, *š
POM	*(H)t	*(Y)t	*(Y)t		*s
Paez	t	t	č	b, w	s
PPan	*š	*t	*š	*b	*s
Q		č <sup>p</sup>	č	w, b	s
PS					*s
PTac	*c		*č	*b	*s
PT-G	*t	*j	*s	*p	*s
PTuc			*č	*b	*s
PU-A	*c			*p	*s
Wit	dž		č	w, u	s
PAm	*š	*š	*x	*h	*z
PA	*š	*θ, *s, *š	*k	*h	*s
PAr	*s	*s	*k	*h	*d
Bo	s			h	
Cam	š	š		h	
PChib	*s	*s	*k, *g	*h, *θ	*c
G (PM, Nt, Tn)	š	š	k	h	
PGb	*ts	*s	*k	*h	
Api, Ge			k		ž
Gmb	š	š		ø	š
PH, Yana, etc.	š, s	s, š, ž	x	h	z
PMy	*š	*š	*h	*h, *x	*s

POM	*s	*s	*k	*h	*(n)s
Paez	š	nž		h	nz
PPan	*š	*š	*j	*θ	
Q	s, š	s, š	x	θ, h	z
PS			*x		
PTac	*š	*č	*x	*š	*s
PT-G		*s	*k	*h, *x	
PTuc	*s	*s	*k	*h	*z
PU-A	*s		*k	*h, *s	
Wit			k	h	d

PAm	*j	*m	*n	*ñ	*η
PA	*y	*m	*n	*n	
Par	*j	*m	*n	*y	
Bo		m	n		
Cam	j	m	n, η	n	
PChib	*d	*m	*n	*y	*g
G (PM, Nt, Tn)	y	m	n	y	
PGb	*y	*m	*n	*y	
Api, Ge		m	n, ñ	ñ, n	η
Gmb		m	n	ñ	
PH, Yana, etc.	ž	m	n	n, y	η
PMy	*č⁹	*m	*n	*n	*η
POM	*y	*nw	*n	*(n)y	
Paez	š	m	n	y	ηg
PPan	*y	*m	*n		
Q	y	m	n	ñ, y	
PS	*y	*m	*n		
PTac	*d	*m	*n	*y	
PT-G	*j	*m	*n	*y, *N	*n
PTuc	*y	*m	*n, *g	*y	*n
PU-A	*y	*m	*n		*η
Wit	dž	m	n		n

PAm	*r	*l	*ly	*w	*y
PA	*r	*l	*l	*w	*y
Par	*r	*l	*ly, *ly	*w, *u	*y
Bo	l		ll	w	
Cam	l			w, u	y
PChib	*d		*d	*w, *u	*y

G (Pm, Nt, Tn)	<i>r</i>	<i>l</i>	<i>l, y</i>	<i>w</i>	<i>y</i>
PGb	* <i>r</i> , * <i>l</i> , <i>N</i>	* <i>r</i>	.	* <i>w</i>	* <i>y</i> , * <i>Y</i>
Api, Ge	<i>r</i>	<i>r</i>	<i>r</i>	<i>v</i>	<i>y</i>
Gmb	<i>r, l</i>	<i>l</i>	<i>l</i>	<i>w</i>	<i>y</i>
PH, Yana, etc.	<i>r</i>	<i>l, r</i>	<i>z</i>	<i>w</i>	<i>y</i>
PMy	* <i>r</i>	* <i>l</i>	* <i>l</i>	* <i>w</i>	* <i>y</i>
POM		* <i>l</i>		* <i>w</i>	* <i>y</i> , * <i>i</i>
Paez	<i>l</i>	<i>l</i>	<i>l</i>	<i>w, u</i>	<i>y, x</i>
PPan	* <i>r</i>	* <i>r</i>		* <i>w</i>	* <i>y</i> , * <i>i</i> , * <i>ø</i>
Q	<i>l</i>	<i>r, l</i>	<i>ll</i>	<i>w, u</i>	<i>y</i>
PS	* <i>r</i> , * <i>Ly</i>	* <i>r</i>	* <i>Ly</i>		
PTac	* <i>r</i>	* <i>r</i>	* <i>r</i>	* <i>w, m, ø</i>	* <i>y</i>
PT-G	* <i>r</i>	* <i>r</i>		* <i>w</i>	* <i>j</i>
PTuc	* <i>r</i>	* <i>r</i>	* <i>y</i>	* <i>w, i, o</i>	* <i>y</i> , * <i>ø</i>
PU-A	* <i>r</i>		* <i>l</i>	* <i>w</i>	* <i>y</i>
Wit	<i>r</i>	<i>r</i>		<i>w</i>	<i>dz</i>

PAm	* <i>i</i>	* <i>e</i>	* <i>a</i>	* <i>i</i>	* <i>u</i>	* <i>o</i>
PA	* <i>i</i> , * <i>e</i>	* <i>e</i> , * <i>i</i>	* <i>a</i> , * <i>e</i> , * <i>o</i>		* <i>o</i>	* <i>o</i>
Par	* <i>i</i>	* <i>e</i> , * <i>i</i> , * <i>a</i>	* <i>a</i> , * <i>e</i> , * <i>o</i> , * <i>i</i>	* <i>i</i> , * <i>o</i> , * <i>i</i> , * <i>e</i>	* <i>u</i> , * <i>o</i>	* <i>o</i> , * <i>u</i> , * <i>a</i>
Bo	<i>e</i>	<i>e, i, a</i>	<i>e, i, i</i>	<i>i, u, o, a</i>	<i>u</i>	
Cam	<i>i, i</i>	<i>i</i>	<i>a, e, i</i>	<i>i, a</i>	<i>u, o</i>	<i>o</i>
PChib	* <i>i</i> , * <i>u</i>	* <i>e</i> , * <i>i</i> , * <i>a</i>	* <i>a</i> , * <i>e</i> , * <i>o</i> , * <i>u</i>	* <i>i</i> , * <i>e</i> , * <i>a</i>	* <i>u</i> , * <i>a</i>	* <i>o</i> , * <i>u</i> , * <i>a</i>
G (PM, Nt, Tn)	<i>i, e</i>	<i>e, i</i>	<i>a, e, u, o</i>	<i>a, e, w</i>	<i>u, a</i>	<i>o, u</i>
PGb	* <i>i</i>	* <i>a</i>	* <i>a</i> , * <i>e</i> , * <i>o</i> , * <i>i</i>	* <i>i</i>	* <i>u</i> , * <i>o</i> , * <i>i</i>	* <i>o</i>
Api, Ge	<i>i, e, a</i>	<i>e, a</i>	<i>a, o, i</i>	<i>i, u</i>	<i>u</i>	<i>o, u, a</i>
Gmb	<i>i</i>	<i>i, i</i>	<i>a, i</i>	<i>i, o</i>	<i>i</i>	<i>o</i>
PH, Yana, etc.	<i>i, e</i>	<i>e, i</i>	<i>a, e, u</i>	<i>u, a</i>	<i>u, a</i>	<i>u</i>
PMy	* <i>i</i>	* <i>e</i> , * <i>i</i> , * <i>a</i>	* <i>a</i> , * <i>e</i> , * <i>u</i>	* <i>u</i> , * <i>o</i>	* <i>u</i> , * <i>o</i>	* <i>o</i> , * <i>u</i>
POM	* <i>i</i> , * <i>e</i>	* <i>e</i> , * <i>i</i>	* <i>a</i> , * <i>e</i>	* <i>u</i> , * <i>e</i>	* <i>u</i> , * <i>w</i>	* <i>u</i> , * <i>w</i>
Paez	<i>i, e</i>	<i>e, i</i>	<i>a, e, u</i>	<i>u, e</i>	<i>u</i>	<i>u, a</i>
PPan	* <i>i</i> , * <i>i</i>	* <i>u</i>	* <i>a</i> , * <i>o</i> , * <i>i</i>	* <i>i</i> , * <i>o</i>	* <i>u</i> , * <i>o</i> , * <i>i</i>	* <i>o</i> , * <i>a</i>
Q	<i>i</i>	<i>i, a</i>	<i>a, u</i>	<i>u, a</i>	<i>u</i>	<i>u, a</i>
PS	* <i>i</i>	* <i>e</i> , * <i>i</i>	* <i>a</i>	* <i>u</i>		* <i>o</i>
PTac	* <i>i</i> , * <i>e</i>	* <i>e</i> , * <i>a</i>	* <i>a</i> , * <i>e</i> , * <i>o</i>	* <i>i</i> , * <i>e</i> , * <i>o</i> , * <i>u</i>	* <i>o</i> , * <i>w</i> , * <i>a</i>	* <i>o</i> , * <i>a</i>
PT-G	* <i>e</i> , * <i>i</i>	* <i>e</i> , * <i>i</i>	* <i>a</i> , * <i>e</i> , * <i>i</i>	* <i>i</i> , * <i>u</i>	* <i>u</i> , * <i>i</i>	* <i>o</i> , * <i>i</i>
PTuc	* <i>i</i> , * <i>e</i> , * <i>e</i> , * <i>i</i>		* <i>a</i> , * <i>e</i> , * <i>o</i> , * <i>i</i>	* <i>i</i> , * <i>o</i> , * <i>a</i> , * <i>i</i>	* <i>u</i> , * <i>o</i> , * <i>i</i>	* <i>o</i> , * <i>a</i> , * <i>i</i> , * <i>u</i>
PU-A	* <i>i</i>	* <i>i</i>	* <i>a</i> , * <i>e</i> , * <i>o</i> , * <i>u</i>	* <i>i</i>	* <i>u</i> , * <i>i</i>	* <i>o</i>
Wit	<i>i, e, i</i>	<i>e, i, u</i>	<i>o, e, o</i>	<i>e, i</i>	<i>i, o</i>	<i>o</i>

## 1.5 CONDITIONING AND EXAMPLES OF PHONEME REFLEXES

- CC →
- \**ph* → *pV1 | -V1* (PA, Wit) ; *ph* (PGb, H, PMy, Paez, Q) ; *ph, ph*  
(PAr) ; *p* 103, 483, 625, 786
- \**phy* → *phy* (P, Ar) ; *ph* (PGb) 233
- \**th* → *th* (Cam, PGb, PMy, Paez) ; *t* (PAr, Tac, PU-A) 554, 566, 638,  
819
- \**kh* → *kh* (PGb, PMy, Paez, Kog-Chib) ; *k* (PAr, Bo, Mot-Chib, PTac,  
Des-Tuc) 28, 67, 76, 281, 500, 569
- \**kñ* → *hñ* (Pre Cp-My) ; *gñ* (Ay-Q) 382
- \**kr* → *kr* (Ge, H) 759
- \**kw* → *kw* (PPan, POM) ; *kw* (PT-G) 76, 949
- \**kh* → *h* (PAr) ; *k* (PGb, PT-G) ; *kh* (PMy) ; *kw* (POM) ; *g* (Tue) ;  
*kh* (Paez) 44, 88, 356, 881, 952
- \**þt* → *d* (PChib) ; *t* (PGb, Q, PT-G) ; *þt* (PA, PTue) ; *ht* (Tn-G) 78,  
196, 501
- \**þt* → *d* (PChib) ; *þty* (Paez) ; *c* (PTac) 67, 500
- \**þd* → *d* (PChib) ; *t* (Ge, PTue) ; *þnd* (Paez) ; *þt* (PPan) 63, 717
- \**þd* → *ht* (G) ; *þndy* (Paez) 202
- \**þts* → *c* (H) ; *þe* (PPan) 915
- \**þč* → *hč* (Cp-My) ; *þč* (Paez) 223
- \**þs* → *s* (PChib, PTac, PTue) ; *þs* (Paez) 927
- \**þš* → *þθ* (PA) ; *čk* (PAr) ; *ts* (Gb) 869
- \**þn* → *þn* (Tun-Chib, Paez) ; *n* (PAr, PTue, PU-A) 262, 925
- \**þŋ* → *þŋ* (PMy-Cp) ; *n* (PT-G) 45
- \**þw* → *þw* (POM, Paez) 918
- \**tsh* → *s* (Gr-Ar) ; *tsh* (Cp-My) 170
- \**čk* → *čk* (PAr) ; *čh* (PMy-Cp) 900
- \**čh* → *č* (Tn-G) ; *č* (Yana-H) ; *čh* (PMy-Cp) ; *ts* (PAr) 241, 474
- \**čh* → *ts* (PAr, Yana-H) ; *č* (Gmb) ; *čh* (PMy-Cp) 273, 303, 899, 933
- \**st* → *t* (Wal-H) ; *st* (P-Ar, Chib, Tz-My, Chan-Pan) 149, 499, 784
- \**sk* → *sk* (Cam, Gmb, Q) 594, 621
- \**scþ* → *sc* (PAr) ; *čþ* (PMy-Cp) 892
- \**sh* → *sh* (Kog-Chib) ; *s* (Wit) 137
- \**št* → *c* (PTac) ; *št* (Tn-G) 9
- \**šþ* → *š* (Gmb) ; *šþ* (Tn-G) 264
- \**xp* → *hk* (Tn-G) ; *xp* (Yana, H) 116
- \**hp* → *p* (Tac) ; *hp* (Tn-G) 885
- \**hb* → *b* (PAr) ; *hp* (Tn-G) ; *pþ* (Yana-H) ; *hpþ* (PMy-Cp) 303, 474
- \**ht* → *t* (PAr) ; *r* (Wal-H) ; *ht* (Tn-G) ; *th* (POM) 206, 467
- \**hk* → *k* (PAr, Kog-Chib, PGb, Gmb; PPan) ; *k(h)* (Paez) ; *hk* (PA),

- Tn-G) ; *hx* (Yana-H) ; *g* (Was-H) 2, 98, 203, 264, 372, 475, 762, 789, 891
- \**hk* → *k, kb* (PAr) ; *k* (Tn-G, Ge, Chac-Pan, PTac) ; *hk* (PMy-Cp) 362, 667, 900
- \**hk<sup>p</sup>* → *k* (PTac, PU-A) ; *hk<sup>p</sup>* (PMy) 379
- \**hk<sup>b</sup>* → *k* (PAr, Kog-Chib, PTac) ; *g* (Yana-H) ; *kh* (Paez) ; *hk<sup>b</sup>* (PMy-Cp) ; *hk* (PA, POM) 358, 436, 674
- \**h<sup>p</sup>* → *hk* (Cp-My) ; *h<sup>p</sup>* (Paez) 909
- \**hč* → *hč* (PMy-Cp) ; *č* (Y-Ch-Om) ; *th* (Paez) ; *č* (PTac) 861
- \**hs* → *hs* (PA) ; *s* (PAr, J-H, K-My, Paez, POM) ; *š* (Tz-My) 757, 812
- \**hy* → *hy* (Paez) ; *y* (PAr, PTuc) ; *h* (Chib, PGb, Wit) ; *z* (Yana-H) 284
- \**mp* → *mp* (Gmb) ; *b<sup>y</sup> | -i* (Paez) ; *mb* (Paez) 161, 780
- \**mk* → *mk* (Gyb-Gb) ; *nk* (POM) 898
- \**mb* → *mb* (Rey-Tac) ; *b/m* (PTuc) 145
- \**nk* → *k* (PChib) ; *nk* (Tn-G) 345
- \**nd* → *nd* (PChib) ; *nd* (Paez) 827
- \**ns* → *j* (PAr) ; *Nc* (PChib) ; *(n)s* (POM) ; *c* (Paez) ; *s* (PTuc) 194
- \**r<sup>p</sup>* → *l<sup>p</sup>* (Yana-H) ; *r* 713
- \**l<sup>p</sup>* → *r* (PAr) ; *l<sup>p</sup>* (Tn-G) 562
- \**yč* → *yč* (Gyb-Gb) ; *(Y)(h)t* (POM) 889
- \**C* →
- \**p* → *b | b . . .* (PAr) ; *b* (Cam, PChib) ; *p* 14, 47, 88, 90, 92, 146, 212, 242, 343, 620, 709
- \**t* → *d* (Wit) ; *t* 14, 103, 290, 438, 570, 575, 669, 763, 887
- \**t* → *d | #* (PTuc) ; *t* (PAr, G, PGb, Api-Ge, Jic-H, POM, Q, PT-G, PTuc) ; *d* (PChib, H, Wit) ; *t* (PMy) ; *t<sup>y</sup>* (Paez) ; *č* (PTac) 12, 45, 67, 179, 277, 572, 578, 670, 885, 892
- \**k* → *č* (Gmb) ; *k* (PMy) ; *x* (PGb) ; *θk* (PA) ; *k* (PAr, Bo, Ge, POM, PPan, Q, PS) 109, 115, 213, 725
- \**k* → *g | n* (V → Ø)- (PAr, Cam) ; *g | -(V → Ø)w* (PTuc) ; *x | k<sup>p</sup> . . .* (PS) ; *k* 7, 34, 133, 198, 257, 512, 662, 678, 712, 858
- \**k* → *k* (PMy) ; *k | h-* (G) ; *x<sup>w</sup>* (PM, G) ; *x* (PGb) ; *g* (PChib, Tn-G, PS, Wit) ; *k* 35, 68, 235, 289, 510, 532, 550, 575, 763, 764, 788

Some Quechuan languages and/or dialects distinguish *k* from *č*. I have not attempted to separate the two in handling the various dialects here because (1) I hope that a complete comparative study of Quechuan will soon be available ; (2) the distinction does not occur in the Ecuadorian Quechua which is the dialect principally used in this comparison ; and (3) the symbols used in the various transcriptions are not explained.

- \* $p^{\theta} \rightarrow p^h$  (PAr) ;  $p$  (Cam, Paez) ;  $ph$  (PGb) ;  $w$  (PU-A) ;  $p$  (PA, G) ;  $b$  (PChib, Yana-H, PTac, PTuc) ;  $p^{\theta}$  (Jic-H, PMy, Q) ;  $g^w$  (PT-G) 93, 166, 196, 266, 270, 325, 480, 482
- \* $t^{\theta} \rightarrow ?t$  (PPan) ;  $\dot{c}$  (Paez) ;  $t^h$  (PAr) ;  $t$  (G, POM, PTac) ;  $t^{\theta}$  (H, PMy) 162, 199, 488, 708
- \* $t^{\theta} \rightarrow t^{\theta}$  (G) ;  $t$  (PT-G) 818
- \* $k^{\theta} \rightarrow x$  (PGb, PTac) ;  $k^{\theta}$  (PMy) ;  $k$  (PChib, Ge, Gmb, POM, Paez, PT-G, PTuc) 238, 509, 636, 743, 859
- \* $k^{\theta} \rightarrow k^h$  (PAr) ;  $k^{\theta}$  (Yana-H and Was-H, PMy) ;  $x$  (PS) ;  $k^{\theta}, q^{\theta}$  (Q) ;  $g^w$  (PT-G) ;  $k$  23, 96, 112, 234, 581, 712, 812, 912, 968
- \* $k^{\theta} \rightarrow \theta$  (Paez, PPan) ;  $g^w$  (PT-G) ;  $k^{\theta}$  (PMy) ;  $k$  218, 227, 434, 436, 495, 576, 801
- \* $b \rightarrow kw$  (PU-A) ;  $w$  (PA, Wal-H, and Jic-H, POM) ;  $mb$  (Paez) ;  $p^{\theta}$  (PMy-Cp, Yana-H, Q) ;  $b, v$  (PMy-Cp) ;  $p$  (G, Ge, Gmb) ;  $b$  135, 147, 163, 305, 350, 365, 375, 383, 696, 829
- \* $d \rightarrow nd$  (Paez) ;  $d$  (PAr, PChib, PTac, PT-G, PTuc, Wit) ;  $t$  16, 29, 171, 214, 261, 267, 416, 488, 523
- \* $d \rightarrow \theta$  (PA) ;  $t$  (G, PMy) ;  $\tilde{n}dy$  (Paez) ;  $d$  34, 645, 711
- \* $g \rightarrow k$  (PA, PGb, Ge, Gmb, Krk-H, POM, PPan, PTac, PU-A) ;  $(h)k$  (G) ;  $kx$  (Cp-My) ;  $g$  31, 49, 218, 222, 232, 269, 293, 304, 776, 806
- \* $\theta \rightarrow \emptyset$  (PA, PAr, Bo, PChib, Wal-H, PGb) ;  $\theta$  64, 256, 259, 339, 592, 857
- Key (1963) states that data for establishing PTac \*? are inadequate.
- \* $ts \rightarrow \dot{s} | \dots \dot{s}$  (PA) ;  $\dot{c} | \dots i$  (PChib, PPan) ;  $\dot{c}$  (Ge, PT-G, PTuc) ;  $(Y)t$  (POM) ;  $ts$  92, 184, 326, 371, 384, 422, 713, 823, 879
- \* $\dot{c} \rightarrow t | -e$  (PA) ;  $ts | s \dots$  (PGb) ;  $t$  (PS, POM) ;  $s$  (PGb) ;  $ts$  (Gmb, Was-H) ;  $\dot{c}$  121, 160, 208, 353, 475, 538, 597, 843, 889
- \* $\dot{c} \rightarrow \theta$  (PA) ;  $t$  (PAr, POM) ;  $ts$  (Cam, PGb, PH, Paez, PPan) ;  $\dot{s}$  (Q) ;  $z$  (PTuc) ;  $\dot{c}$  (PMy) ;  $\dot{c}$  27, 120, 521, 617, 690, 729, 731, 799, 837
- \* $ts^{\theta} \rightarrow ts | s \dots / \#-$  (PAr) ;  $\dot{s} | \#-$  (Tn, G) ;  $s$  (PA, PAr, Mot-Chib, G) ;  $\dot{s}$  (PPan) ;  $t$  (Chib, Paez, PT-G) ;  $(H)t$  (POM) ;  $\dot{c}$  (Wal-H, Shasta-H) ;  $ts^{\theta}$  (Yana-H, PMy) ;  $ts$  (Cam, PGb, PTac, PU-A) ;  $d\dot{z}$  (Wit) 20, 87, 111, 167, 177, 183, 754, 793, 811, 966
- \* $\dot{c}^{\theta} \rightarrow \dot{c} | s \dots t$  (PAr) ;  $ts$  (PA) ;  $t$  (PAr, PChib, PPan, Paez) ;  $d$  (H) ;  $\dot{c}^{\theta}$  (PMy, Q) ;  $(Y)t$  (POM) ;  $j$  (PT-G) 159, 229, 372, 382, 663, 732, 790
- \* $\dot{c}^{\theta} \rightarrow s$  (PA, PAr, PChib, G, PGb, Yana-H, PT-G) ;  $\dot{s}$  (Cam) ;  $\dot{c}$  (Gmb) ;  $\dot{c}$  (PTac) ;  $\dot{s}$  (PPan) ;  $(Y)t$  (POM) ;  $\dot{c}$  175, 239, 330, 736

\**f* → *b* | -*i* (Paez) ; *f* (Chib) ; *b* | *m* . . . (Q) ; *p* (PAr, PT-G, PU-A) ; *b* (Bo, Cam, PChib, PGb, Yana-H, PTac, PTuc) ; *p*<sup>2</sup> (Jic, H) ; *b* (PPan) ; *w*, *u* 15, 34, 114, 134, 162, 203, 259, 278, 340, 422, 681, 710, 748, 766, 804, 950

Wheeler (2.1) calls attention to transcriptions of *f* in Chibcha where a sibilant is expected. It appears also as a reflex of PAm \**f* in 15 and 950.

\**s* → *š* | -*i* (PA, H, PMy) ; *θ* | *e*, *a*- *e*, *a* (PA) ; *c* (PM-G) ; *s* 29, 70, 434, 785, 812, 817, 824, 832

See also protomorphophoneme *S* in 1.2.

\**ʂ* → *ʂ* (Haqe-Aru-G) ; *s* (PAr, Bo, PChib, Yana-H, POM, Q, PTuc, PU-A) ; *ʂ* (Cam) ; *ts* (PGb) ; *ʂ* 61, 66, 72, 306, 324, 331, 334, 376, 684.

\**ʂ* → *θ* ~ *s* ~ *ʂ* (PA) ; *s* (Cam) ; *ʂ* (Gmb) ; *ʂ* (PMy, PPan) ; *ʂ* | -*i* (Q) ; *z* | -*y* (Yana, H) ; *ʂ* (G, PH) ; *nʂ* (Paez) ; *č* (PTac) ; *s* 247, 266, 380, 403, 597, 664, 698, 878, 882

\**x* → *g* | *y* (V → Ø)- (PChib) ; *χ* (PPan) ; *x* (H, Q, PS, PTac) ; *h* (PMy) ; *k* 21, 65, 86, 148, 224, 254, 409, 523, 713

\**h* → *s* | #- (PU-A) ; *h*, *x* (PMy) ; Ø | #- (PChib) ; *x* | *k* . . . (PT-G) ; *ʂ* (PTac) ; Ø (Gmb, Ay-Q) ; *h* 26, 55, 74, 97, 148, 198, 228, 237  
Regarding PMy reflexes, see 3.1.

\**z* → *d* (PAr, Wit) ; *s* (PA, PMy, PTac) ; *c* (PChib) ; *ʐ* (Ge) ; *ʂ* (Gmb) ; *z* (H, Q, PTuc) ; (*n*)*s* (POM) ; *nz* (Paez) 15, 102, 195, 265, 568, 743, 792, 830

\**j* → *j* (PAr, Cam, T-G) ; *d* (PChib, PTac) ; *ʒ* (H) ; *χ*<sup>2</sup> (PMy) ; *ʂ* (Paez) ; *dʐ* (Wit) ; *y* 9, 29, 89, 317, 395, 468, 541, 624, 733, 846, 849

\**m* → *nw* (POM) ; *m* 150, 250, 504, 551, 580, 810, 886, 922, 972

\**n* → *ɳ* | . . . *k* | . . . *g* (Cam) ; *ñ* | *i* . . . *i* (Ge) ; *g* | -*ñg* (PTuc) ; *n* 173, 212, 450, 549, 577, 689, 723, 796

\**ñ* → *ñ* | -*i*-*u* (Ge) ; *ñ*, *y* (Q — varies according to language or dialect) ; *n* (PA, Cam, Ge, Wal-H, PMy) ; *n* | . . . *n* (PGb) ; *ñ* (Gmb) ; (*n*)*y* (POM) ; (*N*)*y* (PT-G) ; *y* 169, 278, 472, 600, 644, 866

\**ɳ* → *g* (PChib) ; *ɳg* (Paez) ; *ɳ* (Ge, PMy, PU-A) ; *n* (PT-G, PTuc, Wit) 33, 45, 660, 720

\**r* → *Ly* | -*i* (PS) ; *l* | #- (Gmb) ; *d* (PChib) ; *r*, *l* ~ *r*, *N* (PGb) ; *r* (H-A-Q, Q of Cuzeo) ; *l* (Bo, Cam, Paez, Q) ; *r* 32, 36, 40, 90, 93, 242, 341, 669, 679, 682

PGb has morphophonemic alternation of \**l* with \**r*. See sets 7, 628, and 635, in which the phonemes vary in the PAm morpheme \*-*rV*. The PGb \**N*, which represents *n.l* in Gb, occurs

in one set (101) in which PAm \*r has been reconstructed with the hypothesis that PAm \*l → N | -V̄ (PGb).

- \*l → d (PChib) ; r (PH) ; r | -i (Yana-H) ; l (PA, G, Gmb, Ay-Q, PMy, POM, Paez) ; r 31, 59, 77, 112, 246, 258, 369
- \*ly → ly | #- (PAr) ; l (Nt, G) ; y | #- (G) ; r (PAr, Ge, PTac) ; z (H) ; ll (= ly) (Q) ; Ly (PS) ; ly (Cp, My) ; y (PTuc) ; l 83, 139, 209, 231, 252, 370, 780, 871
- \*w → i | k⁹- (PTuc) ; o | a . . . a (PTuc) ; Ø | k⁹- (PTac) ; m | . . . m (Tac) ; w, w, u 11, 126, 143, 158, 493, 566, 758, 791, 949
- \*y → z | h- (Yana, H) ; y, x (= hy) (Paez) ; j (PT-G) ; Ø | i-a (PPan, PTuc) ; dz (Wit) ; y, i 18, 30, 39, 64, 96, 189, 338, 856, 920

\*VV →

- \*ii → ee | a . . . (PAr, Paez) ; i' (PA, Cp-My) ; i ~ ih (G) ; ii (PNew-Ar, Yana-H) ; e (Ese-Tac) ; i 159, 437, 475, 545, 556, 694, 949
- \*ie → e' (PA) ; ee (PAr) ; ie (Cam, PChib, Sir-T-G) ; ii (H) ; i (Q) 5, 13, 294, 558
- \*ia → e | s- (PA) ; e | -si (PGb) ; a | s- (Tac) ; iu | sw- (PS) ; i | sw- (PMy) ; i | -si (PChib) ; ii | sw- (Bo) ; ie | #- (PChib) ; ea | h- (PGb) ; ia | sw- (PTuc) ; ya (PA, PPan) ; ia (PAr, Cam, PChib, PGb, PTac, PTuc) ; i (Ge, PS) ; a (Nt-G, PT-G) ; e (Paez) 3, 29, 65, 144, 174, 261, 305, 317, 339, 587, 625, 732, 773, 839, 849
- \*io → oo | u⁹- (PAr) ; io (Gn-Tuc) 622
- \*iu → i' (PA) ; uu (Paez) 792
- \*ei → ee | -wa (PA, PTac) ; i | -w (PTuc) ; e' (PA) ; ei (PAr, PT-G) ; ai (H) ; i (Q) 94, 312, 548, 880
- \*ee → i | ij- (PAr) ; ii | ly- (G, H) ; e' (PA, Pia-Ar) ; ee (Bo, Cp-My, Paez) ; i (Q) ; e 205, 228, 353, 354, 370, 869
- \*ea → ia (PAr) ; e (Chib) ; a (Gmb) ; ea (PTuc) 281, 798
- \*ei → ei (Sir-T-G) 917
- \*eu → eu (PAr, PChib) ; ee (Bo) ; e (POM) 60
- \*ai → a | -yai (PGb) ; a | . . . a (Des-Tuc) ; a | -ns (Paez) ; i | i . . . i (PPan) ; i | -si (PPan, PTac) ; ai | -j/-c/hi/-# (PTac) ; ai | y- (PTuc) ; e | -y/y- (PTac) ; e | . . . i (PAr) ; e | i . . . (PAr, Cam, PTac, Wit) ; e | . . . e (PGb) ; e | w- (PTuc) ; ae | -ha (PGb, PTac) ; ae | a . . . a (PT-G) ; o | w . . . u (PGb) ; a (Cul-Ar, Mot-Chib, Cp-My, PU-A) ; i (Tn-G, PM-G) ; ee (Bo) ; ay (PA) ; e (Ge, Paez) ; ei (PTac, PT-G) ; ai (PAr, Cam, PChib, PGb, Gmb, H, PMy, PPan, Q, PT-G, PTuc, Wit) 12, 65, 88, 108, 132, 139, 148, 194, 211, 217, 226, 244, 290, 298, 328, 347, 359, 487, 519, 526, 551, 682, 720, 846, 858, 876, 886, 908, 936, 948, 953

- \*ae → e (PA, Jic-H, Cubeo-Tuc) ; ae (PAr) ; ai (Bo) ; a (Ese, Tac) 43, 302
- \*aa → e | -y- (Cam) ; ee | y- (Wit-P) ; o | P- (PPan) ; ēē | ñ- (Guar-Bol-T-G) ; a (PA) ; Ø | Probably morphologically determined (PAr) ; aa (PAr, PChib, Yana-H, Paez, PPan) ; a 16, 58, 59, 80, 162, 176, 278, 436, 437, 542, 550, 597, 644, 712, 966
- \*ao → ao (Gmb, PPan, PTac) 111, 626
- \*au → i | y- (PAr) ; o | ... u (PChib) ; a (Cam, Haqe-Aru-Q) ; i (Gr-Ar, PPan, PTuc, PU-A) ; aΛ (Ge) ; o (Gmb, PTac) ; ai (Wit) ; au (PAr, PChib, PGb, Yana-H, PMy-Cp) 41, 68, 147, 236, 268, 314, 608, 877, 946
- \*oi → ii (Gmb) ; e/oi (POP-OM) ; oi (At-Pan) ; u (Q-Bol) 466
- \*oe → ae (PAr) ; o (PTuc) ; o· (PA) ; oo (Mot-Chib) 80, 883
- \*oo → o· (PA) ; oo (H) ; a (Q) ; o 18, 49, 115, 411, 565, 764
- \*oi → oi (Bo) ; a (Gb) ; ua (Guar-Br-T-G) 36
- \*ii → oo | u ... (Wit) ; e (PA) ; ii (PAr, Gn-Tue, Wit) ; i (Bo) ; u (PGb, POM, Q) ; ui (H) ; i (PT-G) 24, 120, 200, 524, 961
- \*ie → i (PAr) ; ie (PTuc) ; ie (Wit) 102
- \*ia → ia (PAr) ; a (Mar-Chib) ; ua (Ge) ; o (Rey-Tac) ; u (PU-A) 227
- \*io → o (PChib, Wal-H) ; io (PTuc) 307, 430
- \*ui → i | g- (PAr) ; i | i ... (Bo) ; i | -h+ (Bo) ; i | k- (PTac) ; wi (PA) ; oi (PAr, PTac) ; e | e ... (Bo) ; ui (Bo, PChib, G, PGb, H) ; i (Cam) ; u(u) (Paez) ; we (POM) ; wi (PPan) ; u (Q) 15, 38, 43, 91, 204, 225, 326, 560, 638, 752
- \*ue → ui | ... i (PTuc) ; we (PA) ; ue (PAr, PTac) ; ui (Bo, PTuc) ; u (PGb, Jic-H) ; ii (Ge) ; we (POM) ; wi (PPan) ; ae (Sir-T-G) 14, 293
- \*ua → wa | k-/k-/k- (PA, PAr, Cp-My, Cav-Tac, Rey-Tac) ; wa | k-/k- (PChib, Nt-G, POM, Ese-Tac) ; o | k- (Pm-My) ; a | ua ... (PGb, Rey-Tac) ; a | k<sup>2</sup>- (Mot-Chib) ; u· (PM-G) ; u | -# (Paez) ; u | ... ua (PTuc) ; wi | -wi (PT-G) ; ia | a ... a (PT-G) ; o· (PA) ; oa (PAr) ; uu (Gr-Ar, Wit) ; ua (Cam, PChib, PGb, PT-G, Jic-H, PTuc) ; va (Ge) ; a (Chib, Cp-My, PTac) ; we (Paez) ; u (PU-A) 98, 103, 145, 208, 218, 326, 338, 385, 397, 407, 615, 630, 636, 647, 654, 775, 841, 859, 866, 872, 952
- \*ui → wi | k- (PChib) ; i | k- (Wit) ; u (Pia-Ar, Yana-H) ; ua (Cam) ; i (PChib, Q) ; i (PGb, PTuc) ; wa (Gmb) ; wi (Wit) 34
  
- \*V →
- \*i → e | ... a (PA, G, PAr, Bo, Paez, PTac, PTuc) ; e | a ... (PAr, Bo, G, Paez, PTac, PT-G, PTuc, Wit) ; e | ... e (PTac) ; i, e (POM) ; a | -# (Ge) ; e | s- (Was-H, PTac) ; i | ... i (PAr,

Cam, PTuc) ; *i | i . . .* (Cam, Gmb, PTuc, Wit) ; *i | Ɂ̥̥-* (PAr, PPan) ; *i | w-ha* (PAr) ; *i | Ɂ̥-/w- . . . y* (PPan) ; *u | -̥o* (PTuc) ; *u | Ɂ̥-* (PChib) ; *i | k-* (PAr, PTuc) ; *i | k̥̥-* (PTuc) ; *u | u . . .* (PGb) ; *i* 14, 20, 122, 141, 221, 239, 281, 380, 487, 532, 597, 648, 659, 723, 817, 877, 954

No explanation has been found for variations between *i* and *e*, and between *e* and *a* in POM, nor between *i* and *e* in Ge.

\**e* → *i | i . . .* (PA, PAr, Bo, Cam, PChib, G, Gmb, H, PMy, Paez, PTuc, PU-A) ; *i | . . . i* (PAr, Bo, Cam, Gmb, H, PMy, Paez, PS, PT-G, PTuc, Wit) ; *i | y-* (G) ; *i | uw-* (H) ; *i | Ɂ̥-* (PChib) ; *i, e* (POM) ; *ə ~ a | a . . . / . . . a* (Ge) ; *a | . . . a* (PAr, Bo, PGb, Ge, PMy, Q, PTac) ; *a | a . . .* (PAr, PGb, PMy) ; *u | k̥̥w . . .* (Wit) ; *u | u . . .* (Cash-Pan) ; *i | z-* (Gmb) ; *e* 12, 27, 32, 50, 175, 242, 340, 529, 632, 646, 666, 684, 786, 834, 879

\**a* → *e | . . . e* (PA, PTac) ; *e | . . . i* (PA, PAr, Bo, PChib, G, PGb, H, PMy, PTac, PT-G, PTuc) ; *e | . . . i/Ɂ̥-* (PAr) ; *e | i . . .* (Bo, G, PGb, PMy, PTac, PTuc) ; *e | y-* (Cam, G, PMy, PTac, PTuc, PU-A, Wit) ; *e | -y* (Cam, PTac, PU-A) ; *e | ũ/-Ɂ̥i* (Paez) ; *e | Ɂ̥-* (PT-G) ; *a, e* (POM) ; *o | w-* (PA, PPan, PU-A) ; *o | . . . w* (PA, PAr, PTuc) ; *o | o . . .* (PA, PAr, PGb, PPan, PTac) ; *o | . . . o* (PAr, PGb, PPan, PTac, PU-A, Wit) ; *o | i . . .* (PChib, PTuc) ; *o | u . . .* (PGb, PTuc) ; *o | h-h* (G) ; *o | -#* (Ge) ; *i | . . . i* (Bo, Cam, PGb, PPan) ; *i | Ɂ̥-Ɂ̥* (Cam) ; *i | i . . .* (Ge, Gmb) ; *i | u . . .* (PT-G) ; *i | ik-* (PTuc) ; *u | u . . .* (G, H, PTuc) ; *u | . . . u* (G, Paez, Q) ; *u | . . . w* (PChib, Paez) ; *u . . . i* (PU-A) ; *o* (Wit) ; *a* 4, 61, 406, 418, 433, 437, 482, 485, 491, 492, 494, 534, 536, 537, 551, 568, 605, 628, 674, 680, 693, 695, 718, 733, 758, 767, 772, 797, 886, 887, 920

The reflexes of both \**o* and \**a* are generally *o* in Wit. *o* is written once in the data. *a* occurs regularly in vowel clusters or preceding or following noncontiguous vowel clusters. There are three instances in which *a* irregularly occurs (263, 280, 379). One of these instances is in the same word with the only *o* recorded. This may be due to an unintentional phonemicization of the data to correspond to a dialect with which the linguist was already familiar.

\**o* → *o | . . . o* (G) ; *a | . . . a* (PAr, PChib, G, Ge, H, Paez, Q, PTuc) ; *a | a . . .* (PAr, PPan, PU-A) ; *i | . . . i* (PTuc) ; *i | Ɂ̥-* (PT-G) ; *i | -Ɂ̥* (Was-H) ; *u | . . . u* (PAr, PChib, Ge, PMy) ; *u | u . . .* (PChib, PGb, PMy) ; *u | k-x-w* (Ge) ; *u | p-h* (My, T-G) ; *u | p-p*

(PTuc) ; *o* (Wit) ; *u* (Tun-Chib, G, H, Paez, Q) ; *u, w* (POM) ; *o* 1, 4, 21, 117, 229, 257, 361, 405, 495, 501, 517, 528, 624, 662, 691, 763, 787, 795, 806, 807, 826

\**i* → *e | -y* (PA) ; *e | . . . i* (PChib, G, Paez) ; *e | e . . .* (PAr) ; *e | w-* (POM) ; *e | . . . a* (PTac, Wit) ; *a | . . . a/a . . .* (Bo, Cam, H, PTac, PTuc) ; *o | -w* (PAr, Gmb, PPan) ; *o | . . . o* (Bo, PMy, PTac) ; *o | o . . .* (PMy, PTac, PTuc) ; *i | . . . i* (PAr, PTuc) ; *i | i . . . /š/-y* (PChib) ; *w | k-* (PM-G) ; *u | . . . u* (Bo) ; *u | -ro* (PT-G) ; *u | s-* (PTac) ; *u | k-* (Ge) ; *u* (H, PMy, Q, PS) ; *a* (PChib, G) ; *i* (PM-G, Jic-H, PTac, PU-A) ; *o* (C-My, Cp-My) ; *i* 11, 87, 120, 123, 206, 212, 447, 455, 512, 531, 570, 577, 613, 661, 726, 738, 774, 882, 903, 912, 935

\**u* → *a | . . . a* (PAr, G, PGb, H, PPan) ; *a | a . . .* (PChib, PPan, PTac, PTuc) ; *o | . . . a* (PTuc) ; *o | a . . .* (PAr, PTac, PTuc) ; *o | -hk* (PAr) ; *o | o . . .* (Cam, PGb, PMy, PPan, PTac, PTuc) ; *o | . . . ts* (PMy) ; *o | w . . .* (PGb) ; *i | i . . . /k-/k-* (PTuc) ; *i | . . . i* (PGb, PPan, PT-G, PTuc) ; *i | hy-* (PGb) ; *i | . . . i* (PT-G) ; *u | . . . i* (PU-A) ; *o | . . . a* (Wit) ; *i* (Gmb, PU-A, Wit) ; *o* (PA, PTac) ; *w | k<sup>b</sup>-/k-/k<sup>b</sup>-/kh-* ; *u* 22, 46, 132, 238, 416, 569, 578, 638, 657, 665, 803, 853, 887, 889, 920, 923, 928, 929

#### 1.6 PROTO AMERINDIAN COGNATE SETS

Following each citation the language is identified in parentheses, either by the abbreviation for the protolanguage, or by the abbreviation of the particular language or subgroup, a comma, and then the abbreviation of the family or stock. Family names are omitted when similar to the language name as in Chibcha and Chibchan. Where necessary a parenthesis containing identification of source precedes the language or language group identification. Reflexes are presented by alphabetical order of the language family or stock.

When, in lieu of a reconstruction from a family or stock, a word is cited from a descendant language or from an included subgroup (e.g. Piapoco, Proto Western Newiki, or Proto Newiki within Arawakan) if the word includes a phoneme reflex which differs from that of a reconstruction of greater time depth, whenever recognizable the Pre form of the greatest possible time depth is given.

Some Camsá cognates with Quechua and Guambiano, although entirely regular, are too close to be convincing. The Camsá are noted travellers. They may have a propensity for not only receiving, but also thoroughly assimilating loan words. See sets 594, 614, 621.

1. 'abdomen' \**poga*: \**poko* (PPan) ; \**pá-ga/ru* (PTuc) ; \**poka* (V-H) (PU-A) ; *pu'u* (Elson) (Sierra Popoluca).
2. 'abdomen' \*-čihkV : -čihki (Tn, G) ; *ciguguš* (Was, H) ; čis 'flatus' (Elson) (Sierra Popoluca).
3. 'abdomen' \**i-atV* : *sati* (P, Ar) ; *ietá* (Chib) ; *tu* (Api, Ge) ; *ato* (Chan, Pan) ; *eto* (Tac).
4. 'abdomen' \**sokota*: *skota* (P, Ar) ; -*kotó-to* (Gb) ; *so<sup>3</sup>ko<sup>2</sup>* (M-J, Mn, OM).
5. 'abdomen' \**arie*: *aré)e* (Gr) ← \**aree* (Pre Gr, Ar) ; *erie* (Sir, T-G).
6. 'above' \**hayi-* : *hayi-ki* 'ridgepole, spine' (P, Ar) ; *háyiši* (Tn, G).
7. 'Adam's apple' \**sa/k-wa-yi-bā-ka-rV/ti*: \**sa-wayi-bora* (PAr) ; \*-*kua Y-bo-karó/bati-to* (PGb) ; *karkwero* (Gmb).
8. 'Adam's apple' \*-*ta-ka-ha-ha*: *e-kahaha-sa* (Ese) ← \**e-kašaša-sa* (Pre Ese, Tac) ; *taxaxa* (Huarayo, T-G).

Notice that the Ese form shares two morphemes (four phonemes) of the protoword 7, although the Huarayo shares none.

9. 'afterward' \**haja-he-što*: *páyəhe-štóhku* (Tn, G) ; *hadya-aco* (Cav) ← \**śadya-aco* (Pre Cav, Tac).

Key does not give the PTac source of Cav *dy*.

10. 'agouti' \**bu-ni/wi*: \**bini/biNi* (PGb) ; \**bu-wi* (PTuc).
11. 'alive' \**wa-hi/ka*: *hi-we-ka* (P) ← \**hi-wa-ka* (Pre P, Ar) ; *wa* (Wal, H) ; \**wahi* (PTuc).
12. 'alive' \**a-i-ṭe-wa*: *ḍadyi* (Mot, Chib) ; *a-ita-va* (Gb) ; *eidē* (Tac) ← \**eiče* (Pre Tac).
13. 'alive' \**hi-es-*: *isikyik* (Gmb) ; *hiisa* (Yana, H) ; *eše* (Ese, Tac).
14. 'all' \**pu/a-eti/de*: *piitā* (Api, Ge) ; *put* (Jic, H) ; *opaete* (Sir, T-G) ; \**dī/hī-pepti/pde-ro/se* (PTuc).
15. 'all' \**fuiza*: *fuiza* (Chib) ← \**fuitsa* (Pre Chib) ; *buiza* (Yana, H).
16. 'all' \*(*s)adi-naa*: *sadínaa* (Kog, Chib) ; \*\*(*Y*)(*n*)*te(H)(n)*<sup>2</sup> (POM) ; \**ati* . . . (PPan).
17. 'anaconda' \**mapa/i*: \**mapa/i-tsi-ri* (PAr) ; *mapisi* (Cav, Tac).
18. 'animal, flesh' \**moo-ya-wa-pi-na*: *áwayis* (Pn, A) ; *mooyaa(na)* (Yana, H) ; \**yoṛina* (PPan) ; *uihua /uywa/* (R) (Q).
19. 'annato' \**ho-ṛa-ṣu-tsi*: *ašútsi* (Kog) ← \**asútsi* (Pre Kog, Chib) ; *hótisi* (Gb) ; \**hōpoš* (J) (PMY).
20. 'annato' \**matspi*: \**maši* (PPan) ; \**mace* (PTac).
21. 'ant, ant sp.' \**pox(o)-hi-to*: \**pokhi* (PP-Ap, Ar) ; *hapoko-to* (Gb) ; *poṛipipo* (Chac, Pan) ; \**poxi-* (PTac).
22. 'ant, termite' \**kuma-ra*: \**kamara* (PAr) ; *kuma-* (Mot, Chib).
23. 'ant' \**sik<sup>3</sup>-*: *sikalakainzi* (Kog) ← \**sikadakainsyi* (Pre Kog, Chib) ; *siq<sup>3</sup>imiri-* (GE) (Q of Bol).
24. 'ant sp.' \**mačii-ha-ki-ro*: *mačha-xi-ro* (P) ← \**mačVha-ki-ro* (Pre P, Ar) ; *mačii-ro* (Gn, Tuc).

25. 'ant sp.' \**ma-ne-(h)i-ga/to*: \**ma-ne-hi* (PAr) ; *ámai* (Pia, Ar) ; *amai-to* (Gb) ; \**i:pima* (PPan) ; \**mẽã-gã* (PTuc).
26. 'ant sp.' \**hay-e-:* \**hayeu* (PAr) ; *ayan* (Gmb).
27. 'ant sp.' \**k<sup>h</sup>a-če-či-si-to-ri*: \**k<sup>h</sup>a-ti-si-to-ri* (PAr), *kačiči* (P, Ar) ; *k<sup>h</sup>ečeč* (Tz) ← \**k<sup>h</sup>ečeč* (Pre Tz, My).
28. 'ant sp.' \**kha-kha*: \**kha-kha-la-wa* (PGb) ; *khávka* (Paez).
29. 'anteater' \**ba-ji-s(i)a-da-wa/i*: \**siawa-nV-d/ta-na* (PAr) ; *ísadabái* (Kog, Chib) ; \**i[s]jis[i]i* (PPan) ; *besawa* (Tac) ; *dobází* (Wit).
30. 'arm' \**Paya-mi*: \**payami* (PPan) ; \**e-bai* (PTac) ; *pa* (Api, Ge).
31. 'arm' \**ga-lV/no*: \**gano* (PAr) ; *gráda* (Kog) ← \**gádu* (Pre Kog, Chib) ; *galu* (Yana, H) ; *kxara* (Cp) ← \**kxala* (Pre Cp, My) ; *rígira* (R) (Q).
32. 'arm' \*-peri: *pel* (Jic, H) ; *kuse-pil* (Paez).
33. 'arm' \*-paya-: \**paya* (V-H) (PU-A) ; *onébwiki* (Wit).
34. 'arm' \**di/bi-fa-kui-ka*: *buakua-ha* (Cam) ; \**bi-kwi-ka* (PChib) ; *kwal* (Gmb) ; *dacbuku* (Yana, H) ; \**dika-ki* (PTuc) ; *onébwiki* (Wit) ; *kui* (Bárbara) (Pampa).
35. 'arm' \**wa/ma-ki-tV*: *wákuta* (Pia, Ar) ; \*-*ma-xi/xa-si-pa-to* (PGb) ; *maqui /maki/* (R) (Q).
36. 'armadillo' \**goi-ra*: *gói* (Bo) ; *ókara* (Gb) ; \*\*(h)*kwe(p)(n)* 'wrap' (POM), \**kukwep* (PCh, OM) ; *t-aguará* (Ruiz de M) (Guar-Br, T-G).
37. 'armadillo' \*-*wV-ši*: \**h/ka-si-wa* (PAr) ; *šita* (Paez) ; \**yawissi* (PPan),
38. 'armpit' \*-se-na-kui: \**neθenkwi* (Ha) (PA) ; *useke* (Bo) ; *enakwiši* (Ese, Tac).
39. 'arrow' \*-pi-ya: -*i·p-*, \**ni·pi-ki·pi* 'my, your arrow' (Ha) (PA) ; \**pi-ha/ya* (PAr) ; *piya* (Cav, Tac) ; \**pia* (PPan) ; *pikši*, *kāpi* (Elson) (Sierra Popoluea).
40. 'arrow' \**ko-ri-a*: \**čoko-ri* (PAr) ; *krua* (Api, Ge).
41. 'arrow' \**hadau*: *hati* (Gr) ← \**hadi* (Pre Gr, Ar) ; *hadai* (Wit-T).
42. 'arrow' \**e-mā-he*: \**mā-* (PS) ; *e-mehe* (Ese) ← \**e-meše* (Pre Ese, Tac).
43. 'ash' \**Pae-ni-gui*: \**penkw-i* (Ha) (PA) ; \**Pae-hi-ni/lV-gi* 'dust, ashes' (PAr) ; *baigthi* (Bo) ; *pe* (Jic, H) ; *pená* (Cubeo, Tuc).
44. 'ash' \**khu-p/uts*: *khuip* (Cp, My) ; *khuuts* (Paez).
45. 'ash' \**taŋŋi-:* \*\**taŋŋη* 'cause ashes, burn' (O) (PMy-Cp) ; \**tanibu-ka* (PT-G).
46. 'ash' \**ošu-:* *su-kta* (Chib) ; *o'si* (Gmb).
47. 'ash' \**ma-pu/o-na*: \**bu-N-* (PChib) ; \**i/a-pu-ma-na* (PGb) ; \**čiŋŋi-mapo* (PPan), \**čiŋŋi* 'fire' (PPan).
48. 'ask, borrow' \**mah*: *ma* (Tn, G) ; \*\**mah* (O) (PMY-Cp).
49. 'ask, borrow' \**yooga-i*: *yoogai* (Yana, H) ; \**yoka* (PPan).
50. 'ask' \**keha*: \**keha-* (PAr) ; \*\**kah* (O) (PMY-Cp).
51. 'at' \*-oka: *oka* (Cam) ; *ka* (Chib) ; -*k* (Yuma, H) ; -*ka* (Paez).
52. 'at' \*-pai: -*pau-* (Yana, H) ; \*-*pi* (PTuc).

53. 'at' \*-*pi*: -*pi* (GE) (Q) ; -*pi* (Guar-Bol, T-G).
54. 'at' \*-*t/tV*: \*-*ta* (Gb) ; \*-*tV* (J) (PMY) ; -*te*, -*ta* (Paez) ; -*ta* (GE) (Q-Bol, Q).
55. 'at' \*-(*h*)*a*: -*ha-* (Mot, Chib) ; -*a* (Yana, H).
56. 'aunt' \**šapa*: *šapa* (P) ← \**sapa* (Pre P, Ar) ; -*šáša* (Was, H).
57. 'axe' \**yami*: *am* (Paez) ; \**yami* (PPan).
58. 'axe' \**či-paa-rV*: \**či-páa-lV* (PWNew, Ar) ← \**či-paa-rV* ; \**sipá-li-a* (PGb).  
(Cf. 7, 71. -*lV* ~ *rV*, Gb).
59. 'baby' \**lak<sup>3</sup>iyaa*: \**kiila* (PAr) perhaps ← \**k<sup>h</sup>iy(V)ra* ; *lak<sup>3</sup>iyaa* (Yana, H).
60. 'baby' \**seu-me*: *séeme* (Bo) ; *sauma* (Kog) ← \**seuma* (Pre Kog, Chib) ; \*\*(*Y*)*(n)*(*p*)*se(h)(n)* (POM), *m<sup>2-3</sup>* (Cn, OM).
61. 'baby' \**ašašo-na/ke*: *sišona* (Cam) ; *ašašake* (Cav, Tac).
62. 'back' \**Pa-de/si*: \**nexpeθkwani* (Ha : S) (PA) ; \**Pa-SI-le-SI* (PAr) ; \*-*pat* (J) (PMY) ; \**basede* (PTac).
63. 'back' \**ka-pdV/ra*: *i-ka-ra* (Tun) ← \**i-ka-da* (Pre Tun, Chib) ; *katut* (Api, Ge) ; \**ka<sup>2</sup>ti* (PPan).
64. 'bad' \**ayā-pV*: *ayái* 'evil' (Gb) ; *najaba* (IZ, OM) ; *yopamo* (Cav, Tac) ; \**yā-pā* (PTuc) ; *idžairede* (Wit).
- The IZ *j* is presumably from POM \*\**y*.
65. 'banana' \**xa-pa-s/ša-tainia*: *kastainia* (Gyb, Gb) ; \**ha<sup>2</sup>pas* (J) (PMY) ; \*\**ka* (POM) ; \**xaša* (PTac).
66. 'banana sp.' \**šik-teno-ta/n/mV*: *šik-teno-ta-lo* (P) ← \**sik-teno-ta-lo* (Pre P, Ar) ; \**šikó/[n]/mV* (PPan).
67. 'bark' \*-*tūkha-p̥ta*: *itukurida* (Mot, Chib) ; *p<sup>h</sup>tūkha<sup>2</sup>ty* (Paez).
68. 'bark' \**ka-lau-*: *kalhúba* (Kog) probably ← \**gadhúba* (Pre Kog, Chib) since Kog *g* has [k] ~ [g] initially ; *kalos* (Gmb) ; *igórai* (Wit). Cf. 'skin' 764.
69. 'basket' \**ko-ki-ta*: *koxita* (P) ← \**ko-ki-ta* (Pre P, Ar) ; *kota* (Cav, Tac) ; *ko<sup>2</sup>on* (Elson) (Sierra Popoluca).
70. 'bat' \*-*si-yo-Pi-hi-ri*: \**ma-si-yo-Pi-hV-ri* (PAr) ; \**ni-su-bi-kw<sup>2</sup>a* (PChib) ; \**hai-wi-si-ri-to* (PGb) ; \**so-wa-ts<sup>3</sup>* (J) (PMY) ; \**bina* (PTac) ; \**oso* (PTuc).
- The sequence *so* (*su*) in Chib, My, and Tuc is assumed to have resulted from the loss of *i* between *s* and *y*, followed by reduction of the CC. Cf. 'hair'
71. 'bathe' \*-*pu-*: *páhpu* (Tn, G) ; *puuzan(p̥di)* (Yana, H).
72. 'bathe' \**na-ši-wi*: \**naši* (PPan) ; \**nawi-* (PTac) ; \**pasi* (V-H) (PU-A).
73. 'be, do' \*-*p̥a-*: -*p̥a* (Yana, H) ; -*p̥a* (Paez) ; \**p̥a-* (PPan) ; *a-* 'do' (Tac, Ese, Tac).
74. 'be, do' \**hi-*: *hi-tya* (P, Ar) ; *hi* (Gn, Tuc).
75. 'be, do' \*-*yV*: *ya* (Tn, G) ; *yu* (Wal, H) ; \**ay* 'be' (J) (PMY).
76. 'beard' \**kwV/kha-Pa-SI-ya-nV*: \**i-sia-Pa-to-na* (PAr) ; *ša* 'hairiness' (Cam) ; \**kai/wa-ga-si-ne* (PChib) ; \*\**šap<sup>3</sup>* (O) (PMY-Cp) ; *khás* (Paez) ;

\**kwišni* (PPan) ; \**kesa* (PTac) ; *e-kwaša* (Huarayo, T-G) ; *passin* (Bárbara) (Pampa).

For a discussion of PAm \*...-*SI-ya*-... see 387 'hair'.

77. 'beard' \**imeli-isik*: *miliisik* (Gmb) ; -ímel (Was, H).

78. 'beard' \**PuštV* : *pʰuštiake* 'chin' (Gn, Tuc) ; *embutá* (Sir, T-G).

79. 'bed' \**atū*: *atúunku* 'sleep' (Gr, Ar) ; *atá* (Paez).

80. 'bee' \**aamō-e-ba*: \**a-mo-wa* (HA) (PA) ; \*-maeba- (PAr) ; *moo* (Mot, Chib) ; \**mōmī* (PTuc), *mōāprā* 'fly' (Tuc).

81. 'bee' \**sanil*: *sani* 'wasp' (P, Ar) ; *sun-ul* (Tz, My) ; \*\**sa(β)(n)*<sup>3</sup> (POM).

82. 'begin' \**yini-ni*: *yini-wa-ka* (P, Ar) ; *yi* (Wal, H).

83. 'begin' \**kalya-li/č*: *krač* (Api, Ge) ; *callari- /kalyari-/* (R) (Q).

84. 'below' \**na-ma*: \**nama* (PPan) ; \*-ma- (PTac).

85. 'big' \**kV-ma-k<sup>3</sup>a/uC* : *maha* 'big in size, area' (Ha) (Ch, A) ; \**ima-ka-rV/ni* ← \**ima-k<sup>3</sup>ha-rV/ni* (PAr) ; *ku-mak-ro* (Tun, Chib) ; *máka* (Tn, G) ; \**muk<sup>3</sup>* (J) (PMY) ; -*kamo* (Ese, Tac).

86. 'big' \**xāpt-* : \**kept-* (Ha) (PA) ; *jatun* (*xatun*) (R) (Q) ; \**xāt-* (PS).

87. 'big' \**bi(h)ts<sup>3</sup>a*: *bitsá* (Cam) ; *buts<sup>3</sup>* 'good, savory' (Tz, My).

88. 'big' \**pai-łhi*: *pakhi* (Cp, My) ; \**pai-gi* (PTuc).

89. 'big' \**aijV* : *ayai* (Gb) ; \*\**yu* 'grow, large, ...' (POM) ; *aida* (Tac) ; *aidžue* (Wit).

90. 'big' \**a-pi-rV* : *pábira* (Mot) ← \**ábi-da* (Pre Mot, Chib) ; \**pi* 'fat' (POP, OM) ; *p<sup>h</sup>i-ro* (Gn, Tuc).

91. 'bird' \**ma-Si-Pi-kui*: \**má-koi-si-ti-pi-* (PAr) ; *pishcu /pišku/* (R) (Q) ; \**mapisi* (PTac) ; \**bi-zī* (PTuc).

The morpheme *-Pi-* 'feathers, fur' is a noun of the class which occurs with the morphophoneme *P*. See 6.1. For an explanation of *-Si-* see 387 'hair'.

92. 'bird sp.' \**tsi-pro-* : *čičipro-lexi* (P) ← \**tsi-tsi-pVro-re-ki* (Pre P, Ar) ; *čipro* (Api, Ge).

93. 'bird' \**srop<sup>3</sup>a-* : *slopa* 'swallow' (PAr) ← \**sVrop<sup>3</sup>ha* (Pre P, Ar) ; *šloptše* (Cam).

94. 'bite' \**mei*: \**aa-SI-mie-ka* ← \**aa-SI-mie-ka* (PAr) ; *mai* (Yana, H).

See 'eat' *miku-* (Q). Cf. 151 'chew'.

95. 'bite' \*-*saka*- : *ha-ška-ta*, *ra-ška-ta* 'he bites' (P) ← \*-*ska* (Pre P, Ar) ; \**yaca-ka* 'chew' (PM, G), *yaska* 'chew' (Ala, Koas, G) ; \**rđ-ska* ~ *ra-spa* (PS).

See also 'eat'.

96. 'bitter' \**k<sup>3</sup>aya*: *káyi* 'to sour' (Th, G) ; *k<sup>3</sup>ai* (Yana, H) ; \**k<sup>3</sup>ay* (J) (PMY) ; *k<sup>3</sup>aya* 'sour' (F) (Haqe-Aru, Q).

97. 'bitter' \**ya-ha-k*: *yahak* (Paez) ; *hayaq* (F) (Cacra Q).

98. 'bitter' \**a-hkua*- : *a-hkwan* 'acrid' (Goddard : F 236) (C, A) ; *kakua-lzai* (Kog, Chib).

99. 'black' \**sa-ke-si-wa*: \**sakesiwa* (Ha) (PA) ; \**ki-sa-ki-na-ri* (PAr) ; \**sak* 'white' (J) (PMY) ; \*\**se* (POM) ; \**skái* 'white' (PS) ; \**sewe* (PTac).

100. 'blood' \*-ma- ~ -mi-: \*meskw-i (Ha : M) (PA) ; \*-ma- ~ -mi- (PAr) ; \*imi (PPan) ; \*ami (PTac) ; ime 'someone's blood' (Elson) (Sierra Popoluca).
101. 'blood' \*-rā-ha: \*-ra-ha (PAr) ; \*haNa (PGb).
102. 'blood' \*hi-zie: \*hi-di-... (PAr), \*ídi (PShani, Ar) ; \*zie-we (PTuc) ; die (Wit).
103. 'blow' \*phu-a-te-ha: \*po-te-wa (Ha) (PA) ; \*ha-ki/ti-p<sup>h</sup>oa (PAr) ; \*pu<sup>w</sup>-ka (Ha) (PM, G), puuW-hoopis (Nt, G) ; \*phu (Swadesh) (PH) ; \*phu-h (J) (PMy) ; puth ← \*phut (Pre Paez) ; \*pu-ti 'blowgun' (PTuc), buti- (Gn, Tuc) ; puude (Wit).
104. 'blow' \*ako-: ḡako- (Mot, Chib) ; ḡako (Api, Ge).
105. 'blue' \*-to-nā: \*\*(n)(h)tu(h)(n)<sup>1</sup> 'black' (POM) ; tonā (Mr, Pan) ; \*to- (PS).
106. 'body' \*-kwe: \*\*kw<sup>e</sup><sub>1/2</sub> 'body, meat' (POM) ; kakwe (Paez).
107. 'body hair' \*-Pi-: \*ka-wiya 'quill' (Ha) (PA), \*pi-way 'prickly' (Ha) (PA) ; \*Pi-ti (PAr) ; wínwín (Kog, Chib) ; \*wi<sup>p</sup> 'hair' (J) (PMY) ; \*\*(n)(h)-kw<sup>i</sup><sub>1/2</sub> 'hair, eyebrow, wool' (POM) ; wilyma (Orr) (Q).
108. 'body hair' \*(h)ai-na: ēiña (Ese) ← \*eina (Pre Ese, Tac) ; hainai (Wit).
109. 'bone' \*ba<sup>2</sup>ka: \*waθkani (Ha) (PA) ; baki (Bo) ; \*\*p<sup>2</sup>ak (O) (PMY-Cp) ; pak (Elson) (Sierra Popoluca).
110. 'bone' \*-abi-: \*abi- (PAr) ; biru (Salser) (Catío).
111. 'bone' \*ts<sup>2</sup>ao: \*ṣao (PPan) ; e-cao (Tac).
112. 'bone' \*k<sup>2</sup>(w)ai-le: \*kai-de (PChib) ; ekwele (Nt, G) ; l<sup>2</sup>ekal (Chontal, H), kere (Jic, H) ; \*kia-na-g<sup>w</sup>e (PT-G) ; ikuru (Wit).
113. 'bow' \*aC-ta-Pi-ya: \*-aHta-piy-a (Ha : AN) (PA) ; \*tapwa-tsa (PP-Ap, Ar), \*pi-ya (PAr) ; \*bitsá-bi (PGb).
114. 'bow' \*k<sup>2</sup>irafa: kórawa (Cp) ← \*k<sup>2</sup>orawa (Pre Cp, My) ; \*g<sup>w</sup>i-ra-pa (PT-G).
115. 'break' \*pooka/i: \*poθkw- (Ha) (PA) ; hi-poka (P, Ar) ; pagui-na (paki-na) (R) (Q).
116. 'break' \*faxpa-: wáhka (Tn, G) ; baxpa (Yana, H).
117. 'breast' \*pē/i-ču-čo-: \*ču-i-ču-le-SI (Pre Yue, Ar) ; čučo (Cam) ; \*čue-ta (PChib) ; ḡ-uču (Tn, G) ; piciwaš (Gmb) ; \*ču<sup>p</sup> (J) (PMY) ; ču (Paez) ; čočo (Choc, Pan) ; chuchu /čuču/ 'woman's breast' (R) (Q) ; aco (Tac) probably ← \*ačo (Pre Tac) ; ečoxo (Huarayo, T-G) ; \*opē (PTuc), pē-čō 'milk' (Gn, Tuc) ; \*pi (V-H) (PU-A).
- The word probably is not from Spanish *pecho*, since the syllables occur as separate morphemes in Tuc. Cf. 538, 807.
118. 'breast' \*misene-y-a: \*meθeny-a (Ha) (PA) ; \*seene (PShani, Ar) ← \*sene.
119. 'breast' \*šu-: sumi, (Kog, Chib) ; kušu (Tn, G) ; šú· (Was, H) ; \*\*(n) su<sup>2</sup> (POM) ; šuma (Cas, Pan).
120. 'breast' \*mi-čii-ni: \*meθenyu (Ha) (PA) ; \*(t)ii-ni (PAr) ; \*\*tu<sup>2</sup> (POM).

121. 'breast' \*-či-ki/raa: *ačiraa* (Gr, Ar) ; *čiki* (Yana, H), *puč-ič* (Krk, H).
122. 'breathe' \*nee(h)ni-: -nni-phya (P, Ar) ; \*ni- (PS).
123. 'brother, elder' \*ti-li: *hi-ti-ri* 'son' (P) ← \*hi-ti-li (Pre P, Ar) ; -θá·tu (Was, H) ; *turi* 'woman's brother' (R) (Q).
124. 'brother' \*-osi-: \*-θθ- (Ha) (PA) ; *e-osi* (Cav, Tac).
125. 'brother-in-law' \*bala-: -wala-dut- (Jic, H) ; \*bal-uč (J) (PMy).
126. 'brush' \*wa-hi: \*(bu)-wa (PChib) ; *bahi* (Bo).
127. 'burn' \*pil-: *pilar* (Gmb) ; *píl* (Wal, H).
128. 'burn' \*pur: *por* (Api, Ge) ; *pur* (Chr, My).
129. 'burn' \*iti-lV-na: \*iti-lV-na (PAr) ; *tiro-* (Cav, Tac).
130. 'burn' \*-sin(d)ina: *sašinina* (Mot) ← \*sasinina (Pre Mot, Chib) ; *sindi-na* (Orr) (Q) ; \*(s)-endi (PT-G).
131. 'burn' \*-hī: *aθahī-* (Gr, Ar) ; \*ihī (PTuc).
132. 'burn' \*ilai-ku: \*likʷ (PM, G) ; \*iri (PPan) ; *irái-ki* 'fire' (Wit).
133. 'burst' \*-pašeka: \*pašk- (Ha : B) (PA) ; *hi-pšeka* (P) ← \*hi-pVseka (Pre P, Ar).
134. 'bury' \*(pam)-fana: \*(k)a-pa-na- (PAr) ; \*bana 'plant' (PPan) ; *pambana* (R) (Q) ; *bana-* 'plant' (Ese, Tac).
135. 'butterfly' \*saba: *sab* (Pm) ← \*sab (Pre Pm, My) ; \*sababa (PPan).
136. 'buzzard' \*m/wayu-rV: \*mayó-ri ← \*mayú-ri (PP-Ap, Ar) ; *wayu-li* (Gb). (Gb -lV ~ rV).
137. 'buzzard' \*sha(i)ka: *shaika* (Kog, Chib) ; \*\*ka<sup>1</sup> (POM), \*šha<sup>4</sup> (PMaz, PPn, Om) ; *sakáni* (Wit-P).
138. 'call' \*tom: \*natom- (Ha) (PA) ; *tom-ha* (P, Ar).
139. 'call' \*walya-i-: *wali* (Tn, G) ; *wazai-* (Yana, H) ; *iwara-* (Cav, Tac).
140. 'call' \*pa(a)y: \*pa(a)y (J) (PMy) ; *pay* (Paez).
141. 'cane' \*kaniki: *kaniki* (Gn, Tuc) ; *kaniki* (Wit-P).
142. 'cane' \*ka/mu-ču-rV-: *ka-ts-li* (P) ← \*ka-čV-ri (Pre P, Ar) ; *músuli-boto* (Gb).
143. 'canoe' \*kanawā: \*(k)anawa (PAr) ; *kanauá* (Kog, Chib) ; *kanuē* (Paez) ; *kanoa* (Inga, Q) ; *kanoa* (Perea) (Taino).
- Note that \*kanawa → \*kanwa in Paez, Q, Taino.
144. 'canoe' \*(t)har-i-a: *héri* (Tn, G) ; \*hera ← \*hel-i-a (PGb) ; \*tha-ra (PT-G).
145. 'canoe' \*kūambūa: *kwamba* (Rey, Tac) ; \*kūbūa/kumua (PTuc).
146. 'carry' \*(m/hiw/y)apa: *h-wa-pa*, *m-wa-pa* (P, Ar) ; *yapa* (Tn, G) ; *pa* (Api, Ge) ; *apa-na* (R) (Q) ; \*mapa- (PTac).
147. 'carry' \*wam-bau-: *-hua-mba-na* (Cam) ; *wam* (Wal, H) ; \*bi (PPan) ; \*abo (PTac), *bao-nahe* (Ese, Tac).
148. 'charcoal' \*koxi-šai-ha: *mušáhiha* (Gr) ← \*musái-ha (Pre Gr, Ar) ; *koxa-šae* (Ese, Tac) ; *koki* (Wit).
149. 'chest' \*-sta: *sta* (P, Ar) ; *fihsta* (Chib).

150. 'chew' \*ma-(<sup>p</sup>)k/k<sup>9</sup>u: mačú (Bo) ; máku (Tn, G) ; ma-r 'eat' (Gmb) ; ma 'eat' (Wal, H) ; \*\*m<sup>a</sup>k<sup>9</sup> (O) (PMy-Cp) ; \*\*nwa 'food' (POM), \*m<sup>a</sup>g (PCn, OM) ; mēp 'eat' (Paez) ; mucu-/muku/ (R) (Q) ; ba<sup>9</sup>ka 'bite' (Gn) ← \*ma<sup>9</sup>ka (Pre Gn, Tuc) ; \*ki(<sup>n</sup>i ~ i) 'to bite' (V-H) (PU-A).

The reflex *u* ← \*a in Q may be influenced by the Q word *miku-* 'eat'. Cf. 94 'bite'.

151. 'chicha' \*bo-koya: koya (P, Ar) ; bokoye (Cam).

152. 'chief' \*-kwana: bitso-waná (Cam), 'bitsá 'big' (Cam) ; wara-hi-kwana (Cav, Tac).

153. 'chief' \*e-hi-le-ri: \*e-hi-ri (PAr) ; hiliri (Cp, My) ; ererékwa (Sir) probably ← \*e-re-rikwa (Pre Sir, T-G).

154. 'chief' \*w/mama: mama (Kog, Chib) ; \*mam-al 'old man' (J) (PMY) ; wama (Perea) (Taino).

155. 'chief' \*we-ha-wa-la: aiwahíibo (Bo) ; werhayá (Tun) ← \*wedhayá (Pre Tun, Chib) ; \*axa-wa-l/w (J) (PMY) ; wara-hi-kwana (Cav) ← \*wara-sí-kwana (Pre Cav, Tac).

156. 'chigger' \*-pos-: \*[<sup>p</sup>]o<sup>9</sup>posši (PPan) ; \*di<sup>9</sup>po-sū-a (PTuc).

157. 'chigger' \*ko-poli: kopli (P, Ar) ; pol (Gmb).

158. 'child' \*fak<sup>9</sup>wā-wa-a-ki/ši/y-: \*awaši (Goddard) (PA) ; \*wa-ši-pu (PHar), Ar) ; wakiña 'son' (Cam) ; awawa (Kog, Chib), baku- (Mot, Chib) ; way (Jic, H) ; \*ak<sup>9</sup>(w)al-Vyuč (J) (PMY) ; kwéē (Paez) ; \*baki (PPan) ; huahua /wawa/ (R) (Q) ; \*baka (PTac), e-bakwa (Tac).

159. 'child' \*-nič<sup>9</sup>ān-: \*neni-cya-nehsa (Ha : B) (PA) ; \*nič<sup>9</sup>an (J) (PMY) ; \*čha (PPn, OM).

160. 'child' \*-uči-: kuči 'small' (Gmb) ; \*ak<sup>9</sup>(w)al-Vyuč (J) (PMY) ; yu<sup>3</sup>či 'a little' (Pn, OM) ; luuč (Paez) ; uči- 'small' (R) (Q) ; čidi Diminutive (GE) (Tac) ; uči (Larson) (Aguaruna, Jivaroan).

161. 'chin' \*kompampa: kompámpa (Gmb) ; kmbamba (Paez).

162. 'clap' \*p<sup>9</sup>/faat<sup>9</sup>a-ta . . . : hi-pt-a-ta (P) ← \*hi-p<sup>h</sup>/pVt<sup>h</sup>a-ta (Pre P, Ar) ; baat<sup>9</sup>ad(. . . a) (Yana, H).

163. 'clothes' \*ba-čV: -p<sup>9</sup>a- (Yana, H) ; bači (Cash, Pan) ; p<sup>9</sup>ača- (F) (Q-Cuzco).

164. 'clothes' \*-hu-to: -hu (Wach, Ar) ; húnna (Cr, G) ; e-hoto-ki (Cav, Tac) ← e-šoto-ki (Pre Cav, Tac).

165. 'cloud, sky' \*alah-: \*alahkwatvi (Ha) (PA) ; e·ri (Pia) ← e·li (Pre Pia, Ar) ; arahpača 'sky' (Cp, My) ; alaqpaccha 'sky' (F) (Ay, Q).

166. 'cloud' \*p<sup>9</sup>o: p<sup>9</sup>u-yu (R) (Q) ; \*bo (PTac).

167. 'cloud (at rest)' \*suts<sup>9</sup>a: sutafaoa (Chib) ; \*su(u)ts<sup>9</sup> (J) (PMY).

168. 'cloud' \*aparu: badú- (Mot, Chib) ; páparu (Tn, G).

*furudi* (Perea) (Taino) may be related.

169. 'cloud' \*waañi: \*awa·n- 'fog' (Ha) (PA) ; sewañi (Gmb) ; \*iwa-N-ga-tasi-na (PT-G).

170. 'cloud' \**tsherV-* : *siřúma* (Gr, Ar) ; *tshiri* (Cp, My).

171. 'club' \*-*kadi/ika* : *kadika* (Kog, Chib) ; *yukudika* (Des) probably ← \**yukadika* (Pre Des, Tuc).

172. 'coca' (narcotic herb) \*-*asV* : *ása* (Tun, Chib) ; *saŋasi* (Cav, Tac).

173. 'cold' \*-*si-ni-na* : *sisna* (Cam) ; *tišini-na* (Mot) ← \**tisini-na* (Pre Mot, Chib) ; \**s-ní* (PS).

174. 'cold' \**si-wi-a-ku-* : *siikuno* (Bo) ; *súiadzai* (Kog, Chib) ; \**sič* (J) (PMy) ; \**Yisia* (PTuc) ; \**siu(pi)* (V-H) (PU-A).

175. 'cold' \*č<sup>p</sup>*elo/i-* : \**sili-ni/ke* ← \**siri-* (PMadi, Ar) ; *séro-ro* (Tun) ← \**sédo-do* (Pre Tun, Chib) ; *piši* (Gmb) ; *chiri /čiri/* (R) (Q) ; \**se-roči-sa* (PT-G) ; *ročirede* (Wit).

The T-G could as well be reconstructed \**ce-roči-sa*.

176. 'cold' \**taa(h)k-* : \**tačkyaki* (Ha : B) (PA) ; *takap-* (Nt, G).

177. 'comb' \**mVtsči-ri* : *mširi* (P) ← \**mVsiri* (Pre P, Ar), *maši-* 'comb one's hair' (P, Ar) ; *miči*, *miiri* (Yana, H).

179. 'come' \**ta-* : \**ta(a)l-el/-k* (J) (PMy) ; \*\*(h)*ta(h)(n)* (POM) ; \**da* (PTuc).

180. 'come out' \*-*tsčpakV* : *hi-špaka* (P) ← \**hi-spaka* (Pre P, Ar) ; *čpak* (Wal, H) ; \**paški* (V-H) (PU-A).

181. 'corn' \**iSi-ki/pim* : \**i-SI-ki-n/m(a)i* (PAr) ; *sese* 'cornstalk' (Cam) ; \**išiŋim* (J) (PMy) ; \**šika-tyahup* (PPn, Om) ; \**šiki* (PPan).

For a discussion of the reflexes of *-SI-*, see 387 'hair'. The Ese, Tac *šixe* is probably a loan.

183. 'corn kernel, beverage' \**matsče* : *matse* 'kernel of corn' (Cam) ; *matsč* 'corn beverage' (Toj, My).

184. 'corner' \**e-tsokhV-* : *tsox-ri* (P) ← \**tsoki-ri* (Pre P, Ar) ; *ecoko* (Cav, Tac).

185. 'correct' \**boti-ka* : *poti-ka* (P) ← \**boti-ka* (Pre P, Ar) ; *botó-ka* (Gn) probably ← \**boti-ka* (Pre Gn, Tuc).

See 4.4.2. See also 'right (side)', 685.

186. 'cotton' \**wa-ma-pe-hi/se* : \**wa-ma-pehi* (PAr) ; *wapeše* (PTac).

187. 'cough' \*(h/p)ohu- : *ho-hosa-na* (Cam) ; *puhu* (Tn, G) ; \**ohob-al* (J) (PMy) ; *uju /uhu/* (R) (Q) ; *oho* (Ese) ← \**ošo* (Pre Ese, Tac).

188. 'cover' \**lakV* : *-lak(i)* 'covered' (Yana, H) ; \**rako-* 'cover up' (PPan).

189. 'crocodile' \*-*yaka-rV* : \**(iy)aka-re* (PAr) ; \**jakari* (PT-G).

190. 'crocodile' \**wāmā-* : \**wāmā* (PAr), \**māmā* (PHar, Ar) ; *mama-mama* (Tac).

191. 'crocodile' \*-*makhī/a-* : \**čmahka* (Tn, G) ; \*-*makhī-Ne-he* (PGb).

The reversal of the *-hk-* cluster in PGb may be due to metathesis, or may be due to occurrence of protomorphemes of optional order.

192. 'crocodile' \*-*si-jo-* : \**ka-SI-jo-ki-ri* (PAr) ; \**iSo* (PTuc).

Regarding the Tuc reflex, compare 70 'bat', and see discussion of the PTuc \*S, 4.4.1.

193. 'cultivate, clear land' \**te:ti* (Cul, Ar) probably with morphophonemic change to *i* because of number; *te* (Tac).
194. 'cultivated clearing' \**wai-nse*: *wadsaha* (Cul) ← \**wajaha* (Pre Cul, Ar); *wáinsi* (*wáisi*) (Kog) ← \**wainci* (Pre Kog, Chib); \*\*(n)se(n) 'village' (POM); *wac* (Paez); \**wai* (PPan); \**wese* (PTuc).
196. 'cut' \**p<sup>9</sup>o/e<sup>9</sup>ti-ma*: \**pept* (Ha) (PA); *pohu* (Tn, G); *p<sup>9</sup>itima* 'sever' (R) (Q).
197. 'cut' \*-*si-ta-ka*: \**hi-si-ta-ka* (PAR); *ták* 'tear' (Wal, H); \*\**Hta<sup>9</sup>n* (POM), *si<sup>3</sup>ka<sup>3</sup>te<sup>3</sup>* (H, Pn, OM).
198. 'cut' \**hiki*: \**siki-* (PTac); \**siki-a* (V-H) (PU-A).
199. 'cut' \**ša/ot<sup>9</sup>-*: *asót-tu-s* (Gr) ← \**asóth-tu-s* (Pre Gr, Ar); *šot<sup>9</sup>* (Tz, My); \**ša<sup>9</sup>ti-* (PPan).
200. 'cut' \**ukiit-*: *kitihi* (Bo); *ukúta* (Gb); *ikuit* (Krk, H); *cuchushca/kuču-ska/* (R) (Q); \**ki-ci* (PT-G); *kóde* (Wit).
201. 'dance' \**yima*: \**ni-my-* (Ha) (PA); *yima-* 'dramatize' (P, Ar); *yimá* (Wal, H).
202. 'dark' \**ši<sup>9</sup>d*: *šihtuna* (Tn, G); *ši<sup>9</sup>ndy* (Paez).
203. 'dark' \**fahk-*: *bahxalau-* (Yana, H); *bakis* vb. (Cash, Pan).
204. 'day' \*-*š(u)e(h)kui-*: \**ki-šekwi* (Ha) (PA); *šáshkki* (Tn) ← \**šášueki* (Pre Tn, G); \*\*(h)*kwe(n)*<sup>3</sup> 'dawn' (POM), *šue<sup>1</sup>* 'daybreak' (A, OM); *išeke* (Ese) ← \**ičekei* (Pre Ese, Tac).
- Cf. 'sun', 812.
205. 'day' \*(w)een: *we'n* (Cp, My); *een* (Paez).
206. 'day' \*-*ni(h)te*: *ibinité* (Cam); \**nihtaki* (PM, G); \**ni-/...-š-the* 'night' (PPn, OM); \**nüti* 'day, country, realm' (PPan).
207. 'dead person, ghost' \**si/a-ma-ni-yo*: *same-ni* (P, Ar); *šimana* (Mot) ← \**si-mana* (Pre Mot, Chib); \**mawa* (PTac), *e-mano-yo* (Ese, Tac); \*-*ma-nu* 'die' (PT-G).
208. 'deer' \**ačehikua*: \**atehkwa* (PA); *čihika* (Chib); \**čix* (J) (PMY); \*\*(Y)*kwa(h)*<sup>1/2</sup> 'animal, deer, horse' (POM); \**w-te* ~ \**w-ta* (PS).
209. 'deer' \**lýāmā*: *yá* (Tn, G); *llama* 'llama' (F) (Q — Cuzco); \**yāmā* (PTuc).
210. 'deer' \**ka-so-te*: (*k*)*šote* (P) ← \*(*k*)*sote* (Pre P, Ar); \*\*(n)*sa(h)(n)*<sup>2</sup> (POM), *ka<sup>1</sup>so<sup>3</sup>hn<sup>1</sup>·a<sup>32</sup>* (A, OM).
211. 'demon' \*-*pai*: \**ci-pay-* 'ghost' (PA); *supai* (R) (Q).
212. 'die' \**ni-na-pi(y)ka*: \**nenepe* 'I die', \**nepwa* 'he dies' (PA); \**i-pina* (PAR), *hi-pi-ka* 'death' (P, Ar); *ho-bana-na* (Cam); *lupi* (Tn, G); *epuik* (Mar, H), *nipi* (Jic, H), *te-puy* (Yuma, H).
213. 'die, demon, kill' \**ka-maka/hi*: \**ka-ma-ka* 'kill, die, demon' (PAR); *omaka* 'demon' (Tn, G); \**kam* (O) (PMY); \**kamano* 'demon, spirit' (PPan).
- The (V-H) PU-A \**muuki* ~ *u* may be cognate, but an explanation of the vowels is lacking.

214. 'die' \**sī-di-ri-*: *śidirik-* (Mot) ← \**sididik-* (Pre Mot, Chib); *sīrī* (Des, Tuc).
215. 'die' \**ti-pa*: \**tipa* (PGb); *ti* (Ap, Ge).
216. 'die' \**wē-rī*: *uve-ri* 'he is dead' (Pn, OM); *wērī-mi* 'he dies' (Tuc).
217. 'die, kill' \**iyai-rV*: *hi-yla* 'kill' (P) ← \**i-yVra-* (Pre P, Ar); \**iye-* (PTac); \**yai-ria* (PTuc).
218. 'dig' \**gua-k<sup>2</sup>o-(h)i-*: \**kua* (PGb); *kohl* (Cp) ← \**k<sup>2</sup>ohl* (Pre Cp, My); \**(gwi)-wi-koi* (PT-G).
219. 'dig' \**se<sup>2</sup>a-*: *seedihi* (Bo); \**se<sup>2</sup>a* (PTuc).
220. 'dig' \**a(h)w*: *aw-* 'plant' (Tz, My); *uhw* (Paez).
221. 'dig' \**wi-ra*: *wi* (Cul, Ar); *wera* (Tn, G).
222. 'dirty' \**tig-*: *táhkiri* (Tn, G); *tik* (Ap, Ge).
223. 'dirty' \**khū<sup>2</sup>či*: *khuhči* (Cp, My); *khū<sup>2</sup>č* (Paez).
224. 'dirty' \**šix-e/ul*: \*\**šihul* (O) (PMy-Cp); -*šeße* (Ese) ← \**čexe* (Pre Ese, Tac).
225. 'dirty' \**muihi-ni*: *mihini* (Bo); *muihizen* (Chib).
226. 'do' \**wa-i*: -*zawai-*, *wairumui*...*pa* (Yana, H), *wi* (Wal, H); \*-*wa* (PPan); *we* (Tuc).
227. 'dog' \**pak<sup>2</sup>ia*: \**kia* (Par); *p<sup>h</sup>akha* (Mar) ← \**paka* (Pre Mar, Chib); \*\**pek<sup>2</sup>* (O) (PMy-Cp); *pako* (Rey, Tac); \**pu<sup>2</sup>ku* (V-H) (PU-A).
228. 'dog' \**ma-hi-weewa*: \**mahwe-wa* 'wolf' (Ha) (PA); \**jomahi* (PMadi, Ar); *uihua /wiwa/* 'domestic animal' (R) (Q); *iñawewa* (Ese, Tac).
229. 'dog' \**oči-či*: \**oč/tsi-ti* (Par); \**č<sup>2</sup>i<sup>2</sup>* (O) (PMy); \*\*(Y)(n)te(H)(n) (POM); *očiti* (Key) (Cash, Pan); *oči* (Tac).
230. 'dog' \**awiri*: *auli* (Pia) ← \**au/wri* (Pre Pia, Ar); *aviri* (= *awiri*) (Gb).
231. 'dog' \**alyku*: *alku* (Paez); *allcu /alykul/* (R) (Q).
232. 'doorway' \*-*huga-*: *guhuga* (Bo); *hígahám* (Kog, Chib).
233. 'doorway' \**phya*: *hi-phya-ptō* (P, Ar); \**pha(-ka)* (PGb).
234. 'down' \**IV-k<sup>2</sup>a/u*: \**bé-reka* (PGb); *krak-ri* 'below' (Api, Ge); -*ri(k<sup>2</sup>u)* (Yana, H); *ura* 'below' (R) (Q).
- The *r* in Yana, H, is probably due to the *i* in Yana.
235. 'down' \**duka*: *dugtu-* (Mot, Chib); \**doka* (PTuc).
236. 'drink' \*-*táuka-*: *táuka-* (Kog, Chib), *tih* 'eat' (Mot, Chib); \**ra-tkā* (PS); \**tiuka* 'eat' (V-H) (PU-A).
- The *h* in Mot, Chib may not be phonemic.
237. 'drink' \**kV-hi-ra*: \**k/hira* (Par); *kora* (Tn, G); \**hi<sub>s</sub>-* (V-H) (PU-A); *hiro* (Wit).
238. 'drink' \**ūk<sup>2</sup>u*: \**uk<sup>2</sup>* (J) (PMy); \*\*(v)k<sup>2</sup>wi(v)(n) (POM); \**ūku* (PTuc).
239. 'drink' \**č<sup>2</sup>i-*: *asi-* (Gr, Ar); -*psia-* (Cam); \**sin/Nebite* (PGb); *sii* (Yana, H), *šwa* (Chontal, H); *č<sup>2</sup>i* (Chr, My); \**ši<sup>2</sup>a-* (PPan); \**iči-* (PTac); *siiu, suu* (Sir); \**si<sup>2</sup>dī* (PTuc).

The regular PTuc reflex would be *\*či* . . . , a possible alternate reconstruction. See 4.3 and 4.5 — 68 ‘drink’. The Sir, T-G *i* ← *\*i* is probably due to the following *u*.

240. ‘drink’ *\*aya-*: *yaŋa-* (Tun, Chib) ; *áyá* (Mr, Pan) ; *uvya-* (R) (Q).
241. ‘drip’ *\*čho-hu-bo*: *\*tsobo-rV* (PAr) ; *\*\*čhuh* (O) (PMY-Cp), *ts⁹uh-ub* (Tz, My).
242. ‘dry’ *\*po-pe-ri-ha-rV*: *\*po-piri-ha-ri* (PAr) ; *filgano* (Bo) ; *burunina* (Mot) ← *\*budu-* (Pre Mot, Chib) ; *por* (Gmb) ; *eperere* ‘drying rack’ (Key) (Cav, Tac).
243. ‘dull’ *\*-tu-*: *mutu* (Cp, My) ; *tút* (Paez).
244. ‘dull’ *\*-wainu-*: *wáinubagáikuai* (Kog, Chib) ; *\*a-wóno-bi* (PGb).
245. ‘dust’ *\*mōrū*: *\*-moru-* ‘dust, powder, grind’ (PAr) ; *mro* ‘ash’ (Api, Ge) ; *moro* (Cav, Tac), *apa-mārū-ri* (Tac) probably ← *\*apa-mōrū-ri* (Pre Tac).
246. ‘dust’ *\*-polo-*: *xi-polo-ka* ‘to dust on’ (P, Ar) ; *imipololi* (Des) ← *\*imi-porori* (Pre Des, Tuc).
247. ‘ear’ *\*iša-ma-k⁹a-lu*: *kaló* (Gmb) ; *\*išamak⁹aru* (Ha) (PH) ; *\*ića-ka* (PTac).
248. ‘ear’ *\*ke-na-ko*: *\*ke-na-ko* (PAr) ; *\*\*(n)k⁹wa(n)* (POM) ; *\*naₙka* (V-H) (PU-A).
249. ‘earth’ *\*(n)kive-ya*: *nguiče* ‘dirt’ (Cam) ; *\*\*ki* ‘earth, under’ (POM), *\*\*kwi(n)* ‘mud, earth’ (POM) ; *kive* (Paez) ; *\*kwiya* (V-H) (PU-A).
250. ‘earth’ *\*ma-Ci*: *\*a-meHk* (Goddard) (PA) ; *ma* (Gr, Ar) ; *ma* (Jie, H) ; *\*mai*, *\*maui* (PPan) ; *mehihi* (Cav, Tac).
251. ‘earth’ *\*ŋ/yawa*: *ŋawa* (Was, H) ; *yawa* (Tac).
252. ‘earth’ *\*halyi-pa*: *háli* (Tn, G) ; *allpa* (R) (Q).
253. ‘eat’ *\*saki/u-*: *\*saki-pw-e-wa* ‘he bites ‘him’ (Ha : B) (PA) ; *-sa-* (Cam) ; *zekihikisuko /seki . . . /* (Chib) ; *šaku* (Tn, G).
254. ‘eat’ *\*pa-ya-xa*: *-yaka* (Pia, Ar) ; *ayg-* ‘drink’ (Mot, Chib) ; *yaxa* (Tonk, H) ; *\*paya-* ‘swallow’ (PPan).
255. ‘eat’ *\*ti-ka/i*: *eki* (Gr, Ar) ; *te-k* (Jie, H) ; *\*ti⁹* ‘bite’ (J) (My) ; *\*\*(n)te(n)* (POM) ; *\*ru-ti* (PS).
256. ‘eat’ *\*či-ŋu*: *uŋ* (Paez) ; *\*či-ŋu* (PT-G) ; *či* ‘food’ (Gn, Tuc).
- Cf. 239 ‘drink’. This word may contain the same morpheme, in which case the reconstruction should be *\*či-ŋu*. The glottal stop is metathesized in Paez.
257. ‘eat’ *\*kō/mi-ku*: *koo* (Mot, Chib) ; *kuku* (Api, Ge) ; *\*\*ku<sup>3</sup>* ‘stomach, swallow, eat’ (POM) ; *\*koko* ‘eat raw meat’ (PPan) ; *micu- /miku-/* (R) (Q) ; *\*kōči-re* ‘bite’ (PTuc) ; *\*ko⁹a* (V-H) (PU-A), *\*kuₙmi* ‘nibble’ (V-H) (PU-A) ; *škɔ* (Wit).
258. ‘eat’ *\*(k)alu*: *\*aro* (PAr) ; *luŋal* (Cp, My), *loŋ-el* (Tz, My) ; *\*-ka-ru* (PT-G).
259. ‘eat’ *\*faŋ-i-:* *\*(m)a/e-pa-i* (PAr) ; *\*waŋ-ik/ul* (J) (PMY) ; *waŋkx* ‘bite’ (Paez) ; *\*baŋi* (PTuc).

261. 'eat' \**idi-a-*: *dia-* (Tac) ; \**idi* 'drink' (PTuc).
262. 'egg' \**a<sup>3</sup>no-*: \**na-ki* (PAr) ; *a<sup>3</sup>na* (Tun, Chib) ; \**no-* (V-H) (PU-A).
263. 'egg' \*(*l*)*ipiku-a*: *ipkua* (Chib) ; *lipiku* (Pawnee, H).
264. 'egg' \**š<sup>3</sup>ohku*: *kápaš<sup>3</sup>óhku* (Tn, G) ; *šok* (Gmb).
265. 'egg' \**zi-*: *nzits* (Paez) ; \**zia* (PTuc).
266. 'elbow' \**p<sup>3</sup>iša*: *bisa-oba* (Mot, Chib) ; *pi<sup>3</sup>nža* (Paez).
267. 'elbow' \**ana/i-daku-rV-* : *-ana-dak<sup>3</sup>-re* (Pia) ← \*-*ana-daku-re* (Pre Pia, Ar) ; *a<sup>3</sup>i dukōriyē* (Des, Tuc) ; *dagiciru* (Wit).
268. 'embarrassed' \**bizaum-*: *pižaam* (Api, Ge) ; \**biso-* (PTac).
269. 'excrement' \*-*tiga*: \*-*tiga* (PAr) ; *nti<sup>3</sup>i* 'manure', *ma<sup>2</sup>wha<sup>1</sup>ka<sup>2</sup>ti<sup>3</sup><sup>2</sup>* 'to go defecate' (A, OM).
270. 'extinguish' \**tup<sup>3</sup>*: \**tup<sup>3</sup>* (J) (PMY) ; \**tu<sub>s</sub>-* (V-H) (PU-A).
271. 'extinguish' \**hi/k-wina-*: *hi-wna* (P, Ar) ; \*\**we* 'extinguish, clean' (POM), *kuwi* 'to clean' (Ch, OM) ; *kwina-na* (Cav, Tac).
272. 'eye' \**yi-ha-l<sup>3</sup>e*: \**yi-ha-ki-re* (PAr), *yhale* (PAr) ; *ihallii* (Bo).
273. 'eye' \*(*čh*)*uhki*: \**ogi* (PAr) ; *ruk-tuL* (Nt, G) ; *čhuhki* (Cp, My).
274. 'eye' \**kaqe*: *kap* (Gmb) ; \**kaqe-a* (PTuc).
275. 'eye' \**a-yāko-xa*: *kuk* (Api, Ge) ; *aya* (Cp, My) ; *e-ko-xa* (Ese, Tac) ; \**yāko* (PTuc) ; *ako* (Perea) (Taino).
276. 'eye, face' \*-*si-*: *ooši-* (Mot) ← \**oosi* (Pre Mot, Chib) ; \**sit* (PMY) ; \**pu<sub>n</sub>si* (V-H) (PU-A).
277. 'eye, face' \**wut<sub>f</sub>/l*: *etfut* (Gyb, Gb) ; *wul* (At, G) ; *wut<sub>f</sub>* (Jic, H) ; \**wut<sub>f</sub>* (J) (PMY) ; *wal* (H, My).
- The *f* in Gyb is due to the contiguous voiceless consonant in Gyb, following vowel loss.
278. 'eye, face' \**ño-f(aa)y*: \*-*anowa:y-* (Ha) (PA) ; *p<sub>3</sub>nobé* (Cam) ; *no* (Api, Ge) ; *ñahui /ñawi/* (R) (Q) ; *uīhi* (Wit).
279. 'fall' \**pulo*: -*polo* 'fall in quantity' (P, Ar) ; *pul* (J, My).
280. 'fall' \**i-pa-ha/ki*: *hi-phā-* (P) ← \**i-pVha* (Pre P, Ar) ; *ipax-* (Tz, My) ; \**paki* (PPan) ; *pakaka* (Cav, Tac).
281. 'fall' \*(*e*)*akhi-*: -*xi-ro/a* (P) ← \*-*ki-ro/a* (Pre P, Ar) ; *ákétehi* (Bo) ; *akhiāni* (Kog, Chib) ; *ea-ke* (Des, Tuc).
282. 'fan' vb. \**paya-*: \**paya-* (PPan) ; *pei* (Cav, Tac).
283. 'far' \**yapa*: *yapa* 'much' (Cam) ; *yap* (Gmb) ; *yapa-* (R) (Q) 'to add a bit additional in selling'.
284. 'far' \**āhyu-V*: \*(*w*)*ā-yu* (PAr) ; *ahuen* (Chib) ; \**tahi* (PGb) ; *xu<sup>3</sup>* probably /*hyu<sup>3</sup>/ (Paez) ; \**Yoa* (PTuc) ; *hika* (Wit).*
286. 'fat' \**poniko*: *poniko* 'rich' (P, Ar) ; *ponik* (Jic, H).
287. 'fat' \**vi-la-*: \**wilenui* (Ha : M) (PA) ; *huira /wira/* (R) (Q) ; \**vi-* (V-H) (PU-A).
288. 'father' \**apa-*: \**a/p-ap-a-ti* (PAr) ; \**papa* (PPan) ; \**a-pai-N* (PT-G) ; \**pa(?)-ki* (PTuc).

The possibility that this is a loan is strengthened by the reflex \**papa* (PPan) corresponding to *papa* (Spanish) in Spanish speaking countries, and \**a-pai-N* (PT-G) corresponding to *pai* (Portuguese) in Brazil and adjacent countries. Nevertheless I have included the set, taking the existence of forms like \**pati* (PAr) and \**pa(?)-ki* (PTuc) as evidence of an Amerindian form that was affected but not replaced by the Indo-European.

289. 'father' \*-*ača-*: \*(*p*)áxa (PGb); *čákah* (Krk, H).
290. 'father' \**ta(i)ta*: *taitá* (Cam); \*(*ha-*)*tai-(kV-)ta* (PChib); *tata* 'chief' (Gmb); *tál* (Wal, H); *tat* (J) (PMy); \*\*(*Y*)*ta(h)* (POM); *táta* (Paez); *taita* (R) (Q); \**tata* (PTac).
291. 'father' \**asi-*: *ašii* (Gr) ← \**asii* (Pre Gr, Ar); \*\**sin* 'man, priest, husband, father' (POM); -*esi* (Tn, G).
292. 'father' \**pabi*: *pabi* (Chib); *pebi* 'man' (Gb).
293. 'fear' \**gue-hV-*: \**kwe?* (Ha) (PA); *íguihi* (Bo); \**ku-húnawa* (PGb); \*\*(*Y*)*(h)kwe(h)(?)n*<sup>1</sup> (POM); \**rakwi* (PPan); \**gui* (PTuc).
294. 'fear' \**si-e-ke-si-wa*: \**se-ke-siwa* (Ha) (PA); *siese* (Chib); \**s/ši-w-* (J) (PMY); *sikíče* (Sir, T-G).
295. 'fear' \**yū-a/i-mē-pi-ka*: \**e-mē-pika* (PAr); *uma*, *?makkro* (Api, Ge); \**pi-t* 'to frighten' (POP, OM), \**yu...* (PMn, OM), *ma<sup>2</sup>ka<sup>2</sup>tyue* (A, OM); *uičk* (Paez); *iyuame* (Tac); *ui-mi* (Tuc).
296. 'feather' \**Pi/a-wa-l/y*: \**pi-way-* (Ha) (PA); \**SI-Pi-ti/lV* (PAr); *wal* (Wal, H); \**h-awa-N* (PT-G).
297. 'feather' \**i-poli-*: *puli/o* 'plumage' (Tn, G); *tapolyo* (Gmb); *ipóro* (Wit).
298. 'feather' \**ih-aina*: *ihéene* (Bo); \**eina* (PTac); \**čauna* (PU-A).
299. 'feminine' \*-*o*: \*-*o* (PAr); -*o* (Tuc).
300. 'fever' \**yasi*: *yáši* (Tn, G); *čisi* (Chac, Pan).
301. 'few' \*-*čiki-*: *hičiki* (Chib); *cikiri-havayo* (Gb).
302. 'few' \*-*sāena*: *sāenVna* (PAr); *pišana* (Ese, Tac).
303. 'fill' \**čhi/ehbo*: *tsepo* (P) ← \**tsebo* (Pre P, Ar); *cip<sup>2</sup>guldam-* (Yana, H); \*\**čhihp<sup>3</sup>* (O) (PMy-Cp).
- The factor which caused the change between *i* and *e* is not apparent in the present reflexes.
304. 'finger' \*-*t/siga/i-*: *uségai* (Bo); *itigina* (Chib); *tasik óni* (Gmb); *ít<sup>2</sup>sig* (Was, H), *ti:k* (Krk, H).
305. 'finger' \*-*bia-či*: *ngitsebia-se* (Cam); *čaba-kok-bisa* (Mot, Chib); \**ko-besi-wābū-pi-ka* (PGb).
306. 'fingernail' \**su...-či-*: \**seiwa-pa/ta-ki* (PAr); *či* (Tn, G); \**či<sup>2</sup>ih* (K, My); \*\**su* (POM); *sillu* (R) (Q); \**wābū-se-(?)ro* (PTuc); \**suutu* ~ *siutu* (V-H) (PU-A).
307. 'fingernail' \**kio-*: \**ko-* (PChib); \*\*(*H*)*kwe(n)* 'bone, fingernail' (POM), \**nku<sup>3</sup>* (PPn, OM); \**kio* (PTuc).

308. 'finish' \**toiku*: \**tek*/\**toi* (POP, OM) ; *tuqu* (GE) (Q-Bol).
309. 'fire' \**pa-wa-ta*: *pota* 'make a fire' (B, A) ; \**apw*- 'roast' (Ha) (PA) ; \**pawa-ta* 'make a fire' (PAr) ; \**pa* (POP, OM).
310. 'fire' \**k(w)ati/a*: \**eškote wi* (Ha : B) (PA) ; \**kata-rV* 'light' (PAr) ; \*\*(n)(h)*kwa<sup>3</sup>* (POM) ; \**kati* 'firewood' (PTac), *kwa-ti* (Tac).
311. 'fire' \**gu-*: \**guka* (PChib) ; *kuvi* (Api, Ge) ; \**ku* (V-H) (PU-A).
312. 'fire' \*-kei-la-: \**pesk-ale* 'blaze' (Ha) (PA) ; \**si-a-wV-kei-la* (PAr). There was probably metathesis of vowels in PA.
313. 'fire' \**tsi-*: \**tsi-tsi* (PAr) ; \**čiži* (PPan).
314. 'fire' \**ta(u/n)ta*: *tantay* (Ha) (D, A) ; *tauta* (Cuiva, Gb) ; \**ta-ta* (PT-G) ; \**tahi* (V-H) (PU-A).
315. 'fire' \**naka*: *nak* (Gmb) ; \*... *ta-si-naka* 'smoke' (PT-G).
316. 'fire' \**isa-to*: *-isa* 'smoke' (Pia, Ar) ; *isó-to* (Gb).
317. 'first' \*-*pia-ja*: \**kopiaya-* (PGb) ; *pia-da* 'one' (Tac).
318. 'fish' \**kuba-s*: \**kuba...* (PAr) ; *kups* 'trout' (Nt, G).
319. 'fish' \**tVp*: *tep* (Api, Ge) ; \**top* (H) (PU-A).
320. 'fish' \**wa(?)i*: *žadiwain* 'salt water fish' (Kog, Chib), *wa* (Chib) ; *duwai-ne* (Gb) ; \**waži* (PTuc).
321. 'fish' \**ši-ma-ki*: \**SI-ma-ki/i* (PAr) ; *šima* (Chan, Pan), \**maki* 'piranha' (PPan).
322. 'fish sp.' \**wami*: *wami* (PAr) ; \**wamī* (PPan).
323. 'fish' \**kar*: *kvrst* (Api, Ge) ; \**kar* (J) (PMY) ; \*\*(n)(?)*ka(n)<sup>3</sup>* (POM).
324. 'five' \**piška*: *pichca* /*pička*/ (R) (Q), *pisqa* (Cuzco Q) ; *pišika* (Tac).
325. 'flat shape' \*-*p'a-*: \*-*ba* (PChib) ; *ba-d<sup>3</sup>pal* (Yana, H).
326. 'flea' \**mua/uitsa*: *mitsana* 'louse' (Cam) ; \**mua-sa-hi* (Pre Chib), *muisa* (Chib).
- Wheeler has reconstructed \**mua-sa-hi*; *ts* instead of *s* would be an acceptable alternative.
327. 'flea' \**pik-*: \**pepikw-a* (Ha) (PA) ; *isimpik* (Gmb) ; *piqui* /*piki*/ (R) (Q).
328. 'flesh' \**ai-ča*: *?ayari-* (Mot, Chib) ; *aicha* /*aiča/* (R) (Q) ; *aiča* (Tac). The fact that the Tac word differs from that of Cav, Ese, and Rey, reconstructed \**Cami* (329), suggests a borrowing from Q. The correspondences are, however, entirely regular.
329. 'flesh' \**Cami*: \**nami* (PPan) ; *rami* (Cav, Tac) ; *yami* (Ese, Rey, Tac). See also 'blood' 102.
330. 'flesh' \**čipik<sup>3</sup>*: \**čižk<sup>3</sup>* (PMY) ; *čič* (Paez).
331. 'flower' \*-*ša-*: *-sa* (Cam) ; *sisa* (R) (Q) ; \**šaša* (PTac).
332. 'flower' \*-*iwa-*: \**ka-howāř-* (PAr) ; *o* (Gmb) ; *oa* (PPan) ; \**iwa-pu-ti-ra* (PT-G).
333. 'flower' \**to-tu*: \**totu-* (PChib) ; \*-*ma-to-Nó-to* (PGb).
334. 'fly' n. \**ipžiša*: *ibsa* (Chib) ; *piš* (Paez).

335. 'fly' n. \**pay-erV-*: \*-erV-to (PAr) ; *péya* (Tn, G) ; *ayer* (Yana, H).

336. 'fly' n. \*-beru: \**mapi-ri* (PAr) ; *bere-bere* (Tac) ; \**N-beru* (PT-G).

337. 'fly' vb. \*-ala-ya-: \**ala-ka-na/wa* (PAr) ; *palayar* (Gmb) ; *lay* (Cp). The Tn (G) word is *nara*, which is not included as a cognate because the Gmb and Tn do not correspond. See \**tolu* 'round'.

338. 'fly' vb. \**p<sup>o</sup>V(y)ua*: *ho-ngephua* (Cam) ; *pxu* probably /*pyu*/ (Paez).

339. 'fly' vb. \**nu<sup>o</sup>ia-*: \**no[y]a-* (PPan) ; \**ni<sup>o</sup>i* (PU-A).

340. 'fly' vb. \**fe-hi-l-*: *bahbil* (Yana, H) ; \**wihl-el* (J) (PMy).

341. 'foot' \*-u-Pa-r-: \**hi-i-pa* (PAr) ; \**Pori-ke* 'thigh' (PAr), *tpali* 'thigh' (P) ← \**tpari* (Pre P, Ar) ; \**topa-thái* 'thigh' (PGb) ; *par* (Api, Ge) ; -*pár* 'leg' (Wal, H) ; \*-*pi-* (PT-G) ; \**gió-bo*, \**di<sup>o</sup>po* (PTuc) ; *eúba* (Wit).

The PAr \**o* probably resulted from the morphophonemic *w* ← \**P* in C and Ap (Ar).

342. 'forehead' \*-mata-: *motokâni* (B, A) (Ha) ; -*mata-boko-to* 'head' (Gb) ; *ma<sup>3</sup>tyi<sup>2</sup>* (Cn, OM) ; *e-mata* (Tac).

343. 'forehead' \*-pali-: \**ta-pa-thá* (PGb) ; *kappali* (Gmb) ; *pa* 'head' (Chon, H), *apá* (Waik, H), *pola* (Ton, H) ; *palanj* (J) (PMy) ; \**pá* 'head' (PS).

344. 'four' \**puši*: *pusaj* /*pusah*/ 'eight' (R) (Q), *puši* (F) (Haqe-Aru, Q) ; *poši* (Tac).

345. 'four' \**ma(n)ku*: \**ma-ka-ya* (PChib) ; *manku* (Tn, G).

*palipik* (Cp, My) may also be cognate, in which case the vowel of the initial syllable is probably nasal. See Section 2.5 'four'. See also conditioning of PTuc and PHar reflexes of \**m* and \**b*, Section 4.4 and 6.8.4.

346. 'four' \**bVtiti-*: *batitiko* (Mot, Chib) ; *bitithia-ro* (Gn, Tuc).

347. 'four' \**painV-*: *bainóa-ka* (Pia) ← *painóa-ka* (Pre Pia, Ar) ; *peneyán-ci* (Gb).

348. 'fox' \**wa-kewe-*: \**wa-kwehša* (Ha) (PA) ; *kew-ne-čro*, *kewe* 'dog' (P, Ar).

349. 'freeze' \*-*o<sup>o</sup>airo<sup>o</sup>i*: *o<sup>o</sup>airó<sup>o</sup>i* (Guar-Bol, T-G) ; *woe<sup>o</sup>* (Tac).

350. 'fruit' \*-o-ba-: *oba* (Chib) ; \**bobo-kuí* (PGb) ; \**lob-* (J) (PMy) ; \*\*(?)*wa(H)<sup>2</sup>* 'plum, peach, potato, orange . . .' (POM).

351. 'fruit' \**saani-yū-*: \**sani-yu-da* 'seed' (PChib) ; *yūñ* (Paez) ; *muyu* (R) (Q) ; \**h/sa<sup>o</sup>i-N-iija* (PT-G) ; *Yuki-dika* (PTuc).

The final morpheme of PT-G may not be cognate with the protomorpheme \*-*yu*. PT-G \**j* is the regular reflex for PAm \**y*, but no explanation of the vowel change is apparent.

352. 'full' \**pira-*: *piřáts* (Gr, Ar) ; *pír* (Wal, H).

353. 'full' \*-čepo: \**te<sup>o</sup>p* 'enough' (Ha) (PA) ; *ka-tsepo* (P) ← \**ka-čepo* (Pre P, Ar).

354. 'fur' \**ije-ena*: *ičina* (Pia) ← \**ijina* (Pre Pia, Ar) ; *iheene* (Bo) ; \*-*ndá-i* (PGb) ; *ña* (Ese) ← \**na* (Pre Ese, Tac).

356. 'fur' \**khasi-*: *khas* (Paez) ; *gasi-ri* (Des, Tuc).

357. 'give' \**ki*-: *ácihi /ákíhi/* (Bo) ; *kuŋo* (Api, Ge) ; *ököa-ue* impv. (Kar, Pan) ; *ku* (GE) (Q) ; \**k-gu* (PS) ; -*ki-* (Itonama).
358. 'give' \**ahk<sup>2</sup>a-ma-*: *akau-wi* (Kog, Chib) ; *gamaa* (Yana, H) ; \**ahk<sup>2</sup>-* 'give, put, leave' (J) (PMy) ; *akh* 'put' (Paez) ; \**maška* (PU-A).
359. 'give' \**iŋdai*-: *piday-na* (Mot, Chib) ; *iŋde* (Wit).
360. 'go' \**ha/iyaa-wa-pa/no/na*: \**pye-wa* 'he comes', \**pyaa-ta* 'come' (Ha) (PA) ; \**y/ha-wa-no* (PAr) ; *hana* (Cam) ; *yaka* 'come back' (Tn, G) ; *yam* (Wal, H) ; *va* 'come' (Wal, H) ; \*\**nya* (PCM, OM), \**pa/\*ma/\*wa* (POP, OM) ; \**waŋa* (PTuc) ; \**yahis(pa)* (V-H) (PU-A).
361. 'go' \**po-na/Ci*: *ye-poni-kawa* (Pia, Ar) ; \**pona* (P, Gb) ; *poi* 'come back' (Api, Ge) ; *ñaupana* 'go ahead', *purina* 'go about' (R) (Q) ; \**po-ti* (PTac).
362. 'go' \**ohka*: \**kʰa-ha-nV* 'come' (PAr) ; *paka* 'go in' (Tn, G) ; *kato* (Api, Ge) ; \*\**ohk* (O) (PMy-Cp) ; *ka-* (Chac, Pan) ; *kwa* (Cav) ← \**ka* (Pre Cav, Tac).
363. 'go' \**le-na*: *rina* (R) (Q) ; \**ré-* (PS).
364. 'go' \**yuh*: *yuh* 'come' (Paez) ; -*ñu* (Guar-Bol) ← \**ju* (Pre Guar-Bol, T-G).
365. 'go' \**-bo/a*: \**hale-bokʰa* 'arrive' (PAr) ; *bah-bo* (Tz, My) ; \**bo-te* 'go down' (PTac).
366. 'go — let's go' \**thiŋa*: *thiŋa* (Mz, Pn, OM) ; *teŋa* (Tuc).
367. 'go up' \**wiči*: *wiči* (Tn, G) ; *huichiyana /wiči-ya-na/* (R) (Q).
368. 'gold' \**koli*: \**koli* (PAr) ; *curi /kuri/* (R) (Q).
369. 'good' \**wāla-/i*-: *walat* (Ha : V) (D, A) ; *walite* 'new' (Man, Ar) ; *wan-wan* (*wāwā*) (Kog, Chib) ; *walaxgai* (Yana, H) ; \**wali* (J) (PMy) ; *wala* 'big' (Paez) ; *ew* 'good' (Paez) ; *wali* (Ay, Q) ; \**hua* 'big' (PT-G) ; \**d(V)-oā/\*n(V)-oā* (PTuc) ; \**wi-* (PU-A).
- The factor which caused the vowel change in PU-A does not appear in the present data. The Kog (Chib) *n* (rather than *d* ← PAm \**l*) represents nasalization of the vowel, but may still be involved in the problem of *l* : *n* discussed in 1.4.
370. 'good' \**lyeek-ip*: *liikip* 'big' (Nt, G) ; *ziikidxi* (Yana, H) ; *lek* 'good, correct' (Tz, My) ; *alli* (R) (Q).
- Numbers 369 and 370 may possibly be related. There is a morpheme *wa* which is a preclitic of designation or emphasis in some Arawakan languages (e.g. Piro, Amarakaeri), and a postclitic of emphasis in Aymara (Q), which may account for the initial *wa-*; however, there would remain discrepancies in the reflexes of *ly*.
371. 'gourd' \**tsima*: *šima* (Mot) ← \**čima* (Pre Mot, Chib) ; \**tsima* (J) (PMy).
372. 'gourd' \**tsuhka*: *toko-* (Cul) ← \**tsoka* (Pre Cul, Ar) ; *šuhkali* (Tn, G) ; *tsúku-to* (Gb) ; *túka* (Paez).

373. 'gourd' \**bo-ča-ka*: \**bo-ča-ka* (PAr); *boč* (J) (My).
374. 'gourd' \**masi-*: *masi* (P) ← \**masi* (Pre P, Ar); \**ma[s]i[n/mV]* (PPan).
375. 'grandchild' \**baʔaba*: *ibaba* (Key) (Chac, Pan); \*-*baba* 'grandfather' (PTac); \**kʷaʔa* (PU-A), *baab* (Pap, U-A).
376. 'grass' \**ma-ši/aku-ana*: *maškw-* (Ha) (A); *imabikei* (Pia) ← \**imasikei* (Pre Pia, Ar); *sakuana* (Cam).
377. 'grass' \**hiyu-tV-hu*: *hiyuhuni* (Tn, G); *guth* probably /*hyuth/* (Paez).
378. 'grass' \**po-*: *po* (Gmb); *póona* (Gb).
379. 'grass' \**ahk̡i*: \*\**ahk̡i* 'he is pasturing' (O) (PMY-Cp); *akwi-wiha* (Cav) ← \**aki-* (Pre Cav, Tac).
380. 'grease' \**na-ši-wa*: \**nV-SI-wa/ki-SI-wa/ki* (PAr); \**nasi-tsi/wa* (PGb); \**šiʔ-ne/ye³* 'lard' (PPn, OM); \**šini* (PPan); \**iʔSe* (PTuc).
381. 'green' \**Caʔš-*: *ataši* (Kog) ← \**atasi* (Pre Kog, Chib); *póšta* (Tn, G); \**raʔš* (J) (PMY); \**paša* (PPan); \**yaʔ-ya/sa* (PTuc); *yaʔsa* (Catio).
382. 'green' \**č̡okña*: *čohña* (Cp) ← \**č̡ohña* (Pre Cp, My); *č̡oqña* (F) (Ay, Q); \**ju-kiri* 'yellow' (PT-G).
383. 'green' \**bo-re-rV*: \**i-bore-e-rV/ni* (PAr); *bore* 'yellow' (Des, Tuc); *borarede* 'yellow' (Wit).
384. 'grounds' \**tsake-*: *čkehi* (P, Ar) ← \**tskehi* (Pre P, Ar); *e-ca-ke* (Cav, Tac).
385. 'guan' \**ya-ku-a*: *hi-yeka* (P) ← \**hiyekoa* (Pre P, Ar); *yankwa* (Tun, Chib); *yehe* (Ese, Tac); *ñáku* (Guar-Bol) ← *jáku* (Pre Guar-Bol, T-G).
386. 'guava' \**tsV-pata*: *tspata* (PAr); *pata* (Tz, My).
387. 'hair' \*-*SI*, \*-*tsa*: \**iši* (Ha) (PA); \*-*si* 'body hair' (PAr); \*-*si-a-ne* (PChib); (*po)šok* (Gmb); \*\**šapl* (O) (PMY-Cp); \*\*(Y)(n)s<sub>a(H)</sub>(n) 'rope, hair' (POM); \**šo(po)* [CV] 'downy' (PPan); \*-*tsa* (PAr); \**tsots* (J) (PMY), *čara* (Cp, My); \**caro* (PTac); \**co(ni)* (V-H) (PU-A); *ča* (Barbara) (Pampa).
- Morpheme sequences for 'beard', 'body hair', 'feather', 'fur' and 'hair' include two common sets of ressemblants. The first meaning 'hair, fur, feather' appears in various languages as -*si-*, -*sa-*, -*ši-*, -*ša-*, -*š-*, or with any of the sibilants followed by a vowel cluster. The other set meaning 'cord, hair' appears as -*ts-*, -*č-*, or some affricate with the similarly irregular vowel reflexes. The hypothesis offered in the PAm reconstruction above is that the morphemes \*-*SI*- and \*-*tsa* frequently preceded a morpheme \*-*yo-* not uncommon in the same lexical items and occurring in 'head'. An example with reverse morpheme order is *yakia-ca* 'hair' in Cocama (PT-G), in which *yakia* is 'head'. The -*i*- was frequently lost following the sibilant — a loss noted in various language families (Arawakan, Chibchan, Tucanoan). The resultant cluster was reduced with various degrees of assimilation of the sibilant or affricate, or the -*y*- became -*i*- with or without loss of the following vowel. In words in which -*ya-* did not occur the change of the morpheme \*-*SI* or \*-*tsa* may have been

analagous to that in 'hair'. The morpheme is written as *\*-SI*. For Arawakan morphophonemes *S* and *I*, see 6.2. For mention of reflexes of PAm *\*-SI*, see 2.1 and 6.1.

388. 'hair, body hair' *\*Po-*: *xiwi* (P) ← *\*kiwi* (Pre P, Ar), *po<sup>9</sup>e* 'head' (B, Ar); *mata-boko-to* (Gb); *pošok* (Gmb); *\*šopo*[CV] (PPan); *e-wo-* (Ese, Tac); *\*poa* (P Tuc); *\*po* 'body hair, fur' (V-H) (PU-A); *ipɔpdi* (Wit); *puda* (Catio); *pak* 'body hair' (Elson) (Sierra Popoluca).

389. 'hammock' *\*bū-*: *\*bu-kwa* (PChib); *\*buu* (PGb).

390. 'hammock' *\*(h)amako:* *\*amako* (PAr); *-maka*, sleep' (P, Ar); *hamaka* (Perea) (Taino).

391. 'hammock' *\*we-*: *wein* 'mat' (Cuiva, Gb); *weh-* (Paez).

392. 'hammock' *\*ni-šeči:* *šeči* (P) ← *\*šeči* (Pre P, Ar); *ači* (Tz, My); *niši* (Chac, P).

393. 'hand' *\*kha-Pi:* *\*kaa-pi* (PAr); *\*-kobe* (PGb); *\*\*khav* (O) (PMy-Cp), *\*k<sup>9</sup>ab* (O) (PMy).

The conditioning of the PGb vowel reflexes has not been determined. The morpheme *wa-* of set 394 may have followed *ka-* at one time. For *\*-Pi*, see 'rod, point'. Olson includes under PMy-Cp the Cp form *khara*. Cf. *nikra* (Api, Ge) and *atkara* (Tun, Chib). Wheeler shows *r* as a reflex of only PChib *\*d* and *\*n*.

394. 'hand' *\*wa-bū/mū-ki:* *muut* 'to hand' (Yana, H); *\*\*(h)k<sup>9</sup>e(?)n* 'fist' (POM), *mi<sup>3</sup>ha<sup>2</sup>*<sup>1</sup> (O, Cn, OM); *\*mikün̄i* (PPan); *\*wabū/wamū-hoto/ka* (P Tuc); *kiu* (Barbara) (Pampa).

395. 'hand' *\*ma-jo-ta-ki/pi:* *\*ma-jo-ta-pi* (PAr); *ki<sup>9</sup>i* (Gyb, Gb); *maasiža-* (Yana, H); *maqui/maki/* (R) (Q); *\*kyake* (PS); *\*e-me* (PTac); *\*ma* (V-H) (PU-A); *ma(ya)* (Mono, U-A).

Re *-ki/pi* see 6.2.

396. 'hand' *\*(k)use:* *úse* (Bo); *kúse* (Paez).

397. 'hand' *\*pu-a-ri/ti:* *ahápuru* (Gr, Ar); *\*-pua-N* (PT-G); *\*pi-ri/ti* (PTuc).

398. 'hand' *\*-no-k-:* *nok* (At, G); *əno* (Wit).

399. 'hard' *\*k<sup>9</sup>a-ra:* *k<sup>9</sup>ara* (Cul, Ar); *rá* (Tn, G); *-k<sup>9</sup>arad-* (Yana, H).

400. 'have' *\*ti-* aux vb., *\*-ya* possessed: *-éhtini* vb. (Tn, G); *ti-ya* aux., *-y* Possessed (GE) (Q); *ti-ro* aux., *-ya* Possessed (Gn, Tuc).

401. 'hawk' *\*koya-:* *\*kaya* 'gull' (Ha : H) (PA); *koya-no, koya-tale* (P, Ar); *\*k<sup>9</sup>e-ya* (PCh, OM).

See Haas, 1958, re 'gull' and 'hawk'.

402. 'hawk' *\*š<sup>9</sup>VrV:* *škiri* (P) ← *\*skiri* (Pre P, Ar); *škara* (Cp, My); *\*\*ka<sup>1</sup>* 'hawk, buzzard, eagle' (POM), *\*šha* (PMaz, OM).

403. 'hawk' *\*pe-wa-še-kiw-a:* *\*peškw-a* 'nighthawk' (Ha) (PA); *pawaskiwa* 'owl sp.' (P, Ar); *se-se-kue-to* 'owl' (Gb).

404. 'he' *\*e-wi/a-ya/la:* *\*wi<sup>9</sup>la* (Ha : B) (PA), *\*w-* (Ha) (PA), *wiya* (C, A); *yaa* (Pia, Ar), *\*wa* 'the' (PAr); *uia* 'he (present)', *éya* 'he (not present)' (Tun,

Chib) ; *va* 'this' (Wal, H) ; \*\*(n)wa(h)(n)<sup>2</sup> 'oneself, that one' (POM) ; \*awī 'he, her, its' (PPan) ; *owa-ya* (Ese, Tac) ; \*awa-pa (PT-G).

405. 'he' \*to-ponV : \*to (PAr), *to-po-ni* (Cul, Ar) ; *po-ni* (Gb) ; *to-ke* (Cav, Tac).

406. 'he' \*(h)a-a: *pa* (Mot, Chib) ; *ha* (Tz, My) ; \*aa 'he, she, it, that one' (PPan) ; *ha* (Chac, P) ; \*ai 'she' (PT-G).

407. 'head' i \*-ku-i/a-ta: *kwisa* (Tun, Chib) ; \*ukwitak(la) (PNM, G) ; \*\*(Y)ke(h)(n) 'head, face, eye' (POM), \*š-/t-ku/ku (PPn, OM) ; *gkweth* (Paez) ; \*-ja-kia-N-ka (PT-G) ; \*kuupa (V-H) (PU-A).

408. 'head' \*ma-þo: *puma-* (Mot, Chib) ; \*ma- (PPan) ; \*moþo (V-H) (PU-A).

Cf. 342 'forehead'.

409. 'head' \*yo-xa: \*e-yo-xa (PTac) ; \*-ja-kia-N-ka (PT-G) ; *wiýuk* (Macu).

410. 'hear' \*hu-ge-ma-: \*ge-ma (PAr) ; \*humetane (PGb) ; *kuma* (Api, Ge).

411. 'hear' \*noonš-: \*no'ntawewa (Ha : B) (PA) ; *nonš* (Cp, My).

412. 'hear' \*yV-pi-ku-: *yo-pik-ha-ta* 'look at' (P, Ar) ; *čepúkhunú* (Bo) ; *ya-pi-ta-ne* 'know' (Cuiva, Gb).

413. 'hear' \*wi-: *wi . . . c* (Tn, G) ; *wit* (Ag, My).

414. 'hear' \*na-: *na* (Tz, My) ; \*nakx (PS).

415. 'heavy' \*ino: \*ina (PAr), \*(m)ina/o (PP-AP, Ar) ; *no* (Wal, H).

416. 'heavy' \*dū-ki: *nud* (Paez) ; \*dikī (PTuc).

417. 'heavy' \*-poti-: \*-pot-čii (PT-G) ; \*piuti (V-H) (PU-A).

418. 'here' \*-wara-: *várayva* (Krk, H) ; \*waral (J) (PMY) ; *re-wa* (Vav, Tac).

419. 'here' \*(k)ay-: *ka* (Chib) ; *aiža* (Yana, H) ; *ay-* (Tz, My) ; *ayte* (Paez) ; *cai- /kai-/* (R) (Q).

420. 'heron sp.' \*-yaka-: *šanyaka* (P, Ar) ; *yákameli*, *yákaþóšta* (Tn, G) ; \*aka (PPan).

421. 'hide' vb. \*-ma-: *yo-hi-ma-ta* (P, Ar) ; \*ma (PPn, OM).

422. 'hill' \*ifi/atsi: *wacew* (Goddard : B) (M, A) ; *uuci* (Gr) ← \*utsi (Pre Gr, Ar) ; *batshañe* (Cam) ; *ibo-tsuto* (Gb) ; \*wits (J) (PMY) ; *bis* (Paez). The morpheme *ibo* in Gb means 'stone, rock'. See 696.

423. 'hill, mountain' \*alku-: *arkita-ra* (Tun) ← \*adkúta-da (Pre Tun, Chib) ; \*silakwi 'slope' (PCh, OM) ; *urcu /urku/* (R) (Q).

424. 'hill, mountain' \*tono: *ton oní* (Gmb) ; *ton* 'rock, stone', (Toj, My) ; \*touno (V-H) (PU-A).

425. 'hill, mountain' \*-mata-: \*mana (PPan) ; *mata* (Key) (Cash, Pan) ; *e-mata* (Cav, Tac).

426. 'his' \*(h)i-: \*hi- (PAr) ; \*y- ~ s- (J) (PMY).

427. 'his' \*pai-: \*pE- (PGb) ; *pai* (R) (Q).

428a. 'hit' \*(pe/a)/me-kpore: \*pak- (Ha : B) (PA) ; *pa:k-* (Nt, G), *péka* (Tn, G) ; *kapprerek* 'spank' (Api, Ge) ; *mekámpor* (Gmb) ; *pak* (Krk, H) ; \*mak<sup>3</sup> (J) (PMY) ; *macana /makana/* (R) (Q) ; *kā* (Gn, Tuc).

428b. 'hit' \**uka*: *uka* (Paez) ; *úka* (Sir, T-G).

The glottalization of *k* in PMy may have resulted from analogy to \*\**k<sup>2</sup>ahk<sup>2</sup>* 'hit, throw, shoot' (O) (PMy-Cp) and \*\**čahk(?)* 'hit, throw' (O) (PMy-Cp). Q has also *pega-na* (R), a regular loan from Spanish *pegar* 'to hit'. This may be an adaptation of a previously regular Quechua cognate.

429. 'hit' \**čahk*: *tsakita* (Gb) ; \*\**čahk<sup>2</sup>* (O) (PMy-Cp).

430. 'hold' \**kio*: *kó* (Wal, H) ; \**kio* (PTuc).

431. 'hole, cave' \**h/mahV-ka*: \**mahV* (PAr), *mahka* (P, Ar) ; *h<sup>2</sup>hka* (Tn, G).

432. 'horn' \**-owi-*: \**owi-wi-θ-a* (Ha) (PA) ; *k-owi* (P, Ar).

433. 'horn' \**h/pawa*: *hwa* (P, Ar) ; \**h-au-N-ci* (PT-G) ; \**pawa* (Ha) (PU-A).

434. 'hot' \**k<sup>2</sup>es-i/a*: \**kešy-* (Ha) (PA) ; \**ki/si-jai* 'firewood' (PWNew, Ar) ; *ke's-* (Nt, G) ; \**k<sup>2</sup>isin* (J) (PMy) ; \**pieisa* (PPan) ; \**a(?)si* (PTuc).

435. 'hot' \**ašana*: *pasana* (Mot, Chib) ; \*\**nsah* 'warm' (POM) ; *šana* (PPan).

436. 'hot' \**k<sup>2</sup>a-hk<sup>2</sup>i*: \**ka-hk* (Goddard : M) (PA) ; \*\**k<sup>2</sup>ahk<sup>2</sup>* (O) (PMy-Cp) ; \*\**hki* 'fever, fire' (POM), \*\**ka* 'burn' (POM), *ka<sup>2</sup>a<sup>2</sup>ka<sup>2</sup>* 'quicklime' (C, Mn, OM) ; *kwaki* (Ese) ← \**kaki* (Pre Ese, Tac).

437. 'house' \**PiikiPa(a)mi*: \**wi-kiwa-mi* (Ha : B) (PA) ; \**Pa-na-di* (PAr) ; *wi* 'house', *panguakuai* 'shelter' (Kog, Chib), *ubaha* (Tun, Chib) ; \**bau* (PGb) ; *wa* (Wal, H), *wawi* (Yana, H) ; *w<sup>2</sup>aa<sup>1</sup>* (A, OM), \*\*(*Y*)(*n*)(*?*)*k<sup>2</sup>wa(h)(n)*<sup>1</sup> (POM) ; *wa<sup>2</sup>* 'shelter' (Paez) ; \**šobo* (PPan) ; *huasi /wasi/* (R) (Q) ; *ovapi<sup>2</sup>a* 'roof' (Guar-Bol, T-G) ; \**wi<sup>2</sup>e* (PTuc) ; *hópó* (Wit) ; *boa* (Perea) (Taino) ; *pa<sup>2</sup>ta<sup>3</sup>* (Anderson) (Ticuna) ; *wa* (Aguaruna, Jivaro).

438. 'house' \**ya-ta/i-* (Pa-): \**ka-pi-eti* (PWNew, Ar) ; *yebna* (Cam) ; *ya* (Gmb) ; \**a/ot* (J) (PMy) ; *ya<sup>3</sup>te<sup>3</sup>* 'boards' (I, Pn, OM) ; *yath* (Paez) ; \**ta<sup>2</sup>pas[V]* (PPan) ; \**ti* (PS) ; \**e-ta-re* (PTac) ; *etepuča* (Tac) ; \**tapui* (PT-G) ; *ti* (Catio).

439. 'house' \**na*: \**Pa-na-di* (PAr) ; *yebna* (Cam) ; *na* (J) (PMy) ; *la, na* 'tree, stick, wood' (C, Pn, OM).

There is considerable overlap among sets 437–440. They could be combined into one very long protoword if preferred.

440. 'house' \**mits/ši*: *miitsi* (Gr, Ar) ; *mišihai* (Huarayo, T-G).

There is insufficient information regarding the reflexes of Gr and Huarayo for the solution of the problem of the medial consonant.

441. 'how' \**paku-*: *poko* (P) ← \**paku* (Pre P, Ar) ; *pkua* (Chib) ; \**pa-kuénia* (PGb).

442. 'how' \**mā-Ci*: *milli* (Bo) ; *mā<sup>2</sup>u* (Paez) ; *i-ma-i* (R) (Q).

443. 'hummingbird' \**č<sup>2</sup>inī*: *čini* (Gr) ← \**tini* (Pre Gr, Ar) ; *ts<sup>2</sup>unun* (Tz) ← \**č<sup>2</sup>unun* (Pre Tz, My) ; *čīnū* (Guar-Bol, T-G).

The Guar should be ← \**jinu* (Pre Guar-Bol) in order to correspond, but there is no evidence in Wheeler's article for such a reconstruction.

444. 'hummingbird' \**Pi-se-rV* : \**se-Pi-yV-rV/tV* (PAr) ; \**se-si-ba-rV-to* (PGb) ; *pisido* (Wit-P).

445. 'hungry' \**wē*: *be* (B) ← \**we* (Pre B, Ar) ; *wē* 'be hungry' (Paez).
446. 'hurt' \**ya-*: *haya-le* 'ouch' (P, Ar) ; *yáša*, *yá* 'have pain' (Tn, G) ; \*\**ya?* (O) (PMy-Cp).
447. 'husband' \**bani*: *pani* 'potential brother-in-law' (P) ← \**bani* (Pre P, Ar) ; \**bini* 'husband, male' (PPan) ; \**bādī* /*mānī*/ (PTuc).
448. 'husband' \**wana-*: *wanačayá* (Cam) ; *čávan* (Krk, H).
449. 'husband' \**Cmí*: *hmí* (Wal, H) ; *nmi?* (Paez).
450. 'I' \**nV* : \**ni-la* (Ha : B) (PA) ; \**nō-wa* (PAr) ; \**na-sV/-nV-ya* (PChib) ; \**xa-ni* (PGb) ; *na* (Gmb) ; *na-p* (Jic, H) ; \**ne* (Ha) (PU-A).

In this and all following affixes, explanations of vowel change between reasonably similar vowels are not given, since conditioning factors are not traceable.

451. 'I' \*-*ima*: *číma* (Tn, G) ; *wařma* (Yana, H) ; *ema* (Tac) ; *mī* (Catio).
452. 'I' \*-*pi*: \**pī*[-] (PPan) ; \**yipī* (PTuc).
453. 'if' \*-*te-*: *teme* (Tz, My) ; *-te?* (Paez).
454. 'iguana' \**mařVw-*: *mátsa* (Kog, Chib) ; *mačíwi* (Cuiva) ← \**masíwi* (Pre Cuiva, Gb) ; *mařaware* (Tac).

The Kog reflex *mátsa* is phonetically written ; further information is needed to establish the *ts* as a regular reflex of the fricative.

455. 'iguana' \*-*iso-*: *sobíi-* (Mot, Chib) ; *oθou* (H, My) ; \**pisoso* (PTac) ; \**yoa-iso* (PTuc).
456. Imperative \**ye-me*: *ye-me* (Ha : B) (A, A) ; *ma* (Cam) ; \*-*ma* (PGb) ; *m-* (Paez) ; *-y* (GE) (Q-Bol) ; *-me* Causative, *me-* Imperative plural (GE) (Tac) ; *-ya* Imperative, *-me* Imperative plural (Tue).
457. 'in, at' \*-*i/-ya*: *-i/-ya* (P, Ar) ; *-ye* (Sir, T-G) ; *-i* (Gn, Tuc).
458. 'in, at' \*-*wi*: *-wi* (Bo) ; *-wul-* (Yana, H).
459. 'in, at' \*-*ki*: \*-*enki* (Ha : B) (PA) ; *kíču* (Tn, G) ; *-ki* (At, H).
460. 'in, at' \*-*n/-na/-nu*: *-n/-na/-nu* (Chib) ; *-n/-na/-nu* (Paez).
461. Infinitive \*-*ña*: *-na* (Cam) ; *-ya* (Gb) ; *-ya?* (Paez) ; *-y* (GE) (Q of Bol, Q), *-ña* (F) (Ay, Q).

462. 'insect sp.' \*-*yo-*: \**ha-hio* (PAr), *hahyo* 'mosquito' (P, Ar) ; *yoy* 'mosquito' (H, My) ; \*\**nyu*, \*\**hyuh* 'mosquito' (PCn, POM).

463. 'inside' \*-*do-me*: \**aθa'm* 'underneath' (Goddard) (PA), *anóme* (Goddard : Tr) (Nt, A) ; *e-do-me-so* (Tac).

464. Interrogative \*-*fa*, *-ri*, *-ti*, *-sa*: *-ti* Negative and Interrogative, *-sa* Weak question (Ay, Q) ; *-re* (GE) (Sir, T-G) ; *pa* (GE) (Guar-Bol, T-G) ; *-ri*, *-ba* (Emphatic interrogative, *-ti* Negative and interrogative, *-sa* Possibility (Tue)).

465. 'intestines' \**a(y)-si-ra*: *ayiirain* (Gr, Ar) ; *ayšii-ra* (Mot) ← \**aysii-da* (Pre Mot, Chib) ; *e-sere* (Cav, Tac).

466. 'intestines' \**poi-tsi*: *piici* (Gmb) ; *poi* (At, Pan).

467. 'intoxicated' \**epihtu-*: *epét-* (Gr, Ar) ; *-pihtu* (Tn, G) ; *pér* (Wal, H).

468. 'jaguar' \*-ja-p<sup>9</sup>a: \*da-bai/-N (PChib) ; \*\*(?)ya(H)(n)<sup>2</sup> 'coyote, mountain lion, jaguar' (POM) ; \*iba (PTac) ; \*N-jag<sup>w</sup>a-ra- (PT-G) ; \*yai (PTuc).

469. 'jungle' \*nī-kī: \*nu 'jungle growth' (PCn, OM) ; nīkī (Tuc).

470. 'jungle' \*-sa: ho-ša (P) ← \*(h)o-sia (Pre P, Ar) ; \*Hsa<sup>3</sup> (POM) ; sacha /sača/ (R) (Q).

The Piro form may be related to the morpheme \*SI of 'hair'. See 383.

471. 'kill' \*kama-: \*kama-ga 'kill, die, demon' (PAr) ; \*kam (O) (PMy).

472. 'kill' \*(k)wañ/d-: kuəññimeč (Api, Ge) ; kwan (Wal, H) ; huañu-chi-na /wañu-či-na/ (R) (Q).

473. 'kill' \*-yar-: hi-yla-ta (P) ← \*i-yVr-ta (Pre P, Ar) ; yariá 'die' (Gn, Tuc).

474. 'kiss' \*čhu(h)ba-: čúhpa (Tn, G) ; waŋicapa- (Yana, H) ; \*\*čhuv (O) (PMy-Cp).

475. 'knee' \*čiina(h)k-: \*-či-nkwan- (Ha) (PA) ; -činahki (Tn, G) ; \*tyu-n-či/yi (PPn, OM).

The -h-, compensatory for vowel length, is metathesized in G.

476. 'knife' \*wata: \*yo-wá-ta 'knife, originally of bamboo' (PP-Ap, Ar) ; \*\*(h)ta(h)(n)<sup>3</sup> (POM), \*ka-/wa-te<sup>3</sup> 'cut' (PPn, OM) ; \*waŋti 'blade' (PWestern Tuc).

477. 'know' \*-mā-tV: hi-ma-ta (P, Ar) ; ésámáahi 'think' (Bo) ; kama- (Mot, Chib) ; uma 'mind' (R) (Q) ; čama- 'see' (Tac) ; \*-maŋe 'see' (PT-G) ; \*māši (PTuc) ; \*mati (V-H) (PU-A).

478. 'know' \*-ti-: -atiha- (Gr, Ar) ; thiŋo 'hear, know' (Gn, Tuc).

479. 'know' \*būē: eŋ-nōpōē (Amar) ← \*e-nō-bue (Pre Amar, Ar) ; bue (Tac).

480. 'lake' \*p<sup>9</sup>uka/i: puka (Gb) ← \*phúka (Pre Gb) ; biki-pari-ro (Gn, Tuc).

481. 'laugh' \*šVka: \*\*(n)kan<sup>3</sup> (POM), šaku (M-M, Mn, OM) ; šika (Paez).

482. 'leaf' \*-sa-p<sup>9</sup>a-na: \*tsi/sa-p<sup>9</sup>hana- (PAr) ; p<sup>9</sup>anga (R) (Q) ; \*sawa (V-H) (PU-A).

483. 'leaf' \*phīŋi/o: pīŋo (Api, Ge) ; \*piŋi (PPan) ; raphi (F) (Q-Cuzco) ; \*ápi (PS) ; \*pu (PTuc).

The vowels are metathesized in Panoan.

484. 'leaf' \*še-: šehi 'leaves, foliage' (P) ← \*sehi (Pre P, Ar) ; še 'tree' (Cam) ; \*\*(Y)(n)(H)si (POM).

485. 'left' \*-šan(a)i: adúsanai (Kog, Chib) ; \*čani (PTac).

486. 'left' \*mayi-: máyisáhu (Tn, G) ; acimay (Gmb).

487. 'leg' \*kai-si-ke: \*ku-tsui-SI-ke (PAr) ; \*kai-si-ke-de (PChib) ; -áska-téraški (Tn, G) ; se- (Was, H) ; \*kissi 'thigh' (PPan) ; \*isi 'foot' (PS) ; e-kise (Ese, Tac) ; \*kasi (V-H) (PU-A) ; idákairɔ (Wit).

488. 'leg' \*t<sup>9</sup>ida: \*\*(Y)(H)te (POM) ; čiŋda (Paez) ; e-tida-da (Key) (Tac).

489. 'leg' \*mina: minthaha (Cam) ; munán-kada (Kog) ← \*muanán-kada (Pre Kog, Chib) ; namin (Barbara) (Pampa).

The assumption on which the Pre Kogi is reconstructed is based on subphonemic *i* ~ *au* variation in that language, resulting in *a* ~ *u* reflexes for PAm \**i* depending on stress, etc.

490. 'leg' \**pir*: \*-*pi* (PAr) ; *pil* (Paez).
491. 'leg' \**tima*-: *e-tima* (Cav, Tac) ; \*-*tima(-ka)* (PT-G).
492. 'lick' \**ra-m-pi*: \**lapi* (PM, G) ; *lambi* probably /*lampi*/ (R) (Q).
493. 'lie down' \**kāw*-: \**kawewa* 'prostrate' (Ha) (PA) ; \**kau-* (PCur-Man, Ar) ; *ñikvá* (Api, Ge) ; *kawi* 'sleep' (Ese, Tac).
494. 'lie down' \**ha-ru-ka*: *hure-ti-* (Gr, Ar) ; \**ruka* (PGb) ; \**raka* (PPan) ; *hara-* (Cav) ← \**sara* (Pre Cav, Tac).
- The Gr (Ar) vowels are metathesized.
495. 'lie down' \**y/ha-k<sup>2</sup>o-*: *yak* (Wal, H) ; \**yok<sup>2</sup>-* (J) (PMy) ; *ha-k<sup>2</sup>ōa* (Gn, Tuc).
496. 'lie down' \**nā*: *ná* (Tn, G) ; *nō* (Api, Ge).
497. 'lie down' \**waya*-: *way-* (Tz, My) ; *oyá<sup>2</sup>a-* (Des) ← \**wyá<sup>2</sup>a* (Pre Des, Tuc).
498. 'lightning' \**pō-pa*-: *ñibeba-* (Mot, Chib) ← \**iboba* (Pre Mot, Chib) ; \**mīpō-pa* (PTuc).
499. 'lip' \**sti*-: *stipil ye* 'edge of mouth' (Tz, My) ; *kisti* (Key) (Chan, P).
500. 'lip' \**kha<sup>2</sup>t*: *yuwekharty* (Paez) ; \**e-kaca* 'mouth' (PTac).
501. 'lip' \**se-ba<sup>2</sup>to*: *kaka* *bada* (Kog, Chib) ; *kuibóto* (Cuiva, Gb) ; *se-be<sup>2</sup>to* (Tue).
502. 'lip' \**ka-ke*-: *káka* *báda* (Kog, Chib) ; *e-keke* (Tac).
503. 'liver' \**ha-Pa-na-ko/i*: \**ohpan* 'lung' (Ha) (PA) ; \**pa-ko-na* (PAr) ; \**pa-hapa*- (PGb) ; *penímo* (Cubeo, Tuc) ; *banáhi* (Wit).
504. 'liver' \*-*imā*-: *ma* (Api, Ge) ; *mánži* (Gmb) ; \**imačipasi* (Ha) (PH) ; *me<sup>2</sup>hx* (Paez) ; \**Ye<sup>2</sup>me-tu/sa<sup>2</sup>wa/bi* (PTuc) ; \**ni<sub>s</sub>ma* (V-H) (PU-A).
505. 'liver' \**tak(u)a*: \**weθkwani* (Ha : S) (PA), *wətaskwənom* 'his liver' (Ha) (Pn, A) ; \**takwa* (PPan) ; \**e-taka* (PTac) ; \*-*pi<sup>2</sup>a-k<sup>2</sup>wei* (PT-G).
506. 'liver' \*-*pi*-: *abita* (Kog, Chib) ; \**pi* (PS).
507. 'long' \**sV/h-yu-ro*: *gahasio* (Chib) ; *yuru* (Tn, G) ; *zul* (Yana, H) ; *šyu<sup>2</sup>kbi* (Mm, My) ; *xu<sup>2</sup>* probably /*hyu<sup>2</sup>*/ (Paez) ; *suyt<sup>2</sup>u* (F) (Q-Cuzco) ; \**Yoa-ro/ri/se* (PTuc).
508. 'long' \**re/i*: *ri* (Api, Ge) ; \**s-re* (PS) ; *are* (Wit).
509. 'long' \*-*k<sup>2</sup>u*-: *k<sup>2</sup>u-* (Yana, H) ; \*\*(Y)(n)(<sup>2</sup>)*k<sup>2</sup>a(h)(n)<sup>2</sup>* (POM) ; \**pu-ku*/\**wu-ku* (PT-G).
510. 'long' \*-*g/ken*-: \**kenw-* (Ha : H) (PA) ; *aguensuka* /*agen-*/ (Chib) ; \*\*(n)(h)*ke(h)(n)<sup>3</sup>* 'deep, long' (POM).
511. 'long' \*-*a-pi*-: \**a-pía* (PGb) ; *yápik* (Gmb).
512. 'louse, head louse' \**k(i)-wa-bau/ti*: \**ehkw-* (Ha : B) (PA) ; *kolibai* (Pia) ← \**kuribau* (Pre Pia, Ar) ; \**kwe-b(V)-(ha)-die* (PChib) ; *kuti* (Chip, My) ; \*\*(h)*k<sup>2</sup>a(h)(n)<sup>2</sup>* (POM) ; \**ku-t<sup>2</sup>ye<sup>2</sup>* (PPn, OM) ; \**ki-wa* (PT-G) ; \**g<sup>2</sup>v-ã-bi* (PTuc).

513. 'louse' \**ta-ri*: *hi-ta-le* (P) ← \**ta-ri* 'weevil' (Pre P, Ar); \**tali* (PGb); \*\**tan*<sup>3</sup> (POM); \**tari* 'insect' (PTac).

The vowel change in *P* is morphemic, obligatory with the possessive *hi-*.

514. 'louse' \**usa*: ēs (Paez); *usa* (R) (Q).

The nasal ē in Paez corresponds to oral *a*. The vowel was probably metathesized rather than assimilated, since metathesis appears internally in Paez.

515. 'louse, body louse' \**kam*: *kəm* (Ha) (Pn, A); \**kama-ti* (PMadi, Ar); *kumne* (Chib).

The A and Chib vowels may have undergone analogical change, since both A and Chib have reflexes belonging to set 512.

516. 'lung' \**-so-*: *osósoo* (Gr, Ar); \**so(h)-t<sup>3</sup>* (J) (PMy); ū-*swatse* (Paez); *e-hasa* (Cav, Tac); \**sosno* (V-H) (PU-A).

517. 'lung' \**poš-i/uk<sup>3</sup>a*: \**bósi* (PChib); *epuska* (Tn, G); *pa·piš* (Was, H); \**pos-poC* (J) (PMy), *pušuk<sup>3</sup>* (Toj, My).

518. 'macaw' \**ma-ha*: \**máha* (PGb); *ma<sup>3</sup>* (Toj, My); \**maha* (PTuc).

519. 'macaw' \**ka(i)ra*: \**kaida* (PChib); *kara* (Cav, Tac).

\**kana* (PPan) may be related, but there is no evidence elsewhere for the nasal component in the present data.

520. 'macaw' \**šawe-*: *saive-to* 'parrot sp.' (P, Ar); \**šawani* (PPan).

521. 'maguey' \**bats*: *béči* (Ar, Chib); *bats* (Paez).

522. 'man' \**uwā*: *uwā* 'Indian' (Tun, Chib); \**wā* (PS); \**uwa-kʷai-N-bai* (PT-G).

523. 'man' \**dexa*: \**dexa* (PTac); \**taka* (V-H) (PU-A).

524. 'man' \**i(i)-ma-ka-li*: \**ma-ke-li* (PAr); *mi* (Api, Ge); *mik* (Gmb); \*\**kel* (O) (PMy); *karmaxa* (F) (Haqe-Aru, Q); \**ka-im-i-dō/gi* (PTuc); *iima* (Wit).

525. 'man' \**dora*: *tóoro* (Gr) ← \**dora* (Pre Gr, Ar); *do-ra* (Mot) ← \**do-da* (Pre Mot, Chib); \**ka-im-i-do/gi* (PTuc); *du<sup>5</sup>u<sup>3</sup>ci<sup>2</sup>* (Anderson, Tieuna).

526. 'manioc' \**ki-ma-i-ka*: *ximeka* (P) ← \**kimeka* (Pre P, Ar); \**ma-di<sup>3</sup>o-ka* (PT-G); *maika* (Wit).

527. 'manioc' \**matsu-*: *mašuna* (Mot) ← \**matsuna* (Pre Mot, Chib); \**mat-súka* 'manioc flour' (PGb).

528. 'manioc' \**ro-mu*: *lo* (Gmb); *lumu* (Orr) (Q-Ec, Q).

529. 'manioc' \**kawe*: \**bawá* (PGb); *kvør* (Api, Ge); \**kawe* (PTac).

530. 'many' \**bay-*: *abairu* (Tun, Chib); *bay-Vl* (Tz, My).

PTuc has \**pai-yi/he*. The Chib would correspond to either the PMy or the PTuc. The Tz, My may be from a dialect which does not distinguish *b* from *p<sup>3</sup>*. If the PMy reflex were \**p<sup>3</sup>*, all three would correspond to PAm \**p<sup>3</sup>*.

531. 'masculine' \*-i/-i: -i/i (P, Ar); -i/-i (Des, Tuc).

532. 'mat' \**čira-šu-kisV-d...m*: *kiθidima* (Pia) ← \**kisidima* (Pre Pia, Ar); *čida-* (Mot, Chib); *suddiipmi* (Yana, H); *činškiši* 'skin rug' (Cp, My); *yokise* (Ese, Tac); *kisa* 'hammock' (Sir, T-G).

533. 'meat' \**p/p<sup>2</sup>iwi*: *piwi* (Gyb, Gb) ; \*\**kwe<sup>1/2</sup>* 'meat, body' (POM), \**na-mbu-wi* (PCM, OM).

534. 'medicine man' \*-*ma-rV-* : *kamarike-ri* (Pia, Ar) ; *mimaripik* (Gmb) ; \**maro* 'witch doctor' (PTac) ; *manoriraima* (Wit).

535. 'medicine man' \**payē*: *pay-el* 'medicine man's rite' (Tz, My) ; *ipañe vae* (Guar-Bol) ← \**ipájē vae* (Pre Guar-Bol, T-G).

536. 'metal, money' \*-*k<sup>2</sup>i(n)-ča<sup>2</sup>* : *čeka* 'metal' (Gyb) ← \**seka* (Pre Gyb, Gb) ; *tak<sup>2</sup>in* 'metal, money', *ča<sup>2</sup>* 'grinding stone' (Tz, My) ; \*(n)(h)*ki(n)<sup>1/2</sup>* 'hard, stone, metal' (PPn, OM), *či<sup>2</sup>ka<sup>3</sup>* (I, Pn, OM).

537. 'middle' \*-*tsika-la*: *tatsik* 'in the middle, between' (Ha) (B, A) ; *tskala* (P, Ar) ; *patéhkala* (Tn, G).

538. 'milk' \**pē-čo-* : *čočo* (child's word) (P, Ar) ; *ču<sup>2</sup>-ul* (Tz, My) ; *ačo-na* (Tac) ; *pē-čō* (Gn, Tuc), \**ope-ko* (PTuc).

Cf. 'breast' which includes the same morphemes. The Tac reflex is regular; however, Cav (Tac) has an identical reflex which would indicate PTac \**c* rather than \**č*. The Cav may have changed through analogy to Cav *soso-* 'suck'.

539. 'monkey sp.' \**madi-* : \**madira* (PAr) ; *madimunda* (Kog, Chib).

540. 'monkey sp.' \**ohoha/mu-* : \**ho-ha/mo-te* (PAr) ; *oho<sup>2</sup>oho* (Sh) (Ese) ← \**ošo<sup>2</sup>ošo* (Pre Ese, Tac) ; \**emu* (PTuc), *o<sup>2</sup>ona* (Des, Tuc) ; *homa* (Wit-P). The loss of the Des, Tuc *h* ← PAm \**h* is irregular.

541. 'monkey sp.' \**dij-* : *didiado* (Tac) ; *didži* (Wit).

542. 'moon' \**saaka*: \**weθa-kw-* 'evening' (Ha) (PA) ; *sa·ka* (Kog, Chib) ; *isax* (Seri, H).

The reconstruction of the velar consonant is questionable since I lack information regarding the source of Seri *x*.

543. 'moon' \**la*: *la* 'to become night' (Tn, G) ; *lá* (Wal, H).

544. 'moon' \**mita-* : *mitvra* (Api, Ge) ; *meta* (Cav, Tac) ; \**miya* (V-H) (PU-A), *ta-mi<sup>2</sup>a* (Mon, U-A).

545. 'moon' \**hiiš*: \**ka-hee-SI-ri* (PAr) ; *hi<sup>2</sup>š* (Cp, My).

546. 'moon' \**wa-ši-ya-rV* : *k-siri* (P, Ar) ; *waškona* (Cam) ; *si<sup>2</sup>yo-ra* (Tun) ← \**si<sup>2</sup>yo-da* (Pre Tun, Chib) ; \**o<sup>2</sup>oshi* (PPan) ; \**jai-sii* (PT-G), *waši* (Mund, T-G), *ñāsi* (Guar-Bol, T-G) ; *síyamí-maká-riro* (Gn, Tuc).

547. 'moon' \**(y)u*: *u* (Tz, My) ; \**yu* (PCM, OM).

548. 'mosquito' \**mei-w-a* : \**sakime<sup>2</sup>w-a* (Ha) (PA) ; \**mei* (PAr) ; *meemee* 'fly' (Ese, Tac) ; \**mītea* (PTuc).

549. 'mother' \**enā-ni*: \**n-inā-mi* (PAr) ; *ena* (Cuiva, Gb) ; *nā* (Api, Ge) ; *nee* (Jic, H) ; \**nan-* (J) (PMY) ; \*\*(n)(<sup>2</sup>)*na(h)(n)* 'mother, woman, grandmother' (POM) ; *niyú* 'wife' (Paez) ; *pani* (R) (Q) ; *nae* (Ese, Tac) ; *nai* (Key) (Huarayo, T-G) ; *añō* (Wit).

The palatalization of the Wit nasal suggests that the morpheme *-ni* is reflected. It does not appear possible to unite the *-na-* of 549 with the *-yā-*

of 550 unless a protomorphophoneme PAm \*-N̄a = -ñā ~ -na is postulated. The absence of the morpheme *ka-* preceding -na is evidence against the suggestion.

550. 'mother' \*ka-yāā/či: \*-kya\* (Ha) (PA) ; \*yaa-ni- 'wife', \*okači (PAr) ; -gači (Tn, G) ; *guaia/gaya/* (Chib) ; *kīāā* 'she' (Paez) ; \*kai (PPan) ; *ye-eti* (Wit-P) ; *yayá* (Bárbara) (Pampa).

551. 'mother' \*ma-(m)i<sup>2</sup>: \*n-in-a-mi (PAr), \*i-nām (PHar, Ar) ; *bebma* (Cam) ; \*ha-bia(-ma) (PChib) ; *mat* (Comecrudo, H) ; \*me<sup>3</sup> (J) (PMy), *iham* 'wife' (Tz, My) ; *máma* (Paez) ; *mama* (R) (Q) ; \*mae-ma (PT-G) ; *maami* (Ocaina).

552. 'mother' \*pa-ni: \*p-éna (PGb) ; *pani* (R) (Q) ; \*pai (PT-G) ; \*pa(<sup>2</sup>)ko (PTuc).

553. 'mother' \*sia-: *seehi* (Bo) ; *áseiwan* (Kog) ← \*ásaiwá (Pre Kog, Chib) ; \*siá· (PCn, OM).

554. 'mountain' \*tha-: *thañe* (Cam) ; *thash* (Paez).

555. 'mountain, brush' \*yu<sup>2</sup>ku: *yuku* 'mountain' (N-M, Mn, OM) ; *yuk* 'brush' (Paez).

556. 'mouse, rat' \*pi-ili-: \*ili (PWNew, Ar) ; *iri* (Gb) ; *ulúsh* (Paez) ; *piricu/piriku/* 'rat' (R) (Q).

The Paez vowel change to *u* is assumed to be due to assimilation to *u* of 'rat', set 557, with which the morpheme *-ili* is compounded.

557. 'mouse, rat' \*uhun-: *hiyuhunkihkut<sup>2</sup>e* (Tn, G) ; *úh̄nza* (Paez).

558. 'mouse' \*ši(e)na: *šiena* (Cam) ; *sinsi* (Kog, Chib) ; \*\*si (POM).

559. 'mouth' \*a-toon: \*to<sup>2</sup>n- (Ha) (PA) ; *ata* (CP, My).

560. 'mouth' \*kui-b-: \*kui-bo-to (PGb) ; \*kwibiči 'lips' (PPan).

561. 'mouth' \*-akua: *pakva* (Api, Ge) ; \*e-kaca (PTac), *ekwaca* (Cav, Tac).

562. 'mud' \*-hal<sup>2</sup>i/u-: *mhali-xpa* (P, Ar) ; *halpupiši* (Tn, G).

563. 'my' \*-ta-: *hi-ta* (P, Ar) ; \*ta-ha (PGb).

564. 'name' \*-Pi-: \*winle-wa 'he names him' (Ha) (PA) ; \*bi-ra-na (PAr) ; *pina* Reportative (Gb) ; \*-bi-pil/hil (J) (PMY) ; \*\*(n)(H)wi(<sup>2</sup>)(n) 'converse, word, talk' (POM) ; -pi- 'word' (Gn, Tuc).

565. 'name' \*oo-mil... ja-: *milkauši* (Kog) ← \*midkadVsausi (Pre Kog, Chib) ; *múl* (Wal, H), *poozaiyau(ng)* (Yana, H).

When the relationship of oral consonants to homorganic nasals has been established in PAm it may be possible to unite sets 564 and 565, and perhaps 566.

566. 'name' \*t-hi-wa-ba-k<sup>2</sup>a-ni/ni/me: *hi-waka* (P, Ar) ← \*hi-wak<sup>2</sup>a (Pre P, Ar) ; *wabaina* (Cam) ; \*wí-ni (PGb) ; \*-k<sup>2</sup>aba- (J) (PMY), *thw* (Cp, My) ; \*ani Verb (PPan) ; *e-ba-ka-ni* (Cav, Tac) ; \*wa-mil-i (PTuc), *wābā* (Gn, Tuc) ; \*ti<sup>2</sup>nwa (V-H) (PU-A) ; *mámeki* (Wit).

567. 'name' \*-VrV : \*-iri (PAr) ; \*he-ira (PT-G).

568. 'narrow' \*patiiza: *atiza* (Chib) ← \*atica (Pre Chib) ; *p̄teen<sup>2</sup>* (Paez).

569. 'narrow' \*-khu<sup>h</sup>ki: akiki (Cuiva) ← \*akhikhi (Pre Cuiva, Gb); skhu<sup>h</sup>ku (Cp, My).

570. 'navel' \*mu-ši/ta-k<sup>h</sup>-: iθo-lo (Pia) ← \*isi-li (Pre Pia, Ar); imutaba (Bo); \*mue (PChib); mušuk<sup>h</sup> (Tz, My); simika (Gn, Tuc); \*si<sup>h</sup>ku (V-H) (PU-A); mo<sup>h</sup>da (Wit).

571. 'navel' \*pūrū-: plo (P) ← \*pVru (Pre P, Ar); ipūrāpā (Guar-Bol, T-G).

572. 'near' \*uṭa-: utat (H) ← \*uṭat (Pre H, My); utya (Paez).

573. 'near' \*-pan: rōhpan (Tn, G); xiipan (Yana, H).

574. 'near' \*yoti: yoti (Gmb); yatan (F) (Q-Cacra).

575. 'neck' \*kua/(h)ta/ši-: kwaht (Nat, G); -osi-to (Cuiva) ← \*uasi-to (Pre Cuiva, Gb); kwaši (Cp, My); \*\*(n)si(h)(n) (POM); ekwešana (Ese) ← \*e-kečana (Pre Ese, Tac); \*ku<sup>h</sup>ta (V-H) (PU-A).

576. 'neck' \*-nūk<sup>h</sup>/ki: \*nu-ki (PAr); \*nuk<sup>h</sup>/k (J) (PMy); winigi (Des) ← \*winiki (Pre Des, Tuc).

577. 'neck' \*k/hinga-: behingaha (Cam); cunga /kunga/ (R) (Q).

578. 'neck' \*mūta-: \*mudašižo (Kog, Chib); mut (Api, Ge); \*wamū-tuta (PTuc).

579. 'neck' \*ya-pi: \*-pi (PHar, Ar); \*\*ya(h)(<sup>h</sup>)(n) 'music, throat, neck' (POM); \*e-piti (PTac); \*ya-pe (PTuc); peel (Bárbara) (Pampa).

580. Negative \*mā: \*ma Privative (PAr); mā (Api, Ge); \*(ma)-n... ta(x) (J) (PMy); \*[-ya]ma (PPan); -mee (Paez); mana (R) (Q); \*-ma (PTac); \*ma<sup>h</sup>e-tei (PT-G); mārī Negative singular (Tuc); mar (Perea) (Taino).

The condition which caused the vowel change in Paez, 580, has not been determined, nor has that which caused the change in Api (Ge) in 581.

581. Negative \*-k<sup>h</sup>a: \*a/unV-k<sup>h</sup>a-wV (PAr), hi-ke (P, Ar); ket-ari (Api, Ge); ka<sup>h</sup> (Gmb); kák 'not at all' (Wal, H); ink<sup>h</sup>a (K, My); \*ka (V-H) (PU-A).

582. Negative \*kua: kua (Jic, H), ooko (Tonk, H); ko (Pm, My); \*\*ku<sup>h</sup> (POM).

583. Negative \*-ye-: tondaye (Cam); ye? (I, My); \*[-ya]ma (PPan).

584. Negative \*ā(n/<sup>h</sup>h)a: aaaa?a (Kog, Chib); ḷahā (Tn, G); na (Api, Ge); ana (Cp, My); ā<sup>h</sup>ā (Paez); \*ani (PT-G).

The <sup>h</sup> in Kog is extrasystematic.

585. Negative \*ba-: bát-ro (Tun, Chib); bara (Cuiva, Gb).

586. Negative \*ahi-be: a-hibi (Gb); be (GE) (Tac).

587. 'nest' \*-sia-: \*wahse... (Ha) (PA); šale (P) ← \*siare (Pre P, Ar); esa-hi (Tac).

This may be the same morpheme as in 'hair', 'jungle', 'leaf', etc. If it is the morpheme for 'hair', then metathesis must be assumed for Tac.

588. 'nest' \*taz-il/n: tasil (Tso, My); tazin (R) (Q).

589. 'new' \*bi-ša: \*wešk (Ha : B) (PA); \*a-bi-sa (PChib).

590. 'new' \*fi-<sup>h</sup>o-na: bo<sup>h</sup>ono (Bo); ewu (Cp, My); \*bi<sup>h</sup>ona[CV] (PPan).

591. 'new' \**y-ak<sup>3</sup>-*: \**y-ak-ak<sup>3</sup>* (J) (PMY) ; *iyakwa-ke* (Cav) ← \**iyaxwa-ke* (Pre Cav, Tac).

592. 'night' \**a<sup>3</sup>it-*: *ai* (Gr, Ar) ; *aitakiri* (Gb) ; *nabitia-no* (Gn, Tuc).

593. 'night' \**jā-mī/i*: \**ja-doe/ti* (PAr), \**jo/ama* (PMadi, Ar) ; \*\*(n)(H)-*ya(h)(n)*<sup>3</sup> 'night, sleep . . .' (POM) ; \**yami*[CV] (PPan) ; \**yāmī* (PTuc).

594. 'nine' \**eskonusu-*: *eskonupta* (Cam) ; *iscun /iskun/* (R) (Q).

Borrowing is certainly a possibility here.

595. Nominal, object or time marker \*-dV : \*-ti/\*-di (PShani, Ar) ; -ra (Mot) ← \*-da (Pre Mot, Chib) ; -ta Temporal, instrumental, accusative (Gb) ; -ta Temporal, locative, accusative (GE) (Q) ; -da Nominal, adjectival, assertive (Tac).

596. 'nose' \**ya-*: *yái* (Wal, H), *yammi* (Acho, H) ; \**yaska* (V-H) (PU-A).

597. 'nose' \**ri-čaa-ma-ši-n(i)-kv* : \**čaθ-*, \**čaš-i* (Ha, PA) ; \**giri-masi* (PAr) ; *ŋgisišiha* (Cam) ; \**su-ni-ka* (PChib) ; -*riši* (Tn, G) ; *hošis* (Ess, H) ; *niŋ* (Tz, My) ; *maši* (Mtz, OP, OM), \**si-nio/nqa* (POP, OM) ; \**ri-* (PPan) ; *singa /sinka/* (R) (Q) ; \**ča-pti* (PT-G) ; *nituŋ* (Chayahuita).

This assumes that the morpheme *-n(i)-* was omitted from Ar after the contiguous *k* became voiced. The Ar *gi-*, however, may correspond to \**ge* of set 602.

598. 'nose' \*-Pi: \**oka/ki-nā-mpi* (PHar, Ar) ; *e-wi* 'nose, point' (Cav, Tac) ; \**mu<sub>s</sub>pi* 'nose, point' (V-H) (PU-A).

H, My has *wiŋ* 'mouth', which may be cognate, with a semantic shift.

599. 'nose' \*-sa: *osa* (Cp, My) ; *nasa* (F) (Ay, Q).

600. 'nose' \*-ñū: *piñu* (Api, Ge) ; *yúfiw* (Krk, H) ; \*\*(n)*yu* 'nose, face, head' (POM).

601. 'nose' \**itsi*: *epičii* (Gr) ← \**e<sup>3</sup>picii* (Pre Gr, Ar) ; *its* (Paez) ; \*-N-*cia* (PT-G), *itī* (Guar-Bol, T-G).

602. 'nose' \**pi-gē-*: *kimcik* (Gmb) ; *iŋgē-dō/ā/ka* (PTuc) ; *ke-mbi* (Catío).

603. 'old' \**p<sup>3</sup>okoi-*: *ka-poko-ti* (P) ← \**ka-p<sup>3</sup>hoki-ti* (Pre P, Ar) ; *poko* (Toj) ← \**p<sup>3</sup>oko* (Pre Toj, My) ; \**bi-ki-ki/ro* 'old man' (PTuc).

604. 'old' \*-se-ri/i: *tse-ri* (P) ← \**tVser-ri* (Pre P, Ar) ; *siri* (Key) (Chac, Pan) ; *e-si-ri* (Cav, Tac).

605. 'old' \*-p/hay-: \**waya-li* (PAr) ; *werhayá* (Tun, Chib) ; *háyi* (Tn, G) ; \**payo* (PPan) ; *paya* 'inanimate', *yuyaj* 'animate' (R) (Q).

606. 'old' \**pe-ri/u*: *bé-ri* (Pia) ← \**pe-ri* (Pre Pia, Ar) ; \**perú-hu-ni/wa-yo* (PGb).

607. 'old' \*idV: *idi* (Cul, Ar) ; \**ida* (PWTuc).

608. 'old' \**čáruka čauka*: 'old woman' (Tun, Chib) ; \*\**čawk* 'old, big' (O) (PMY-Cp) ; *ačaka* (F) (Haqe-Aru, Q).

The regular Tun reflex for PChib \**g* ← PAm \**k* is  $\emptyset$ .

609. 'old' \**weraha*: *welaha* (Cam) ; *werhaya* (Tun) ← \**wedhaya* (Pre Tun, Chib).

610. 'one' \**kan:kanje* (Cam); *kanti* (Gmb); \*\**hkan* 'he, this' (PMaz, Pn, OM).  
 611. 'one' \**a-pa/ba/pe/be-dV-rV*: \**pe-lekw-* (Ha) (PA); \**pa-ti-rV* (PAr)  
*abe-ri* (Pia) ← \**abe-ri* or \**ape-ri* (Pre Pia, Ar); \**(a)-bai-N* (PChib); *ipa-tsa*  
 'who' (Gb); \**ipa* (Swadesh) (PH); *s-ba* 'first' (Tz, My); *bite* 'other' (Paez) ←  
 \**fite* (Pre Paez); *pia-da* (Tac); \**ma/pe-tei*, \**awa-pa* 'who' (PT-G); \**ape-*  
*iro/ro/o* 'other' (PTuc); *ába* (Catío).

The PAm problem of deviant or alternate reflexes of this word has been met in various of the subgroups. Reflexes of the first morpheme in all Arawakan subgroups are reconstructed as \**pa-*. Pia *abe-ri* ← Pre Pia \**abe-ri* or \**ape-ri* was not included. A separate PAr reconstruction is 'other, another' \**apu-*. The PH reconstruction \**ipa* represents *be*, *bai*, *ba*, *pe*, *pa*, and *pi*. T-G shows only -*e* or -*i* vowel reflexes, but includes *bV* and *mV*, which are pointed out but not explained, though morphophonemic variation is suggested for T-G \**p* and \**w*, a variation also involved in PAm \**P*. (Wheeler, unpublished manuscript.) Tuc shows reflexes of both *pa* and *pe*. The vowel changes may be conditioned or morphophonemic, or may indicate some sort of case inflection, which is, indeed, to be expected in the accompanying morphemes *-dV* and *-rV*.

In the Tz (My) form *s-ba*, the *s-* is assumed to be the common possessive, whether presently so functioning or not. This suggests that \**pa* may have once been a member of the class of obligatorily possessed nouns in which the occurrence of the protomorphophoneme \**P* is common.

Notice the same problem in set 615 'other', which should perhaps be combined with this set with a reconstruction \**a-PV(V)-dV-rV*.

612. 'one' \*-*k-wi(i)ta-*: \**nekwetwi* (Ha) (PA); *wi't(a'N)* (Nat, G); \*\*(Y)-  
*(n)(h)kwe(h)(n)* (POM).

The use of the morphophoneme \**P* in set 611 above would result in the inclusion of this set also.

613. 'open' \*-*tipi-hu-*: *ko-tipi-ka* (P, Ar); *tiphua* (Cam).  
 614. 'orphan' \**wahča-*: *wahčarná* (Cam); *huajcha /huahča/* (R) (Q).  
 615. 'other' \**a-bu-a*: \**apu-* (or \**abu-*) (PAr); *piči* 'one', *pič* 'only' (Api, Ge); \**a-N-bua* (PT-G).

See 611.

616. 'other' \**sV-*: *sa* 'one', *si-* 'other' (Bo); *sahu* (Tn, G); \**si-* (V-H) (PU-A).

617. 'other' \**wiča*: *uča* (Chib); *ica-ní* (Gb); \**wiz[a]* (PPan).  
 618. 'otter' \**náuwi*: *náuwi* (Kog, Chib); \**bohóNao-wi* (PGb).  
 619. 'our' \**wa-ha*: \**w-* (PAr), *w- ~ ha-* (P, Ar); \**wa-ha* (PGb).  
 620. 'owl' \**bipopako*: \**bō(i/m)bō(i)-ri* (PAr); \**popo* (PPan); *popo* (Cav, Tac); \**bipupako* (PTuc).

621. 'owl' \**koskonko*: *kokaskon-ro* 'woodpecker' (P, Ar); *koskonjo* (Cam); *koskonko* (Gmb).

622. 'owl' \**tū̄?iōt*: *tóot* (Gr) ← \**tuiot* (Pre Gr, Ar); *thū̄?iō* (Gn) ← \**tū̄?iō* (Pre Gn Tuc).
623. 'owl' \**tuku-*: *ko* (Pia) ← \**ku* (Pre Pia, Ar); *tuku* (Vivanco) (Q); \**tukur(i)* (V-H) (PU-A).
624. 'own' \*-*joh*: -č<sup>2</sup>*ox* 'to have' (Tz) ← \*č<sup>2</sup>*ox* (Pre Tz, My); -*yuj* /-*yuh*/ 'owner' (R) (Q).
625. 'paca' \**phia-*: \**opheá-bi* (PGb); *ñupx* probably /*ñuphi*/ (Paez).
626. 'paca' \**se-me/ao-*: *mao* (Gmb); *se(?)ao* (Ese, Tac), *basome* (Tac); \**seme* (PTuc); *áime* (Wit).
627. 'paddle' \*-*wi-ha-pi*: \**salwi-ha-pin* (PAr); *kúwi* vb. (Tn, G); \**wina*-vb. (PPan); *ehe-wi-behe* (Ese, Tac); \**we-ha-pīhīro* (PTuc).
628. 'palm sp.' \**kuma-rV*: *koma-ri* (P) ← \**kuma-ri* (Pre P, Ar); *kuma-li* (Gb); *mako-ri* (Tac) ← \**maku-ri* (Pre Tac).
629. 'palm sp.' \**kiri*: *kiri* (P, Ar); *kiri* (Key) (Cav, Tac).
630. 'palm sp.' \*-*kua-*: *kua-bo-to* (Gb); *cakwa* (Cav, Tac).
631. 'palm sp.' \**fōri*: *piro* (P) ← \**piro* (Pre P, Ar); \**bō̄ri* (Pre Pan).
632. 'palm sp.' \**mare-*: *male-xi* (P) ← \**mare-ki* (Pre P, Ar); *mare* (Cav, Tac).
633. 'palm form' \*-*yō*: *kinyo* (Y, Ch, OM); -*yō* (Tuc).
634. 'palm sp.' \**matsa-*: *mač-ki-ri* (P) ← \**mats-ki-ri* (Pre P, Ar); *maca* (Key) (Cav, Tac).
635. 'parakeet' \*č<sup>2</sup>*e-?i/re*: \**tsé-le-/Ci-to* (PGb); č<sup>2</sup>*i?* (Paez).
636. 'parrot sp.' \**k<sup>2</sup>u(a)rē/a*: *ák<sup>2</sup>vara* (Tun) ← \**ak<sup>2</sup>wada* (Pre Tun, Chib); *xura* (Gb); *krē* (Api, Ge); \**xoraka* (PTac); \**kure* 'macaw' (PT-G).
637. 'parrot sp.' \**saroki-*: *šarokda-* (Mot) ← \**sadokda-* (Pre Mot, Chib); *soróki* (Wit-P).
638. 'parrot sp.' \**thui*: *twi* (P, Ar); *thui-to* (Gb); *toi* (Tac).
639. 'parrot sp.' \**fawa-ro*: *pawro* (P, Ar); \**bawa* (PPan).
640. 'parrot' \**wawa-*: *wawa-to* (P, Ar); *awa* 'macaw' (Wit).
641. 'path' \*-*apo-*: \**aPo-ts/ti* (PAr); \**po* (V-H) (PU-A). Cf. 361 'go'.
642. 'path' \**be*: *benače* (Cam); *be-nro* 'walk' (Tun, Chib); \**be-* (J) (PMy); \*\*(H)*win* (POM). PT-G has \**(ta-)pe-he* which could be included by postulating PAm \**Pe*. The \**P* in the PAr in set 641 is from PAr \**Po* 'footprint'.
643. 'path' \**mā-ye-*: \**mye'w-i* 'road' (Ha) (PA), *may* (Ha) (Na, A); *may* (Gmb); \**mā?ā* (PTuc).
644. 'path' \**ñāñān-*: *nan-to* (Cuiva, Gb); \*\*(n)*ya(n)* 'road, path' (POM); *ñan* (R) (Q); *ñēñenda* (Guar-Bol) ← \**yēñenda* (Pre Guar-Bol, T-G).
645. 'path' \**edi-*: *téti* (Tn, G); *ñdyi?nzu?z* (Paez); \**ediči* (PTac).
646. 'peccary' \**meri/a-*: \**miri-Si/ti* (PAr); *méro* (Wit).
647. 'penis' \**nakua*: *nakua* (Chib); \*(čer)-*N-akwa* (PT-G).

648. 'people, person' \*ha-yinV-IV : \*elenyiva 'man' (Ha : B) (PA), iyiniw 'man' (Ha) (C, A) ; \*ha-ye-ri/nV 'man, people' (PAr), yine (P, Ar) ; yintṣanya (Cam) ; -hayi 'husband' (Tn, G) ; \*h(o<sup>p</sup>)/y-in-an 'I' (J) (PMy).

649. 'people' \*nasa: nasan 'we' (Kog, Chib) ; \*\*(n)(H)sa(h)<sup>3</sup> 'person, men, male' (POM) ; nása (Paez) ; \*bai-sa (PTue).

650. 'people' \*maadi: \*madi-ha (PMadi, Ar) ; maatidsi 'common people' (Yana, H).

The Mot (Chib) *badi* may be related.

651. 'people, person' \*oni: óni 'human being' (Tn, G) ; \*oni 'male, mankind' (PPan).

652. 'pierce' \*helaw-: yo-hlo-ta (P, Ar) ; xelaw (Tz, My).

653. 'pierce' \*hi-mek-: \*mekohsi 'awl' (Ha) (PA) ; yo-h-mika (P) ← \*yo-himika (Pre P, Ar).

654. 'pierce' \*kek<sup>9</sup>(u)a-: kekáena (Cuiva, Gb) ; k<sup>9</sup>ah- 'break in two, pluck' (Tz, My) ; \*\*(p)ka(h) 'pierce, break' (POM) ; keku-a- (Ese, Tac).

655. 'pitch' \*šika-ha-: šekwaki 'pine logs, chewing gum' (Ha) (Sh, A), šeka-hkwa 'pine' (Ha) (F, A) ; šik-ha-li (P) ← \*sikV-ha-ri (Pre P, Ar) ; skd<sup>2</sup> (A, OM).

This appears reasonable. The Piro word may, however, be from *šiko* 'hard'. The morpheme *-ha* is 'liquid'.

656. 'place' \*-waka: -waka (P, Ar) ; vakre (Api, Ge).

657. 'plant' \*ts<sup>9</sup>un: c<sup>9</sup>un 'to plant, not including corn' (Tz, My) ; \*\*(H)-tu(h)(n)<sup>3</sup> (POM).

658. 'porcupine' \*-mi-či-: \*ki-mi-tsi-rV ← \*ki-mi-či-rV (PP-Ap) ; mičična (Cam).

659. 'pot, cooking' \*kīči-: pōškačéhkini (Tn, G) ; kici (Gmb) ; \*\*(Y)ti(h)-<sup>9</sup>(n) (POM), \*čip<sup>3</sup> (PPn, OM).

660. 'pot, cooking' \*η(o)go-: ηοι (Api, Ge) ; nogóri (Wit-T).

661. 'pot, cooking' \*-mati: hi-mati (P, Ar) ; mata soro (Des, Tue).

662. 'pot, cooking' \*kō-so-ru-tV : \*ko-hV-su-rua-Pi-ti (PAr) ; \*\*ku 'plate, bowl, pot' (POM) ; \*kōmē-soro-ti (PTue).

663. 'pot, cooking' \*pa/uč<sup>9</sup>i: pútsi /púti/ (Kog, Chib) ; pače (H) ← \*pač<sup>9</sup>e (Pre H, My).

664. 'pull' \*weša-na-: wešana-na (Cam) ; weŋž (Paez) ; aisana (R) (Q).

665. 'pull' \*taru-: ko-tlo-lo-ta (P) ← \*ko-tVru-ru-ta (Pre P, Ar) ; tarú-riye (Des, Tuc).

666. 'pull' \*yeha-: yahk- (Cp, My) ; yehahe (Ese) ; yesáše (Pre Ese, Tac).

667. 'pull' \*(č)hohka: hoka (Cul, Ar) ; \*\*čhohk (O) (PMy-Cp).

668. 'pus' \*Poho-: \*pox-ow- (J) (PMy) ; e-bohoco (Cav) ← \*e-bošoco (Pre Cav, Tac).

669. 'push' \*turo-: thuroka probably /turoka/ (Gr, Ar) ; toró-ta (Gb) ; tor (Cp, My).

670. 'push' \**ton-*: \*\**ton* (O) (PMy-Cp) ; *tanga-* (R) (Q).
671. 'put' \**-tika*: *hi-taka* (P, Ar) ; \**ti<sub>s</sub>ka* (V-H) (PU-A).
672. 'put' \**iya-tsa*: \**iya-* (PTac) ; \**yaca* 'to set it down' (V-H) (PU-A).
673. 'put, leave' \**-hawa*: *-hawa* 'remain, pick up, wear' (P, Ar); *ha-hawa*-(Cam).
674. 'put inside' \**-mahk<sup>3</sup>a*: *yo-šmaka* (P, Ar) ; \*\**mahk<sup>3</sup>* (O) (PMy-Cp).
675. 'rabbit' \*(*k*)*wa-lo*: *walo* (P, Ar) ; \*\**kwa* (POM), *lo<sup>31</sup>kwa<sup>3</sup>* (O, Cn, OM).
676. 'rain' \**ni-ka*: \**neka* (PAr) ; *nika-da* (Kog, Chib) ; *ne(<sup>3</sup>)i* (Cav, Tac).
677. 'rain' \**ohaba*: *ooba* (Chon, H) ; \**hab-al/r* (J) (PMy).
678. 'rainbow' \**ko-si-yu-hi-ma-ti/ši*: \**kisi* (PP-Ap, Ar) ; \**tu-kwa-mai* (PChib), *kumáisa* (Kog, Chib) ; *kósuyúwiši*, *kósuwúhi* (Tn, G) ; *kišimpiti* (Gmb) ; \*\**šeħk* (O) (PMy-Cp), *kumári* (Cp, My) ; *kxtūs* (Paez) ← \**ko-hi-yu(-ma)-si* (Pre Paez).

No attempt is made to account for vowel alternations in this word because of the extreme variation in order.

679. 'red' \**se-ri/ru-ni*: *-sero-* (P) ← \**-seru-* (Pre P, Ar) ; \*\*(n)*sii/a* (POM), \**si<sup>3</sup>/sa-ne* (PP, OM) ; \**si-ri* 'yellow' (PS) ; *-suru* 'ripe' (Tac).

680. 'red' \**si-ta*: *išo* (Gr) ← \**iso* (Pre Gr, Ar) ; *atsúši* (Kog) ← \**atasúsi* (Pre Kog, Chib) ; \**tsobía* ← \**tasobía* (PGb) ; \**sū<sup>3</sup>-ā/yō* (PTuc) ; \**sita* (V-H) (PU-A).

681. 'red' \**fa-wa-nV-ka*: *buangana* (Cam) ← \**bawanakana* (Pre Cam) ; *buwáya* (Tun, Chib), *bokora-* (Mot) ← \**bwkora* (Pre Mot, Chib) ; *bawad<sup>3</sup>-* (Yana, H) ; \*\*(n)*kwa(?)* (POM), *mbaha* (Mazahua, OM).

682. 'red' \**irā-i-nV* : \**ha/ki-ira-a-rVni* (PAr) ; *atiran* 'yellow' (Chib) ← \**atidon* (Pre Chib) ; *dherena* (Tac) ; \**pi-ta/ra-ni-ga* (PT-G), *eirēi* (Sir, T-G) ; *hiairede* (Wit).

684. 'right (side)' \**iše-*: *tíriši* (Tn, G) ; *isii-* (Yana, H) ; *šew* (Cp, My).  
 685. 'right (side)' \**boti-*: *poti-ko* (P) ← \**boti-ko* (Pre P, Ar) ; *botó-bise* (Gn, Tuc).

686. 'right' \**p/bats<sup>3</sup>u*: \**bats<sup>3</sup>/č<sup>3</sup>-* (J) (PMy) ; *páeu* (Paez).  
 The bilabial stops pose a problem for which a solution has not yet been found. Cf. 140 'call', 521 'maguey', and 937 'when'.

687. 'ripe' \**-si/i*: *šini* (Gmb) ; *sii* (Yana, H) ; \**kwausi* ~ *i* (V-H) (PU-A).  
 688. 'ripe' \**tuli-*: *hi-tli-ta* 'be ripe' (P) ← \**hi-tVli-ta* (Pre P, Ar) ; *tul-an* (Tz, My).

689. 'river' \*(*w*)*VnV* : \**hu-wē-ni/i-ha* (PAr), *hina* 'rain' (P, Ar) ; *nina* (Kog, Chib) ; *p-ena-ha-to* (Gb) ; *pani* (Chac, Pan) ; *ena-baki* (Tac).

Notice that the morpheme(s) of set 689 occur in the following sets of 'river' cognates.

690. 'river' \**čiya*: \**čiya* (J) (PMy) ; \**zia-wa* (PTuc).  
 691. 'river' \**a-po-ha*: \**si<sup>3</sup>po<sup>3</sup>w-i* (Ha) (PA), \**a<sup>3</sup>po* 'water' (Ha) (PA) ; *ha-p(o)-ha* (P, Ar) ; \**pa(h)ni* (PM, G) ; *pe-pó-mene* (Gb) ; *puhu* (Cp, My) ; *puhu* (Guar-Bol, T-G) ; *abo* (Perea) (Taino).

692. 'river' \*-ma-: \*mene- ← \*mani (PGb); pímáy (Gmb); mayu (F) (Q of Cuzco).

693. 'river' \*parV-; \*para-ra/wa 'sea' (PAr); porampik (Gmb) ← \*parom-pik (Pre Gmb); paro (PPan); \*parana-hua (PT-G); biki-pari-ro (Gn, Tuc); parau (Vivanco) (Pemón).

694. 'rock, stone' \*šiixa-w-: \*ši:kwan- (Ha) (PA); šiko ← (P \*siko 'hard' (Pre P, Ar); šikkali (Tn, G); \*síki-ibo-to-xi/tiyo 'pebbles' (PGb); šxap (Sal, H); \*\*nsi 'grindstone' (POM).

The PGb could optionally be \*tsiki . . .

695. 'rock, stone' \*ma-p<sup>h</sup>i: \*map<sup>h</sup>i (PAr); p̪e (Jic, H), bii- (Yana, H); pek (K) ← \*p<sup>h</sup>ek (Pre K, My).

696. 'rock, stone' \*(h)iba-i: \*hi-ba-i (PAr); guisiba (Bo); \*u-ba-ni-ta/sa 'sand' (PChib); \*ibo- (PGb); siba (Perea) (Taino).

The vowel change to o in Gb was probably due to extremely frequent occurrence preceding the nominal -to.

697. 'rock, stone' \*-ita-k-: \*i-ta-ku-ru (PT-G); \*gītā-yoka (PTuc), tā-kā (Gn, Tuc).

698. 'rock, stone' \*šo-t/k-: sot-li (P, Ar); šok (Gmb); sita kwi (Sir, T-G).

699. 'rock, stone' \*kuētī: kuet<sup>h</sup> (Paez); ivikuūtī (Guar-Bol, T-G).

700. 'rod, blade, point' \*Pi.

Examples of the occurrence of this morpheme in A, Ar, Cam, Chib, Gb, My, Paez, Pan, Tac, Tuc, and U-A will be found in the following cognate sets: 39 'arrow', 113 'bow', 393 'hand', 490 'leg', 579 'neck', 598 'nose', 706 'rope', 781 'snake'. It is mentioned by Waltz and Wheeler in Tucanoan (4.1) and Matteson in Arawakan (6.1).

701. 'roof' \*mūhi-ki-il: bo-mīhi (Cuiva, Gb); -muk-il (Tz, My); mūhi (Tuc).

702. 'roof' \*-poku-: \*pu-so-ko 'village' (PAr), \*poko 'house, village' (PP-Ap); ripokuni (Tn, G); hipoko 'shelter' (Wit).

The discrepancy in the vowel reflexes appears to involve metathesis, but I see no evidence for determining in which language the metathesis occurred.

703. 'root' \*ha-Pa-tse-ye: \*wecye-pe/ihk-i (Ha) (PA); \*ha-Pa-IV (PAr); ifahife (Bo); awáda (Kog, Chib); wace (Paez); \*čer-a-iwa-pua (PT-G); wa (Gn, Tuc).

704. 'root' \*ta-bi-to-pa: tobitha (Cam); \*tabitopa (PGb); \*tapono (PPan).

Metathesis is assumed to have occurred in PPan.

705. 'root' \*a(y)-si-ra: asiraa (Gr) ← \*asiraa (Pre Gr, Ar); ɻayši-ra (Mot) ← \*aysi-da (Pre Mot, (Chib)).

706. 'rope' \*-Pi-: \*a-py- (Ha) (PA); i-wi-ri-tsa (Mg, Ar).

See 700 'rod'.

707. 'rope, to make' \*-p<sup>h</sup>ali: -pri 'to roll' (P) ← \*p<sup>h</sup>Vli (Pre P, Ar); \*\*p<sup>h</sup>al (O) (PMy-Cp).

708. 'rotten' \**yVt<sup>3</sup>a-*: *yota* (Tn, G) ; *yut<sup>3</sup>gala* (Yana, H) ; \*\**ya* (POM).

709. 'rotten' \**pu-sa-rV*: *po-si-ri* (P) ← \**pu-sa-ri* (Pre P, Ar) ; *buxšure* (Mot) ← \**pus-sa-da* (Pre Mot, Chib) ; *sa* (Wal, H) ; \**mpo-s* 'dirty, bad' (POP, OM).

710. 'rotten' \**fawa*: *ibadai-kawa* (Pia) ← \**ipadái-kawa* (Pre Pia, Ar) ; *wá<sup>3</sup>wa* (Paez) ; \**boa* (PTuc).

711. 'rough' \**daku*-: *dakusa* (Yana, H) ; *daka-daka* (Tac).

712. 'rough' \**k<sup>3</sup>aak-*: *k<sup>3</sup>aakuyup<sup>3</sup>a* (Yana, H) ; \**xax* (PS).

713. 'round' \**tsi-xur-<sup>3</sup>a/V-*: *kóra* 'disc' (Tn, G) ; *baxul<sup>3</sup>uluigu* (Yana, H) ; *gororoh* (Chr, My) ; \*\*(Y)-*ti* (POM), \**ku<sup>4</sup>čhi* (P, PPn, POM) ; \**cikuri* 'circular' (V-H) (PU-A).

Olson's data do not include *g* in Chr.

714. 'round' \**tólu*-: *ubi-tro* (Tun) ← \**ubi-tVdo* (Pre Tun, Chib) ; *tólu* 'spherical' (Tn, G) ; -*mata-to-yorokóe* (Gb) ; *pítitol* (Gmb) ; *tolo<sup>3</sup>s* (Ag, My) ; *toro* (Key) (Chac, Pan).

715. 'round, round object' \*-*PulV-IV* : \*-*pu-rV/iti* (PAr), *po-prolo-li* (P, Ar) ; *pu-<sup>3</sup>ñ* (Api, Ge) ; \**wolol* (Tz, My) ; *perorota* (Tac) ; \**ya-pu<sup>3</sup>a* (PT-G) ; *bu-ri-saro* (Gn, Tuc) ; *porico-* (Catío).

The *e* ← PAm \**u* in Tac is irregular.

716. 'rub' \**tseš-*: \*-*šešw-* (Ha) (PA) ; *e<sup>3</sup>s* (Am, Ar) ; *kacišip* (Gmb).

717. 'rub' \**ki<sup>3</sup>di*-: *ku<sup>3</sup>nd* (Paez) ; \*-*kiti-(N)ka* (PTuc).

718. 'saliva' \**tuse-ha-ka-w-*: \**sehkw-* (Ha) (PA) ; *tska-ha* (P) ← \**tVska-ha* (Pre P, Ar) ; *tušuka-ti* (Cash), probably ← \**tusuka-ti* (Pre Cash, Pan) ; \*(d)*i<sup>3</sup>se-ko* (PTuc).

719. 'salt' \**yuk/č-*: \**yuki-ra* (PAr) ; *yaku* (Cp) probably ← \**yuka* (Pre Cp, My) ; *yuči-vata* (Pak, Pan) ; \**juki-ra* (PT-G).

720. 'salt' \**nai-ŋa-wa*: \**nai-gu-wa* (PChib) ; *néngā* (Paez) ; *nani-* (Des, Tuc) ; \**osŋa* (V-H) (PU-A).

721. 'sand' \**mVse-či*: *kweth* *múse* (Paez) ; \**massči* (PPan) ; \*\*(Y)(n) *(h)se(h)(n)<sup>1/2</sup>* (POM) ; *mešči* (Ese, Tac).

The first syllable is probably *ma-* as in 250 'earth', but there is no evident conditioning for the Paez V reflex.

722. 'sap' \**mena-i*: -*mene* (Cuiva, Gb) ; *amenai* (Murui Wit).

723. 'say' \**h|ni*-: *néehi* (Bo) ; *ní* (Tn, G) ; *aně* (Api, Ge) ; *i* (Wal, H) ; *hī* (Paez) ; *ni-* (R) (Q) ; -*n* 'talk' (Sir, T-G) ; *ni* (Tuc).

724. 'say' \*-*adi*-: \**a:t-* (Goddard) (PA) ; *ti* (Yana, H) ; \**adi* (PTuc) : *dajide* (Wit).

725. 'say' \**ki*: *čenzar* (Gmb) ; \*-*ki* (J) (PMy).

726. 'say' \*-*yani*-: *yanima-* 'speak, talk' (P, Ar) ; -*yana-* (Cam).

727. 'say' \*-*ap<sup>3</sup>V-* : *paaba-kay-* (Mot, Chib) ; *gitabo<sup>3</sup>* 'tell' (Yana, H) ; \**paawi* ~ *a* 'tell' (V-H) (PU-A).

728. 'say' \*-*ma-ka*: *i-imaka* (Pia, Ar) ; \**ma·ka* (PM, G) ; *humaici* Prequote

(Gb) ; *makwáúŋwi* 'you are speaking' (Wal, H) ; \*\*(n)<sup>2</sup>*wa(h)(n)* 'mouth, say, talk' (POM) ; *kama* (Vivanco, Pemón).

729. 'say' \*či: či-na (P, Ar) ; či<sup>2</sup> (Cp, My).

When further data are available it may be possible to combine sets 725 and 729. See note following set 92 in Section 3.2.

730. 'scare' \*-rVkV- : *rúka* . . . c (Tn, G) ; *kirik* 'fear' (Gmb) ; \**rakwíi-* 'fear' (PPan).

731. 'see' \*heča: *heta* (P, Ar) ; čama (Tac) ; \*h-eča (PT-G).

732. 'see' \*č<sup>2</sup>i-aw(a)-i: \*ti-awa (PAr) ; *waʔiti-nro* (Tun, Chib) ; *owamirar* 'know' (Gmb) ; *diwai* (Yana, H) ; \*\*(Y)te(H) (POM) ; *uy* (Paez) ; \*pož (PPan).

733. 'see' \*-iňā: *hi-nňa-* (Cam) ; \*\*(P)ya(n)<sup>3</sup> 'hear, see' (POM) ; \*i(<sup>2</sup>)yā (PTuc).

734. 'see' \*él-: *eraháa* (Gr, Ar) ← \*elaháa (Pre Gr, Ar) ; *peL* (Nt, G) ; -il (Tz, My) ; *eróide* (Wit).

The factor which conditioned the *Tz* vowel change is not shown in the present data.

735. 'seed' \*(h)i-ni: \*no-k<sup>2</sup>i-i-ni-ki (PAr) ; \*hiNi ~ Nihī (PM, G).

736. 'seed' \*ič<sup>2</sup>u: *siči* (Gr, Ar) ; *tósu* (Tn, G) ; \*išči (PPan) ; \*akičo 'fruit' (Tac).

737. 'seed' \*-hi: *muhu* (Cp, My) ; *ihi* (Wit).

738. 'seed' \*nok<sup>2</sup>i-: \*nok<sup>2</sup>i-i-ni-ki (PAr) ; \*nku-tV (PCh, OM).

739. 'seed' \*ha-na-ke-ti: \*-ake-ti (PAr), *hanáka-ti* (PAr, Ar) ; \*\*(n)(h)-te(h)(n) (POM).

740. 'seed' \*-kī-: \*-ki (PAr) ; \*\*ken (POM).

741. 'seven' \*-sup<sup>2</sup>i-: *kansupta* (Cam) ; \*ku-(subi)-k<sup>2</sup>ia (PChib).

The Cam suggests the possibility of a loan from *septimo* 'seventh' Spanish. The reflexes in the various Chibchan daughter languages, on the other hand, would not have resulted from such a loan.

742. 'sew' \*soku-: -*soko-* (Pia) ← \*soku (Pre Pia, Ar) ; *sku's* (Cp, My) ; *soko* (Ese, Tac).

743. 'sharp' \*-zek<sup>2</sup>a/i: *sika* (Chib) ← \*cika (PreChib) ; čiščk (Gmb) ; \*\*(Y)(n)si(<sup>2</sup>) (POM) ; *wala<sup>n</sup>zek<sup>2</sup>* (*wala* 'very') (Paez) ; šexi (Ese) ← \*sexi (Pre Ese, Tac).

744. 'sharp' \*ki-wi-nV- : \*ki-nlihe'wa 'he sharpens it' (Ha) (PA) ; *kini* (At, G) ; *xiu-hai* (Gb) ; \*k<sup>2</sup>wiño (PPan).

745. 'sharpen' \*ker-: *xiri-ta* (P) ← \*keri-ta (Pre P, Ar) ; \*kero-da (PTac).

746. 'she' \*(d/t)i-g/ko: *ik* (Chib) ; *díigo* (Bo) ; *tíhči* (Tn, G) ; *tik* (Gmb) ; *ti/i-go-ro* (PTuc).

The distinction between \**k* and \**g* is not clearly defined in PTuc. There may be morphemic alternation of voiced and voiceless stops, as is reported for Paez, for the transitive and intransitive categories.

747. 'short' \**ya-tu-*: *toyaeka* (Gb) ; *tuw* (Paez) ; *yutu* 'short of time' (R) (Q) ; \**ja-tu-ra* (PT-G).
748. 'short' \**-afu-*: *ubu-čidi* (Tac) ; \**ja-pu-pha* (PT-G).
749. 'short' \**tahk-we-s-*: \**tahkvesiwa* (Ha) (PA) ; *taksa* (F) (Q of Cuzco).
750. 'shoulder' \**teli-*: \**-tely-* (Ha) (PA) ; \**te(h)leb* (J) (PMy).
751. 'shoulder' \**ta-ha-na*: *tha-na* (P, Ar) ; *tančaha* (Cam).
752. 'shoulder' \**ku(i)V*: *kwi-toka* (Tun, Chib) ; *kú̃ta* (Paez).
753. 'shout' \**awa*: *awáataa* (Gr, Ar) ; \*\**aw* (O) (PMy-Cp).
754. 'side' \*(*s*)*ts̥i/ehl*: *stsi* (P, Ar) ; *ts̥ehl* (Tz, My).
755. 'sing' \**čip̥a*: *čibaa-* (Mot, Chib) ; \*\**čip̥a* (O) (PMy-Cp) ; *ci<sup>2</sup>i<sup>2</sup>ta<sup>3</sup>* (C, Mn, OM).
756. 'sing' \**aša-wa-r-*: *čašár* (Gmb) ; *aašvaar* (Yuma, H) ; \*\**sa(h)(n)* (POM).
757. 'sister, older' \**nem-ihsa*: \**nemihsa* (Ha) (PA) ; -*pĩsa* (Was, H) ; \*\**sa* (POM).
758. 'sit' \**-api-wan*: \**apiwa* 'he sits' (Ha) (PA) ; *wan* (Gmb) ; *wá* (Wal, H) ; *ap̥* 'lie down' (Cp, My) ; *wari* 'seat' (Tac) ; \**gwa-pi-ka* (PT-G), *aapi*, *aguapi* (R de Montaya) (Guar-Br, T-G).
759. 'sit' \**kri*: *kri* (Api, Ge) ; *ikriv* (Krk, H).
760. 'sit' \**-birā-*: *tipla-ta* (P) ← \**tibVra-ta* (Pre P, Ar) ; *ibirapé* probably /-birapé/ (R de Montaya) (Guar-Br, T-G) ; \**kobürō* 'seat' (PTuc).
761. 'sit' \**ya-ku/a*: *iya-daši* (Kog, Chib) ; \*\*(Y)(h)*kwa(n)<sup>1/2</sup>* (POM) ; \**yaka-* (PPan) ; *tiyaqu* (GE) (Q-Bol, Q) ; \**yan-sa* (V-H) (PU-A).
762. 'six' \**sih-ki-ta*: *másahki* (Tn, G) ; *tesáikx* probably /sáikhy/ (Paez) ; *sujta* /suhta/ (R) (Q).

The Tacana word is šokota probably a loan from Quechua. There is metathesis of the *h* and *i* in Paez.

763. 'skin' \**mo-mi-ta-hki-si*: *motokis* (Ha) (Bl, A) ; \**pa/mi-mi-ta-ki/rV* 'skin, bark' (PAr), *mótoki* (Ter, Ar) ; *táhkiši* (Tn, G) ; *mat* (Wal, H) ; *skiši* (Cp, My) ; \*\**ta(h)<sup>3</sup>* (POM) ; \**misa* 'bark' (PTac).

764. 'skin' \**ka-lo-os*: \**lo·kay-* (Ha) (PA) ; *toloks* (Nt, G) ; *aškalos* (Gmb) ; *cara /kara/* (R) (Q).

Cf. 'bark' 68.

765. 'skin' \**pira*: \**pera-bo/i* (PGb) ; \**-pi-re-* (PT-G).

766. 'skin' \**fi-*: \**biči* (PPan) ; \**e-bití* (PTac).

The final syllables *-ti* and *-či* do not correspond. They may be noun suffixes, such as the \*-tV and \*-či which function differently in Arawakan.

767. 'sky' \**tawa-ka*: *tawaka* (P, Ar) ; *eya tawa tawa* (Ese, Tac) ; \**twa-N-ka* (PT-G).

768. 'sky' \**-m̥i-*: \**hm̥i* 'sky, day' (PCn, OM) ; *̢bi-se*(= *im̥i-se*) (Tuc).

769. 'sleep' \**ma-n/h-*: \**ma-(n)i/a-ge* (PAr) ; -*mana-* (Cam) ; \**mahi-ta/teka* (PGb) ; *maha* (Jic, H) ; *maiiniqai* (Wit).

770. 'sleep' \*-ki-: *ki* (Gmb) ; *iki* (F) (Ay, Q) ; \*-ki-N (PT-G).
771. 'sleep' \*-pu-: *rápu* (Tn, G) ; *puñu* (R) (Q).
772. 'sloth, anteater' \*-sawa-: \**s(i)awa-nV-ta-na* 'anteater' (PAr), *hudsawa* 'anteater' (Jam, Ar) ; *besawa* 'sloth' (Tac).
773. 'small' \*-ria-: *yrí* (Api, Ge) ; *lə̃c* (Paez) ; \**Lyík-* (PS) ; \**ria* 'small and rounded' (PTuc).
774. 'small' \**ti/ema*: *m(a)ti-rV* (P, Ar) ; \**tema* (Cam) ; \**na-tu/ru-me* (PCM, OM) ; \**te* (PU-A), \**tima* (V-H) (PU-A).
775. 'small' \**akua*: *agua* (Chib) ; -*kwe* Diminutive (Paez).
776. 'small' \*-nīgā-: *nángatsai* = *nágatsa* (Kog, Chib) ; *miq̡iŋa* /*bīg̡iŋā* (Des, Tuc).
777. 'small' \*-či: \**n-či* 'little, a little' (PPN, OM) ; *čidi* Diminutive (GE) (Tac).
778. 'smell' vb. \*-tu-na-: *átu-kay-na* (Mot, Chib) ; \**tuxú-ne/na* (PGb) ; \*\*(Y)(n)*tu(h)(n)* 'nose, smell' (POM) ; \**etu-nV-ga* (PT-G).
779. 'smoke' \**síka*-: *šíká msara* (Gr, Ar) ; *šketi* (Cp, My) ; *tata-ší* (Sir, T-G).

In Wheeler's data, T-G, an *š* in Sir does not appear. The regular PT-G reflex is \**s*. The Sir word is a compound, literally 'fire and white'.

780. 'smooth' \**ly-a-m-pi*-: *ka-lya* 'slippery' (P, Ar) ; *hapí-na* (Gb) ; *milik* (Gmb) ; *lyanu* (Cp, My) ; *lab'* (Paez) ; *llamba* probably /*lyampa*/ (R) (Q) ; \**yaŋpi* (PTuc).

The regular PMy reflex of PAm \**ly* is \**l*. Olson (1964, 1965) reports one occurrence of Cp *ly* corresponding to PMy-Cp \**l* when followed noncontiguously by palatal phones.

781. 'snake' \*-*Pi*-: \*-*Pi*- (PAr) ; *tadbi* (Kog, Chib).
782. 'snake' \**ol*: *ol* (Gmb) ; *ul* (Paez).
783. 'snake' \**hV-mo-nV*: *himni* (P, Ar) ; *hínimo* (Bo) ; \**hómo* (PGb).
784. 'sole' \**stap*: -*stap* (*xityi*) (P, Ar) ; *táp* (Wal, H).
785. 'sour' \**pʰisaku*: *pisa-* 'to sour' (P) ← \**pʰisa-* (Pre P, Ar) ; *pʰusqu* /*pʰusqu*/ (F) (Q of Cuzco) ; \**skú-* (PS).
786. 'split' \**pho-(p)a-te*: *hi-pho-ta* (P, Ar) ; *phaate* (Paez) ; *phoŋa* (Gn, Tuc).
787. 'split' \**bo-ka-*: -*baka-* (Pia, Ar) ; *búka-nro* (Tun, Chib) ; \**waúkoba* ← \**waliboka* (PGb) ; *kobo-* (Ese, Tac).
788. 'spoon' \**kulu*-: *kolwiiŋwa* (P, Ar) ; \**xwulu-s* 'calm' (PM, G).
789. 'squash' \*-*tohk*-: *šúlihtóhkú* (Tn, G) ; *túka* (Paez).
790. 'squash' \**č̡u-mū*: *č̡um* (Tz, My) ; \**č̡u<sup>4</sup>* (PPn, OM), *mu* (OT, OP, OM).
791. 'squat' \**k̡(a)-wā*: \*\**k̡aw* (O) (PMy-Cp) ; *kōā* (Gn, Tuc).
792. 'squeeze' \**ziuna*: \**si'n-* 'extract liquid' (Ha) (PA) ; *nzíuna* (Paez).
793. 'squeeze' \**pits'a*: *pisa . . . c* (Tn, G) ; \**pits<sup>3</sup>* (J) (PMy).
794. 'squeeze' \*-*tsa(h)na*: *wenitsa-na* (Cam) ; *tsahn-*, *tsan-* (Tz, My).

795. 'squirrel' \**kapo-*: *kapo-pna* (P, Ar) ; \**kapa* (PPan).

796. 'stand' \**nV-ka/ti*: \**Núka* (PGb) ; \**ni-* (PPan) ; \**nāk-* (PS) ; \**neti* (PTac) ; \**Vnaka-haimi* (PTuc).

Both -tV and -kV are common verbal suffixes.

797. 'stand' \**yu-ka-hu-*: *yukubakiis* (Nt, G) ; *yúhu* 'standing' (Paez).

798. 'stand' \**pa-še-a-k-*: \**pasekw* (Ha) (PA) ; *šiok'oye* (Kin) ← \**siakoye* (Pre Kin, Ar) ; *zekipkuakiskua* /*sekipkuakiskua*/ (Chib) ; *pašan* (Gmb).

799. 'stand' \**čaya-*: *ho-tsaya-* (Cam) ; *shayari-na* /*šayari-na*/ (R) (Q).

800. 'star' \**we(h)i-ri/a*: \**wi-he-ri-SI* ← \**we-hi-ri-SI* (PAr) ; *weeriku* 'shooting star' (Yana, H) ; *warawara* (Cp, My) ; *wáraxa* (F) (Haqe-Aru, Q).

801. 'star' \**ăk'bi*: *ek'* (Tz) ← \**ek'* (Pre Tz, My) ; *ă'* (Paez).

802. Stative \*-rV : \*-rV (PAr) ; -ra (Mot) ← \*-da (Pre Mot, Chib) ; -rV (Gn, Tuc).

803. 'stick' \*-tū-: *tuñi* (Cp, My) ; *pxtū* (Paez).

See also 886, 887 'tree, stick'.

804. Subjunctive \*-fo: *ni-po*, *ai-po* (Guar-Bol, T-G) ; *bo* (Tuc).

805. 'suck' \*-no-: \**no·n* (Ha : Bl) (PA) ; *eno* (Cul, Ar).

806. 'suck' \**gowi-*: *guéénchi* (Bo) ; *kuvo* (Api, Ge) ; *kókowi* (Yn, Pan).

807. 'suck (the breast)' \**su-čo-či*: \*-čo- (PAr), *sosowa-ni* (Pia, Ar) ; *zebčuči* (Chib) ; \**šw-ka* ~ *cw-ka* (PM, G), *šúču* 'to suckle' (Tn, G) ; *tsu-tsú-ne* (Gb) ; \*-ču-*Vn/Vl* 'nurse' (J) (PMy) ; *čučč* (Paez) ; *čočo* (Chac, Pan) ; *chuchu-čuču/* (R) (Q) ; *čočo* (Tac), *soso* (Cav, Tac) ; *pěčo* (Gn, Tuc) ; \**ci(ši)* (V-H) (PU-A).

The irregular Gb reflex *ts* may be due to baby talk.

808. 'suck' \**pi-*: *pu-* (Yana, H) ; \*-pi-te (PT-G).

809. 'sun' \*-tahu-eni-: *tahčči* (Tn, G) ; \**a-tahu-enik* (PGb) ; *thuñi* (Cp) ← \**thuni* (Pre Cp, My).

810. 'sun' \**kama-/u/-hi*: \**ka-ma-hi* (PAr) ; \**ma-hi* 'tomorrow' (PCM, OM), \**kam-/.../* 'sky, day, sun' (PMn, OM) ; *dačó-maka-ruro* (Gn, Tuc) ; *kamuy* (Perea) (Taino).

811. 'sun' \*(*t*)*ats'ayi*: *a-čayi-* (Shasta, H) ; *ts'ayik* (J, My) ; *taykykwe* (Paez) ; \**tauca* (V-H) (PU-A).

812. 'sun' \**a-se-k'bi/hs-wa/n-*: \**ki·sehswa* (Ha) (PA) ; *ses* (B, Ar), *siki* 'fire' (Gr) ← \**sikhi* (Pre Gr, Ar) ; *laksak* (Jic, H) ; *sakče* (K, My), *yašk'lin* 'name of month' (Tz, My), *k'lin* 'sun, day' (Chl, My) ; *sek'* (Paez) ; \*\*(*n*)(*h*)*ken*<sup>3</sup> (POM) *šhnga<sup>4</sup>* (Ixcatec, Pn, OM), *kheya* (OT, OP, OM).

813. 'sun' \*-šeti: \**ičeti* (PTac) ; *ešeti* (Key) (Huarayo, T-G) ; \**asī* (PTuc).

814. 'sun' \**tV-ka-č-*: \**a-ta-ka-SI/či* (PAr) ; \**n-ka-/ča-hu* (PPn, OM).

815. 'sun' \*-pihū or \*-hīpu: \**ma-pihu/piyu* (PCM, OM) ; *būhīpu* (Tuc).

The direction of metathesis has not been determined.

816. 'swamp' \*-ba-ro: *badoo-* (Mot, Chib) ; \**sa-šabaro* (PTuc).

817. 'sweet' \**fi-i-ta-si*: \**wi'nk-* (Ha) (PA), *wi'hkacišiw* 'he tastes good'

- (Ha) (C, A) ; \**petsi* 'honey' (PAr) ; *wísta* (Tn, G) ; \*\*(Y)(n)si(h)(<sup>?</sup>)(n) (POM), *vr<sup>2</sup>ši<sup>3</sup>* (M-SM, Mn, OM) ; *bita-da* (Tac) ; \**pis* (V-H) (PU-A).
818. 'sweet potato' \*-ñe-t<sup>3</sup>i- : *yít<sup>3</sup>ewísta* (Tn, G) ; \*N-ye-ti-(ka) (PT-G).
819. 'sweet potato' \*-úthi- : \**dáithi* (PGb) ; *úth* (Paez).
820. 'sweet potato' \**ko/ari* : \**kori-ti/li* (PAr) ; \**kari* (PPan).
821. 'swell' \*če-pun- : *ši-čpon-ha* (P) ← \**si-čVpon-ha* (Pre P, Ar) ; *čepunga* (R de Montaya) (Guar-Br, T-G).
822. 'swell' \*ya-hina- : \**hena-na-ka-wa* (PAr), -*yena-kawa* (Pia, Ar) ; \**ya-hína* (PGb).
823. 'swell' \*tsifi- : *ze-bia-sua* (Chib) ← *tse-bia-sua* (Pre Chib) ; *tsú<sup>3</sup>bi* (Paez).
824. 'swell' \*-sihe- : *ihízíhi* (Kog) ← \**ihidVsihi* (Pre Kog, Chib) ; *siht<sup>3</sup>-* (Tz, My) ; *e-sehe-ni* (Tac).
825. 'swim' \*-pu-h- : *páhpu* (Tn, G) ; -*puh* (Krk, H).
826. 'swim' \*nona- : *pónana* (Api, Ge) ; \**nona-* (PPan).
827. 'swim' \*pendo- : *ákut bé-nro* (Tun) ← \*... *pé-ndo* (Pre Tun, Chib) ; *pend* (Paez).
828. 'swim' \*k<sup>3</sup>a-wā-y- : *kawa* 'bathe' (P) ← \**k<sup>3</sup>hawa* (Pre P, Ar) ; *huaini* (Kog, Chib) ; *wáyu* (Tn, G) ; *kueyopa* (Cuiva) ← \**kVwayopa* (Pre Cuiva, Gb), *hua* (Gb) ; *k<sup>3</sup>uye* (Was, H).
829. 'tail' \*a/bu-sa- : \**waθanyi* 'tail of bird' (Ha) (PA) ; *ílibu<sup>3</sup>u* (Bo) ; -*ásə* (Tn, G) ; \**bosó-to* (PGb) ; *p<sup>3</sup>ulsu* (Yana, H) ; \*\**nsu* (POM) ; \**e-tisa* (PTac).
830. 'tail' \*amizi- : *pami* (Api, Ge) ; *miš* (Gmb) ; *me<sup>2</sup>nz* (Paez).
831. 'tail' \*he- : *hé* (Wal, H) ; \*-*he* (J) (PMy).
832. 'tail' \*-isi- : \**ie-li-si-pi* (PAr) ; *pisi* (Nt, G) ; \**sít-* (PS) ; \**k<sup>3</sup>wausi* (V-H) (PU-A).
833. 'take' \*čú- : *čú* (Tn, G) ; \*čuk 'grasp' (J) (PMY).
834. 'take' \*uve- : *auvi-* (Yana, H) ; *úwe* (Paez).
835. 'talk' \*yanu-ma- : *yanu-ma-ta* (P, Ar) ; *yána* (Tn, G) ; *gayaa-* (Yana, H).
836. 'talk' \*mi\*mi- : \**mimi-* (PTac) ; -*miārī* (Guar-Bol, T-G).
837. 'tapir' \*b/miča- : *bíča* (Kog, Chib) ; \**métsa-ha* (PGb).
838. 'tapir' \*pawa-da/ra- : \**pawara* (PPan) ; *awada* (Tac).
839. 'ten' \*kasia- : *kaski* (Ha : Sb) (Pw, A) ; *ukásia* (Tun, Chib) ; *kse<sup>2</sup>mba* (Paez).
840. Tense, past \*-suka- : -*suka* ~ -*skua* Present, past imperfect (Chib) ; -*ska* Historic past (GE) (Q-Bol).
841. 'termite' \*p<sup>3</sup>i-... *tūa* : *ofoto* (Gb), \**opho* ← \**ophituá* (PGb) ; *p<sup>3</sup>xtūčika* (Paez) ; \**bitua* (PTuc).
842. 'that' \*nā- : *ho<sup>2</sup>ono* (Bo) ← \**ho<sup>2</sup>ona* (Pre Bo) ; *na* (Jic, H) ; *naa* 'this' (Paez) ; *nāči* 'this' (Cub, Tuc).
843. 'that' \*či-sa- : *čisa* 'this, m.' (Gr, Ar) ; *či's* (Mm, My) ; *chai /čai/* (R) (Q), *či* (Wheeler) (Inga, Q).
844. 'that' \*-si- : *asi* (Chib) ; \**si* (PTuc).

845. 'that' \*-ma: \*ma (PM, G); ima (GE) (Q-Bol); mayi (Vivanco) (Pemón).

846. 'there' \*ai-ja-a-: \*jaa-rV (PAr); aižuanai (Kog) ← \*ai-dVs-nai (Pre Kog, Chib), \*ai-sai (PChib); aizaj-ma (Yana, H).

847. 'there' \*saŋo-: saŋaya (Gr) ← \*saoya (Pre Gr, Ar); soŋoya (Gn) ← \*saŋoya (Pre Gn, Tuc).

848. 'they' \*-na-: \*na-ha-ni/li (PAr), -na (P, Ar); naa 'these' (Paez); ona-ya (Ese, Tac); \*ti-kidā/na (PTue), ná (Gn, Tuc).

849. 'they' \*k(i)ã-wi-ja-: wi'lawa:w (Ha) (C) ← \*wi'yawa:w (Pre C, A); káuvižain (Kog) ← \*kauwidVsain (Pre Kog, Chib); kiidā we'š (Paez).

850. 'thin' \*ošo-: sotu-pkua (Chib); ošo (Key) (Chac, Pan); ošori (Tac).

851. 'think' \*šini/a: hi-šini-ka (P) ← \*hi-sini-ka (Pre P, Ar); šina- (PPan), \*yošini 'spirit' (PPan).

852. 'think' \*-mini-: amñima (Api, Ge); minidćxaya (Yana, H).

853. 'think' \*-na-hu-: asána-hi- (Gr) ← \*asana-hu- (Pre G, Ar); \*nahu-natabi xáin/Na (PGb); naŋ 'know' (Tz, My); onáde (Wit).

854. 'think' \*-tik-: -tiki (Chib); nekoteka (Cuiva, Gb).

855. 'this' \*wid/li: widi (Was, H); \*wili (J) (PMy).

856. 'this' \*yá: \*tV-ya- (PAr); yá (Wal, H); yan 'other' (Tz, My); \*\*ya 'here, now, this' (POM); maya (F) (Ay, Q); ye (Tac); \*iye (PTue).

857. 'this' \*ha-ŋi-ti/ni: \*ha-ni-re 'that' (PAr); hāihiai (Kog, Chib); \*haŋini (J) (PMy), ha-ŋiti (Toj, My); \*\*(Y)(n)ten 'here' (POM), \*ha-/hi-n-de (PCM, OM), \*nhí/\*ní 'this' (POM, OM); \*aŋti (PTue); \*ŋi (V-H) (PU-A).

858. 'this' \*ikāi-: kem (Cam); ik (Gmb); cai /kai/ (R) (Q); he(ŋ)e-ke (Tac).

This set may be related to set 857, with loss of the glottal stop and addition of the *k*- prefix which is common to Arawakan and Chibchan.

859. 'this' \*k̥ua: \*xuá (PGb); \*\*(h)kʷa(H)(n) (POM); kuae (Sir, T-G).

860. 'thorn' \*ka-wV-ša: \*kaw- 'prickly' (Ha) (PA); \*ka-ru-wa-re (PAr), ka-wši (P) ← \*ka-wVsi (Pre P, Ar); casha /kaša/ 'cactus' (R) (Q); akwiša (Ese, Tac).

861. 'thorn, nail' \*k̥ihča: \*\*k̥ihč 'to nail, thorn' (O) (PMY-Cp); kitšeŋ (Y, Ch, OM); kit̥ 'to drive in a pointed instrument' (Paez); \*akiča (PTac); ki (Vivanco) (Pemón).

862. 'three' \*kVmíša: miku sa (Bo); quimsa /kimsa/ (R) (Q); kimiša (Cav, Tac, Rey-Tac).

Key does not reconstruct PTac because of irregularity of correspondence; the Tac forms are probably borrowed from Q.

863. 'throw' \*wVya-: wiya (Tn, G); wayar (Gmb).

864. 'tick' \*-aŋnanV: sáŋnani 'insect' (Tn, G); \*yaŋnanii (PPan).

865. 'tie' \*č̥ake: \*sak- 'fasten' (Ha) (PA); shoke (Cul) ← \*sake (Pre Cul, Ar).

866. 'tie' \**he-ñök³ua*: *yukay-* (Mot, Chib); *nok³* (Tz, My); *xük* probably /*hyük/* (Paez); *heyo* (Ese) ← *šeyo* (Pre Ese, Tae); *ñókua* (Guar-Bol) ← \**Nyókua* (Pre Guar-Bol, T-G).

The PT-G reflex of PAm \**k* is \**gʷ*. Data are lacking on PT-G for a solution of the problem.

867. 'tie' \*-*mata*: *hi-mata* (P, Ar); *mata kata* (Cuiva, Gb).

868. 'toad' \**fuši-*: \**busi-to* (PGb); \**biško* 'frog sp.' (PPan).

869. 'tobacco' \*-*šeema-*: \**θeθe·ma·wa* (Ha : B) (PA); *če·ma* (Pia, Ar); \**tséma* (PGb).

870. 'tongue' \**i-aya-l/nā-ni*: \**t-e·laniw* (Ha) (PA), *tenaniw* (Ha) (M, A); \**i-aye-na-ni/i* (PAr), \**na-ni* (PNew, Ar); \**na⁴hai⁴*, \**ni⁴hai⁴* (PMaz-Kirk, Pn, OM), \*\**ya* (H)(n) (POM); \**ana* (PPan); \**e-yana* (PTac); \**nē⁹nē* 'lick' (PTuc); \**nen* (V-H) (PU-A).

The reconstructed \*-*l/n*... probably represents an unsolved phonological problem rather than a choice of morphemes. See the discussion of nasals and homorganic stops, 1.4.

871. 'tongue' \**lyi-si-ki/k⁹a*: \**nalakackw-i* 'palate' (Ha : B) (PA); \*-*cu-laski* ~ \*-*cu-laksi* (PM, G), -*lu* (Tn, G); *nili* (Gmb); *las* (Cp, My); *čallu* /*k⁹alyu/* (R) (Q); \**Lyékyi* (PS); \**liŋi* (V-H) (PU-A).

872. 'tongue' \**a-pi-ku-a*: \**bi-kʷa* (PChib); \**a-pe-ku-N-gV* (PTuc); *iipe* (Wit).

873. 'tongue' \*-*ē⁹-mē-ro*: *he-mro-ka* 'lick' (P, Ar); \**Yē⁹mē-ro/yo* (PTuc).

874. 'tongue' \**ye-na-ni*: \**i-aye-na-ni* (PAr); \**hñe/nehe/ñe/nahí* (PPn, OM), \*\**Y(h)ne(h)*<sup>3</sup> (PMaz-K, OM).

875. 'tooth' \*-*Pi-ts-*: \**i-pit/ts* (Ha) (PA); *ki⁹tʰbic* 'tooth point' (Paez); \**gopi* (PTuc).

Cf. 422, 601, and especially 700.

876. 'tooth' \*-*ã-i-wa-*: \**yai-SI-mi-nV-* (PAr); \*-*a-wáuno* (PGb); *va* (Api, Ge); *yo* (Wal) ← \*-*iv-* (Pre Wal, H); \**eC-al* (J) (PMy); \*(čer)-ai-N-ya (PT-G); *ãi* 'chew' (PTuc); *hai kidžai* (Wit); *m-ahi-te* 'toothless' (Perea) (Taino).

See negative, privative.

877. 'tooth' \**kits³au*: *kic³au(na)* (Yana, H); *ki³tʰ* (Paez); *hai kidžai* (Wit).

878. 'tooth' \**iši-ka/ta/mi*: \**yai-SI-mi-nV-* (PAr); *behakeše* (Cam); *sika* (Chib); *iške* (Cp, My); \**šita* (PPan); *shimi /šimi/* (R) (Q), *šimi* 'teeth' (F) (Haqe-Aru, Q).

879. 'tooth' \*-*tse-*: \*(*t)se-ri* (PAr); \**e-ce* (PTac); \*(čer)-ai-N-ya (PT-G).

880. 'tooth' \**arē-í*: *ári* (BC, Ar); *ni-ri* (Tun) ← \**ni-di* (Pre Tun, Chib); *érēi* (Sir, T-G).

881. 'tortoise' \**khuri*: *ikuli* (Gb); *kerere* 'river, turtle' (Sir, T-G); \**gū(í)* (PTuc), *kuri* (Gn, Tuc).

882. 'tortoise' \**šā-wi-*: \**sā-we/me-pi-rV* (PAr); \**šawī* 'turtle sp.' (PPan).

- 883a. 'toucan' \**ts<sup>3</sup>okV-* : *sakadura* (Mot, Chib) ; *sok* 'bird sp.' (Gyb) ← *tsok* (Pre Gyb, Gb) ; \**šoki* (PPan) ; \**coke* (PTac).
- 883b. 'toucan' \**tuikVV-* : \**tuikuekue* (PGb) ; \**tukai-N* (PT-G).
884. 'toucan' \**pisa*: \**pisa* 'small toucan' (PPan) ; *piša* (Ese) ← \**pisa* (Pre Ese, Tac).
885. 'touch' \**tahpa*: *táhpa* (Tn, G) ; *đapaba* (Tac) ← \**čapaba* (Pre Tac).
886. 'tree, stick' \**ami-na-i*: *mina* (P, Ar) ; *imehi* (Bo) ← \**amihī* (Pre Bo) ; \**nae-hava* (PGb) ; -<sup>3</sup>*manai* (Yana, H) ; *munti* (F) (Haqe-Aru, Q) ; *amena* (Wit).
887. 'tree, stick, wood' \**aha-te-ku-*: \*-*ahtekw-* (Goddard : B) (PA) ; \**ahaiku/a-wā-ī/na* (PAr) ; \**itti/u* (PM, G) ; *ak<sup>3</sup>in-te?* (Toj, My) ; \*\*(h)*kwa(h)(n)*<sup>3</sup> (POM) ; \**aki* (PTac), *akwi-wiri* (Cav, Tac) ; \*-*ki* 'tree-like' (PTuc).
888. 'trumpeter' \*-*tītī*: \**hi-tyitgi* (P) ← \**hi-titi* (Pre P, Ar) ; \**tītī* (PTuc).
889. 'turkey, wild' \*-*y-ču*: *kóyču* (Gyb) ← \**koysu* (Pre Gyb, Gb) ; \*\*(Y)-*(h)tu(?)n*<sup>3</sup> (POM).
890. 'turtle' \*-*pe-*: *ópe* (Gb) ; *peyú* (Des, Tuc) ; *pei(-turo)* (Vivanco) (Pemón).
891. 'turtle' \**ko(h)ku*: *kóhku* (Tn, G) ; *kok* (Tz, My).
892. 'twist' \*-*sč<sup>3</sup>o-ṭa*: -*sčo-ta* (P) ← \*-*sčo-ta* (Pre P, Ar) ; \*\**č<sup>3</sup>ot* (O) (PMy-Cp).
893. 'two' \**be-*: -*behe* 'dual' (Gb) ; \*\*(h)*wi(n)* 'two, twins' (POM) ; \**beta* (PTac) ; *beka* (Key) (Huarayo, T-G).
894. 'two' \**wa*: *va* (Api, Ge) ; \*\*(h)*kwa(h)(n)* (POM) ; \**wo* (V-H) (PU-A).
895. 'uncle' \*-*ko-ka-ki*: \**ko* (PAr), *koko* (P, Ar) ; *bakó* (Cam) ; -*ki* 'maternal uncle' (Tn, G) ; \**koka* (PPan) ; *e-koko-ke* (Cav, Tac) ; \**ka<sub>s</sub>ku* 'father's mother' (V-H) (PU-A).
- The PU-A \**u* ← PAm \**o* is not regular.
896. 'uncle' \**ho-n-*: *hon* (Gyb, Gb) ; *hoho* (Tac).
897. 'uncle' \**toti*: *toi* (P, Ar) ; *toto* (Ese, Tac).
898. 'under' \*-*mki-*: *tomkidik* (Gyb, Gb) ; \*\**ki<sup>1</sup>* (POM), \**nki<sup>2</sup>* (PPn, OM).
899. 'undeveloped' \**čhuta*: *tso-tso-ta* 'green, premature' (P, Ar) ; \*\**čhut* 'undersized, small' (O) (PMy-Cp).
900. 'untie' \*-*čkohka*-: *ko-čkoka* 'pull out' (P, Ar) ; \*\**čhohk* 'untie, let loose' (O) (PMy-Cp).
901. 'up' \**bu*: *čipunaa* (Gr) ← \**čibunaa* (Pre Gr, Ar) ; *bu* (Gn, Tuc).
902. 'up' \*-*taka-*: *matáka* (Kog, Chib) ; *tákwe* (Paez).
903. 'urinate' \**si-*: *tsina* (P) ← \**t-sina* (Pre P, Ar) ; *is(i)o-* (PPan) ; \**si<sub>u</sub>(?)* ~ *a* (V-H) (PU-A).
904. 'urinate' \**ša-ki/?*: \**šeki* (Ha) (PA) ; *áša?* (Was, H).
905. Verbal, verbalizer \*-*ta*, -*wa*: \*-*wa* (Ha) (PA) ; \*-*ta*, -*ka*, -*wa* (PAr) ; -*ta* (Gb).
906. Verbal prefix \**e-*: *e-* (Amar, Ar) ; *e-* Incompletive (Tac).
907. 'vomit' \*-*etV-* : *eeti* (Gr, Ar) ; \*\*(Y)*ta(n)*<sup>3</sup> (POM) ; \**eto(a)* (PTuc).

908. 'walk' \*sa-i: *saymura* (Mot, Chib); \*\*nsa 'go' (POM); \*sa(i) 'go' (PTuc).

909. 'walk' \*oh<sup>3</sup>: *ohk* (Cp, My); *u<sup>3</sup>h* (Paez).

Metathesis of <sup>3</sup> and *h* is not infrequent in Paez.

910. 'walk' \*-gawa-: \*a-kawa ← \*a-gawa (PNew, Ar); \*\*(n)(h)k<sup>w</sup>a(<sup>3</sup>)(n) (POM); *kwa-* (Cav, Tac); \*N-g<sup>w</sup>ata (PT-G).

911. 'walk' \*-ni-: *inini* (Chib); *nix* (Yana, H); \*ni- 'walk, stand' (PPan).

912. 'want, love' \*-lik<sup>3</sup>a: *ha-likha* (P) ← *ha-lik<sup>3</sup>a* (Pre P, Ar); *haluk<sup>3</sup>ma* 'happy' (Yana, H); -*lok<sup>3</sup>* 'love, want, buy' (C, My).

913. 'want, ask for' \*k<sup>3</sup>u-an-: *k<sup>3</sup>un-* (Yana, H); \*k<sup>3</sup>an- (J) (PMy); \*\*kwan 'ask for' (POM).

914. 'wash' \*sak<sup>3</sup>-: *sak<sup>3</sup>* (Tz, My); *šakwa* (Ese) ← \*sakwa (Pre Ese, Tac).

915. 'wash' \*pa<sup>3</sup>tsa: *pac* (Atakapa, H); \*pa<sup>3</sup>ea- (PPan).

916. 'wash, bathe' \*ka-ta: *kata* 'bathe, tr.' (P, Ar); \*ki(á)ta (PGb).

917. 'wash' \*irei-: *her-ka* (P, Ar); *irei* (Sir, T-G).

918. 'wasp, worm' \*ša<sup>3</sup>we: \*sa<sup>3</sup>we<sup>4</sup> 'wasp' (PPn, OM); *ša<sup>3</sup>we* 'worm' (Paez).

919. 'wasp' \*fina: \*bina (PPan); \*birá (PTac).

There is not sufficient evidence to analyse the *n*.*r* correspondence in this set. The *r* may be a conditioned variant of a reflex of \**n*. See discussion of nasals and homorganic orals 1.5.

920. 'water' \*ya-(<sup>3</sup>)ku-i-ni: \*w|huni|i-ha (PAr), \*huwV-ya-ka 'rain' (PAr); *ri<sup>3</sup>ya* (Tun, Chib), *ni* (Kog, Chib); \*akwini (PG), *kuN* (Nt, G); \*ya<sup>3</sup> (J) (PMy); \*kuri (POP, OM), \*yam/yu-Hta 'river, valley' (PMn, OM); *yu<sup>3</sup>* (Paez); \*m-ni (PS); *yabi* (Tac), *kwei* 'river' (Ese, Tac); \*ya-ki-ma 'wet', \*(o)aki 'rain' (PT-G); \*a-ko (PTuc); \*yuku (V-H) (PU-A); *ko* (Bárbara) (Pampa); *kwéa* 'rain' (Catío).

921. 'water' \*(-)ha<sup>3</sup>: \*-ha (PAr); *há* (Wal, H); \*ha<sup>3</sup> (J) (PMy); \*nha (POP, POM).

922. 'water' \*-ma-: *šima-* (Mot, Chib); \*éma 'rain' (PGb); *uma* (F) (AY, Q); \*ya-ki-ma 'wet' (PT-G).

923. 'water' \*hu-ni: \*w|huni|i (PAr); *nifaihu* (Bo); \*inii (PPan); \*i-hi- (PT-G).

924. 'water' \*pa-yi: \*nepyí (Ha) (PA); \*pa- (PAr); *yipa* 'rain' (Jic, H); \*pa (V-H) (PU-A).

925. 'waterfall' \*k<sup>3</sup>na: *k<sup>3</sup>na* (Paez); *kini* (Gn, Tuc).

926. 'we' \*ha: *ha-* (P, Ar); *há* 'we incl.', *há<sup>1-3</sup>* 'we excl' (A, OM).

927. 'we' \*e<sup>3</sup>sā: *isa* (Tun, Chib); *eseya* (Key) (Ese, Tac); \*yī<sup>3</sup>i-sā 'we excl.' (PTuc).

928. 'wet' \*pu-: *púl* (Wal, H); *po<sup>3</sup>s-el* (Tz, My); *pu-* (Tuc).

The conditioning responsible for the Tzo has not been traced.

929. 'wet' \*-tup-: \*iotupkua (Chib); *tuph* (Paez).

930. 'wet' \*ts<sup>3</sup>abi-: *iθabekani* (Pia) ← \*isabika-ni (Pre Pia, Ar); *cabi-da* (Tac).

931. 'what' \**ka-ha-na*: \**ka-ha-ka* (PAr); *kánahku* (Tn, G); \**ha-ki* 'who' (V-H) (PU-A).

932. 'what' \**ay-bi/ba*: *ka-bina* (Pia, Ar); *paybi* (Mot, Chib); *bi*(... *ma*) (Yana, H); *bi-š*, *ban*, *bin* (Tz, My); *a(?)i* (Cav, Tac); *yabá* (Gn, Tuc).

Cf. 'be', 'there'.

The expected reflex in Yana, *H* is *p<sup>θ</sup>*. The voicing might be due to the preceding *y*, or to a position in an interrogative construction.

933. 'what' \**čhi*: *či* (Gmb); *paci* (Yana, H); \*\**čhV?vV* (O) (PMy-Cp).

934. 'what' \**kīhi*: *ain-kihi* (Kog, Chib); *kīh* (Paez); *may-kin* 'which' (GE) (Q-Bol).

935. 'what, that' \**tik<sup>θ</sup>a*: *tika* 'that' (P) ← \**tikh'a* (Pre P, Ar); *tuk<sup>θ</sup>a* (Chr, My).

936. 'what, when, where' \**mā-i*: \**mē-nō-ka* 'when' (PAr); *mai* 'what' (Kog, Chib), *mani* 'when' (Kog, Chib); *mēmo* (Ge, Api); *mana* 'when' (Gmb); *acii(ma)-* (Yana, H); *ma* 'who' (Tz, My); *ima* 'what', *mai* 'where' (R) (Q); *mānge* (Sir, T-G).

937. 'when, where' \**ba-*: *pabáha* 'where' (Mot, Chib); \**ba-* 'where' (J) (PMY); *mbagáč* (Paez).

Cf. 936 'what, when, where' and see discussion of nasals and homorganic orals, 1.4.

938. 'where' \**kata*: *káta* (Tn, G); *kat* (Jic, H); *kat* (I, My).

939. 'whip' \**x(w)āts<sup>θ</sup>a*: \*\**x<sup>w</sup>a(h)e<sup>θ</sup>* (O) (PMY-Cp); *xa-xasa-ki* (Ese) ← \**xa-xaca-ki* (Pre Ese, Tac); *kā* (Gn, Tuc).

940. 'whistle' \**h-wi-*: *čivivi* noun (Api, Ge); *hui-* verb (Yana, H); \*\**hwi<sup>3</sup>* 'whistle, fan' (POM); *wi-* (Tac).

941. 'white' \**bo-...lV*: \**ha-bu-(nV)-si* (PChib); *polík* (Gmb); \**bo-ti-ro* (PTuc).

942. 'white' \**oše/u*: *ka-súu-* (Gr, Ar); *séséene* (Bo); \**ošo* (PPan); *oše* (Ese, Tac); *ye<sup>w</sup>se-ro* (Gn, Tuc).

943. 'who' \**ka-:* *ka-ti* (P, Ar); *káku* (Tn, G); *katikan* (Gmb); *ká* (Wal, H); *kai* (Catío).

Cf. 858 'this'.

944. 'who' \**ha-ra*: *harái* (Gr, Ar); *rera* (Tun, Chib); \**bahará* 'that' (PGb).

945. 'wide' \**paha-:* *pahama* (Chib); *pahai-da* (Ottaviano) (Tac) ← \**pásai* (Pre Tac).

946. 'wide' \**kauku-:* *kauku-ri* (Pia, Ar); *kokšaida-* (Mot, Chib).

947. 'wife' \**yí-:* *niyú* (Paez); *yi-bikó* (Gn, Tuc); \**yí<sup>w</sup>i* 'mother' (V-H) (PU-A).

948. 'wife' \**šai*: *ásaiwán* (Kog, Chib); *šay* (Gmb).

949. 'wife' \*(*k*)*wiiwa*: \**wi-wa* (Ha) (PA); \**wi-* (PChib), *ásaiwan* (Kog, Chib); \**waha-wa* (PGb); \*\*(*H*)*k<sup>wi</sup>(h)(n)* 'woman' (POM); \**pawini* (PPan); *huarmi* /*warmi/* (R) (Q); \**e-wane* (PTac).

950. 'wind' \*fe-ni: bin̄ia (Cam) ; fiva (Chib) ; wéxa probably /wehyā/ (Paez) ; \*beni (PTac).

951. 'wind' \*-iwi-: \*niwi (PPan) ; \*iwi-tua (PTuc).

952. 'wing' \*khuara-: hwa 'fin' (P, Ar) ; \*kúarau-fe (PGb) ; khara (Cp, My) ; \*\*(n)(h)kwa(H)<sup>1/2</sup> (POM), hwa (Ot, OP, OM).

953. 'wing' \*nabai-: yaa-nabai (Pia, Ar) ; e-nabai (Tac).

954. 'wing' \*-šik<sup>2</sup>i-: \*ai-si-gi-ka-(ta) (PChib) ; \*šik<sup>2</sup> (J) (PMY) ; \*\*(n)(h)-ki(n) (POM).

The PChib could as well have -ki- instead of -gi-, since the g is based on the Kog, which varies according to Wheeler (2.1).

955. 'with' \*yā-ka: \*ya- (PAr) ; \*\*(h)ka(h)(n) (POM), ñe<sup>2</sup>kio<sup>2</sup> 'and' ← \*\*yahn (A, OM), kya (P, Cn, OM) ; yak (Paez) ; \*-ya (PPan).

956. 'with' \*-ma: yma (P, Ar) ; -ma (Bo).

957. 'with' \*-pa-: -pa (Gmb) ; -pau- (Yana, H).

958. 'with' \*-ta: -ta (Gb) ; -tan (Cp, My).

959. 'woman' \*šano: \*seno (PShani), Ar) ; \*šano 'old wife' (PPan).

960. 'woman' \*po-: abunži (Kog, Chib) ; \*po-wa 'she' (PGb) ; \*e-pona (PTac).

961. 'woman' \*siitio: \*siitio (PAr), \*si-nV-tio 'daughter' (PAr) ; \*\*(Y)-(n)su(h)n 'woman, daughter' (POM).

962. 'worm' \*wāši-: \*omo<sup>2</sup>θe'w-a (Ha) (PA) ; \*dV-si-ma (PChib) ; šila (Tn, G) ; \*šina (PPan) ; \*wāši (PTuc).

963. 'worm' \*-some-: \*tV-some-ri (PAr) ; soso (Ese, Tac) ; tásó (Guar-Bol, T-G).

964. 'yam' \*ano-: no-bi (Gb) ; ano-θai 'tuber' (Cav, Tac).

965. 'year' \*ko-wa-ra: wala-pi (P) ← \*wara-pi (Pre P, Ar) ; bá-ra (Tun) ← \*gwá-ra (Pre Tun, Chib) ; \*wai (PGb) ; \*ko-wa-N-rai (PT-G).

966. 'yellow' \*-ts<sup>2</sup>a/e-aw(a)ya-: \*o(n)sa:w- (Ha) (PA) ; \*e-ewá-li (PNew, Ar) ; tawáya (Tun, Chib).

967. 'yellow' \*-wi-: \*\*we 'red' (POM) ; \*h/s-o-wi (PT-G) ; \*ewi (PTuc).

968. 'yellow' \*k<sup>2</sup>ar/n-: karikašugdu- (Mot) ← \*kadika . . . (Pre Mot, Chib) ; da<sup>2</sup>k<sup>2</sup>aramsuisa- (Yana, H) ; \*k<sup>2</sup>an (J) (PMY) ; \*\*ka(h) 'yellow, red, blue' (POM) ; qarwa (F) (Q of Cuzco).

The unglottalized stop in Q is without apparent explanation.

969. 'yes' \*oho-n: hoo 'Oh, I don't know' (P, Ar) ; hon (Tn, G) ; hoo (Yana, H) ; oh-o (Toj, My).

970. 'yes' \*ali: ari (C, Ar) ; ari (R) (Q).

971. 'yes' \*hihe-: hihi (P, Ar) ; hehe<sup>2</sup>e (Cav) ← \*šeše<sup>2</sup>e (Pre Cav, Tac).

972. 'you' \*mV: \*mue-ya-(nV)- (PChib) ; má (Ms, G) ; \*xami (PGb), -me ~ -mi 'object' (Gb) ; m- ~ <sup>2</sup>um- (Was, H) ; am (Cp, My) ; \*mi- (PPan) ; mi-ke (Tac) ; \*mī<sup>2</sup> (PTuc) ; amare (Vivaneo) (Pemón).

973. 'you' (sg) \*aka: aka (Cam) ; ka (Api, Ge).

974. 'you' (sg) \*ni: \*ni-hi (PGb) ; ni (Gmb).

PART TWO

COMPARATIVE STUDIES  
IN SOUTH AMERICAN INDIAN LANGUAGES

## 2. PROTO CHIBCHAN

ALVA WHEELER

### 2.1 INTRODUCTION

The reconstructions for Proto Chibchan presented here are based on linguistic evidence from six languages of Northern Colombia. Four of these, Chibcha (Muisa, Mosca), Tunebo (Tame), Kogi (Kagaba), and Arhuaco fall into the classification made by Mason (1950 : 175—79), following Rivet (1943) and Jijón y Caamaño (1941—43), as Chibcha proper. Marocacero (Sancá), not mentioned in any of the classifications, is in close affinity with Arhuaco and Kogi. Motilón, not to be confused with a group of languages classified as Cariban, is that of the Catatumbo and Rio de Oro region along the Colombia—Venezuela border north of Cúcuta (Mason, 1950 : 229, fn 8), and is not mentioned in most classifications. Mason here quotes Reichel—Dolmatoff (personal correspondence) as relating this language probably to Arawakan.

Mason, citing Rivet and Jijón y Caamaño, indicates Chibcha proper as a group of languages coordinate with several others mentioned in this volume as members of a single macro-phylum, with a geographical range from Central America to Ecuador and in Colombia from the Pacific Coast to the Venezuela border. Many of these suggest affiliation with Chibchan, but evidence for reconstructing a proto language based on them does not readily present itself from the data presently available.

Rowe (1951) shows agreement with Mason's general classification of Chibcha proper.

McQuown (1955) does not disagree in principle with Mason's classification, but he considers Jijón y Caamaño, whose work forms a strong basis for Mason's, as highly tentative and in places unreliable in his presentation.

Kogi, Arhuaco and Marocacero, all of the Sierra Nevada de Santa Marta Region in Northern Colombia, form a linguistic subgroup coordinate with Chibcha and Tunebo. Motilón exhibits the greatest degree of divergence. The chart below indicates the percentage of cognates (first figure of each box) shared on the basis of a given number of lexical items (second figure) available

out of Swadesh-Rowe word-lists. Data for Marocacero is sparse and with a small degree of overlap with Arhuaco, so that the percentage calculated is less representative of the actual degree of affinity.

	Tunebo	Kogi	Arhuaco	Marocacero	Motilón
Chibcha	45%—158	45%—161	38%—72	45%—52	32%—149
Tunebo		47%—153	36%—60	38%—40	35%—141
Kogi			57%—70	54%—38	40%—155
Arhuaco				62%—28	30%—80
Marocacero					28%—56

Qualifications and comments on the source material for this comparison are as follows :

Chibcha, from Ortegón (1938), was transcribed largely but not entirely in Spanish orthography, the exceptions being *k* instead of *qu* often written before *i*, and *č* instead of *ch*, *s*, *z*, *x*, *f*, and *j* all appear in the data where the reconstruction on the basis of the other languages yields \**s*. I have found no clear-cut evidence of allophonic variation, but I assume the author intended to distinguish minor phonetic differences. I have retained his transcriptions for spirants (except that I have written his *j* as *h*), and I have regularized his *gu* and *v*, the latter occurring only following front vowels, as *w*. The Chibcha vowel *e* is the only evidence on which I base the reconstruction \**e* for Proto Chibchan. Many cases point to a possible conditioning from \**a* as \**a* → *e* | *i*. Similar rules may be proposed for other cases, but no overall pattern is evident that would account for *e* as an internal development in Chibcha. Stress is not recorded in his material, but evidence for it shows up in a number of instances of vowel loss in what I assume to be contiguous syllables. Since stress is phonemic in the other languages, I assume it also for Chibcha.

Tunebo, from the field notes of Paul and Edna Headland, SIL, taken at Cobaría on the Cobaría River, Colombia, tributary to the Arauca, between January 1964 and April 1966, is phonemically written. Acute accent indicates stress. Grave accent indicates stress and falling pitch. The distinction seems to have no historical significance, and they are treated here as the same. Glottal stop appears intercalated at proto morpheme junctures under certain conditions, possibly stress, and has no bearing on the original phonological structure of Chibchan, but it is a development in Pre-Tunebo.

Kogi, from the field notes of Chadwick and Patricia Stendal, SIL, taken at Don Diego, near San Pedro, Magdalena, Colombia, between February 1965 and April 1966, is phonemically written. Morphophonemic alternation between *k* and *g* accounts for the occurrence of *g* reflecting \**k* and *k* reflecting \**g* in a few examples. The conditions for the alternation have not been determined.

Arhuaco, taken from Vinalesa (1952), is phonetically written, though I suspect the same *k* and *g* alternation here as for Kogi. Compare 35b, 65, 76. The symbols he used are given the following values in phonetic notation, which I have used except in the case of his *ē* vowel, which seems to me to be high central *i*: *ā, ē, ī, ū* = long vowels; *ē* is undefined, corresponding to the sound between *e* and *i*; *c' = č; j' = dž; p' = p; s' = θ; t' = interdental stop; z = z; ss, nn = geminate consonants.* *x*, appearing in number 42, is not defined. All other symbols have values commensurate with standard phonetic transcriptions. Variant transcriptions of the same morphemes under different sections or in combination with other morphemes are assumed to reflect some kind of allophonic or morphophonemic alternation, which I have not attempted to define. The author gathered his data in and around the Capuchin Mission at San Sebastián de Rábago near Valledupar, Magdalena, Colombia, during a period of about twenty years.

Marocacero, based on a short word-list taken by Richard Mansen, SIL, near San Francisco in the Sierra Nevada Region of Magdalena, during January 1966, is phonetically written. Elicitation was interrupted when the informant sensed that other of his tribesmen were about to discover him imparting language material to an outsider. Note *k*: *:g* correspondence with Kogi 35b, indicating participation in the same *k/g* alternation mentioned above.

Motilón, taken from the field notes of Frank and Jerelyn Morgan, SIL, gathered at Iquiricadora on the Rio de Oro, Colombia, between August 1964 and April 1966, has not been phonemicized. Data gathering has been slow, with elicitation difficult and uncontrollable under completely monolingual conditions. I assume glottal stop, shown word initially in almost all cases preceding a vowel to be a subphonemic utterance-initial phenomenon. *d* and *r* are assumed to be members of the same phoneme.

Other languages of the Macro-Chibchan Phylum are given consideration on the basis of the data available at this time:

South Barbacoan, taken from Moore (1962), involves a comparison of two neighboring languages of the Ecuadorian Coast, Cayapa and Colorado. Vocabulary from these languages is used in a few instances to support reconstructions for Proto Chibchan, but no extensive search for cognates has been made. See also Lindskoog (1964). Lexical resemblances between these languages and Chibcha proper show less than ten percent correlation.

Kamsá (Coche, Sibundoy, Mocoa), taken from the field notes of Linda Howard and Alice Clough, SIL, at Sibundoy, Putumayo, Colombia, during July 1964 and May 1966, shows not more than two dozen lexical items comparable with Chibcha proper, as does Cofán, taken from Borman (1962), doing investigation on the Aguarico River of Northeastern Ecuador.

Páez, taken from the field notes of Florence Gerdel and Mariana Slocum gathered at Jambaló, Cauca, Colombia, between October 1964 and May 1966,

shows a stronger relationship with Chibcha proper and is also tied in with Mayan on a more recent horizon than that of Barbacoan, Kamsá and Cofán, as demonstrated in this volume.

A significant feature of Proto Chibchan morphology is the construction of noun stems from roots designating shape, form or function, and of stem forming affixes. Several words for body parts have a basic stem which reconstructs *\*kaisi-* (31, 40, 47, 61), and which may be further analyzed into *\*kai-* 'stem formant' and *\*-si* 'bushy, hairy'. The semantic content is 'something hairy' (e.g., 'skin') in the proto language, although none of the daughter languages attest that meaning for its corresponding forms. Rather the present word for 'skin' or 'bark' (68) involves a combination of *\*su-* 'containing within' and generally *\*-ba-* 'something flat'. The morpheme *\*-si* is reflected in Motilón 'feather' (22), 'root' (59), and 'wing' (86). 'Beard' (6) shows *\*-si* as part of the construction for both Motilón and Kogi, while Chibcha retains its reflex of *\*kaisi-* plus *\*-ne* 'hair' ( $*n \rightarrow \emptyset$ ), attested also in Tunebo (6, 21, 33). The stem formative *\*kai-* occurs also with *\*-de* 'bony substance' (10, 13, 35b, 86), with *\*-di* 'woody substance' (79), with *\*-gi* 'stony substance' (71), and elsewhere. See also Proto Tucanoan *\*gq̡si* 'skin, bark' and Chipaya *škiši* 'skin'.

Further evidence for morphological patterning of this sort arises in the comparison of forms referring to liquid (39, 56, 58, 81), areas around the mouth (6, 13, 78); 'arm' (3), 'shoulder' (66) and 'tongue' (77); 'bat' (5) and 'bird' (7), coupled with the fact that roots or affixes designating shape, form and function are prominent features among many Amerindian languages. See Introduction to Proto Arawakan, Section 6.2.

The morphological system in Proto Chibchan is for the most part blurred in the daughter languages as a result of semantic shift, metathesis, phoneme loss, and other processes of linguistic evolution, so that large numbers of lexical sets appear on the surface not to be cognate. Neither did all the daughter languages combine the same sets of shape morphemes and stem formatives to designate particular objects, so that in many cases only parts of words may be compared as cognate.

In other cases a morpheme of the proto language is absent or replaced in particular daughter languages, but the influence of its phonological features on neighboring phonemes remains, as in the case of vowel harmony: Chibcha (9, 31 *kus*  $\leftarrow$  *\*ka-s(i)-tu*, with *\*-tu*  $\rightarrow$   $\emptyset$ ) ; Arhuaco (11), Motilón (11). Nasalization (of consonants or vowels) shows up in the same way in Chibcha (41) ; Tunebo (63, 68) ; Kogi (33, 38, 39, 40, 73, 80, 81a) ; Arhuaco (20, 46, 50, 64, 69) ; Marocacero (9, 20, 29, 53) ; Motilón (22, 25, 80, 83). Conditioning of either of the above types often appears in particular examples of an attested language, but with no evidence as to what morpheme should be reconstructed. In these cases I reconstruct *\*-CV* (designating a particular vowel) to suggest the influence for vowel harmony, and *\*N* to represent a morpheme with some element

of nasalization, probably a consonant *m* or *n*, as the conditioning factor most particularly in cases where  $*b \rightarrow m$  and  $*d \rightarrow n$ , but also where  $*V \rightarrow V'$ . Evidence for such conditioning is present in 22 and 25 (see Motilón); 33 (see Kogi); 38 (compare Chibcha and Kogi). Evidence for determining the grammatical position of the proto morpheme designated *\*N* is lacking. Where there is no doubt I have reconstructed a particular nasal consonant plus vowel as a morpheme in its proper grammatical sequence.

Grammatical order of morphemes is inverse of that of the other examples of a set in a number of cases, particularly in Motilón (5, 13, 16, 32, 35b, 53, 57, 68, 69a, 70, 80, 82, 87), but noted also in Chibcha (29), Kogi (13, 34), Arhuaco (16), and Marocacero (16, 40, 53). Occurrence of this pattern is indicated in the particular set in Section 5.

Since a great deal of material on Chibchan morphology is yet to be gathered, a detailed analysis of the system will be left for a later time. However, variations in morpheme combination in the daughter languages bear an important influence on the phonological shape of lexical items shown here as members of cognate sets.

## 2.2 THE PHONEMES OF PROTO CHIBCHAN

( <i>p</i> )	<i>t</i>			<i>k</i>	<i>k<sup>w</sup></i>	
<i>b</i>	<i>d</i>			<i>g</i>	<i>g<sup>w</sup></i>	
	<i>s</i>	<i>c</i>	<i>č</i>			<i>h</i>
<i>w</i>				<i>y</i>		
<i>m</i>		<i>n</i>				
	<i>i</i>				<i>u</i>	
		<i>e</i>		<i>o</i>		
			<i>a</i>			

Stress occurs as phonemic in all the daughter languages, but its origin is yet to be determined.

## 2.3 PHONEME REFLEXES IN THE DAUGHTER LANGUAGES

Proto							
Chibchan	$*(p)$	$*t$	$*k$	$*k^w$	$*b$	$*d$	$*g$
Chibcha	—	<i>t</i>	<i>k</i>	<i>ku</i>	<i>b</i>	<i>n</i>	<i>g</i>
Tunebo	—	<i>t</i>	<i>k</i>	<i>k<sup>w</sup></i>	<i>b</i>	<i>r</i>	$\emptyset$
Kogi	—	<i>t</i>	<i>k, g</i>	<i>ku</i>	<i>b</i>	<i>d</i>	<i>g, k</i>
Arhuaco	—	<i>t</i>	<i>k, g</i>	<i>ku</i>	<i>b</i>	<i>r</i>	<i>g</i>
Marocacero	—	<i>t</i>	<i>k, g</i>	<i>k<sup>w</sup></i>	<i>m</i>	<i>l, n</i>	—
Motilón	—	<i>t, d</i>	<i>k</i>	<i>ko</i>	<i>b, m</i>	<i>d, r</i>	$\emptyset$

## Proto

	*s	*č	*c	*h	*w	*y	*m	*n
Chibchan								
Chibcha	s, h	č	s(z)	h	w, Ø	Ø	m	n, Ø
Tunebo	s	s	č	h, Ø	w	y, Ø	b	n, r, Ø
Kogi	s, č, h	s	s	h, Ø	w	y, Ø	m	n, Ø
Arhuaco	s, kh	č	s	Ø	w, wu	y, Ø	m	n
Maroacero	s, ts	—	—	—	w	—	—	n
Motilón	s, x, č~š	—	—	Ø	b	y	b	n

## Proto

	*s(V)n	*s(V)d	*n(V)s	*d(V)s	*s(V)y	*n(V)y	*d(V)y
Chibchan	sV	—	nh	—	s, sV	—	—
Chibcha	sVn	—	VsV, r	r	—	r	rV
Tunebo	hVn	—	n, nV,	ž, žVž	sV, z	—	dV
Kogi	—	—	nVs	—	dž,	—	—
Arhuaco	—	—	—	—	zVy	—	rV
Maroacero	—	—	—	—	dž	—	ly
Motilón	—	dy	—	Vs	—	—	—

## Proto

	*i	*e	*a	*u	*o	*ai	*au	*ue	*ua
Chibchan	i	e	a	u	o	ai, i, a	u, e	—	—
Chibcha	i	a	a	u	—	ai, a, e	u	—	—
Tunebo	i	a	a	u	—	ai, a	au	—	ua
Kogi	i	a	a	u	—	—	—	—	—
Arhuaco	i	a	a	u	o	a	—	—	—
Maroacero	i	a	a	u	—	—	—	—	—
Motilón	i	a	a	u	o	ai, a	a	ə	a

## 2.4 CONDITIONING OF PHONEME REFLEXES

In statements on conditioning (V) indicates that the proto vowel is lost in the daughter language(s) under consideration. Environments are those of the proto language except in the case of stress, which is peculiar to each of the given languages and has not been reconstructed.

2.4.1 *Consonants*

Certain sequences of consonants have varying reflexes in the daughter languages under conditions of stress and vowel loss. The sequences under consideration are \*s(V)n, \*n(V)s, \*d(V)s, \*s(V)y, \*n(V)y, and \*d(V)y. The quantity

of data is insufficient to show a strong pattern in any one of the languages, but examples are presented here to demonstrate special cases of development apart from those of the individual phonemes per se.

\**s(V)n*

→ *hV/sV* (Chib) 6, 33 (See treatment under \**s*).

→ *sVn* (Tun) 33

→ *hVn* (Kog) 53

\**s(V)d* → *dγ* (Mot) 56

\**n(V)s* → *nh* (Chib) 13

→ *Vs* stress on initial vowel (Tun) 37 ; → *rV̄* ; stress on second vowel 5, 7.

→ *nVs* (Kog) 37 ; *nV* 5 ; *n* 7. Conditioning undetermined.

→ *z* (Arh) 63

\**d(V)s* → *r* (Tun) 87

→ *zVz* (Kog) 1, 26 ; → *z* 87. Conditioning undetermined.

→ *Vs* (Mot) 1

\**s(V)y* → *sV* (Chib) 39, 81a ; → *s* 72. Conditioning undetermined.

→ *sV* (Kog) 72 ; → *z* 64. Conditioning undetermined.

→ *zVy* (Arh) 64 ; → *dz* 72. Conditioning undetermined.

→ *dz* (Mar) 72.

\**n(V)y* → *r* (Tun) 64

\**d(V)y* → *rV* (Tun, Arh) 81b ; → *dV* (Kog) 81b ; → *ly* (Mar) 81b.

\*C

\*(*p*) is absent in all languages except Chibcha and Kogi, for which no correspondences are available. Chibcha *p* before voiceless consonant usually corresponds to *b* in other languages and is reconstructed \**b*. The remaining occurrences in both Chibcha and Kogi are very few in number. The evidence for including \**p* as a proto phoneme is structural patterning plus the occurrence of the phoneme in two corresponding forms of Cayapa and Colorado (8, 21b).

\**t* → *d | C —* (Mot) 21a, 57, 63

→ *t* 11, 15, 31, 67, 70

\**k* → *g | —* C (Mot) 54, 68

→ *k* 6, 10, 16, 17, 24, 25, 31, 40, 47, 48, 53, 55.

*k/g* problem in Kogi, Arhuaco, and Marocacero is mentioned in the introduction under the particular languages.

\**kʷ* → *g* (Arh) 65 with no evidence for conditioning.

→ *ko | # —* C (Arh, Mar) 77, in this example only.

→ *ku* (Chib, Kog, Arh) 16, 41, 57, 66, 69, 76.

- *ku* under special cases of stress development herein undefined (Tun) 41, 77.
- *k<sup>w</sup>* (Tun, Mar) 57, 65.
- *ku* (Mot) 26, 41, conditioning uncertain ; → *k* | C<sup>V</sup> — (V)C 5, 69a ; → *ko* 16, 57, 76, 77.
- \**b* → *m* | — (\**d* → *n*) (Chib) 41. This example only.
- *m* | — N (Tun) 62, 68, only.
  - (Kog) 4, 80, 83, only.
  - (Arh) 20, 38, 68, only.
  - (Mot) 80, 83, only.
- *m* (Mar) 9, 20, 38, 68.
- *p* | — (V)*k<sup>w</sup>* (Chib) 3, 5, 20, 66, 77.
- *b* 4, 9, 15, 28, 41, 45, 51, 82.
- \**d* → *t* | *s*(V) — (Tun) 60.
  - *n* | — N (Kog) 38, 39, 56, 73, 81a only.
    - (Arh) 38, 40, 50, 69b, 79 only.
    - (Mar) 40, 79 only.
  - *n* (Chib) 10, 13, 41
  - *l* (Mar) 10, 50, 61, 81b.
  - *r* (Tun) 10, 41, 78, 81b
  - *d* 43, 54, 78 (Mot [d/r]).
- \**g* → Ø (Tun, Mot) 22, 24, 62.
  - *g* 17, 22, 24, 50.
- \**gw* → *gu* (Kog) 45
  - *b* (Tun) 45
- \**s* → *s* | — (V)C (Chib) 14, 27, 69a.
  - *h* | — (V)C (Tun) 47.
  - ċ/ś | — *i* (Kog) 14, 27, 82, but not in cases of \**i* → Ø 30b, nor \**ia* → *ai* 33 ; → *h* | # — (Kog) 36, 53, 72, 74. In 30, 68 initial morphemes were added at a later stage.
  - *kh* | — (V)*k* (Arh) 47, 61 (same morpheme) ; → *t* | — (V)*t* (Arh) 31.
  - *ts/ś* | — *i* (Mar) 30b, 40, but not in cases of \**i* → *a* 31.
  - ċ/ś | — *i* (Mot) 6, 22, 59, 82, 86, but not in cases of \**i* → *ə* 42.
  - \**s* → ċ after vowel metathesis in 51 ; → ś | \**k* → *g*(V) — (Mot) 68 (\**g* → Ø, so I suggest \**k* here as the source rather than \**g*) ; → *x* | *i* — (V)*t* (Mot) 31.
  - *s* ~ *h* (Chib). The environment V—V shows h in all cases except ‘there’ (74) : 6, 13, 31, 41, 47, 59, 61. The environment #— shows a predominance of *s* : 39, 53, 54, 68. See variant forms for ‘bird’ (7).
  - *s* 6, 8, 27, 36, 37, 51, 69a.

- \*č → s (Tun, Kog) 11, 44.
- č (Chib, Arh) 11, 31, 44, 59.  
Not attested in Mar and Mot.
- \*c → s(z) (Chib) 2, 52.
- č (Tun) 2, 23b, 52.
- s (Kog, Arh) 2, 23b, 52. Arhuaco has θ (*s'* = interdental) varying with *s* and *ss* in 'ant' (2). I assume this variation to be subphonemic.
- \*h → h (Chib) 27, 46, 71.
- h | C(V) —/— (V)C (Tun) 41, 48; → Ø 27, 46, 71.
- Ø | # — VCV (Kog) 27, 82, only; → h 21a, 46, 55, 71.
- Ø (Arh) 46.
- h | — (V)s (Mot) 82; → Ø 46, 71.
- \*w → Ø | u — (Chib) 7, 13.
- wu | — V (Arh) 39, 56.
- b (Mot) 26, 84.
- w, u 12, 18, 62, 78.
- \*y → Ø (Chib) 39, 72, 81.
- Ø (Tun) 75, 81b, only.
- i | C(V) — (Kog) 72;
- Ø | V — V 8, 64, 81b.
- Ø | i — V (Arh) 59, 81b.
- iy (Mot) 56, 59.
- i | — (V)C 32, 59, 76; → y 8, 64, 72, 81a.
- \*m → b (Tun, Mot) 32, 49, 75, 76.
- m 29, 69b
- \*n → n | a — e (Tun) 6, 22, 33 (same morpheme); → r 14, 39, 56, 62, 73.
- η | — (gV) (Mot) 63, a speculation to account for the velar feature of the nasal consonant.
- n 37, 53  
Loss of \*n occurs only in special consonant sequences. See above.

#### 2.4.2 *Vowels*

The proto vowel system with five emic tongue positions is reflected in the daughter languages along two different lines, from single vowels or from clusters of two vowels. Clusters originate most commonly from \*VCV plus loss of consonant \*g, \*w, \*y or \*h, and within special environments \*s and \*n. A few cases are results of \*Vy → Vi | — (V)C. The true proto vowel cluster \*VV is affected heavily by loss of one member under conditions of

stress on adjacent syllable and by merger to a single vowel. Only a small amount of evidence remains for reconstructing the original cluster.

Chibcha is the only language pointing to a five vowel system. Its *e* corresponds to *a* in all other languages. Tunebo has (*e*) as phonemic but its source is \**ai*. Kogi has an emic three vowel system, with allophones of [e] and [ai] for (*ai*) and [i] and [ua] for (*ua*). Marocacero, although not phonemicized, suggests a system somewhat parallel to that of Kogi. The Arhuaco transcription has a larger inventory of vowels, but these are non-phonemic. Vinalesa's undefined *e* (a sound between *i* and *e*), possibly of the value *i*, together with *e* seem to result from vowel harmony. Motilón *ə* is a descendant from \**ai* and also a result of vowel harmony. Vowel harmony accounts for Motilón *i* as well.

Vowel harmony operates historically under definable patterns of direction : Chibcha and Tunebo vowel changes are conditioned generally by the following vowel. Vowel changes in the other languages are generally conditioned by the preceding vowel. These patterns do not operate throughout any of the languages, however, and circumstances under which they do operate have not been determined. Therefore, the environments stated apply only to the citations following the statement. Extensive vowel harmony is characteristic of many South American Indian language groups. See Proto Tucanoan, Proto Tupían and Proto Arawakan.

Heavy patterns of vowel loss operate in all the languages under conditioning by stress on adjacent syllables. The vowel \**i* is most commonly affected, but, as in the case of vowel harmony, the patterns do not operate in every situation in each language and are restricted to the examples cited for each rule.

A few examples show metathesis of vowels in adjacent syllables, but factors conditioning this change are not apparent. Motilón dominates the pattern (26, 35b, 41, 73, 82). Kogi attests one example (33).

Vowel nasalization in Kogi (33), Marocacero (53), and Motilón (22, 25) is a result of conditioning by a nasal element in a neighboring morpheme, which may or may not be present in the actual language. See treatment under \**N* near the end of the introduction.

Stress stated in the environments below is that of the particular language. Chibcha stress is hypothesized and not attested in Ortegón's data. Where neither vowel is marked, both are considered unstressed.

Rules for reflex of clusters hold only for the examples cited. Environments are statable for Chibcha and Tunebo, but not for the other languages.

- \**ai* → *i* |  $V_1 \tilde{V}_2 / V_1 V_2$  (Chib) 6, 10, 13, 27, 31, 40, 61, 62, 71. Example 21b shows *a* or *i* in alternate forms.
- *e* |  $V_1 \tilde{V}_2 / V_1 V_2$  (Tun) 15, 21a, 31, 44, 52, 59, 67, 74, 85, 86.
- *ai* (Kog) 15, 21a; 30b, 36, 52, 60, 67, 74, 83, 86.

- *i* (Mar) 10, 31, 40, 47, 61.
- *ai|ay* | V<sub>1</sub>V<sub>2</sub> (Mot) 21a, 40, 43, 59, 71, 83 ; → *ə* V<sub>1</sub>V<sub>2</sub> 38 ;  
*a* in all other cases, accounted for by the loss of \**i*.
- \**ay(a)* → *ə* (Mot) 32, 76 (Same morpheme).
- \**au* → *u* (Chib) 80 (*u* → *o* | — Ca); → *e* 66.
- *u* (Tun) 80
- *au* (Kog) 80
- *a* (Mot) 80 (*a* → *i* | iC —).
- \**ia* → *ɛ* (Arh) 38.  
 → *a* in all other cases, accounted for by the loss of \**i*
- \**ua* → *a* (Chib, Mot) 80.  
 → *ua* (Kog) 80.

All other reconstructions of vowel clusters are reflected as either one or both vowels in the various languages, vowel loss being the major change taken place.

- \**i* → *e* | — Ce (Chib) 10 ; → *a* | — (C)*a* 3, 9, 66, 86 ; → *u* | — Cu 31 ;  
 → Ø | C $\tilde{V}$ (C) — 14, 15, 27, 31, 38, 42, 51, 58, 65, 67, 74 ;  
 → Ø | — (C) $\tilde{V}$  3, 5, 41, 66 ; → Ø |  $\overset{\circ}{a}$  65, 72.
- *a* | — Ca (Tun) 35a ; → *a* | — C(*e* → *a*) 2 ; → *a* | (\**e* → *a*)  
 C — 9 ; → Ø | C $\tilde{V}$ (C) — 6, 10, 36, 40, 47, 48, 51, 60, 62, 63, 71,  
 74 ; → Ø | — (C) $\tilde{V}$  5, 8, 30b, 41, 60, 79 ; → Ø |  $\overset{\circ}{a}$  33, 46.
- *u* | *u*C — (Kog) 53 ; → Ø | C $\tilde{V}$ (C) — 3, 8, 10, 13, 30b, 31, 35b,  
 40, 43, 47, 61, 62, 69b, 71 ; → Ø | — (C) $\tilde{V}$  7, 26, 30b, 59, 79 ;  
 → Ø |  $\overset{\circ}{a}$  46, 65.
- Ø | C $\tilde{V}$ (C) — (Arh) 3, 25, 31, 40, 44, 47, 61, 62, 69b ; → Ø | —  
 (C) $\tilde{V}$  33, 79.
- Ø C $\tilde{V}$ (C) — (Mar) 30b ; → Ø | — (C) $\tilde{V}$  33, 64, 79.
- *ə* | *o*C — (Mot) 42 ; → *i* | (\**wa* → *o*)C — 77 ; → Ø | C $\tilde{V}$ (C) —  
 6, 10, 13, 25, 31, 36, 60, 63, 74, 85, 86 ; → Ø | — (C) $\tilde{V}$  46, 60, 79  
 → *i* (e.g.) 2, 9, 17, 39, 45, 51, 59, 81, 83, 84
- \**e* → Ø | C $\tilde{V}$ (C) — (Chib) 13, 79 ; → *e* (e.g.) 2, 6, 7, 9, 10, 75, 81a.  
 → *i* (Tun) conditioning undetermined 41 ; → Ø | *u* — C 11, 41  
 'head louse'.
- *i* | *u* — (Kog) 41 ; → Ø | *u* — C 11.
- *ɛ* | *i*C — (Arh) 2 ; → *ɛ* | *a*C — 33, 40, 49 (*a* ← \**e*), 50 ; → *i* | *i*  
 C — 39 ; → Ø | *u* — 41.
- *u* | *u*C — (Mot) 35b, 78 ; → Ø | *u* — C 41 ; → Ø | C $\tilde{V}$ (C) — 56.
- *a* (e.g.) 2, 6, 7, 9, 75.
- \**a* → *i* | — Ci (Chib) 29 ; → Ø | C $\tilde{V}$ (C) — 20, 56 ; → Ø | —  $\tilde{V}$  10, 13,  
 27, 40, 47, 59, 61, 62, 71, 72, 74, 85 (See also \**ai*).  
 → Ø | C $\tilde{V}$ (C) — (Tun) 35a, 63.

- $\rightarrow i | iC -$  (Kog) 45, 71 ;  $\rightarrow \emptyset | i - C$  19 ;  $\rightarrow \emptyset | C\bar{V}(C) -$  24, 29, 32, 38, 55, 72, 76 ;  $\rightarrow \emptyset | - V/- (*y \rightarrow i)$  44, 72.  
 $\rightarrow e | - i$  (Arh) 44, 57, 72 ;  $\rightarrow \ddot{e} | uC -$  16, 68 ( $*u \rightarrow o$ ) ;  $\rightarrow \ddot{e} | w -$  39, 56 ;  $\rightarrow u | uC -$  63 ;  $\rightarrow \emptyset | C\bar{V}(C) -$  29, 76 ;  $\rightarrow \emptyset | - \bar{V}$  72.  
 $\rightarrow u | uC -$  (Mar) 53 ;  $\rightarrow i | Ci$  (Mar) 61 (Compare 47) ;  $\rightarrow \emptyset | - \bar{V}$  72.  
 $\rightarrow i | iC -$  (Mot) 1, 80 ;  $\rightarrow \emptyset | iC -$  15 ;  $\rightarrow \emptyset | - Cu$  70 ;  $\rightarrow \emptyset | C\bar{V}(C) -$  16, 37, 53, 63, 75, 76 ;  $\rightarrow \emptyset | - V$  31, 83.  
 $\rightarrow a$  (e.g.) 3, 8, 14, 15, 17, 20, 21, 24, 48, 51, 54, 83.  
 $*u \rightarrow o | aC -$  (Chib) 58 ;  $\rightarrow o \sim u | \# -$  20 ;  $\rightarrow a | - Ca$  53 ;  
 $\rightarrow \emptyset | - a$  80 ;  $\rightarrow \emptyset | - \bar{V}$  75.  
 $\rightarrow o | - Ca$  (Tun) 12, 34 ;  $\rightarrow \emptyset | - \bar{V}$  75.  
 $\rightarrow \emptyset | - \bar{V}$  (Kog) 29, 49, 75.  
 $\rightarrow o | - Ca$  (Arh) 68 ;  $\rightarrow \ddot{e} | aC -$  31 ;  $\rightarrow \emptyset | - \bar{V}$  29, 49, 75.  
 $\rightarrow o | - Ca$  (Mar) 30b ;  $\rightarrow \emptyset | - \bar{V}$  29.  
 $\rightarrow o | - Co$  (Mot) 58 ;  $\rightarrow i | iC -$  53 ;  $\rightarrow o | (*w_a \rightarrow o)C(V)C -$  58 ;  $\rightarrow o | aCC -$  54 ;  $\rightarrow o | - Ca$  16, 34 ;  $\rightarrow \emptyset | CVC -$  16, 35b, 80, 82 ;  $\rightarrow \emptyset | - \bar{V}$  75.  
 $\rightarrow u$  (e.g.) 4, 5, 7, 35b, 63, 64, 70, 73.  
 $*o \rightarrow u | - Cu$  (Chib) 30a ;  $\rightarrow \emptyset | C\bar{V}C -$  69a.  
 $\rightarrow o$  (e.g.) 23a, 42, 84.

Some miscellaneous vowel changes involve the labial element  $*kw$  plus V(V).

- $*w_a \rightarrow \ddot{e} | aC -$  (Arh) 26.  
 $\rightarrow o \rightarrow \emptyset | CV(C)$  (Mot) 5, 69a.  
 $*wia \rightarrow o | - Va$  (Arh) 65.

## 2.5 INDEX OF COGNATE SETS

Those parts of forms in roman type do not figure in the reconstruction.

1. 'abdomen'  $*disa$ : *žiža* (Kog), *niši* (Mot).
2. 'ant'  $*ice$ : *ize* (Chib), *áča* (Tun), *ísa* (Kog), *isë-*, *issë*, *iθë* (Arh).
3. 'arm'  $*bi-kwi/(-de)-(N)-ka$ : *pkuaka* (Chib), *kwička* (Tun), *gú-da* (Kog), *gunégáka* (Arh), *bísa* (Mot). See also 'shoulder'.
4. 'ash'  $*bu-N-$ : *bú-ra* (Tun), *mudi* (Kog), *búnzaga* (Arh).
5. 'bat'  $*ni-su-bi-kwa$ : *supkua* (Chib), *ríku-ra* (Tun), *niuíži* (Kog), *darékbi* 'bird' (Mot), *supa* (Cay, Col).

6. 'beard' \**kai-/(wa-)-(ga)-si-ne*: *kihie* (Chib), *kána-ra* (Tun), *wasá* (Kog), *kagači-* (Mot).
7. 'bird' \**ni-su-we*: *sue*, *hue* (Chib), *rúwasira* (Tun), *nuwá* (Kog), *súži* (Mar).
8. 'black' \*(*p*)*aba-ki-su-ye*: *baksóya* (Tun), *abáksua* (Kog), *baa* (Mot), *paba* (Cay, Col).
9. 'blood' \**ebi*: *eba* (Chib) ← \**ebi-Ca* (Pre Chib), *aba* (Tun), *ábi* (Kog), *aamáy?* (Mar), *paabi-* (Mot).
10. 'bone' \**kai-de*: *kine*, *ken(e)* (Chib), *kára-ra* (Tun), *zada kada* (Kog), *kikila* (Mar), *kara-ra* (Mot).
11. 'breast' \**čue-ta*: *čue* 'breast', *čuči* 'suck' (Chib), *sutá* (Tun), *sumí* (Kog), *tu* (Arh), *tu-* (Mot).
12. 'brush, woods' \*(*bu*)-*wa*: *wa* (Chib), *bówa-ra* (Tun).
13. 'chin' \**kai-de-su-wa*: *kinhua* (Chib), *kahá-ra* (Tun), *wázu-kada* (Kog), *daka* (Mot).
14. 'come' \**na-ki-si-*: *zexikiskua* (Chib), *rawí-* (Tun), *naši* (Kog), *nákan* (Arh), *ki-* (Mot).
15. 'corn' \**a-(ta)-i-ba*: *atiba*, *aba* (Chib), *éba* (Tun), *ábi* (Kog), *?irokba* (Mot).
16. 'ear' \**ku-(su)-ka/-kwa*: *kuhuka* (Chib), *kukahá* (Tun), *kuka* (Kog), *kúkuč* (Arh), *kikwá* (Mar), *kokéi* (Mot).
17. 'earth' \**ka-gi*: *gi* (Chib), *káka* (Tun), *kági* (Kog), *káa* (Arh).
18. 'edge (noun inflection)' \*-*wa*: *xiewa* 'lake', *niwa* 'salt' (assumed because salt deposits are found along the edge of a swamp), *kinhua* 'chin' (Chib); *niwa* 'swamp', *wázu* 'chin' (Kog); *ríwa* 'lake', *ráuwa* 'salt' (Tun).
19. 'eight' \**abia*: *ábia* (Tun), *ábigua* (Kog).
20. 'eye' \**uba-N-(kwa)*: *opkua*, *upkua* (Chib); *uba* (Tun); *úba* (Kog); *úmē* (Arh); *úma* (Mar).
21. 'father' (a) \*(*ha-*)*tai-(kv-)ta*: *teta* (Tun), *hátai* (Kog), *taygda* (Mot); (b) \**pa(-bai)*: *paba*, *pabi* (Chib), *pápa* (Cay, Col). See also 'mother'.
22. 'feather' \**ga-ne-/ka-/da-(si)*: *gaka* (Chib), *ana-rá* (Tun), *gáda* (Kog), *páči* (Mot) ← \**ga-(ne)-si* (Pre Mot).
23. 'fingernail' (a) \**ko-:* *koha* (Chib), *komě* (Arh); (b) \**cu-:* *číka* (Tun), *katsuma* (Kog) ← \**ka-t(a)-su-ma* (Pre Kog).
24. 'fire' \**guka*: *óka* (Tun), *guk-sáí* (Kog).
25. 'firewood' \**kie-di-N*: *kan* (Arh), *káā-* (Mot). See also 'tree'.
26. 'fish' \**wa-di-su-kwa*: *wa* (Chib), *žížú* (Kog), *wáka* (Mar), *wákë* (Arh), *bašiku* (Mot) ← \**wa-(du)-si-kwá*.
27. 'five' \**haisi-:* *hizka* (Chib), *esía* (Tun), *aičíwa* (Kog).
28. 'flat shape (noun inflection)' \*-*ba*: *pkuakeba* 'shoulder' (Chib); *umá* 'skin' (Tun); *ahúba* 'skin', *ahudaba* 'roof', *kukuba* 'shoulder' (Kog).
29. 'flea' \**mua-sa-hi*: *muisa* (Chib) ← \**mua-hi-sa* (Pre Chib), *mášhi* (Kog), *máss* (Arh), *sáze* (Mar), *mú* (Cay, Col).

30. 'flower' (a) \**totu-*: *tutuaba* (Chib), *totúbi* (Mot) ; (b) \**siu-mai-*: *síwa* (Tun), *kádhúmaishi* (Kog), *šoma* (Mar).
31. 'foot' \**kai-si-/(bV)-ča/-tu/-ka*: *kihiča*, *kipča*, *kus* (← \**kai-s(i)-tu* (Pre Chib) (Chib) ; *kes-ká-ra* (Tun) ; *kásá* (Kog) ; *kátté* (Arh) ; *kisá?* (Mar) ; *kixtu-* (Mot).
32. 'four' \**ma-ka-ya*: *bakáya* (Tun), *makainua* (Kog), *bətitika* (Mot), ← \**ma-y(a)-titi-ka* (Pre Mot). *muihika* (Chib) is not cognate. See also 'three'.
33. 'hair' \*-*si-a-ne*: *zie* (Chib), *kʷísana-rá* (Tun), *sāñ* (Kog), *síganë* (Arh), *ša* (Mar).
34. 'hammock' \**bu-kʷa*: *bókʷa* (Tun), *žakuábušai* (Kog), *boo-* (Mot).
35. 'hand' (a) \**ita*: *ita* (Chib), *át-kara* (Tun) ; (b) \**ku-kai-de/(-N)*: *ku-ka-da* (Kog), *gúnë* (Arh), *gú-la* (Mar), *vakdu* (Mot) → \**a-ke-du* (Pre Mot).
36. 'here' \*(*u*)-*sai*: *usá-ra* (Tun), *hái* (Kog), *ʔíreha-* (Mot). See also 'there'.
37. 'I' \**na-sV/(-nV)-ya*: *ása* (Tun), *nas*, *naski* (Kog), *nán* (Arh), *nay* (Mot). ← \**na-ya* (Pre Mot). See also 'thou'.
38. 'jaguar' \**da-bai/-N*: *komba* (Chib), *báiyara* (Tun), *nábi* (Kog), *senkuínamë* (Arh), *daabə-* (Mot).
39. 'lake' \*(*si*)-*di/(-N-)-ye-wa*: *xie-wa* (Chib), *rí-wa* (Tun), *ni-wa* (Kog), *yíwuë* (Arh) ← \*(*di*)-*ye-wa* (Pre Arh). See also 'water'.
40. 'leg' \**kai-si-(ke)-de*: *kihike* (Chib), *kára-ra* (Tun), *káda* (Kog), *kánë-* (Arh), *tsikína* (Mar) ← \**si-kai-de-N* (Pre Mar), *kay-* 'lower leg' (Mot).
41. 'louse' \**kʷe-b(V)-(ha)-die*: *kumne* 'body louse', *kʷe* 'head louse' (Chib) ; *kʷibhara* 'body louse', *kúria* 'head louse' (Tun) ; *kui* (Kog) ; *ku* (Arh) ; *ku-* (Mot).
42. 'lung' \**bosi*: *bóxi* (*bóši?*) (Arh), *bosə* (Mot).
43. 'macaw' \*-*kaida*: *šakáda* (Kog), *kayda-* (Mot).
44. 'man' \**a-čai*: *ča* (Chib) ; *sé-ra* (Tun) ; *ási-gí* (Kog) ; *čeirua* 'man', *če* 'people', *ačana* 'old' (Arh).
45. 'monkey (howler)' \**gʷiba*: *bíba-ra* (Tun), *guibí* (Kog).
46. 'mother' \**ha-bia(-ma)*: *abá* (Tun), *hába* (Kog), *amía* 'wife' (Arh), *vakama* (Mot). See also 'father'.
47. 'mouth' \**kai-si-ka*: *kihika* (Chib), *káhka* (Tun), *kákhhá* (Arh), *kika* (Mar).
48. 'name' \**a-hi-ka*: *hika* (Chib), *áhka* (Tun), *vaa-* (Mot).
49. 'navel' \**mue-*: *mue* (Chib), *máda* (Kog), *manë* (Arh), *bəcidu* (Mot).
50. 'neck' \**ga-de(-N)*: *gada* (Kog), *ganë-* (Arh), *galmana* (Mar).
51. 'new' \**a-bi-sa*: *fihiza* (Chib), *íbsaya* (Tun), *abísa* (Kog), *abíti* (Arh), *bačini* (Mot).
52. 'night' \**cai*: *za* (Chib), *čéka* (Tun), *tuáun-sai* (Kog).
53. 'nose' \**su-ni-ka*: *saka* (Chib) ; *hánu-ká-da* (Kog) ; *misunna*, *misúnë* (Arh) ; *sūkuna* (Mar) ; *nisi* (Mot).
54. 'old' \**saka-du*: *saka* (Chib), *duáibak* (Kog), *sagdo?* (Mot).
55. 'paddle' \*(*ha*)-*ka-tu*: *haktu* (Kog), *katu-* (Mot).

56. 'rain' \**si-di(-N-)wa/-ka-(ye)*: *siu* (Chib) ← \**si-wa* (Pre Chib), *ríwa* (Tun), *ní-ka-da* (Kog), *yewuë* (Arh), *dyikay-* (Mot), *šíwa* (Cay). See also 'water'.
57. 'rainbow' \**tu-kʷa-mai-*: *túkʷa-ra* (Tun), *kumáisa* (Kog), *kuméítē* (Arh), *kokdou* (Mot) ← \**kʷa-k(V)-tu* (Pre Mot).
58. 'river, stream' \*(*wa*)-*tu-kʷa/-ki(-bo)*: *watok*, *wato* (Chib), -*túkua-* (Kog), *itooboki* (Mot).
59. 'root' \**ča/-isi-ya*: *čihiza* (Chib), -*esi?yá* (Tun), *kansía* (Arh), *?ayši* (Mot), ← \**ya-isi*: \**y* → Ø (Pre Mot).
60. 'rope' \**si(si)-dai*: *čistá* (Tun), *kuámadai* (Kog), *sí* (Arh), *šdá-* (Mot).
61. 'saliva' \**kai-si-ka-dia*: *kihiza* (Chib), *káka-dlá* (Kog), *kakħkaría* (Arh), *kikilyá* (Mar). See also 'mouth'.
62. 'salt' \**nai-gu-wa*: *niwa* (Chib), *ráuwa* (Tun), *náku* (Kog), *nágu* (Arh).
63. 'sand' \**u-ba-ni-ta/-sa*: *wanza* (Chib) ← \**u-ba-ni-sa*: \**ub* → *w*, \**i* → Ø (Pre Chib); *úmta* (Tun), *úi* (Kog), *úzu* (Arh), *?uŋda* (Mot) ← \**u-ni-(gV)-ta* (Pre Mot).
64. 'seed' \**sa-ni-yu-da* (?) : *rurá* (Tun), *zída* (Kog), *zayúna* (Arh) ← \**sa-yu-ni-da* (Pre Arh), *žandúna* (Mar). My reconstruction seems not to account for Marocacero ž. I suspect either a change in grammatical order of morphemes or the inclusion of \*-yV following \*sa-.
65. 'seven' \**ku-(subi)-kʷia*: *kuhupkua* (Chib), *kukʷia* (Tun), *kúgua* (Kog), *kóga* (Arh).
66. 'shoulder' \**bi-kʷi-ka-u-ba*: *pkuakeba* (Chib), *kukú-ba* (Kog), *bədoo-* (Mot). See also 'arm'.
67. 'six' \**tai-: ta* (Chib), *téraya* (Tun), *taižuwa* (Kog).
68. 'skin, bark' \**-su-ba(-N)* : *huka* (Chib) : *umá* (*u* not descendant from \*-*su-*) (Tun); *ahúba* 'skin', *kadħúba* 'bark' (Kog); *zómē* (Arh), *?egħu-* (Mot).
69. 'spider' (a) \**so-so-(bV)-kʷa*: *sospkua* (Chib), *soksoo-* (Mot); (b) \**madi-kʷa*: *mádkua* 'spider', *madimúnda* 'spider monkey' (Kog); *mánkuë* (Arh).
70. 'star' \*(*tu-ta-*)*u-ba/(-kʷa)*: *uba* (Tun), *úkʷa* (Mar), *totubi-* (Mot) ← \**ta-tu-bV* (Pre Mot).
71. 'stone' \**hai-ka*: *hika* (Chib), *hági* (Kog), *áka* (Tun), *?ay-* (Mot).
72. 'sun, day' \**sa-yu-ia*: *sua* (Chib); *hiúi* (Kog); *džui* ← \**s(a)-yú-i(a)* 'sun', *yuía* ← \**yu-íá* 'day', *séia* ← \**sá-ia* 'last night', *say* ← \**sa-y(u)* 'yesterday' (Arh and Pre Arh); *džwi* (Mar).
73. 'tail' \**du-ki*: *rustá-* (Tun), *núgi* (Kog), *?ariku-* (Mot).
74. 'there' \**ai-sai*: *asi* (Chib), *ésa-ra* (Tun), *hái* (Kog), *?orħha-* (Mot). See also 'here'.
75. 'thou' \**mue-ya-(nV)-*: *mue*, *ma* (Chib); *bá?a* (Tun); *ma*, *manki* (Kog); *ma* (Arh); *bai* (Mot).
76. 'three' \**ma-ya-kʷa/-ka*: *báya* (Tun), *máigua* (Kog), *máikana* (Arh), *bətitiko-* (Mot). *mika* (Chib) is not cognate. See also 'four'.
77. 'tongue' \**bi-kʷa*: *pkua* (Chib), *kúa* (Tun), *koríganë* (Arh), *kongíla* (Mar),

*kobi-* (Mot). *bi* 'blade' or some variant is in widespread usage in Amerindian languages. See Proto Tucanoan and Proto Arawakan.

78. 'tooth' \*du-/(wa-)de: *rú̑ra* (Tun), *wá-da* (Kog), *duduú-* (Mot).
79. 'tree, stick' \*kie-di-(N): *ki*, *kie*, *ke* (Chib); *kárukwa* (Tun); *kádi* (Kog); *kan* (Arh); *kan* (Mar); *kaa-* 'tree', *katu* 'stick' (Mot). See also 'firewood'.
80. 'two' \*bau-sua: *boza* (Chib), *bukáya* (Tun), *máusua* (Kog), *pisami* (Mot) ← \*i-mau-sua: \*au/\*ua → a, a → i | iC —, \*i-sa-mi.
81. 'water, liquid' (a) \*si-di-(N)-ye: *sie* (Chib), *rí̑ya* (Tun), *ni* (Kog), *ye* (Arh), *šimə* (Mot); (b) \*di-ye: *suta-rȋa* 'milk' (Tun); *káka-día* 'saliva', *aibídia* 'corn drink' (Kog); *kakhkaría* 'saliva' (Arh), *kikilyá* 'saliva' (Mar). The two forms are in contrast but undoubtedly have the same origin in Pre Chibchan. I consider the (b) set of the earliest origin with loss of \*y in each language. Tunebo with intercalated ɿ loses the final a before another consonant as shown in *bá̑a* 'thou' (75) versus *baɿtota* 'thy bow'. In order to make a distinction between liquid in general and water, a later -ya ← \*ye suffix on *rȋa* resulted in *rȋya* of set (a). Also a more recent development is the addition of a morpheme containing a nasal element, reconstructed \*N, as attested in Kogi, and possibly Motilón.
82. 'white' \*ha-bu-(nV)-si: *abúči* (Kog), *búnsi* (Arh), *bahči-* (Mot) ← \*bu-ha-si: \*a — u; \*u → Ø | CVC — ; \*s → č | — i (Pre Mot).
83. 'who' \*(a)-bai-N: *mái* (Kog); *amay*, *pami* (Mot).
84. 'wife' \*wi-: *wisa*, *wi* (Chib), *wíya* (Tun), *bio-* (Mot).
85. 'wind' \*sai-: *fiwa* (Chib), *séroa* (Tun), *sabə* (Mot).
86. 'wing' \*ai-si-gi-ka-(ta): *gaka* (Chib), *ékta-ra* (Tun), \*ai-ka-ta (Pre Tun), *aigi káda* (Kog) See 'bone', *ači* (Mot).
87. 'worm' \*dV-si-ma: *rimya* (Tun), *ží* (Kog), *si* (Arh), *paižrəba* (Mot).

### 3. PROTO MAYAN

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#### 3.1 INTRODUCTION

The Proto Mayan reconstructions presented here are based on linguistic evidence from twenty-one languages. The data on Guatemalan languages are taken from *Languages of Guatemala*, Marvin K. Mayers (ed.), (1966); those on Mexican languages as follows: Marianna C. Slocum and Florence Gerdel, *Vocabulario Tzeltal de Bachajón* (1965); Marianna C. Slocum, *Vocabulario Tzeltal-Español (Oxchuc dialect)* (1953); Colin Delgaty, *Vocabulario Tzotzil de San Andres* (1964); Ray Larson, *Vocabulario Huasteco* (1955). Chol and Chontal represent more fragmentary information gleaned from various sources; the Chontal, primarily from Kathryn C. Keller, *The Phonemes of Chontal (Mayan)* (1959), and Kathryn C. Keller, *The Chontal (Mayan) Numeral System* (1955); the Chol and Lacandon, from field notes offered informally by various colleagues; Tojolabal data are from field notes taken by Julia Supple and myself in Jotaná (Comitán), Chiapas, Mexico, during the period 1950—57. The material I have at hand is limited. The remainder of the material is that which Ronald Olson has collected in his article, "Mayan Affinities with Chipaya of Bolivia", I, II, *IJAL* (1964, 1965).

The purpose of this paper is to provide Proto Mayan reconstructions for comparison with other Amerindian languages in this volume, expanding the list begun by Olson. It has not been my purpose to establish another set of proto phonemes. Rather I have followed Olson, modifying his set to some degree by stating conditioning required by further data not utilized by him. The Proto Mayan phonemes and their reflexes as set up by Olson<sup>1</sup> are as follows:

<sup>1</sup> I have used the abbreviations as used by Olson as follows: A — Achí, Ag — Aguateco, C — Cakchiquel, Ch — Chuj, Chl — Chol, Chr — Chortí, Cp — Chipaya, H — Haustec, I — Ixil, J — Jacalteco, K — Kekchí, M — Maya of Yucatan, Mm — Mam, Mop — Mopan-Maya, P — Pocomchi, Pm — Pocomam, PMy — Proto Mayan, PMy-Cp — Proto Mayan Chipaya, Tz — Tzeltal, Tzo — Tzotzil.

PMY	*p	*b	*t̥	*t̥ <sup>p</sup>	*t	*t̥ <sup>p</sup>	*c	*c <sup>p</sup>		
A	p	b	č, š	č <sup>p</sup>	t	t <sup>p</sup>	c	c <sup>p</sup>		
Ag	p	b	c	c <sup>p</sup>	c	č <sup>p</sup>	c	c <sup>p</sup>		
C	p	b	č	č <sup>p</sup>	t		c	c <sup>p</sup>		
Ch	p	b	t	t <sup>p</sup>	t, č		c	c <sup>p</sup>		
Chl	p	b	t̥	t̥ <sup>p</sup>			c	c <sup>p</sup>		
Chr	p	b	t	t <sup>p</sup>	t, č	t <sup>p</sup> , č <sup>p</sup>	c			
H	p	b	t	t <sup>p</sup>	t	t <sup>p</sup>	θ, t	c, c <sup>p</sup>		
I	p	b	c	c <sup>p</sup>	č	č <sup>p</sup>	c	c <sup>p</sup> , č		
J	p	b	t	t <sup>p</sup>	t, č		c	c <sup>p</sup>		
K	p	b	č	č <sup>p</sup>	t	t <sup>p</sup>	c, s	c <sup>p</sup>		
M	p	b	č	č <sup>p</sup> , t <sup>p</sup>	č	č <sup>p</sup>	c, č, t	c <sup>p</sup> , č <sup>p</sup>		
Mm	p	b	c, t	c <sup>p</sup>	t, č		c	c <sup>p</sup>		
Mop	p	b					c	c <sup>p</sup>		
P	p	b	č	č <sup>p</sup>	t	t <sup>p</sup>	c, s	c <sup>p</sup>		
Pm	p	b	č	č <sup>p</sup>	t	t <sup>p</sup>	c	c <sup>p</sup>		
Tz	p	b	t	t <sup>p</sup>	t	t <sup>p</sup>	c, s	c <sup>p</sup>		
Q	p	b	č	č <sup>p</sup>	t	t <sup>p</sup>	c	c <sup>p</sup>		
PMY	*č	*č <sup>p</sup>	*č̥	*č̥ <sup>p</sup>	*k̥	*k̥ <sup>p</sup>	*k	*k̥ <sup>p</sup>		
A	c	c <sup>p</sup>	č	c <sup>p</sup>	k	k <sup>p</sup>	k	k <sup>p</sup>		
Ag	č, č̥	č <sup>p</sup>	č, č̥	č <sup>p</sup> , č <sup>p</sup>	k	k <sup>p</sup> , š	k	k <sup>p</sup> , k <sup>p</sup>		
C	c	c <sup>p</sup>	č	č <sup>p</sup>	k	k <sup>p</sup>	k	k <sup>p</sup> , ʃ, k <sup>p</sup>		
Ch	c	c <sup>p</sup>	č	č <sup>p</sup>	č	č, c <sup>p</sup>	č	č <sup>p</sup>		
Chl	c	c <sup>p</sup>	č	č <sup>p</sup>	č	č, c <sup>p</sup>	k	k <sup>p</sup>		
Chr	c	c <sup>p</sup>	č	č <sup>p</sup> , t <sup>p</sup>	č	č, č <sup>p</sup>	č	č <sup>p</sup>		
H	θ	č, t <sup>p</sup> , c <sup>p</sup>	č, č̥	č <sup>p</sup> , c <sup>p</sup>	c	c <sup>p</sup>	k	k <sup>p</sup>		
I	č, č̥	č <sup>p</sup>	c	č <sup>p</sup> , č <sup>p</sup>	k, č	k <sup>p</sup>	k	k <sup>p</sup>		
J	č, č̥	č <sup>p</sup>	č, č̥	č <sup>p</sup> , č <sup>p</sup>	k	k <sup>p</sup> , š	č, k	k <sup>p</sup> , k <sup>p</sup> , ʃ		
K	c	c <sup>p</sup>	č	č <sup>p</sup>	k		k	k <sup>p</sup> , k <sup>p</sup>		
M	č	č <sup>p</sup> , c <sup>p</sup>	č	č <sup>p</sup>	k	k <sup>p</sup> , š	k	k <sup>p</sup> , ʃ		
Mm	č, č̥	č <sup>p</sup>	č, č̥	č <sup>p</sup> , č <sup>p</sup>	k		č, k	k <sup>p</sup>		
Mop										
P	c	c <sup>p</sup>	č	č <sup>p</sup>	k	k <sup>p</sup>	k	k <sup>p</sup>		
Pm	c	c <sup>p</sup>	č	č <sup>p</sup>	k	k <sup>p</sup>	k	k <sup>p</sup>		
Tz	c	c <sup>p</sup>	č	č <sup>p</sup>	č	č, č <sup>p</sup>	k	k <sup>p</sup>		
Q	c	c <sup>p</sup>	č	č <sup>p</sup>	k	k <sup>p</sup>	k	k <sup>p</sup>		
PMY	*s	*š	*š̥	*h	*h <sup>w</sup>	*x	*x <sup>w</sup>	*ρ	*m	*n
A	s, š	š	š̥	h	w	h	w	ρ	m	n
Ag	s	š	š̥, š	h	h	h	h	ρ	m	n
C	s, š	š	š̥, s	h	w	h	w	ρ	m, b	n

Ch	s	š		h	h	h	h	θ	m	n
Chl	s	š	š	h	h	h	h	θ	m	n
Chr	s	š			h	h	h	θ	m	n
H	θ	θ/š	š	h	w	h	w	θ	m, w	n, y
I	s	š	š	h	w	h	w	θ	m	n, l
J	s	š, š	š, š, s	h	h	x	x	θ	m	n
K	s	š	š	h	w	x	w	θ	m	n
M	s	š	š	h	h	h	h	θ	m, b	n
Mm	s, š	š, š, s	š	h	h, h <sup>w</sup>	h	h	θ	m	n, l
Mop	s	š		h				θ	m	n
P	s, š	š	š	h	h	x	x	θ	m, n, p	n, l
Pm	s	š	š	h	h	x	x	θ	m, n	n
Tz	s	š, s	š	h	h	h	h	θ	m	n
Q	s, š	š	š	h	w	h	w	θ	m	n, l
PMY	*η	*l	*r	*w	*y	*i	*e	*a	*o	*u
A	h	l	r	w	y	i	e, i	a	o	u
Ag	l	č	w	y	i, u	e	a	o	u	
C	h	l	r	w, m	y	i, u	e, i	a	o	u
Ch	η	l, r	y	w	y	i	e	a	o	u
Chl	l	y	w	y	i, e	e	a	o	u	
Chr	n	r	y	w	y	i	e	a	o	u
H	h	l	y	w, Ø	y	i, e	e	a	o, u	u
I	h	l	č	w	y	i	e	a	o	u
J	η	l	y	w	y	i, e	e	a	o	u
K	x	l	r	w	y	i	e	a	o	u
M		l		w	y	i, u	e	a	o, u	u
Mm	h	l	č	w	y	i	e	a	o	u
Mop	n, h	l	y	w	y	i	e	a	o	u
P	x	l, r	r	w, m	y	i, e	e, i	a	o	u
Pm	x	l	r	w	y	i, e	e, i	a	o	u
Tz	n	l, r	y	w, b	y	i	e	a	o	u
Q	h	l	r	w	y	i	e, i	a	o	u

I add the following reflexes:<sup>2</sup>

PMY	*p	*p <sup>θ</sup>	*b	*f	*f <sup>θ</sup>	*t	*t <sup>θ</sup>	*c	*c <sup>θ</sup>	*č
Chon	p		b	č		t		c <sup>θ</sup>	c	
Lac	p		b	t		č	t <sup>θ</sup>	c	č	

<sup>2</sup> In addition I have used the following abbreviations for the languages in which I have added reflexes: Chon — Chontal of Tabasco (Mayan), Lac — Lacandon, Toj — Tojolabal.

Toj	<i>p</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>t<sup>p</sup></i>	<i>t</i>	<i>t<sup>p</sup></i>	<i>c</i>	<i>c<sup>p</sup></i>	<i>č</i>
Tzo	<i>p</i>	<i>p<sup>p</sup></i>	<i>b</i>	<i>t</i>	<i>t<sup>p</sup></i>	<i>t</i>	<i>t<sup>p</sup></i>	<i>c</i>	<i>c<sup>p</sup></i>	<i>č</i>
Tz		<i>p<sup>p</sup></i>								
Chl		<i>b</i>								
PMY	*č <sup>1</sup>	*č <sup>p</sup>	*č	*č <sup>p</sup>	*k	*k <sup>p</sup>	*k	*k <sup>p</sup>	*k	*k <sup>p</sup>
Chon		<i>c<sup>p</sup></i>	<i>č</i>	<i>č</i>	<i>č, k</i>	<i>č</i>	<i>k</i>	<i>k<sup>p</sup></i>	<i>k</i>	<i>k<sup>p</sup></i>
Lac				<i>k<sup>p</sup></i>	<i>k</i>	<i>k<sup>p</sup></i>	<i>k</i>	<i>k<sup>p</sup></i>	<i>k</i>	<i>k<sup>p</sup></i>
Toj	č	<i>c<sup>p</sup></i>	č	č <sup>p</sup>	č	č <sup>p</sup>	č	č <sup>p</sup>	č	č <sup>p</sup> /p
Tzo	č	<i>c</i>	č	č <sup>p</sup>	č	č <sup>p</sup>	<i>k</i>	<i>k<sup>p</sup></i>	<i>k</i>	<i>k<sup>p</sup></i>
PMY	*s	*s	*š	*š	*h	*x	*m	*n	*l	
Chon	s	s	š	š	h	h	m	n	l	
Lac	s	č	š	š	h	h	m	n	l	
Toj	s	s	š	š	h	h	m	n	l	
Tzo	s	s	š	š	h	h	m	n	l	
PMY	*r	*w	*y	*i	*e	*a	*o	*u		
Chon	y			i	e	a, ə	o	u		
Lac	y	w		i	e	a, ʌ	o	u		
Toj	y	w	y	i	e	a	o	u		
Tzo	y	w	y	i	e, i	a, o	o	u		

The problem of long vowels (see Olson) has not been solved. My reconstructions show \*V<sub>1</sub>(V<sub>1</sub>) where an unexplained long vowel occurs in any of the languages. The following is a tentative solution to some of the other problems with regard to vowel reflexes :

\*CV<sub>1</sub>      <sup>2</sup>C (monomorphemic) → CV<sub>1</sub> <sup>2</sup>V<sub>1</sub>C (Toj, Chr, Lac, Mop); CV<sub>1</sub> <sup>2</sup>C (Mm, Ag, Ch, I); CV<sub>1</sub>C 51

\*a → ə | r- (Chon); a (Chon) 51

\*i → u | w- (Ag); i (Ag) 56

Certain variations of vowel reflexes in the data included in this paper have not been covered by Olson's study. The determination of rules of conditioning would require more information regarding the particular languages involved than is presently available, and would also result in a study of much greater scope than is warranted by the purpose of this paper. I have therefore allowed without further comment variations between *i* and *e*, *a* and *e*, *a* and *o*, *o* and *u*. See Olson regarding reconstruction of a sixth vowel. Vowel loss is frequent. The conditions under which it occurs have not been explained.

Olson shows *t* as the source of Chol *t* which is probably phonetically *t̪y* but written phonemically *t* in most of the material to which I have access.

There is evidence of attrition of initial and final consonants, particularly *h*.

It may be necessary to add other protophonemes when further data are considered. The following covers some of the problems not treated by Olson with regard to consonant reflexes.

\**r* in my data has the reflex *y* root final in I as contrasted to the *č* cited by Olson. I find *č* only in root initial position, but due to lack of data have no conclusive proof. I also find *y* as the reflex root final for Ag in contrast to *č* root initial. See sets 42 'fish' and 51 'green'.

Discrepancies between *h* and *x* ← PMy \**x* in Q, Ag, and A are probably due to differences in transcription. In some cases the interpretation of orthographic symbols *h* and *j* has been uncertain.

\**x* has the reflex *x* root medial or final as attested in sets 21, 33, 34, 85 in Q, A, Ch, C, Mm, Ag. This is in contrast to the reflex *h* as listed by Olson in these languages.

The PMy \**č*<sup>1</sup> is postulated to cover the morpheme PMy \**č*<sup>1</sup>*u*<sup>2</sup> which is found in sets 15 'breast' and 80 'nurse'. The reflexes differ from Olson's PMy *č*, which is likewise attested by only one morpheme.

In J,I find the reflex *k* root final for *k*<sup>3</sup>; note that Olson gives reflex *s* in this position. I find *č* as a reflex for *k* in J (see set 34 'deer'). This is in contrast to *k* as stated by Olson.

For \**k*<sup>3</sup> Olson gives *c*<sup>3</sup>, probably a typographical error, as a reflex in Tzeltal where I find *č*<sup>3</sup>. See Olson, set 100. Other reflexes are as follows:

- \**b* → *w* | # - (Pm, J) ; Ø | -*h* (Chr) ; *b* 74, 83, 88, 87
- \**ts*<sup>3</sup> → *ts* | V-V (Tzo, Chr) ; *ts?* 47
- \**k* → *č* | . . . *y* (I) ; *k*<sup>3</sup> | . . . *k*<sup>3</sup> (A, Q, C) ; *č* | *x* . . . (J) ; *k* (J) 34, 42, 79
- \**k*<sup>3</sup> → *k*<sup>3</sup>/*p* | *u*- (Toj) ; *č*<sup>3</sup> (Toj) 35 ;
- \**k* → *k*<sup>3</sup> | *h*- . . . (Tzo) ; *k* 82
- \**k*<sup>3</sup> → *p* | *h*- (Toj, C, Q) ; *k* | *h*- (J) 46
- \**p* → *h* | -*k* (Toj) ; Ø | -*b* (Toj, Tzo, Mm, Ag, J, I) ; Ø | *i*-/*a*- (A) ; *p* 53, 90, 111
- \**n* → *m* | *b*- (Chl) ; *n* 106
- \**h* → Ø | -C/-# (A, Tzo) ; Ø | -*k*<sup>3</sup> (Toj, Tz, Tzo, Chl, J, K, A, I, Ch) 14, 46, 90, 103
- \**y* → Ø | -*el* (Tzo) ; *y* Tzo 54
- \**x* → Ø | V-V (Chr) 85
- \**w* → *b* | *i*- (Tzo, C) ; *w* (Tzo, C) 40
- \**č* → *č*<sup>3</sup> | . . . *k*<sup>3</sup> (Tz, Tzo, Chl, Chr) ; *k* | . . . *k*<sup>3</sup> (Q, A, P, C) ; *k*<sup>3</sup> | . . . *k*<sup>3</sup> (Lac, Mop) 118
- \**s* → *h* | -*y* (Chol) 51

## 3.2 COGNATE SETS

1. 'abdomen' PMy \*čouht: -čouht (Tz), -čout (Tzo).
2. 'above' PMy \*t/y-eba<sup>3</sup>: ebāl (H), yiboay (J), yibao (Ch).
3. 'achiote' PMy \*hoooš: hoooš (Toj), hoooš (Tz), hoooš (Tzo).
4. 'armadillo' PMy \*h-ib-oy/ač: iboy (Toj), hoib (Tz), ib (Tzo), ibooy (K), ibooy (Q), ibooy (Ag), ibooy (A), iboač (Chr), ibooy (Pm), ibooy (P), ib<sup>3</sup> (J), ibooy (I), iboač (Ch).
5. 'at' PMy \*kV: te (Toj), ta (Tz), ti (H), če (Q), či (A).
6. 'back' PMy \*-pat: -pat (Toj), -pat (Tz), -patil (Tzo).
7. 'banana' PMy \*haoas: haoas 'mamey, zapote' (Toj), haoas 'mamey' (Tz), haoas 'banana' (Chl), haoas 'banana' (Chon), haoas 'mamey' (Tzo).
8. 'basket' PMy \*mooč: mooč (Toj), moč (Tz), moč (Tzo).
9. 'bat' PMy \*so-wa-ts<sup>3</sup>: sots<sup>3</sup> (Toj), sots<sup>3</sup> (Tz), sots<sup>3</sup> (Tzo), θut<sup>3</sup> (H), sots<sup>3</sup> (K), so-ts<sup>3</sup> (Mm), sots<sup>3</sup> (Q), sots<sup>3</sup> (Ag), sots<sup>3</sup> (A), suts (Chr), suwats<sup>3</sup> (Pm), sots<sup>3</sup> (J), sots<sup>3</sup> (Ch), sots<sup>3</sup> (C).

Note t<sup>3</sup> in H. Olson does not mention the variant reflexes of PMy \*ts<sup>3</sup> for H.

10. 'be' PMy \*ay: ay (Toj), ay (Tz).
11. 'bee' PMy \*sunul: sunul (Tz), sunul (Tzo) 'beehive'.
12. 'big' PMy \*muk<sup>3</sup>: muk<sup>3</sup> (Tz), muk<sup>3</sup> (Tzo).
13. 'bite' PMy \*tio-: tioel (Tz), tioel (Tzo), ti<sup>3</sup> (K), ti<sup>3</sup> (Q)
14. 'blow' PMy-Cp \*\*phuh-, PMy \*phu-: huh (Toj), phuhos (Cp), hubel (Tzo), hučayal (H).
15. 'breast' (woman's) PMy \*ču<sup>3</sup>-: -ču<sup>3</sup> (Toj), -ču<sup>3</sup> (Tz), čuoul (Tzo), čučul 'to nurse' (H), tu<sup>3</sup> (K), tu<sup>3</sup> (Q), tsoum (A), uču (Chr), čuč (P), čou (I), tsoum (C).
16. 'brother-in-law' PMy \*bal-uč/ol: baluč (Toj), bal (Tz), bolol (Tzo).
17. 'burn' PMy \*čik<sup>3</sup>-Vl: čikoel (Tz), čikoel (Tzo), čikāl (H).
- Notice that H has reflex k which does not correspond to the reflex listed by Olson, but does correspond to the example recorded in his set 97: "PMy \*sik<sup>3</sup>/šik<sup>3</sup>/šik<sup>3</sup> ... H šek(lek) 'leaf'".
18. 'butterfly' PMy \*pehpem/n: pehpen (Toj), pehpen (Tz), pepen (Tzo), pe·pem (K), pehpem (Chr), pehpem (P).
19. 'buzzard' PMy \*ahaous-Vh: useh (Toj), ahaous (Tz), usih (Chr), useh (Ch).
20. 'call' PMy \*pa (a)y: paoy (Toj), pay (Chl).
21. 'chief, lord, owner' PMy \*axa-wa-l/w: ahwal, waw (Toj), -ahwal- (Tz), ahral- (Tzo), axaw (Q), waw (Ag), waxaw (A), waxal (Ch), waxaw (C).
- The change from w to r ← \*l in Tzo is analogous to the optional substitution of l for the final w.
22. 'child' (of man) PMy \*ničoan: ničoan (Tz), ničoan-(unin) (J).
23. 'child' (of man) PMy \*ni<sup>3</sup>-(al): ni<sup>3</sup> 'child' (Ag), ni<sup>3</sup>al 'grandchild' (Toj).

24. 'child' (woman's) PMy \**ak<sup>2</sup>-(w)al-Vl/uč*: *alal* (Toj), *aluč* (Tz), *olol* (Tzo), *alal* (Chl), *al* (K), *k<sup>2</sup>wa<sup>2</sup>l* 'boy' (Mm), *ak<sup>2</sup>al* (Q), *ak<sup>2</sup>al* (A), *ak<sup>2</sup>wal* (C).
25. 'clouds' PMy \**su(u)ts<sup>2</sup>*: *suts<sup>2</sup>* (Q), *suts<sup>2</sup>* (A) (*ko<sup>2</sup>*) *suts<sup>2</sup>* (Pm), *su-ts<sup>2</sup>* (P), *suts<sup>2</sup>* (I), *suts<sup>2</sup>* (C).
26. 'cold' PMy \**sik*: *sik* (Tz), *sik* (Tzo), *sik* (Ch).
27. 'come' PMy \**ta(a)l-el/k*: *tal* (Tz), *tal-el* (Tzo), *čale* (K), *čale* (Pm).
28. 'corn' PMy \**iši<sup>2</sup>im*: *išim* (Toj), *išim* (Tz), *išim* (Tzo), *išim* (Chl), *iθi<sup>2</sup>o* (H), *išim* (Q), *išim* (A), *išim* (J), *iši<sup>2</sup>m* (I), *išim* (Chon), *išim* (C), *iši<sup>2</sup>im* (Mop).
29. 'correct' PMy \**lek*: *lek* (Toj), *lek* (Tz), *lek* (Tzo).
30. 'cough' PMy \**ohob-al*: *ohob* (Toj), *ohbal* (Tz), *obal* (Tzo).
31. 'cut, split' PMy \*-*t<sup>2</sup>os*-(*el*): *t<sup>2</sup>os* 'cut' (Toj), *t<sup>2</sup>osel* 'split' (Tz), *t<sup>2</sup>ošel* (Tzo).
32. 'cut' PMy \**tsuk<sup>2</sup>*: *tsos<sup>2</sup>* (J), *tsok<sup>2</sup>* (I), *tsuk<sup>2</sup>w* (Ch).
33. 'day' PMy \**k<sup>2</sup>i-x/č(a)*: *k<sup>2</sup>iča* (H), *k<sup>2</sup>i-x* (Mm), *ix* (A), *k<sup>2</sup>ix* (Q), *k<sup>2</sup>ix* (P), *k<sup>2</sup>ix* (Pm), *k<sup>2</sup>i* (I), *k<sup>2</sup>ih* (C), *k<sup>2</sup>ex* (Ag).
34. 'deer' PMy \**kix*: *čeh* (Toj), *čih* (Tz), *kex* (K), *kiex* (Q), *kex* (A), *kiex* (Pm), *keh* (P), *(sax)če* (J), *če* (I), *(kultkil)čex* (Ch).
35. 'drink' PMy \**uk<sup>2</sup>*: *uk<sup>2</sup>/w<sup>2</sup>* (Toj), *uč<sup>2</sup>-* (Tz), *uč<sup>2</sup>-* (Tzo), *uts<sup>2</sup>* (H), *uk<sup>2</sup>* (K), *uk<sup>2</sup>* (Pm), *uk<sup>2</sup>* (P), *uk* (J), *uk<sup>2</sup>a* (I). Ch has *ukx* 'drink' which does not correspond to reflex established for *k<sup>2</sup>* by Olson.
37. 'extinguish' PMy \**tup<sup>2</sup>*: *tup* (Toj), *tup<sup>2</sup>* (B-TZ), *tup<sup>2</sup>* (Tzo).
38. 'face' PMy \**wuč*: *wuč* (Chl), *wuts* (Ag).
39. 'father' PMy \**tat*: *tat* (Toj), *tat* (Tz), *totil* (Tzo), *tata* (H), *tat* (Q).
40. 'fear' PMy \**s/ši-wi<sup>2</sup>*: *šiw* (Toj), *šiw* (Tz), *sibtes* (Tzo), *čišiw* (*nax*) (J), *šiwi* (Ch), *šib<sup>2</sup>ih* (*ri<sup>2</sup>*) (C).
42. 'fish' PMy \**kar*: *čay* (Toj), *čay* (Tz), *čoy* (Tzo), *kar* (K), *kär* (Q), *käy* (Ag), *kar* (A), *čay* (Chr), *kar* (Pm), *kar* (P), *kay* (J), *čay* (I), *kär* (C), *kiy* (Mop). See note.
43. 'fly' (vb) PMy \**wihl-el*: *wihlel* (Tz), *wilel* (Tzo).
44. 'forehead' PMy \**palaŋ*: *pläx* (Ag), *palaŋ* (*nax*) (J), *pala* (I).
45. 'fruit' PMy \**lo<sup>2</sup>b-: lobal* (Toj), 'banana', *lo<sup>2</sup>bal* 'banana' (Tz), *lobol* 'banana' (Tzo), *lob<sup>2</sup>x* 'fruit' (Mm), *lob<sup>2</sup>ax* 'fruit' (Ag), *lob<sup>2</sup>al* (J), *lob<sup>2</sup>ets* (I).
46. 'give, put, leave' PMy \*-*ahk<sup>2</sup>-*: *a<sup>2</sup>-* (Toj), *ak<sup>2</sup>-* (Tz), *ak<sup>2</sup>-* (Tzo), *ak<sup>2</sup>-* (Chl), *ya<sup>2</sup>ik* (Q), *ahk<sup>2</sup>* (Chr), *ak* (J), *ak<sup>2</sup>* (I), *ak<sup>2</sup>* (Ch), *ya<sup>2</sup>* (C).
- 47.. 'good' PMy \**uts/ts<sup>2</sup>-*: *uts<sup>2</sup>* (Tz), *utsilal* (Tzo), *uts<sup>2</sup>at* (Chl), *uts* (Q), *uts* (A), *imb<sup>2</sup>utsop* (Chr), *uts<sup>2</sup>* (C).
48. 'gourd (small)' PMy \**tsu*: *tsu* (Toj), *tsu* (Tz), *tsu* (J).
49. 'gourd' PMy \**tsima*: *tsima* (Toj), *tsima* (Tz), *tima<sup>2</sup>* (H).
50. 'grasp' PMy \*-*čuk*: *čuk* 'to tie up' (Toj), *čuk* 'to jail, to tie up' (Tz), *čuk* 'to grasp' (Chl).
51. 'green' PMy \**ra<sup>2</sup>š-*: *ya<sup>2</sup>aš* (Toj), *yaš* (Tz), *yoš* (Tzo), *yahyaš* (Chl), *yašu* (H), *raši* (K), *rāš* (Q), *raš* (A), *yašuš* (Chr), *raš* (Pm), *raš* (P), *yaš* (J), *ya<sup>2</sup>aš* (Lac), *ya<sup>2</sup>aš* (Mop), *yaš* (Ch), *yoš* (Chon), *rāš* (C), *ča<sup>2</sup>š* (Mm), *ča<sup>2</sup>š* (I), *ča<sup>2</sup>š* (Ag).

52. 'hair' PMy \**tsots-*: *-tsots-* (Toj), *tsotsel* (Tz), *tsots* (Tzo), *tsuts* (Chr), *tso<sup>3</sup>-otsel* (Mop).  
The glottal stop in Mop is probably a feature of Mop reduplication.
53. 'hair, head' PMy \**wi<sup>3</sup>*: *wi<sup>3</sup>* (Q), *wi<sup>3</sup>* (A), *wi<sup>3</sup>* 'head' (Ag), *wi<sup>3</sup>* 'head' (J), *wi<sup>3</sup>* 'head' (I), *wi<sup>3</sup>* 'head' (C).
54. 'hear' PMy \*-*a<sup>3</sup>i(y)-*: *(la) ya<sup>3</sup>iy* 'he heard' (Tz), *a<sup>3</sup>iel* (Tzo).
55. 'here' PMy \**waral*: *waral* (Q), *waral* (A).
56. 'hill, mountain' PMy \**wits*: *wits* (Toj), *wits* (Tz), *wits* (Tzo), *wits* (Mm), *wuts* (Ag), *witsir* (Chr), *wits* (J), *wits* (I), *wits* (Ch).
57. 'his' PMy \**y- ~ s-*: *y-* preceding vowel initial, *s-* preceding consonant initial (Tz, Tzo, Toj).
58. 'hit' PMy \**mah/k<sup>3</sup>/k<sup>3</sup>*: *mak<sup>3</sup>* (Toj), *mah* (Tz), *mah* (Tzo), *mak<sup>3</sup>a* (Ch).
59. 'hot' PMy \**k<sup>3</sup>išin*: *k<sup>3</sup>išin* (Toj), *k<sup>3</sup>išin* (Tz), *k<sup>3</sup>išin* (Tzo).
60. 'house' PMy \**na-*: *-nah/jna<sup>3</sup>its* (Toj), *na* (Tz), *na* (Tzo), *na* (Q), *nä* (J).
61. 'house' PMy \**a/ot-*: *otot* (Chl), *ata* (H), *otot* (Chon).
62. 'hurt' PMy \**k<sup>3</sup>uš*: *k<sup>3</sup>uš* (Tz), *k<sup>3</sup>uš* (Tzo), *k<sup>3</sup>uš* (Chon).
63. 'I' PMy \**h(o<sup>3</sup>)/y-in-an*: *ho<sup>3</sup>on* (Tz), *ho<sup>3</sup>on* (Tzo), *nanä<sup>3</sup>* (H), *in* (K), (Q), (Ag), (I), (Ch), *en* (Chr), *a-yine* (M), *yin* (A), (C), *haninan* (J).
64. 'inside' PMy \**yoh/t-*: *yoh* (Toj), *yut* (Tz), *yutil* (Tzo).
65. 'kiss' PMy \**(ts<sup>3</sup>)uhts<sup>3</sup>-ub/an*: *-uhts<sup>3</sup>-* (Toj), *-uhts<sup>3</sup>* (Tz), *ts<sup>3</sup>uts<sup>3</sup>un* (Tzo), *ts<sup>3</sup>uts<sup>3</sup>ub* (H), *ts<sup>3</sup>uman* (Q), *ts<sup>3</sup>ub/(ux)* (P).
66. 'learn' PMy \*-*ne/op*: *neb* (Toj), *-nop* (Tz), *-nop* 'to think' (Tzo), *-ñop* (Chl).
67. 'lie down' PMy \**yok-*: *yokyo* (K), *yok* (Pm).
68. 'lungs' PMy \**so(h)-t<sup>3</sup>-*: *sot<sup>3</sup>ot* (Tzo), *sohsoh* (Chl).
69. 'lungs' PMy \**pos-poC-*: *pospo<sup>3</sup>oy* (K), *po<sup>3</sup>y* (Ag), *pospon* (A), *pospoy* (Ch).
70. 'molar tooth' PMy \**ka<sup>3</sup>m-*: *-ča<sup>3</sup>am* (Toj), *-ča<sup>3</sup>am* (Tz), *ka<sup>3</sup>* (K), *ka<sup>3</sup>* (Q), *aka<sup>3</sup>* (Ag), *ka<sup>3</sup>* (A), *ča<sup>3</sup>m* (Chr).
71. 'mother' PMy \**nan-*: *nan* (Toj), *nana* (H), *nan* (Q).
72. 'mother' PMy \**me<sup>3</sup>*: *me<sup>3</sup>* (Tz), *me<sup>3</sup>* (Tzo).
73. 'mouse' PMy \**č<sup>3</sup>o-*: *č<sup>3</sup>o<sup>3</sup>o* (Toj), *č<sup>3</sup>o* (Tz), *č<sup>3</sup>o* (Tzo).
74. 'name' PMy \*-*bi-<sup>3</sup>il/hil*: *bi<sup>3</sup>il* (Toj), *bihilil* (Tz), *bi* (Tzo), *bih* (H), *wih* (Pm), *tb<sup>3</sup>i* (Mm), *b<sup>3</sup>i<sup>3</sup>* (Q), *b<sup>3</sup>i<sup>3</sup>* (Ag), *b<sup>3</sup>i* (A), *b<sup>3</sup>ih* (P), *b<sup>3</sup>i* (J), *b<sup>3</sup>i* (I), *b<sup>3</sup>i* (Ch), *b<sup>3</sup>i<sup>3</sup>* (C).
75. 'name' PMy \*-*k<sup>3</sup>aba-*: *k<sup>3</sup>aba<sup>3</sup>* (Chl), *k<sup>3</sup>ab<sup>3</sup>a<sup>3</sup>* (K), *uk<sup>3</sup>ab<sup>3</sup>a* (Chr), *k<sup>3</sup>abar* (Lac), *k<sup>3</sup>ab<sup>3</sup>a* (Mop).
77. 'neck' PMy \*-*nuk<sup>3</sup>/k*: *-nuk<sup>3</sup>* (Toj), *te<sup>3</sup>nuk<sup>3</sup>* (Tz), *nuk<sup>3</sup>ulal* (Tzo), (*in kuš*) *in nuk<sup>3</sup>* (H), *nuk* (Chr), *nuk* (J).
78. 'negative' PMy \**(ma)-n . . . ta(x)*: *man . . . tax* (Q), *n . . . tax* (A), *ma . . . ta* (P), *man . . . ta* (C).
79. 'new' PMy \**y-ak-ak<sup>3</sup>-*: *yakač<sup>3</sup>il* (Toj), *yač<sup>3</sup>il* (Tz), *ač<sup>3</sup>* (Tzo), *ak<sup>3</sup>* (K),

*ak<sup>9</sup>ax* (Mm), *k<sup>9</sup>ak<sup>9</sup>* (Q), *ak<sup>9</sup>ax* (Ag), *k<sup>9</sup>ak<sup>9</sup>* (A), *ak<sup>9</sup>* (Pm), *ak<sup>9</sup>* (P), *ak<sup>9</sup>* (J), *ak<sup>9</sup>* (I), *ak<sup>9</sup>* (Ch), *k<sup>9</sup>ak<sup>9</sup>a* (C).

Notice that the PMy \**k<sup>9</sup>* is reflected in Chr and Ch with *k<sup>9</sup>* whereas Olson states that the reflex should be *c<sup>9</sup>*. Neither in Olson nor my own am I able to find *c<sup>9</sup>* in Chr or Ch reflecting PMy \**k<sup>9</sup>*.

80. 'nurse' (vb) PMy \*-č<sup>1</sup>u<sup>9</sup>-Vn/Vl: *ču<sup>9</sup>an* (Toj), *ču<sup>9</sup>un* (Tz), *ču<sup>9</sup>un* (Tzo), *ču<sup>9</sup>un* (Chl), *čucul* (H).

81. 'old man (chief)' PMy \**mam-al*: *mamat*, *mam* 'direct address' (Tz), *mamat* 'old man' (Toj).

82. 'pain' (complain of) PMy \**a(h)kan-*: *ahkan* (Tz), *ak<sup>9</sup>anahel* (Tzo).

83. 'path, trail' PMy \**be-*: *beh* (Toj), *be* (Tz), *be* (Tzo), *bih* (Chl), *be-l* (H), (*č<sup>9</sup>ina*) *b<sup>9</sup>e* (K), (*tk<sup>9</sup>ab<sup>9</sup>*) *b<sup>9</sup>e* (Mm), (*alah*) *b<sup>9</sup>e/bey* (Q), (*č<sup>9</sup>ut*) *b<sup>9</sup>e* (A), *b<sup>9</sup>i<sup>9</sup>r* (Chr), (*k<sup>9</sup>ab<sup>9</sup>*) *b<sup>9</sup>e* (Ag), *wieh* (Pm), *b<sup>9</sup>eh* (P), *b<sup>9</sup>e* (J), *ber* (Lac), *b<sup>9</sup>ey* (I), *b<sup>9</sup>e* (Ch), *bih* (Chon), *b<sup>9</sup>ey* (C), *b<sup>9</sup>eh* (Mop).

84. 'pierce' PMy \*-šek<sup>9</sup>-: *šek<sup>9</sup>al* (H), *inšek<sup>9</sup>e* (Chr).

85. 'pus' PMy \**pox-ow-*: -*pohwil* (Toj), *pohow* (Tz), *pohow* (Tzo), *pox* (K), *pox* (Mm), *pux* (Q), *pox* (Ag), *pux* (A), *pouw* (Chr), *pox* (P), *pohow* (J), *po* (I), *poxow* (Ch), *puh* (C).

86. 'put, leave, give'. See 'give'.

87. 'rain' PMy \**hab-al/p<sup>9</sup>r*: *hab* (K), *xb<sup>9</sup>a-l* (Mm), *hab* (Q), *ab<sup>9</sup>al* (Ag), *hab<sup>9</sup>* (A), *haha<sup>9</sup>r* (Chr), *hab<sup>9</sup>* (Pm), *hab<sup>9</sup>* (P), *hab<sup>9</sup>al* (I), *hob<sup>9</sup>* (C).

This may be related to 'year' 116.

88. 'right' PMy \**bats<sup>9</sup>/tš<sup>9</sup>-*: *bats<sup>9</sup>il* (Tz), *bats<sup>9</sup>i* (Tzo), *watš<sup>9</sup>* (J).

89. 'river' PMy \*č<sup>1</sup>ya: *čiya* (Q), *čiya* (A).

90. 'sand' PMy \**hi<sup>9</sup>-*: *hikkab* (Toj), *hi<sup>9</sup>* (Tz), *hi<sup>9</sup>* (Tzo), *hi<sup>9</sup>* (Chl), *hi<sup>9</sup>* (Chr), *hi<sup>9</sup>* (Chon).

91. 'say' PMy \**b<sup>9</sup>i(x)*: *b<sup>9</sup>i* (Q), *b<sup>9</sup>ix* (A), *b<sup>9</sup>ih* (C).

92. 'say, quote' PMy \**ki*: -*či* (Toj), -*či* (Tz), *ki* (P), *či* (Ch).

Chipaya has *či* which corresponds to PMy \*č more closely than to PMy \**k*.

93. 'shoulder' PMy \**te(h)leb*: *tehleb* (Toj), *teleb<sup>9</sup>* (Q), *teleb<sup>9</sup>* (A), *tileb* (P), (*wi<sup>9</sup>*)*čeleb* (I), *teleb<sup>9</sup>* (C).

94. 'sour' PMy \**k<sup>9</sup>ay*: *k<sup>9</sup>ay* (I), *k<sup>9</sup>ay* 'bitter' (C).

95. 'spill' PMy \**p<sup>9</sup>ek*: *peh* (Toj), *bek* (Chl).

96. 'squeeze' PMy \**pits<sup>9</sup>*: *pits<sup>9</sup>* (Toj), *pits<sup>9</sup>* (Tz), *pits<sup>9</sup>* (Tzo).

97. 'star' PMy \**k<sup>9</sup>an-al*: *k<sup>9</sup>anal* (Toj), *k<sup>9</sup>anal* (Tzo), *k<sup>9</sup>anal* (Ch).

98. 'tail' PMy \*-*he<sup>9</sup>*: *he<sup>9</sup>* (Q), *he<sup>9</sup>* (Ag), *he* (A), *hia* (Pm), *rihe<sup>9</sup>* (P), *he* (I), *hey* (C).

99. 'this' PMy \**ha<sup>9</sup>ini*: *ha<sup>9</sup>ini* (Tz), *a<sup>9</sup>in* (K).

100. 'this' PMy \**wili*: *wili* (Pm), *wili* (P).

101. 'tie' PMy \*čuk: *čuk* (Tz), *čuk* (Tzo), *kac* (Chl). Chol consonants are apparently metathesized.

102. 'tooth' PMy \*-eC-al: -*ehal* (Toj), *e* 'mouth', *ehal* 'tooth' (Tz), *e-* 'mouth'

(Tzo), *eh* 'mouth' (Chl), *e<sup>3</sup>* 'tooth' (Ag), *wa-e* (A), *eh* (Chr), *wiah* (Pm), *eh* (P), *e* (J), *e* (I), *e* (Ch), *wey* (C).

103. 'tortilla' PMy \**wah*: *wah* (Toj, Tz, Ag), *wa* (K, A), *wa<sup>3</sup>il* (Ch). In Ch the *o* ← \**h* probably developed through analogy to *wa<sup>3</sup>* 'eat'.

104. 'urine' PMy \**čul-n*: -*čul-n-* 'to urinate' (Toj), *ču<sup>3</sup>* (K), *čul* (Q), *čulux* (A), *čul* (Ch), *čul* (C).

106. 'walk' PMy \**šan-*: *šanbal* (Tzo), *šambal* (Chl), *šon* (Ag), *ašanop* (Chr), *šan* (I).

107. 'want, ask for' PMy \**k<sup>3</sup>an-*: *k<sup>3</sup>an* (Toj), *k<sup>3</sup>anel* (Tz), *k<sup>3</sup>anel* (Tzo).

108. 'wash (clothes)' PMy \**čuk<sup>3</sup>-*: *čuk<sup>3</sup>ele* (Toj), *čuk<sup>3</sup>el* (Tzo).

109. 'wash face/self' PMy \**pok*: *pok* (Tz), *pok* (Tzo), *pok* (Chr).

110. 'water' PMy \**ha<sup>3</sup>*: *ha<sup>3</sup>* (Toj), *ha<sup>3</sup>* (Tz), *ho<sup>3</sup>* (Tzo), *ha<sup>3</sup>* (Chl), *ha<sup>3</sup>* (H), *ha<sup>3</sup>* (K), *pa<sup>3</sup>* (Mm), *ha<sup>3</sup>* (Q), *a<sup>3</sup>* (Ag), *ha<sup>3</sup>* (Chr), *ha<sup>3</sup>* (Pm), *ha<sup>3</sup>* (P), *ha<sup>3</sup>* (J), *ha<sup>3</sup>* (Lac), *a<sup>3</sup>* (I), *a<sup>3</sup>* (Ch), *ha<sup>3</sup>* (Chon), *ha<sup>3</sup>* (Mop).

111. 'water' PMy \**ya<sup>3</sup>*: *ya* (A), *ya<sup>3</sup>* (C).

112. 'where' PMy \**ba-*: *bayá* (Toj), *ban* (Tz), *b<sup>3</sup>ar* (K).

113. 'wing' PMy \**šik<sup>3</sup>*: *šik<sup>3</sup>* (Tz), *šik<sup>3</sup>* (Tzo).

114. 'woman' PMy \**an-ts*: *ants* (Tz), *ants* (Tzo).

115. 'yellow' PMy \**k<sup>3</sup>an*: *k<sup>3</sup>an* (Toj), *k<sup>3</sup>an* (Tz), *k<sup>3</sup>on* (Tzo), *k<sup>3</sup>ank<sup>3</sup>an* (Chl), *k<sup>3</sup>an* (K), *sk<sup>3</sup>an* (Mm), *k<sup>3</sup>an* (Q), *k<sup>3</sup>an* (Ag), *pan* (A), *k<sup>3</sup>an* (Chr), *k<sup>3</sup>an* (Pm), *k<sup>3</sup>an* (P), *k<sup>3</sup>an* (J), *k<sup>3</sup>an* (I), *k<sup>3</sup>an* (Ch), *k<sup>3</sup>ən* (Chon), *k<sup>3</sup>an* (C), *k<sup>3</sup>an* (Mop).

116. 'year' PMy \**haw/b-il*: *hawil* (Toj), *habil* (Tz), (*či-*)*hab<sup>3</sup>* (K), *ab<sup>3</sup>(k<sup>3</sup>i)* (Mm), *hab<sup>3</sup>* (Pm), *ha·b* (P), *hab<sup>3</sup>il* (J), *ab<sup>3</sup>il* (Ch), *hab* (Chon). This may be an indication that PMy \**b* ← \*\**w* should be separated from \**b* ← PMy -*Cp\*\*p<sup>3</sup>*. If we posited PMy \**v*, then \**v* → *w* | *i-* (Toj); *v* (Toj).

117. 'cornfield' PMy \**aw-*: *aweš* (A), *awiš* (Pm), *awal* (J), *awal* (Ch), *awen* (C), *awen* 'second planting' (Toj).

118. 'blood' PMy \*-*čik<sup>3</sup>*: *čik<sup>3</sup>* (Toj), *č<sup>3</sup>ič<sup>3</sup>* (Tz), *č<sup>3</sup>ič<sup>3</sup>* (Tzo), *č<sup>3</sup>ič<sup>3</sup>el* (Chl), *kik<sup>3</sup>el* (Q), *kik<sup>3</sup>el* (A), *č<sup>3</sup>ič<sup>3</sup>* (Chr), *kik<sup>3</sup>* (P), *čikel* (J), *k<sup>3</sup>ik<sup>3</sup>* (Lac), *čik<sup>3</sup>il* (Ch), *čič* (Chon), *kik<sup>3</sup>el* (C), *k<sup>3</sup>ik<sup>3</sup>* (Mop).

## 4. PROTO TUCANOAN

NATHAN E. WALTZ and ALVA WHEELER

### 4.1 INTRODUCTION

Classifications of South American Indian languages (Mason, 1950) reflect primarily geographical contiguity and display linguistic relationships in most cases only in a broad general way. Although sizable information is available to verify the existence on that continent of nearly one hundred linguistic families, stocks and isolates, investigation toward establishing the exact linguistic positions and inter-relationships of any of these groups has made little progress. The picture is somewhat blurred by the fact that large numbers of tribal names listed in the current classifications are based on obsolete information and represent either extinct groups, early designations no longer known, or political subdivisions and otherwise duplicate names for a single language.

There has been some confusion between a group of languages that stems from Chibchan stock (Betoyan) and Tucanoan. Koch-Grunberg (1912-16) and Hernandez (1949) refer to the group as Betoya, as it is known in most of the earlier literature. Tucanoan seems to be a designation initiated by Rivet (1924).

The object of this paper is to give a background of the Tucanoan family of languages of the Northwestern Amazon Basin of South America, and to posit phonemic reconstructions for this language family. The reconstructions are based on sound correspondences of Barasano (Bar), Bará (Bará), Carapano (Car), Cubeo (Cub), Desano (Des), Guanano (Gn), Macuna (Mae), Pápiwa (Pap), Piratapuyo (Pir), Siriano (Sir), Tatuyo (Tat), Tucano (Tuc), Tuyuca (Tuy), Siona (Si), Secoya (Sec), and Orejon (Or), using 278 cognate sets. The sound correspondences were based on reflexes in all sixteen languages; however, since many of the languages have obvious and simple sound developments varying only slightly from one another, seven languages have been selected as fully supporting the reconstruction of Proto Tucanoan. In the remainder of this paper, the examples and details of development are limited to those seven, six Eastern Tucanoan and one Western Tucanoan: Barasano,

Bará, Cubeo, Desano, Guanano, Tucano, Siona. Occasionally we cite examples from the others when cognates are missing from the seven.

The generally accepted geographical classification of the Tucanoan languages into Western and Eastern is supported as the first major linguistic subdivision on the basis of preliminary observations of the language data available. The two groups are separated geographically by a wedge of Witotoan and Boran tribes extending over an area of two river systems in Southeastern Colombia and Northeastern Peru.

The Northern group listed by Rivet and Loukotka (1952) are not presently found at the location stated in their report. Although Mason (1950) and McQuown (1955) list no such group, verification of a small remnant in the vicinity of the upper Arauca River along the Colombia-Venezuela border may yet be likely.

The chart below indicates the percentage of cognates (lower figure of each box) shared on the basis of a given number of lexical items (top figure) taken from the Swadesh-Rowe and . . . *Vocabularios . . . para Estudios Comparativos* . . . (Bogotá, Colombia, División de Asuntos Indígenas, 1963), word lists. The shortest list, with which Pápiwa and Carapano are compiled, is the Swadesh list of one hundred words.

A distinctive feature of all Eastern Tucanoan languages which have been completely phonemicized is that all stops and nasals are found to be mutually exclusive. In Western Tucanoan languages voiced stops and nasals reconstruct as contrastive phonemes. All the languages maintain six positions of vowel contrast, all with oral and nasal counterparts. Desano, Guanano, Tucano, Siona as well as Piratapuyo and Secoya reflect a glottal stop *?* where the rest of the Tucanoan languages reflect zero. This indicates a loss of the glottal in the remaining languages possibly due to stress change. The morphophoneme \**R* represents \**r* ~ \**d* reflected in nominal singular and plural suffixes as well as in present indicative second and third person verb suffixes of Guanano. \**R* symbolizes irregularities between \**d* and \**r* in Eastern Tucanoan languages.

The Barasano are located on or near the Pirá-Paraná river in Southern Vaupés, Colombia. They intermarry mainly with Taiwanos whose language is almost identical with their own. There are approximately 215 speakers of Barasano as a first language. The Barasano word-list, from the field notes of Richard and Connie Smith, taken on the Pirá-Paraná river between September 1965, and February 1966, is written phonemically.

In Barasano \**p* is reflected as *h*, corresponding with the reflex *h* in Siona. This indicates a possible early contact with Western Tucanoan. Barasano, Macuna, Siriano and Desano reflect *g* for \**g* and \**gw* while Siona reflects *k'* and *kw'*. This proto-phoneme has merged with \**k* in the rest of the Tucanoan languages referred to in this paper with the exception of Orejón, which also reflects *g* for \**g*. In Barasano \**r*, \**z*, \**j* and \**n* are reflected as *r*, contrasting

CHART I *Percentages of Shared Vocabulary*

	Gn	Tuc	Pap	Tat	Car	Bará	Tuy	Bar	Mac	Sir	Des	Cub	Si
Pir	(230) 99.2	(228) 91.6	(58) 83	(152) 86.5	(63) 87.4	(146) 83	(84) 80.5	(66) 81	(103) 85	(181) 82	(121) 69.5	(108) 74	
Gn	(235) 91	(56) 87.5	(151) 89.5	(66) 91	(140) 85	(102) 82.8	(83) 82	(66) 83	(101) 88.2	(181) 86.8	(126) 71.4	(115) 76.5	
Tuc		(57) 93	(157) 91.5	(58) 89.8	(146) 91	(102) 86.8	(86) 86	(66) 86.5	(105) 87.8	(186) 88.2	(127) 72.6	(122) 77	
Pap			(61) 90.2	(59) 91.6	(57) 91.2	(57) 91.2	(44) 86.4	(42) 81	(25) 90.9	(49) 83.7	(45) 71	(46) 67.3	
Tat				(54) 96.3	(126) 90.5	(98) 90.8	(83) 89	(64) 89	(87) 90.7	(128) 85	(102) 78	(86) 76.5	
Car					(56) 91	(56) 91	(45) 89	(36) 86	(30) 93.4	(51) 86.4	(46) 69.5	(47) 72.5	
Bará						(103) 97.2	(87) 95.4	(82) 92	(75) 88	(121) 83	(89) 73	(89) 63	
Tuy						(84) 93	(65) 89.2	(51) 88.3	(91) 80.1	(71) 70	(66) 69		
Bar							(58) 98.3	(45) 95.5	(70) 87	(59) 76.5	(60) 77		
Mac								(36) 94.5	(60) 89	(48) 75	(49) 77.5		
Sir									(99) 98.9	(68) 84	(60) 83.4		
Des										(106) 79	(93) 77.5		
Cub										(82) 95.1			

with all the other Tucanoan languages except Carapano and Tatuyo. The sibilant \**s* is reflected as *ts* in Barasano, and is so written in order to focus on this distinction from the other Tucanoan languages.

Lexically, Barasano shows a close relationship to Macuna with 98.3% cognates.

The Bará are located on the upper Colorado tributary to the Pirá-Paraná and the Inambú tributary to the Papurí in Vaupés, Colombia, as well as on the Tiquié River which flows from Vaupés, Colombia into Brazil. The Bará intermarry mainly with the Tuyuca. The language data, from the field notes of Joel and Nancy Stolte, taken at the Colorado tributary between February and July of 1966, is written phonetically. Only a few phonetic refinements have been omitted from this paper.

As in Cubeo, also in Bará \**s* is reflected as *h*. \**h* is reflected as zero in Bará corresponding with zero in Siona. The \**ŋ* is reflected also as zero in Bará, corresponding with zero in Barasano and Cubeo.

Lexically, Bará shows a close relationship with Tuyuca, manifesting 97.2% cognates. Barasano shows 95.4% cognates with Bará. However, a dialect survey made by Waltz in January of 1966 indicated a much higher percentage of exactly equivalent cognates between Bará and Tuyuca than between Bará and Barasano. It seems significant also that Bará and Siona show less lexical similarity (63%) than any other combination of Tucanoan languages.

The Cubeo are located on the Querarí, Cuduiarí and Vaupés Rivers of Vaupés, Colombia. They intermarry mainly with the Cubeo of other fraternities though there is some practice of exogamy noted between the Cubeo, Tucano and Guanano. There are approximately 1500 speakers of Cubeo as a first language. The word-list, from the field notes of J. K. and Neva Salser, SIL, taken at Timbó located on the Vaupés River about four hours by motor below Mitú, Vaupés, intermittently between July 1965 and July 1966, is partially phonemicized. Thus far in their study of Cubeo, Salsers state that the lateral flap *l̪* is phonetically very similar to the flap *r*. The latter occurs only in loan words in Cubeo. Also these two phones are allophones in all the Eastern Tucanoan languages which have been phonemicized. Salsers have also found the voiced biliteral fricative *b̪* and the continuant *w* to be mutually exclusive. Therefore, in this paper the lateral flap *l̪* and the fricative *b̪* will be written as *r* and *w* respectively. Though the affricate *dž* and the continuant *y* are suspected as being allophonic, they will be written phonetically in this paper due to the lack of a definite conclusion at this time. *ny* is also possibly an allophone with *y* but will be presently written phonetically.

In Cubeo, \**z* is reflected as a glottal fricative *h*, corresponding to the alveolar fricative *s'* in Siona. In all other Eastern Tucanoan languages \**z* is reflected as an alveolar stop or flap. A parallel correspondence between Cubeo and Siona is reflected in \**Y*. Cubeo also shares with Siona the reflex *y* for \**S*.

In Cubeo \**t* is reflected as *ñ* in two cases (156, 267). This is possibly a previous development of morphophonemic alternation under conditions not yet determined.

The vowel clusters of Cubeo and Siona which correspond to single vowels of Eastern Tucanoan indicate further relationship between the two languages. Cubeo is contrastive with all other Tucanoan languages in the occurrence of the reflex *r* for \**t*.

Lexically Cubeo shows a greater similarity to Siona with 95.1% cognates, than with any Eastern Tucanoan language. Also, the percentages between Cubeo and Eastern Tucanoan languages are unusually similar to those between Siona and Eastern Tucanoan languages, in that they range within the 60 and 70 percentages with only Siriano showing as high as 84% (See Chart I).

The Desano are located on the Papurí River and tributaries and also on the Abiyú tributary to the Vaupés River in Southeastern Colombia. They intermarry mainly with the Tucano and the Guanano. There are approximately 800 speakers of Desano as a first language. The wordlist, from the field notes of Marion Swift Miller taken at Teresita on the Papurí river, between July 1963 and August 1964, and of James and Marion (Swift) Miller taken in the Abiyú tributary of the Vaupés between Mitú and Yavaraté, between 1965 and 1966, is written phonemically except for *d* and *r* for which contrast is not yet clear.

Phonologically, Desano shows contrast with other Tucanoan languages in its tendency toward assimilation with high vowels, especially *i* and *u*.

As in Barasano, in Desano also \**g* and \**gw* are reflected as *g*, thus not merging \**g* and \**k* as do the majority of Eastern Tucanoan languages. \**S* is reflected as *y* in Desano, corresponding with a *y* in Siona and Cubeo.

As in Cubeo, in Desano \**t* is reflected as *r* in several cases (4, 27, 48, 56, 156, 247, 267). This is possibly a previous development of morphophonemic alternation under conditions which will be determined in the course of the grammar.

The glottal stop \*<sup>g</sup> is reflected as <sup>g</sup> in Desano only between geminate vowels. Though almost all of the data available supports this hypothesis, the Millers state that the glottal stop does occur in certain cases between non-geminate vowels. There is, however, a definite tendency for the occurrence of glottal stop to be conditioned.

Lexically, Desano shows a definitely close relationship with Siriano with 98.9% cognates. There are many cognates between Desano and Siriano which are exact equivalents.

The Guanano are located on the Vaupés River from Santa Cruz which is four hours below Mitú, Vaupés, to Yavaraté on the border of Brazil. About half of the Guanano are Brazilian and the rest live in Colombia. They intermarry mainly with the Desano and some Tucano and Cubeo. The Guanano also intermarry with the Tariano, the majority of whom speak Tucano. The

Guanano are forbidden to marry the Piratapuyo "because they are brothers". There are approximately 800 speakers of Guanano as a first language. The word list, from the field notes of Nathan and Carolyn Waltz, taken in Santa Cruz and Villa Fátima between December 1964 and June 1966, is written phonemically.

The distinction between Guanano and other Tucanoan languages of the phonemic status of aspirated stops versus unaspirated stops, is not significant in the reconstruction of Proto Tucanoan. The \**k* is reflected as č after front vowels in Guanano. This has no relation to the č of Western Tucanoan. The bilabial and velar voiceless stops in Guanano morphophonemically alternate with their voiced counterparts initially before a stressed syllable which has a voiceless consonant onset. In the vowel system of Guanano a high frequency of vowel harmony is evident. Initial vowels preceding a consonant are consistently dropped.

\**d* is reflected as *r* in one instance in Guanano (244) indicating morphophonemic alternation intervocalically contiguous to a high front vowel. There is fluctuation in this pattern within Guanano.

Lexically, Guanano and Piratapuyo show a close relationship with 99.2% cognates. Tucano is second in percentage of cognates to both Guanano and Piratapuyo with 91% cognates.

The Tucano are located along Papuri River and its tributaries as well as the lower Vaupés and Tiquié Rivers, extending into Brazil. They intermarry mainly with the Desano. There are approximately 1500 speakers of Tucano as a first language.

The wordlist, from the field notes of Betty Welch and Birdie West, taken in Acariuara on the Paca tributary to the Papuri River, between July 1963 and September 1965, is written phonemically.

Tucano, Guanano and Piratapuyo manifest completely identical reflexes. Another feature that groups these three languages together is the presence of glottal stop without alternation. This feature establishes a contrast between this group of languages and all other Eastern Tucanoan languages. Desano has a glottal stop but with a majority of occurrences limited to occurrence between geminate vowels. In Siona also \*<sup>?</sup> is reflected as <sup>?</sup>.

Lexically, Tucano is closest to Pápiwa with 93% cognates. It is also lexically very similar to Guanano, Piratapuyo, Tatuyo and Bará with approximately 91% cognates. Desano has 88.2% cognates with Tucano.

The Siona tribe is located on the upper Putumayo River at three points along the Colombia-Ecuador border, Nueva Granada, Buena Vista, and Piñuña Blanca, which lies between the mouths of the Cuhembí and Piñuña Blanca Rivers. The number of speakers is about 150. The word list, from the field notes of Alva and Margaret Wheeler, taken between 1960 and 1965, is written phonemically.

The proto-voiced stops are reflected as lenis glottalized stops in Siona. The Siona reflex *k<sup>w</sup>* has merged with *k* in the Eastern Tucanoan languages. Also *k<sup>w</sup>* has merged with *k* in all Eastern Tucanoan languages, except Barasano, Desano, Siriano and Macuna in which *g* corresponds with the Siona *k<sup>w</sup>*. \**p* is reflected as *h* in Siona. \**p* in some instances is reflected initially as zero. \**h* is reflected as zero. The latter feature corresponds with the reflex zero in Bará. As was stated under the discussion of Cubeo, Siona shares with the latter in the *s - d* as well as the *s - y* isoglosses. In Siona \**r* is reflected as *r* intervocalically and *t'* initially. As previously stated, unlike Eastern Tucanoan languages, Siona voiced stops and nasals are contrastive.

There appears to be a morphophonemic alternation between \**p* and \**b* or \**m* under certain conditions not yet determined (Note : 71, 73, 162, 164, 220, 270). \**d* is reflected as *t* in a few instances (34, 249) indicating a possible morphophonemic alternation under presently undetermined conditions.

Lexically, Siona shows similarity to Cubeo with 95.1% cognates. This relationship between Siona and Cubeo is supported by phonological similarities discussed above with reference to Cubeo.

The following are the Tucanoan languages considered in the establishment of sound correspondences but not included in the examples :

The Carapano are located in the region of the upper Pirá-Paraná River. The word list, taken by J. K. Salser, April 1966, is written phonetically.

In Carapano \**z* is reflected as the lateral flap *ł* corresponding to the phonetically similar alveolar flap *ř* reflected in Barasano and Tatuyo. Carapano and Pápiwa manifest phonological similarity in \**s* which is reflected as *h* in both languages initially but is reflected as *ts* in Carapano and *s* in Pápiwa intervocally. In Carapano \**g* is reflected as *ø* initially corresponding to the reflex *ø* in Bará, Tatuyo and Tucano. Medially \**g* is reflected as *k*, as it is in most of the other Tucanoan languages.

Lexically, Carapano shows a very close relationship to Tatuyo with 96.3% cognates.

The Piratapuyo are located on the Papurí River, in Vaupés, Colombia, and in Brazil. There are approximately 600 speakers of Piratapuyo as a first language. The word list, taken by Nathan Waltz from a Piratapuyo informant whose mother is Tucano and father Piratapuyo, June 1966, is written phonetically.

The proto glottal stop \**?* is reflected as *?* in Piratapuyo, grouping the latter with Desano, Guanano, Tucano and Siona in reference to this feature. The glottal stop is more fully explained under the discussion of Tucano. The phonology of Piratapuyo is basically similar to that of Guanano and Tucano.

Lexically, Piratapuyo is very close to Guanano with 99.2% cognates, Tucano being second in the sharing of lexical forms with 91.6%.

The Siriano tribe is located on the Paca River, tributary to the Papurí

River, as well as on the Viña River, tributary to the Paca, in Vaupés, Colombia. There are approximately 200 speakers of Siriano as a first language.

The word list, taken by James Miller during July 1966, is written phonetically.

Siriano shares all phonological features with Desano. Lexically Siriano also manifests a close relationship to Desano with 98.9% cognates.

The Tatuyo tribe is located in the region of the upper Pirá-Paraná River as well as on the Yapú tributary to the Papurí.

The word list, taken by J. K. Salser June 1966 from an informant who lives in the Pirá-Paraná River region, is written phonetically.

\*z is reflected as r in Tatuyo corresponding to the r reflex in Barasano. \*s is reflected as h in Tatuyo as it is in Bará, and Cubeo. Tatuyo shares with Bará, Carapano and Tucano the reflex Ø initially for \*g. Lexically, Tatuyo is closest to Carapano with 96.3% cognates.

The Tuyuca tribe is located on the upper Colorado tributary to the Pirá-Paraná River, the Inambú and Paca tributaries to the Papurí River in Vaupés, Colombia, as well as on the Tiquié River which flows from Vaupés, Colombia into Brazil. There are approximately 500 speakers of Tuyuca as a first language. The word list, taken by Nathan Waltz on the Colorado tributary, January 1966, is written phonetically.

\*s is reflected as s fluctuating with ts in Tuyuca corresponding to the ts reflex of Barasano. \*h is reflected as Ø in Tuyuca corresponding to the reflex Ø in Bará, Carapano and Pápiwa. Lexically, Tuyuca is very similar to Bará with 97.2% cognates.

The Pápiwa tribe is located on the Vaupés River above Mitú, Vaupés, Colombia. There are approximately 20 speakers of Pápiwa as a first language. The word list, taken by J. K. Salser March 1966, is phonetically written.

As stated above, Pápiwa shares the reflex h for \*s and its medial variant with Carapano. \*h is reflected as Ø in Pápiwa as well as in Bará, Carapano and Tuyuca. \*y is reflected as y alternating with dž under certain conditions not yet determined. Pápiwa shares this feature with Cubeo. Lexically, Pápiwa is closest to Tucano with 93% cognates, though Carapano, Bará and Tuyuca each share approximately 91% cognates.

The morphological system of Proto Tucanoan is evident in the construction of forms by affixing or compounding morphemes which designate shape, form or function. Terms for body parts present numerous examples of recurring partials of this sort. In all Tucanoan languages p̫ 'blade' and variants thereof enter into constructions with other morphemes to designate various objects as well as body parts as follows :

- 'hand' wabō-pi-ka (Gn) 82, 'ear' o'bē-pe-ro (Tuc) 71,
- 'tail' pi-kō-rō (Tuc) 236, 'tooth' u-p̫ (Bará) 252,
- 'knife' di'i-p̫-yā (Pir) 131.

Two forms for 'liquid' in Proto Tucanoan illustrate early and late stages of development. \*zi- appears to have had an early development, being reflected as follows :

'river' *di-a* (Des) 194, 'blood' *di* (Bará) 26.

See 45, numbers 26 and 194.

The use of \*-ko as 'fluid' seems to be of a later development reflecting related substantives as follows :

'rain' *i-ko* (Bará) 185, *ope-ko* 'milk' (Cub) 153.

'Water' is reconstructed as \*a-ko 263. 'Medicine' also reflects \*-ko to designate 'liquid' as follows : *o-ko* 'water', *i-ko* 'medicine' (Si).

A further indication of semantic and formal variations in the Proto Tucanoan morphology is illustrated by the morpheme \*-se. The semantic content of this form is clarified in Proto Tucanoan, though by observing its recurrence in 'fingernail' (83) and 'bark' (17) in several of the daughter languages, only a limited idea of its meaning is evident. Moreover, vowel harmony tends to alter phonological shape as in Guanano 'bark' *k<sup>h</sup>a<sup>3</sup>-sa-ro* (17) and Desano 'bark' *ga-si-ri* (17). Body parts again utilize this descriptive morpheme as in 'fingernail' *wabō-se-ro* (Gn) 83; and 'mouth' *i-se-ro* (Tuc) 160. The Tucanoan concept of the universe or of space is mirrored in 'sky' \**imi-ga<sup>3</sup>/ka-se-ro* (215). The semantic content of this form is 'high covering'. In Tucano it develops as *īpbi-se*. The Guanano and Piratapuyo forms for 'thick' and 'thin' help substantiate the semantic content of -se as 'covering'. The form for 'thick' reconstructs \**i-se-bili* 'hard covering' and for 'thin' \**i-se-bidi*, 'diminished covering'. (These forms are not listed in the Index of Cognate Sets.)

An extensive analysis of this system, both semantic and formal, will doubtless prove very fruitful, but will not be treated in this paper. However, observations of morphological patterns have been helpful in accounting for many of the phonological differences in the daughter languages.

The following outline of the classification of Tucanoan is based upon phonological and lexical amenities between the Tucanoan languages. The geographical headings are only in a broad sense applicable.

Mason (1950), referring to his classification of Tucanoan, states that, "It is generally assumed that linguistic divisions follow geographical ones, . . ." This is basically true in the classification of Tucanoan languages, though Tucano, Cubeo and Pápiwa show more linguistic similarity to languages of tribes not in the close vicinity of their respective centers of population.

Mason's classification places most of the Eastern Tucanoan languages in one subdivision under Eastern Tucanoan omitting Cubeo and Macuna from that subdivision. The present data supports this separation of Macuna and

Cubeo from the remaining Eastern Tucanoan languages. However, further subdivisions may be made to clarify the situation. The languages here classified under Northern and Central reflect lexical and phonological differences within Eastern Tucanoan languages equally as substantial as those found in Macuna.

Mason classifies Cubeo as a major subdivision under Eastern Tucanoan. The data in this paper points to a separation of Cubeo one step further, classifying it as a major subdivision of Tucanoan : Middle Tucanoan. The phonological and lexical similarities between Cubeo and both Eastern Tucanoan and Western Tucanoan support this classification. The data indicates a possible break between Cubeo and Western Tucanoan some time later than that between the Eastern Tucanoan groups and Western Tucanoan.

One problem with Mason's classification is that among those groups which are accurately referred to as linguistic subdivisions are mixed social subdivisions in which basically the same dialect is spoken.

Mason's coupling of Tuyuca with Bará and Piratapuyo with Guanano is well supported by the present data.

#### *Classification of Tucanoan*

##### I. Eastern Tucanoan

###### A. Northern

1. Tucano
2. Guanano
3. Piratapuyo

###### B. Central

1. Bará and proximates
  - a. Bará
  - b. Tuyuca
  - c. Pápiwa
2. Desano and proximate
  - a. Desano
  - b. Siriano
3. Tatuyo and proximate
  - a. Tatuyo
  - b. Carapano

###### C. Southern

1. Macuna
2. Barasano

## II. Middle Tucanoan

## 1. Cubeo

## III. Western Tucanoan

## A. Northern

1. Correguaje
2. Siona and proximates
  - a. Siona  
Macaguaje
  - b. Cuyabeno Secoya — Eno (Siona)
  - c. Yuvineto Secoya
  - d. Angutero
3. Teteté

## B. Southern

1. Orejón

## 4.2 PHONEMES OF PROTO TUCANOAN

## Consonants :

* <i>p</i>	* <i>t</i>		* <i>k</i>	* <i>kw</i>
* <i>b</i>	* <i>d</i>		* <i>g</i>	* <i>gw</i>
* <i>r</i>				
	* <i>s</i>	* <i>S</i>	* <i>č</i>	
	* <i>z</i>	* <i>Y</i>	* <i>j</i>	
* <i>m</i>	* <i>n</i>			
* <i>w</i>		* <i>y</i>	* <i>h</i>	* <i>þ</i>

## Vowels :

* <i>i</i>	* <i>ɪ</i>	* <i>u</i>
* <i>e</i>	* <i>a</i>	* <i>o</i>

Nasalization is phonemic. Stress appears to be phonemic in all Tucanoan languages, but its proto-phonemic status is yet to be determined.

## 4.3 PHONEME REFLEXES

## Consonants :

## Proto

Tucanoan	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>kw</i>	* <i>b</i>	* <i>d</i>	* <i>g</i>	* <i>gw</i>	* <i>r</i>	* <i>s</i>	* <i>č</i>
Barasano	<i>h</i>	<i>t</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>g</i>	<i>g</i>	<i>r</i>	<i>ts</i>	—

Bará	<i>p</i>	<i>t</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>k</i>	<i>k</i>	<i>r</i>	<i>h</i>	—
Cubeo	<i>p</i>	<i>r</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>k</i>	<i>k</i>	<i>r</i>	<i>h</i>	<i>h</i>
Desano	<i>p</i>	<i>t</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>g</i>	<i>g</i>	<i>r</i>	<i>s</i>	<i>s</i>
Guanano	<i>p</i>	<i>t</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>k</i>	<i>k</i>	<i>r</i>	<i>s</i>	<i>s</i>
Tucano	<i>p</i>	<i>t</i>	<i>k</i>	<i>k</i>	<i>b</i>	<i>d</i>	<i>k</i>	<i>k</i>	<i>r</i>	<i>s</i>	<i>s</i>
Siona	<i>h</i>	<i>t</i>	<i>k</i>	<i>kw</i>	<i>p'</i>	<i>d</i>	<i>k'</i>	<i>k'w</i>	<i>t'</i>	<i>s</i>	<i>č</i>

## Proto

	Tucanoan	*z	*j	*Y	*S	*m	*n	*w	*y	*h	*p
Barasano	<i>r</i>	<i>r</i>	<i>y</i>	—	<i>b</i>	<i>r</i>	<i>w</i>	<i>y</i>	<i>h</i>	Ø	
Bará	<i>d</i>	<i>d</i>	<i>y</i>	<i>h</i>	<i>m</i>	<i>n</i>	<i>w</i>	<i>y</i>	Ø	Ø	
Cubeo	<i>h</i>	<i>h</i>	<i>h</i>	<i>y</i>	<i>m</i>	<i>n</i>	<i>w</i>	<i>y, dz</i>	<i>h</i>	Ø	
Desano	<i>d</i>	<i>d</i>	<i>y</i>	<i>y</i>	<i>b</i>	<i>d</i>	<i>w</i>	<i>y</i>	<i>h</i>	Ø	
Guanano	<i>d</i>	<i>d</i>	<i>y</i>	<i>s</i>	<i>b</i>	<i>d</i>	<i>w</i>	<i>y</i>	<i>h</i>	Ø	
Tucano	<i>d</i>	<i>d</i>	<i>y</i>	<i>s</i>	<i>b</i>	<i>d</i>	<i>w</i>	<i>y</i>	<i>h</i>	Ø	
Siona	<i>s'</i>	<i>y</i>	<i>s'</i>	<i>y</i>	<i>m</i>	<i>n</i>	<i>w</i>	<i>y</i>	Ø	Ø	

## Vowels :

Proto Tucanoan	*i	*e	*i	*a	*o	*u	*V̄
Barasano	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Bará	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Cubeo	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Desano	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Guanano	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Tucano	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄
Siona	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>	V̄

## 4.4 CONDITIONING FACTORS OF PHONEME REFLEXES

## 4.4.1 Consonants

In the pattern of consonant-vowel sequences of Proto Tucanoan consonant clusters are basically absent. A cluster of glottal stop plus a consonant seems to have developed as a result of a shift in stress from the syllable or syllables contiguous with the glottal to the following or preceding syllable with simultaneous loss of the vowel. 'horn' illustrates this phenomenon : *sáʔá-ri* (Gn), *kapé saʔro* (Tuc). A later possible development is shown in 'you pl.' *b̄i-sá* (Tuc), *m̄iʔi-sa-koʔa* (Si), which reconstructs as \**m̄iʔi-sá*. After the development of vowel loss due to stress shift, the glottal also was dropped, as shown in the Tucano form.

In the Tucanoan languages assimilation of consonants is not consistent. An

example of this is shown by the Desano form for 'leg' *ḡiḡi ŷ [ñ]* → *g [ŋ]* | — *gV̄*. However, the same morpheme remains without this specific assimilation in 'shin' (210) *ȳiḡi-gōā*. The following formulas of consonant change apply only to the examples listed :

\**p* → *h/p | o/u—o/u* (Des, Bará) 27, 70, 199

Ø | #— (Si) 85, 201, 236

*m | -Vm* (Cub) 164

*p<sup>h</sup>, p* (Gn) (*p<sup>h</sup>* contrasts with *p* in Guanano but is not significant in the reconstruction of Proto Tucanoan.) 1, 10, 21, 39

*p<sup>h</sup> ~ p* (Bará) (The aspirated stops are not significant in the reconstruction of Proto Tucanoan.) 6, 27, 46, 70

*h* (Bar, Si) 27, 78, 84, 134

*p.* 1, 6, 10, 21, 39, 46, 70

\**t* → *d | VdCV—* (Bar) 133, 199 (VdCV = voiced consonant plus vowel)

*r | -V<sub>1</sub>V<sub>2</sub>* (Bar) 163

*t* 5, 27, 36, 56

\**k* → *g | bV̄—/-V̄g/V—* (Des) 34, 130, 136, 167, 169, 210

*g | -VlCV* (Gn) 4, 56, 75, 262

*č | i/e—* (Gn) 7, 9, 59, 84, 85, 95, 136, 153, 177, 210, 236, 237

*k* 4, 9, 14, 23, 35, 56

\**b* → *p | -Vp* (Cub, Si) 70, 89, 173, 224

*s | -Vs* (Si) 261

*w | -Vp/m* (Gn) 224, 233 (See \**m*)

*p'* (Si) 2, 22, 23

*b* 2, 5, 22, 23, 27, 42

\**d* → *r | V—V* (Tuc) 6, 34, 68, 123, 271, 272

*g | -V̄g* (Des) 127

*t'* (Si) 114, 270

*d* 40, 67, 93, 94

\**g* → Ø | #— (Bará, Tuc)

*g* (Bar, Des) 17, 28, 71, 79, 91, 93

*k'* (Si) 17, 28, 71, 91

*k* 7, 17, 28, 71, 79, 91, 93

\**g<sup>w</sup>* → *g* (Bar, Des)

*k<sup>w</sup>* (Si) This reflex is well supported in Western Tucanoan, though there are no examples listed in the Index of cognates due to lack of cognates in Eastern Tucanoan : *kwēkwe* (Si), *kwēkwe* (Sec), *kwēkwe* (Or) 'to count'.

*k*

\**r* → *n | -V* (Cub) 2, 31, 44, 77, 114, 123, 142, 156, 165, 182, 191, 267

*n | V—V* (Si) 44

- t'* (Si) 71, 133, 192  
*r* 71, 76, 133, 192  
 (Regarding protomorphophoneme, \*R see 4.1.)  
 $*s \rightarrow ts$  (Bar) 17, 120, 132  
*h* (Bará, Cub) 17, 68, 120, 132  
*s* 17, 68, 98, 120, 132  
 $*\check{c} \rightarrow h$  (Cub) 112, 162  
*s* (Des, Gn, Tuc) 112, 162  
*\check{c}* (Si) 112, 162  
 $*z \rightarrow r$  (Bar) 26, 74, 194  
*h* (Cub) 22, 26, 74, 133, 194  
*s'* (Si) 26, 74, 194  
*d* 22, 26, 74, 194  
 $*j \rightarrow r$  (Bar) 213, 254  
*h* (Cub) 213, 254  
*y* (Si) 213, 254  
*d*  
 $*Y \rightarrow s'$  (Si) 140, 251, 256  
*h* (Cub) 142, 251, 256  
*y* (Bar, Bará, Des, Gn, Tuc) 95, 140, 142, 251, 256  
 Compare the *s-y* isogloss below which probably had an analogous development.  
 $*S \rightarrow y$  (Cub, Des, Si) 18, 101, 103  
*h* (Bará) 18  
*s* 18, 101, 103  
 The *s-y* isogloss possibly reflects an *sy* cluster resulting from vowel loss due to stress shift. Thus, based on external data (See Part 1, Sec. 1.6: 70 'bat' and 192 'crocodile') this correspondence could be reconstructed as *y(V)s*.  
 $*m \rightarrow w | -Vp/m$  (Gn) 122, 165, 246  
*m* (Si, Cub) 8, 12, 20, 41, 60  
*b* In cognate sets where Siona is missing, the nasal or non-nasal status of the bilabial cannot be determined when Eastern Tucanoan languages phonetically reflect the bilabial nasal *m*. 14, 20, 35, 41, 60  
 $*n \rightarrow r | V-V$  (Tuc) 34, 123, 271  
*n* (Si, Cub) 154, 226  
*d* In cognate sets where Siona is missing, the nasal or non-nasal status of the alveolar cannot be determined when Eastern Tucanoan languages phonetically reflect the alveolar nasal *n*. 15, 34, 68, 123, 168  
 $*w \rightarrow h^w | -i/eC$  (Si) \**wiha* → *hwihā* (Si) 212 (This is well supported within Western Tucanoan.)

- b* |  $-\tilde{V}b/d$  (Bar, Des) 271  
*\emptyset* |  $-m/p$  (Cub) 4, 161, 212  
*\emptyset* |  $u-V$  (Des) 3  
*m* |  $-Vm$  (Si) 161  
*w* 41, 87, 121, 129  
 $*y \rightarrow d | -i$  (Bar) 136  
*dž* ~ *y* (fluctuation is possibly due to stress changes) (Cub) 52, 101, 264  
*d* |  $V_1-V_1$  (Cub) 18, 223  
*g* |  $\tilde{V}-\tilde{V}$  (Gn) 223 (Regular pattern in Gn)  
*g* |  $-VgV$  (Des) 130, 136  
*\emptyset* |  $e-a$  (Des, Gn) 265  
*\emptyset* |  $i-$  (Des, Tuc) 206  
*\emptyset* |  $\#-$  (Bará) 33  
*\tilde{y}* |  $-\tilde{V}$  (All Tucanoan) 24, 60, 99, 166  
*y* 33, 38, 72, 104, 124, 128  
 $*h \rightarrow \emptyset$  (Bará, Si)  
*h* 15, 88, 182, 196  
 $*\emptyset \rightarrow \emptyset | V_1-V_2$  (Des) 28, 58, 63, 69, 87, 176, 206  
*\emptyset* (Bar, Bará, Cub) 17, 23, 28, 58, 143, 159  
 $\emptyset : i^y\tilde{a} \rightarrow iy\tilde{a}$  (Si) 206  
 $\emptyset | (Des, Gn, Tuc, Si) 17, 23, 28, 58, 143, 159$   
 $\emptyset \rightarrow w | o-V$  (Bará) 28  
*w* |  $i/u-/i$  (Bar, Cub) 26, 65, 128, 191  
*d* |  $o-a/a-o$  (Cub) 28, 106  
*h* |  $\#-$  (Si) 120  
 $\emptyset : *ya(\emptyset)sa \rightarrow ya^sado$  (Des) 189  
 $*se(\emptyset)ro \rightarrow se^sro$  (Tuc) 190  
 $*pa(\emptyset)ki \rightarrow ha^s-ki$  (Secoya) 157  
 $(p)a(\emptyset)si \rightarrow ha^s si$  (Si) 120  
 $*ma^sme \rightarrow mame$  (Si) 165

These are a few examples of irregular occurrences of the glottal stop. It is not exhaustive.

#### 4.4.2 Vowels

A tendency to vowel harmony is evident in Proto Tucanoan. The vowel change under certain conditions is only applicable to the examples cited. All languages listed do not necessarily assimilate the same in all examples. The causes of this irregularity in assimilation are:

1. The multilingual situation in which the Tucanoan live. The word for 'head' in Guanano is an example of the influence of a multilingual situation

on vowel harmony. In Villa Fátima the word for 'head' is *dapú*. The nearby Desano say *dipu* for 'head'. Whereas up river in Santa Cruz, the Guanano say *dapó* for 'head'. These Guanano have contact with the Cubeo whose word for 'head' is *hipobi*.

2. The sporadic dropping of protomorphemes. In some languages a protomorpheme may be dropped before vowel harmony has actually taken effect. Thus, there is variation in the stages of change in each individual language. The following vowel changes in the Tucanoan languages are evident :

$*i \rightarrow e$	$  aC-$ (Bar, Bará, Cub, Tuc, Si) 126, 161, 244, 254
$e$	$  eC-$ (Tuc) 113
$e$	$  oC-$ (Cub, Des, Gn, Tuc) 64, 267
$e$	$  -Ca$ (Cub, Tuc, Si) 72, 202, 210
$e$	$  a-$ (Bar, Bará) 92
$e$	$  e-$ (Des) 65, 128
$e$	$  -\varepsilon Ce$ (Tuc) 167
$e$	$  -o$ (Des) 273
$e$	$  -i/Ci$ dissimilation (Cub) 24, 159
$i$	$  -Ca$ (Cub, Des, Gn, Tuc) 9, 64, 95, 130, 143, 206, 210
$i$	$  -Co$ (Bará, Cub, Tuc, Pir) 111, 197, 236
$i$	$  w-$ (Gn, Si) 121
$i$	$  i-$ (Tuc) 92
$i$	$  i^2C-$ (Gn) 94
$i$	$  -Ci$ (Gn) 136
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## 4.5 INDEX OF COGNATE SETS

- ‘abdomen, stomach’ \*pá-ga/ru: [pá-ga] (Bará), pá-ru (Des), p<sup>h</sup>á-Ro (Gn), pá-ga (Tuc).
- ‘achiote’ \*būsā: [muhāniyoka] (Cub), būsā (Tuc), p'ōsa (Si).
- ‘agouti’ \*bu-wi: [bu] (Bará), buí (Des), bu (Gn), bu (Tuc), wi (Si).
- ‘alive<sup>1</sup>’ \*kati: kári- (Des), gatí- (Gn), katí-mi (Tuc).  
‘alive<sup>2</sup>’ \*wahi: [apíkí] (Cub), wahi (Si).
- ‘all’ \*hi/di/ni-pe-<sup>3</sup>ti/<sup>2</sup>de-ro/se: [ní-peti-ro] (Bará), ádi-pe<sup>3</sup>de-ro (Des), hí-pi<sup>3</sup>ti-Ro (Gn), dí-pe<sup>3</sup>ti-se (Tuc). (dí- ‘to be, continuative’; hi- ‘to be’.) See also ‘first’.

6. 'anaconda' \**pidō-rō*/\**pinō-rō*: [piṇō] (Bará), *pidō-Rō* (Gn), *pídō* (Tuc).
7. 'ant' \**mēā-gā*: [*mēkʰā*] (Bará), [*bēā-ki*] (Cub), *bégā* (Des), *bāčī* (Gn), *bēkā* (Tuc), *mēā* (Si).
8. 'anteater<sup>1</sup>' \**mīē*: [*mie*] (Cub), *bīē* (Gn), *mīē* (Si).
9. 'anteater<sup>2</sup>' \**bigo*: *bugu* (Des), *bikó* (Tuc).
10. 'arm' \**dika-ki*: [*dikhá*] (Bará), *diká* (Des), *dačī-ki* (Gn). See also 'leg'.
11. 'arrow, bow<sup>1</sup>' \**bue-*: [*bue-di-krape*] 'bow', (Bará), *bui-ri-bero* 'bow', (Des), *bie-di* 'arrow', *bie-Ri-děte* 'bow' (Gn), *bi-se* 'arrow', *bie-ri-tehe* (Tuc).
12. 'arrow, bow<sup>2</sup>' \**temū-*: *temō-medo* 'arrow' (Bar) ; [*temū-yo*] 'arrow', [*temū-teňabi*] 'bow' (Cub).
13. 'assai palm' \**yūmī-yo*: *yābū-yo* (Tuc), *yūmī-yi* (Si).
14. 'axe' \**kōbē-ā*/\**kōmē-ā*: *kōbē-ā* (Bar), [*kōmē-ā*] (Bará), *kōbē* (Des), *kōbā* (Gn), *kōbē* (Tuc). See also 'pot'.
15. 'baby' \**dē-hī*/\**nē-hī-na/ga|rō*: [*imi-hīnā*] (Cub), *dīhī-gā* (Des), *dīhī-Rō-ka* (Gn), [*nehino*] (Pir).
16. 'bad' \**yā-ā*: *yē-* (Des), *yā-Rō* (Gn), *yā-ā-se* (Tuc).
17. 'bark, skin' \**ga*/\**ka-sé/-ni*: *gatsé-ro* (Bar), [*kahé-ro*] (Bará), [*kahé*] 'skin' (Cub), *gasi-ri* (Des), *kʰa<sup>ps</sup>sá-Ro* (Gn), *kasé-ro* (Tuc), *kā<sup>ps</sup>ni-wi* (Si). See also 'fingernail', 'sky'.
18. 'bat' \**oSo*: *oho* (Bará), [*odō-ri*] (Cub), *oyó* (Des), *so* (Gn), *osó* (Tuc), *oyo* (Si).
19. 'beard, chin' \**zi-/i-sei*: [*dihe-poa*] 'beard', [*ihe-wi*] 'chin' (Bará) ; *he-wi* 'beard', [*ye-dihī-di*] 'chin' (Cub) ; *disi-ka poa-ri* 'beard', *disi-ka púri-ru* 'chin' (Des) ; *dise poa-Ri* 'beard' (Gn) ; *ise-ka poa-ri* 'beard', *ise-ka* 'chin' (Tuc) ; *sei-wi* 'beard' (Si).
20. 'bee (honey)' \**mōmō*/\**bōbī*: *mūmī-di* (Cub), *bī-kina-iro* (Gn), [*mōmē*] (Sir).
21. 'big' \**pai-gi*: *hái-ro* (Bar), [*pái-ro*] (Bará), *paga-ri* (Des), *pī-Rō* (Gn), *paka-sé* (Tuc), *hai* (Si).
22. 'bird' \**bī-zī/ā*: *bīdī* (Bar), [*mīnī*] (Bará), [*mihi-ki*] (Cub), *bīdībāyī* (Des), *bīdīčaka* (Gn), *bīrī* (Tuc), *pī<sup>z</sup>ā* (Si).
23. 'bite<sup>1</sup>' \**kōžī-ri*: *korī-ēbē* (Bar), [*kūñ-mī*] (Cub), *kūrī* (Des), *kū<sup>z</sup>rī-bī* (Tuc), *kūžī* (Si).
24. 'black' \**yī-:* *yī-rī* (Bará), *nyēmī-no* (Cub), *yī-rī* (Des), *yī-Rō* (Gn), *yī-sé* (Tuc).
25. 'blade' \*-*pi*: [*di<sup>z</sup>i-pī-ηā*] 'knife' (Pir), *wabō-pika* 'finger' (Gn), *pi-kō-Rō* 'tail' (Tuc), [*ko-pi-yo*] 'tooth' (Cub).
26. 'blood' \**zie-(we)*: *ri* (Bar), [*di*] (Bará), [*hiwé*] (Cub), *dii* (Des), *di* (Gn), *di* (Tuc), *s'ie* (Si). See also 'sap'.

27. 'blow, blowgun<sup>1</sup>' \**pu-ti*: *hutí-gi-ya* 'blow' (Bar) ; *hapú* 'blow', *púrisu-ke* 'blow' (Des) ; *butí-Ra* 'blow', *pʰá-ká* 'blowgun' (Gn) ; *putí-bi* 'blow' (Tuc).
28. 'blow, blowgun<sup>2</sup>' \**bupuo-rike/waa/yi/ru/wi*: [*buhu-rike*] 'blow', [*bupuwája*] 'blowgun' (Bará) ; [*piónyi*] 'blowgun' (Cub) ; *buhu-rú* 'blowgun' (Des) ; *bupu-wí* 'blowgun' (Tuc) ; *hio-wi* 'blowgun' (Si).
29. 'bone' \**gō<sup>z</sup>ā*: *gōdā* (Bar), [*ōwá*] (Bará), *kūdā-do* (Cub), *gōdā* (Des), *kō<sup>z</sup>ā* (Gn), *ō<sup>z</sup>ā* (Tuc), *k'ō<sup>z</sup>ā* (Si).
30. 'breast' \**opé-ηā/bō/ru/rī*: [*opé-ηā*] (Bará), [*opé-bo*] (Cub), *apī-rū* (Des), *pē-Rī* (Gn), *opé* (Tuc), *øhe* 'milk' (Si). See also 'milk'.
31. 'brush, woods' \**mākā-roka/dīgī/nīgī*: *mākā-roka* (Bar), [*mākā-nīkhī*] (Bará), [*mākā-nō*] (Cub), *dīgī* (Des), *dīkī* (Gn), *dīkī* (Tuc), *māka* (Si).
32. 'burn' \**ihī*: *hī* (Gn), *ihī-bī* (Tuc).
33. 'buzzard' \**yu-ga-(wa)*: [*ukhá*] (Bará), [*kawá*] (Cub), *ga* (Des), *yuká* (Gn), *yuká* (Tuc).
34. 'cane' \**gādī*/\**gānī*: *gādī* (Des), *kādī-ki* (Gn), *ārī* (Tuc), *k'ātī* (Si).
35. 'canoe<sup>1</sup>' \**kūbūā*/\**kūmūā*: *kūbūā* (Bar), [*kūmādā*] (Bará).
36. 'charcoal' \**dītī*/\**nītī*: *nīhitī* (Bará), *dītī* (Des), *dītī* (Gn), *dītī* (Tuc).
37. 'chest' \**ko-re-ti-ro/bi/a/ba*: [*kʰotʰia*] (Bará), *koretībi* (Des), *kutīro* (Tuc), *p'a* (Si).
38. 'chicha' \**pe-ya-ru*: *pérū* (Des), *pīayuru* (Gn), [*peyáru*] (Sir), *pérū* (Tue).
39. 'chief' \**opi*/\**to-ro*: [*opi*] (Bará), *opí* (Des), *pītō-Rō* (Gn).
40. 'chigger' \**di*/\**po-sū-a*: [*dipʰi-hī*] (Bará), *gubu-sū* (Des), *da<sup>z</sup>pu-su-a* (Gn), *di<sup>z</sup>po-sū-a* (Tuc).
41. 'child' \**wi<sup>z</sup>a-mā-gīaka/riro-ka/gi*: *wibā-gī-a-ka* (Bar), *wi<sup>z</sup>á-Riro-ka* (Gn), *wi<sup>z</sup>bā-gī* (Tuc), *mami* (Si).
42. 'chili pepper' \**bia*: [*bíaa*] (Bará), [*biá*] (Cub), *bia* (Des), *biá* (Gn), *biá* (Tue), *p'ia* (Si).
43. 'chin' See 'beard'.
44. 'chonta palm' \**irē*: [*īnē-nyi*] (Cub), *īrē-pō* (Gn), *īrē-yō* (Tuc), *īnē* (Si).
45. 'claw' See 'fingernail'.
46. 'coca' \**patu*: [*páthu*] (Bará), [*pátu*] (Cub), *pútu-pū* (Gn), *pátu* (Tue).
47. 'cold' \**Yisia*: [*yihá*] (Bará), [*hihī-rō*] (Cub), *yisa* (Des), *yisīa-Ro* (Gn), *yisīa-sé* (Tuc), *sisi* (Si).
48. 'come<sup>1</sup>' \**a<sup>z</sup>tī*: *arike* (Des), *ta-ga* (Gn), *a<sup>z</sup>tī-á* (Tuc).
49. 'come<sup>2</sup>' \**da*: [*da-haki*] (Cub), *t'a-i* (Si).
50. 'corn' \**oho-dika*: *oho-rika* (Bar), *o-dika* (Bará), *oho-dika* (Des), *ohó-ka* (Tue). See also 'plantain'.
51. 'cornfield' See 'cultivated clearing'.

52. 'cotton<sup>1</sup>' \*bu<sup>2</sup>sa: [buháa] (Bará), bu<sup>2</sup>sá (Gn), bu<sup>2</sup>sá (Tuc).  
   'cotton<sup>2</sup>' \*yuí: [džui] (Cub), yii (Si).
53. 'covering' \*-se: ka-se-ro 'bark' (Tuc), wabō-se-ro 'fingernail' (Gn), di-se-Ro 'mouth' (Gn), ibi-se 'sky' (Tuc), se -buti 'thick' (Gn).
54. 'crocodile<sup>1</sup>' \*iso/iSo: [peká-iho] 'fire lizard' (Bará), so (Gn), peká-iso 'fire lizard' (Tuc). See also 'iguana'.  
   'crocodile<sup>2</sup>' \*zia-bi<sup>2</sup>i: [hidbi] (Cub), bi<sup>2</sup>i-a 'piranha' (Gn), bi<sup>2</sup>i 'piranha' (Tuc), p'i<sup>2</sup>i (Si).
55. 'cultivated clearing' \*wese: wese (Gn), wese (Tuc).
56. 'eurassow' \*kata-bāhī/\*kata-māhī: [khátá] (Bará), kára-bahi (Des), gatá-bāhā (Gn), katá- (Tuc). See also 'hen and macaw'.
57. 'cut' \*yi/di-te: dité (Gn), di-té-bi (Tuc), yiti (Si).
58. 'dark' \*nā<sup>2</sup>i-tiā/sibi: dāitia (Des), dā<sup>2</sup>itī-Rō (Gn), dā<sup>2</sup>itī-se (Tuc), nā<sup>2</sup>i-sip'i (Si).
59. 'day' \*imī-de-ko: ibi (Des), dačo (Gn), [dekó] (Pir), [ibí-reko] (Tat), ibi-ko (Tuc) ← ibi-deko (Pre-Tucano). See also 'man, sky, water'.
60. 'deer' \*yāmā: [yāmāā] (Bará), [nyāmā-ko] (Cub), yābā (Des), yābā (Gn), yābā (Tuc), yāmā (Si).
61. 'demon' \*wātī: wātī (Gn), wātī (Tuc), wati (Si).
62. 'die' \*yai-ria: [yai] (Cub), yaria (Gn).
63. 'dig' \*se<sup>2</sup>a: sea-ke (Des), sa<sup>2</sup>a-ra (Gn), se<sup>2</sup>é-bi (Tuc).
64. 'dirty<sup>1</sup>' \*go<sup>2</sup>i-ra-ri: gi<sup>2</sup>ira-ri (Des), ū<sup>2</sup>irī (Tuc).  
   'dirty<sup>2</sup>' \*wete: wete (Gn), [wete] (Pir).
65. 'dog' \*dia-yai: yai (Bar), [yai] (Bará), [yawimi] (Cub), diá-ye (Des), dié-Ro (Gn), diá-yi (Tuc).
66. 'doorway' \*sope: sopá-pħa<sup>2</sup>bā (Gn), sopé (Tuc).
67. 'down' \*doka: doká (Des), doká-pi (Gn).
68. 'drink<sup>1</sup>' \*sī<sup>2</sup>dī/\*si<sup>2</sup>ni: hīnt-ya (Bará), si<sup>2</sup>dī-Rā (Gn), si<sup>2</sup>ri-bi (Tuc).  
   'drink<sup>2</sup>' \*ūkū: [ūkū-haki] (Cub), ū<sup>2</sup>kū (Si).  
   'drink<sup>3</sup>' \*idi: idi (Bar), íri (Des).
69. 'drum' \*to<sup>2</sup>atu: [toatore] (Bará), toatú-ri (Des), tħo<sup>2</sup>ati-ri (Gn), to<sup>2</sup>áti (Tuc).
70. 'dry' \*bopo-a/-i: [bopóa] (Bará), [popói-no] (Cub), boho (Des), bopo-sé (Tuc).
71. 'ear' \*ga<sup>2</sup>-bu-pe-ro: gābō-rō (Bar), [ámōpero] (Bará), kámūka (Cub), gābī-ro (Des), khā<sup>2</sup>bō-Rō (Gn), o<sup>2</sup>bé-pero (Tuc), k'āhō-t'o (Si).
72. 'earth<sup>1</sup>' \*si<sup>2</sup>di<sup>2</sup>-ta: tsítá (Bar), [hítá] (Bará), di<sup>2</sup>tá (Gn), di<sup>2</sup>tá (Tuc).  
   'earth<sup>2</sup>' \*yipa: [yépa] (Car), yiha (Si). See also 'sand'.
73. 'eat<sup>1</sup>' \*ba<sup>2</sup>i: ba-ya (Bar), [ba-ya] (Bará), [a-haki] (Cub), ba (Des), ba<sup>2</sup>a-bi (Tuc), ū<sup>2</sup>a-i (Si).
74. 'egg' \*zia: ría (Bar), [díá] (Bará), [hidi] (Cub), diu (Des), dié-ka (Gn), die (Tuc), s'ia (Si).

75. 'eye<sup>1</sup>' \*kape-a: kahé-a (Bar), [kapéa] (Bará), gapá (Gn), kape-a (Tuc).  
   'eye<sup>2</sup>' \*yāko: [yakó-ri] (Cub), yāko-ka (Si).
76. 'fall<sup>1</sup>' \*bira: bora-Ra (Gn), biri-bi (Tuc).  
   'fall<sup>2</sup>' \*to<sup>2</sup>i: [ti] (Cub), to<sup>2</sup>i (Si).
77. 'far<sup>1</sup>' \*Yoa: yó-a-ha (Bar), [yóá] (Bará), [hoa-ñō] (Cub), yoá-ri (Des), yoá-Ro (Gn), yoa-ró (Tuc), s'oa 'long' (Si).  
   'far<sup>2</sup>' \*sō<sup>2</sup>ō: sō<sup>2</sup>ō 'there' (Des), sō<sup>2</sup>ō-pi 'there' (Gn), so<sup>2</sup>o-pi 'there' (Tuc), so<sup>2</sup>o (Si).
78. 'father' \*pa(<sup>2</sup>)-ki: yi-ha-ki (Bar), [yi-pħa-kħi] (Bará), [pa-ki] (Cub), pa-gi (Des), pa-ki (Tuc), ha<sup>2</sup>-ki (Sec). See also 'mother, old man'.
79. 'fear' \*gui: gui-ka (Des), kui (Gn), uí-bi (Tuc).
80. 'feather' See 'hair'.
81. 'feminine' \*-ko: [pa-ko] 'mother' (Cub), bādā-ki-ko 'wife' (Bar).
82. 'finger' \*wā/ā-bū/\*wā/ā-mū -pi-ka ('hand' wā/ā-bū) wābō-pi-ka (Gn), [ūmū-pi-ka] (Pir), ābō-pi-ka (Tuc). See also 'knife, neck, tooth'.
83. 'fingernail, claw<sup>1</sup>' \*wā/ā-bū/\*wā/ā-mū-se(<sup>2</sup>)ro ('hand' wā/ā-bū) [āmōka-herō] (Bará), bōhā<sup>2</sup>se-ri (Des), wābō-se-Ro (Gn), abō-se<sup>2</sup>-ro (Tuc).  
   'fingernail, claw<sup>2</sup>' \*kio: [kio-we] (Cub), ko-wi (Si).
84. 'fire<sup>1</sup>' \*pe-ka/a-bē/mē/ka: heabē (Bar), [pħekħamē] (Bará), peabē (Des), bičá-ka (Gn), pekábē (Tuc).  
   'fire<sup>2</sup>' \*toa: [toa-bo] (Cub), toa (Si). See also 'blade, small object, smoke'.
85. 'firewood' \*peka: [peká-buwéri] (Bará), [peká] (Cub), peá (Des), bičá (Gn), peká (Tuc), peka (Si).
86. 'first' \*hi-/dī-/nī-bī<sup>2</sup>ta/mi<sup>2</sup>ta: hi-bī<sup>2</sup>tā-Riro (Gn), dī-bī<sup>2</sup>ta-ka (Tuc). See also 'all'.
87. 'fish' \*wa<sup>2</sup>i: wái (Bar), [wai] (Bará), wai (Des), wa<sup>2</sup>i (Gn), wa<sup>2</sup>i (Tuc), wa<sup>2</sup>i (Si). See also 'kill'.
88. 'fish hook' \*wēhē-rī/-se: wēhē-rī (Des), wa<sup>2</sup>i wēhē-se (Tuc). See also 'fish net, kill'.
89. 'fish net' \*wēhē-te-dī/gi|rō: wēhēdigi (Des), wā-yī-Rō 'to kill, to look thing' (Gn), wēhē-ki (Tuc), wātē-t'i (Si).  
   'fish net<sup>2</sup>' \*bapi-ki: [bapi-ki] (Bará), [papi-ki] (Cub).
90. 'flesh' See 'meat'.
91. 'flower' \*go<sup>2</sup>o-ro/wi/ri: go (Bar), [o] (Bará), [kówi] (Cub), go (Des), ko<sup>2</sup>o-Ro (Gn), o<sup>2</sup>ó-ri (Tuc).
92. 'fly (v)<sup>1</sup>' \*wii: [wi-] (Cub), wi<sup>2</sup>i- (Des), wi-Ra (Gn), wii-bi (Tuc), wi-i 'rise' (Si).  
   'fly (v)<sup>2</sup>' \*kaido-pi: kaerihire (Bar), [kaedipi] (Bará), [kairo] (Mac).
93. 'foot, thigh<sup>1</sup>' \*gio-bo/so: gibo (Bar); [kibóba] (Cub); gubu-ri (Des); k'io 'foot', k'i-so 'thigh' (Si).  
   'foot, thigh<sup>2</sup>' \*di<sup>2</sup>po/so: dipó (Bará); da<sup>2</sup>pó-Ro 'foot', disó 'thigh' (Gn); di<sup>2</sup>po-ka 'foot', 'thigh' (Tuc). See also 'chigger'.

94. 'forehead' \*wi<sup>3</sup>dia-poa: [dia-mak<sup>h</sup>a] (Bará), dia-pu<sup>3</sup>sero (Des), wi<sup>3</sup>día-pa (Gn), diá-poa (Tuc). See also 'hair'.
95. 'fruit' \*Yuki-dika 'tree fruit': yukidika (Des), dičá-ka (Gn), yuki-dika (Tuc). See also 'tree, fruit'.
96. 'full' \*bui: [buí-no] (Cub), p'ui (Si).
97. 'give<sup>1</sup>' \*o-<sup>3</sup>o: o- (Des), o<sup>3</sup>o- (Tuc).
98. 'give<sup>2</sup>' \*isi: [hi-bi] (Cub), <sup>3</sup>isi (Si).
99. 'go<sup>1</sup>' \*wa<sup>3</sup>a: wá-hi (Bar), [wá-hi] (Bará), wá-ke (Des), wá<sup>3</sup>á-ga (Gn), wa<sup>3</sup>a-ya (Tuc).
100. 'gourd' \*waku-hu-: wahá-ka (Gn), wahá-ro (Tuc), [wakuhu] (Tat).
101. 'grape' \*iSei: [idžei] (Cub), se (Gn), iye (Si).
102. 'grass' \*ta-ya: ta (Des), thá (Gn), ta (Tuc), taya (Si).
103. 'grease' \*i<sup>3</sup>Se: iyi (Des), se (Gn), i<sup>3</sup>sé (Tuc).
104. 'green' \*ya<sup>3</sup>-ya/sa: [yáyá-ri] (Bará), yasa-ri (Des), ya<sup>3</sup>sá-Ro (Gn), ya<sup>3</sup>sa-se (Tuc).
105. 'ground' See 'earth'.
106. 'hair' \*poa: hóa (Bar), [póa] (Bará), [podá] (Cub), poá-ri (Des), p<sup>h</sup>oá-Ri (Gn), poa-ri (Tuc). See also 'foot, head, beard'.
107. 'hammock' \*păū-gă|rō|dī: [pă-ŋă] (Bará), [păū-ki] (Cub), păū-gă (Des), p<sup>h</sup>ă-Rō (Gn), păū-gă (Tuc), hăō-ti (Si).
108. 'hand<sup>1</sup>' \*wă/ă-bă/\*wă/ă-mă -hoto/dzō/ka: ābō (Bar), [amō] (Bará), [amă-dzō] 'finger' (Cub), bōhótó (Des), wăbō-ka (Gn), abō-ka (Tuc), wabă (Car). 'hand<sup>2</sup>' \*pi-ri/ti: [pi-rí] (Cub), <sup>3</sup>ti ti-sat'a (Si).
109. 'hard' \*buti: butí (Gn), bití (Tuc).
110. 'he<sup>1</sup>' \*ati-ro: i (Bar), [atí] (Bará), ti-ro (Gn). 'he<sup>2</sup>' \*-gă: [i] (Cub), i-gă (Des), kă (Tuc), p'a-k'i (Si).
111. 'head' \*zi-po-a/ga/ru/bi: ri-hoá (Bar), [di-pí-ga] (Bará), [hi-póbi] (Cub), dipu-ru (Des), dapú (Gn), dipóa (Tuc), s'i-hō (Si). See also 'meat, hair'.
112. 'hear<sup>1</sup>' \*ti<sup>3</sup>o: thi<sup>3</sup>o (Gn), ti<sup>3</sup>o-bi (Tuc). 'hear<sup>2</sup>' \*ača: [ha-pia-ibi] (Cub), ača (Si).
113. 'heart' \*yi<sup>3</sup>i-si/hi-ri-pō<sup>3</sup>dă/po<sup>3</sup>nă 'my being offspring': [yerika] (Bará), sípōdă (Des), ya-híRi-pō<sup>3</sup>dă (Gn), eheripō<sup>3</sup>ră (Tuc).
114. 'heavy' \*dikī-rō/se: [n̩ikī] (Bará), [n̩ikiňo] (Cub), dikī (Des), dīkī-Rō (Gn), dīkī-se (Tuc), t'iki (Si).
115. 'hen' \*a-ka-re-(<sup>3</sup>)-ka/raya/yuko: [ak<sup>h</sup>a] (Bará), [kadžúko] (Cub), ka-rayá (Des), kháraká (Gn), kárē<sup>3</sup>kē (Tuc), <sup>3</sup>aka 'guinea hen' (Si).
116. 'here<sup>1</sup>' \*ādō: ado (Bar), [anō] (Bará), [anō] (Tuy). 'here<sup>2</sup>' \*a<sup>3</sup>to: [áto] (Tat), a<sup>3</sup>tó (Tuc).
117. 'hill, mountain' \*ită-gă: [itá-ŋă] (Bará), tă-kă (Gn).

118. 'hold' \*kio: kia (Gn), kio-bi (Tuc).
119. 'horn' \*sa<sup>3</sup>a: [tsabu] (Bar), [hawaro] (Cub), sa<sup>3</sup>a-Ri (Gn), kape-sa<sup>3</sup>ro (Tuc).
120. 'hot' \*a(<sup>3</sup>)si: atsi-goda (Bar), [ahi] (Bará), [toa-hi-no] (Cub). See also 'fire' (Cubeo), asi (Des), sí-Ro (Gn), asi-sé (Tuc), ha<sup>3</sup>si (Si). See also 'burn'.
121. 'house' \*wi<sup>3</sup>e: wi (Bar), [wi] (Bará), wi<sup>3</sup>i (Des), wi<sup>3</sup>i (Gn), wi<sup>3</sup>i (Tuc), wi<sup>3</sup>e (Si).
122. 'hummingbird' \*mimī: bībī (Des), wībī (Gn), bībī (Tuc), mīmī (Si). Note: wi<sup>3</sup>bī 'suck' (Gn).
123. 'husband' \*bădă/\*măñă: bădăkiki (Bar), bădă-pi (Des), bădă (Gn), bără-pi (Tuc). See also 'wife'.
124. 'I' \*yī<sup>3</sup>i: yi (Bar), [yí] (Bará), [dži] (Cub), yī<sup>3</sup>i (Des), yī<sup>3</sup>i (Gn), yī<sup>3</sup>i (Tuc), yī<sup>3</sup>i (Si).
125. 'iguana' \*yoa-iso 'long lizard': yoá-si-peruriki (Des), yoá-so (Gn), yoá-so paki 'long lizard's father' (Tuc). See also 'crocodile'.
126. 'intestines' \*gi(<sup>3</sup>)tă-mi-si: [kira-mē] (Cub), tă-bisī (Gn), i<sup>3</sup>tă-bisī (Tuc), k'ita-mē (Si).
127. 'island' \*dīqī-dō/nō/ro: gīgī-dō (Des), dīkō (Gn), dīkī-Rō (Tuc).
128. 'jaguar' \*yai: yái (Bar), [yái] (Bará), [yawí] (Cub), yée (Des), yai-Ro (Gn), yai (Tuc), yai (Si).
129. 'kill' \*wēi-hē: wēhē (Des), wāhā-da (Gn), wehe-bi (Tuc), wai (Si). See also 'fish, fishhook, fishnet'.
130. 'knee' \*yīkā-si/ku<sup>3</sup>u-ria: gīgī-ku<sup>3</sup>u (Des), [yīkā-hi-ria] (Tat), [yīkā-si-ria] (Tuy).
131. 'knife' \*zi<sup>3</sup>i-pi: [n̩i-pí] (Bará), [di<sup>3</sup>i-pi-ŋă] (Pir), di<sup>3</sup>i-pihi-ākā (Tuc). See also 'blade, head, meat, tooth'.
132. 'know' \*măsī: bătsī-ya (Bar), [măhī-ya] (Bará), măhī-bi (Cub), băsī (Des), băsī-Ră (Gn), băsī-bi (Tuc), măsī (Si).
133. 'lake<sup>1</sup>' \*zi(<sup>3</sup>)ta-ra/ru/bi: [maka-hitabi] (Cub), dīta<sup>3</sup>ru (Des), di<sup>3</sup>ta-ra (Tuc), s'ita-t'a (Si). 'lake<sup>2</sup>' \*gīta-biki-ra: gīdá-biki-ra (Bar), [itá-biki-ra] (Bará), [ita-biki-ra] (Tat).
134. 'leaf' \*pă: hă (Bar), [p<sup>h</sup>u] (Bará), pă (Des), pă (Gn), pu-ri (Tuc). See also 'roof'.
135. 'left' \*kō-pe/-pi-rawi/bi<sup>3</sup>se: [kakō pirawi] (Cub), kupi (Des), kō-bi<sup>3</sup>se (Gn), kō-pe (Tuc).
136. 'leg' \*yīkā: dīki (Bar), yīka (Bará), gīgā-gă (Des), yīči-kī (Gn).
137. 'lick' \*nē<sup>3</sup>nē: dē<sup>3</sup>rē (Tuc), ne<sup>3</sup>ne (Si).
138. 'lightning' \*mīpō-pa: [ipo-pa-ro] (Pir), bipó-pa-se (Tuc), mīhō (Si). See also 'thunder'.
139. 'liquid<sup>1</sup>' \*zi: di-a 'river' (Des), [di] 'blood' (Bará). 'liquid<sup>2</sup>' \*ko: [i-ko] 'rain' (Bará), [ope-ko] 'milk' (Cub).

140. 'liver' \**Yēpmē-tu/sa<sup>3</sup>wa/bi*: *yā<sup>3</sup>bā-sa<sup>3</sup>wa-ri* (Gn), *yē<sup>3</sup>bē-tū-ri* (Tuc), *s'eme-p'i* (Si). See also 'tongue'.

141. 'lizard' See 'crocodile, iguana'.

142. 'long' \**Yoa-ño/ro/ri/se*: [*hoa-ño*] (Cub), *yoa-ri* (Des), *yoa-Ro* (Gn), *yoa-sé* (Tuc), *s'oa* (Si). See also 'far'.

143. 'louse' \**gī<sup>3</sup>-ā-bi*: *giá-bi* (Bar), [*iá-mī*] (Bará), [*kī-kī*] (Cub), *ki<sup>3</sup>a-iro* (Gn), *i<sup>3</sup>píá* (Tuc), *kī<sup>3</sup>pī* (Si).

144. 'lower leg' See 'leg'.

145. 'macaw' \**māhā*: *bāhā* (Bar), [*mā*] (Bará), [*mā*] (Cub), *bāhā* (Des), *bāhā* (Gn), *bāhā* (Tuc), *mā* (Si).

146. 'man' \**ka-īmī-rō/gī*: *ībī* (Bar), [*īmī*] (Bará), [*īmī*] (Cub), *ībīgī* (Des), *bī-Rō* (Gn), *ībī* (Tuc), *īmī-k'i* (Si), [*kīmī*] (Tat) → \**(ka)-īmī*; *ka-īmī* (Car). See also 'sky'.

147. 'manioc' \**kīi*: *kī* (Bar), [*kīi*] (Bará), [*kiika*] (Cub), *kī* (Des), *ki* (Gn), *ki* (Tuc), *kīi* (Si).

148. 'manioc flour' \**po<sup>3</sup>ga*: *pogá* (Des), *p<sup>h</sup>o<sup>3</sup>ká* (Gn), *po<sup>3</sup>ká* (Tuc).

149. 'many' \**pai-yi/he*: *p<sup>h</sup>ayí* (Gn), [*péye*] (Pir), *pehé* (Tuc), *hai* 'big' (Si).

150. 'masculine' \*-*ki*: [*pa-ki*] 'father' (Cub), *bādō-ki-ki* 'husband' (Bar).

151. 'meat' \**wa<sup>3</sup>i-biki-zi*: *wai-biki-ri* (Bar), [*wai-bikidi*] (Bará), *wa<sup>3</sup>i* (Si). See also 'fish, old man'.

'meat' \**zi<sup>3</sup>i-ro*: [*hi-ari*] 'flesh' (Cub), *di<sup>3</sup>i* (Des), *di<sup>3</sup>i-Ro* (Gn), *di<sup>3</sup>i-ro* (Tuc) See also 'knife'.

152. 'medicine man' See 'jaguar'.

153. 'milk' \**opē-ko*: [*opé-kó*] (Cub), *deko-apikū* (Des), [*pēni*] (Pir), *pē-čo* (Gn), *opé-ko* (Tuc). See also 'breast'.

154. 'miriti palm' \**nē<sup>3</sup>e-yu/pu*: [*nēi-yī*] (Cub), *dē<sup>3</sup>e-yū* (Des), *dā<sup>3</sup>ā-pō* (Gn), *dē<sup>3</sup>e-yo* (Tuc), *nē<sup>3</sup>e-yī* (Si), [*nē-pú*] (Tat).

155. 'monkey, howler' \**ēmū*: *ēbū* (Gn), *ēbō* (Tuc), *ēmū* (Si).

156. 'mosquito' \**mītēā*: [*mīthā*] (Bará), [*mīnē-ki*] (Cub), *bīrēā-bī* (Des), *bīteá-iro* (Gn), *bītēā* (Tuc), *mite* (Si).

157. 'mother' \**pa(3)ko*: *yi-hako* (Bar), [*yi-p<sup>h</sup>akó*] (Bará), [*pakó*] (Cub), *pago* (Des), *pakó* (Tuc), *ha<sup>3</sup>ko* (Sec). See also 'father'.

158. 'mountain'<sup>1</sup> \**butua*: *butúa* (Bar), [*butúa*] (Bará), *butú-ki* (Gn). See also 'hill, termite'.

'mountain'<sup>2</sup> *igu-ra-gu/bi*: [*kīrā-kū*] (Cub), *īrī-gī* (Tuc), *ku-p'i* (Si). See also 'hill, termite'.

159. 'mouse' \**bi<sup>3</sup>i*: [*beibo*] (Cub), *bi<sup>3</sup>i* (Des), *bi<sup>3</sup>i* (Gn), *bi<sup>3</sup>i* (Tuc).

160. 'mouth' \**zi/i-se*: *ritsé* (Bar), [*ihé-ro*] (Bará), [*hihe-kamu*] (Cub), *disi-ro* (Des), *disé-Ro* (Gn), *ise-ro* (Tuc). See also 'beard, covering, saliva'.

161. 'name' \**wā-mi/i*: *wābē* (Bar), [*wámē*] (Bará), [*ami-á*] (Cub), *wāi* (Des), *wābā* (Gn), *wābē* (Tuc), *mami* (Si).

162. 'navel' \**čōbū-a/rō/ka/bi*: [*homīro*] (Cub), *sūbū-rū* (Des), *sībī-ka* (Gn), *sūbū-a wiha-ro* (Tuc), *čōhō-p'i* (Si).

163. 'near' \**pi<sup>3</sup>/ye-tora-ka*: *yeroá-ka* (Bar), [*petoa-ka*] (Bará), *tiro* (Des), *pi<sup>3</sup>to* (Tuc).

164. 'neck'<sup>1</sup> \**wā/ā-bū/\*wā/ā-mū -tuta* ('hand' *wā/ā-bū*): *abū-tutu* (Bar), [*amītutu*] (Bará), *wabīā* (Gn), *wabīta* (Tuc). See also 'hand'.

'neck'<sup>2</sup> \**yā-pē*: [*nyāmemu*] (Cub), *yā-hē<sup>3</sup>ītika* (Si), *yāhe* (Sec).

165. 'new' \**mā<sup>3</sup>mē*: *bābā-dō* (Bar), [*wāmā-diku*] (Bará), [*mā-nā-ño*] (Cub), *bābā* (Des), *wā<sup>3</sup>bā* (Gn), *bā<sup>3</sup>bā-se* (Tuc), *mā-mē* (Si).

166. 'night' \**yāmī*: *yābī* (Bar), [*yāmī*] (Bará), [*nyāmī*] (Cub), *yābī* (Des), *yābī* (Gn), *yābī* (Tuc), *yāmī* (Si).

167. 'nose' \**i<sup>3</sup>gē-rō/ā*: [*ikē*] (Bará), *īgī-ru* (Des), *kē-Rō* (Gn), *ē<sup>3</sup>kēā* (Tuc).

168. 'old' \**būdā/\*mūnā*: *būdā-yē* (Des), *bīdā-Rō* (Gn).

169. 'old man' \**bi-ki-ki/ro*: *biki-ro* (Bar), [*bikī-ri*] (Bará), *biki-ki* (Cub), *bigi* (Des), *biki-Ro* (Gn), *biki* (Tuc). See also 'father, mother, old woman'.

170. 'old woman' \**bi-ki-ko/ro/o*: *biki-ko* (Cub), *bi-ko-Ro* (Gn), *biki-o* (Tuc). See also 'father, mother, old man'.

171. 'other, another' \**a-pe-iro/ro/o/ki*: *ha-iro* (Bar), [*p<sup>h</sup>a-iro*] (Bará), [*a-pe-ki*] (Cub), *pa-iro* (Gn), *a-pé-ro* (Tuc).

172. 'otter' \**zia-ya<sup>3</sup>o*: *diayana* (Des), *diéyo* (Gn), *diáyo<sup>3</sup>o* (Pir), *diáyo* (Tuc), *ya<sup>3</sup>o* 'collared peccary' (Si).

173. 'owl' \**bipu pako*: [*bup<sup>h</sup>u-p<sup>h</sup>ak<sup>h</sup>o*] (Bará), [*pupú-ri*] (Cub), *bip<sup>h</sup>-pako* (Tuc). See also 'mother, lightning'.

174. 'paca' \**sēmē*: [*hēmē*] (Bará), [*hēmē-bo*] (Cub), *sēbē* (Des), *sābā* (Gn), *sēbē* (Tuc), *semé* (Si).

175. 'paddle (n)' \**we-ha-pīhī/ro/bu*: [*wa-diká-pi*] (Bará), *weha-bu* (Des), *wehe-Ro* (Gn), *waha-pīhī* (Tuc). See also 'tooth'. Note: *pī* = 'blade'.

176. 'parakeet'<sup>1</sup> \**gā<sup>3</sup>i*: *gā<sup>3</sup>i-putaro* (Des), *kā<sup>3</sup>i* (Gn), *kā<sup>3</sup>i* (Tuc).

'parakeet'<sup>2</sup> \**kiyī-ri*: [*kidži-ri*] (Cub), *kiyī* (Si).

177. 'parrot' \**weko*: [*wek<sup>h</sup>o*] (Bará), [*weko*] (Cub), *weko* (Des), *wačō* (Gn), *wekō* (Tuc), *wekō* (Si).

178. 'path, road' See 'trail'.

179. 'peccary' \**Yese*: *yese* (Gn), *yese* (Tuc), [*yehe*] (Tat), *sese* (Si).

180. 'people' \**bāi-sā*: *bātsā* (Bar), [*mahokhá*] (Bará), *bāsā* (Des), *bāsā* (Gn), *bāsā* (Tuc), *p'ai* (Si). See also 'you (pl.)'.

181. 'pierce' \**pui-riye*: *púriye* (Des), *hui* (Si).

182. 'plantain' \**o-ho*: [*ohu-warihe*] (Bará), [*óñēwe*] (Cub), *ho* 'banana' (Gn), *ohó* (Tuc), *po* (Si). See also 'corn'.

183. 'pot (cooking)' \**kōbē/\*kōmē-soro/ti*: *kōbē-soro* (Des), *kōbē-ti* (Tuc).

184. 'push' \**tio*: *turíye* (Des), [*tió<sup>3</sup>ya*] (Pir), *tukeó-bī* (Tuc).

185. 'rain' \*(*d*)*i-ko*: *i-kó* (Bar), [*i-kó*] (Bará), *de-ko-bēdē-ri* (Des), *kó-Ro* (Gn), *a-kóro-peha-sé* (Tuc), *po-ko* (Si). See also 'water'.

186. 'rainbow' \**bu<sup>3</sup>e-rī/ri-da/soro*: *bu<sup>3</sup>i-Rī-soro* (Gn), [*bu<sup>3</sup>e-ri-da*] (Pir), *bu<sup>3</sup>e-da* (Tuc).

187. 'rapids' \**poe-ye/ro*: *p̥oáye* (Gn), *ita poero* (Tuc).
188. 'rat' See 'mouse'.
189. 'rattle' \**yā(?)sā*: *yāsā-rō* (Des), *yāsā* (Tuc).
190. 'rattle snake' \**sō(?)kō-dōākā/nōākā/se(?)ro*: *sōkō-dōākā* (Gn), *sōkō-se<sup>?</sup>ro* (Tuc). See also 'fingernail, bark'. Note: *se<sup>?</sup>ro*.
191. 'red' \**sū<sup>?</sup>-ā/yō*: [*hūā-ri*] (Bará), [*huuvá-ñō*] (Cub), *sōā* (Gn), *sōā-se* (Tuc), *sī<sup>?</sup>-yō-hē<sup>?</sup>i* 'yellow' (Si).
192. referent \*-re: *-Re* (Gn), *t'e* (Si).
193. 'ripe' \**buti*: [*buti-ye*] (Pir), *buti-sé* (Tuc).
194. 'river' \**z̄ia-wa*: *riwa* (Bar), [*diá-mak̄i*] (Bará), [*hia*] (Cub), *diá* (Des), *diá* (Gn), *diá* (Tuc), *s'ia-ya* (Si). See also 'otter, dog'.
195. 'rock' See 'stone'.
196. 'roof' \**būhī*: [*mūi*] (Bará), *būhī* (Des), *būhī p̥ābā* (Gn), *būhī* (Tuc), *p'ūi* 'leaf' (Si). See also 'leaf'.
197. 'root' \**dī(?)kō/ñī(?)kō*: [*nīkō nēnēthā*] (Bará), [*nīkō-ñī*] (Pir), *dīkō-ri* (Tuc).
198. 'rotten' \**boa*: *boa* (Des), *báa-Ró* (Gn), *boa-sé* (Tuc).
199. 'round<sup>1</sup>' \**zu-/u-pabe<sup>?</sup>to*: *ruhábedo* (Bar), [*uhuábeto*] (Bará), *apa-be<sup>?</sup>to* (Tuc).
- 'round<sup>2</sup>' \*-soro: *bu<sup>?</sup>i-rē-soro* (Gn) 'rainbow', *kobē-soro* 'pot' (Des).
200. 'saliva' \**zi/i-se-ko*: [*he-kū*] (Cub). Analogous to Desano *ku*; *isí-ku* (Des), *isé-ko* (Tuc). See also 'mouth, rain, water'.
201. 'salt' \**bōā*: *bōā* (Bar), [*mōā*] (Bará), *bōā* (Des), *bōā* (Gn), *bōā* (Tuc), *p'owa* (Si).
202. 'sand' \**ibī/ñmī-pa*: [*épa*] (Cub), *ibīpa* (Des), *p̥a-dí* (Gn), *mēhā* (Si). See also 'earth'.
203. 'sap' See 'tree'.
204. 'say' \**ādī*: *ārī* (Des), *dī* (Gn), *dī-bī* (Tuc).
205. 'seat' \**kōbūrō/kōmūrō*: [*k̄obūrō*] (Bará), *kūbūrō* (Gn), *kūbūrō* (Tuc).
206. 'see' \**ī(?)yā*: *yī-yē* (Bar), [*nyīá-rike*] (Bará), *īā* (Des), *yī-Rā* (Gn), *īā-bī* (Tuc), *īyā* (Si).
207. 'seed' \**ote-ri/yapa/se*: *oté* (Bar), [*oté*] (Bará), *oté-ri* (Des), *toá-yapá* (Gn), *ote-se* (Tuc).
208. 'sew' \**dero*: *deré-Ra* (Gn), *deró-bī* (Tuc).
209. 'she' \**ti/i-go-ro*: [*o*] (Cub), *i-go* (Des), *tí-ko-ro* (Gn), *kó* (Tuc), *-k'o* (Si).
210. 'shin' \**yīkā-gōā*: *yīgē-gōā* (Des), *yīčīkē-kōā* (Gn), *yēkā-gī* (Tuc). See also 'bone, leg'.
211. 'shoulder' \**kōbē/kōmē-po-ro/ria*: *kōbēpōrō* (Des), *kōbāpā-Ria* (Gn). See also 'pot'.
212. 'sing<sup>1</sup>' \**ba-Sa*: *ba-iya-ri* (Des), *basá-Ra* (Gn), *basá-bī* (Tuc).
- 'sing<sup>2</sup>' \**wīha-ka*: [*upa*] (Cub), *hwīha-ka* (Si).
213. 'sit' \**jū(?)hī*: [*duí-ye*] (Bará), *duhī-Ra* (Gn), *duhī-bī* (Tuc), *yū<sup>?</sup>i* (Si).

214. 'skin' See 'bark'.
215. 'sky' \**ñmī-a-ga<sup>?</sup>-se/rō*: *ibīā-gatséro* (Bar), [*ñmī-kahero*] (Bará), *ibī-sī* (Des), *bīā-Rō* (Gn), *ibī-se* (Tuc). See also 'man, bark'.
216. 'sleep' \**kāi-rī*: *kāi-ye* (Bar), [*kani-ye*] (Bará), [*kāi-bī*] (Cub), *kāi* (Des), *kāi-bī* (Tuc), *kā-i* (Si).
217. 'small' \**kāpōrō-ā-ka*: *kōrōaka* (Bar), [*kónōāka*] (Bará), *kāpōrō* (Tuc).
218. 'small object' \*-ka: *bīčā-ka* 'bird' (Gn), *p̥hū-ká* 'blowgun' (Gn), [*wimā-ñīā-ka*] 'child' (Bará), *bičā-ka* 'fire' (Gn), *pe-ka* 'firewood' (Tuc), *di<sup>?</sup>pō-ka* 'foot' (Tuc), *dičā-ka* 'fruit' (Gn), [*véri-ka*] 'heart' (Bará), [*yī-ka*] 'leg' (Bará), *pī-Ria-ka* 'tooth' (Gn).
219. 'small rounded' \*-ria: [*yīkā-hi-ria*] 'knee' (Tat), [*yīkā-si-ria*] 'knee' (Tuy), *pī-Ria-ka* 'tooth' (Gn).
220. 'smoke' \**ñbēko*: [*bikó*] (Cub), *ibīka* (Des), *bē* (Gn), *o<sup>?</sup>bē* (Tuc), *pīko* (Si).
221. 'smoke, vapor' \*-bē: *pe-ka-bē* 'fire' (Tuc), *bē-se* 'cloud' (Gn).
222. 'smooth' \**ya<sup>?</sup>pī*: *ya<sup>?</sup>pī-Ro* (Gn), *ya<sup>?</sup>pī* (Tuc).
223. 'snake' \**āyā*: *āyā* (Bar), [*ānyā*] (Bará), [*ādā*] (Cub), *āyā* (Des), *āgā* (Gn), *āyā* (Tuc), *āyā* (Si).
224. 'spider' \**bīpī*: [*pīpībo*] (Cub), *bīpī* (Des), *wipī* (Gn), *bīpī* (Tuc), *hīhi* (Si).
225. 'spider monkey' \**wa<sup>?</sup>u*: *wa<sup>?</sup>u* (Tuc), *wa<sup>?</sup>o* (Si).
226. 'stand' \**nūkā*: [*naka-haimi*] (Cub), *duku* (Gn); *nika* (Si).
227. 'star' \**yōko-(awi)*; *yokó* (Bar), [*yōko*] (Bará), *dēyōka* (Des), *yōko-áwi* (Tuc).
228. 'stomach' See 'abdomen'.
229. 'stone' \**gītā-yo/ka*: *gītā* (Bar); [*itā-yō*] (Bará); *ita-yé* (Des). Loss of *g* due to the proximity of Desano to Piratapuyo and Guanano; *tā-ka* (Gn); *itā* (Tuc); *k'ata* (Si). See also 'hill'.
230. 'stream' \**bā/\*mā-i/ka*: *bā* (Des), *bā-ká* (Gn), *bā* (Tuc). See also 'trail'.
231. 'sun<sup>1</sup>' \**āsī*: *sī* (Gn), [*asī*] (Pir), *īsi-k'i* (Si).
- 'sun<sup>2</sup>' \**būhī-pū*: *būhī-hū* (Bar), [*mūi-pū*] (Bará), *būhī-pū* (Tuc). See also 'leaf, roof'.
232. 'swamp' \**sa-<sup>?</sup>abaro*: [*abaro*] (Bará), *yārī sāpāba* (Gn), *sa<sup>?</sup>báro* (Tuc).
233. 'sweet potato' \**yāpī*: [*yāpī*] (Bará), [*yapi*] (Cub), *yāpī* (Gn), *yāpī* (Tuc).
234. 'swell' \**bīpī*: *wipī-Ra* (Gn), *bīpī-bī* (Tuc).
235. 'swim' \**baa*: *bāa* (Des), *bāa* (Gn), *bāa* (Tuc).
236. 'tail' \**pīkō-rō/mūyo*: *ihikōrō* (Bar), [*pīkō*] (Bará), [*pīkō-mū*] (Cub), *bičō-Rō* (Gn), *pīkōrō* (Tuc), *pīko-yo* (Si). See also 'blade'.
237. 'tapir' \**weki*: *weki* (Bar), [*weki*] (Bará), [*weki*] (Cub), *weki* (Des), *wačī* (Gn), *weki* (Tuc), *weki* (Si).
238. 'termite' \**bitua*: [*bithúá*] (Bará), *butua-iro* (Gn), *butúa* (Tuc). See also 'mountain'.
239. 'that' \**si*: *si* (Des), *si* (Gn), *si-sé* (Tuc).

240. 'there' \**sō̃ō-pi*: *sō̃ō* (Des), *sō̃ō-pi* (Gn), *sō̃ō-pi* (Tuc), *sõo* 'far' (Si).
241. 'they' \**ti-kidā/na*: [*ina*] (Cub), *ira* (Des), *tidā* (Gn), [*ti-kidā*] (Pir), *dā* (Tuc).
242. 'thigh' See 'foot'.
243. 'think' \**wakū*: *wakū-Rā* (Gn), *wakū-bī* (Tuc).
244. 'this<sup>1</sup>' \**ãdi*: *adí* (Bar), *i* (Des), *ãRí* (Gn).
- 'this<sup>2</sup>' \**ãti*: [*atí*] (Bará), *ãté* (Tuc).
- 'this<sup>3</sup>' \**iye*: [*iyé*] (Cub), *pi-ye* (Si). See also 'here'.
245. 'throw' \**doke-o*: *doká* (Gn), *dokéo-bī* (Tuc).
246. 'thunder' \**m̄pō*: [*bupo*] (Bará), *bupú* (Des), *wipó* (Gn), *bipo* (Tuc), *m̄hō* (Si). See also 'lightning'.
247. 'tie' \**dĩte*: *díri* (Des), *dĩté* (Gn), *dĩte-bī* (Tuc).
248. 'toad' \**tãaro-biki*: *thá̃áro-biki* (Gn), *tãrō-kī* (Tuc).
249. 'tobacco' \**m̄dō*: [*m̄nō*] (Bará), *bárū* (Des), *b̄dō* (Gn), *b̄rō* (Tuc), *m̄to* (Si).
250. 'toe' \**dĩpo-pika*: *dãpó-pika* (Gn), *dĩpo-pika* (Tuc). See also 'finger'.
251. 'tongue' \**Yē̃mē-rō/yō*: *yé̃bē-rō* (Bar), [*n̄yémē-ro*] (Bará), [*hémē-do*] (Cub), *yá̃bā-Rō* (Gn), *yé̃bē-rō* (Tuc), *s'émē-yō* (Si). See also 'liver'.
252. 'tooth' \**gōpī*: *guhí* (Bar), [*upí*] (Bará), [*kōpī-yo*] (Cub), *gui-kuri* (Des), *pí-Ria-ka* (Gn), *upí-ka* (Tuc), *k'ūhī* (Si). See also 'blade, small object, small roundish'.
253. 'tortoise' \**gu-i*: [*ju*] (Bará), [*kūibō*] (Cub), *kúri* (Gn), [*gú*] (Tat), *ü* (Tuc), *k'oi* (Si).
254. 'toucan' \**jāsi*: [*dáhé*] (Bará), *dásí* (Des), *dasá* (Gn), *dasé* (Tuc), *yāse* (Si).
255. 'trail' \**mā̃ā*: *bā* (Bar), [*mā*] (Cub), *bā̃ā* (Des), *bā̃ā* (Gn), *bā̃ā* (Tuc), *mā̃ā* (Si). See also 'stream'.
256. 'tree' \**Yu-ki/ki-gi/yi*: *yukí* (Bar), [*yukí-gi*] (Bará), [*hoki-ki*] (Cub), *yuki-gi* (Des), *yuki-ki* (Gn), *yuki* (Tuc), *súki-yī* (Si).
257. 'tree-like, part of the woods<sup>1</sup>' \*-*di*: [*puti-di*] 'blowgun' (Pir), [*mumi-di*] 'bee' (Cub), [*we-di*] 'fishnet' (Pir).
- 'tree-like, part of the woods<sup>2</sup>' \*-*ki*: *kadi-ki* 'cane' (Gn), *yu-ki* 'tree' (Tuc).
258. 'trumpeter' \**tītī*: *tītī* (Tuc), *tītī* (Si).
259. 'up' \**bu-(̄)i*: *bu* (Gn), *bu-̄i* (Tuc).
260. 'village' \**bākā/mākā*: *bākā* (Des), *bākā* (Gn), *bākā* (Tuc).
261. 'vomit<sup>1</sup>' \**etoa*: *etoka* (Des), *toa-ka* (Gn).
- 'vomit<sup>2</sup>' \**biso*: [*bihō*] (Cub), *siso* (Si).
262. 'wash' \**koe-Yoa/sa*: [*koā-ya*] (Bará), [*hoa*] (Cub), *kōe* (Des), *gosá-Ra* (Gn), [*koha-ya*] (Tat), *koe-bī* (Tuc), *s'oa* (Si), *doa* (Or).
263. 'water' \**a-ko*: *oko* (Bar), [*ók̄hō*] (Bará), [*okó*] (Cub), *ko* (Gn), *akó* (Tuc), *oko* (Si). See also 'rain, saliva'.
264. 'we (inclusive)' \**mā̃-rī*: *bārī* (Des), *bārī* (Gn), *bārī* (Tuc), *mai* (Si).

- 'we (exclusive)' \**yī̃ĩ-sā*: [*džihá*] (Cub), *yī̃sā* (Gn), *sā* (Tuc). See also 'people, you (pl.)'.
265. 'wet' \**weya-ko*: *weá-dā* (Des), *wáa-ri* (Gn), *weya-ko* (Tuc).
266. 'where' \**dō̃ō-pi/nō̃ō-pi*: *dō̃ō* (Des), *dō̃ō-pi* (Gn), *dō̃ō-pi* (Tuc).
267. 'white' \**bo-ti-ro*: [*boti-ro*] (Bará), [*bōñō*] (Cub), *bóre* (Des), *buti-se* (Tuc), *p'o* (Si).
268. 'who' \**dō̃ā/nō̃ā*: *dō̃ā* (Bar), [*nō̃*] (Bará), *dō̃ā* (Des), *dō̃ā* (Gn), *dō̃ā* (Tuc).
269. 'wide' \**hẽ-sa-ro*: *sa-ro* (Gn), [*hẽsa-ro*] (Pir), *ẽsa-ró* (Tuc).
270. 'wife' \**bādibō/mādibō-ki-tigo*: *bādā-kiko* (Bar), [*n̄imō-kitigo*] (Bará), *bādā-po* (Des), *dabó* (Gn), *dibō* (Tuc), *t̄ihō* (Si).
271. 'wind' \**wĩdō/wĩnō-rō*: *bīdō* (Bar), [*wĩnō*] (Bará), *bīrū* (Des), *wĩdō-Rō* (Gn), *wĩrō* (Tuc).
272. 'with' \**bē̃dā/mē̃nā*: *bē̃dā* (Des), *bē̃dē* (Gn), *bē̃rā* (Tuc).
273. 'woman' \**dō̃mī-o/a|rō-go*: *rōbiā* (Bar), [*n̄omīā*] (Bará), [*n̄omīō*] (Cub), *dūbēō* (Des), *dūbīRō* (Gn), *dūbīō* (Tuc), *t̄omi-k'o* (Si).
274. 'worm' \**wāsi*: *wātsi* (Bar), [*wāhi*] (Bará), [*wāhi*] (Tat).
275. 'year' \**kī̃bā/kī̃mā*: *kī̃bā* (Bar), [*kī̃mā*] (Bará), *kī̃pbā* (Gn), *kī̃bā* (Tuc).
276. 'yellow' \**ewi*: *ewi* (Gn), *ewi* (Tuc).
277. 'you (pl.)' \**m̄b̄i-sā*: [*m̄hā*] (Cub), *b̄iā* (Des), *b̄isā* (Gn), *b̄isā* (Tuc), *m̄b̄i-sa-kõa* (Si).
278. 'you (sg.)' \**m̄b̄i*: *b̄i* (Bar), [*m̄i*] (Bará), [*m̄i*] (Cub), *b̄ĩi* (Des), *b̄ĩi* (Gn), *b̄ĩi* (Tuc), *m̄b̄i* (Si).

Proto	*s	*x	*r	*l	*m	*n	*N	*w
Gb	s	x	r	l, r	m	n	n	w
Cuiva	s, č	x	r	r	m, n	n	n	w
Gyb	s, č	h	r	l, r, $\emptyset$	m	n	l	w
Proto	*y	*h						
Gb	y	h						
Cuiva	y	h, x, $\emptyset$						
Gyb	y	h						
Proto	*i	*i	*u	*e	*a		*o	
Gb	i, e	i, e, u, o	u, o, a	e, i, u	a, e, u, o		o	
Cuiva	i, e, $\emptyset$	i, u, o, $\emptyset$	u, o	e, i	a, e, u, ua, i, o	o, $\emptyset$ , a		
Gyb	i	u	u, oi	e	a, u, o		o	

## 5. PROTO GUAHIBAN

DIANA R. CHRISTIAN and ESTHER MATTESON

### 5.1 INTRODUCTION

The Guahiban languages included in this study are the Guahibo, Cuiva, and Guayabero of Colombia.

The Guahibo data are from field notes of Victor F. and Riena W. Kondo, 1964; the Cuiva, from field notes of Isabel Kerr and Marie Berg, 1966; the Guayabero, from field notes of John L. and Adreana Waller, 1966.

### 5.2 THE PHONEMES OF PROTO GUAHIBAN

*p	*t	*k
*b	*d	*Y
*s		*x
*r		
*l		
*m	*n	*N
*w	*y	*h
	*i	*e
	*a	*o

### 5.3 PHONEME REFLEXES

Proto Gb	*p	*t	*k	*b	*d	*Y
Gb	p	t	k	b, w	d	y, i, $\emptyset$
Cuiva	p	t, č	k	b, w	d	y, i, $\emptyset$
Gyb	p	t	k	b, p, p, w	d	č

### 5.4 CONDITIONING OF PHONEME REFLEXES

\*CC →

- \*ph → f | o- (Gb, Cuiva); p 41, 104, 129, 183
- \*ts → č | # - (Gyb); s | # - (Cuiva); č (Cuiva); s (Gyb); ts (Gb) 34, 138, 143, 182
- \*th → d (Gyb); th
- \*kh → p | # - (Gyb); x | # - Vkh (Gb); h ~ x ~ k ~ kh (Cuiva); h (Gb); k (Gyb) 35, 50, 63, 172
- \*Yb → ib (Gb); Øb (Cuiva); cb (Gyb) 2

\*VCV → VV | h → Ø (Cuiva):

- ahV<sub>2</sub> → V<sub>2</sub>
- V<sub>1</sub>hV<sub>1</sub> → V<sub>1</sub>
- V<sub>2</sub>ha → V<sub>1</sub>a
- ahoia → o

\*C →

- \*p → p 13, 19, 74, 80, 101, 105
- \*b → p | - # (Gyb); p | t - (Gyb); w | i-V (Gyb); w (= v) | i-i (Gb, Cuiva); b 29, 72, 76, 83, 86, 90, 193, 209
- \*w → w (= v) 119, 133, 144
- \*t → č | -i (Cuiva); t 38, 63, 90, 123
- \*d → d 4, 58, 62, 179
- \*k → k 38, 54, 70, 101
- \*s → č | # -i (Gyb); s 13, 86, 119, 193

- \**x* → *h* (Gyb) ; *x* (Gb, Cuiva) 52, 89, 103, 192  
 \**m* → *n* | #nV-V# (Cuiva) ; *m* 24, 29, 35, 103, 140  
 \**n* → *n* 89, 96, 175, 217  
 \**N* → *l* (Gyb) ; *n* (Gb, Cuiva) 22, 30, 35, 139  
 \**l* → *l* | #- (Gyb) ; *r* | -i/-u (Gyb) ; *ø* (Gyb) ; *l* | -i/-u . . . *l/l* . . (Gb) ; *r* (Gb, Cuiva) 13, 108, 138, 143, 146, 153  
 \**r* → *r* 7, 26, 77, 78, 160  
 \**h* → *h* ~ *x* | # (Cuiva) ; *ø* ~ *h* ~ *x* | V-V (Cuiva) ; *h* (Gb, Gyb) 10, 34, 112, 117, 153, 178, 208  
 \**y* → *y* 11, 57  
 \**Y* → č (Gyb) ; *i* | *hua-* (Cuiva) ; *i* ~ *ø* | *hua-/kua-* (Gb) ; *ø kua-* (Cuiva) ; *y* (Gb, Cuiva) 2, 46, 58, 103

\*VV →

	<i>i</i>	<i>e</i>	<i>i</i>	<i>a</i>	<i>o</i>	<i>u</i>
<i>i</i>				<i>ia</i> <i>ia, ia</i> <i>ia, i</i>	<i>iu</i> <i>iu</i> <i>eo</i>	
<i>e</i>				<i>ea</i> <i>eya, ae, e</i> <i>ea</i> <i>ai</i>	<i>eu</i> <i>evi</i> <i>ei</i> <i>u</i>	
<i>i</i>				<i>ia</i> <i>ia</i> <i>i</i>		
<i>a</i>	<i>ai</i> <i>ai</i> <i>i, ae~e~ei~a,</i> <i>ai</i> <i>ai</i>	<i>ae</i> <i>ae</i> <i>e</i>	<i>ai</i> <i>a, ai</i> <i>a, ai</i>	<i>aa</i> <i>a, aa</i> <i>a</i>	<i>ao</i> <i>a</i> <i>o, u, au~o</i> <i>o</i> <i>a, u, o</i>	<i>au</i> <i>au</i> <i>u, a, aa</i>
<i>o</i>	<i>oi</i> <i>ovi</i> <i>oi</i> <i>oi</i>			<i>oa</i> <i>o</i> <i>o</i> <i>a</i>		
<i>u</i>	<i>ui</i> <i>i, ui, i</i> <i>u, ui, i</i>	<i>ue</i> <i>ue, u</i> <i>ue, u</i>		<i>ua</i> <i>u, ua, o, ua, ua</i> <i>o, ua, ua, we, o</i> <i>a</i>	<i>uu</i> <i>u</i> <i>u</i> <i>uu</i>	

- \**ia* → *i* | -- *y* (Cuiva) ; *ia* 57, 84, 106, 107, 151  
 \**iu* → *eo* (Cuiva) ; *iu* (Gb) 104  
 \**ea* → *ae* | -- *Ci* (Gb) ; *eya* | -- ŴV (Gb) ; *e* (Gb) ; *ea* (Cuiva) ; *ai* (Gyb) 44, 98, 119, 136  
 \**eu* → *evi* (Gb) ; *ei* (Cuiva) ; *u* (Gyb) 97  
 \**ia* → *ia* (Gb) ; *i* (Cuiva) 164  
 \**ai* → *i* | -- # (Cuiva) ; *ai* | # -- (Cuiva) ; *ae* ~ *e* ~ *ei* ~ *a* (Cuiva) ; *ai* 62, 81, 96, 170, 188, 190, 205, 215  
 \**ae* → *e* (Cuiva) ; *ae* 21, 132, 175, 187, 198  
 \**ai* → *a* | -- *w* (Gb, Cuiva) ; *a* | -- *y* (Gb) ; *o* | -- *y* (Gyb) ; *i* (Gyb) ; *ai* 16, 38, 179, 188, 189  
 \**aa* → *a* | - (Gb) ; *a* (Cuiva) ; *aa* 103, 150  
 \**ao* → *a* (Gb) ; *o* (Cuiva) 33, 71, 99, 107, 133, 206  
 \**au* → *áu* ~ *o* | #C-# (Gb) ; *ú* | - (Gb, Cuiva) ; *o* (Gb) ; *o* | #C -- # (Cuiva) ; *a* (Cuiva) ; *aa* | #C -- # (Gyb) ; *a* | - (Gb) ; *u* (Gyb) 10, 41, 83, 143, 167, 172, 173, 210  
 \**oi* → *ovi* (Gb) ; *oi* 209  
 \**oa* → *o* (Gb, Cuiva) ; *a* (Gyb) 117, 209  
 \**ui* → *i* | *w* -- / -- CVV (Gb) ; *i* | *w* -- (Cuiva) ; *u* | -- CVV (Cuiva) ; *ui* 60, 65, 121, 197  
 \**ue* → *ué* | -- (Gb, Cuiva) ; *é* | -- (Gyb) ; *u* (Gb, Cuiva) ; *i* (Gyb) 25, 84, 140, 197  
 \**ua* → *ua* | *k* -- / *x* -- (Cuiva) ; *o* (Cuiva) ; *o* | -- (Gb) ; *u* | - / - (Gb) ; *ua* (Gb) ; *a* (Gyb) 2, 40, 58, 63, 96, 178, 191, 210  
 \**uu* → *u* (Gb, Cuiva) ; *uu* (Gyb) 72

\*V →

\*V → V | h-#/r-# ; ø | -# (Gyb)

The few instances of retention are assumed to be due to frequent suffixation. The infrequent instances of medial vowel loss are assumed to be due to early fusion of suffixes or compounded elements taking place after normal vowel loss. The vowel loss in several instances involves methathesis with resultant vowel changes not frequent enough in the present data to be predicted by rules. 34, 47, 63, 89, 97, 112, 117

- \**i* → *e* | *ew-*#/*a* . . . *a/a* . . . *o* (Gb) ; *e* | *a* . . . *o* (Cuiva) ; *ø* | N- (Cuiva) ; *i* 8, 13, 77, 90, 144, 157, 178  
 \**e* → *i* | *ih-* (Gb) ; *i* | -*si* (Cuiva) ; *e* 14, 34, 86, 118, 182  
 \**i* → *e* | *s-* (Gb) ; *u* | *us-* (Gb) ; *u* | *u* . . . *u* (Cuiva) ; *u* (Gyb) ; *o* | *ua* . . . *o* (Gb) ; *o* | *s-* (Cuiva) ; *ø* | N- (Cuiva) ; *i* (Gb, Cuiva) 3, 10, 18, 31, 37, 39, 66, 119, 172, 193

- \**a* → *e* | *y-Ci* (Gb); *e* | *iC-Ci/y-Ci* (Cuiva); *u* | *uC-Ci* (Gb, Cuiva);  
*u* | *uC-w* (Cuiva); *u* | *-khu* (Gyb); *ua* | *uk-* (Cuiva); *i* | *-xi* (Cuiva);  
*o* | *ih-w* (Gyb); *a* 9, 10, 11, 22, 23, 52, 53, 63, 101, 103, 123, 174,  
208  
\**u* → *o* | *o . . . o* (Gb, Cuiva); *oi* | *-Y* (Gyb); *a* | *a . . . a* (Gb); *u* 10, 29,  
59, 70, 101, 162  
\**o* → *ø* | *N-* (Cuiva); *a* | *-ha* (Cuiva); *o* 30, 61, 74, 117, 139

## 5.5 INDEX OF COGNATE SETS

In the following cognate sets the Proto Guahiban is first in order after the gloss; the Guahibo is second; the Cuiva, third; the Guayabero, fourth. The absence of a member of the set is indicated by —.

1. 'abdomen' \*-khoto(-wita): *-kóto-*; *-xotowita*; —.
2. 'Adam's apple' \*-kua<sub>Y</sub>(-bo-kará/-bati)-*to*: *-kuai-bo-kará-to*, *-kobati-to*, —.
3. 'agouti' \**bini*,/\**biNi*: *bini*, *bin*, —.
4. 'all' \**daxí-ta*: *daxí-ta*, *daxí-ta*, —.
5. 'anaconda' \**homo-wábi*: *homo-vabi*, *homo-wábi*, —.
6. 'ant' \**pibi*: *píbi*, *píbi*, —.
7. 'ant' \**kha-kha-ra-wa*: *xa-xa-ra-va-*, *kahara-wa*, —.
8. 'anteater' \**tsóNi*, (Pre Gyb) \**tsoiN*: —, *čón*, *čoil*.
9. 'arm' \*-ma-xi/xa-si-pa-to: *-maxi-sí-to*, *-maxa-si-pa*, —.
10. 'armadillo' \**tuháu-bi*: *tuháu-bi*, *tuhúbu*, *túha*.
11. 'arrow' \**pú/ku-yani*, (Pre Gb) \**pu-yani*: *pú-yene*, *kuyéni*, *búya*.
12. 'ash' \**i/a-pu-ma-na/Na*: *ipumána*, *-apúna*, —.
13. 'axe' \**sipá-li-a-*: *si-pá-li*, *sipa-ri*, *čipáera*.
14. 'bad' \**a-béhe*: *a-béhe*, *a-béhe*, —.
15. 'bark' \*-bauko-: *-boko-*, *-bako-*, —.
16. 'bat' \**hai-wi/si-ri-to*, (Pre Gb) \**hai-hai-si-ri*: *hava-sí-ri-*, *hauči-ri*, *híwi-t*.
17. 'beard' \*-bixi/o-pina/piNa: *-bixi-pína*, *-opína*, —.
18. 'bee (honey)' \**habi/bara-moNi*: *habi-móni-*, *bara-mon-*, —.
19. 'big' \**pinihiyo/nV*: —, *pinihiyo*, *pinhín*.
20. 'bite' \**síne*/\**siNe*: *síne*, *síne*, —.
21. 'black' \*-tsaebía-hawa: *pe-tsaebía-hava*, *sébia*, —.
22. 'blood' \**háNa*: *-hana*, *-hána*, *hal*.
23. 'bow (n.)' \**bitsá-bi*: *bitsá-bi*, *bičé-bi*, —.
24. 'breast' \*-mi-pa/pi-to: *-mi-pa-to*, *-mípi*, *mi-t*.
25. 'brush, woods' \**uéNu*: *únu*, *únu*, *þil*.
26. 'buzzard' \**ké-ke-re*: *ké-ke-re*, *ké-ke-re*, —.
27. 'cane' \**mu/ba-se-bo*: *músuli-bo*, *basebo-*, —.

28. 'canoe' \**héra*: *héra*, *héra*, —.
29. 'capybara' \**húmo-ko-bi-to*: *hómō-kobi*, *homokóbi*, *humbói-t*.
30. 'chili pepper' \**noN-hi*: *nónohi*, *nóni* ← \**nónoi* (Pre Cuiva); *nol* ← \**noNo* (Pre Gyb).
31. 'chin' \**bixi- . . .*: *-bixi-*, —, *buh-*.
32. 'cold' \**a-ke*: *a-ké*, *á-ke*, —.
33. 'come' \**patao-ho-pa*: *páta*, *pata-hópa*; *pato-pa*; —.
34. 'corn' \**hétsa*: *hétsa*, *héča*, *hes*.
35. 'crocodile' \**makhiNe-he*: *maxí-nehe*, *maxine*, *maklé*.
36. 'cultivated clearing' \**pábi*: *pábi*, *pábi*, —.
37. 'curassow' \**ithi-biri*: *i-thí-biri*, *ithibiri*, —.
38. 'day' \**mata-kái-bi*: *máta-kabi*, *matakáibi*, *matkóy*.
39. 'die' \**tipa*: *tipa*, *tipa*, —.
40. 'dig' \**kúa*: *kúa*, *kuá*, —.
41. 'doorway' \**bau-pha-ka*: *báu-pa*, —, *báapaká?*.
42. 'down' \**bé-reka*: *bé-reka*, *bereka*, —.
43. 'drink' \**ápa*: *ápa*, *ápa*, —.
44. 'dry' \**tséawa*: *tséva*, *séawa*, —.
45. 'dull' \**a-wóno-bi*: *a-vóno-bi*, *a-wonó-bi*, —.
46. 'ear (inner)' \**muxu/mi-Yó-lo/ri-to*: *-muxu-yóro-*, *-miyóro-*, *có'o-t*.
47. 'earth' \**ira*: *ira*, —, *ira*.
48. 'eat' \**xáne*/\**xáNe*: *xáne*, *xáne*, —.
49. 'egg' \**tobi*: *-tobi*, *tobi*, —.
50. 'eye' \**takhú*: *-ta-xú-*, *-ta-hú*, —.
51. 'far' \**tahi*: *táhi*, *táxi*, —.
52. 'father' \**p-áxa*: *p-áxa*, *áxa*, *ah*.
53. 'fear' \**ku-húnawa/ku-húNawa*: *ku-húnava*, *kunúwa*, —.
54. 'finger' \**ko-besí/tíya*: *-kobe-sí*, *-kobe-si-*, *kotíya*.
55. 'fire' \**iso*, *nawa*: *isó-*, *náva*; *iso*, *nawá*; —.
56. 'firewood' \**iso*: *iso*, *isó-*, —.
57. 'first' \**kopiaya-pita*: *kopia-ya*, *kopi-yapita*, —.
58. 'fish' \**duhuaY*: *duhuái*, *duvéi*, —.
59. 'fish hook' \**kulupú-bo*: *kulupu-bo*, *kurupó-bo*, —.
60. 'flesh' \*-wúi: *-ví*, *-wi-*, —.
61. 'flower' \*-ma-tóNo-to: *-matóno-to*, *-tón-to*, —.
62. 'fly (n.)' \**dáina-/dáiNa-*: *dáina-*, *déina-*, —.
63. 'foot' \**tákhua*: *-táxu*, *-táxo*, *tuk*.
64. 'forehead' \*-ta-pa-thái-: *-ta-pa-thái-*, *-ta-pa*, —.
65. 'fruit' \**bobo-kui*: *-kui-*, *bobókui*, —.
66. 'full' \**wiNíka*: *vi-níka*, *winka*, —.
67. 'fur' \*-ná-i: *-ná*, *-náe-*, —.
68. 'gourd' \**dére-bi*: *dére-bi*, *dére-bi*, —.

69. 'grease' \*-nasi-tsi-/wa/\*-Nasi-tsi/wa: -nasítsi-, -nasi-wa, —.
70. 'guan' \*kuYu-wi: kúyuví, kuyúwi, koiču.
71. 'hair' \*ma-ta-nao: -mata-na, -ta-no, —.
72. 'hammock' \*buu: bu, bu, búu.
73. 'hand' \*kóbe: -kóbe, -kóbe, —.
74. 'he' \*khum-po-ni: pó-ni, pó-ni, púmpón.
75. 'hear' \*híme-tane/húme-taNe: híme-tane, hume-táne, —.
76. 'heart' \*-humata-bi-ithi-to: -humata-bi-ithi-to, -thi-to, matpi-t.
77. 'heavy' \*a-réwi: a-réve, a-réwi, —.
78. 'hen' \*wakará: vakará, wákara, —.
79. 'here' \*hó-ta: hó-ta, hó-ta, —.
80. 'his' \*pE-: pe-, pe-, pi-.
81. 'hold' \*xáina/xáiNa: xáina, xéina, —.
82. 'hot' \*a-táhu-enik: a-táhu, á-tu, túhenik.
83. 'house' \*bau: bo, bo, báa.
84. 'how' \*pa-kuénia/\*pa-kuéNia, pa-kuénia, pakuenia, —.
85. 'huge rocks' \*p-ibo-to: ibo, pinbó-to, —.
86. 'hummingbird' \*se-si-bá-ri/-u/-Ci-to: si-si-bári-to, sisibáu-to, sesíwi.
87. 'husband' \*-amuNa-to: -amóna, —, -ámul-t.
88. 'husband' \*-pébi: -pébi, -pébi, —.
89. 'I' \*xá-ni: xá-ni, xá-ni, han.
90. 'iguana' \*matíbi: matívi, mačívi, matíp.
91. 'imperative' \*-ma: -ma, -ma, —.
92. 'imperative' \*-re: -re, -re, —.
93. 'in, at' \*-ta: -ta, -ta, —.
95. 'intestines' \*-íni: -íni, -íni, —.
96. 'island' \*tuanái-to: -tu-nái-to, -tonae-to, taná-t.
97. 'jaguar' \*neúthi: nevíthi, néíthi, nud.
98. 'kill' \*beaxú-a-ba: beya-xúaba, beaxúba, —.
99. 'knee' \*-ma-ta-baókao: -máta-baka, -ta-bóko-, —.
100. 'know' \*yapí-tane/\*yapí-taNe: yapí-tane, yapi-táne, —.
101. 'lake' \*púka: púka, púkua, púka.
102. 'lie down' \*rúka: rúka, rúkua, —.
103. 'lightning' \*Yádamaxi: yá-maxi, yámixi, čáamah.
104. 'lip' \*Ci-uphi-Yólo/ri: pi-upi-yóro-, pe-opíri-, —.
105. 'liver' \*pa-hapa-: -hapa-, -hapa-, pahap-.
106. 'long' \*a-pía: a-pía, a-pía, —.
107. 'long hair' \*ă-ma-tao-ná-pia/\*ă-ma-tao-Ná-pia: a-mata-ná-pia, án-tona-pía, —.
108. 'louse' \*talí: tarí-, -tári, ti?
109. 'lower arm' \*ma-xi-sí-pa-pa: -maxi-sí-pa-pa, -ma-sí-pa, —.
110. 'lower leg' \*sí-to: -sí-to, -sí-to, —.

111. 'lungs' \*ko-fo-fóbi: -kofofóbi, -kofóbi, —.
112. 'macaw' \*máha: máha, máha, máha.
113. 'man' \*pébi: pébi, pebin, —.
114. 'manioc' \*bawá: bavá, báwa, —.
115. 'manioc flour' \*matsúka: matsúka, mačúkua, —.
116. 'many' \*na-wi-ta: na-vi-ta, na-wi-ta, —.
117. 'miriti palm' \*ino-hóa-bo/to: inóho-bo, iná-xo, nó-hat.
118. 'monkey howler' \*níhē: níhi, níhen, —.
119. 'mosquito' \*wéasi: váese-, wéaso, wais.
120. 'mother' \*p-éna: p-éna, éna, en.
121. 'mouth' \*kui-bo-to: -kui-bo, -kui-bo-to, —.
122. 'my' \*ta-x: ta-, ta-, tah.
123. 'my' \*taha-: taha-, taha-, taha-.
124. 'name' \*-wí-ni: -ví-ni, -wíni, —.
125. 'near' \*imokhó-yo: imoxó-yo, imoho-yo, —.
126. 'neck' \*Ce-i-sí-to: pe-vi-sí-to, pe-osi-to, —.
127. 'new' \*ha-na-ha-wa/ha-Na-ha-wa: -hana-hava, -na-wa, —.
128. 'night' \*meráwi: merávi, meráwi, —.
129. 'nose' \*phímu: -pímu, —, pumú.
130. 'old man' \*perú-hu-ní/wa-yo: perúhu-ní, perú-wá-yo, —.
131. 'old woman' \*perú-hu-wa: perúhu-wa, perú-wa, —.
132. 'one' \*kaé-haewa: kaé-hava, ke-haewa, —.
133. 'otter' \*bohóNao-wi: bohóna-vi, bonówi, bohléw.
134. 'our' \*wa-ha: vaha-, wa-, —.
135. 'our' \*pa-ta: pa-ta, pa-ta, —.
136. 'paca' \*ophéá-bi: ofaé-bi, oféabi, —.
137. 'paddle' \*ka-téna-pa/\*ka-téNa-pa: téna-pa, katéna, —.
138. 'parakeet' \*tsé-le/Ci-to: tsére-to, sére, sépit.
139. 'parrot' \*óNau: óno, óna, pol.
140. 'path, trail, road' \*ná-mue-to: námu-, nán-to, namí-t.
141. 'pebbles' \*síki-ibo-to-xi/tiyo: ibo-to-xi, síki ibotiyo, —.
142. 'white-lipped peccary' \*habítsa: habítsa, hábiča, —.
143. 'collared peccary' \*tsamáu-li: tsamú-li, samúri, čama.
144. 'people' \*híwi: hívi, híwi, hiw.
145. 'piranha' \*kowára-bo: kovára-bo, kówara, —.
146. 'piranha' \*fe-le-le-va-: \*fe-le-le-va, —, le<sup>b</sup>.
147. 'push' \*to-ró-/tá-ba: toróba, totába, —.
148. 'rain' \*éma: éma, éma, píam.
149. 'rattle' \*tsi-tsí-bu: tsi-tsí-, číčibu, —.
150. 'rattlesnake' \*yaa-sí-to: yaa-sí-to, yasi-to, —.
151. 'red' \*tsobia: -tsobia-, sóbia, —.
152. 'river, stream' \*ménel/\*méNe: méne, méne, —.

153. 'river turtle' \*hála: hára, hára, ha<sup>3</sup>.
154. 'root' \*-tabú-topa: -tabú-topa, -tábū, —.
155. 'rope' \*-amí-to: -mai-to, -amí-to, —.
156. 'saliva' \*-i-óne/-i-óNe: -ióne, -óne, —.
157. 'sand' \*tahita-atsa: tahéta-atsa, —, táhi-t.
158. 'see' \*tá-Ne/nai/ne-kota: táne, naikóta; táne, nekóta; —.
159. 'seed' \*xú-: -xú-, -xu-, —.
160. 'sew' \*horáuka: horóka, hóraka, —.
161. 'she' \*pó-wa: pó-va, pó-wa, —.
162. 'shoulder' \*-wi/o-tá-kura: -vitákara, -o-takíra, —.
163. 'shoulder' \*kóf-ia/eri: -kófia, -koféri, —.
164. 'sing' \*na-xíana/na-xíaNa: na-xíana, na-xína, —.
165. 'sit' \*éka: éka, éka, —.
166. 'skin' \*pera-bo/i: -pera-bo, -pera-i-, —.
167. 'sky' \*itá-bokhau: itá-boxo, ita-bóka, —.
168. 'sleep' \*mahí-ta/teka: mahíta, maiteka, —.
169. 'smell' \*tuxú-ne/na/Ne/Na: tuxú-ne, tuxúna, —.
170. 'smooth' \*kóni-hai: kóni-hai, koníhi, —.
171. 'snake' \*hómō: hómō, hómō, hom.
172. 'spider' \*khaumi-bi-to: hómō-bi-, hamí-, ɻumí.
173. 'split' \*waríkoba: vokóba, wakaba, —.
174. 'stand' \*Núka: núka, únkua, —.
175. 'stick' \*náe-hava/wa-ta: náe-hava, ne-wa-ta; nae.
176. 'stomach' \*kó-to/so-to/-ro: -kóto-to, -kosóro, —.
177. 'stone' \*ibó-: ibó-, ibó-, —.
178. 'sun' \*húami-to: huáme-to, home-to, húimi-t.
179. 'sweet potato' \*dáithi: dáithi, dáithi, did.
180. 'swell' \*ya-hín/Na: ya-hína, yahína, —.
181. 'tail' \*bosó-to: -bosó-to, -bosó-to, —.
182. 'tapir' \*méta-ha: métaha, méča, mésa.
183. 'termite' \*ophó: ofó, ófo, ɻop.
184. 'that' \*bahará-xua: bahará-xua, báhara, —.
185. 'their' \*pe-: pe-, pé-, —.
186. 'their' \*pi-ha/yeníhi-: piha-, piyeníhi-, —.
187. 'they' \*po-món/Nae: po-mónae, po-móne, —.
188. 'thick' \*aitayái: a-ita-yái, aítayái, —.
189. 'thigh' \*-topa-thái: -topa-thá-, tái-, —.
190. 'think' \*nahunatabi xáin/Na: na-humatabi-xáina, namatabí xéina, —.
191. 'this' \*xuá: xuá, xuá, —.
192. 'thou' \*xámi: xá-mi, xa-mi, ham.
193. 'toad' \*busi-to: busu-to, busó-to, bis.
194. 'tobacco' \*tséma: tséma, séma, —.

195. 'tongue tip' \*e-bá-ri-to-kopi-a: \*e-bári-to-kopia, -e-ba-tópi, —.
196. 'tooth' \*-a-wáuno: -vóno-, -awáno, —.
197. 'toucan' \*tuikuékue: tikuékue, tukuékue, —.
198. 'tree, stick' \*náe-hava/hae-wa: náe-hava, ne-hae-wa, náe.
199. 'upper back' \*-hu-ma: -huma, -ma, —.
200. 'village' \*tómara: tómara, tómara, —.
201. 'vomit' \*y/n-akába: yakába, nakába, —.
202. 'walk' \*póna-pona: póna-pona, póna, —.
203. 'wash' \*ki-á-ta: kiáta, kíta, —.
204. 'water' \*mé-ra: mé-ra, me-ra, —.
205. 'we' \*waxái-tsi: waxái-tsi, waxáči, —.
206. 'when' \*detsa/eta-pao-kuín/Nae: detsa pa-kuíhinae, éta pokuiñehi, —.
207. 'whip' \*détsa/éta hótá: détsa hótá, éta hótá, —.
208. 'wife' \*piha-wa: piha-va, pía-wa, pího.
209. 'wind' \*hoibóa: hoví-bo, hóibo, hóiva.
210. 'wing' \*kúarau-fe: -kóro-fe-, -kuárafe, —.
211. 'woman' \*pe-tíri-wa: pe-tíri-va, pe-tíri-wa, —.
212. 'worm' \*oro: oro-, óro, —.
213. 'wrist' \*kobe-ya-vére/hóri-to: -kobe-ya-vére-to, -kobe-yahóri-to, —.
214. 'ye' \*pa-xá-mi: pa-xá-mi, pa-xa-mi, —.
215. 'year' \*wái: vai, wei, —.
216. 'your (pl.)' \*pa-n/Ne-: pa-ne-, pa-ne-, —.
217. 'your (sg.)' \*ni-hi: ne-, ne-, nihi.

## 6. PROTO ARAWAKAN

ESTHER MATTESON

### 6.1 INTRODUCTION

The Proto Arawakan reconstructions of this study are established on the basis of six Arawakan subgroups and four isolates, twenty-six languages in all. The reconstructions established here obviously represent too small a proportion of the total Arawakan family (a 'hundred-odd' languages according to Mason) to very closely approximate any real stage of the development of the language.

The subgroups posited here in Sections 6.7 to 6.12 do not purport to outline a final classification of the Arawakan languages, but a simple organization of the materials on hand according to percentages of shared vocabulary, and apparent structural similarities.

The subgroups include protolanguages Proto Shani, Proto Harakbut, Proto Piro-Apuriná, Proto Ashaninka, and Proto Madi, all of the first order; and Proto Newiki of the second order.

The isolates are as follows: Pareci (Paressí-Cabishi) of Western Brazil, classified by Mason as South Arawakan, data supplied by a word list taken by Orland Rowan in 1961; Amuesha (Amagues, Amaje, Amoexa, Armueshe, Omaje, Lorenzo, etc.) of the montaña area of Peru, listed by Mason as 'of probable Arawakan affinity', from a dictionary, *Vocabulario Breve del Idioma Amuesha*, published in 1958 by Mary Ruth Wise and Martha Duff; Guajiro (Goajiro) of the northern coast of Colombia, belonging to Mason's North-western Arawakan group, from field notes of Richard Mansen, 1966; and Black Carib of Guatemala, from a word-list by Ilah Fleming taken in, or prior to, 1960.

Details of the subdivisions of Arawakan are given in the accompanying diagram and the table showing percentages of shared cognates. Amar 2 (Harakbut) has been omitted from the diagram because of uncertainty with regard to the percentages of its relationship.

*Percentages of Shared Vocabulary of Arawakan Subgroups*

	P Har	P P-Ap	P Ash	P Madi	P New	Par	Am	Gr	BC
P Shani	171 24	318 32	299 21	155 29	187 41	95 26	238 16	264 13	265 14
P Har		195 29	185 17	124 35	141 33	68 19	145 17	159 13	161 13
P P-Ap			330 31	168 41	216 48	94 31	383 14	275 17	273 17
P Ash				150 25	191 30	89 16	241 17	270 12	267 11
P Madi					124 46	66 24	135 15	138 15	138 18
P New						83 35	166 29	175 25	180 21
Par							79 18	88 16	85 14
Am								221 13	220 11
Gr									249 14

In the chart above, the upper figure gives the number of vocabulary items available for comparison; the lower figure gives the percentage of cognates among those vocabulary items.

Arawakan vowels pose an extremely complicated problem. In the first place several morphemes of high frequency consist in a vowel replacement as in the masculine \*-i/\*-i and feminine \*-u (although Baure reverses the gender markers), and \*V → \*e in forms that enter into certain morphological or syntactic combinations, as in the possessed item with a genitive, or a verb functioning like the English infinitive in a verb phrase. In Culina gender and number are marked by vowel change, particularly the replacement of -a- by -e-, or a front vowel by a back vowel. In Tereno person and number are indicated by modification of the stem, often affecting the vowels. The changes in these last two languages may be, or may have resulted from, morphophonemic alternation.

Secondly the picture is complicated by extremely frequent morphophonemic changes. For instance, in Piro text the alternations average about two per word. An illustration of the problem is in the form *rimpotita* 'he heartily agreed' derived by regular affixation from the stem *hihi-*. Morphophonemic changes appear to be at least as frequent in Baure, Tereno, Guajiro, and

Amuesha; perhaps in others. Most commonly, but by no means exclusively, the morphophonemic changes are for vocalic harmony. Vowel clusters result in varied reflexes. Sequences involving semivowels often follow a pattern of change quite distinct from that of vowels contiguous to other consonants. The morphophonemic problem is further obscured by the multiple combinations in which a given morpheme occurs. The morpheme may be conditioned by frequent association with another particular morpheme (for example a stem whose vowel is affected by most commonly occurring with the third masculine singular possessive *i-* or *ri-*), and yet the conditioning morpheme may not show up in the word list available for comparison.

In the third place vowel loss due to shifting stress occurs in nearly all of the languages. It is discussed in the phonologies of Machiguenga, Amuesha and Baure, and a morphophonemic vowel loss is described in Piro.

The potential confusion of vowels from the three factors mentioned above is demonstrated by the Piro reflexes of the affixes symbolized by *\*-rV*. Both *r* and *l* are phonemic in Piro; there are five vowel phonemes. The third person singular object, stative, nominal suffix occurs in the following forms in Piro:

masculine -*li* ~ -*li* ~ -*l* ~ -*ri* ~ -*ri* ~ -*r*  
 feminine -*lo* ~ -*l* ~ -*ro* ~ -*r*  
 emphatic neuter -*la* ~ -*le* ~ -*l* ~ -*ra* ~ -*re* ~ -*r*  
 endearment -*le* ~ -*li* ~ -*re* ~ -*ri*  
 grammatical marker -*le* ~ -*l* ~ -*re* ~ -*r*

Finally, all of the frequent vowel modifications must be traced back and forth between drastically different vowel systems, such as Amuesha with three phonemic vowels versus Proto Harakbut with six oral and six nasal vowels. Metathesis is very common in Amuesha. In both Amuesha and P Madi back vowels are frequently substituted for front and -*e*- for -*a*- probably representing morphemic differences or morphophonemic alternations. Particularly in treating the Amuesha phonemes, one would be tempted to represent the words by consonants only as in Hebrew were it not for the consonant reflexes conditioned by adjacent vowels.

A larger body of data and more complete descriptions of the various languages should eventually simplify and sharpen statements regarding the conditioning of vowel changes.

Morphophonemic variations of consonants, though considerable, are less extensive and easier to identify than the vowel changes. See Section 6.2 for a discussion of proto morphophonemes.

Stress has not been reconstructed. It probably was phonemic, but in the present corpus no systematic correlation of stresses in the daughter languages can be established.

## 6.2 NOTES ON THE GRAMMATICAL STRUCTURE OF PROTO ARAWAKAN

Certain structural similarities are widespread throughout the Arawakan grammars. The formation of words from long strings of short, often monosyllabic, morphemes varying in order from language to language is conspicuous throughout the family. The following examples from Piro, typical of word formation, from Proto Shani to Black Carib, illustrate some common processes:

1. *n-po-hi-m(-)e-wa-xri-pna-ta* 'I snore': *n-* 'I'; *po-* Intensive, more commonly a derivative adjective suffix; *hi-* derivative verb prefix, often intransitive; *-ma-* 'sound, speech'; *V → e* Marker of a type of grammatical composition; *-wa-* Verb suffix, intransitive; *xri* 'nose'; *pna* 'hole'; *-ta* verbal, obligatory following incorporated noun(s).

2. *ka-šte-hwi-ri* 'cupped petal': *ka-* Adjective prefix, 'having an attribute or belonging to a class'; *šte* 'rim of a slight depression'; *hwi* 'flower'; *-ri* Individual, here serving to nominalize the adjective 'having a rim of a flower'.

3. *to-šte-xi* 'button': *to-* 'its, fem.'; *šte* 'rim of a slight depression'; *xi* 'small object'.

4. *hwi-pahi* 'pollen': *hwi* 'flower'; *pahi* 'powder'.

In the examples above the following are so-called 'form words', analysed as an obligatorily possessed class of nouns in Piro: *xri*, *pna*, *šte*, *hwi*, *xi*, *pahi*. Notice the incorporation of more than one at a time in example 1, and the optional or arbitrary order — head followed by genitive in example 2, but genitive followed by head in example 4. Notice also the interspersion of roots and derivational affixes in example 1.

In the sets of cognates, Section 6, nouns or 'form words' of this type are conspicuous. Reflexes of the form *pi* 'rod-shaped object, usually flexible' occur in the word for 'vine' in P Madi, P New, P P-Ap, P Ash, Am, and in a vine species, *Banisterium*, in P Har, Piro, and P Ash; in the word for 'finger' in P Har, P Madi, P New (But P Ash, Piro, and Apuriná substitute *ke* ~ *ki* 'pole, stick'); in the word for 'neck' in P Har, P New and Apuriná (while *ke* ~ *ki* 'pole, stick' takes its place in P Shani and Piro). See also 'snake', 'arm', 'tail', 'toe'.

A homophonous morpheme *-pi*, of the same class but meaning 'furry, fuzzy object' will be found in 'bat', 'bird', 'body hair', 'feather', 'fly (n.)', and 'hummingbird'.

Still another homophone of the same class, *-pi* 'word' or 'that which concerns' occurs in 'name'.

Other common members of this innumerable and ubiquitous noun class are *tsa* 'cord' in 'rope' and 'vine' and in P P-Ap 'sew' and Piro 'hair'; *sia* 'hair'

in 'beard', 'body hair', 'brush', and Piro 'foliage' ; *ha* 'liquid' in 'dry', perhaps 'eye', 'lake', 'river', 'sap', 'water', and 'wet' ; *ki* diminutive, 'small object' in *annatto*, 'baby', 'bird', 'charcoal', 'claw', 'fly (n.)', 'heart', 'seed' ; *ke ~ ki* 'pole, stick' in 'crocodile', 'fish', 'leg', 'neck', 'spine', 'stick'.

Apart from their employment in compounds, nouns of this class are extensively used for abstract shapes, body parts, tools, kin, and intimately possessed objects or parts. In most of the languages they either occur with a stated possessor or else are marked by a special suffix : \*-*tsi* especially in P P-Ap and P Ash, but also sporadically in most languages ; \*-*SI* in P New and occasionally in other groups ; -*e* in Baure, and apparently the prefix or pre-clitic *wa-* in P Har. This feature is not immediately obvious from examination of word-lists because in some of these, the nouns are recorded in the first or second person, some with hyphens signifying obligatory morphological possession, and some with nonpossessed or nonspecifically possessed markers.

In the Piro examples 1–4 above, a clutter of grammatical markers occurs along with the numerous short roots. This is typical of all languages included in this paper, although of course the details of occurrence vary.

The prefix \*-*k*- or \*-*kV*- 'having an attribute or belonging to a class' is clearly attested in most of the languages, and appears to be present in the remainder. There is little occasion for the occurrence of the antonym \*-*ma*- Privative in the isolated words of the vocabularies which provide the only data available on most of the languages, but it appears in the grammars of Baure and Ignaciano (neighbor of Baure, and probably fairly closely related), and Piro. There is some indication of it in semantically privative words such as 'dull', 'bad', 'nothing' in Proto Madi, Amuesha, Guajiro, and Black Carib.

The suffix \*-*rV*, masculine \*-*ri*, feminine \*-*ru*, possessed or combining form \*-*re*, neuter \*-*ra*, appears to be practically universal. It commonly serves as a nominalizer, and, along with the other persons and numbers, as the object of a verb, or as a sort of stative when affixed to nouns, adjectives, or adverbs. The affix belongs to the object paradigm in the following set :

	Subject and possessive prefix	Object and stative suffix
1 sg.	* <i>n</i> (V)-	*- <i>nu</i>
2 sg.	* <i>p</i> (V)-	*- <i>PV</i>
3 m sg.	* <i>r</i> (V)-, *( <i>h</i> ) <i>i</i> -	*- <i>ri</i>
3 f sg.	* <i>t</i> (V)-, * <i>u</i> -	*- <i>ru</i>
1 pl.	* <i>w</i> (V)-, <i>ha</i> -	*- <i>wV</i>
2 pl.	* <i>h</i> (V)-	*- <i>hV</i>
3 pl.	* <i>r</i> (V)-/Ø-/( <i>h</i> ) <i>i</i> -...- <i>na</i>	*- <i>na</i>

Guajiro corresponds only in the first and second person subject and possessive prefixes. The BC corresponds, except for the third person plural which has only *h*- Amuesha differs from the rest in its first person plural affixes. The Culina has an entirely aberrant set of pronominal affixes. Those of Tereno were discussed in Section 6.1 ; complete paradigms for this language do not appear in the data. It has not been possible to check the first and second object suffixes in any but P Ash, P P-Ap, and Baure and Ignaciano of Bolivia, Shani languages, and Amuesha. Otherwise, as far as it has been possible to ascertain, correspondences within this paradigm are quite regular.

Suffixes \*-*tV*, the -*V* paralleling that of the -*rV* above, occur as nominal suffixes in all, or practically all, of the languages. In Piro this suffix is primarily associated with privative forms ; it is more common with positive forms in the other languages. A third person singular or plural suffix \*-*ni*, overlapping in function with \*-*rV*, occurs in each of the protolanguages and perhaps in the isolates. Nouns not otherwise obligatorily possessed are marked to be possessed in some languages by a vowel change to -*e* in the suffixes \*-*rV*, \*-*tV*, \*-*ni*. The plural of human beings is commonly -*ne* with nouns, -*na* with verbs or as possessor.

The affixes mentioned in the preceding paragraphs usually occur in mutually obligatory sets. Specifically, the occurrence of the possessive pronominal prefix in some word classes renders obligatory the suffix sequence \*-*ni*, \*-*r V*, or \*-*tV* followed by \*-*V* > *e* ; the prefix \*-*ka*- in some situations co-occurs with \*-*rV* ; the absence of the possessive prefix and \*-*ka*- often requires the suffixation of \*-*tsi*, \*-*SI*, etc.

The commonest verbal suffixes are \*-*ka-wa* and \*-*ta*. The -*wa* alone is often intransitive ; \*-*ka* or \*-*ka-wa*, transitive. The suffix \*-*ta* along with a few less common suffixes, is required to mark the closure of particular strings of morphemes, as described in the grammars of Piro, Campa, Amuesha, Baure, and Ignaciano.

The reconstructions represent morpheme sequences which actually occur in daughter languages, but in some cases no one language includes all of the morphemes of the protoword, as for example in 289 \**ti-ke-ra/te-ni*, in which the longest sequence reflected is *tu-x-ra* (P), which, by the way, is optionally followed by -*ni* in an equative clause.

The changing of word classes by suffixation is extensive and widespread. Nouns, adjectives, and even minor word classes are verbalized by the addition of the \*-*ta* mentioned in the preceding paragraph. Verbs, adjectives and other word classes are nominalized by the suffixes \*-*rV* and \*-*tV*. Intransitive verbs are transitivized by the suffixation (prefixation in Ignaciano) of \*-*ka*(*ka*).

Equally widespread and even more frequent is the modification or negation of meaning by a great number of affixes, preclitics, and enclitics expressing aspects, attitudes of the speaker, evaluation of result, status, direction of

action, etc. Among those common in the subgroups for which we have grammars are *\*hi-ma* which disclaims the responsibility of having witnessed a reported action (Baure, Ignaciano, Piro), *\*yeh/ŋi* 'in the presence of, for, concerning' (Baure, Ignaciano, Piro), *\*-ya* 'to, from, by, at, for' (PHar, PMadi, PShani and Piro), *\*-pa-* Motion to perform the action of the verb (Baure, Ignaciano, Piro), *\*-wa* Temporal, *\*-pa* Reference to a particular point of time (Ignaciano, Piro), *\*-sa* 'profuse' (Amuesha, Piro).

Two proto morphophonemes are posited. Traces of the morpheme *\*-SI*, described above as a grammatical marker, are found sporadically in various languages. The morpheme appears as *-si ~ hi ~ s ~ h ~ i*, or, having caused palatalization of surrounding phones, disappears completely. Homophonous morphemes and in some cases the syllable *-si-* seem to have analogously developed corresponding allomorphs or allophonic sequences, especially in the word-initial position. It is quite likely that the homophonous morphemes so affected at some period co-occurred with *\*-SI*, so that the repetition of the syllable was equated with the very popular reduplications, and so the two varied together. It is also quite probable that more than one occurrence of the grammatical marker *\*-SI* within a single word was not uncommon. The homophonous morphemes and/or syllables are written as *\*SI* in order to account for the variant reflexes. 47, 52, 78, 84, 128.

The proto morphophoneme *\*P* represents *\*p ~ \*w* as in P Ash, 6.10.4. The only evidence for such morphophonemic variation within daughter languages is that described in 6.10.4. Similar variations among the protolanguages are ascribed to the same cause since they occur within the noun class involved in the P Ash protophoneme. The reflexes are as follows: *\*p ~ \*w* (P Shani), *\*w* (P Har), *\*p ~ \*w* (P P-Ap), *\*P ~ \*w* (P Ash), *\*p ~ \*b* (P Madi), *\*p ~ \*f* (P New), *h ~ w* (Par), *b ~ w* (BC), *p* (Am), *w* (Gr). 28, 31, 34, 109, 177

### 6.3 THE PHONEMES OF PROTO ARAWAKAN

<i>*p</i>	<i>*t</i>	<i>*k</i>				
<i>*p<sup>h</sup></i>	<i>*th</i>	<i>*kh</i>	<i>*i i̚</i>	<i>*i̚ ɔ̚</i>	<i>*u u̚</i>	
	<i>*ts</i>	<i>*č</i>	<i>*e e̚</i>	<i>*a a̚</i>	<i>*o o̚</i>	
<i>*b</i>	<i>*d</i>	<i>*j</i>	<i>*g</i>			
<i>*f</i>	<i>*s</i>		<i>*h</i>			
<i>*m</i>	<i>*n</i>					
	<i>*l</i>	<i>*ly</i>				
<i>*w</i>	<i>*r</i>		<i>*y</i>			

### 6.4 PHONEME REFLEXES

PAr	<i>*p</i>	<i>*t</i>	<i>*k</i>	<i>*p<sup>h</sup></i>	<i>*t<sup>h</sup></i>	<i>*ts</i>
PShani	<i>*p</i>	<i>*t, č</i>	<i>*k</i>	<i>*p</i>		<i>*č</i>
PHar	<i>*p</i>	<i>*t</i>	<i>*k</i>	<i>*p</i>	<i>*t</i>	
PP-Ap	<i>*p</i>	<i>*t</i>	<i>*k</i>	<i>*p</i>	<i>*t</i>	<i>*ts, č</i>
PAsh	<i>*p</i>	<i>*t</i>	<i>*k</i>			<i>*ts</i>
PMadi	<i>*p</i>	<i>*t</i>	<i>*k</i>	<i>*p<sup>h</sup></i>	<i>*t<sup>h</sup></i>	<i>*t</i>
PNew	<i>*p</i>	<i>*t</i>	<i>*k</i>	<i>*p</i>	<i>*t</i>	<i>*č</i>
Par	<i>h</i>	<i>t ~ t<sup>y</sup></i>	<i>k</i>	<i>h</i>		<i>č</i>
Am	<i>p, p<sup>y</sup></i>	<i>čy</i>	<i>k</i>	<i>p, p<sup>y</sup></i>		<i>ts, č, s</i>
Gr	<i>p</i>	<i>t, č, ū</i>	<i>k</i>			
BC	<i>b</i>	<i>t, r</i>	<i>g</i>	<i>b, f</i>		<i>ts</i>
PAr	<i>*č</i>		<i>*k<sup>h</sup></i>	<i>*b</i>	<i>*d</i>	<i>*j</i>
PShani	<i>*č</i>		<i>*k</i>	<i>*p</i>	<i>*d</i>	<i>*y</i>
PHar			<i>*k</i>	<i>*p</i>	<i>*t</i>	<i>*j</i>
P P-Ap	<i>*ts, č</i>		<i>*k</i>	<i>*p</i>		<i>*y, č</i>
PAsh	<i>*ts</i>		<i>*k</i>	<i>*p</i>	<i>*t</i>	
PMadi			<i>*k<sup>h</sup></i>	<i>*b</i>	<i>*d</i>	<i>*j</i>
PNew	<i>*č</i>		<i>*k</i>	<i>*p</i>	<i>*d</i>	<i>*j, č</i>
Par	<i>ts</i>			<i>h</i>	<i>t, č</i>	<i>d, y</i>
Am	<i>č</i>			<i>p</i>		<i>č, čy, y</i>
Gr			<i>ŋ</i>	<i>p</i>	<i>t</i>	<i>y</i>
BC	<i>č</i>		<i>g</i>	<i>b</i>	<i>d</i>	<i>y</i>
PAr	<i>*g</i>		<i>*f</i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
PShani	<i>*g</i>		<i>*b</i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
PHar	<i>*k, Ø</i>		<i>*w</i>	<i>*š, h</i>	<i>*m</i>	<i>*n</i>
P P-Ap	<i>*k</i>		<i>*p</i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
PAsh	<i>*g</i>		<i>*w</i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
PMadi	<i>*k<sup>h</sup></i>		<i>*p<sup>h</sup></i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
PNew	<i>*k</i>		<i>*p</i>	<i>*s</i>	<i>*m</i>	<i>*n</i>
Par	<i>g</i>				<i>m</i>	<i>n</i>
Am	<i>y, s</i>		<i>p</i>	<i>s, š</i>	<i>m</i>	<i>n, ň</i>
Gr	<i>y, ŋ, Ø, k</i>		<i>p</i>	<i>s, š</i>	<i>m</i>	<i>n, ň</i>
BC	<i>g ~ y</i>			<i>s</i>	<i>m</i>	<i>n</i>
PAr	<i>*w</i>	<i>*l</i>	<i>*ly</i>	<i>*r</i>	<i>*y</i>	<i>*h</i>
PShani	<i>*w</i>	<i>*l</i>	<i>*r</i>	<i>*r</i>	<i>*y</i>	<i>*h, n, Ø</i>
PHar	<i>*w</i>	<i>*r</i>		<i>*r</i>		<i>*h, x</i>
P P-Ap	<i>*w</i>	<i>*r</i>	<i>*r</i>	<i>*r</i>	<i>*y</i>	<i>*h</i>

PAsh	*w	*r	*r		*h, m, n
PMadi	*w	*l	*l	*l	*h
PNew	*w	*l	*l	*l	*h
Par	w	l	l	r, l	h
Am	w	r	ll	rr	h
Gr	w	r		r	h, Ø
BC	b	l	r	r	h, y
PAr	*i	*e	*i	*a	*u
PShani	*i, e, u	*e	*e	*a, o	*u
PHar	*i, i	*e	*i	*a, o	*o, e
P P-Ap	*i, e, i	*e, a, i	*i, o	*a, e	*o
PAsh	*i	*e, i	*i	*a, e	*o, i
PMadi	*i, u, e	*e	*u, o	*a, i, o, e	*a
PNew	*i	*e	*u, i	*a	*u
Par	i, e	e, a	o	a, o	o
Am	e, aa	e		a, e	o, a
Gr	i, ii	e	u, o	a, o, i, u	u
BC	i, e, u	e	u, i	a, i, e	u
PAr	*i	*ē	*i	*ā	*ū
PShani		*e		*o	*o
PHar	*i	*ē		*ā	
P P-Ap	*i	*ē, e		*a, ā	*o
PAsh	*i	*e		*a	
PMadi	*i	*e	*u	*a	
PNew		*e		*a	
Par				a	
Am				a	o
Gr				u	
BC				ē, e	

## 6.5 CONDITIONING AND EXAMPLES OF PHONEME REFLEXES

\*(V)CV(V) →

Vowel sequences contiguous to semivowels and in one instance to ē, show different sets of correspondences than in other conditions. Since most of the sequences are unique the examples are listed here without further explanation : 11, 17, 73, 81, 88, 94, 178, 181, 227, 240, 262, 310, 311

## \*C →

- \*p → h (Par); b (BC); p<sup>y</sup> | -i# (Am); p 19, 126, 148, 191, 194, 196
- \*t → č | i-i (PShani); t ~ ty (Par); č | -i/ii (Gr); ū, t (Gr); čy (Am); t, r (BC); t

There is morphophonemic alternation ū ~ t within Gr, and probably also r ~ t in BC. 1, 30, 46, 60, 289

- \*k → g (BC); k 12, 21, 65, 74, 138
- \*p<sup>h</sup> → p<sup>h</sup> (PMadi); h (Par); f | h . . . (BC); b (BC); p<sup>y</sup> | -c# (Am); p 44, 127, 190, 334
- \*t<sup>h</sup> → \*t<sup>h</sup> (PMadi); t 82, 256, 304
- \*ts → č | j . . . /i- (PP-Ap); s | j . . . (Am, PShani); ts | -i (Am); č (PShani, Par, Am); t (PMadi); ts 51, 68, 77, 96, 205, 240
- See Footnote 1, Section 6.9.
- \*č → č | -i (PShani); ts (PP-Ap, PAsh, BC); s (PShani, PMadi); č 119, 152, 156, 184, 272, 275
- See Footnote 1, Section 6.9.
- \*k<sup>h</sup> → k<sup>h</sup> (PMadi); p (Gr); g (BC); k 18, 79, 104, 265
- \*b → b (PMadi, BC); h (Par); m | -V oral (PHar); p 18, 48, 50, 100, 138
- \*d → d (PShani, PMadi, BC); č | i-i (Par); t 16, 91, 147, 177, 305
- \*j → d | #- (Par); č | -a (Am); Ø | i-a (Gr, BC); čy | -aa (Am); y (PShani, PP-Ap, Am, Gr, BC, Par); j 23, 52, 134, 183, 350
- \*g → Ø | V-V (PHar); g (PShani, PAsh, Par); g ~ y (BC); y | i-a (Am, Gr); p | i-i/o-i (Gr); s (Am); k<sup>h</sup> (PMadi); k 70, 96, 116, 122, 123, 166, 225
- \*f → b (PShani); w (PHar, PAsh); f (BC); p 66, 136, 252, 303, 325
- \*s → š | -i (PHar); š | -i/e-e/š . . . (Am); h (PHar); š | -ai (Gr); s, š | -i (Gr); s 13, 20, 31, 40, 73, 178, 262
- \*m → m 35, 37, 96, 267
- \*n → ñ | -i/ . . . si/y . . . / . . . ni (Am); n | -ia (Gr); ñ | -i (Gr); m | m . . . (Pre P); n 45, 65, 69, 164, 190, 320
- \*w → b (BC); W | hV-Ø-; w 65, 85, 258, 314, 322
- \*l → r (PHar, PP-Ap, PAsh, Am, Gr); l 24, 109, 283, 60
- \*ly → ll (= ly) (Am); r (PShani, PP-Ap, BC); l 5, 30, 300, 41, 124
- \*r → l | a-a (Par); l (PMadi, PNew); r 6, 8, 29, 43, 107, 225
- See note under \*t for r ~ t in Gr and BC.
- \*y → y 31, 87, 94, 149, 259
- \*h → n | -V → Ø voiced C/h . . . (PShani); h | #- (PShani, Gr); Ø (PShani, Gr); m | . . . h/ . . . n/h . . . (PAsh); n | h . . . (PNew); x | -V → Ø; w (PHar); y | e-i (BC) 10, 19, 22, 44, 57, 71, 82, 208, 244

Aspirated stops in the protolanguage can be determined only by PMadi reflexes. For sets for which these are lacking, either the aspirated or unaspirated stop is possible. In these cases, rather than tediously show the possible alternatives in a great many reconstructions, the proto voiceless unaspirated stop is written. A linguist using these reconstructions for further comparative work should keep in mind the need for possible readjustments in this respect.

Similarly PAr \*r is generally shown rather than the more accurate \*r/l when the Arawakan data are insufficient to distinguish the source of an l or r, unless evidence is provided by the PAm materials. Only BC, Am, or PShani, with reconstructions based on Kinikinao or Tereno in the PShani, serve to determine the protophoneme. In most of the Arawakan languages included in this study morphophonemic variation, especially in the suffix -IV/rV Object, Nominal, etc. obscures the distinction between r and l.

\*VV →

- \*ii → ē (PHar) ; ie | a . . . e (PMadi) ; i (P) 141
- \*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub>V<sub>1</sub>-či-čy (Am) ; V<sub>1</sub>V<sub>1</sub> | V<sub>1</sub> . . . / . . . V<sub>1</sub>  
/Undetermined conditions of stress (PShani, PMadi, Gr) ; V<sub>1</sub>V<sub>1</sub>  
(PNew, PAsh) ; V<sub>1</sub>  
24, 39, 53, 146, 207
- \*ie → o (PHar) ; ie (PNew) 39
- \*ia → ii (PHar) ; a | -wa (PMadi) ; ia | s- (PAsh) ; o (PMadi, PAsh) ; ia | č- (PNew) ; ee (PNew) ; eo (PShani) ; oi | -w (Gr) ; ia (Gr) ; iu (BC) ; i | -w (PAP) ; ia | s- (PAP) ; e (PAP) 1, 13, 47
- \*io → iu (PShani) ; io 208
- \*ei → i (Pre B) ; i | . . . i (Gr) ; i (Pre P) ; a (BC) ; ei 133, 209, 235
- \*ii → iie | -cio (PHar) ; e | s- (PNew) ; u | u . . . u (Pre Ter) ; u (PNew) ; i (PAsh) ; o (PShani) ; i (Gr) ; i | . . . i / i . . . (PP-AP, BC) ; u (BC) ; ii 7, 165, 297, 337
- \*ia → i (PNew) ; ia (PHar) ; awe (PShani) ; ewe (P) 98, 102
- \*ai → i | j-/s- (PMadi) ; o | y- (PShani) ; oi | w- (PShani) ; ai (PMadi, PNew, PShani) ; ii (Gr) ; i (PP-Ap) ; e 134, 142, 252
- \*ae → oe | o . . . o (PShani) ; ue (PShani, PMadi) ; oe (PHar) ; aa (Pre Pia) ; a 35, 109, 129
- \*ai → ai (PHar) ; aa (Gr) ; ai (BC) 15
- \*au → au (PNew) ; e<sup>3</sup> (Am) 285
- \*ao → o (Pre Sap) ; ao (Pre Cul) 50
- \*ui → i (PMadi) ; ee | j- (PNew) ; ui (PNew) ; o (Am) ; ii | j- (Gr) ; i (Gr) ; iu (BC) ; ui | j- (PP-Ap) 51, 306
- \*ua → u (PShani) ; oo (Am) ; a (Gr) ; u | a . . . a (BC) ; ua (PNew, BC) ; i (PAsh) ; a | -ra (PP-Ap) ; o 44, 58, 113, 312
- \*oi → oi (PHar, PShani) ; ui (PNew) ; o (PP-Ap) 38
- \*oe → a (PMadi) ; aa (PNew) ; oe (PShani) ; o (Gr) 23

\*V →

- \*a → aa | #m-/#w ~ m when not frequently prefixed (PHar) ;
- \*ă → ăă | #m- (PHar) 31, 38, 85, 160, 206
- \*V → Ă | Ă . . . / . . . Ă (PHar) 228, 287
- \*Ă → V | -mV/-nV/-hV (PP-Ap) ; Ă (PHar, PP-Ap, Gr, BC) ; V 8, 12, 19, 31, 63, 85

\*V<sub>1</sub> → V<sub>1</sub>V<sub>1</sub> | -Ci → Cy (Am) ; V<sub>1</sub>V<sub>1</sub> | V<sub>1</sub> . . . / . . . V<sub>1</sub>/Undetermined conditions of stress (PShani, PMadi, Gr) ; V<sub>1</sub>

The development of V<sub>1</sub>V<sub>1</sub> under conditions stated above is not entirely consistent. Morphological factors or morphophonemic alternation may be involved as well as phonological conditioning within those languages which are phonetically written. 123, 176, 185, 207, 225

Vowels in Am are frequently modified by a following glottal stop or aspiration or by length. These features do not show evident correlation with the reconstructed phonemes.

- \*i → u | h- (PMadi) ; y | C-# (Am) ; oo, aa | r-e (Am) ; i | i . . . /k-/h- in a certain morphophoneme class (PP-Ap) ; e | e . . . (PMadi, PShani) ; u | wu . . . (PShani) ; ii | w- (Gr) ; e | a . . . a ; e | ey-/ew- (BC) ; u | o . . . (BC) ; i | p-k (PHar) ; i 46, 78, 107, 154, 207, 225, 270
- \*e → i | . . . i ; a | . . . a ; i | kuk- (PHar) ; e 10, 40, 110, 112, 166, 176, 187
- \*i → e (PShani) ; o | o . . . ; o | -hu (Gr) ; u | ii . . . (Gr) ; i | . . . i (PP-Ap) ; i (PHar, PP-Ap, Gr) ; u (PMadi, BC) ; i | . . . i (BC) ; u | o . . . /u . . . (PNew) ; i (PNew, PAsh) ; i 5, 15, 82, 260, 265
- \*a → e | . . . i ; a | s-/h-/j-/y- (PShani) ; o (PShani) ; o | j- (PHar) ; e | i . . . (PAsh) ; o | a . . . wa (Par) ; e | y-/r-# (Am) ; o | . . . o (Gr) ; i | . . . i-i (Gr) ; i | w-gi (BC) ; u | -w/o . . . o | . . . u (Gr) ; a 23, 65, 177, 196, 204, 207, 223
- \*u → o | a . . . e (PShani) ; i | m- (PHar) ; e | . . . e . . . i (PHar) ; i | i . . . i (PAsh) ; a | -ri (Am) ; a (PMadi) ; u (PShani, PNew, Gr, BC) ; o 138, 155, 244, 259, 269
- \*o → u (PHar) ; a | . . . a (PP-Ap) ; a | a . . . a (PAsh) ; u | u . . . u | -w (PNew) ; a (PNew, Par) ; e | . . . i | y-/j- (Am) ; a | a . . . a (Am) ; u | y-SI/wo . . . (Gr) ; o 18, 52, 82, 181, 237, 275

#### 6.6 INDEX OF COGNATE SETS

Irregular vowel reflexes in PMadi, especially the replacement of e for a or a back for a front vowel are assumed to be morphemic differences denoting change in number and/or gender. No further explanation is given.

1. 'abdomen' \**tia-ri*: \**tika-te/ko* (PP-Ap) ; \**tso-mon-tí-a* (PAsh) ; \**ato-li* (PMadi) ; \**tee-lV* (PNew).
2. 'Adam's apple' \**sa-wayi-b/pora*: -*sor* (B) ← \**sarV* (Pre B) ; *swayi-pla* (P) ← \**sV-wayi-b/pVla* (Pre P) ; \**-ala-* (PNew).
3. 'all' \**ma-ga-lo-ni*: \**ma-ga-ro-ni* (PAsh) ; *oora* (Am) ← \**aro* (Pre Am).
4. 'all' \**sū*: *su-púšware* (Gr) ; *sú* (BC).
5. 'anaconda' \**piyu-te/yi*: *piyo* 'sting ray' (P) ; *puyuté* (Yuc) ; *poyaallopy* (Am).
6. 'anaconda' \**mapa/i-tsi-ri*: \**mapa-tsi/yi-rV* (PP-Ap) ; *mapiči-ri* (C) ← \**mapitsi-ri* (Pre C).
7. 'animal' \**kamii-he-ri*: *kamo* (Kin) ; *kamehe-ri* (Yuc) ← \**kamehe-li* (Pre Yuc).
8. 'annatto' \**ha-pi-ki-ri*: \**ha-pi-kí-ri* (PP-Ap) ; *pi-ri* (Yuc) ← \**pi-li* (Pre Yuc).
9. 'annatto' \**po/yonV-tso-ti*: *yan* (B) ← \**yonV* (Pre B) ; \**po-tso-ti* (PAsh) ; *yetsop* (Am).
10. 'ant sp.' \**ma-ne-hi*: *manahi* (P) ← \**manehi* (Pre P) ; \**manihi* (PAsh) ; *mehi* (Cul).
11. 'ant sp.' \**hayeu*: *hyeu* (Ter) ← \**hVyeu* (Pre Ter) ; *hayi* (P) ; *heyúu* (Gr) ; *hái* (BC).
12. 'ant sp.' \**k<sup>h</sup>a-ti-si-to-ri*: *ka-ši-ri* (B) ← \**ka-si-ri* (Pre B) ; \**ka-tsi-ti* (PP-Ap) ; \**ka-tí-to-ri* (PAsh).
13. 'anteater' \**siawa-nV-ta-na*: \**siiwa* (PHar) ; \**isiwa* (PP-Ap) ; \**wantana* ; *šaa-ni* (C) ← \**sia-ni* (Pre C) ; *hudsawa* (Jam) ; *wintan* (Am).
14. 'arm' \**gano*: \**kano-ke* (PP-Ap) ; *gona-ki* (Nom). The Nom -*a-* ← \**o* is aberrant. See also PAsh 'thigh'.
15. 'arm' \**atinai-pi*: \*-*ó-pi* (PHar) ; \**a-na-pi-* (P W New) ; *atínaa* (Gr) ; *arinai* (BC).
16. 'arm' \**dVki*: *taki* (Ter) ← \**daki* (Pre Ter) ; *diki* (Pau).
17. 'armadillo' \**h/ka-si-wa*: *hóšokoriaw* (B) ← \**hásokoriawV* (Pre B) ; \**k-siwa-na/ti* (PP-Ap) ; *ašo<sup>2</sup>š* (Am) ; *gasígamu* (BC).
18. 'arrive' \**ha/e-bok<sup>h</sup>a*: *e-poka* (Sap) ; \**ha-póka* (PP-Ap) ; \**poka* (PAsh) ; *bak<sup>h</sup>o* (Cul) ; \**a-apu/a-ka-wa* 'walk' (PNew) ; *aibuga* (BC).
19. 'arrow' \**pi-ha/ya*: \**pi-ha/yā* (PHar) ; \*-*pi-* (PP-Ap) ; \*-*pi* (PAsh) ; *abiha* (Pau) ← \**apiha* (Pre Pau) ; -*pe-* (Am).
20. 'arrow' \**kasi/u-hi-ri*: \**sui-ke/me* (PShani) ; \**ka-siri-pi-ri* (PP-Ap) ; \**isihi-ku-lV* (P W New).
21. 'arrow' \**kari-ra-kV*: *korirok* (B) ← \**karirakV* (Pre B) ; *kore* (Par).
22. 'ask' \**keha-*: *kehe-mha* (P) ← \**kehe-mV-ha* (Pre P) ; *kehaa* (Yuc).
23. 'axe' \**jV-boe-wa-ti/rV*: \**poe-wo-ti* (PShani) ; *yawa* (P) ; \**wa-ti* 'arrow' (P J-J) ; \**ji-páa-lV* (P W New) ; *dawati* (Par) ; *po-rú* (Gr).
24. 'baby' \**kii-la-*: \**kaliwóono* ← \**kilawoono* (PShani) ; \**kiilá* (P W New).

25. 'baby' \**ha-na/ma-ti-ri-ne-ki*: *món-či* (B) ← \**mán-či* (Pre B) ; \**ha-ma-ti-ri-ni-ki* (PP-Ap) ; \**há-na-né-ki* (PAsh) ; *ema<sup>3</sup>* (Am).
26. 'back' \**ana-ga/ti/ču-pu-ni-ri*: \**čupu-nu-di* (PShani) ; \**hin-tipu* (PHar) ; -*hini-ri* (Par) ← \**pini-ri* (Pre Par) ; *yeča<sup>2</sup>-ñ* (Am) ; *anái-ñ-ru<sup>2</sup>u* (Gr) ; *anágani* (BC).
27. 'back' \**ta-ki*: *txi* (P) ← \**taki* (Pre P) ; \**taki* (C).
28. 'back' \**Pa-SI-re-SI*: *bali* (Jam) ; *wa-h-le-hi* (Yuc) ← \**wa-SI-le-SI* (Pre Yuc).
29. 'Banisterium' \**ka-maramV-pi*: \**kamarapin* (PHar) ; *ka-malam-pi* (P) ← \**ka-maramV-pi* (Pre P) ; \**ka-maram-pi* (PAsh) ; *rami* (Cul) ← \**lam-pi* (Pre Cul).
30. 'bark, skin' \**pa/ma-mi-ta-ki/lV*: \**mótó-ke/ru* (PShani) ; *pa-ta* (P) ; \**ma-ta* (PP-Ap) ; \**ta-ki* (PAsh) ; \**to-li* (PMad) ; \*-*ma-mi* (P W New) ; -*mi-lí* 'skin' (Par) ; *pa<sup>2</sup>taall* (Am) ; *túra* (BC).
31. 'bat' \**mā-si-yo-Pi-hi-ri*: \**wite-te/rV* (PShani) ; \**mēē-re* (PHar) ; \**siyo-pi-ri* (PP-Ap) ; \**pihi-ri* (PAsh) ; \**ma-si-lí* (PMadi) ; *pihi-ri* (Yuc) ← \**pihi-li* (Pre Yuc) ; *pohsoorr* (Am) ; *musiiči* (Gr) ; *buri-ri* (BC).
32. 'bathe' \**ah/fi-ka-wo-tV*: *ahyikovo-ti* (Ter) ← \**ahikawo-ti* (Pre Ter) ; *ka-ta* tr. *ka-wa* intr. (P) ; *kate-ni* (Nom) ; *afiobedyá* (Jar) \**ap<sup>h</sup>iobedyá* (Pre Jar) ; *a<sup>2</sup>pitá* (Yuc).
33. 'bathe' \**mi-ki-pa-wa*: *mikipa-wa* (Ap) ; *kiwa* (Mg) ; *ahp-* (Am).
34. 'beard' \**i-sia-Pa-to-na*: \**ísewa* (PShani) ; \*-*si-a-pato* (PP-Ap) ; \**siPa-toná-* (PAsh) ; *eyéisee* (Gr).
35. 'bee' \**yo-maeba-hina*: \**yo-moépo* (PShani) ; *mapá* (Ap) ; *bahina* (Pau) ; *máaba* (Pia) ← \**máapa* (Pre Pia) ; *mapá* (Gr) ; *mába* (BC).
36. 'bee' \*-*e-ri-to*: \**ee-rV-to* (PAsh) ; *četsoorr* (Am).
37. 'big' \**ima-ka-rV-ni/ri*: \*-*mari-ri* (PP-Ap) ; *i-mára-ni* (Mg) ; *i-me-ni* (Cul) ; \**maka-itada-li* (PNew) ; *muré<sup>2</sup>u* (Gr).
38. 'bird' \**má-koi-si-ti-pi-ri-ki*: \**máakoi* (PHar) ; \**kosi-ti-pi-ri-ki* (PP-Ap) ; \**kuipi(a)-lV* (PNew) ; *oočy* (Am) ; *učii* (Gr).
39. 'bite' \**aa-SI-mie-ka*: \**e-mok* (PHar) ; *ha-ška-ta* (P) ← \**a-sika-ta* (Pre P) ; \**aa-SI-mie-ka* (PNew).
40. 'bitter' \**pise-:* *psa-ha-lV* ← \**pVsa-ha-rV* (Pre P) ; *ipisi-ni/ri* (Yuc) ; *peesherr* (Am).
41. 'black' \**kewe-lV*: \**kéwe-lV-* (P W New) ; *kellwe* (Am).
42. 'black' \**ki-sa-ki-na-ri*: *k-saxi* (P) ← \**kV-saki* (Pre P) ; *kisa-ri* (C) ; *su-suki-na-li* (Jam).
43. 'blood' \**hi-di-ma/mi-ra-ha-ni*: \**idi* (PShani) ; \**mīmī* (Pre Har) ; \**hi-ra-ka/ha* (PP-Ap) ; \**ri-rá-ha* (PAsh) ; \**ama-ni-ne* 'sg.' ; \**eme-ne* 'pl.' (PMadi) ; \**ila-* (PNew) ; *timalad-* (Par) ; *yehrrahs* (Am) ; -*ita* (BC).
44. 'blow' \**ha-ki/ti-p<sup>h</sup>ua*: \**e-típo(-m)* (PHar) ; *ha-xpo-ka* (P) ← \**ha-kipo-ka* (Pre P) ; \**hap<sup>h</sup>o* (PMadi) ; \*-*pua* (PNew) ; *áfura* (BC) ← \**buhara* (Pre BC).

45. 'body' \*-bona-SI: *búno* (Pau) ← \**pono* (Pre Pau) ; -*pona-hi* (Yue) ← \*-*pona-SI* (Pre Yue).
46. 'body hair, fur' \**Pi-ti*: \**wih* (PHar) ; *pityi* (P) ← \**piti* (Pre P) ; \*-*witi* (PAsh).
47. 'body hair, fur' \*ču-SI-a/na-pe: \**iseo* (PShani) ; *šape* (P) ← \**siape* (Pre P) ; \*-*si* 'hair' (PAsh) ; \*ču-SI-na-SI (P W New) ; *sói* (Gr) ; *hiu* (BC).
48. 'bone' \*yai/abi-hi-na-SI (See *yai-SI-mi-nV* 'tooth' re sequence *yai-*) : \**oipeu-di* (PShani) ; \**ai* (PHar) ; \**ha-pi* (PP-Ap) ; \*-i-aphi-na-SI (PNew) ; *ahí-ti* (Par) ← \**api-ti* (Pre Par) ; *yenop* (Am) ; *hiipu* (Gr) ; *ábu* (BC).
49. 'bone' \*to-ne-ki: \*-tón-ki (PAsh) ; \*to-ne (PMadi).
50. 'box' \**baο-ki*: *wa-po* (Sap) ; *pa-xi* (P) ← \**pa-ki* (Pre P) ; *baο* (Cul).
51. 'breast' \*(t)ui-ni: \*-ti-ni (PP-Ap) ; *úini* (Pre Pia) ; *ači-raa* (Gr).
52. 'breast' \*jo-tso-/hi-mi-re/-ne/SI: \**seene* (PShani) ; \*-hi (PHar) ; \**tsomi* (PAsh) ; čuču-re-hi (Yue) ← \*ču-u-ču-le-SI (Pre Yue) ; *yesoomap* (Am).
53. 'brother, elder' \*a-ajo: *ājō* (Ter) ; \*a-ajo (PMadi).
54. 'brother, younger' \*he-pi-ri: *he-pi-ri* (P) ; -*bi-ri* (BC). This word is not on the present list from Fleming ; I am not sure of the source of the data.
55. 'brother-in-law' \**wa-in-bo*: *wa-inpo* (Sap) ; *wa-bo* (Cul).
56. 'brother-in-law' \**hani-ri*: *hani-ri* (P) ; \**ani* (PAsh).
57. 'brush' \*-ma-ho-(g)oi/si-a: \**hooi* (PShani) ; \**nima* (PHar) ; *ho-ša* (P) ← \**ho-sia* (Pre P) ; \*-si (PAsh) ; \**jama* (PMadi), *hogui* (Pau) ; \*-ima- (PNew) ; *kolóho* (Par) ; *mohúui* (Gr).
58. 'burn' \**ha-po/ukua*: *ha-pka-ha* (P) ; -*pukoa-ka-wa* (Pia) ← \*-*pukua* (Pre Pia).
59. 'burn' \*aha/ka-roo: \**aharoo-ka-wa* (PShani) ; *kára*<sup>3</sup>a (Yue) ← \**kálaa* (Pre Yue).
60. 'burn' \**iti-lV-na*: *tvi-r-na* (P) ← Pre P \**iti-rV-na*; *ačyoor* (Am).
61. 'bury' \*(k)a-pa-na-ki/ta: *kapna-ta* (P) ; \**panki* (PAsh) ; *opónu-š* (Gr).
63. 'buzzard' \*wā/ma-ju-rV-di-: *warututu* (Ter) ← \**warudó-tu* (Pre Ter) ; \*-māātiik (PHar) ; \**mayó-ri* (PAp) *majo-li* (Pau) ; *wayú* (Yue) ← \**wajú* (Pre Yue) ; *wadúbi* (BC).
64. 'buzzard' \**thiso-mVni*: \**tisó-ni* (PAsh) ; *tse*<sup>3</sup>*m* (Am).
65. 'canoe' \*(k)anawa: \**kanawa* (PP-Ap) ; \**kanawa* (PMadi) ; *kanówa* (Par) ; *anúwa* (Gr).
66. 'capybara' \*ife-tV: *hipe-ti* (P) ; \**iwe-to* (PAsh).
67. 'cave' \*mahV-ka: *makha* (P) ; *mahpyehtpoon* (Am).
68. 'charcoal' \**tsi-me-rV*: či-č-me-ro (P) ← \**tsi-tsi-me-ro* (Pre P) ; \**tsi-menki-to* (PAsh) ; *kalá-h-me-ru* (Yue) ← \**kalá-SI-me-lu* (Pre Yue) ; čimére 'smoke' (Par).
69. 'charcoal' \**kisa-ma-ni-sai/ki-to/rV* (\**ki-sa* See 'black'): *emónés* (B) ← \**emonesV* (Pre B) ; *k-sa-mome* (P) ← \**ki-sa-mone* (Pre P) ; *mušáha* (Gr).
- 'chest' See 344.

70. 'chief' \**wa-gi-ri*: \**wái-ri* (PHar) ; *wigi-ri* (BC).
71. 'chief' \**e-hi-ri*: *hir* (B) ← \**hi-rV* (Pre B) ; *eyeri* (BC).
72. 'chocolate' \**kanaka*: *kanka* (P) ; *kanaka* (Pau).
73. 'claw, fingernail' \**seiwa-pa/ta-ki*: \**et/hi-ipo* (PShani) ; \**sewata* (PP-Ap) ; \*-seata-ki (PAsh) ; \**su-upa* (P W New), *paséwa* (Tar) ; *supáto*<sup>3</sup>u (Gr).
74. 'clothes' \**máka-rV*: \**máka* (PP-Ap) ; \**maka-li* (PMadi) ; \**lumaká* (P W New).
75. 'cloud' \**ami-nV-ko-ri*: *amók* (B) ← \**amákV* (Pre B) ; \**menko-ri* (PAsh).
76. 'coati' \**kabi-si*: \**kapísi* (PP-Ap) ; *kábi* (Pau).
77. 'cold' \**ka-tsíka-ri-rV*: \**ka-tsíka-ri/e-ri* (PP-Ap) ; \**ka-tsínska-ri* (PAsh).
78. 'come' \**Sinā*: \**hiná-ā* (PP-Ap) ; *ihna* (Yue) ← \*-*SIna* (Pre Yue).
79. 'come' \**kha-ha-nV*: *kani* (Kin) ; *kha-ha-ni* (Cul) ; \*-nu-ka (P Cur-Man).
80. 'corn' \**i-SI-ki-n/m(a)i*: \**him/to-ke-t* (PHar) ; \**si-ki-mi* (PP-Ap) ; \**sin-ki/yi* (PAsh) ; \**kimi* (PMadi) ; \**ka-SI-na-i-li* (PNew) ; *máikki* (Gr) ; *awási* (BC).
81. 'cotton' \**wa-ma-pehi*: \**wa-ma-pehi* (PP-Ap) ; \**ampéhi* (PAsh) ; *wepe* (Cul) ; *máawii* (Gr) ; *maúru* (BC).
82. 'cough' \**he-tho-hi-ta*: *e-tohi* (Sap) ; *he-tho-ta* (P) ; *thoho* (Cul) ; *toho*<sup>3</sup>o (Yue) ← \**tohoo* (Pre Yue).
83. 'count' \**ya-wa-nā-ta*: *yonongwa-ti* (Kin) ; \**ya-wa-nā-ta* (PP-Ap).
84. 'crocodile' \**ka-SI-jo-ki-ri*: \**ka-SI-yo-ki-ri* (PP-Ap) ; *kasi*<sup>3</sup>i (Pau) ← \**kosii* (Pre Pau) ; \**ka(a)-SI-jui-lV* (PNew) ; *kayúuš* (Gr).
85. 'crocodile' \**wāmā*: \**māāmā* (PHar) ; \**wama* (PMadi).
86. 'crocodile' \*(iy)akare: *iyákare* (Par) ; *agáre* (BC).
87. 'cry' \**tsi-ya-ha-ta/wa*: *yo-n-di* (Kin) ; \**tsiya-ha/pa-ta* (PP-Ap) ; *ia* (Yue) ; *yaawa* (Am).
88. 'cultivated clearing' \**wijaha*: *wijaha* (Cul) ; *yiiha* (Gr).
89. 'cultivated clearing' \*(i)sane: *isáne* (Ter) ; *sana* (P).
90. 'cut' \**hi-si-ta-ka*: \**hi-si-ta-ka-* (PP-Ap) ; *siíki* (Pau).
91. 'cut' \**da-to-*: \**datú-ka-wa-ti* (PShani) ; \**tota/i-ro* ← \**tato-ro* (PAsh).
92. 'daughter' \**si-nV-tio*: *šičo* (P) ← \**sitio* (Pre P) ; \**sintio* (PAsh).
93. 'day' \**hohi-ra-kawa*: *hohi*, *hohi-kawa* 'evening' (P) ; *hérakoa* (Par).
94. 'day' \**kayi-ta-*: *kayi* 'afternoon' (P) ; \**koitagite-ri* (PAsh) ; *ka*<sup>3</sup>i (Gr).
95. 'deer' \**mani-ro/ti*: *mani-ti* (Ap) ; \**mani-ro* (PAsh), \**maní-ti* 'jaguar' (PAsh) ; *mañoorr* (Am).
96. 'demon, die, kill' \**kama-k/ga-rV/tsi*: *kam-či* 'demon' (← \**kama-tsi*), *kama-ka-ta* 'kill' (P) ; \**kama-ga-ri* (PAsh) ; \**ka-ma-li* 'medicine man' (P W New) ; *kamkñeets* 'spirit' (Am).
97. 'die' \**i-pina*: *yepén* (B) ; \**hi-pina-* (PP-Ap).
98. 'die' \**mia-ja-mi-*: \**e-miay* (PHar) ; \**ma-ja-mi/taa-ka-á/wa* (PNew).
99. 'dig' \**atsi/ki-ga-ha-ke-ro*: \**kiga-ke-ro* (PAsh) ; *atsígha* (BC).

100. 'dirty' \**ka-bi-sV/čo-rV-ni*: *ka-pčo-li* (P) ← \**ka-pVčo-ri* (Pre P) ; \**bisi-ne/kē* (PMadi) ; *ka-pisa-ni* (Yuc).
101. 'dirty' \**kipatsi-ki-pi-ta/ri*: *kí-pačikipi* (Ap) ← \**ki-patsikipi* (Pre Ap) ; \**kipatsi-ta/ri* (PAsh).
102. 'dog' \**kia*: *kobe* (B) ← \**kawe* (Pre B) ; \**kia* (PHar) ; *kewe* (P).
103. 'dog' \**oč/tsi-ti/kV*: \**otsi-ti* (PAsh) ; *ooček* (Am).
104. 'doorway' \**nokhō* Cf. 'eye': *esonók* (B) ; *nokhō-bihī* (Cul).
105. 'down' \*-*api-ye/kV*: \*-*po-ye/keeke* (PShani) ; *mra-pi-ko* (P).
106. 'drink' \**k/hira* (PP-Ap) ; *irero* (C) ; \**ilá-ka* (PNew) ; *orr* (Am) ; *gira* (BC).
107. 'dry' \**po-piri-ha-ri*: *po-pri-ri* (P) ; *piri-ha-ri-ta-ke* (PAsh) ; *pohrraarraa* (Am).
108. 'dull' \**masV-*: *mahseen* (Am) ; *m-asá-sat* (Gr).
109. 'dust' \**Pae-hi-ni/lV-gi*: \**ko/i-pue-ne/lV* (PShani) ; \**pa-hi-ni* (PP-Ap) ; \*-*pane* (PAsh) ; *pueila* (Jam) ; \**pa(i)-lV* 'ash' (PNew) ; *pohpñatets* (Am) ; *parip̩i* 'ash' (Gr) ; *baligi* 'ash' (BC).
110. 'ear, inner' \**gē-mV-pi-ta*: \**kēpi-ta* (PP-Ap) ; \**gēmpita* (PAsh).
111. 'ear, outer' \**pana-yV-pē-ta/ni*: \**pē-šon* (PHar) ; *paná-yeupta* (Cul) ; \**pa-nyu-* (PNew).
112. 'ear, outer' \**ke-na-ko*: \**keeno* (PShani) ; *xnako* (P) ← \**ki/enako* (Pre P).
113. 'earth' \**mua*: *má* (Gr) ; *múa* (BC).
114. 'earth' \**kaa-wa-l/ri*: \**h/taa-kaa-wá-li* (PNew) ; *waikowa* (Par).
115. 'earth' \**kipatsi-pe*: *kipacipe* (Ap) ← \**kipatsipe* (Pre Ap) ; \**ki-Pa-tsi* (PAsh) ; *paats* (Am).
116. 'eat' \**ni-ga*: \**ninke/o* (PShani) ; \*-*nika* (PP-Ap) ; -*ga-* (Mg).
117. 'eat' \**(m)a/e-pa-i*: \**ma/e-pe* (PHar) ; \*-*apa-i* (PMadi).
118. 'eat' \*-*aro*: -*aro* (C) ; *rra?* (Am). This is a doubtful set, since the conditioning of Am *rr* ← \**r* is not evident.
119. 'eat' \**natsi-*: *nač-ne-wa-ta*, *nači* 'hunger' (P) ← \**nats-ne-wa-ta*, \**natsi* 'hunger' (Pre P) ; *nači* 'abdomen' (Par).
120. 'egg' \**na-ki*: *na* (B) ; *naxi* (P) ← \**na-ki* (Pre P).
121. 'enter' \**ki/mu-SI-ru-ka-a*: *xihlo-ka* (P) ← \**kihVlo-ka* (Pre P) ; *mu-hlukā?* (Yuc) ← \**mu-SI-lu-ka-a* (Pre Yuc).
122. 'excrement' \*-*tiga*: *hi-čka* (P) ← \**hi-tika* (Pre P) ; \*-*tiga* (PAsh).
123. 'eye' \**ogi-*: \**uunge-SV* (PShani) ; *oki* (Ap) ; *o?íu* (Gr) ; *águ* (BC). P Madi \**nokhō* may be a cognate with vowel change for number. The \**u* reflex ← P Ar \**o* is assumed to be due to the formation of a vowel cluster by some prefix.
124. 'eye' \**yi-ha-ki-lye*: *y-ha-le* (P) ← \**y-ha-re* (Pre P) ; *yehklle* (Am).
125. 'far' \**(w)ā-yu*: \**wēé-yu* (PHar) ; *a?yo* (Am).
126. 'father' \**a/p-apá-ti*: \**áapam* (PHar) ; \**pa-ti/pa* (PP-Ap) ; \**ápa* (PAsh) ; *apa* (Am).

127. 'fear' \**e-mě-p̩i-ka/na*: \**piiko* (PShani) ; \**ē-měpik* (PHar) ; \**p̩ika* (PP-Ap) ; *pinga* (Mg) ← \**pinka* (Pre Mg) ; \*(*j*)*ophina* (PMadi).
128. 'feather' \*-*SI-Pi-ti/lV*: \**esu-tápií* (PShani) ; \**wi* (PHar) ; \**piti* (PP-Ap) ; \*-*SI-fi-lV* (PNew) ; *pye?ch* (Am).
129. 'few' \**sāénVna*: *šužin-a* (Kin) ← \**suenVna* (Pre Kin) ; \**sim-soen-na* (PHar).
130. 'find' \**ku-lV*: *kulá* (Yuc) ; *akre?* (Am).
131. 'finger' \*-*ma/ka/jeipi*: \*-*má-pi* (PHar) ; *myo* (P) ; *dzepe* (Cul) ← \**jepe* (Pre Cul) ; \*-*kapi-wána* (P W New) ; *yotahpy* (Am) ; *ehépi-řaa* (Gr).
132. 'fire' \**tsi-tsi*: *čiči* (P) ; \**tsi-tsi* (PAsh) ; *čimére* 'smoke' (Par).
133. 'fire' \**si-a-wV-kei-la-*: \**sia-wV-ke-ila-* (PNew) ; *siki* (Gr).
134. 'firewood' \*-*jai*: \**yoku* 'fire, firewood' (PShani) ; \**jiphō* 'fire' (PMadi) ; \**ki/si-jai* (PNew) ; *niyehe* 'ash' (Par).
136. 'first' \**fata*: \**wata* (PAsh) ; *pardhana* (Gr).
137. 'fish' \**SI-ma-ki/i*: \**hyoi-mV* (PShani) ; \**simá-ki* (PP-Ap) ; \**sima* (PAsh) ; *imá* (Pal) ; *himé* (Gr).
138. 'fish' \**kuba-r/lV-ki/SI-nia*: *kobes* (B) ← \**kowes* (Pre B) ; *kopa-xi* 'minnow' (P) ← \**kopa-ki* (Pre P) ; \**aba* (PMadi) ; \**kupale-SI-ña* (PNew) ; *kohatse* (Par). The reflex *b* in Baure is irregular. The Baure phonology describes a very small residue of words in which /b/ does not fluctuate to /w/; this word is probably one of those few exceptions.
139. 'fishnet' \**kitsa-rV*: *čali* (P) — *čari* (Pre P) ; \**ki-tsa-ri* (PAsh).
140. 'flea' \**hayaba*; *hayépa* (Gr) ; *hayába* (BC).
141. 'flesh' \**ba-na-hiñ-me/SI*: *na-i* (Kin) ; \*-*hēn* (PHar) ; *hi-ti* (P) ; \**banieme* (PMadi) ; \**ii-pe/na-SI* (PNew).
142. 'flower' \**kahowāi-*: \**ha-la-u* (PShani) ; \**kWē-y/n* (PHar) ; \**ka-hōwi-ri* (PP-Ap) ; \**mowai* (PMadi) ; \**me-iwai-ti-pe* (PNew).
143. 'fly (n.)' \**mapi-ri*: *mepé-ro* (Sap) ; *mapi-li* (Pia).
144. 'fly (n.)' \**si-ki-ri*: *šiš-ri* (P) ← \**si-si-ri* (Pre P) ; \**siki-ri* (PAsh).
145. 'fly (vb.)' \**ala-ka-na/wa*: \**aró-w* (B) ← \**ala-wV* (Pre B) ; \**hardá-na* (PP-Ap) ; \*-*ara/i* (PAsh) ; \*-*ala-ka-wa* (PNew).
146. 'foot' \**hi-i-pa*: *hipoy* (B) ← \**hipayV* (Pre B) ; \*-*i* (PHar) ; \**hi-i-pa-lV* (PNew).
147. 'foot' \**won-kidi*: \*-*kiti* (PP-Ap) ; \**a/won-g/kiti* (PAsh) ; *kiči* (Par) ; *ugúdi* (BC).
148. 'give' \**i/a-pa-he-ni-ka*: \**ipa-ra/éko-wV* (PShani) ; *hene-ka* (P) ; \**pa-ke-ri* (PAsh) ; \**aka-ni* (P Cur-Man) ; *ahp* (Am) ; *t-dápi-iñ* (Gr).
149. 'go' \**y/ha-wa-no*: \**yano-wV* (PShani) ; \**wa* (PHar) ; *ya-na* (P) ; \**ha-ta* (PAsh) ; \*-*ya-wá-na* (P W New) ; *aawo?* (Am). A replacement of *h* by *y* probably occurred as a result of frequent prefixation of *i-/ri-* 3 m. sg. in languages with *aθ* ← \**h*.
150. 'gold' \**koli*: *kori* (P) ; *kori* (Mg).

151. 'gourd' \**paho-pa*: *paho-pa* (P) ; \**paho* (PMadi).
152. 'gourd' \**bo-ča-ka*: *pačaka* (P) ; *pačaka* (Nom) ; *kočopo-ri-pa-n* (B) ← \**kačapa-ri-pa-nV* (Pre B). The variant order of syllables in Baure probably results from optional order in a string of separate morphemes in the proto-language rather than from metathesis.
153. 'grass' \**imiā-*: \**mī-re* (Pre Har) ; \**imiā-či* (PNew) ; *ime* (Par).
154. 'grease' \**nV-SI-wa/ki-SI/tsi*: \**sikisi* (PShani) ; \**šiwa* (PHar) ; \**n-hi-tsī* (PP-Ap) ; \**re/ki-hi-tsī* (PAsh) ; *ihila-hí* (Yue) ← \**i-hi/SI-la-SI* (Pre Yue) ; *pyese* (Am) ; *séepu* (Gr).
155. 'green, blue' \**i-bore-e-rV/ni*: \**-mira-na* (PHar) ; \**po-pore-rV* (PP-Ap) ; \**i-pule-e-li/ni* (PNew).
156. 'hair' \**čia-ye-o-ku*: \**ča-hV-yeo* (PShani) ; *ye-ko* (Ap) ; \**čia-ku-le* (PNew) ; *tseko-tse* (Par) ; *yehč* (Am).
157. 'hammock' \**amako* Cp. 'sleep' : \**amáka* (PNew) ; *mako* (Am).
158. 'hand' \**wa-hi-abi/\*wa-ko*. See *-abi* 'bone' : \**wóhi* (PShani) ; *-áko* (Ap) ; \**-(w)ako* (PAsh) ; \**wa* (PNew).
159. 'hand' \**kaa-pi*: \**káa-pi* (P W New) ; *kahe* (Par).
160. 'hand' \**ma-jo-ta-pi*: \**ma* (PHar) ; *myo* (P) ; *yot, yotahpy* 'finger' (Am).
161. 'hat' \**sapiwa*: *sappiwa* (Pau) ← \**sapiwa* (Pre Pau) ; *sapewa* (Yue).
162. 'he' \**to*: *to-* (Cul) ; *atyo* (Par).
163. 'he' \**li*-: *-li* 'him' (P) ← \**-ri* (Pre P) ; \**iri-o-rV* (PAsh) ; *li-* (Yue) ; *ki-gía* (BC).
164. 'he' \**nia*: *ña* (Am) ; *niá-kai* (Gr).
165. 'head' \**gii-tu/wi-di/ti*: \**tuu-di* (PShani) ; *ki(-i)* (Har) ; \**kíwi* (PP-Ap) ; \**gi-to* (PAsh) ; \**i-ta-ti* (PMadi) ; \**he-wí-da* (PNew) ; *ekíi* (Gr) ; *ičigí* (BC).
166. 'hear' \**ke-ma*: \**kema-* (PP-Ap) ; \**-kemake-ro/nge* (PAsh).
167. 'hear' \**yi-kena-ko*: *keno* (Ter) ; \**yi-kena-ko-ta* (PP-Ap).
168. 'heart' \**no-bo*-: \**-nōpō-kirēn* (PHar) ; \**bonokhō-li* (PMadi).
169. 'heart' \**asa-ni-ga-ki*: \**-asa-nigá-ki/ne* (PAsh) ; *anígi* (BC).
170. 'heavy' \**-ina*: \**ína-ti* (PShani) ; \**(m)ina/o* (PP-Ap) ; \**ti-na-ri* (PAsh) ; \**khanaha-lo* (PMadi) ; *eñerr* (Am).
171. 'here' \**ya-ni*: \**yani-ye* (PShani) ; \**ín-te/ē* (PHar) ; \**(y)aka* (PAsh) ; *na-ni* (Cul) ; *ya<sup>2</sup>ayáa* (Gr) ; *yá, yára/ha* (BC).
172. 'his' \**hi*-: *hi-* (P) ; \**i-* (PAsh) ; *hi-ka* (Jam).
173. 'hit' \**eti*-: *eet-* (Am) ; *t-ašé<sup>2</sup>eti-iñ* (Gr).
174. 'hold' \**ahiru-ka-iro*: *ehéruko* (Ter) ; \**pa-hirika-iro* (PAsh).
175. 'honey' \**petsi*: \**pitsi* (PAsh) ; *peets* (Am).
176. 'hot' \**imaa*: *heme* (P) ← \**eme* (Pre P) ; *ima<sup>2</sup>a* (Yue) ← \**imaa* (Pre Yue).
177. 'house' \**Pa-na-di*: \**-pa-di* (P Shani) ; *pa-n-či, pa-na-ta* 'build a house' (P) ; \**Panko* (PAsh) ; \**yube* (PMadi) ; \**pa-na/ni-SI* (PNew) ; *hati* (Par) ; *-úba* (BC).

178. 'hummingbird' \**se-Pi-yV-rV/tV*: *šiririri* (Ter) ← \**siririri* (Pre Ter) ; \**sewī-t* (PHar) ; *šwey-li* (P) ← \**siveyV-ri* (Pre P) ; \**sī-pi* ← \**seyV-pi* (P New). Re \*P, see 2.4, discussion of \**pi* 'furry, fuzzy object'. The vowel of Pre Har \*-wī- is nasal, an irregular reflex of the morpheme. Note the nonnasal vowel in the P Ap reflex in 'hummingbird', and compare P Har 'feather'.
179. 'husband' \**hima*: \**iimá* (PShani) ; \**-a-hime* (PAsh).
180. 'husband' \**a/u-ni-rV*: \**(it)-ani-ri* (PP-Ap) ; *uni-ri* (Pia) ; *edanane* (Par).
181. 'I' \**nō-wa*: \**uun-di* (PShani) ; \**nō-wa* (PHar) ; \**hi/no-ta* (PP-Ap) ; \**o-wa* (PMadi) ; \**nu-SI-ka/wa* (PNew) ; *natyo* (Par) ; *na* (Am).
182. 'if' \**-i-ni*: *nini* (Ter) ; *-ini* (P).
183. 'in, at' \**-ja*: \**-ya* (PShani) ; \**-io* (PHar) ; *-ya* (P) ; *ja* (Cul).
184. 'island' \**ičapi-ka/e*: *ečpié* (B) ; *ičapi-ká* (Ap).
185. 'jaguar, dog' \**jaa-wi/ma-ho*: \**joma-ho-* (PMadi) ; \**jáawi* (PNew).
186. 'kill' \**-(h)ara-*: \**e-hára-k* (PHar) ; *hi-yla-ta* (P) ← \**hi-yVra-ta* (Pre P) ; *áfaraha* (BC).
187. 'know' \**e-nū-SI-a*: *enžoa* (Kin) ← \**enVsoa* (Pre Kin) ; \**e-nōpōhē* (PHar) ; *eňoh* (Am).
188. 'lake' \**jā-ko*: \**wā/i-yáku* (PHar) ; \**ijau* 'rain' (PCur-Man) ; *hokoda* (Par) ← \**ho-da-ko* (Pre Par).
189. 'lake' \**ka-ha-re*: *eturukoré* (Kin) ; \**a/inkáh'a-re* (PAsh) ; \**-ka-li/é-sa* (P W New).
190. 'leaf' \**tsi/sa-p<sup>h</sup>ana-*: *eponé* (B) ; *sapna* 'leaf used for wrapping' (P) ; \**-tsipaná-ta* (PAsh) ; \**ap<sup>h</sup>a-ni* (PMadi) ; \**a-pána-pe/ka-le* (PNew) ; *tihana* (Par) ; *ahspaan* (Am) ; *supána* (Gr) ; *ubána* (BC).
191. 'left' \**(s/m)apa-*: *sap* (B) ; \**na-ma-pa-te* (PAsh) ; \**a-pa-SI-lú/u* (P W New) ; *t-cheplia* (Gr).
192. 'leg' \**ku-tsui-SI-ke*: \**ki/ku-ki-ti-pu* (PHar) ; *-ksi-xe* (P) ← \**kV-si-ke* (Pre P) ; \**ku-tsúi/SI-yu* 'thigh' (P W New).
193. 'leg' \**-Pori-ke*: *pori-ke* (Ap) ; \**-wóri* (PAsh).
194. 'leg' \**-pi*: \**-mo/mō-pi* (PHar) ; *kátsa-he* (Par) ; *yehčya-p* (Am).
195. 'light' \**kata-rV*: *kata-lo* (P) ← \**kata-ro* 'shining, light' (Pre P) ; *katá-li* 'charcoal' (Pia).
196. 'liver' \**-pa-ko-na*: \**apákona* (PShani) ; \**i-pana* (PP-Ap) ; \**i-riraapana* (PAsh) ; \**-u-paná-SI* (PNew) ; *yohpaan* (Am) ; *apánaa* (Gr) ; *ubána* (BC).
197. 'louse' \**u-ne-či*: \**-né-či* (PAsh) ; *úne* (Yue).
198. 'lungs' \**hawaa-rV*: *waahalolo* (Pau) ; *ihuara* (BC).
199. 'man' \**mo-ke-li/ki*: \**-mo-kérek* (PHar) ; \**ki-ki* (PP-Ap) ; \**mak<sup>h</sup>a-ki* (PMadi). The vowel change in P Madi is the reverse of that expected. Perhaps the singular of 'man' has a change to o by analogy to the common -a- sg, -o- or -e- plural.

200. 'man' \*ha-ye-na/ne/ri: \*hóye-no/rV (PShani) ; ha-yi-ne-ri 'person' (possessed form) (P) ; ena (Par) ; hiér 'woman' (Gr) ← \*hVye-rV (Pre Gr) ; eyé-ri (BC).
201. 'manioc' \*kāā-ha-SI: kaháp (B) ; \*kini-kaahí- (P W New) ; gáā (BC).
202. 'monkey, cebus' \*ma-ko-kii: makákee (Yuc) ; máako (Gr) ; mégu (BC).
203. 'monkey, cebus' \*ho-ha/mo-te: hōh (Wach) ; homo (Cul) ; hoa-te (Par).
204. 'monkey, howler' \*toyani-rV: yor (B) ← \*ya-rV (Pre B) ; \*toy-o-re (Pre Har) ; \*yani-ri (PAsh).
205. 'monkey, sp.' \*katsana-rV: \*-k-atsana-ri (PP-Ap) ; katana-li (Pau). P Madi regularly reflects \*č with \*s, to which Pau s corresponds. No t reflex in Pau was noted in comparing the Madi languages.
206. 'monkey, spider' \*madira: \*matira (PHar) ; matira (PP-Ap). The P Har should be \*maatira, but for its reconstruction the Amar 1 and 2, which establish long vowels, is lacking.
207. 'moon' \*ka-hee-SI-ri: \*kohé-e (PShani) ; \*kasi-ri (PP-Ap) ; \*kasi-ri (PAsh) ; \*ka-hee-SI-li (PNew) ; kaima-re (Par) ; kaši (Gr).
208. 'mosquito' \*há-hio: \*ní-u (PShani) ; \*háhio (PP-Ap) ; \*mánio (PAsh) ; haniyú (Yuc).
209. 'mosquito' \*mei: mei (Cul) ; méi (Gr) ; ma-ri (BC).
210. 'mother' \*n-iná-mi: \*n-enó (PShani) ; \*i-nám (PHar) ; \*ná-to/ro (PP-Ap) ; \*ina 'wife', \*hina (PAsh) ; \*a-mi (PMadi) ; naka (Tar) ; \*aami (P W New), \*iina-ná-wi-lu 'woman' (P W New).
211. 'mother' \*okači: aač (Am) ; -úguču (BC).
212. 'mouth' \*nama/\*n/iuma: \*náma (PP-Ap) ; \*-numa (PNew) ; yenaam (Am) ; -iúma (BC).
213. 'mouth' \*naki: -nóki (B) ← \*naki (Pre B) ; áaniki-i (Gr).
214. 'my' \*n-/nV-: n-/ni- (B) ; \*nV- (PP-Ap) ; \*n-/no- (PAsh) ; \*nu- (P W New) ; nu- (BC).
215. 'name' \*bi-ta/ra-na: -pi 'word' (B) ; pira-na 'that which concerns . . .' (P) ; \*pitana (PNew).
216. 'name' \*-ni-: \*-nik (PHar) ; \*oni (PMadi).
217. 'name' \*-iri: aniri-aa (Gr) ; íri (BC).
218. 'navel' \*-pe-rV: \*-něx-pe/ro (PHar) ; p-lo (P) ← \*pV-ro (Pre P) ; e-pe (Cul) ; aribi-ri (BC).
219. 'neck' \*tsa-nu-lu-pi-ki-SI: \*(č)anu-ki (PShani) ; \*-pi (PHar) ; \*-no-pi/ki (PP-Ap) ; \*tsano (PAsh) ; \*kan-há-pi (P W New) ; -hino (Par) ← \*pimo (Pre Par) ; yečrnoopy (Am) ; anúruu (Gr).
220. Negative, 'no, not' \*hi-ke: he (Sap) ; ke (Amar 1) ; hi, hi-ke (P) ; he-la (Cul).
221. Negative, 'no, not' \*a/unV-kha-wV: \*anV-ko-wV (PShani) ; unká (Yuc).
222. 'new' \*i/he-ke-ro-ti: he-ro-ti (P) ; \*iro-ake-ra-i (PAsh) ; wa-he (Yuc) ; hekéti (Gr).

223. 'night' \*ja-doe/ti: \*yadoe (PShani) ; yeči/yači (P) ← \*yeti/yati (Pre P) ; \*jo/ama (PMadi) ; yeečy (Am) ; yāū (BC).
224. 'Nominal' \*-ti/i: \*-ti (PShani) ; -ti (P) ; \*-ti (PMadi).
225. 'nose' \*giri-masi: \*giiri (PShani) ; \*kiri-ta (PP-Ap) ; \*-girimasi (Pash) ; gi·ri (Par) ; īgiri (BC).
226. 'nothing, not' \*ma-ra-sia: ma-leša (P) ← \*ma-re-sia (Pre P) ; mala (Cul).
227. 'old' \*waya-li: vulu (Kin) ← \*wuli (Pre Kin) ; bili-di (Cul) ; \*piyu-li/ke (P W New) ; weya-li (BC). See 2.5, \*(V)CV(V) →.
228. 'old man' \*yeka-tū-nē/ti: \*yeka-tone (PShani) ; \*tōnē (PHar) ; \*to-ti 'grandfather' (PP-Ap).
229. 'one, another' \*pa-ti-rV: \*po-y/na-so (PShani) ; pa (P) ; \*(a)pá-ti-ro (PAsh) ; pa-h-líwa (Yuc) ← \*pa-SI-lú-wa (Pre Yuc) ; pahčeerr (Am) ; ába (BC).
230. 'other, another' \*apu-: apu- (Yuc) ; poþpoñ (Am).
231. 'our' \*w-: w- (P) ; \*wa (P W New).
232. 'owl' \*bō(-i)bō(i)-ri: \*pōi-pōi (PHar) ; pom-po-ri (Nom) ; bobo (Cul) ; pupu (Yuc).
233. 'paddle' \*homa-ti: homēt (Sap) ; hema (Cul).
234. 'paddle' \*-ha-pi: habi (B) ← \*howi (Pre B) ; salwi-hapi (P).
235. 'palm, chonta' \*kei-ya-re: kiyoreawok (B) ; ki-ri (P) ; \*kei-ri (PAsh).
236. 'palm, chonta' \*-biri-: biliha-ri (Cul) ; \*pi-pi-lí (P W New).
237. 'path, road' \*aPo-ts/ti: \*hapó-ri (PP-Ap) ; \*avo/a-tsi (PAsh) ; \*ní/aa-pu (PNew) ; áho-ti (Par) ; wopú (Gr).
238. 'pebbles' \*mapoi: mopói (Ter) ; \*mapoi-poro-ki-si (PAsh).
239. 'peccary, collared' \*miri-si/ti: \*miri-si (PHar) ; \*miri-ti (PP-Ap).
240. 'people' \*čia-ne-ti: \*čani-ti (PShani) ; ačeēñ (Am).
241. 'Plural' \*-nV-(b): -neb (B) ; \*-ne/i (PP-Ap) ; \*-na (Yuc).
242. 'pod' \*pa: pa (P) ; \*-pa (PAsh).
243. 'pot, cooking' \*ko-hV-su-rua-Pi-ti: \*kuhV-su/wi (PShani) ; \*kiso-mō (PHar) ; \*ko-ra-pi-tV (PP-Ap) ; \*kowi-ti (PAsh) ; su-rua-pi (Tar). 'pot, cooking' See 345.
244. 'rain' \*-(h)uwV-ya-ka: \*uko (PShani) ; \*o/eexWii (PHar) ; \*(u)uni-a/hú-wa-ka (P W New) ; huyá (Gr) ; húya (BC).
245. 'rain' \*neka: neka (P) ; \*a/inka-ni (PAsh).
246. 'red' \*ha/ki-ira-a-rV/ni: hararai-ti (Kin) ; \*kiraá-ri (PAsh).
247. 'red' \*-sero-: mo-séro-kon (B) ; sero-li (P) ← \*sero-ri (Pre P).
249. 'river, stream' \*hu-wē-ni/i-ha: \*huweo (PShani) ; \*wē (PHar) ; \*weni (PP-Ap) ; \*e-ni-ha (PAsh) ; \*uni-fa (PNew).
250. 'river, stream' \*ha-po-e-ni-ha: wa-poér (B) ← \*wa-po-há-ri (Pre B) ; hap-ha, hapo-ha- 'flow' (P) ; poþñehs (Am).
251. 'roast, fry' \*(k)i-ma: \*kimi/a- (PP-Ap) ; eemá (Yuc).

252. 'rock, stone' \*hi-ba-i: \*mabói-e (PShani) ; \*(h)iípa-ku-da (PNew) ; ipá (Gr).
253. 'rock, stone' \*ma-p̥hi: \*mapi (PAsh) ; mahp̥ye (Am). The *h* in Am is probably due to the stress pattern.
254. 'root' \*ha-Pa-rV: \*-Pá-ri (PAsh) ; \*habo (PMadi) ; \*hai-gu-ma-pa-lV (PNew) ; t̥aha-re (Par).
255. 'rope' \*tsa: \*tsa (PP-Ap) ; \*-tsa (PAsh).
256. 'rotten' \*bat̥a: \*bat̥a (PMadi) ; bada-ka-wa (Pia) ← \*pata-ká-wa (Pre Pia).
257. 'round' \*-pu-rV/-iti: \*pu-ití/rV- (PShani) ; \*po-po-rV-rV (PP-Ap).
258. 'saliva' \*-wi-ya-: \*yá-a-wi-rú-pa/hi (P W New) ; wiyatáho (Par).
259. 'salt' \*yuki-ra: yuke (Kin) ; yoki-ra (Ap) ; \*yuki-la (PNew).
260. 'salt' \*tiwi: tiwi (P) ; \*tiwi (PAsh).
261. 'sand' \*kai-ipa-tsi/na/da: \*kipa-tsi (PP-Ap) ; \*kai-iipa(i)-na/da (P New).
262. 'sap' \*ka-si-ha: kši-ha (P) ← \*kvsi-ha (Pre P) ; \*-kasi (PAsh) ; sihí (Gr) ; ihi (BC).
263. 'sea' \*para-na/wa: paráa (Gr) ; bará-na/wa (BC).
264. 'see' \*ti-awa-i: e-tia-wai (Amar 1) ; awa (Cul).
265. 'seed' \*no-k̥i-i-ni-ki: \*es-ake (PShani) ; \*e-ki-in/-ra (PHar) ; \*ki (PP-Ap) ; \*ki-tso-ki (PAsh) ; \*nook̥o (PMadi) ; kiniki (Cur).  
'seed' See 346.
266. 'skin' \*tasí/ai-gi: tasai-gi (Mg) ; tasi-ne (Yuc).
267. 'sleep' \*ma-(n)i/a/ge-: \*móngo-ti/wV (PShani) ; \*hi-máka (PP-Ap) ; \*mai-ge (PAsh) ; \*maa-ka-tua (PNew) ; ma<sup>3</sup> (Am) ; aru-muga (BC).
268. 'smell' \*i/a-mi-a-rV: ominža-pa-ti (Kin) ; ha-mli-ta (P) → \*ha-mVri-ta (Pre P) ; \*a-miá (PNew) ; poomya (Am) ; imiriča (BC).
269. 'smooth' \*su-we-ri-rV-: hušowelelakói (Kin) → \*husuwelilukói (Pre Kin) ; \*isu-le-li/ke (PJam-Jar).
270. 'snake' \*-Pi-: \*-Wi (PHar) ; \*-pi (PP-Ap) ; \*-pi (PNew) ; ówi (Par) ; -py (Am) ; wíi (Gr) ; hewe (BC).
272. 'spear' \*čokori: čoko-ri (P) ; čoko-ri (Mg).
273. 'spider' \*-katí: káti (Yuc) ; aréket (Gr).
274. 'stand' \*o/e-ma: -išóm (B) → \*ison (Pre B) ; e-ma-na (Cul) ; e-ma-ka-wa (Cur) ; čroom (Am).  
'star' See 347, 348.
275. 'suck' \*-čo-/tso: ha-čpo-ta (P) ← \*ha-čVpo-ta (Pre P) ; tsɔ̃tsopt (Am) ; aču-punkaht-š (Gr) ; ačuha (BC) ; čomiga (Mg) ;
- This word is probably related to \*jo-tso/hi-mi-re/-ne/-SI 'breast'. Notice especially Mg čomiga 'suck' and P Ash \*tsomi 'breast'. Am has, along with tsɔ̃tsopt, the form mooma<sup>3</sup> 'suck', suggesting that morphemes from the two words for 'suck' may be included in Am yésoomap 'breast'.

276. 'sun' \*ka-má-hi: \*mahi (PMadi) ; \*ka-mui 'sun, year' (PNew) ; kamai (Par).
277. 'sun' \*a-ta-ka-SI/či: \*ka-se-sV (PShani) ; \*ataka-tsi (PP-Ap) ; \*kači (Gr).
278. 'sun' \*pawa: pawa- 'fire' (P) ; paba (Nom) → \*pawa (Pre Nom).
279. 'sweet potato' \*ki/si-pa-ri/i: sere (B) ; \*ere-mim (PHar) ; \*kipá-ri (PP-Ap).
280. 'sweet potato' \*kori-ti/ri: \*kori-ti (PAsh) ; kali-li (Pia).
281. 'swell' \*hena-na-ka-wa: \*hana-na/ka (PP-Ap) ; \*ihená(a)-ka-wa (P W New) ; ahna<sup>3</sup> (Am).
282. 'swim' \*ha-nu-: \*e-nopie (PHar) ; \*ha-no-hā-ta (PP-Ap) ; ha-nu-ne (Jam).
283. 'tail' \*ie-li-si-pi: \*-pi (PHar) ; \*-sipi (PNew), ieriko (Man) ← \*lieliko (Pre Man) ; asíi (Gr) ; ili (BC).
284. 'tail' \*i-ni-ho: \*iího (PShani) ; iního (Par).
285. 'talk' \*puraū: puraú (Yuc) ← \*puraú (Pre Yuc) ; serrpaare<sup>3</sup>t (Am).
286. 'tapir' \*sawi: sewi (Wach) ; \*awi (PMadi).
287. 'tapir' \*kēma: \*kēmē (PHar) ; \*kéma (PP-Ap) ; \*kema-ri (PAsh) ; \*éema (PNew).
288. 'termite' \*kamara: \*kamá-ra (PP-Ap) ; \*kamá-la (P W New).
289. 'that' \*ti-ke-ra/te-ni: ten (B) ; \*ken-te (PHar) ; ti-x-ra (P) ← \*ti-ki/e-ra (Pre P) , k-la-li (P) ; \*o-ra (PAsh) ; ti-ra (Gr) ; tu-ra (BC).
290. 'that' \*ha-ni-re: hané-le (Ter) ; ha (P) ; añ (Am).
291. 'the' \*wa: \*wa (PHar) ; wa (P).
292. 'their' \*-na: -na (P) ; \*na- (P W New).  
'there' See 350.
293. 'they' \*hagi: \*h-egi Pronominal plural (PAsh) ; hagía (BC).
294. 'they' \*a-ni-ga: anigóno (Kin) ; ne-ka (Yuc) ; ñee (Am).
295. 'they' \*na-ha-ni/ri: wan-na (P) ; na-ha-li (Cul) ; naha-ni (Tar).
296. 'thick' \*rakV-: rakyet (Am) ; rakta (Gr).
298. 'this' \*tV-ya-: te/i (B) ; \*t-iya (PP-Ap) ; \*ti-yáahi (PNew). Gender is represented by the vowel, -i being usually masculine, and -u feminine.
299. 'this' \*añi: \*i/ñ-ñe (PHar) ; añ (Am).
300. 'thorn' \*ka-lyu-wa-re: luwe-re (Yuc) ← \*luwe-le (Pre Yuc) ; kallawo<sup>3</sup> (Am) ← \*kallawo (Pre Am).
301. 'thou' \*afi-a/ka/ro: \*avi-ro (PAsh) ; \*pi-a/ka (PNew).
302. 'thou' \*pi-ti-a: pi-ti, p- ~ pV (B) ; \*pi-tia, \*p- ~ pV- (PP-Ap) ; \*p- ~ pi- (PAsh) ; \*pi-a/ka (PNew) ; pya (Am) ; bu-gúya (BC).
303. 'three' \*maSI-fa/uá: \*mabiúa-ti/nV (PShani) ; \*maapa (PHar) ; mapa (P) ; \*mawá- (PAsh) ; ma-θi-ba (Pia) ← \*ma-SI-pa (Pre Pia) ; ma<sup>3</sup>pa (Am) ; apúnuiñ (Gr).

304. 'thunder' \**thi-lo/e: hi-tlohi-ta* (P) ← \**hi-tVro-hi-ta* (Pre P) ; *i-tirei* (C) ; *t<sup>h</sup>o-ro* (Cul) ← \**tho-lo* (Pre Cul).
305. 'toad' \*-*dulu-* : \**n-toro* (PP-Ap) ; *dulu-lu* (Pau).
306. 'tobacco' \**ha-jui-ma-ri:* \**ha-yui-ri* (PP-Ap) ; *ha-ji-li* (Pau) ; *če-ma* (Pia) ← \**jeema* (Pre Pia) ; *yomaats* (Am) ; *yíi* (Gr) ; *iúri* (BC).
307. 'tobacco' \**sai-na/ri:* \**sái-nV* (PShani) ; *seri* (C) ; \**sina* (PMadi).
308. 'toe' \**apa-ri:* \**č/tsapá* (PAsh) ; *apa-li* (Pia).
309. 'toe' \*-*epi-:* \**ipi(-h)* (PHar) ; *š-ehépi-řa* (Gr).
310. 'tongue' \**ĩ-aye-na-ni/i:* \**néene* (PShani) ; \**ni-ni* (PP-Ap) ; \*-*nene* (PAsh) ; \**na-ni* (PNew) ; *nini-tsa* (Par) ; *yeñeeñ* (Am) ; *ayée* (Gr) ; *iẽyẽ* (BC).
311. 'tooth' \**yai-SI-mi-nV-:* \**oi-nV* (PShani) ; \**in*, \**ai* 'bone' (PHar) ; *yhi* (P) ; \**ahí* (PAsh) ; \**ino* (PMadi) ; \**yai-SI-mi-nV-da* (PNew) ; *áiko-li* (Par) ; *yahs* (Am) ; *áii* (Gr) ; *á-ri* (BC).
- 'tooth' See 349.
312. 'tortoise' \**sã-we/me-pi-rV:* *sopír* (B) ← \**sapu-rV* (Pre B) ; \**sa-w-ro* (PHar) ; \**sípi-ri* (PP-Ap) ; \**si-li* (PMadi).
313. 'toucan' \**ja-nV-kua-rV:* *jakua-kua* (Pau) ; *čankoorr* (Am).
314. 'tree, stick' \**aha-iku/a-wã-ĩ/na:* \**ewokoe* (B) ; \**oy(õ) wẽi-mẽi* (PHar) ; \**aha-mina* (PP-Ap) ; \**awa* (PMadi) ; \**aha-iku/a-wana* (PNew) ; *wéwe* (BC).
315. 'two' \**bi/pVja-a-ma:* \**ma-bía-so/nV* (PShani) ; \**epi* (PP-Ap) ; \**a-pite-ti* (PAsh) ; \**pamV* (PMadi) ; \**i-jamáa* (PNew) ; *ehpa* (Am) ; *piáma* (Gr) ; *bíá-ma* (BC).
316. 'uncle' \**ko-:* *ko-ko*, *hi-ko-xi-ri* (P) ; \*-*ku* (PNew).
317. Verbal \*-*ta*, \*-*ka-wa:* \*-*ka-wa* (PShani) ; -*ta*, -*wa*, -*ka* (P) ; -*ta*, -*wa* (Cul).
318. 'village' \**pu-so-ko:* *pusoko-wo-ku* (Ter) ; \**poko* 'house, village' (PP-Ap) ; *pokooll* (Am).
319. 'vine' \**(h)a-pi-tsa:* \**haha-pi-tsa* (PP-Ap) ; \**ta-pe-tsa* (PAsh) ; -*pi* (Cul) ; -*pi* (Yuc) ; *ahpeečr* (Am).
320. 'water' \**w/huni/i-ha:* \**ho-o/ine* (PShani) ; \**wẽey* (PHar) ; *honi-ha* (P) ; \**ni-ha* (PAsh) ; \**pa-ha* (PMadi) ; \**(h)u-úni* (PNew) ; *one* (Par) ; *oñ* (Am) ; *wiñ* (Gr).
321. 'water' \**pa-:* *ápa-rá* (Ap) ; \**pa-ha* (PMadi).
322. 'we' \**wa-gi-a*, \**wi-:* \**uu-nV-ti* (PShani) ; *bi-ti* (B) ← \**wi-ti* (Pre B) ; *wi-tya* (P) ← \**wi-tia* (Pre P) ; *ia* (Cul) ; *we-ka* (Yuc) ; *witsó* (Par) ; *ya* (Am) ; *wayá-kan* (Gr) ; *wagia* (BC).
323. 'we' \**aro-:* \**(n)a/ero-egi* (PAsh) ; \**o-oro* (PHar).
324. 'wet' \**pa/ka-hã-ka:* \**ka-hã-ka* (PP-Ap) ; \**o-ka-ha* (PAsh).
325. 'wet' \**sa-fi-:* \**sa-wí/yimna* (PHar) ; \**isá-be-ka-ni* (PNew).
326. 'what, which, who' \**ka/u-tV-meá:* \**ku-ti-meá* (PShani) ; \**kate* 'what', \**méa* 'who' (PHar) ; *ka-ti* 'who' (P) ; *katai* (BC).
327. 'what, which' \**pa/ka-ha-ka:* \**ka-ha-ka* (PP-Ap) ; \**o-ka-ha-* (PAsh).

328. 'when' \**mẽ-nõ-ka:* \**mẽ-nõ-ka* (PHar) ; *meke-ča* (Yuc).
329. 'where' \**hi/a-na-gV/ja:* *ha-naku* (Ter) ; *hi-naka* (P) ; *néga* (Nom) ; *hanaja* (Pau).
330. 'where' \**era-:* *errašt* (Am) ; *hará-š* (Gr).
331. 'white' \**kV-halV-e/ta:* *klata*, *halata* 'whiten' (P) ; *katalikhe* (Cul) ; \**halee-ni* (PNew) ; *harú-ti* (BC).
332. 'wife' \**yaa-ni-:* \**yeeno* (PShani) ; \**yaa* (P W New) ; *haya-ni-tyo* (Par) ; *yečyahpoor* (Am).
333. 'wind' \*-*bu-:* \**emápu-k* (PHar) ; \**bu-ni* (PJam-Jar).
334. 'wind' \**ha-(h)u-la-ti/na:* \**h/ka-u-le-ná* (PNew) ; *hohola-ti* (Par).
335. 'wing' \**ep<sup>h</sup>a-he-:* \**ep<sup>h</sup>e* (PMadi) ; \**yVpáhe* (P W New) ; *pa<sup>h</sup>pye<sup>h</sup>* (Am).
336. 'with' \**ya-:* *yaakoi* (Kin) ; *yma* (P) ; *yapiče-ri* (Pia).
337. 'woman' \**siitio:* \**séno* (PShani) ; \**sii-et* (PHar) ; \**siitio* (PP-Ap).
338. 'worm' \**k|hoko-:* *kokó-n* (B) ; *hokóma* (Gr).
339. 'worm' \**tV-some-ri:* \**tsomi* (PP-Ap) ; \**tsomi-ri* (PAsh) ; \**some* (P Madi).
340. 'yam' \**magóna:* *makna* (P) ; \**magóna* (PAsh).
341. 'yawn' \*-*aapaha-ta:* *hapha-ta-ta* (P) ; *aapá* (Yuc).
342. 'ye' \**(h)i-ti-só/a:* \**iti-noi* (PShani) ; \**hitia* (PP-Ap) ; *i-ka* (Yuc) ; *hitsó* (Par).
343. 'yes' \**hã-hi:* é (Ter) ; \**hẽ-* (PHar) ; \**hihi* (PP-Ap) ; \*-*he* (PAsh) ; \**hee* (PMadi) ; \**aa* (Yuc).
344. 'chest' \**ča/ba-khu-hV-da/ra/ke:* \**čaá-ku-ke* (PShani) ; \**bak<sup>h</sup>o* (PMadi) ; \**khu(u)-da/SI* (PNew) ; *tikola-he* (Par).
345. 'pot, cooking' \**hi-mati-ko:* *hi-mati* (P) ; *mátoko* (Par).
346. 'seed' \*-*ake-ti:* \**es-ake* (PShani) ; *hanáka-ti* (Par).
347. 'star' \**wi-he-ri-SI:* \**wa-he-SI/ke-we* (PShani) ; *kata-hiri*, *kata* 'shine' (P) ; *bo-wi-li* (Pau) ; \**iwi-li-SI-nu* (P W New).
348. 'star' \**jōri-če/ki:* *yoríki* (Ap) ; *dóre-tse* (Par).
349. 'tooth' \**(t)se-rV:* *séri* (B) ; -*tsíri* (Ap) ; \**tsera* 'lip' (PAsh).
350. 'there' \**jaa-rV:* *čáa-la* (Pia) ← \**jáa-la* (Pre Pia) ; *čyáarr* (Am) ; *sa<sup>h</sup>ayaá* (Gr) ; *yágí-ra/ta* (BC). Cp. 'that' *ti-x-ra* (P).
351. 'drip' \**tsobo-rV:* *tsop-re-* (P) ; *saboro* (Cul) ← \**tsaboro* (Pre Cul).
352. 'dust' \*-*moru-* 'dust, powder, grind' : -*mlo-* 'grind, crush' (P) ; *moliiobi* (Pia) ← \**moluisi* (Pre Pia).
353. 'people' \**madi-:* \**mat-si-age/ni-nka* (PAsh) ; \**madi-ha* (PMadi).

## 6.7 PROTO SHANI

6.7.1 *Introduction*

Data on only four languages of Mason's South Arawakan group are available: Pareci, Kinikinao, Tereno, and Baure. Of these the Pareci is omitted from the present grouping, and treated as an isolated in Sections 6.1–6.6, since in its closest relationship, that with Tereno, only 15% of the vocabulary items compared are cognate. The relationship among the other three is irregular. Kinikinao and Tereno, both in Mason's Paraná subgroup, share 78% of the vocabulary compared. Baure, of Mason's Bolivia subgroup, shares 46% with Tereno, but only 24% with Kinikinao.

The data for the Baure were provided by Priscilla Baptista and Ruth Wallin; for the Tereno, by Muriel M. Perkins; and for the Kinikinao by Dale Kietzman.

The term *Shani* is the Kinikinao form of the word for 'people'.

6.7.2 *The Phonemes of Proto Shani*

*p	*t	*k
*b	*d	*g
	*s	*č
*m	*n	*h
	*l	
*w	*r	*y
	*i	*u
	*e	*o
		*a

6.7.3 *Phoneme Reflexes*

P Sh	*p	*t	*k	*b	*d	*g
Kin	p	t	k	b, f	d, t	g
Ter	p	t	k	p	t <sup>h</sup> , t	k
B	p	t	k	p	t	k, s

P Sh	*s	*č	*h	*m	*n
Kin	s, š, ž	š	h, Ø	m	n
Ter	s, š	č, š	h, hy, þ	m	n
B	s, š	č	h	m	n

P Sh	*w	*r	*l	*y
Kin	w, v	r	l	y
Ter	w, v	r	l	y
B	w, b	r	r	y

P Sh	*i	*e	*a	*o	*u
Kin	i, e	e, i	a	o	u, o
Ter	i, e	e	a, o	o, a, u	u
B	i, e	e	o, e	o, a, i	i, a

Nasal vowels occur sporadically adjacent to nasal consonants. Stress is marked as in Tereno.

6.7.4 *Conditioning and Examples of Phoneme Reflexes*

\*CC →

\*C<sub>1</sub>C<sub>1</sub> → C<sub>1</sub>

Clusters of identical consonants appear only in Kin. They are assumed to be conditioned by rhythm, or to result from the loss of an optional morpheme, perhaps a reduplicated syllable. 11, 21, 61, 95

\*hs → ž ~ y | -e (Kin); z (Kin); hž (Ter) 37

\*hy → h (B); hy 35

\*mb → mb (Kin); p (Ter); b (B) 12

\*nt → nd (Kin); t 97

\*nk → nk (Kin); k 28

\*nd → nd (Kin, Ter); nt (B) 49

\*ng → ng (Kin); k 29, 81

\*ns → nž (Kin); hy | -i (Ter); š (Ter) 10, 95

\*nč → z (Kin); nž (Ter); č (B) 31

\*(V)VCV →

\*iiho → ihi (Kin); ihi (Ter); iho (B) 87

\*aha → o | . . . oo (Ter); aha (B) 17

\*ohi → o'i (Kin); o'u (Ter); óhi (B) 42

\*hooi → ho'i (Kin); hyooi (Ter) 16

\*ewa → eo (Ter); awa (B) 8

\*awa  
The morpheme sequence \*-ka-wa → -kua (Kin); -ko (Ter); ko-w, -w (B). See 94.  
\*oye → oye (Kin, Ter); i (B) 56

- \*C →
- \*p → p 2, 14, 27, 32
  - \*t → t 6, 7, 38, 103
  - \*k → k 12, 26, 27, 32
  - \*b → b | #- (Kin) ; f (Kin) ; p 59, 74, 89, 93
  - \*d → t | -i (Kin) ; d (Kin) : <sup>t<sup>h</sup></sup> | -i (Ter) ; t 11, 14, 63, 79
  - \*g → g (Kin) ; s | -i (B) ; k 65
  - \*s → ž | m . . . n (Kin) ; s | -u (Kin) ; s | . . . s (B) ; s | -a ; š 1, 8, 13, 21, 33, 44, 68
  - \*č → č (B) ; š ~ č (Ter) ; š (Kin) 5, 19, 69
  - \*h → hy | -i/-e . . . i | . . . h (Ter) ; h 16, 56, 57, 59, 104
  - \*m → m 6, 9, 81, 89
  - \*n → n 26, 28, 40, 45
  - \*w → v | -e (Kin) ; v | -i/-e (Ter) ; b | -i (B) ; w 4, 7, 18, 42
  - \*l → r (B) ; l 4, 25, 87, 88
  - \*r → r 6, 10, 17, 65
  - \*y → y 34, 40, 46, 50, 52
- \*VV →
- |   |   |   |   |   |
|---|---|---|---|---|
| i | e | a | o | u |
|---|---|---|---|---|

i	ii		ia	io	
e		ee		eo	eu
a	ai		aa	ao	au
o	oi	oe		oo	ou
u	ui	ue	ua		uu

- \*ii → i (Kin) ; i 32
- \*ia → i (B) ; ia 93
- \*io → io (Kin) ; i (Ter) 30
- \*eo → a (B) ; eo 13, 73
- \*eu → ei (Kin) ; e (Ter) ; i (B) 14
- \*ai → ai (Ter) ; o (B) 90
- \*ao → aa (Kin) ; o (Ter) 79
- \*aa → a | -C (Kin) ; a<sup>h</sup>a ~ a ; (Ter) ; a<sup>h</sup>a (Kin) ; a (B) 19, 31, 59
- \*au → oi (Kin) ; iu (Ter) 36
- \*oi → o, u | #-C (Kin) ; oe | -#/. . . oi # ; o | -w ; o (B) ; oi 14, 24, 67, 72, 82, 83, 92
- \*oe → i | -# (Kin, Ter) ; o (Ter) ; oe (B) 3, 63

- \*oo → ee (Kin, Ter) ; o (B) 17
  - \*ou → ou (Kin, Ter) ; oi (B) 2
  - \*ui → ii (Kin) ; u (Ter) 1
  - \*ue → ui (Kin) ; ou (Ter) ; oe (B) 25
  - \*ua → u<sup>h</sup>a (Kin) ; oa (Ter) ; o (B) 89
  - \*uu → bi | #- (B) ; o | -yu (Kin) ; u
- A few irregular instances of u ← \*uu are found in Kin. 22, 29, 49, 52, 97

### \*V →

- \*V → Ø | -# frequently (B) 9, 20, 26, 27
  - \*i → e | a . . . # (Kin, Ter) ; u | u . . . o (Kin) ; e | a . . . e (B) ; i 11, 45, 46, 82
  - \*e → i | -wi/-su (Kin) ; a | a . . . a (Kin, Ter) 30, 77, 84, 86, 101
  - \*a → o | . . . o/-w (Ter) ; u | u . . . o (Ter) ; i | č- . . . i (B) ; e | y-/. . . ee (B) ; o (B) ; a 10, 12, 50, 63, 77
  - \*o → u | . . . u (Ter) ; a | a . . . a (Ter) ; o | -w/. . . o (B) ; i | -y ; a (B) , o 26, 32, 34, 40
  - \*u → o ~ u (Kin) ; a | . . . a (B) ; o | . . . i (B) ; i (B) ; u (Ter)
- The free fluctuation in Kin is evident in 'who' *kuti*, 'what' *koti-ya*. 34, 80, 98, 99

### 6.7.5 Index of Cognate Sets

The reflexes are presented in the following order : P Shani : Kin, Ter, B. The lack of a member of a set is marked by a dash.

1. 'arrow' \*sui-ke/me : siike, šume, —.
2. 'ash' \*pou-pV : pou, pou, poip.
3. 'axe' \*poe-wo-ti : —, powoti, poé.
4. 'baby, child' \*kaliwóno : kaliwóno, kaliwóno, —.
5. 'back' \*čúpu-nu-di : —, šúpunu-thi, -cípi.
6. 'bark' \*móto-ke/ru : mótoke, móto-ru, —.
7. 'bat' \*vité-te/rV : —, vitéte, bité-r.
8. 'beard' \*ísewa : —, išeо, -išawán.
9. 'bee' \*yo-moépo : —, mopo, yomoép.
10. 'bite' \*aránsu-ka-wa : aránžu-kua, arúšuko, —.
11. 'blood' \*idi : it'i, íthi, iti.
12. 'blow' \*(h)ambi-ka-wa : ámbi-kwa, apí-ko, -hábi-ko-w.
13. 'body hair' \*íseo : —, išeо, -išá.
14. 'bone' \*oipéu-di : opéi-ti, oipé-thi, -ópi.
15. 'breast' \*soone : še-ne, —, -šon. It is possible that this is borrowed from

Spanish *seno*, Portuguese *seio*, but compare 'woman', which, of course, could be an extension of the loan.

16. 'brush' \**hooi*: *ho'i*, *hyói*, —.
17. 'burn' \**aharo*-: *oropéšati*, *orópoko*, -*ahárow*.
18. 'canoe' \**watéke*: *watéke*, *watéke*, —.
19. 'chest' \**čaaku-ke*: —, *ša³a* ~ *ča³a*, 'his chest' *ča³ákuke*; *čakóki*.
20. 'claw, fingernail' \**et/hí-ipo*: *hi'po*, *hyípo*, *etíp*.
21. 'cold' \**kás-a-ti*: *kás-a-ti*, *kás-a-ti*, —.
22. 'correct' \**uuná-di*-: *unát-i-ti*, *ú-nath'i*, —.
23. 'cut' \**dátu-ka-wa-ti*: *dáto-kva-ti*, *tetúko*, —.
- 'dark' See 104.
24. 'dry' \**mowoi-ti*: *mowo³i-ti*, *mowoi-ti*, —.
25. 'dust' \**ko/i-pue-ne*/nV: *ipúine*, *pou*, *kopoér*.
26. 'ear' \**koóno*: *ke'nó*, *ké no*, -*čókon*.
27. 'earth' \**pó-ewo-ke*: *poke*, *poké³e*, *poevok*.
28. 'eat' \**nínke/o-wa*: *ninge-ti*, *niko*, *ników*.
29. 'eye' \**uunge-sV*: *üngé*, *ú'ke*, -*kís*.
30. 'fan' \**kevio-ti*: *kiwiotí*, *keviti*, —.
31. 'father, my father' \**nčaa-čV*: *za³á*: *há³a*, *nža³a*, *čač*.
32. 'fear' \**píko*-: *píko*, *píko*, -*pikow*.
33. 'feather' \**esu*-: *išotap'ií*, —, *esis*.
34. 'fire' \**yoku*: *yok'u*, *yuku*, *yáki*.
35. 'fish' \**hyói-mV*: *hyói*, *hyó'e*, *him*.
36. 'flower' \**ha-la-u*: *hiloi*, *hiu*, —.
37. 'foot, leg' \**hseewe*: *zé've*, *ye've*; *hy'e've*; —.
38. 'freeze' \**ima-tóko*-: *imatáko-ti*, —, -*tókonokopa*.
39. 'give' \**ipa-ro/é-ka-wa*: —, *ipara*, -*poé-ko-w*.
40. 'go' \**yáno-wa/ti*: 'walk' *yano-ti*, *yóno*, -*yoно-w*.
41. 'grease' \**šikiši*: *šikiši*, *šikiši*, —.
42. 'hand' \**wohi*: *wó'i*, *wó'u*, -*wóhis*.
43. 'head' \**tuu-di*: *tu'ti*, *tú'thi*, —.
44. 'heart' \**omísone*: *omižoné*, *omišone*, —.
45. 'heavy' \**ína-ti*: *ína-tí*, *ína-tí*, *kohinokon*.
46. 'here' \**yá-ni-ye*: *ániyé*, *yáye-ye*, *ne*.
47. 'house' \**woko/pe-di*: *wokotí*, *pet'hí*, —.
48. 'husband' \**iima*: *i'má*, *íma*, —.
49. 'I' \**úundi*: *úndi*, *úndí*, *nti*.
50. 'in, at' \**ya*: —, *ya*, *ye*.
51. 'intestines' \**a-s/nturu-pi*: *anturu-pi*, *asuru-pi*, —.
52. 'knee' \**buuyu*: *bó'yu*, *pú'yu*, —.
53. 'leaf' \**tuu-di*: *tu'ti*, *tú'thi*, —.
54. 'lightning' \**parúka-ti*: *parúka-tí*, *paruk'o-ti*, —.

55. 'liver' \**apé-ra/ko-na*: *apákona*, *apákana*, *eperon*.
56. 'man' \**hoye-no/rV*: *hóyeno*, *hóyeno*, *hir*.
57. 'moon' \**ko/ihé-e-rV*: *kohé³e*, *kohyé*, *kihér*.
58. 'mother' \**n-enó*: *enó*, —, *nen*.
59. 'mouth' \**báaho*: *bahó*, *pá'ho*, —.
60. 'near' \**anéko-nV*: —, *anéko*, *anékon*.
61. 'neck' \**(č)ánu-ki*: *anú*, *ánu*, -*čanó-ki*.
62. Negative \**anV-ko-wV*: *ák'o*, —, *ónkaw*.
63. 'night' \**yadoe*: *yati*, *yóth'i*, *yotoé*.
64. Nominal, verb suffix \*-ti, \*-di: -*ti*; -*ti*, -*thi*; —. See 21, 22, 30, 43
65. 'nose' \**giiri*: *gi'ri*, *kí'ri*, -*pasíri*.
66. 'one' \**pó-y/na-so*: *póyašo*, *póhyu-ti*, *ponóš*.
67. 'other' \**póinu*: —, *póinu*, *pón*.
68. 'path' \**saane-e-ki*: *še'ne*, *šene*, *šanóki*.
69. 'people' \**čáni-ti*-: *šani*, *šáne*, *činti-neb*.
70. 'pierce' \**yu-ro/wa-ka-wa*: *yuwakua-ti*, *yuróko*, —.
71. 'rain' \**uko*: *uk'o*, *úko*, —.
72. 'rainbow' \**úpikawoi*: *opikawói*, *úp'ikow³e*, —.
73. 'river, stream' \**huvéo*: *huve³ó*, *huvéo*, —.
74. 'rock' \**mabói-e*: *má³foi³é*, *mopói*, —.
75. 'root' \**poi kuse/o*: *poi koše*, *kúso po³e*, —.
76. 'round' \**pu-ítí/rV-*: *purabuika*, *puiti*, *čoporikon*.
77. 'seed' \**es-ake*: *ak'é*, *áke*, *esóki*.
78. 'shoulder' \**pówo-sV*: —, *póvo*, -*pówos*.
79. 'skin' \**máodo-ke/i*: *mádoke*, *mótoki*, —.
80. 'sky, up' \*(w)ánuke: *wánoké*, *wánuke*, *aníye*.
81. 'sleep' \**mónigo-ti/wV*: *mongo-ti*, *imóko*, -*moków*.
82. 'smoke' \**kurihoi*: *kúruhoi*, *kurihoe*, —.
83. 'snake' \**koisoi*: *koísoi*, *koéšoe*, —.
84. 'star' \**wa-hé-si/ke*: *hikeve*, *hyékere*, *wahís*.
85. 'straight' \**ponó-wo-ti*: *ponó-wo-tí*, *ponówo-ti*, —.
86. 'sun, day' \**ká-se-sV*: *kaš'e*, *káše*, *ses*.
87. 'tail' \**iiho-SV*: *í hi*, *ihí*, *ihós*.
88. 'termite' \*(t)ilípa: —, *ilípa*, *tiríp*.
89. 'three' \**mabuá-ti/nV*: *mafú'a*, *mopoáti*, *mpon*.
90. 'tobacco' \**sái-nV*: —, *sái*, *son*.
91. 'tongue' \**néene*: *něně*, *né ne*, —.
92. 'tooth' \**oi-nV*: *ői*, *ó'e*, —.
93. 'two' \**ma-bía-so/nV*: *biašó*, *pí³a*, *mapin*.
94. Verbal \*-ka-wa: -*kua*, -*kwa*; -*ko*; -*ko-w*, -*w*. See 10, 12, 23, 28.
95. 'wash' \**ansíko*-: *anžík'oa-ti*, *ahyíko*, —.
96. 'water' \**ho-o/ine*: *uné*; *hoó*, *ín'e*; *in*.

97. 'we' \*úunti: *u'ndi*, *ú'ti*, *biti*.  
 98. 'what, which' \*ku-ti-me: *kuti*, *kutímea*, —.  
 99. 'who' \*kuti-ya: *ku-ti-ya*, *kuti*, —.  
 100. 'wife' \*yóono: *yé'no*, *yé'no*, *yón*.  
 101. 'wing' \*kéwi: *kiwi*, *kévi*, —.  
 102. 'woman' \*seno: *sé'no*, *séno*, —.  
 103. 'ye' \*iti-noi: *itinói*, *iti*, —.  
 104. 'dark' \*ha-ha-mo-r/ne: —, *hya-hyamone*, *hamó-re*.  
 105. 'hear' \*gámo: *góma* ← Pre Kin \*gamo, *kamo*, —.  
 106. 'old man' \*yeka-toone: —, *yekoteeno*, *ané*.

### 6.8 PROTO HARAKBUT

#### 6.8.1 Introduction

The Wachipayri data were made available in an unpublished manuscript by Patricia Lyon, who was doing research for the American Museum of Natural History. She obtained the word-list from an informant living in a village on the Q'eros River in the montaña region of eastern Peru. Data for the Amara-kaeri and Sapateri were furnished by Robert Tripp of the Summer Institute of Linguistics in Peru. The generous provision of well recorded data by both of these colleagues is greatly appreciated.

The name Harakbut is taken from the Wachipayri word for people, which is shared by the Amarakaeri, and is used instead of the derogatory term "Mashco".

For the Sapateri, two different transcriptions were used. In the earlier recording *u* and *t* were employed where *o* and *c* are found in the later. Instances of this variation are pointed out by the insertion of the later symbol in parentheses following the word.

#### 6.8.2 The Phonemes of Proto Harakbut

* <i>p</i>	* <i>t</i>	* <i>k</i>
* <i>W</i>	* <i>s</i>	* <i>g</i>
* <i>m</i>	* <i>n</i>	
* <i>w</i>	* <i>r</i>	* <i>y</i>
		* <i>h</i>
	* <i>i</i>	* <i>i</i>
	* <i>e</i>	* <i>e</i>
	* <i>a</i>	* <i>a</i>
	* <i>u</i>	* <i>u</i>
	* <i>o</i>	* <i>o</i>
	* <i>ə</i>	* <i>ə</i>

#### 6.8.3 Phoneme reflexes

Proto Har	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>W</i>	
Wach	<i>p</i>	<i>t</i>	<i>k</i>	<i>h, m</i>	
Amar 1	<i>p</i>	<i>t, č</i>	<i>k</i>	<i>w, m</i>	
Amar 2	<i>p</i>	<i>t</i>	<i>k</i>	<i>h</i>	
Sap	<i>p</i>	<i>t</i>	<i>k, ky</i>	<i>h</i>	
Proto Har	* <i>s</i>	* <i>g</i>	* <i>x</i>	* <i>m</i>	* <i>n</i>
Wach	<i>s</i>	<i>g, s</i>	<i>x</i>	<i>m, n, b, g, y, Ø, B</i>	<i>n, d</i>
Amar 1	<i>s</i>	<i>g, s</i>	<i>k</i>	<i>m, b, g, y</i>	<i>n, d</i>
Amar 2	<i>s</i>	<i>s</i>	—	<i>m, b, g, y</i>	<i>n, d</i>
Sap	<i>s</i>	<i>s</i>	<i>k</i>	<i>m, n, b, g, y</i>	<i>n, d</i>
Proto Har	* <i>w</i>	* <i>r</i>	* <i>y</i>	* <i>h</i>	
Wach	<i>w, B</i>	<i>r</i>	<i>y</i>	<i>h</i>	
Amar 1	<i>w</i>	<i>r</i>	<i>y</i>	<i>h, Ø</i>	
Amar 2	—	<i>r</i>	—	<i>h, Ø</i>	
Sap	<i>i, w</i>	<i>r</i>	—	<i>h</i>	
Proto Har	* <i>i</i>	* <i>i</i>	* <i>o</i>	* <i>e</i>	* <i>a</i>
Wach	<i>i, e</i>	<i>i</i>	<i>o, u</i>	<i>e, i</i>	<i>a</i>
Amar 1	<i>i</i>	<i>i, o</i>	<i>o</i>	<i>e, i</i>	<i>a</i>
Amar 2	—	<i>o</i>	<i>o</i>	<i>e, i</i>	<i>a, o</i>
Sap	<i>i, e</i>	<i>i</i>	<i>o</i>	<i>e, i</i>	<i>a</i>
					<i>u, o</i>
Proto Har	* <i>ĩ</i>	* <i>ĩ</i>	* <i>õ</i>	* <i>ẽ</i>	* <i>ã</i>
Wach	<i>ĩ, i</i>	<i>i</i>	<i>õ, o</i>	<i>ẽ, e</i>	<i>ã, a</i>
Amar 1	<i>ĩ, i</i>	<i>ĩ</i>	<i>õ, o</i>	<i>ẽ, e</i>	<i>ã, a</i>
Amar 2	<i>ĩ, i</i>	—	<i>õ, o</i>	<i>ẽ, e</i>	<i>ã, a</i>
Sap	<i>ĩ, i</i>	<i>i</i>	<i>õ, o</i>	<i>ẽ, e</i>	<i>ã, a</i>
					—

#### 6.8.4 Conditioning of Phoneme Reflexes

*CC →	
*tp → tp	30
*tt → tt (Wach); t (Amar 1)	70, 179
*ts → ts (Wach); s	139
*tš → š (Wach); ts (Amar 1); s (Sap)	5
*kt → kt	92
*kk → k (Wach); kk	22, 125
*kW → k (Wach); kw (Amar 1); kh (Sap)	66

- \*ks → ks (Amar 1, Amar 2); ts (Wach) 123, 163
- \*kš → kš (Wach) 153
- \*km → kb 69
- \*kn → kd (Amar 2) 73
- \*kw → kw 124, 176
- \*kh → k (Amar 2) 180
- \*st → st (Wach); tt (Amar 1) 109
- \*xp → xp (Wach); kp 55, 111
- \*xt → xt (Wach) 46
- \*xm → kmb (Amar 1) 46
- \*xW → xw (Wach); w (Amar 1); h (Sap) 136
- \*xn → knd (Amar 1); x (Wach) 13, 44, 88
- \*mp → qp 115, 131
- \*mt → ηč | -i; ηt 118, 119
- \*mk → k | k . . . (Wach); gk (Wach); ηk 10, 24, 34, 128
- \*ms → gs (Wach) 59
- \*mm → mb 37
- \*mn → ηnd | Ŵ- (Amar 1); gnnd | V- (Amar 1) 1, 184
- \*np → p (Wach); n (Amar 1); np (Amar 2) 112, 143
- \*nt → dč | V-i (Wach); nt | Ŵ-; dt | V- 6, 8, 29, 84, 148, 164
- \*nh → h (Amar 1); nh 79, 164
- \*nm → dn̄m (Amar 2) 95
- \*nn → nd | -Ŵ (Wach); dd | -V (Wach); nd (Amar 1) 59
- \*nw → dw (Wach) 31

## \*C →

- \*p → p 3, 22, 50, 51, 53, 149, 156, 171
- \*t → č | -i; t 15, 21, 118, 149, 152, 155, 168
- \*k → ky | -ia (Sap); k 21, 45, 73, 78, 133
- \*W → m | Ŵ-Ŵ (Wach); h | -ie (Amar 1); w (Amar 1, 2); i | i-i (Sap); h 112, 133, 136, 140, 153, 161
- \*s → s 13, 38, 135, 178
- \*š → š | -i (Wach); š | -Ŵ (Amar 1); s 10, 25, 123, 150
- \*x → x (Wach); k 44, 62, 88, 89
- \*m → n | nŴ- (Wach, Sap); Ø | Ŵ-k (Wach); B | w . . . w (Wach); g | V-C/V-#; η | Ŵ-C/Ŵ-#; b | -V; m | -Ŵ (Amar mb = b; gn̄ = g) 5, 7, 11, 14, 24, 28, 41, 57, 60, 92, 108
- \*n → d | V-C/V-#/V; n | Ŵ-C/Ŵ-#/Ŵ 1, 5, 6, 71, 84, 95, 174
- \*w → B | -ē/-ī (Wach); i | kii- (Sap); w 8, 73, 120, 138, 182
- \*r → r 7, 22, 69, 74, 76, 79
- \*y → y 43, 47, 56, 129
- \*h → Ø | Ŵ-Ŵ (Amar 1, Amar 2); h 1, 19, 48, 50, 98

## \*VV →

Since the nasal component does not appear to affect vowel quality, no distinction is made here between oral and nasal vowels within the clusters.

ii	io	ie	ia
ii	ii	ie	ia
oi	oo	oe	oa
ei		ee	ea
ai	ao		aa

- \*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub> | -x/-y (Wach); V<sub>1</sub> | x (Amar 1, 2); V<sub>1</sub> (Wach, Sap); V<sub>1</sub> (Amar 1, 2) 2, 7, 10, 11, 62, 88, 89, 126, 144, 172, 182, 183, 188
- \*ii → i | W- (Wach, Amar 1); i | C-C (Amar 1); i | -k (Sap); u (Wach); ii 21, 78, 82, 132, 136, 145
- \*oi → oi | p- (Wach); wi (Wach); ii | k- (Amar 1); oi 11, 122, 134
- \*ei → ei (Amar 1); e 167, 177
- \*ai → i | # . . . i (Amar 1); ai, ay 9, 17, 26, 49, 61, 152
- \*io → e (Wach); io 40, 94, 114, 148
- \*ao → a (Wach); a | w- (Amar 1); ao 42, 123
- \*ie → ia (Wach); ie 160
- \*ie → ie (Amar 1); ē 133
- \*oe → e | s- (Wach); o (Wach); ue | s- (Amar 1); o (Sap); i | -CC/-Cu (Amar 1); oe 54, 59, 102
- \*ia → ia, ya 1, 33, 145
- \*ia → a | -y (Wach); iwa (Wach); i | -y (Amar 1); iwa (Amar 1); ia 43, 45
- \*oa → uwa (Wach); oa 127
- \*ea → e (Wach); ea 144, 188
- \*- → ə (Amar 1) Probably at Pre Amar morpheme boundaries; ə

## \*V →

- \*i → e | is- (Wach, Sap); e | ah- (Wach); i 5, 22, 83, 95, 150
- \*i → o | so (Amar 1, 2); i 38, 58, 87, 135, 151
- \*o → u | uy-/w (Wach); o 3, 47, 93, 122
- \*e → i | -w; e 15, 53, 69, 91
- \*a → a 1, 8, 57, 61, 166
- \*u → i | p-d/b-d (Wach); o | p-/w . . . o (Sap); o | p-/yo (Amar 1); u 27, 31, 39, 47, 55, 56, 77, 93, 191
- \*Ŵ → Ŵ (Amar 1); V ~ Ŵ

In a few instances Ŵ is indicated only by surrounding consonants in Amar 1 (66, 83, 172) 4, 25, 41, 48, 50, 51, 58, 67, 98, 145, 148, 180

## 6.8.5 Index of Cognate Sets

In the following sets the Proto Har is given first, followed by Wach, Amar 1, Amar 2, and finally Sap. Absence of a member of the set is indicated by —.

1. 'all' \*hám-ia-na: —, háŋnda, han̥yaŋnda, —.
2. 'anteater' \*šiwa: šiwa, síwa, —, —.
3. 'arm' \*-ópi: -ópi, -opí, —, —.
4. 'arrow' \*pí-ha/yá: píha, píyá, —, —.
5. 'baby' \*tsínōm: šinon, tsípnōñ, —, sípinon.
6. 'back' \*hin-tipu: \*hidčipu, -hidn, —, —.
7. 'bat' \*méere: mere, mē'rē, —, mérē.
8. 'beard' \*-in-ta-nó/-pé-wi: -id-tano-wi, -idn-ta³pē-wi, —, -idntapéwih.
9. 'bed' \*aita: aya, píyta, 'seat', —, —.
10. 'bee (honey)' \*aašimkí-si: —, a³síŋkísi, —, asíŋki 'bee'.
11. 'bird' \*máakoi: bakwi, mbáəkiy, —, mbakoi.
12. 'bite' \*e-mok/\*e-muk: —, e³mbok, —, —.
13. 'black' \*six-na: wa-six, sik-nda, —, —.
14. 'blood' \*mímí: mimi, mímí, —, mimi.
15. 'blow' \*e-tipo-m/\*e-tipum: —, e³čipogn, —, e-tipu (o).
16. 'body hair' \*wih: —, -wih, —, -wih.
17. 'bone' \*ai: ay, ái, —, —. (See also 'tooth').
18. 'bow' \*kímē: kime, kímēh, —, —.
19. 'breast' \*-hi: -hi, -hi, —, -hi.
20. 'brush, woods' \*nima: diba, —, —, ndimba.
21. 'buzzard' \*-mātiik: matúk, mā³atík, —, matik.
22. 'canoe' \*kisipe: kisepe, kisi⁹peh, —, —.
23. 'canoe' \*Vkkóri/\*Vkkúri: —, —, ikkori, -okkóri.
24. 'chest' \*kámka: kákka, káŋka, —, —.
25. 'chicha' \*šinē: šine, šinē, —, —.
26. 'chief (lord, boss)' \*wáiri: wayri, wíri, —, —.
27. 'child' \*wa-ši-pu: wa-ši-pu, wa-ši-po, —, —.
28. 'chili pepper' \*im: ig, ign, —, —.
29. 'chin' \*in-ta-no/-pē: -id-tano, -idn-tá³-pēh, —, —.
30. 'chonta palm' \*witpi: witpi, witpi, —, —.
31. 'clouds' \*a-kurun-wai: akurudway, kurudn, —, —.
32. 'cold' \*nawa-hihi-na: hihi, n̥dawahihíp-nda, —, —.
33. 'come' \*k/t-iak: kyak, e-čiak, —, —.
34. 'corn' \*him/to-ke-t: higke, to⁹ket, —, híŋke.
35. 'cotton' \*kitaamén: kitamē, kita⁹mén, —, —.
36. 'crocodile' \*māamā: mama, māəmā, —, mama.
37. 'cultivated clearing' \*támma: tamba, ta⁹mba, —, tám̥ba.

38. 'curassow' \*kisi: kisi, —, —, kisi⁹.
39. 'cushma' \*wa-hu-to: wa-hu, —, —, ho-to.
40. 'dark' \*šikio-rem: šikereg, šikio, —, —.
41. 'day' \*wa-ménō-wē: wa-BenoBe, wa-mé⁹nō, —, —.
42. 'deer' \*máoWi: bahi, mbáowih, —, —.
43. 'die' \*e-miay: bay, e⁹mbiy⁹, —, —.
44. 'dirty' \*sorox-na: sorox, sorók-nda, —, —.
45. 'dog' \*kia: kiwa, ki·wa, —, kyia.
46. 'doorway' \*hax-ta-mómpe: hax-tabogpe (See 'house'); haknbg̥npe⁹, —, —.
47. 'down' \*tuyu-n: -tuyu, toyo-dn, —, —.
48. 'drink' \*māhī: mahe, māi⁹, —, —.
49. 'dry' \*hái-na: hai, hái-nda, —, —.
50. 'ear (inner)' \*pēhē-ki-o/rē: -pehelkirē, —, -pēē-kio⁹, -pe.
51. 'ear (outer)' \*pē-šon: -pe-sod, -pē-šodn, —, —.
52. 'earth' \*soro-k, soro, sórok, —, —.
53. 'eat' \*ma/e-pe; bape; pe⁹; —, -pe, e-pe, e-mbape-.
54. 'elbow' \*o-koesta-pi: -kostapi, -okitta-pi, —, —.
55. 'eye' \*a-x-pu: -xpu, -kpo, —, -ak-pu.
56. 'far' \*wéé-yu: Be-yu, —, —, wéyu.
57. 'father' \*áapam: apag, —, ápagn, apagn.
58. 'fear' \*ē-mēpik: —, ē-mē⁹pik, —, ē-mēpik.
59. 'few' \*sim-soen-na: sigsed-da, sué⁹nda, —, —.
60. 'finger' \*-má-pi: -ba-pi, -mbá⁹-pi, —, -mba-pih.
61. 'fingernail' \*-má-ki: ba-ki, mbá⁹-ki, —, -mba-ki.
62. 'fire' \*t.áax: ta:x, tá⁹ak, —, —.
63. 'firewood' \*ita: ita, ita⁹, —, —.
64. 'flea' \*pím: wa-pig ('louse'), wa⁹pign, —, —.
65. 'flesh' \*-hēn: —, -hēn, —, -hen.
66. 'flower' \*kWē-Y/n: -key, -kwen, —, -khei.
67. 'fly (n.)' \*mōrōx: morox, mōrōk, —, mepéro. (See also 'bee'.)
68. 'foot' \*-i: -i, -i⁹, —, —.
69. 'forehead' \*kmére: —, kmbére, —, -kmbere.
70. 'four' \*móttá móttá: botta botta, mbóta⁹mbóta⁹, —, —. (See also 'two'.)
71. 'fruit' \*-na: -da, -nda, —, —.
72. 'go' \*wa: wa, wa⁹, —, —.
73. 'good' \*wanak-na: dak, wa⁹dak, wa⁹dak-nda, —.
74. 'grass' \*mírē: mire, mírē, —, —.
75. 'grease' \*-šiwa: -šiwa, -siwah, —, —.
76. 'green' \*-mira-na: —, -mbira-nda, —, -mbira-nda.
77. 'guan' \*mun: bid 'curassow', mbúdn, —, —.
78. 'hair' \*ki-t-miwi: -ku-miwi, -kii, —, -kii-h.

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In  
A

- e: *wa-nhoro, wa-horo<sup>ə</sup>, enhoro<sup>ə</sup>, —.*  
*-mba.*
- , -nōpōkīrēn, —.
- inē*, 'there' *inte; ānē; —.*
- nēn, —, —.*
- ki-pi, —, -ki-pi.*
- hi:x, hikndā, —, —.*
- ax: hax, hak, —, hak.*
- 'monkey' \**toy-o-re: toyre, to<sup>ə</sup>yó-re<sup>ə</sup>, —, —.*
- 'hummingbird' \**séwī-t: siBī, sítvit, —, siit.*
- 'husband' \**mo-kerek-tónē/tōē: —, bo-kerek-tónē<sup>ə</sup>, wa-mbo-kerék-tōē, —.*
93. 'I' \**no-wa / nō-wa: duwa, ndo, —, no.*
94. 'in, at' \**io: —, -io, —, -io.*
95. 'intestines' \**min-mīna: -bid, -mīn, -mbidn-mīda* (phonemicized transcription?), —.
96. 'kill' \**e-hárak: harak, e<sup>ə</sup>-hárak, —, —.*
97. 'knee' \**w-ikīna: -ikinda<sup>ə</sup>, -wi<sup>h</sup>kīndā, —, —.*
98. 'know' \**e-nōpōhē: —, e<sup>ə</sup>-nōpōē, —, e-nopōhe.*
99. 'lake' \**wā-/i-yáku: Bā-yaku, iyáko, —, —.*
100. 'leaf' \**wale-ma-kita: wa-bakita, é<sup>ə</sup>m̥ba<sup>ə</sup>, —, —.*
101. 'leg' \**mō/mo-pi: —, -mbo<sup>ə</sup>-pi, —, -mo-pi.*
102. 'lip' \**moem-pi: —, -mbig<sup>ə</sup>, —, -mog<sup>ə</sup>pi.*
103. 'man' \*-mo-kérek: *wa-bokerek, wa-mbo-kérek, —, —.*
104. 'manioc' \**táare: tare* 'raw', *tá<sup>ə</sup>re<sup>ə</sup>, —, —.*
105. 'many' \**waka-na: wa<sup>ə</sup>ka, waka<sup>ə</sup>-nda, —, —.*
106. 'moon' \**pīhig: pīhig, pīhig<sup>ə</sup>, —, —.*
107. 'mosquito' \**pinēm: pineŋ, —, —, pi<sup>h</sup>neŋ.*
108. 'mother' \**i-nám: inaŋ, —, náŋ<sup>ə</sup>, inaŋ.*
109. 'mouth' \**kista: kista, kíttā<sup>ə</sup>, —, -kita.*
110. 'name' \*-nik, nīk: —, -ndik, —, -nik.
111. 'navel' \*-nēx-pe/po: -nexpe, nēkpo, —, —.
112. 'neck' \**wa-Wērēn-pi: wa-herēpi, wā-wērēn, wā-wērēn-pi, —.*
113. 'new' \**a-mo-na: abo, -mbo-nda, —, —.*
114. 'night' \**śikio: śikyo, síkyo, —, —.*
115. 'nose' \**ōhe-nāmō / oka/ki-nāmpī: kināŋpi* 'bridge', -ōhe; -ōh; *okanáŋpi* 'bridge'; -ohnāmō.
117. 'old man' \**tōnē: wa-tone, wa-tónē<sup>ə</sup>, —, —.*
118. 'one' \**nōm-tina: noŋ-čida, noŋ<sup>ə</sup>-čīndā, —, —.*
119. 'other, another' \**nōm-ta: noŋ-ta, nōŋ, —, —.*
120. 'otter' \**āawīt: aBit, əā·wīt, —, —.*

121. 'our' \**or-/oro-en: or-/oro-, oro<sup>ə</sup>edn, —, —.*
122. 'owl' \**pōi-pōi: pōy-pōy, pōy-poy, —, puy puy.*
123. 'paca' \**wa-ok-sik: —, wák sik, ok sik, —.*
124. 'paddle' \**wa-nō-kwaya-m/ra: wa-kwayara, wa-nōkwáiyag<sup>ə</sup>, —, —.*
125. 'parakeet' \**mikki: biki, mbikki<sup>h</sup>, —, —.*
126. 'parrot' \**sáaro: saro, sáro<sup>ə</sup>, —, —.*
127. 'parrot' \**toaro: tuwaro, tóaro<sup>ə</sup>, —, tōaro.*
128. 'path, trail, road' \**nam-ka: dagka, ndag<sup>ə</sup>, —, —.*
129. 'peccary (white-lipped)' \**yári / yari: yári<sup>ə</sup>, —, yari.*
130. 'peccary (collared)' \**mirisi: —, mbirisi<sup>ə</sup>, —, mbirisi.*
131. 'penis' \**~Vm/hé-pa: —, -ypa<sup>ə</sup>, —, hépa.*
132. 'people' \**harák/harát-miit: harakbut, harátmbit, —, —.*
133. 'pierce' \**e-Wiek: —, e<sup>ə</sup>-hiek, e<sup>ə</sup>-wek, éhek.*
134. 'plantain' \**hároi: harwi, hároi, —, —.*
135. 'pot (cooking)' \**kiso-mō: kisomo, koso, siro koso* 'metal', —.
136. 'rain' \**o/eexWii: exxi, ówi<sup>ə</sup>, —, éhiy.*
137. 'red' \**men: bed, wa-mbedn, —, —.*
138. 'river, stream' \**wē: Bē, -wēh, —, wē.*
139. 'river turtle' \**pētsā: petsa, pēsā<sup>ə</sup>, —, —.*
140. 'rock, stone' \**Win: hid, widn, —, —.*
141. 'rope' \**wa/ee-mi: ebi, wa-mbi, —, —.*
142. 'sand' \**kiwan: kiwad, kíwad, —, —.*
143. 'sap' \*-ki-wēn-po: —, -ki wēn, kiwēnpo, —.
144. 'say' \**e-a-pak: —, e<sup>ə</sup>-á<sup>ə</sup>pak, —, e<sup>ə</sup>-a.*
145. 'seed' \**e-kī-in/-ra, ki-a/n: ekira, -kidn, —, -kiin*, 'round seed' *kia.*
146. 'she' \**kēn-a: kena, kēn* 'he, she', —, —.
147. 'shin' \**itak/páa-pi: -itak-pi, -pá<sup>ə</sup>-pi, —, —.*
148. 'short' \**hōnto-n/pío/yo-na: hotod-da, hōntohpío<sup>ə</sup>, hōntohyo<sup>ə</sup>, —.*
149. 'shoulder' \**mam-ku-tó/mé-pe: -kumepe, -kutópe<sup>ə</sup>, -mbag<sup>ə</sup>-kutó-pe<sup>ə</sup>, —.*
150. 'skin' \**śinak: -śidak, -sín dak, —, -sinak.*
151. 'sky' \**kirin: kirid, kíridn, —, —.*
152. 'sleep' \**e-tai: tay, tai<sup>ə</sup>, —, etay.*
153. 'smoke' \**ek/o-śiWī: ekšimi, o<sup>ə</sup>śiwi, —, sīi.*
154. 'snake' \**miWi: bihi, mbivih<sup>h</sup>, —, —.*
155. 'spider monkey' \**matira: mačira, —, —, matira.*
156. 'spine' \*-tápi: -tapi, —, -tá<sup>ə</sup>pi, —.
157. 'stick' \**ō-wēi-pa: ōBē, wéi pa, —, —.*
158. 'stone' \**Win: hid, widn, —, hin.*
159. 'sweet potato' \**ere-mim: erebig, ére<sup>ə</sup>* 'yam', —, —.
160. 'swim' \**e-nopie: dopia, e<sup>ə</sup>-ndopí<sup>ə</sup>ε, —, —.*
161. 'tail' \*-We-tamim/-pi: *hētabig, -wēpi, —, -hē.*
162. 'tapir' \**kēmē: keme, kēmē<sup>ə</sup>, —, keme.*

79. 'hammock' \*wa-/e-nhorō-e: wa-nhorō, wa-horō<sup>3</sup>e<sup>3</sup>, enhoroe<sup>3</sup>, —.
80. 'hand' \*ma: -ba, -mba, —, -mba.
81. 'he' \*kēn: ken, kēn, —, —.
82. 'head' \*ki-i: -ku, -ki, —, -ki.
83. 'heart' \*-nōpō-kirēn: —, -kirēn, -nōpōkirēn, —.
84. 'here' \*in-te/ē, \*ānē: in-te; īnē, 'there' īnte; īnē; —.
86. 'his' \*kenēn: kenen, ke<sup>3</sup>nēn, —, —.
87. 'horn' \*ki-pi: —, ki-pi, —, -ki-pi.
88. 'hot' \*hiix-na: hi:x, hikndā, —, —.
89. 'house' \*háax: ha:x, hák, —, hak.
90. 'howler monkey' \*toy-o-re: toyre, to<sup>3</sup>yó-re<sup>3</sup>, —, —.
91. 'hummingbird' \*séwī-t: siBī, sítwit, —, siit.
92. 'husband' \*mo-kerek-tōne/tōē: —, bo-kerek-tōnē<sup>3</sup>, wa-mbo-kerék-tōē, —.
93. 'I' \*no-wa / \*nō-wa: duwa, ndo, —, no.
94. 'in, at' \*-io: —, -io, —, -io.
95. 'intestines' \*min-mīna: -bid, -mīn, -mbid<sup>n</sup>mīda (phonemicized transcription ?), —.
96. 'kill' \*e-hárak: harak, e<sup>3</sup>-hárak, —, —.
97. 'knee' \*w-ikīna: -ikinda<sup>3</sup>, -wi<sup>3</sup>kīnda, —, —.
98. 'know' \*e-nōpōhē: —, e<sup>3</sup>-nōpōē, —, e-nopóhe.
99. 'lake' \*wā-ji-yāku: Bā-yaku, iyāko, —, —.
100. 'leaf' \*wale-ma-kita: wa-bakita, é<sup>3</sup>mba<sup>3</sup>, —, —.
101. 'leg' \*mō/mo-pi: —, -mbo<sup>3</sup>-pi, —, -mo-pi.
102. 'lip' \*moem-pi: —, -mbig<sup>n</sup>, —, -mog<sup>n</sup>pi.
103. 'man' \*-mo-kérek: wa-bokerek, wa-mbo-kérek, —, —.
104. 'manioc' \*táare: tare 'raw', táre<sup>3</sup>, —, —.
105. 'many' \*waka-na: wa<sup>3</sup>ka, waka<sup>3</sup>-nda, —, —.
106. 'moon' \*pīhig: pihig, pīhign, —, —.
107. 'mosquito' \*pinēm: pinej, —, —, pi<sup>3</sup>nej.
108. 'mother' \*i-nám: inaŋ, —, náŋ, inaŋ.
109. 'mouth' \*kista: kista, kittā<sup>3</sup>, —, -kita.
110. 'name' \*-nik, nīk: —, -ndik, —, -nik.
111. 'navel' \*-nēx-pe/po: -nexpe, nēkpo, —, —.
112. 'neck' \*wa-Wērēn-pi: wa-herēpi, wā-wērēn, wā-wērēn-pi, —.
113. 'new' \*a-mo-na: abo, -mbo-nda, —, —.
114. 'night' \*šikio: šikyo, síkyo, —, —.
115. 'nose' \*ōhe-nāmō / \*oka/ki-nāmpī: kināŋpi 'bridge', -ōhe; -ōh; okanáŋpi 'bridge'; -ohnāmō.
117. 'old man' \*tōnē: wa-tone, wa-tōnē<sup>3</sup>, —, —.
118. 'one' \*nōm-tina: noŋ-čida, noŋ<sup>3</sup>-činda, —, —.
119. 'other, another' \*nōm-ta: noŋ-ta, nōŋ, —, —.
120. 'otter' \*āawīt: aBit, ɬāwīt, —, —.

121. 'our' \*or-/oro-en: or-/oro-, oropedn, —, —.
122. 'owl' \*pōi-pōi: pōy-pōy, pōy-poy, —, puy puy.
123. 'paca' \*wa-ok-sik: —, wák sik, ok sik, —.
124. 'paddle' \*wa-nō-kwaya-mra: wa-kwayara, wa-nōkwá'yag<sup>n</sup>, —, —.
125. 'parakeet' \*mikki: biki, mbikki<sup>3</sup>, —, —.
126. 'parrot' \*sáaro: saro, sáro<sup>3</sup>, —, —.
127. 'parrot' \*toaro: tuvaro, tóaro<sup>3</sup>, —, tōaro.
128. 'path, trail, road' \*nam-ka: dagka, ndag<sup>n</sup>, —, —.
129. 'peccary (white-lipped)' \*yári / \*yári: yári<sup>3</sup>, —, yari.
130. 'peccary (collared)' \*mirisi: —, mbirisi<sup>3</sup>, —, mbirisi.
131. 'penis' \*-Vm/hé-pa: —, -ηpa<sup>3</sup>, —, hépa.
132. 'people' \*harák/harát-miit: harakbut, harátmbit, —, —.
133. 'pierce' \*e-Wiek: —, e<sup>3</sup>-hiek, e<sup>3</sup>-wek, éhek.
134. 'plantain' \*hadroi: harwi, hárroi, —, —.
135. 'pot (cooking)' \*kiso-mō: kisomo, kósó, siro kósó 'metal', —.
136. 'rain' \*o/eexWii: exwi, ówi<sup>3</sup>, —, éhiy.
137. 'red' \*men: bed, wa-mbedn, —, —.
138. 'river, stream' \*wē: Bē, -wēh, —, wē.
139. 'river turtle' \*pētsā: petsa, pēsā<sup>3</sup>, —, —.
140. 'rock, stone' \*Win: hid, wid<sup>n</sup>, —, —.
141. 'rope' \*wa/ee-mi: ebi, wa-mbi, —, —.
142. 'sand' \*kiwan: kiwad, kiwad, —, —.
143. 'sap' \*-ki-wēn-po: —, -kí wēn, kiwēnpo, —.
144. 'say' \*e-a-pak: —, e<sup>3</sup>-á<sup>3</sup>pak, —, e<sup>3</sup>-a.
145. 'seed' \*e-kī-in/-ra, \*ki-a/n: ekira, -kidn, —, -kiin, 'round seed' kia.
146. 'she' \*kēn-a: kena, kēn 'he, she', —, —.
147. 'shin' \*-itak/páa-pi: -itak-pi, -pá<sup>3</sup>-pi, —, —.
148. 'short' \*hōnto-n/píyo-na: hotod-da, hōntohpíos, hōntohyos, —.
149. 'shoulder' \*mam-ku-tó/mé-pe: -kumepe, -kutópe<sup>3</sup>, -mbag<sup>n</sup>-kutó-pe<sup>3</sup>, —.
150. 'skin' \*šinak: -šidak, -síndak, —, -sinak.
151. 'sky' \*kirin: kirid, kíridn, —, —.
152. 'sleep' \*e-tai: tay, ta<sup>3</sup>, —, etay.
153. 'smoke' \*ek-jo-šíWī: ekšimi, o<sup>3</sup>stvī, —, siii.
154. 'snake' \*miWi: bihi, mbiwih, —, —.
155. 'spider monkey' \*matira: mačira, —, —, matira.
156. 'spine' \*-tápi: -tapi, —, -tá<sup>3</sup>pi, —.
157. 'stick' \*ō-wēi-pa: ōBē, wéi'pa, —, —.
158. 'stone' \*Win: hid, wid<sup>n</sup>, —, hin.
159. 'sweet potato' \*ere-mim: erebig, ére<sup>3</sup> 'yam', —, —.
160. 'swim' \*e-nopíe: dopia, e<sup>3</sup>-ndopí<sup>3</sup>e, —, —.
161. 'tail' \*-We-tamim/-pi: hētabig, -wēpi, —, -hē.
162. 'tapir' \*kēmē: keme, kēmē<sup>3</sup>, —, keme.

163. 'termite' \**paksire*: *patsire*, *paksire<sup>3</sup>*, —, —.
164. 'that' \**kēn-te*, \**in-he/-te*: *in-he*, *inte<sup>h</sup>*, *kēnte<sup>h</sup>*, —.
166. 'the' \**wa*: *wa*, *wa*, *wa*, *wa*.
167. 'they' \**ken-ēn/-ōmēi*: *kenen*, *kenōmē<sup>i</sup>*, —, *ānēn*.
168. 'thigh' \**ki/ku/ki-ti-pu*: *kičipu*, *ku-či-po*, —, *-kičipu(-o)*.
169. 'this' \**i/ā-nē*: —, *īnē*, *ānē*, *īnē*.
170. 'thou' \**ōn*: *on*, *ōn*, —, —.
171. 'three' \**maapa*: *bapa*, *mbáəpa<sup>3</sup>*, —, *mbapa*.
172. 'toad' \**mōkooko* / \**mokooko*: *mokoko*, *mbokó-kō<sup>3</sup>*, —, —.
173. 'toe' \**ipi(-h)*: *ipi*, *ípi<sup>h</sup>*, —, *ipih*.
174. 'tongue' \**nō-pa*: *no*, *nō<sup>3</sup>*, *nō<sup>3</sup>pa*, -*no*.
175. 'tooth' \**-in*: *-id*, *-id*, —, —.
176. 'toucan' \**sirok-wen*: *sirokwed*, *sirók wedn*, —, —.
177. 'tree, stick' \**oy/ō-wēi-mēi*: *ōBē*, *wēimē<sup>i</sup>*, —, *oyme*.
178. 'turtle' \**sá-we-ro*: —, *sáwe<sup>h</sup>*, —, *sawéro*.
179. 'two' \**mótta*: *botta*, *mbótta*, —, —. (See also 'four'.)
180. 'vomit' \**e-hōk-ka*: —, *e<sup>3</sup>-hōk*, *e<sup>3</sup>-kōkōkō<sup>h</sup>ka* ← Pre Amar \**e-hōk-hōk-hōk-*  
*hōk-*, —.
181. 'vulva' \**-pen*: *-ped*, —, *-pedn*, —.
182. 'water (liquid)' \**wēey*: *Bēy*, *wē<sup>3</sup>z̥i*, —, *wēy*.
183. 'we' \**o-oro*: *o'ro*, *oro<sup>3</sup>*, —, —.
184. 'wet' \**sa-wim/yimna*: *saBig*, *sa'yígñ-nda*, —, —.
185. 'what, which' \**kate*: —, *káte*, —, *kate*.
186. 'when' \**mē-nō-ka* / \**mē-nū-ka*: —, *mē-nōka<sup>3</sup>*, —, *menoka*.
187. 'where' \**mē-yō-n*: *mēyō*, *mēi-yōn*, —, —.
188. 'who' \**mēa*: *be* 'who, what', *mbé<sup>3</sup>a*, —, —.
190. 'wind' \**emápu-k*: *ebapu*, *e<sup>3</sup>mbápok*, —, —.
191. 'ye' \**opun*: *opid*, *opudn*, —, —.

## 6.9 PROTO PIRO-APURINÁ

### 6.9.1 Introduction

The Piro are scattered along the Urubamba, Madre de Dios, and Cushabatay Rivers in Peru. A close dialect, Manchineri, is found on the Iaco River in Brazil. The Apuriná are located in the extreme west of Brazil near the borders of Peru and Bolivia, along the Purus and Madeira Rivers and their tributaries.

The Piro data are from my own field notes; the Apuriná from those of Wilbur N. and Ida Lou Pickering, supplemented by a vocabulary taken by Curt Niemuendaju in 1922, a copy of which was made available to me through

the kindness of Dr. John H. Rowe, who has the original manuscript. Entries from Niemuendaju's list are marked (N). Apuriná correspondences are based exclusively on the Pickering lists.

### 6.9.2 The Phonemes of Proto Piro-Apuriná

* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>ȷ</i> * <i>ȷ̥</i>	* <i>ȷ̥</i> * <i>ȷ̥̥</i>
	* <i>ts</i>		* <i>e</i> * <i>ȷ̥̥</i>	* <i>o</i> * <i>ȷ̥̥̥</i>
		* <i>s</i>	* <i>h</i>	* <i>a</i> * <i>ȷ̥̥̥̥</i>
* <i>m</i>	* <i>n</i>			
* <i>w</i>	* <i>r</i>		* <i>y</i>	

### 6.9.3 Phoneme Reflexes

P P-Ap	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>ts</i>	* <i>s</i>
P	<i>p</i>	<i>t</i> , <i>č</i> , <i>ty</i>	<i>k</i> , <i>x</i>	<i>ts</i> , <i>č</i>	<i>s</i> , <i>š</i>
Ap	<i>p</i>	<i>t</i>	<i>k</i>	<i>ts</i> , <i>č</i>	<i>s</i> , <i>š</i>
P P-Ap	* <i>m</i>	* <i>n</i>	* <i>h</i>	* <i>w</i>	* <i>y</i>
P	<i>m</i>	<i>n</i>	<i>h</i>	<i>w</i>	<i>l</i> , <i>r</i>
Ap	<i>m</i>	<i>n</i>	<i>ø</i>	<i>w</i>	<i>r</i>
P P-Ap	* <i>i</i>	* <i>e</i>	* <i>a</i>	* <i>ȷ</i>	* <i>o</i>
P	<i>i</i>	<i>e</i>	<i>a</i> , <i>e</i> , <i>ȷ</i> , <i>o</i>	<i>ȷ</i> , <i>i</i>	<i>o</i>
Ap	<i>i</i>	<i>e</i> , <i>ȷ</i> , <i>a</i>	<i>a</i> , <i>e</i>	<i>ȷ</i> , <i>i</i>	<i>o</i> , <i>ȷ</i>
P P-Ap	* <i>ȷ̥</i>	* <i>ȷ̥̥</i>	* <i>ȷ̥̥̥</i>	* <i>ȷ̥̥̥̥</i>	* <i>ȷ̥̥̥̥̥</i>
P	<i>ȷ̥</i>	<i>ȷ̥̥</i>	<i>ȷ̥̥̥</i>	—	<i>ȷ̥̥̥̥̥</i>
Ap	<i>ȷ̥</i>	<i>ȷ̥̥</i>	<i>ȷ̥̥̥</i>	—	<i>ȷ̥̥̥̥̥</i>

### 6.9.4 Conditioning and Examples of Phoneme Reflexes

\*CC →

\**pw* → *w* (P); *p* (Ap) 137

\**kh* → *kh* (P); *k* (Ap) 5

\**tsh* → *tsh* (P); *ts* (Ap) 125

\**nw* → *nw* (P); *m* (Ap) 139

\*CV(V) →

\**yui* → *yi* (P); *wi* (Ap) 158

\**wa* → *oa*, *o* | V → *ø* — (Ap); *wa* 6, 8, 17

- \*C →
- \*p → p 2, 3, 5, 9
  - \*t → ty | i-i (P) ; č | -i (P) ; t 1, 4, 11, 53
  - \*k → x | -i/-i/-e (P) ; k 1, 2, 3, 7
  - \*ts<sup>1</sup> → č | -i; ts 4, 29, 45, 67
  - \*s → š | -i; s 6, 8, 10, 26
  - \*m → m 11, 22, 27, 35
  - \*n → n 2, 7, 19, 23
  - \*h → n | h . . . (Ap) ; Ø (Ap) ; h (P)
- h, a nasal spirant, is reconstructed wherever it occurs in Piro. Medially it probably should always be written. An initial h developed in Piro in all words beginning with a vowel. This h appears in only two morphemes in Apuriná. It is, therefore, impossible at this horizon to determine in which cases a proto \*h occurred initially.
- 3, 9, 35, 56, 95
- \*w → w 23, 57, 71, 75
  - \*r → l | a-/o- (P) ; r 3, 10, 22, 25, 59
  - \*y → Ø | i-a (Ap) ; y 22, 32, 34, 90, 105

## \*VV →

- \*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub> (P) ; V<sub>1</sub>V<sub>1</sub> (Ap) 30, 52, 71
  - \*ia → a | t-/s- (P) ; iya (P) ; e | t- (Ap) ; ia (Ap) 35, 178, 179
  - \*io → o | CC- (P) ; -yo (P) ; o | it- ; io (Ap) 37, 95, 184
  - \*ai → i | w- (P) ; a (P) ; ai (Ap) 75, 154
  - \*oi → i (P) ; oi (Ap) 79
  - \*ii → i 184
- \*V →
- \*i → i is- (Ap) ; i | V → Øs-w (P) ; i 4, 6, 8, 10, 28, 117
  - \*e → i | . . . i (Ap) ; a | a . . . a (Ap) ; i . . . i (Ap) ; e 15, 18, 26, 63, 89, 118
  - \*a → o | o . . . i / . . . w (P) ; i | . . . i ; e | iy- (P) ; e | -r| . . . i/i . . . e ; a 2, 3, 4, 45, 62, 63, 143, 145, 157, 170
  - \*i → i | #h-/k- (P) ; i | i . . . / . . . i ; i (Ap i = i) 16, 19, 46, 47, 49, 85, 156
  - \*o → i | -wi (Ap) ; o 5, 9, 12, 57
  - \*i → i (P) ; ī (Ap) 3, 51, 69, 178
  - \*ē → e (P) ; ī (Ap) 14, 42, 175

<sup>1</sup> For the P P-Ap, \*c has not been reconstructed. However, in relating this subgroup with other Arawakan languages, it is necessary to recognize in both Piro and Apuriná a \*č which is not a reflex of \*ts. See P Ar 'island, louse, and spear'.

- \*ă → a (P) ; ā (Ap) 27, 29, 30, 32
- \*i → i (P) ; ī (Ap) 161, 174
- \*o → o (P) ; ī | -wi (Ap) ; ō (Ap) 45, 57, 122, 127

## 6.9.5 Index of Cognate Sets

The order of presentation is P P-Ap, P, Ap :

1. 'abdomen' \*tiká-te/ko : čkete, -tikáko.
2. 'all' \*paki-ni : pexni, pakini.
3. 'annatto' \*hapí-ki-ri : hapi-x-ri, apíkiri.
4. 'ant' \*katsí-ti : kačiči, kačí-ti.
5. 'ant' \*-pokhi : pokhi, kačepoki-ri (N).
6. 'anteater' \*isiwa : siwa, išča.
7. 'arm' \*kano-ke : kano, -kanu-ke (N).
8. 'armadillo' \*k-siwa-na/tí : kšiwna, šoati.
9. 'arrive' \*ha-pó-ka : ha-po-ka, -apó-ka.
10. 'arrow' \*ka-siri-pi-tsi : kašri, širipi-ci.
11. 'bark' \*máta : mta, máta.
12. 'basket' \*ko-ki-tá-ri : koxi-ta, kotá-ri.
13. 'bat' \*siyo-píri : šyo, šiopiri.
14. 'blood' \*hira-ká-ha : -hra-ha, erěká-či.
15. 'blue' \*po-pore-rV : pole, pupore-ri (N).
16. 'bone' \*há-pi : ha-pi, -ápí.
17. 'bow' \*tapwá : twa, tapó-či.
18. 'bowl' \*ko-ra-pí-tV : kolpe-to, kopí-ti.
19. 'breast' \*tí-ni : t-ni, tí-ní.
20. 'bring' \*hwá-pa : hwa-pa, -ápa.
21. 'brother, younger' \*he-pí-rV : hepi-ri, -pi-ri.
22. 'buzzard' \*mayó-ri : may-li, mayó-ri.
23. 'canoe' \*kanáwa : kanawa, kanáwa.
24. 'chameleon' \*hapasi/tse-ri/i : hapasi-ri, apatseka-ri (N).
25. 'chest' \*tóro-ta : tlo 'arch of ribs', tórota.
26. 'claw, fingernail' \*séwata : sewata, -sáwata.
27. 'clothes' \*máka : mka, máka.
28. 'coati' \*kapísi : kapši, kapíši.
29. 'cold' \*katsíka-rí/e-ri : kačík-le-ri, kačí.
30. 'come' \*hiná : hina, íná.
31. 'corn' \*si-ki-mi : šixi, kími.
32. 'count' \*ya-wa-ná-ta : yanta-ta, -yawaná-ta.
33. 'crocodile' \*ka-SI-yo-ki-ri : kšiyo-x-ri, kaiki-ri.
34. 'cry' \*tsiya-ha/pa-ta : čiyaha-ta, čiapá-ta.
35. 'dark' \*mapi-sia-há-ri : map-ša-ha-li, mapi-á.

36. 'day, daylight' \*po-kamara-ri: *po-kamla-li*, *po-kamara-rí*.  
 37. 'deer' \*k-s(i)ó-ti/e-ri: *kšote-ri*, *sóti*.  
 'die' See 180.  
 38. 'do' \*káma-ri-ta: *kam-ri-ta*, *-káma*.  
 39. 'domestic animal' \*pirá: *pra*, 'to domesticate' *pira-*; *píra*.  
 40. 'duck' \*hopa-SI: *hopši*, *opai*.  
 41. 'dust' \*pá-hi-ni: *pahi*, *-pání*.  
 42. 'ear, outer' \*képi-ta: *xepi*, *kípi/ita*.  
 43. 'eat' \*níka: *nika*, *-níka*.  
 44. 'eat' \*na-tsima-: 'be hungry' *načima*, *-čima*.  
 45. 'eel, electric' \*patsō-tV: *pitso-ti*, *patsō-tí*.  
 46. 'egg' \*náki: *naxi*, *-nakí*.  
 47. 'fall' \*hi-ki-ri-ka-: *hixri-ka*, *-irika-poa-*.  
 48. 'fan' \*hVpono-pi/ta: *hepno-pi*, *apun-ta* (N).  
 49. 'father' \*hí-ri: *hi-ri*, *íri*.  
 50. 'father' \*pa-ti/pa: *pa-ti/pa-pa*, *pa-tí*.  
 51. 'fear' \*píka: *pika*, *píka*.  
 52. 'feast' \*kiini-rV: 'game' *kin-re*, *kíni-ri*.  
 53. 'feather' \*píti: *pityi*, *-piti*.  
 54. 'fish' \*simá-ki: *šima*, *šimákí*.  
 55. 'fish sp.' \*hamaki-rV: *hamxi-ro*, *amaki-ri* (N).  
 56. 'flow, rise (river)' \*ha-pohá-ta: *ha-po-ha-ta*, *apoč-ta*.  
 57. 'flower' \*hówi: *hwí* ~ *howi-*, *-iúi*.  
 58. 'flute' \*soko-nake: 'musical bow' *soko-soko*, *sokonake*.  
 59. 'fly' \*hará-na: *halna*, *ará-*.  
 60. 'foam, suds' \*sóri: *soli*, *sóri*.  
 61. 'foot' \*kíti: *xityi*, *kíti*.  
 62. 'frog' \*torá-ki-rV: *tolo-x-ri*, *torá-ro*.  
 63. 'good' \*ki-haré-ka: *kihle*, *eréka*.  
 64. 'grandfather, vocative' \*tó-ti: *to-ti*, *tó-tí*.  
 65. 'grandfather' \*ha-toki-ri: *hataxi-ri*, *-atuki-ri* (N).  
 66. 'grandmother' \*ha-kí-ro: *ha-xi-ro*, *kí-ro*.  
 67. 'grass, cane' \*katso-ri/ta: 'cane' *kats-li*, 'grass' *katso-ta-ti*.  
 68. 'grasshopper' \*tse-tse-ri: *tsetse*, *či-či-ri* ← Pre Ap \*tsi-tsi-ri.  
 69. 'grease' \*n-hí-tsi: *nhi-či*, *í-či*.  
 70. 'hammock' \*i-kéko: 'bed' *xeko*, *ikéko*.  
 71. 'head' \*kíwi: *xiwi*, *-kíwi*.  
 72. 'heart' \*hakí-pa: *háxi*, *-akípa*.  
 73. 'heavy' \*(m)ina/o: *hi-no-li*, *-mina*.  
 74. 'her' \*to, \*o-: *to-*, *o-*; *o-*.  
 75. 'here' \*he-wái: *hewi*, *wái*.  
 76. 'honey' \*(t)o-ha: 'her liquid, honey' *to-ha*, *ua*.

77. 'house' \*aa-poko-tsi: 'settlement' *-pok-či*, *aapoko-či*.  
 78. 'hungry' \*natsi-: *nači*, *nači-ta*.  
 79. 'hurt' \*katsoi: *kači* → Pre P \*katsi, *katsói*.  
 80. 'husband' \*(ít)ani-ri: *hani-ri*, *ítáníri*.  
 81. 'I' \*hi/nó-ta: *hita*, *-no*; *nó-ta*.  
 82. 'kill' \*ó-ka-ma-: *kama-ka-ta*, *óka-*.  
 83. 'knife' \*yo-wá-ta: 'bamboo' *wa-ta*, *yowá-ta*.  
 84. 'know' \*himata: *himata*, *ímata*.  
 85. 'lake' \*hi-powa-ha: *hi-pow-ha*, *í-póá*.  
 86. 'liver' \*-pána: *ho-pna*, *-pána*.  
 87. 'look at, see' \*heta: *heta*, *eta*.  
 88. 'louse' \*ke-pa-tsi: *xepa*, *šepe-či*; *nipá-či*.  
 89. 'man' \*kéki: *xexi*, *kiki*.  
 90. 'many' \*ka-yáho-: 'counted' *ka-yaho*, *kayádō-ro*.  
 91. 'medicine' \*pini: *pini-*, *pini*.  
 92. 'monkey, cebus' \*tsikó-ti: *čko-ti*, *čikó-tí*.  
 93. 'monkey sp.' \*k-atsana-ri: *katsna-li*, *atsana-li* (N).  
 94. 'moon' \*kasi-ri: *ksi-ri*, *kasi-rí*.  
 95. 'mosquito' \*hahío: *hahyo*, *anío*.  
 96. 'mother' \*ná-to/ro: *nato*, *hin-ro*; *íná-ro*.  
 97. 'mouth' \*-náma: *nama*, *-náma*.  
 98. 'my' \*n(V)-: *no-*, *n-*; *nV-*.  
 99. 'name' \*hi-wáka: *hi-waka*, *í-wáka*.  
 100. 'neck' \*-nó-pi/ki: *noxi*, *-nópi*.  
 101. Negative \*hi: *hi*, *i-*.  
 102. 'nose' \*kirí-ta: *xri*, *-kirí-ta*.  
 103. 'old' \*mi-tsi-rV: *ts-ri*, *miči-ri*.  
 104. 'other' \*(s)á-ti: *sa-ti*, *áti*.  
 105. 'paca' \*kayá-ti: *kaya-ti*, *kayá-tí*.  
 106. 'parakeet' \*kotsina-ke: *kočina*, *kočina-ke*.  
 107. 'path' \*hapó-ri: *hapo*, *kimapo-rí*.  
 108. 'peccary' \*miri-ti: *mrityi*, *miri-ti*.  
 109. 'people' \*kākí-ti: 'non-Indian' *kaxi-ti*, *kākí-tí*.  
 110. 'pineapple' \*hanána: *han'a*, *anána*.  
 111. 'piranha' \*homa-ke: *homa*, *omá-ke*.  
 112. 'plant' \*hita-kV: *hita-ka*, *itaki*.  
 113. 'play' \*hapnoka-wa-ta: *hapnoka-wa-ta*, *oka-ná-ta*.  
 114. 'porcupine' \*kimi-tsi-rV: *kmitsi-ri*, *kímitsi-ro*.  
 115. 'porpoise' \*pesó-IV: *pes-li*, *pesó-ri*.  
 116. 'pull' \*kose-: *kose-ta*, *kose-ka*.  
 117. 'rainbow' \*kísi: *kši* ← Pre P \*kisi: *kši*, *kísi*.  
 118. 'river' \*weni: *weni*, *wíni*.

119. 'roast' \*kimV- : *xima*, *-kimi-*.
120. 'root' \*ko-tsa : *ko-tsa*, *kó-tsa*.
121. 'rope' \*tsa : *tsa*, *-tsa*.
122. 'round' \*pō-pi-rV-rV : *po-pro-lo-li*, *pōpori-ri*.
123. 'sand' \*kipa-tsi : 'mud' *xpa-či*, *kípá-či*.
124. 'seed' \*kí : *xi*, *-kí*.
125. 'sew' \*yo-ts-ha- : *yo-ts-ha*, *yotsa-rV*.
126. 'shell, flat seed, scale' \*tata : *tata*, *-tata*.
127. 'sickness' \*pōhā : *poha*, *-pōā*.
128. 'sing' \*sikarV-ta : *šikale-ta*, *šikara-*.
129. 'sit' \*to/ipára-ka-ta : *tiplä-ta*, *-itopá-kä*.
130. 'skin' \*máta : *mta*, *máta*.
131. 'sky' \*te|ano- : *teno*, *itanoti-ši* (N).
132. 'sleep' \*hi-máka : *himka/himaka*, *máka*.
133. 'sloth' \*yaa/ki-pa-ri : *xipa-li-xi*, *yaapá-ro*.
134. 'small' \*aše-mítí-rV : *mti-ri*, *aše-mítí-ro*.
135. 'smoke' \*tsi-tsi-(ph)īā : *či-či-phya*, *ičīā*.
136. 'snake' \*himíni, \*pi : *himni*, *pi*; *imíni*, *pi*.
137. 'spindle' \*kipwé-ta : 'spin' *xiwe-ta*, *-kipé-ta*.
138. 'spirit, demon' \*kama-ri/tsi : *kam-či*, *kami-ri*.
139. 'stand' \*tinwa-ta : *tin-wa-ta*, *-tíma*.
140. 'stick' \*hāhā-pó-ri : 'branch' *hah-mina-plí*, *āāpóri*.
141. 'stomach' \*hi-tika-mapu/ko : *hička-mapa*, *tikako*.
142. 'string' \*tsa : *tsa*, *-tsa*.
143. 'suck, nurse' \*hasí-ta : *haši-ča*, *ašite*.
144. 'sun' \*ataká-čtsi : *tna-či*, *ataká-či*.
145. 'sweet' \*patsiwá-ro : *počwa-li*, *pačoáro*.
146. 'sweet potato' \*kipá-ri : *xipa-li*, *kipa-ri*.
147. 'swell' \*haná-na/ka : *hanka*, *anána*.
148. 'swim' \*hanohā-ta : *ha-noha-ta*, *anoč-po-ta*.
149. 'table' \*kwa-ná-ri : *kwa-li*, *koaná-ri*.
150. 'tail' \*-n-sí-pi : *nši*, *šipi*.
151. 'take' \*hani-ka : *hani-ka*, *-ani-ka*.
152. 'tapir' \*kéma : *xema*, *kéma*.
153. 'termite' \*kamara : *kamla*, *kamara*.
154. 'there' \*(t)ikai : *tika*, *íkai*.
155. 'there are' \*hawa : *hawa*, *áwa*.
156. 'think' \*-sinika- : *hi-šinika*, *-šinikaši-ti*.
157. 'this' \*(t)iya : *tye*, *iya*.
158. 'tobacco' \*ha-yui-ri : *hayi-re*, *awí-ri*.
159. 'toe' \*kiti-ki : *xityi-xi*, *-kiti-ki* (N).
160. 'tongue' \*níni : *n'i*, *níni*.

161. 'tortoise' \*sípi-ri : *sipri*, *sípi-ri*.
162. 'toucan' \*sika-ni : *šikene*, *šika-ni*.
163. 'tree' \*haha-mína : *hah-mina*, *aa-mína*.
164. 'trumpeter' \*hititi : *hityiyi*, *ititi* (N).
165. 'turtle' \*tsikipi : *čkipi*, *tsikipe* (N).
166. 'two' \*hepi : *hepi*, *ípi*.
167. 'urine' \*tsiná-ka : 'urinate' *tsiná-ka*, *tsínáka*.
168. 'vine' \*haha-pi-tsa : *haha-pi-tsa*, *aapitsa*.
169. 'vine sp.' \*tsa-pi-ri-ki : *tsa-pi*, *tsa-pi-ri-ki* (N).
170. 'wash' \*haro-ka- : *herka*, *hero-ta*; *aroka-*.
171. 'wasp' \*sáani : *sani*, *sáani*.
172. 'water boa' \*mapa-tsi/yí-rV : *mapči-ri*, *mapayi-ro*.
173. 'we' \*ha- : *ha*, *a*.
174. 'wet' \*hi-há-ka : *hi-ha-ka*, *íáka*.
175. 'wing' \*méki : *mexi*, *-míki*.
176. 'worm' \*tsómi : *tsomi*, *tsómi*.
177. 'yes' \*hi-hi : *hi-hi*, *ii*.
178. 'you pl.' \*hitia, \*hi- : *hitya*, *hi-*; *íte*, *í-*.
179. 'you sg.' \*pitia, \*p- , \*pi- : *pitýa*, *p-*, *pi-*; *pite*, *p-*, *pi-*.
180. 'die' \*hi-pina : *hi-pna*, *i-pína-*.
181. 'hear' \*kema- : *xema*, *kema-*.
182. 'bird' \*ko-si-ti-pi-ri-ki : *koši-či*, *kotipí-ri-ki*.

The *P* reflex č | i-i instead of the expected *ty* is due to the fact that -ti is a nominal suffix occurring in various environments. -ki is a diminutive ; -pi-ri is probably the same morpheme sequence as in 'bat' and 'mouse'.

183. 'cotton' \*wa-ma-pehi : *waphi*, *mapoa* ← Pre Ap \*mapei.
184. 'woman' \*siiito : *sityo*, *sito*.
185. 'baby' \*há-ma-ti-ri-ní-ki : *mti-ri*, *amariníki*.

## 6.10 PROTO ASHANINKA

### 6.10.1 Introduction

*Ashaninka* is the Campa word for 'people'. It is used here to represent a group of dialects and/or closely related languages extending along the Uru-bamba in Peru from Cuzco to the mouth of the Camisea River ; along the Tambo-Ene, probably to its headwaters ; up numerous tributaries of these rivers and across the watershed as far as to the Madre de Dios River ; and far down the Ucayali River toward Pucallpa. The speakers of these languages live in single clearings or small settlements scattered deep in the jungle and across the Pajonal or grasslands.

The impression gathered from conversation with the linguists and with neighboring Piros who speak Ashaninka languages as well as Piro, is that the terms 'Machiguenga' and 'Campa' overlap considerably in their application to various dialects. Perhaps they are related by a chain of dialects. No comprehensive dialect survey has been published, and since vocabularies representing only three dialects are available at present, this study falls far short of a comparison of the Machiguenga, Campa, and Nomatsiguenga.

Harold and Mary Elizabeth Shaver supplied the Nomatsiguenga data from their field notes. I am indebted to Wayne and Betty Snell, and to Willard and Lee Kindberg not only for the Machiguenga and Campa vocabularies respectively, but also for scanning the various lists in the early stages of this work and supplying cognates from memory. The Campa and Nomatsiguenga lists include over 300 words each; the Matsiguenga, somewhat less.

#### 6.10.2 The Phonemes of Proto Ashaninka

* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>i</i>	* <i>ı</i>
	* <i>ts</i>	* <i>č</i>	* <i>e</i>	* <i>o</i>
		* <i>s</i>	* <i>h, h'</i>	
				* <i>a, a'</i>
* <i>m</i>	* <i>n</i>			
* <i>w</i>	* <i>r</i>	* <i>g</i>		

#### 6.10.3 Phoneme Reflexes

	P Ash	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>ts</i>	* <i>č</i>
Mg		<i>p</i>	<i>t, d</i>	<i>k, hy, g</i>	<i>ts</i>	<i>č</i>
C		<i>p</i>	<i>t</i>	<i>k</i>	<i>ts, č</i>	<i>č</i>
Nom		<i>p</i>	<i>t</i>	<i>k, ky</i>	<i>ts</i>	<i>č</i>
	P Ash	* <i>s</i>	* <i>h</i>	* <i>h'</i>	* <i>m</i>	* <i>n</i>
Mg		<i>s, š</i>	<i>h</i>	<i>ø</i>	<i>m</i>	<i>n</i>
C		<i>s, š</i>	<i>h</i>	<i>h</i>	<i>m</i>	<i>n, η</i>
Nom		<i>s</i>	<i>h</i>	<i>h, ø</i>	<i>m</i>	<i>n</i>
	P Ash	* <i>w</i>	* <i>r</i>	* <i>g</i>		
Mg		<i>w</i>	<i>r</i>	<i>g, gy</i>		
C		<i>v</i>	<i>r</i>	<i>y, ø</i>		
Nom		<i>b, b</i>	<i>r</i>	<i>g, gy, ø</i>		
	P Ash	* <i>i</i>	* <i>e</i>	* <i>a</i>	* <i>a'</i>	* <i>ı</i>
Mg		<i>i</i>	<i>e</i>	<i>a</i>	<i>a</i>	<i>ı</i>
C		<i>i, e</i>	<i>e</i>	<i>a</i>	<i>a</i>	<i>e, i</i>
Nom		<i>i, ei, e</i>	<i>i, e</i>	<i>a</i>	<i>o</i>	<i>ı, e</i>

#### 6.10.4 Conditioning and Examples of Phoneme Reflexes

##### \*CC →

\**mp* → *mb* (Mg) ; *mp* (C) ; *m* (Nom) 14, 72, 127, 194

\**nt* → *nd* (Mg) ; *nt* 23, 60, 154, 171

\**nk* → *ngy* | -*i*-*e* (Mg) ; *ng* (Mg) ; *nk* (C) ; *ŋy* | *i*-*i* (Nom) ; *n* | *e*-*i* (Nom) ; *ŋ* (Nom) 42, 49, 50, 52

\**ng* → *ŋ* 105

##### \*CVCV →

\**gVke* → *gye* (Nom) 65, 77

\**tsia* → *čaa* (C) ; *tsia* (Nom) 205

##### \*C →

\**p* → *p* 12, 13, 21, 40

The proto morphophoneme \**P* represents \**p* ~ *w* in a class of nouns including body parts and kin. This morphophonemic variation is found in the daughter languages, as in 'house' Mg *pango* ~ *wango*, C *pango* ~ *vanko*, Nom *poŋo(-tsi)* ~ *-biwano* ~ *baŋo*. The \**P* symbolizes irregularities between reflexes of \**p* and \**w* in any of the three languages.

32, 66, 82, 224

\**t* → *t* 1, 19, 22, 29

\**k* → *ky* | -*i*-*e* (Mg) ; *ky* ~ *k* | -*i*-*e* (Nom) ; *k*

Two instances of *k* | -*i* appear in the Matsiguenga data: 'fishnet' *kitsa-ri* ← \**ki-tsá-ri* and 'dig' *-kiga* ← \**-kiga-ke-ro*. These may be due to copying errors on my part; there may be some conditioning feature not evident in the data, or a proto phoneme \**ky* may exist as the phoneme \**ky* in Mg. Such a proto phoneme has not been added on the basis of these two words because the other members of the palatal stop series, *g̊y* and *t̊y*, of Mg are completely conditioned, and because the *ky* of Mg occurs in reconstructions only preceding *i* and *e*.

12, 13, 19, 89

\**ts* → *č* | -*i* (C);<sup>2</sup> *ts* 2, 23, 26, 33, 135

\**č* → *ts* | -*i* (Nom) ; *č* 13, 141, 234

\**s* → *š* | -*i* (Mg, C) ; *š* | -*ei* (Mg) ; *s* 14, 22, 35, 38, 148

\**h* → *h* 21, 123, 209, 214

\**h'* → *h* | #/-*V* (Nom) ; *ø* (Mg, Nom) ; *h* (C) 15, 54, 70, 103

<sup>2</sup> The assignment of *č* | -*i* (C) to PAsh \**ts* and of *ts* | -*i* (Nom) to PAsh \**č* is arbitrary; the two sources might be interchanged if advantageous.

Fairly good contrasts exist between \**h* and \**h'*, and between Ø in the proto language and \**h'*:

- 'husband' \**a-híme*: -*híme* (Mg), -*híme* (C), -*ahíme* (Nom).
- 'tooth' \**ah'i*: -*ái* (Mg), -*ahi* (C), -*aht* (Nom).
- 'walk' \**ani-tane-ti*: -*anei-* (Mg), -*aniti* (C), *anetaneti-gye* (Nom).
- 'baby' \**h'anané-ki* (Mg), *hanane-ki* (C), *hané-kyi* (Nom).

\**m* → *m* 1, 7, 14, 25

\**n* → *n* 7, 9, 15, 29

\**w* → *w* (Mg); *v* (C); *b* ~ *b* (Nom)

There is optional irregular and infrequent spirantalization of the labial stops in Nom.  
30, 41, 154, 189

\**r* → *r* 21, 28, 47, 70

\**g* → *y* | Stem-initially (C); Ø (C); *gy* | -*i*-e (Mg, Nom); *g* 61, 63, 65, 72, 75

\*VV →

\*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub>, V<sub>1</sub>V<sub>1</sub> (Allophonic) (Nom); V<sub>1</sub> (Mg, C) 24, 128, 185, 208

\**ie* → *e* (Mg); *ee* (C); *ie* (Nom) 206

\**ia* → *e* | -#/#- (C); *ea* (C); *i* | s-# (M); *a* | s- (M); *ei* | -# (Nom); *ia* 1, 32, 44, 48

\**io* → *io* 170, 204

\**ei* → *e* | s- (Mg, C); *i* | -r (Mg); *i* (C); *ei* (Mg, Nom) 148, 168

\**ea* → *a* (Mg); *ea* (C); *i* (Nom) 241, 254

\**ai* → *ai* 203, 246

\**oi* → *oi* (Mg); *i* (C); *a* | ... *a* (Nom); *e* (Nom) 61, 173

\*V →

\*V<sub>1</sub> → V<sub>1</sub>, V<sub>1</sub>. (Allophonic) (Nom) 112, 113, 124

\**i* → *e* | *a* ... *a/e* (C, Nom); *i* ~ *e'i* (Nom); *i* 7, 12, 15, 106

\**e* → *i*, *e* (Nom); *e* 15, 23, 209, 230

\**a* → *e* | *i* ... *i*; *a* 7, 20, 29, 50, 201

\**a'* → *o* (Nom); *a* 13, 22, 120, 158

*a'* occurs only preceding -Co or a bilabial -*p*, -*m*, or -*w* (13, 14, 22, 81, 120, 142, 150, 158, 165, 169, 171, 186, 189, 193, 197, 226). It is not in complementary distribution with *a*, since *a* also occurs in the same environments (5, 17, 80, 227). However two sets between which the contrast is apparent suggest that the variation between *a* and *o* in Nom may be morphophonemic: 63 'demon, die, kill'

\**kama-ga-ri*: *kamága-ri-ni* (Mg); *kaama-ri* ← \**kamaa-ri* (Pre C); *kamaga-ri* (Nom). 239 'vomit' \**ka'marankV-*: *kamaranga* (Mg); *kamaranki* (C); *komaranjéni* (Nom). The first two syllables of

'vomit' may well be the same morpheme as the root *kama-* which refers to death and detrimental supernatural forces.

\**i* → *e* | *as-* (C, Nom); *i* (C); *i* 47, 143, 228

The phoneme *i* /i/ in Mg. is very infrequent.

\**o* → *o* 12, 22, 29, 33

#### 6.10.5 Index of Cognate Sets

The order of presentation in the sets is as follows: P Ash : Mg, C, Nom.

1. 'abdomen' \**tso-mo-n-ti-a*: -*motía*, -*tsomonte*, *tsomonté*.
2. 'achiote' \**po-tsó-ti*: *pocó-ti*, *potso-ti*, *tsó-ti?*.
3. 'Adam's apple' \**tonko-rV-na*: -*tonko-ri-na*, -*tonko-re-na*, —.
4. 'alive' \**ani-a-*: —, *anea-či*, *kañaniró-na?*.
5. 'all' \**o-ma-ga-ro-ni*: —, *ma-a-ro-ni*, *o-maga-ro*.
6. 'alligator' \**sani-ri*: —, *sani-ri*, *sani-ri?*.
7. 'ant' \**manihi*: *manihi*, *manihi*, *maní*.
8. 'ant' \**katito-ri*: *katito-ri*, *katitorí*, —.
9. 'anteater' \**wanta-na*: —, *vanta-na*, *pánta-na?*.
10. 'armadillo' \**étini*: *étini*, *etini*, —.
12. 'arrive' \**poka*: *poka*, *poki*, -*pok*.
13. 'arrow' \**ča'kópi*: *čakó-pi*, *čakopi*, *čókopí?*.
14. 'ash' \**sa'mámpu*: *samámbo*, *samampo*, *somámo?*.
15. 'baby' \**h'a-na-né-ki*: *anánék'yé*, *hanane-ki*, *hanékyi?*.
16. 'back' \**a-tisíta*: -*tišta*, —, -*atisítá?*.
17. 'bad' \**te-Vnkame-*: *tera iŋgaméítite*, *tee onkameetsate*, —.
18. 'banisterium' \**ka'marámpi*: *kamárambi*, *kamarampi*, *kómarampi?*. The Nom is probably borrowed from C, since the reflex of -*mp* is irregular.
19. 'bark' \**taki*: *o-takyi*, *o-taki*, *o-táki?*.
20. 'basket' \**kanti-ri*: *kandi-ri*, *kanti-ri*, *kánti-ri*.
21. 'bat' \**píhi-ri*: *píhi-ri*, *pihi-ri*, *pihi-ri?*.
22. 'beard' \**siPa'toná-*: *śipatonántsi*, -*śipatona*, -*asibotóna?*.
23. 'bed' \**ma-ga-ke-me-n-to-n-tsi*: *magaméndontsi*, *maamentonči*, *isomamé-n-tó-tsi?*.
24. 'bee (honey)' \**ee-rV-to*: —, *eeri*, *erótó*.
25. 'bird' \**tsíme-ri*: *tsíme-ri*, —, *tsími-ri?*.
26. 'bite' \**atsika-ga-ke-*: *atsika*, -*čikakero*, -*tsigemi*.
27. 'black' \**po-tsita-ri*: *potsita-ri*, —, *tsitá-ri?*/-*ro?*.
28. 'blood' \**-ri-rá-ha*: -*ri-ráa*, -*ra-ha*, *ará*.
29. 'blow' \**tason-*: -*tason-*, -*tasonkiro*, -*tasóniróta?*.
30. 'body hair' \*-*Piti*, -*si* 'hair': -*witi*, -*viti*, -*bitihéme?*.
31. 'bone' \*-*tón-ki*: -*tóngyi*, -*tonki*, -*tóni?*.
32. 'bow' \**Píáme-n-tsi*: *piáme-n-tsi*, *veanenči*, *biántsí?*.

33. 'breast' \*tsomi: -tsómi, -tsómi, -tsomi.
34. 'brother-in-law' \*ani: ani, ani, aní.
35. 'brush, woods' \*a/in-čatō-si 'tree': ingyeníši, inčatoši, ančatosi?
36. 'burn' \*taga-gi/ka: -taga-, otaaka, -atági-ro?.
37. 'bury' \*panki: pangyi 'plant', panki 'plant', —.
38. 'buzzard' \*tisó-ni: tisóni, tisoni, tiso?.
39. 'cane' \*sawó-ro: sawóro, savoro, —.
40. 'canoe' \*pitó-tsi: pitó-tsi, pito-či, pitó-tsi.
41. 'capybara' \*iwé-to: iwéto, iveto, ibéto.
42. 'charcoal' \*tsimeniki-to: tsiméngyito, čimenkito, tsimenitó?.
43. 'chest' \*ne-gi/hi: -negyi, -nehi, -ne- 'body'.
44. 'chicha' \*pia-rV-n-tsi: —, pearen-či, piá-ri?.
45. 'chigger' \*mampe/a-iri-ki: mamberikyi-ti, pekiči, pairikiti?.
46. 'chili pepper' \*tsi-ti-kana: tsitikana, čitikana, tsíkana?.
47. 'chin' \*gira: -gira, —, -agíra.
48. 'claw, fingernail' \*-seata-ki: -šáta, -seta-ki, isiáta?.
49. 'clouds at rest' \*menkó-ri: méndo-ri, menkori, mēño-ri.
50. 'cold' \*katsinka-ri: katsinga-ri, kačinka-ri, kátsinjá-ri?.
52. 'corn' \*sin-ki/-yi: šín-gyi, šin-ki, stínyí?.
53. 'correct' \*kame-: kame-ti, kameetsa, —.
54. 'cotton' \*ampéh'i: ambéi, ampehi, —.
55. 'crocodile' \*saní-ri: saní-ri, sani-ri, saní-ri?.
56. 'cultivated clearing' \*(t)ogan-tsi: —, oan-či, tógan-tsi?.
57. 'cushma' \*mančaki-: mančakyintsi, —, -mančekip?.
58. 'cut' \*-tota/i-ro: tota-, -toti-ro, -tóntimár-o?.
59. 'dark' \*tsite-ni-ri/ti: tsiteni-ri, čiteni-ri, tsitini-ti?.
60. 'daughter' \*sintio: -šinto, -šintyo, sinto.
61. 'day' \*koitagite-ri: koitagyiteri, kitaite-ri, katagité-ri.
62. 'deer' \*máni-ro: máni-ro, mani-ro, má·ni-ro? See also 'jaguar'.
63. 'demon, die, kill' \*kama-ga-ri: kamága-ri-ni, kaama-ri ← \*kamaa-ri (Pre C), kamaga-ri.
65. 'dig' \*-kiga-ke-ro: -kiga, pikiaker, áneygerba?.
66. 'dirty' \*kiPatsi-ta/ri: -potsitata-, -kipačitake, kibatsíri?(ro).
67. 'dog' \*otsi-ti: otsiti, očiti, otsiti?.
68. 'doorway' \*sotsi-mo-ro: sotsimó-ro, -mo-ro, —.
69. 'down' \*isi-aa'wi-hi: —, išaavihi, osóbi?.
70. 'dry' \*-pirih'a-ri/ta-ke: -piria-ta-, opiriha-take, pirid-ri.
71. 'dust' \*-pane: -pane, impaneki, —.
72. 'ear, inner' \*gém̥pita: -gyém̥bita, -yempita, -agyemítá?.
73. 'earth' \*kiPa-tsi: kíypatsi, kipači, kiba-tsí?.
74. 'egg' \*-Vgitso-ki: -gicokyí-, o-itsoki, igítsó?.
75. 'excrement' \*-tiga: -tiga-, -tia, -tiga.

76. 'eye' \*(l)o-ki: ókyi, -ki, -ló-ki?.
77. 'fall' \*pariga-ke-ta: -pari-ga, -pari-ake, -marigýéta.
78. 'fan' \*hevaron-tsi: hevaron-tsi, -hevaron-či, —.
79. 'far' \*o-sama-ni: sama-ni, osama-ni, —.
80. 'father' \*ápa: ápa, apa, apá.
81. 'fear' \*tsa'ro-a-ke-ni: —, -tsaro-ake, -tsorokyénip?.
82. 'feather' \*-Panki: -vangyi; ivanki; i'-barí, panji-tsi?.
83. 'finger' \*-čapá-ki: -čapákyi, -akochap-ki, —.
85. 'fire' \*tsi-tsi: tsí-tsi, či-či, tsí-tsí.
86. 'fish, fish species' \*simá: šima, šima, simá?.
87. 'fish-hook' \*-ta-sa/ga-ró-n-tsi: tsagarón-tsi, pitasasron-či, katsáron-tsi?.
88. 'fishnet' \*ki-tsá-ri: ki-tsá-ri, kitsa-ri, —.
89. 'flea' \*kentirá-ti-ki: kyendirákiti, kentiratiki, kintiráti?.
90. 'flesh' \*-watsa-: -vatsa-, ivatsa, ibatsá?.
91. 'flower' \*-téga: o-téga, otea, oté-ga?.
92. 'fly (n.)' \*siki-ri: šíkyi-ri, šiki-ri, síki-ri?.
93. 'fly (v.)' \*-ara/i: -ara-, yari, —.
94. 'fog' \*menko-ri: —, menko-ri, míño-ri.
95. 'foot' \*a/won-/kiti: wóngyiti, -iti, -agítip?.
96. 'fruit, seed' \*-gitso-ki: —; o-vatsa, o-itsoki; ogitsó?.
97. 'full' \*ohaga-ka: —, ohaaka, ohágap?.
98. 'fur' See 'body hair'.
99. 'give' \*pa-ke-ri: -pa-, -pakeri, —.
100. 'go' \*-h'á-ta: -ata, -ha, -ha.
101. 'good' \*kame-: kaméte, ka-meetsa, —.
102. 'gourd' \*pamoko: pamoko, pamoko, —.
103. 'grass' \*to-wase-ri: towáséri, —, tobári?.
104. 'grassland' \*kesi-: kyesi, kešiši, kesie.
105. 'guan' \*sanga-ri: sa'ña-ri, —, sáña-ri?.
106. 'hair' \*a-gi-si: -gyíši, -iši, -agyeísi? See 'body hair'.
107. 'hand' \*-(w)ako: -áko, -ako, -bwá-ko.
108. 'he' \*irí-o-rV: irío-ro, irio-ri, iri-ro?, irap?.
109. 'head' \*gi-to: -gyíto, -sto, -agító?.
110. 'hear' \*-kemake-ro/nge: —, -kemakero, -akyémakñe?.
111. 'heart' \*-asa-n(i)gá'-ki/ne: -anigá-kyi, -asankane, -anéyomentó.
112. 'heavy' \*tina-ri: —, tena-ri, tiná-ri?.
113. 'here' \*(y)aka: —, aka, yá'ká?.
114. 'his' \*i-: i-, i-, i-.
115. 'hit' \*-pasata-i-ro: -pasata, -pasat-iro, -atá-iro?.
116. 'hold' \*pa-hirika-iro: -irika-, pahirikiro, —.
117. 'honey' \*pitsi: pitsi, —, pitsi.
118. 'horn' \*tsei-ki/tsi: -tsei-, itseeki, tséi-tsi.

119. 'hot' \*ka-tsirinka-ri: katsiringa-ri, -čirinka-ri, kátsirinja-ri.
120. 'house' \*Pa'nkó-: pango-, panko-či, poño-tsi?
122. 'hummingbird' \*tsonki-ri: tsongyí-ri, tsonki-ri, —.
123. 'husband' \*-a-hime: -hime, -hime, -ahime?
124. 'I' \*ná-ro: ná-ro, na-ro, ná-ro?
125. 'if' \*-rika: -rika, -rika, —.
126. 'inside, within' \*tsompogi-na: tsompogyi, tsompoina, —.
127. 'intestines' \*-ampo-re-tsa: -ambo-ré-tsa, -ampo-re-tsa, -na-rétsa?
128. 'it' \*iró-o-rV: iróro, iroori, —.
129. 'jaguar' \*maníti: maníti, maniti, —. See also 'deer'.
130. 'kill' \*-ka-i-rV: -ga-, -akero, -ηtónkeríni?
131. 'knee' \*-ge-rV-to: -gyéreto, -yerito, -ageritó?
132. 'know' \*nigo-ti-ro: -go-, niotiro, nigótí?
133. 'lake' \*a/inkáh'a-re: ingáa-re, inkaha-re, aŋá-re?
134. 'last' \*impogi-tai-ni-: imbogýini, impostaínčiri, —.
135. 'leaf' \*-tsipaná-ta: -čipanáta, —, tsípana?
136. 'learn' \*-si: o-ši, o-ši, —.
137. 'left' \*na-ma-pa-te: nampatei, nampate, -mate.
138. 'leg' \*-wóri: -wóri, -vori, —.
139. 'lip' \*-tsera: -tsera, -tsera, atséra?
140. 'liver' \*i-ri-raa-pa-na-: iriraapanantsi, iranatare, -mpáná.
141. 'louse' \*néči: néči, neči, ná-tsí?
142. 'macaw' \*sa'wá-ro: —, sava-ro, sobá-ro.
143. 'man' \*si-rá-mpa-ri: sirá-ri, širampa-ri, sirá-ri.
144. 'mat' \*šítá-tsi: šítá-tsi, šita-či, —.
145. 'medicine man' \*seri-pigá-ri, seri-pigári, seripia-ri, séripia?
- The 'Nom is probably a Campa loan.'
146. 'milk' \*tsomi-tsi: tsomi-tsi, tsomi-či, tsómi-tsi?
147. 'monkey' \*kósi-ri: kóširi, koši-ri, kosi-ri.
148. 'monkey' \*sei-to: oše-to, ose-to, oséi-to.
149. 'moon' \*kasí-ri: kaši-ri, kaši-ri, —.
150. 'mosquito' \*má'nio: mánio, manio, moñó? (móño).
151. 'mother' \*ina, 'wife' \*hina: ína, ina, ind?
152. 'mountain' \*otisi: otiši, otíši, otísi?
153. 'mouse' \*sága-ri: sága-ri, —, sá-ga-ri.
154. 'mouth' \*-wa-ga-ni: -wagandi, -vante, -baganté?
155. 'my' \*n-, no-: n-, no-; n-, no-; nV-, no.
156. 'name' \*-Pah'i-ró-n-tsi: vairontse, -vahi-ro, -pái-ró?
157. 'navel' \*-čom-o/agí-to: -mogi-to-, -moi-to, -čomagéito?
158. 'neck' \*tsd'no: -tsáno, -tsano, tsono?
159. 'negative, no, not' \*te-ra/a: tera, tee, te-.
160. 'new' \*iro-ake-ra-i: —, iroakera, irorá?

161. 'old man' \*antiasipa-ri: —, antiašipa-ri, antiasipá-ri?
162. 'one, another' \*(a)pá-ti-ro: pátiro, aparo, patiró?
163. 'other, another' \*pasi-ni: paši-ni, paši-ni, pási-ni?
164. 'otter' \*pará-ri: pará-ri, para-ri, pára-ri?
165. 'paca' \*sa'má-ni: samá-ni, sama-ni, somá-ni.
166. 'paddle' \*komaro-n-tsi: komaróntsi, komaron-či, komáron-tsi?
167. 'pain' \*(h)a-ya-lé: aya 'cry of pain', aya 'cry of pain', hayalé 'cry of pain'.
168. 'palm, chonta' \*kei-ri: ki-ri, ki-ri, kái-ri.
169. 'palm, miriti' \*ka'mona: —, kamona, komo-na.
170. 'parakeet' \*čokio: —, čokio, čokio?
171. 'parrot' \*kinta'-ro: kyindáro, kintaro, kintoro?
172. 'path, trail, road' \*awó/atsi: awótsi, avoči, ábatksi?
173. 'pebbles' \*ma'-poi-poroki-si: mapoiporókyisi, mapiporoki, mopwé. See 189 'rock'.
174. 'peccary (collared)' \*sinto-ri: šindó-ri, —, sintó-ri?
175. 'people' \*mat-si-a-ge/ni-nka: matsigéŋga, ašaninka ← \*asianinka (Pre C), matsigeŋga.
176. 'pierce' \*-kenti-ro: -kenti-ro, -kenti-ro, —.
177. 'pierce' \*satai-ro: -satai-ro, -satai-ro, —.
178. 'pot, cooking' \*kowi-ti: kowiti, koviti, kobítí?
179. 'pod' \*-pa: -pa, -pa, -pa.
180. 'pull' \*-nosike/a-ro-ta-: -nošika-, —, nósikeróta?
181. 'puma' \*ma-tso-na-ri: matsontsori, matsontso-ri, tsoná-ri.
182. 'rain' \*a/inka-ni: iŋga-ni, inka-ni, áŋa-ni.
183. 'rainbow' \*i-oge: yógye, —, ógye?
184. 'rat' sága-ri: sága-ri, —, sága-ri.
185. 'red' \*kiraá-ri: kiraari, kira-ri, kirá-ri?
186. 'right' \*(w)aKo-sa'no-ri: -akosano-, -akosanori, -bagosonóri?
187. 'ripe' \*-ra-ga-ka: irakaga, iraaka, orá:ga?
188. 'river, stream' \*e-ní-ha: eni, niha; eni; nihá?
189. 'rock, stone' \*ma'pi: mapíi, mapi, mopwé 'huge rocks'. See 173 'pebble'.
190. 'rope' \*-tsa: -tsa, iviri-tsa, ome-tsá.
191. 'rotten' \*oPatsagake: —, opatsa-ake, obatsaga?
192. 'rub' \*a-miroka: -miroka-, -amiroka, —.
193. 'saliva' \*-ha'wa-: -ava-, -hava, hobatsí?
194. 'sand' \*-mpaniki: -imbánikyi, impaneiki, -maníki?
195. 'say' \*kanta/i: -kanta-, kantiro, —.
196. 'sea' \*inkah'a-rV: ingaare, inkahare, aŋári?
197. 'seat, stool' \*no-sa'wika'-mento-n-tsi: savikaméntontsi, tsointamenton-či, nosobíkomentó?

198. 'seed' \*-kitso-ki: *o-kyitsó-kyi*, *oitso-ki*, —.
199. 'sharp' \*tsogiampi-ta-ke: *-tsogyiampi-*: *otsaampita-ke*, —.
200. 'she' \*iro-o-ri: *iroro*; *iroo-ri*; *irórop*, *orá?*.
201. 'skin' \*mo-ma-si-na: *meśina*, *-meśina*, *momasí*.
202. 'sky' \*inki-te: *ingyiti*, *inkite*, —.
203. 'sleep' \*mai-ge: *maigye*, *-mai*, —.
204. 'small' \*ori/tiomni-h'a-ni: *-tiomiá-ni*, *orihani*, *itiómihəni?*.
205. 'smoke' \*kats(i)a-ri: —, *kačaa*, *katsiá-ri?*.
206. 'smooth' \*karie-ni-: *kareni*, *kareeni*, *karienró?*.
207. 'snake' \*maránki: *maráŋyé*, *maranki*, *imaranŋyé?*.
208. 'spear' \*sataamento-tsi: —, *sataamento-či*, *osatámento-tsi?*.
209. 'spider' \*hé-to: *hé-to*, *he-to*, *hí-tó?*.
210. 'split' \*-tsira-: *-tsiraa-*, *pičirahiiro*, *-atsirairótap*.
211. 'star' \*impokiro: *imbókyiro*, *impokiro*, —.
- 'Stative suffix' See 258.
212. 'stick' \*Vnčá-ki/pa: *inčákyi*, *inča-ki*, *ančápwá?*.
213. 'straight' \*katinka-: *katinka-*, *katinkat-ake*, *katiqári?*.
214. 'stream' \*niháte-ni: *niháteni*; *niha*, *niháteni*; *nihátni?*.
215. 'sweet potato' \*koríti: *koríti*, —, *kórítip*.
216. 'swim' \*-maata-: *-maata-*, *-maati*, *-mátanénip*.
217. 'tail' \*-risi: *-riši*, *-riši*, *-gísip*.
218. 'tapir' \*kema-ri: *kyemári*, *kema-ri*, *kíma-ri?*.
219. 'termite' \*kah'i-ro, *kači-ro*, *kahi-ro*, *kahí-ro?*.
220. 'that' \*ora: —, *ora*, *orá?*.
221. 'their' \*i...-h'egi: *i...-egyi*, *i...-hei*, *i...-égi*.
222. 'there' \*(k)anta: —, *anta*, *kantá?*.
223. 'they' \*iri-o-ri-h'egi: *iriroégyi*, *iriorihei*, —.
224. 'thigh' \*-Po-ri, *-vó-ri*, *-čitipo-ri*, *-ba-ri?*.
- The Nom *a* ← \**o* is an aberrant reflex. Compare P Ar 'arm'.
225. 'this' \*oka: *oka*, *oka*, *oká?*.
226. 'thou' \*a'wí-ro: *awí-ro*, *avi-ro*, *obi-ro?*.
227. 'three' \*mawá-: *mawáti*, *mava*, *mábwa?*.
228. 'toad' \*masi-ro: *mastro*, *masero*, *masíro*.
229. 'toe' \*č/tsapá-: *-čapág'iti*, *-ititsapa-ki*, —.
230. 'tongue' \*-nene: *-nene*, *-nene*, *-anine?*.
231. 'tongue tip' \*-gi/a-ra-si-nene: *-gýiašinene*, *-arašinene*, *-garasínine*.
232. 'tooth' \*ahí: *-áhi*, *-ahi*, *-ahí?*.
233. 'tree, stick' \*-Vnčá-to: *inčá-to*, *inča-to*, *ančá-to?*.
234. 'turtle' \*čogóta'-ro: *čogótarō*, *čootaro*, *čokotóró*. Nom has an irregular reflex of *k* ← \**g*.
235. 'two' \*a-pite-ti: *pitéti*, *apite*, *pité?*.
236. 'up' \*he-noki: *henokii*, *henoki*, *hónokyé?*.

237. 'vine' \*siwi-tsa: *šiwi-tsa*, —, *sibi-tsa*.
238. 'vine, sp.' tape-tsa: *tape-tsa*, *tape-tsa*, —.
239. 'vomit' \*ka'marankV-: *kamaranga*, *kamaranki*, *-komaranjéni?*.
240. 'walk' \*ani-tane(i)-ti: *-anei*, *-ani-ti*, *-a'netanetigye?*.
241. 'wash' kiwea: *-kwa-*, *-nkivea*, —.
242. 'water' \*ni-ha: *ní-ha*, *ni-ha*, *ni-há?*.
243. 'waterfall' \*-(p)ari-h'a-ti-rV: *-pari-a-tí-ra*, *-ari-ha-ri*, *-pari-d-ti-ti?*.
244. 'we' \*(n)a/ero-egi: *naroégyi*, *aro-ri*, *e'ró?*.
245. 'wet' \*o-ka-ha-: —, *okahataka*, *kahári?*.
246. 'what, which' \*pai-ro/ta: —, *pai-ta*, *pai-ró?*.
247. 'white' \*ka/kita-ma-rV: *kitari*, *kitamarori*, *katá-ri?*.
249. 'wind' \*tampía: *tambía*, *tampea*, —.
250. 'wing' \*-wanki: *vangyi*, *išivanki*, *ibaŋi?*.
251. 'woman' \*tsinane: *tsinane*, *činane*, *tsinané?*.
252. 'yam' \*magóna: *magóna*, *maona*, —.
253. 'ye' \*-wiroh'egi: *wiroégyi*, *avirohei*, *o-bírohégip*.
254. 'year' \*osareani-: —, *osarean-či*, *osárini?*.
255. 'yellow' \*kite-ri-: *kyiteri*, *kiteriri*, *katériro?*.
256. 'yes' \*-he: *hehe*, *nehe*; *he*, *ari*; —.
257. 'your (sg.)' \*p-, pi-: *pi-*, *p-*; *pi-*, *p-*; *po-*, *(pV-)*.
258. 'stative suffix' \*-rV, \*-ni: *-rV*, *-ni*; *-rV*, *-ni*; *-rV*, *-ni*. See 20, 50, 62, 108, 127, 163, 164, 165.
259. Indefinite possessive \*-tsi: *-tsi*, *-či*, *-tsi*. See 32, 40, 87.
260. Nominal suffix \*to, \*-ti: *-to*, *-ti*; *-to*, *-ti*; *-to*, *ti*. See 2, 41, 42, 59.

## 6.11 PROTO MADI

## 6.11.1 Introduction

The Madi group included in the Aruará of Mason, comprises the Culina (Culino, Curina) of the Purús in the frontier area of Peru and Brazil, and the Paumari, eastward in the Purus region of Brazil, along with Proto Jamamadi-Jaruará. Culina shares about 49% of vocabulary with Proto Jamamadi-Jaruará; Paumari, only from 31% to 33% with any of the others. Paumari is, however, much closer to the Madi than to any other group.

The Culina material, taken primarily from the vocabulary in Textos Culinas, 1962, by Patsy Adams, includes additional words supplied from her field notes. The Paumari is taken from field notes of Shirley Chapman and Mary Ann Odmark.

6.11.2 *The Phonemes of Proto Madi*

* <i>p</i>	* <i>t</i>	* <i>k</i>		
* <i>p<sup>h</sup></i>	* <i>t<sup>h</sup></i>	* <i>k<sup>h</sup></i>		
* <i>b</i>	* <i>d</i>	* <i>j</i>		
	* <i>s</i>	* <i>h</i>		
* <i>m</i>	* <i>n</i>			
* <i>w</i>	* <i>l</i>			
		* <i>i</i>		
		* <i>e</i>		
			* <i>o</i>	
				* <i>a</i>

6.11.3 *Phoneme Reflexes*

PM	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>p<sup>h</sup></i>	* <i>t<sup>h</sup></i>
Cul	<i>p</i>	<i>t</i>	<i>k</i>	<i>p<sup>h</sup></i>	<i>t<sup>h</sup></i>
P Jam-Jar	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>f</i>	* <i>t</i>
Pau	<i>b, f</i>	<i>d</i>	<i>k, kk</i>	<i>b, f</i>	<i>th</i>
PM	* <i>k<sup>h</sup></i>	* <i>b</i>	* <i>d</i>	* <i>j</i>	* <i>s</i>
Cul	<i>k<sup>h</sup></i>	<i>b</i>	<i>d</i>	<i>dz</i>	<i>ts<sup>h</sup>, s<sup>h</sup></i>
P Jam-Jar	* <i>k</i>	* <i>b</i>	* <i>d</i>	* <i>y</i>	* <i>s</i>
Pau	<i>kh, kk</i>	<i>b</i>	<i>d</i>	<i>j</i>	<i>s</i>
PM	* <i>h</i>	* <i>m</i>	* <i>n</i>	* <i>w</i>	* <i>l</i>
Cul	<i>h</i>	<i>m</i>	<i>n, m</i>	<i>w</i>	<i>l ~ r</i>
P Jam-Jar	* <i>h</i>	* <i>m</i>	* <i>n</i>	* <i>w</i>	* <i>l</i>
Pau	<i>h</i>	<i>m, mm</i>	<i>n, nn</i>	<i>w</i>	<i>l ~ r</i>
PM	* <i>i</i>	* <i>e</i>	* <i>a</i>	* <i>o</i>	
Cul	<i>i, e</i>	<i>e</i>	<i>a, o</i>	<i>o</i>	
P Jam-Jar	* <i>i</i>	* <i>e</i>	* <i>a</i>	* <i>o</i>	
Pau	<i>i</i>	<i>e, i</i>	<i>a</i>	<i>o, u</i>	

6.11.4 *Conditioning and Examples of Phoneme Reflexes*

- \*C →  
 \*C<sub>1</sub> → C<sub>1</sub>C<sub>1</sub> | intonational or rhythmic conditions not defined. (Pau) 8, 13, 43, 44  
 \*p → f | . . . h (Pau); b (Pau); p 19, 44, 80, 82  
 \*t → d (Pau); t 28, 32, 51, 58  
 \*k → k 8, 41, 69, 74

- \*p<sup>h</sup> → p<sup>h</sup> (Cul); b | # - (Pau); f 3, 20, 39, 85  
 \*t<sup>h</sup> → t (P Jam-Jar); t<sup>h</sup> 61, 64  
 \*k<sup>h</sup> → k (P Jam-Jar); k<sup>h</sup> 9, 21, 48, 67  
 \*b → b 9, 22, 59, 76  
 \*d → d 10, 12, 37, 55  
 \*j → dz (Cul); y (P Jam-Jar); j (Pau) 5, 6, 7, 52  
 \*s → ts<sup>h</sup> ~ s<sup>h</sup> (Cul); s 15, 79, 81, 86  
 \*h → h 5, 17, 34, 70  
 \*m → m 41, 43, 46, 52  
 \*n → m | -Vm (Cul); n 14, 65, 69, 76  
 \*w → w 8, 27, 40, 78  
 \*l → l (P Jam-Jar); l ~ r

No instance of l ~ r within a single morpheme was found in Pau.  
 15, 33, 64, 69

- \*VV →  
 \*ee → e<sup>2</sup>e (Cul); a<sup>2</sup>a (Pau) 87  
 \*oo → o (Cul); oo (P Jam-Jar) 62  
 \*aa → a (P Jam-Jar); aa (Pau) 6  
 \*ia → ie | . . . i (Cul); ia 63  
 \*ie → i (Cul); ie (P Jam-Jar) 26  
 \*ai → e (Cul, P Jam-Jar); ai (Pau) 12, 27  
 \*oa → o<sup>2</sup>o (Cul); \*ua (P Jam-Jar); u (Pau) 44

- \*V →  
 \*i → e | a . . . a (Cul); i 15, 22, 53, 84  
 \*e → i (Pau); i | . . . i; e  
 The occurrence of i | . . . i is frequent in the plural. 15, 34, 43, 85  
 \*a → o | -w (Cul); a 8, 19, 40, 43  
 \*o → o | -w (Pau); u | l-/s-/oC-; o (Cul); u 5, 17, 18, 27, 48, 77, 86

Vowel changes, especially the substitution of a back for a front vowel and e for a frequently mark the plural or gender in Cul and P Jam-Jar. 2, 20, 37, 39, 43

6.11.5 *Index of Cognate Sets*

The order of each set is the following : P Madi, Cul, P Jam-Jar, Pau. A dash marks the absence of a cognate.

1. 'bark' \*ato-li: ete-ru, Pre Jam \*atu-li, -.
2. 'blood' \*ama-ni ~ ne: eme-ne, ama-ni (Cul); \*ama-; -.
3. 'blow' \*hap<sup>h</sup>o: hap<sup>h</sup>o; \*(h)afu-; -.

4. 'bone' \*to-ne: -na-ne; \*tu-ne; —.
5. 'breast' \*i-joho: dzoho; —; juhu.
6. 'brother, elder' \*aajo: —, Pre Jar \*ayu, <sup>p</sup>aajo.
7. 'brush, woods' \*jama: dzama, \*yama, —.
8. 'canoe' \*kanawa: kanawa, Pre Jam \*kanawa, kannawa.
9. 'chest' \*bak<sup>h</sup>o: bak<sup>h</sup>o, Pre Jam \*baku, —.
10. 'child' \*bedi: bedi, Pre Jam 'small' \*bedi, —.
11. 'chili pepper' \*kasi: katsh<sup>i</sup> (Cul), —, kasi.
12. 'chin' \*k-anadai: 'beard' enede, —, kanadai.
13. 'cloth, clothing' \*maka-li: —, Pre Jar \*maka-li, makka-ri.
14. 'cloud' \*neme-: meme ets<sup>h</sup>e-ni, \*neme, —.
15. 'cold' \*sili-ni/ke: shi-ri, tshili-ni; \*sili-ni/ke; sili-ki.
16. 'dig' \*wi: wi, Pre Jam \*wi-na-ne, —.
17. 'dog' \*jomahi: —, Pre Jam \*yumahi, jummahi.
18. 'dry' \*hoko-: hoko- (Cul); \*huku-lV/-ke, —.
19. 'eat' \*-apa-i: hip<sup>a</sup>, apa; Pre Jam \*tafa-li 'he eats', ba-i.
20. 'egg' \*ap<sup>h</sup>a-ni: nap<sup>h</sup>a-ni, nep<sup>h</sup>e pl.; Pre Jam \*hefe-ne; nafa-ni.
21. 'eye' \*nok<sup>h</sup>o: nok<sup>h</sup>o pl., Pre Jam \*nuku-budi, —.
22. 'father' \*abi: abi, Pre Jam \*abi, 'my father' kidiabi<sup>i</sup>.
23. 'fear' \*(j)ophina: op<sup>h</sup>ina (Cul), —, yufina-lu.
24. 'fire' \*jip<sup>h</sup>o: dzip<sup>h</sup>o, Pre Jam yifu, —.
25. 'fish' \*aba: aba, Pre Jam \*aba, —.
26. 'flesh' \*ban-ieme: ime, Pre Jam \*banieme, —.
27. 'flower' \*mowai: mowe Pre Jam \*muwe, mowai.
28. 'foot' \*tama: —, Pre Jam \*teme, -dama.
29. 'fruit' \*bono: bono, Pre Jam \*bunu, —.
30. 'hair' \*ko-ne: ko-ne/ani, Pre Jam \*ku-ne, —.
31. 'hand' \*je-pe: -dzepe, Pre Jam \*ye-fe, —.
32. 'head' \*i-ta-ti: ita-ti, Pre Jam \*ta-ti, —.
33. 'heart' \*-bonok<sup>h</sup>o-li: bonok<sup>h</sup>o-ri, Pre Jam \*watibunuku-li, —. See 'fruit'.
34. 'heavy' \*khana-ha-lo: —, \*kanaha-lu/ke, khana-ki.
35. 'hill, mountain' \*adami: adami, \*adami, —.
36. 'I' \*o-wa: -o, owa; Pre Jam \*uwa; —.
37. 'intestines' \*badi: bodi, Pre Jam 'abdomen' \*nabadi, —.
38. 'jaguar' \*joma-ho: dsohoho, \*yuma, —.
39. 'leaf' \*apha-ni: ep<sup>h</sup>e, apha-ni; Pre Jam \*afe; —.
40. 'liver' \*pa-wa-ti: wa-ti, Pre Jam \*wa-ti, ba-wa-<sup>p</sup>i.
41. 'louse' \*kama-ti: kama-ti, \*kama-ti, kama-<sup>p</sup>i.
42. 'macaw' \*k/wa-ha: waha, Pre Jam \*ka-ha, —.
43. 'man' \*mak<sup>h</sup>a-li: mak<sup>h</sup>i, \*maki, makka-ri.
44. 'manioc' \*poa-da/ta: po<sup>h</sup>o, Pre Jam \*fua, budda.

45. 'moon' \*abal/j-iko: abadziko, \*abaliku, massiku.
46. 'mother' \*a-mi: ami, Pre Jam \*ami, -mia.
47. 'mouth' \*oni, \*l/bodi: oni; Pre Jam \*uni, \*-ludi; buddi.
48. 'my' \*o(k<sup>h</sup>)a: ok<sup>h</sup>a; Pre Jam \*u, u-ka; ua.
49. 'name' \*oni: oni, Pre Jam \*uni, —. See 'mouth'.
50. 'neck' \*nami-di: —, Pre Jam \*nami-di, nabidi.
51. 'new' \*ja-ti: dza-ti, \*ya-ti, ja-di-ni.
52. 'night' \*jo/ama: dzome; Pre Jam \*yama, juma.
53. Nominal suffix \*-ti: -ti, \*-ti, di/<sup>p</sup>i. See 33, 40, 41, 51.
54. 'old' \*bota: —, Pre Jam \*bute, buda.
55. 'people' \*madi-ha: madiha, Pre Jam \*udeune made, —.
56. 'pull' \*hoka: hoka, Pre Jam \*huka-, —.
57. 'rain' \*pa-kaki-ni: —, \*pa-, bahi. See 83 'wet'.
58. 'rock, stone' \*ja-ti: —, \*ya-ti, ja<sup>p</sup>di.
59. 'root' \*habo: habo, Pre Jam \*habu, —.
60. 'rope' \*mado: mado, Pre Jam \*madu, —.
61. 'rotten' \*bat<sup>h</sup>a: bat<sup>h</sup>a, —, bath<sup>h</sup>a.
62. 'seed' \*nooh<sup>h</sup>o: nooh<sup>h</sup>o-ni, \*niuki, —.
63. 'sing' \*ahia-lV: 'song' ahieri-ni, —, ahiara.
64. 'sit' \*itha-li-ho: itha, Pre Jam \*ita-li-hu, —.
65. 'sky' \*nama: meme, \*neme, nama.
66. 'sleep' \*amo(b)eda: eda, wada; \*amu-beda, —.
67. 'snake' \*mak<sup>h</sup>a: mak<sup>h</sup>a, \*maka, mak<sup>h</sup>a.
68. 'stand' \*wa-: wa, Pre Jam \*wa-hu, —.
69. Stative suffix, adjectival \*-ni ~ ne, -ke, -lV: -ni ~ -ne, -lV; \*-ni ~ ne, -lV, -ke; -ni, -lV, -ke. See 15, 20, 34, 43, 80
70. 'sun' \*mahi: mahi, \*mahi, 'day' mahi.
71. 'tail' \*jopa-li: dzopo-ri, Pre Jam \*yufa-li, —.
72. 'tapir' \*awi: awi, Pre Jam \*awi, —.
73. 'thou' \*ti-a/wa: tia, Pre Jam \*tiwa, —.
74. 'throw' \*koro: koro, Pre Jar \*kuru-, —.
75. 'tobacco' \*sina: shina, Pre Jam \*sina, —.
76. 'tongue' \*ebanV: ebeno, Pre Jam \*ebene, -báni.
77. 'tooth' \*ino: dzo, ino; Pre Jam \*inu; inu.
78. 'tree, stick' \*awa: awa, Pre Jam \*awa, awa.
79. 'twist' \*si-li: shi-ri, —, si-ri.
80. 'two' \*pamV-: pama-ni, Pre Jam \*fami-ni, bami-ki.
81. 'wash' \*soko-: sukuma-ne, Pre Jar \*suku-ke, —.
82. 'water' \*pa-ha: pas<sup>h</sup>o, Pre Jam \*fa-ha, pāhā.
83. 'wet' \*pa-ha, (\*ph<sup>h</sup>a-ha): Cul phaha; Pre Jam \*afitu-ha-lu, Pre Jar \*pa-kē; Pau ába-ki.

Culina reflects \*ph where the others reflect \*p. The noncontiguous h may

have affected the Cul, or the others may have changed through analogy to 82 'water'. Note that Cul also reflects \**p* in 'water'. Cf. also 57 'rain'.

- 84. 'what' \*na-hi-na/ko: *neheko*, —, *nahina*.
- 85. 'wing' \*ephe: *ephe*, Pre Jam \**efe*, —.
- 86. 'worm' \*some: *tshomi*, \**sume*, —.
- 87. 'yes' \*hee: *he<sup>2</sup>e*, —, *ha<sup>2</sup>ã*.

#### 6.11.6 Proto Jamamadi-Jaruará

##### 6.11.6.1 Introduction

The Jamamadi (also Yamamadí) language is classified by Mason as of the Aruará Group "of probable Arawakan affinity". It shares 80% of the comparable vocabulary available at this time with Jaruará. I have not been able to identify the Jaruará in any classification.

Jamamadi is spoken in the region of the headwaters of the Purus River in Brazil.

Jamamadi data are taken from field notes, 1963–1964, of Robert and Barbara Campbell; the Jaruará by Joyce Kerr.

##### 6.11.6.2 The Phonemes of Proto Jamamadi-Jaruará

* <i>p</i>	* <i>t</i>	* <i>k</i>
* <i>b</i>	* <i>d</i>	
* <i>f</i>	* <i>s</i>	* <i>h</i>
* <i>m</i>	* <i>n</i>	
* <i>w</i>	* <i>l</i>	* <i>y</i>
		* <i>i</i>
		* <i>u</i>
		* <i>e</i>
		* <i>a</i>

Nasal vowels appear in free variation with oral vowels in word-final syllables in Jaruará. They are treated as nonphonemic. Stress is not reconstructed. It is written only in Jaruará in which it appears to conform roughly to the pattern predictable in the other languages.

##### 6.11.6.3 Phoneme Reflexes

P Jam-Jar	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>b</i>	* <i>d</i>
Jam	<i>f</i>	<i>t</i>	<i>k</i>	<i>b</i>	<i>d</i>
Jar	<i>p</i>	<i>t</i>	<i>k</i>	<i>b</i>	<i>t</i>
P Jam-Jar	* <i>f</i>	* <i>s</i>	* <i>h</i>	* <i>m</i>	* <i>n</i>
Jam	<i>f</i>	<i>s</i>	<i>h</i>	<i>m</i>	<i>n</i>
Jar	<i>f, p</i>	<i>s, ts</i>	<i>h</i>	<i>m</i>	<i>n</i>

P Jam-Jar	* <i>w</i>	* <i>l</i>	* <i>y</i>
Jam	<i>w, Ø</i>	<i>l</i>	<i>y</i>
Jar	<i>w</i>	<i>l ~ r</i>	<i>y ~ dy</i>
P Jam-Jar	* <i>i</i>	* <i>e</i>	* <i>a</i>
Jam	<i>i</i>	<i>e, i</i>	<i>a</i>
Jar	<i>i</i>	<i>e</i>	<i>a</i>
			<i>u, o</i>

##### 6.11.6.4 Conditioning and Examples of Phoneme Reflexes

###### \*C →

- \**p* → *f* (Jam); *p* (Jar) 26, 29
- \**t* → *t* 1, 31
- \**k* → *k* 9, 11, 13, 20
- \**b* → *b* 10, 16, 19, 34
- \**d* → *d* (Jam); *t* (Jar) 14, 34
- \**f* → *p* | # (Jar); *f* 2, 4
- \**s* → *ts* | # (Jar); *s* 8, 10, 12, 35
- \**h* → *h* 11, 13, 15, 25
- \**m* → *m*; *b* occurs as a deviant reflex for *m* in 37 'sun'. 3, 6, 7, 12
- \**n* → *n* 2, 5, 7, 13
- \**w* → Ø | o- (Jam); *w* 1, 15, 18, 25
- \**l* → *l ~ r* (Jar); *l* (Jam) 8, 22, 31
- \**y* → *y ~ dy* (Jar); *y* (Jam) 6, 16, 17, 18

###### \*VV →

- \**uu* → *u* (Jam); *o* (Jar) 28

###### \*V →

Jar has an occasional *a* substituting for any vowel. 10, 13, 30, 36.

- \**i* → *i* 1, 2, 8, 9
- \**e* → *i* | ... *i* (Jam); *e* 5, 7, 8, 16
- \**a* → *a* 1, 2, 3, 4
- \**u* → *u* | oC-/. . . o/y- (Jar); *o* (Jar); *u* (Jam) 4, 5, 11, 12, 16, 17, 22

Vowel changes, especially the substitution of *e* for *a* frequently mark the plural or gender in both languages. 3, 12, 15, 17.

##### 6.11.6.5 Index of Cognate Sets

In the following sets the Jam reflex immediately follows the P Jam-Jar. The Jar is last.

1. 'arrow' \*wa-ti: *wa-ti, wá-ti*.

2. 'big' \*nafi-ni/-ke: nafi-ni 'thick', náfi-ké.
3. 'blood' \*ama-: ama (Jam); ama, eme (Jar).
4. 'blow' \*(h)afu-: afu-namuku, hafo-fo-ké.
5. 'bone' \*tu-ne: tu-ne, tó-ne.
6. 'brush, woods' \*yama: yama, yáma.
7. 'cloud' \*neme-: nemesabo, nemehá-ni.
8. 'cold' \*sili-ni/ke: sili-ni, siri-ké.
9. 'corn' \*kimi: kimi, kimi.
10. 'dirty' \*bisi-ne/ké: bisi-ne, bisá-ké.
11. 'dry' \*huku-lV/-ke: huku-le-lu, hoku-ri-ké.
12. 'good' \*amusa-ni/ke: amusi-ni, amósa-ké.
13. 'heavy' \*kanaha-lu/ke: kanaha-lu, kánahá-ké.
14. 'hill, mountain' \*adami: adami, atúmi.
15. 'hot' \*hiwa-ni/ke: hiwi-ni, hiwa-ké.
16. 'house' \*yube: yube, yúbe.
17. 'jaguar' \*yuma: yumahi, dyúme.
18. 'knife' \*yimawa: yimawa, dyimawá.
19. 'long' \*yabu-li/ke: yabu-li, yábo-ké.
20. 'louse' \*kama-ti: kama-ti, káma-tí.
21. 'man' \*maki: maki, maki.
22. 'moon' \*abaliku: abaliku, abaliku.
23. Nominal suffix \*-ti: -ti, -ti. See 1, 20, 23, 26.
24. 'new' \*ya-ti: ya-ti (Jam); dya-ti, ya-ti (Jar).
25. 'path' \*hawi: hawi (Jam); hawi, awa<sup>3</sup>habi (Jar).
26. 'rain' \*pa-: fakaki-ni, pahá.
27. 'rock, stone' \*ya-ti: ya-ti, dya-ti.
28. 'seed' \*nuuki: nuki, nó'ki.
29. 'she' \*pana: fana, pána.
30. 'sing' \*ayake: aya-ke, áya-ká.
31. 'skin' \*ata-lu: ata-lu, áta-ló.
32. 'sky' \*neme: neme, neme.
33. 'sleep' \*amu-beda: amu-na-hu, amobe<sup>3</sup>dá.
34. 'small' \*bide: bide/o, bitye.
35. 'smooth' \*isu-le-lu/ke: isu-le-lu, isu-ké.
36. 'snake' \*maka: maka, maká.
37. 'sun' \*mahi: mahi, báhí.
38. 'walk' \*yaka-: yaka, yakáuké.
39. 'wind' \*bu-ni: bu-ni, bó-ni.
40. 'worm' \*sume: sumé, tsóme.
41. Stative, adjectival suffix \*-ni ~ ne, -lV, -ke: -ni ~ -ne, -lV (Jam); -ni ~ -ne, -lV, -ke (Jar). See 8, 28, 29, 37, 38.
42. 'know' \*h/t-iwatu-: hiwatui-ne, tiwatútike.

## 6.12 PROTO NEWIKI

6.12.1 *Introduction*

The Newiki group is designated by the Maniba form of the common word for 'people'. It is based on reconstructions of Western Newiki and Eastern Newiki, found in Sections 6.12.6 and 6.12.7, respectively, plus forms from the individual languages reconstructed as Pre... according to the proto phonemes of the subgroup. The Newiki languages belong to the Rio Negro Group of Mason.

6.12.2 *The Phonemes of Proto Newiki*

*p	*t	*k
*f	*s	*h
	*ts	*č
	*d	*j
*m	*n	*ñ
*w	*l	*y
		*i
		*u
		*e
		*a

6.12.3 *Phoneme Reflexes*

P New	*p	*t	*k	*f	*s	*h
P W New	*p	*t	*k	*f	*s	*h
P E New	*p	*t	*k	*f	*s	*h
P New	*ts	*č	*d	*j	*g	*m
P W New	ts (Pia)	*č	*d	*j	*k	*m
P E New	*ts	*č	*d	*j	*g	*m
P New	*n	*ñ	*w	*l	*y	
P W New	*n	*ñ	*w	*l	*y	
P E New	*n	*ñ	*w	*l	*y	
P New	*i	*e	*u	*a		
P W New	*i	*e	*u	*a		
P E New	*i	*e	*u	*a		

6.12.4 *Conditioning of Phoneme Reflexes*

Since most of the phoneme reflexes show a one to one correspondence as charted in Section 6.12.3, only the few exceptions are listed here.

\*CC →

- \*ph → ph (P W New); p (P E New) 5
- \*kh → kh (P W New); k (P E New) 7

\*C →

- \*g → k (P W New); g (P E New) 44
- \*ñ → ñ (P W New); n (P E New) 39

\*VV →

- \*ia → e | s- (P W New); ia 14, 20, 24, 56
- \*ui → u | -CVV (P W New); ui (-CVV) (P E New); ui (P W New); i (P E New) 3, 9, 13
- \*ai → i | iw- (P W New); ai 17, 37, 45, 58

#### 6.12.5 Index of Cognate Sets

The Proto Newiki appears first, Proto Western Newiki second, and Proto Eastern Newiki third in the following sets:

1. 'all' \*piyuu-ke: Pre Yuc \*piyúuke, P Cur-Man \*piyúu.
2. 'big' \*maka-ita/da-li: Pre Pia \*makaita 'all', P Cur-Man \*maka-da-li.
3. 'bird' \*kuiipi(a)-lV: \*(k-)upila, \*p/kuiipi(a)-lV/da.
4. 'blood' \*-ila-: \*-ila-, \*-ila-.
5. 'bone' \*-i-aphi-na-SI: \*-i-aphi-ná-SI, \*-ápi.
6. 'bow' \*-de-má-pi/u-: Pre Pia \*-demápu, Pre Tar \*depikakúa-li.
7. 'chest' \*khu(u)-da/SI: \*khu-ta/SI, P Cur-Man \*kuu-da.
8. 'corn' \*ka-SI-ná-i-li: \*ka-SI-nái, Pre Tar \*kana-li.
9. 'crocodile' \*ka(a)-SI-žui-lV: \*ka(a)-SI-žui-lV, Pre Tar \*kaži-la.
10. 'die' \*ma-ja-mi/taa-ka-á/wa: \*ja-taa-ka-á/wa, P Cur-Man \*ma-žami-ka.
11. 'drink' \*ilá-ka: \*ilá-ka, P Cur-Man \*ila-ka.
12. 'egg' \*e-SI-fé-SI: \*e-SI-fé-SI, \*-éfe.
13. 'eye' \*thúi: \*thúi, P Cur-Man \*-thi.
14. 'fire' \*sia-wV-ke-ila-': \*sewi-ke-ila-', Pre Tar \*siá-wa.
15. 'fish' \*kupa/e-SI-ña: \*kupa-SI-ña, kupe.
16. 'flesh' \*ii-pe/na-SI: \*ii-na-SI, -íipe.
17. 'flower' \*me-iwai-ti-pe: \*iwí-pe/naa-SI, \*me-iwa-i-ti-pe.
18. 'fly' \*-ala-ka-wa: Pre Pia \*-ala-ka-wa, P Cur-Man \*-ala-ka-wa.
19. 'foot' \*hi-i-pa-lV: \*hii/a-pa-lV, P Cur-Man \*-ipa.
20. 'full' \*pa/pu-ka-ni-á: \*pu-niá, P Cur-Man \*pa-ká-na/i.
21. 'green' \*i-pulé-e-li/ni: \*ipulé-li/ni, \*-pulée-.
22. 'he' \*li-: Pre Yuc \*li-, P Cur-Man \*li-.
23. 'head' \*he-wí-da: \*he-wida, \*-wi-da.

24. 'hear' \*-e-miá-ka: \*-emiá-ka, P Cur-Man \*-imia-ka.
25. 'house' \*pa-na/ni-SI: \*pa-na/SI /pi-eti/, Pre Tar pani-SI.
26. 'I' \*nu-SI-ka/wa: \*SI-nu-ká/a, \*núhwa.
27. 'jaguar' \*jáawi: \*jáawi, Pre Tar \*jaawi.
28. 'kill' \*i-nu-a-ka: \*i-nú-aka-ni, P Cur-Man \*-nu-a-ka.
29. 'knee' \*i/u-lúi-pa-či-SI: \*ilúi-pači-SI, \*u-pa-SI-.
30. 'leaf' \*a-pána-pe/ka-le: \*a-pána-ka-le, \*panápe.
31. 'liver' \*-u-paná-SI: \*-u-paná-SI, \*(si)-upána.
32. 'man' \*a-ah-čia-ña-li: \*a-čia-ña-li, \*aahčia-li.
33. 'many' \*(m)ani/upa-: Pre Pia \*manupa-, P Cur-Man hanipa.
34. 'moon' \*ka-hee-SI-li: \*khée-li, \*ka-SI-li.
35. 'mouth' \*-núma: \*-numa, P Cur-Man \*núma.
36. 'name' \*'-pitana: Pre Pia -pitana, Pre Man pitana.
37. 'new' \*wali-sái-da-li: \*wali-sái, P Cur-Man \*wali-te/da-li ← P E New \*wali-sai-da-li.
38. 'night' \*a/de-pi-čiwapa: \*-ápi, \*dee-pi-čiwapa.
39. 'path' \*-ni/aa-pu: \*a/i-ña-a-pu, \*(h)inípu.
40. 'people' \*we/i-nawiki-a: \*we/i-nawiki-a, Pre Man \*naviki.
41. 'red' \*ki-ila-i-lV/ni: \*ki-ila-i-lV/ni, P Cur-Man \*ilai-.
42. 'river' \*uni-fa: \*úní-fa, Pre Tar \*uni-fa.
43. 'rock' \*(h)iipa-ku-da: \*iipa-ku, Pre Tar hiipa-da.
44. 'root' \*hai-gu-ma-pa-lV: \*-apá-le, \*hai-gu-mapá-li.
45. 'sand' \*kai-iipa(i)-na/da: \*kái-iipa-na/da, \*kai-pai-na/da.
46. 'skin' \*o/i-má-mi: \*-íma-mi, Pre Pal úmaui.
47. 'sleep' \*máa-ka-tua: \*máa-ka-tua, P Cur-Man \*-máa-ka.
48. 'small' \*a-tsú-u-/me-li: Pre Pia \*atsumeli, P Cur-Man \*tsuu-.
49. 'smoke' \*a-ísa/i-: \*-ísa-, \*a-ísi/a.
50. 'snake' \*ku/a-ma-SI-pi: \*ku/a-ma-SI-pi, Pre Tar \*ampi.
51. 'stick' \*háiku-te-: Pre Pia \*áiku, Pre Cab \*tekukáhaaya, Pre Tar hai-kutsuinatikianha.
52. 'stone' \*(h)i-ípa-da: \*i-ípa, P Cur-Man \*hiipa-da.
53. 'sun' \*k/heé-li: \*éeli, \*k/heéeli (See 'moon').
54. 'tail' \*-sipí-: \*-sipí-, \*-sípi.
55. 'this' \*ti-yáahi: Pre Pia \*yáahi, P Cur-Man \*tiyaahi.
56. 'thou' \*pi-a/ká: \*pi-a/ka, \*pía.
57. 'tongue' \*na-ni: \*ná-ni, \*-ná-ni.
58. 'tooth' \*yai-mi-SI-n-da: \*yaiín, Pre Tar \*yai-minda.
59. 'tree, stick' \*aha-iku/a-wana: \*ah-aa-waná, \*a-ha-iku.
60. 'two' \*i-žamáa-: Pre Yuc \*ižamáa, P Cur-Man \*žamaa-da.
61. 'walk' \*-a-apu/á-ka-wa: \*-a-apu/á-ka-wa, P Cur-Man \*-a-ka-wa.
62. 'water' \*(h)u-úni: \*hu-úni, \*(ú)uni.
64. 'white' \*halee-ni: Pre Yuc \*halee-ni, P Cur-Man \*halee-.

65. 'who' \**khu(a)-ka-wi-na-ani*: \**kawi-ná-ani*, P Cur-Man \**khu(a)ká(n)*.  
 66. 'wind' \**h/ka-u-le-ná*: \**ka-u-le-ná*, Pre Tar \**halé-da*.  
 67. 'woman' \**iina-wi-lu*: \**iina-na-wi-lu*, \**iina-lu*.  
 68. 'worm' \**u-ma/i-pi*: \**ma/i-pi*, Pre Tar \**umapi*.  
 69. 'worm' \**ka(a)wi-SI*: Pre Pia \**kaawi*, Pre Pal *kawV-SI*.  
 70. 'year' \**kaemú*: Pre Pia \**kaemú*, Pre Pal \**kae'muki*.  
 71. 'yellow' \**e-ewá-li*: \**eevá-li*, P Cur-Man \**ewa(a)*.

#### 6.12.6 Proto Western Newiki

##### 6.12.6.1 Introduction

The languages of the Western Newiki group are Piapoco, Cabiyari (Cauyari, Kauyari) and Yucuna of Southeastern Colombia. Timothy and Muriel Sudo provided the data for Piapoco, a vocabulary of 346 words taken in 1966; Alva Wheeler, 1963, and Junia Schauer, 1965, for Cabiyari, 114 words; Stanley and Junia Schauer, 1966, for Yucuna, 364 words. Only the Yucuna was phonemicized.

*H* in Yucuna represents a  $\emptyset \sim h$  alternation in a morphophonemic class in which a word-initial *h* has developed.

The morpheme *-SI*, discussed in section 6.2, is very prominent in Yucuna where it is reflected by *-si*  $\sim$  *-s*, as also in Cabiyari. It appears as *-θ*  $\sim$  *-i* in Piapoco.

Cabiyari has occasional long consonants, probably due to the loss of the vowel of some optional morpheme CV which did not occur in the other languages. The consonant length has not been represented in the reconstructions where evidence for the lost vowel was not available.

##### 6.12.6.2 The Phonemes of Proto Western Newiki

* <i>p</i>	* <i>t</i>	* <i>k</i>
* <i>f</i>	* <i>s</i>	* <i>h</i>
		* <i>č</i>
	* <i>d</i>	* <i>ʃ</i>
* <i>m</i>	* <i>n</i>	* <i>ñ</i>
* <i>w</i>	* <i>l</i>	* <i>y</i>
	* <i>i</i>	* <i>u</i>
	* <i>e</i>	* <i>a</i>

Stress has been reconstructed as far as possible as in Yuc because phonemic stress is indicated only in Yuc. It is probable that stress was phonemic in P W New, highly improbable that it corresponded to stress in Yuc, since stress shift is frequent in Arawakan languages, and the vowel losses in Yuc are quite likely due to change of stress.

#### 6.12.6.3 Phoneme Reflexes

P W New	* <i>p</i>	* <i>t</i>	* <i>k</i>	* <i>f</i>	* <i>s</i>	* <i>h</i>
Pia	<i>p, b</i>	<i>t, d</i>	<i>k</i>	<i>b, b</i>	<i>s, θ</i>	$\emptyset$
Cab	<i>p</i>	<i>t</i>	<i>k</i>	<i>p</i>	<i>h, t</i>	<i>h</i>
Yuc	<i>p</i>	<i>t</i>	<i>k</i>	<i>p, w</i>	<i>s, h</i>	<i>h</i>

P W New	* <i>č</i>	* <i>d</i>	* <i>ʃ</i>	* <i>m</i>	* <i>n</i>
Pia	<i>č, θ</i>	<i>d, t</i>	<i>č</i>	<i>m</i>	<i>n</i>
Cab	<i>č, t</i>	<i>t</i>	<i>č</i>	<i>m</i>	<i>n</i>
Yuc	<i>č</i>	<i>l</i>	<i>y</i>	<i>m</i>	<i>n</i>

P W New	* <i>ñ</i>	* <i>w</i>	* <i>l</i>	* <i>y</i>
Pia	<i>y</i>	<i>w, b</i>	<i>l, r</i>	<i>y</i>
Cab	<i>y</i>	<i>w, u</i>	<i>l, r</i>	<i>y</i>
Yuc	<i>ñ</i>	<i>w, u</i>	<i>r</i>	<i>y</i>

P W New	* <i>i</i>	* <i>e</i>	* <i>u</i>	* <i>a</i>
Pia	<i>i, u</i>	<i>e, a</i>	<i>u, o</i>	<i>a, e</i>
Cab	<i>i</i>	<i>e</i>	<i>u, wi</i>	<i>a, e</i>
Yuc	<i>i, e</i>	<i>e</i>	<i>u, w</i>	<i>a, e</i>

#### 6.12.6.4 Conditioning of Phoneme Reflexes

##### \*CC →

- \**ph* → *ph* (Yuc); *p* 19
- \**th* → *th* (Cab); *t* 28, 40
- \**kh* → *kh* (Cab); *k* 22, 79
- \**nh* → *nh* (Cab); *n* (Pia) 83

##### \*VCV →

- \**ewe* → *u* (Pia); *ewe* (Cab) 15
- \**aahi* → *ai* (Pia); *a·yi* (Cab); *ahe* (Yuc) 77
- \**yai* → *yei* (Pia); *i·a* (Cab); *ai* (Yuc) 122

##### \*C →

- \**p* → *b* | -*a/-e* (Pia); *p* 70, 74, 83, 91
- \**t* → *d* | -*e/-u/i-a* (Pia); *t* 21, 32, 73, 86
- \**k* → *k* 29, 30, 41, 52
- \**f* → *b* | -*a* (Pia); *b* (Pia); *w* | *si-* (Yuc); *p* 38, 62
- \**s* → *s* | -*ih* (Yuc); *h* | #-/V-iC (Cab, Yuc); *h* ~ *s* | -*i#* (Yuc); *s* | #-(Pia); *θ* (Pia); *t* (Cab); *s* (Yuc) 6, 23, 29, 69, 107

See note in introduction regarding *-SI*.

- \**h* → *h* (Cab, Yue); Ø (Pia) 6, 113, 123, 128
- \**č* → *t* | -*i* (Cab); *θ* | -*i* (Pia); *č* 12, 18, 25, 76
- \**d* → *d* | *u-a* (Pia); *l* (Yue); *t* 51, 59
- \**j* → *y* (Yue); *č* 6, 24, 45, 66
- \**m* → *m* 3, 11, 81, 115
- \**n* → *n* 4, 18, 29, 70
- \**ñ* → *ñ* (Yue); *y* 46, 76, 91
- \**w* → *b* ~ *w*, *u* (Pia); *w*, *u* 36, 49, 59, 88
- \**l* → *r* (Yue); *l* ~ *r* (Pia); *l* = *r* (Cab)

The phonetic Cabiyari word-lists show *r* in the notes of one recorder where *l* appears in the other. Probably only one phoneme is represented. 16, 35, 41, 79

- \**y* → *y* 52, 132, 134

- \*VV →
- \**aa* → *a<sup>ə</sup>a* | ... *aa* ... / *a* ... *a* (Yue); *e<sup>ə</sup>e* | *ñ-* (Yue); *a* | ... *aa* ... 32, 37, 47, 91, 123
- \**ee* → *e* | *ʃ-* (Pia); *e<sup>ə</sup>e* | *ʃ-* (Yue) 5
- \**ii* → *e* (Yue) 9, 95
- \**uu* → *o<sup>ə</sup>o* | *aa* ... (Yue); *u<sup>ə</sup>u* (Yue); *u* | *aa* ... (Pia); *u* | *a* ... (Cab) 26, 41, 43

V<sub>1</sub>V<sub>1</sub>(*h*)V<sub>2</sub> → V<sub>1</sub>V<sub>2</sub> (Pia) 77

\*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub> (Yue); V<sub>1</sub>, V<sub>1</sub>V<sub>1</sub> 3, 21, 32, 47, 48, 79

- \**aiii*: *e<sup>ə</sup>e* (Yue) 102
- \**ie* → *ie* (Pia); *e* (Cab); *a<sup>ə</sup>a* (Yue) 14, 63
- \**iu* → *io* (Pia) 108
- \**ia* → *a* | *i* ... *i* (Pia); *i* | *i* ... *i* (Yue); *i* | *č-ñ* (Cab, Yue); *e* | *w-* (Yue); *a<sup>ə</sup>a* (Yue); *ia* 55, 60, 76, 85, 94, 129
- \**ei* → *ei* (Pia); *i*, *i* (Cab); *e* (Yue) 44, 140
- \**ui* → *ui* (Pia); *u* 40, 68, 99
- \**ua* → *oa* (Pia); *ua* (Cab); *o* ~ *o<sup>ə</sup>o* (Yue) 17, 31, 67
- \**ai* → *e* | SIC-/s- (Yue); *a* | *ʃ-* (Yue); *a*, *a<sup>ə</sup>a* (Cab); *ai* 7, 29, 45, 84
- \**ae* → *a* (Pia) See P New 70 'year'
- \**au* → *au* (Pia); *a* 71, 133

\*V →

- \**i* → *u* | *u..u* (Pia); *e* | *k-* (Yue); *i* 16, 19, 59, 92
- \**e* → *a* | *a...a* (Pia); *e* 62, 73, 98, 113
- \**u* → *o* | *č-* (Pia); *u* (Pia); *i* | *č...i* (Yue); *u*, *w* 18, 22, 75, 81
- \**a* → *e* | *i...i/e...i*; *a* 4, 16, 21, 102, 121

#### 6.12.6.5 Index of Cognate Sets

The order of the sets is as follows : P W New, Pia, Cab, Yue. A dash marks the position when a cognate does not occur.

1. 'abdomen' \*-tēe-lV: *dé*, *té·re*, —.
2. 'Adam's apple' \*'-ala-: *-ala-ri*, —, *tópa*ala-hí.
3. 'anaconda' \*máanu: *má·nu*, *ma·nu*, —.
4. 'arm' \*a-na-pí-: *-ana*, *-napí*, *a<sup>ə</sup>panapítá-hi*.
5. 'armadillo' \*jeé: *če*, —, *ye<sup>ə</sup>é*.
6. 'arrow' \*isihkí-ku-lV: *čukuru*, —, *isihíla*. Evidence for the sequence reconstructed is in Kin *siike*. See 6.7.5 and 6.6.
7. 'ash' \*pa(i)-lV: *bali*, —, *papilá*.
9. 'baby' \*kilá-: *kiiraθi*, —, *keráko<sup>ə</sup>opi*.
10. 'bad' \*pV-wa-lV: *báiberi*, —, *pu<sup>ə</sup>uwaré*.
11. 'bark' \*'-ma-: *-mami*, —, '-ma.
12. 'beard' \*-či-: *θí-noma*, —, *a<sup>ə</sup>areci-hi*.
13. 'bird' \*(k-)upíla: —, *pupíra*, *kupírapap<sup>h</sup>á*.
14. 'bite' \*aa-SI-mié-ka: *-aa-mié-ka*, —, *ahma<sup>ə</sup>á*.
15. 'black' \*kéwelV-: *kú-li-ri*, *kewereka*, —.
16. 'blood' \*-ila-: *-iraná*, *pi·ra*, *íra-hi*.
- (Cab *i* represents pronomial prefix as well as root.)
17. 'blow' \*-puá-: *poáni*, —, *apo<sup>ə</sup>o*.
18. 'body hair, feathers, fur' \*-ču-SI-na-SI: *-čona*, *čuna*, *čihne-hí*.
19. 'bone' \*i-aphi-ná-SI: *-api*, *piápi*, *aphiná-hi*.
20. 'brush, woods' \*-íma-: *analíma*, —, *Hima<sup>ə</sup>alami*.
21. 'canoe' \*-lita: *iida*, *pi·ta*, *Hita*.
22. 'chest' \*-khú-ta/SI: *-ukúta*, *ukhú*, *i<sup>ə</sup>likú-hi*.
23. 'chigger' \*isitú: *iθídu*, —, *ihitú*.
24. 'child' \*-juw-': —, *ir-ičuwi*, *yuwa-hi*.
25. 'chin' \*'-či-: *θí-noma*, —, *a<sup>ə</sup>aráči-hi*.
26. 'claw' \*(su)-upá: *-u·ba*, *-upa*, *su<sup>ə</sup>upá-hi*.
27. 'clothing' \*lumaká-: —, *-ito<sup>ə</sup>orumaka*, *a<sup>ə</sup>arumaká-hi*.
- 'cloud' See 138.
28. 'coca' \*i-pathú: —, *pathú*, *ipatú*.
29. 'corn' \*ka-SI-nái: *kanái*, *káhna*, *kahné*.
30. 'crocodile' \*ka(a)-SI-ču-lV: *kačui-ri*, *ká·ču-ri*, *kahyú*.
31. 'crown of head' \*p/i-uáta: *poáta*, —, *i<sup>ə</sup>iviáta-he*.
32. 'die' \*ja-taa-ka-á/wa: *-ye-ta-ka-wa*, —, *taka<sup>ə</sup>á*.
- (For *a* in the first syllable, see P New 'die'.)
33. 'dog' (See jaguar) \*jáawi: —, *ča·wi*, *yáwi*.
34. 'doorway (See 'mouth')' \*-numa-ná-SI: *-numa*, —, *numaná-hi*.
35. 'drink' \*ilá-ka: *-iraka*, *ka-ila*, *-irá*.

36. 'ear, inner' \*-iSI-wi-SI: -ui, *puí*, -ih-wi-hí.
37. 'earth' \*h/taa-kaa-wá-li: káa-li, tá-ka-li, *ehapavá*.  
See Par *waikowa* for evidence for the morpheme sequence.  
'eat' See 139.
38. 'egg' \*e-SI-fé-SI: -ébeθi, —, *ehwé-hi*.
39. 'elbow' \*'-ana-ta: -ana-daku-ré, —, *tahwáñaaana-hi*.
40. 'eye' \*thúi: -túi, *thu*, —.
41. 'fear' \*kaa/elíu-kV: ká-lukane, *ka-luke*, *keropó*.
42. 'finger' \*-kapi-wána: kapi-dukuana, -kapiwana, *yatewána-hi*.
43. 'fingernail' \*-uupá: -ba, —, *Huupá*.
44. 'fire' \*sewi-ke-ila-': sebíkei, *kira*, keratá-ni. (Compare 'red')
45. 'firewood' \*ki/si-žái: kičái, —, *siyá*.
46. 'fish' \*kupa-SI-ña: kubai, —, *hiña*.
47. 'flea' \*kaawa-SI-ná-li: kaawanáiri, —, *kawaahné*.
48. 'flesh' \*ií-na-SI: i-náθi, *pi*, -hi.
49. 'flower' \*iwí-pe/naa-SI: -ibi-náaθi, *pi-wipeh*, -wií.
50. 'foot' \*hit/a-pa-LV: '-abari, *hi-pa*, —.
51. 'forehead' \*pudá: '-puda, —, *pulápa-hi*.
52. 'fruit, seed' \*'-ya-ka: -ya-kaná-thi, aháyaka, —.
53. 'full' \*pu-niá/ute: ipuniá-, —, *puθute*.
54. 'go' \*-ya-wá-na: -yawá, -wa-na, *ihná*.
55. 'grass' \*imiá-či: imáthikei, —, *Himíči*.
56. 'green' \*ipulé-li/ni: ipulé-ri, —, *ipuré-ni*.
57. 'hammock' (Compare 'sleep') \*amáka: ámaka, —, *Hamáka*.
58. 'hand' \*káapi: -káapi, *ka·pi*, —.
59. 'head' \*he-wida: -iwita, *hiwita*, *wílaparu-hi*.
60. 'hear' \*-emiá-ka: -émia-ka, —, *Hemádá*.
61. 'heart' \*wa-SI-wa-SI: wawa, —, *wahwe-hí*.
62. 'hen' \*kafé-mai: kabámai, —, *kapére*.
63. 'house' (a) \*pa-na/SI, (b) \*ka-pí-eti: kapí, *pe-ti/-pa-θna*, *pa-hí*. Forms (a) and (b) are probably morphophonemic variants.
64. 'hummingbird' \*síi-pí: *θi·pi*, —, *piθimi*.
65. 'I' \*SI-nu-ká/a: *nóa*, *hnú*, *nuká*.
66. 'jaguar' \*jáawi: ča·bi, ča-wi, *yáwi*.
67. 'kill' \*i-nú-aka-ni: -nóa-ka-ni, —, *inó*.
68. 'knee' \*ilúi-pači-SI: Cu-urui, —, *iθ-irúpači-hi*.
69. 'lake' \*-ka-li/é-sa: kálíθa, *kálita*, *kaésa*.
70. 'leaf' \*a-pána-ka-le: bana-ka-re, *θapána*, -pana.
71. 'left (side)' \*a-pá-SI-lú/u: apáu, —, *pahrú*.
72. 'leg' \*ka-wa: -kawa, -kawa, —.
73. 'lip' \*-tulé-: -dure, —, *turé-hi*.
74. 'liver' \*-u-páná-SI: -ubana, -úpana, *paná-hi*.

- 'louse' See 140.
75. 'macaw' \*-a-lú: atá-lu, *na-lu*, *laθarú*.
76. 'man' \*a-čia-ñá-li: abiari, *tiyáre*, ačiñá.
77. 'manioc' \*kini-kaahí-: kinikai, ká-yí, *kahéru*.
78. 'medicine man' \*ka-mali-: kamarikeri, —, *mariθičú*.
79. 'moon' \*khéé-li: kék-ri, khé-ri, kék-ri.
80. 'mouse' \*íli: íiri, —, *híri*.
81. 'mouth' \*-núma: -núma, *núma*, númera-hi.
82. 'my' \*nu-: nV-, *nu*, *nu-leθehé*.
83. 'neck' \*kanhá-pi: -kanápi, *kanhápi*, *núrupi-hi*.
84. 'new' \*wa-li-sái: wáliθai, —, *wa-hé*.
85. 'night' \*-ápí: —, *niápi*, *lapí*.
86. 'nose' \*i-takú: -takú, -takú, *takú-hi*.
87. 'old man' \*píyu-li/ke: bérí, —, *píyuke*.
88. 'our' \*wa-: wa-, *wá*, *wa-leθehé*.
89. 'palm, chonta' \*pipili: —, *pípiri*, *pipili*.
90. 'palm, assai' \*man/laka-: manakái, —, *malakála*.
91. 'path' \*a/i-ñá-a-pú: áyapu, *yápu*, iñepépú.
92. 'people' \*we/i-nawiki-a: we-nábikya, —, *inaθuké*.
93. 'piranha' \*u-má: umai, —, *maí*.
94. 'rain' \*(u)uni-a/hú-wa-ka: unía, *u-nihúwaká*.
95. 'red' \*ki-ilá-i-LV/ni: ki-re-ri, *ki·ra*, *kerá-ni*.
96. 'river' \*úni-fa: uniba, —, *Húni*.
97. 'rock' \*iipa-ku: i-baku, —, *Hípa*.
98. 'root' \*-apá-le: —, *θapá-le*, -aθapá-re.
99. 'round' \*makapukui-: makapukui-ri, —, *makapúkuči-ni*.
100. 'saliva' \*ya-a-wi-rú-pa/hi: -a-wi-ru-ni, -arúpa, *awi-hí*.
101. 'salt' \*íwi-: iθiduma, *θiwi*, —.
102. 'sand' \*kái-iipa-na/da: káina, *káθa*, *keθepe*. See 'rock'.
103. 'shoulder' \*wakú-: wakuta, —, *wakúlaθapa-hi*.
104. 'skin' \*-ima-mi: -imami, *θiámi*, *íma-hi*. See 'bark'.
105. 'sleep' \*-máa-ka-tua: -máaka, —, *kamáto*.
106. 'smell' \*a-miá: -mia, —, *amaθá*.
107. 'smoke' \*-isa-: -iθa, *θita-li*, *ísa*.
108. 'smooth' \*kapi-uni-lú/ka-ni: kapionikani, —, *kapilú-ni*.
109. 'snake' \*ku/a-ma-SI-pi: kumata, *ap-i*, *mapi-hí-pi*.
110. 'star' \*iwi-li-SI-nu: —, *wirihnu*, *iwihi*.
111. 'stone' \*i-ipa: i-ba, *θípa*, *Hípa*.
112. 'sun' \*éeli: éri, *éri*, —.
113. 'swell' \*ihená(a)-ka-wa: i-yéna-ka-wa, *hena-ka*, *hená*.
114. 'tail' \*-sipí-: -θipi, —, *hipí-hi*.
115. 'tapir' \*éema: éma, *θéma*, *Hema*.

116. 'termite' \*kamála: kámala, —, kamára.  
 117. 'that' \*ya-i-lV: yáira, —, ilé.  
 118. 'their' \*na-: na-, na-, na-le<sup>g</sup>ehé.  
 120. 'thou' \*pi-a/ká: pía, —, pi-ká.  
 121. 'tongue' \*ná-ni: -nene, ná-ka, lená-hi.  
 122. 'tooth' \*yáin-SI: -yéi, piá, aín-si.  
 123. 'tree, stick' \*ah-aa-waná: —, aháa, a<sup>g</sup>awaná.  
 124. 'uncle' \*-kú: —, a·kú, okú.  
 125. 'walk' \*-a-apu/á-ka-wa: a-poni-ka-wa, —, Ha<sup>g</sup>apá.  
 126. 'want' \*uru-watá: —, -uruwutá, -wútá.  
 127. 'wash' \*ipá-ka-wa: -iba-ka-wa, —, ipá.  
 128. 'water' \*hu-úni: úni, pu-ní/hú-ni, húni.  
 129. 'we' \*SI-wí-a/ka: wía, —, we-ka. (See P New 63 'we')  
 130. 'wet' \*isá-p/feka-ni: iθabeka-ni, —, isá-ni.  
 131. 'what' \*kawi-ná: kabiná, —, na.  
 'who' See 142.  
 132. 'wife' \*yaa-': yaa-kabetóa, —, yahálo-hi.  
 133. 'wind' \*ka-u-le-ná: kaúri, kálena, karená.  
 134. 'wing' \*yVpáhe-: yaanabói, tehépa, yup<sup>h</sup>é-hi.  
 'woman' See 141.  
 135. 'worm' \*ma/i-pi-': map·i<sup>h</sup>, i<sup>o</sup>-ipiči.  
 See P New 50 'snake'.  
 136. 'yellow' \*eevá-li: é-beri, —, Hewá-ni.  
 137. 'your' \*pi-: pi-, pi-, pi-le<sup>g</sup>ehé.  
 138. 'cloud' \*su-we-ka-lV: akále, ke-wereak<sup>h</sup>e, suwákapala.  
 139. 'eat' \*SI-ñá-ga: -yáka, —, ahñá.  
 140. 'louse' \*ú-nei: —, ni·, úne.  
 141. 'woman' \*iina-ná-wi-lu: inanái, nanáwi, inanáru.  
 142. 'who' \*kawi-ná-aní: kabiná-ni, —, na.  
 143. 'fur' \*ču-SI-na-SI: čuna, —, či-h-ne-hi.  
 144. 'mother' \*aami: —, á·mi, a·mí.

### 6.12.7 Proto Eastern Newiki

#### 6.12.7.1 Introduction

The Proto Eastern Newiki group (PENew) comprises the Tariano of the Vaupés River, a tributary of the Rio Negro, the Proto Curipaco-Maniba of the Rio Negro in Colombia and the Palicur of the Atlantic sea coast, north of the mouth of the Amazon in Brazil. The Maniba is the "Baniva" of the Rio Negro Group in Mason's classification, the Tariano is the "Tariana" of that group, while the Palicur belongs to his Northern Amazon group.

The Tariano data are supplied by phonetically transcribed field notes of Alva Wheeler, 1963. The P Cur-Man reconstructions are from section 6.12.7.6 of this volume. The Palicur data, phonetic, are by Philip and Wendy Boute, 1963.

For variations of the proto morphophoneme -SI, see section 6.2.

#### 6.12.7.2 The Phonemes of Proto Eastern Newiki

*p	*t	*k
*f	*s	*h
	*ts	*č
	*d	*j
*m	*n	*g
*w	*l	*y
		*i
		*u
		*e
		*a

Nasal vowel reflexes result from proximity to m, n, h.

Since the transcriptions are phonetic, stress has not been analyzed in any of the languages. No consistent pattern of correspondence is apparent. It is arbitrarily reconstructed as in P Cur-Man wherever possible.

#### 6.12.7.3 Phoneme Reflexes

P E New	*p	*t	*k	*f	*s	*h
Tar	p(p <sup>h</sup> )	t	k	p	θ	h
P Cur-Man	*p	—	*k	*f	*s, *t	*h
Pal	b, v	t	k	p	s, g	h
P E New	*ts	*č	*d	*j	*g	*m
Tar	s	ts	d	y	k	m
P Cur-Man	*ts	*č	*d	*j	*k	—
Pal	—	s	t	—	g	m
P E New	*n	*w	*l	*y	—	—
Tar	n	w, b	—	—	—	—
P Cur-Man	*n	*w	*l	*y	—	—
Pal	n	w	—	—	—	—
P E New	*i	*u	*e	*a	—	—
Tar	i	u, o, ɔ	e, i	a, e	—	—
P Cur-Man	*i, e	*u	*e	*a, e	—	—
Pal	i	u, o, ɔ	e	a	—	—

## 6.12.7.4 Conditioning of Phoneme Reflexes

\*CC →

- \*hč → ūč (Tar); č (P Cur-Man) 19
- \*hw → hw (Tar); w (P Cur-Man) 16

\*C →

- \*p → b | -a/-# (Pal); v (Pal); p 3, 9, 18, 30
- \*t → t 5
- \*k → k 9, 15, 20, 26
- \*f → p | -i/-e (Tar); w (Tar); f (P Cur-Man); p (Pal) 7, 8
- \*s → s | . . . f (Pal); g (Pal); s | -i (P Cur-Man); t (P Cur-Man); Ø (Tar) 8, 20, 28, 30
- \*h → h 6, 24
- \*ts → s (Tar); ts (P Cur-Man) 5
- \*č → ts (Tar); č (P Cur-Man); s (Pal) 12
- \*d → t (Pal); d 14, 21, 25
- \*j → č | i- (Tar); y (Tar); j (P Cur-Man) 23. See also P New 9 'crocodile'
- \*g → g (Pal); k 24
- \*m → m 24
- \*n → n 17, 18, 22, 32
- \*w → b | -i (Tar); w 13, 14
- \*l → r | i-/e-/r . . . ; l 1, 2, 7, 8
- \*y → y 26

\*VV →

- \*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub> (Pal); V<sub>1</sub>V<sub>1</sub> (P Cur-Man), V<sub>1</sub>, V<sub>2</sub>, V<sub>1</sub>V<sub>1</sub> (Tar)

Clusters of identical vowels are reconstructed to correspond to those of P Cur-Man. Vowel length is shown in the phonetic transcription of Tar, but is probably not phonemic, since long vowels in words given in isolation generally vary to short vowels when the words are shown in phrases or clauses.

- \*ia → a | f-# (P Cur-Man); ia | -# (P Cur-Man); i (P Cur-Man); e (Pal); ia (Tar) 12, 19, 31  
See P New 63 'we'
- \*iu → u (Pal); iu 18
- \*ie → i (Tar); ie 7
- \*ui → ui 1
- \*ua → o (Pal); oa (Tar) 27
- \*ai → e | aiC-/y- (Tar); e | s- (P Cur-Man); ai | #- (Pal); a (Pal); ai 6, 24, 25, 28, 33. See P New 58 'tooth' 37 'new'.
- \*au → e | j- (Tar); oa (Tar); au 15, 23

\*V →

- \*i → e | e . . . e (P Cur-Man); i 3, 14, 30, 32
- \*e → i | i . . . i (Tar); e 9, 10, 17, 32
- \*u → o, u (Tar, Pal); u (P Cur-Man)  
o appears to be an allophone of u preceding a stressed syllable in Tar and Pal, and o to be a very infrequent variant elsewhere. 9, 11, 24, 34
- \*a → e | u . . . i (Tar); e | e . . . i (P Cur-Man); a 2, 3, 14, 17, 24 See also P New 51 'stick'.

## 6.12.7.5 Index of Cognate Sets

The order of presentation of cognates is first the reconstructed P E New, second Tar, third the reconstructed P Cur-Man (or Pre Cur or Pre Man, so labeled, in instances in which a cognate is found with a word of one but not the other), and fourth, Pal. The lack of a cognate is indicated by a dash.

1. 'bird' \*p/kuipi(a)-lV/da: puiphída, \*(k)ui-pi(a)-lV, ku'hivra.
2. 'blood' \*-ila-: —, \*í-la-natu/i, omi-rá.
3. 'bone' \*-ápi: ñā·p'híh (ñā- is probably a possessive prefix), \*-ápi, avitsí.
4. 'dog' \*tsínu: si·nu, \*tsínu, —.
5. 'ear, outer' \*tápi: tapi-tia-le, —, utáibí.
6. 'earth' \*hipai: hip'hai, Pre Man \*hipai, —.
7. 'egg, (its)' \*li-éfe: ibhá-liphe, \*(li)-éfe, —.
8. 'feather' \*-SI-fi-lV: p'húiphi páčha-le, —, asíp-li.
9. 'fish' \*kúpe: khúphe, \*kúpe, —.
10. 'flesh' \*-iipe: -háp'ediphe, Pre Cur \*-iipe, —.
- 'flower' See 36.
11. 'green' \*-pulée-: mak'háthi phóle (black), \*hipulée-da-li, —.
12. 'hair' \*čia-kú-le: phátsia-le, \*čikú-le, usérNnU.
13. 'hand' \*-wá-: phaséwa, —, uwáku.
14. 'head' \*-wí-da: -bida, Pre Man \*-ewide, otewí.
15. 'heart' \*káu-lV: p'ehkoádá-lida, \*káu-le, —.
16. 'I' \*nuhuwa: náhvuā, \*níwa, —.  
'knee' See 37.
17. 'leaf' \*panápe: phanáphe, \*panápe, —.
18. 'liver' \*(si)upána: —, Pre Man \*siupána, ubán.
19. 'man' \*aahčiá-li: p'á·čá-li, \*(aa)čiá-li, —.
20. 'moon' \*ká-SI-li: khé-ri, \*kee-li, kaig-li.
21. 'night' \*dée/-pi/čiwapa: dičiwáph'a, \*dée-pi, —.
22. 'path' \*(h)inípu: hiníph'u, \*(i)nípu, —.
23. 'rain' \*ijau: p'i-ye, \*ijau, —.

24. 'root' \*hai-gu-mapa-li: mak'həliphe, Pre Man \*(hai-)kupa-li, gəhāmpa.  
 25. 'sand' \*kái-pai-da: kʰaipʰéda, \*kái-pai-da/na, —.  
 26. 'seed' \*-yáku: —, Pre Man \*tamiyaku, ayáku.

The Man reflex is -tamiyako. The o reflex for \*u was not established in P Cur-Man. It is assumed to be an allophone of u in Man because the only other occurrence of o is in the morpheme ru-, -ro 3 sf. Cp. P Har.

27. 'sky' -Vkuá-hne/pi: eʰ'kʰoápʰi, —, okoNné.  
 28. 'smoke' \*a-ísi/a: —, \*-ita, aʰgi. For further evidence see P New.  
 29. 'sun' \*k/héé-li: kʰéri, Pre Cur \*héé-li, —.  
 30. 'tail' \*-sipi: nãíphida, \*-sipi, gib.  
 31. 'thou' \*pía: pʰia-ni, \*píya, —.

The intercalated y in P Cur-Man is assumed to be transitional.

32. 'tongue' \*-náni: —, Pre Man \*(pe-)néne, onéni. See P New 57 'tongue'.  
 33. 'tree, stick' \*a-há-iku: hákku, \*háiku, ahá.  
 34. 'water' \*(ú)uni: ɻúni, \*úuni, —.  
 35. 'woman' \*tina-lu: ɻína, \*tina-ru, —.  
 36. 'flower' \*me-iwa-i-ti-pe: metʰiwápʰe, —, iwouithi.  
 37. 'knee' \*u-pa-SI-: —, \*pa-si-, ubougi.

### 6.12.8 Proto Curipaco-Maniba

#### 6.12.8.1 Introduction

The Curipaco data are taken from a list of ninety-three vocabulary items transcribed phonetically by Victor Kondo in May, 1965; the Maniba from a corresponding list by Paul Headland in 1966.

On the basis of internal evidence the sets of phones [l] [r] and [o] [u] are assumed to be phonemic units in Curipaco, and conditioning of reflexes is not explained. Glottal stop is assumed to be nonphonemic. In both languages [p] and [pʰ] are united, primarily on the basis of free fluctuation, although the aspiration may result from the occurrence of the optional morpheme -SI discussed in section 6.9. The rare instances of [tʰ] and [kʰ] are interpreted as clusters.

#### 6.12.8.2 The Phonemes of Proto Curipaco-Maniba

*p	*t	*k	*i	*u
*f	*s	*h	*e	*a
	*ts	*č		
	*d	*j		
*m	*n			
*w	*l	*y		

Nasalization in cognate sets appears only in the vocoid clusters ùã, ùú/ùw, and ãã.

There is one occurrence of š in the Maniba word for 'liver' šúpana.

#### 6.12.8.3 Phoneme Reflexes

Proto Cur-Man	*p	*t	*k	*f	*s	*h
Cur	p	t	k	f	t	h
Man	p	t	k	f	s, t	h
Proto Cur-Man	*ts	*č	*d	*j	*m	—
Cur	ts	č	d	y	—	—
Man	ts, č	č, ts	d	dz	—	—
Proto Cur-Man	*n	*w	*l	*y	—	—
Cur	n	w, u	l, r	y	—	—
Man	n	w, Ø	l, r, z	y	—	—
Proto Cur-Man	*i	*e	*u	*a	—	—
Cur	i	e	u, o	a, i	—	—
Man	i	e	u, o	a, e	—	—

#### 6.12.8.4 Conditioning of Phoneme Reflexes

*CC →	
*th → tʰ (= /th/) 19	
*kh → k (Cur); kʰ (= /kh/) (Man) 78	
*hw → w (Cur); hw (Man) 46	

#### \*C →

*p → p	2, 22, 28, 48
*t → t	7, 16, 21, 49
*k → k	6, 22, 26, 61
*ts → č   -i (Man); ts	14, 62
*č → č   -i (Man); ts (Man); č (Cur)	20, 27, 29, 42
*f → f (Cur); p (Man)	18, 59, 76
*s → s   -i (Man); t (Cur)	64, 68 (See Proto Newiki *s)
*h → h	35, 65, 69, 72
*d → d	1, 46, 50
*j → y (Cur); dz (Man)	3, 13, 53
*m → m	16, 32, 34, 61
*n → n	12, 36, 75, 79
*w → u   ù-a (Cur); Ø   u-a (Man); w	36, 47

\**l* → *r* ~ *l* (Cur) ; *z* | *li-* (Man) ; *r* | -*u/i/e-* (Man) ; *l* (Man) 1, 8, 15, 33,

44

\**y* → Ø | *i-u-* (Cur) ; *y, i* 2, 70

\*VV →

\*ee

*ii	*iu	*ia
*ui	*uu	*ua
*ai	*au	*aa

\*aa → aa 30, 61

\*V<sub>1</sub>V<sub>1</sub> → V<sub>1</sub>· (Cur) ; V<sub>1</sub> (Man) 7, 11, 16, 62, 63, 77

\*ia → ia | č- ; a (Man) ; i (Cur) 27, 32 (See Newiki 'hear') 42

\*ie → ie 18

\*ui → e | -CiV (Man) ; ui | # (Cur) ; ui 5

\*ūā → ūā ~ ūā (Man) ; ūā (Cur) 6, 35

\*ua → ua 37, 40

\*ai → ai 54, 55, 72

\*au → au ~ ao (Cur) ; a | -# (Man) ; aa (Man) 33, 53

Curipaco shows another source of *ao* in the verb-final morpheme sequence -*ka-wa*, Man -*ka-wa*, which has been shortened to *kao*.  
23, 74

\*V →

\*i → i 3, 8, 9, 13

\*e → e 18, 22, 46, 71

\*u → u ~ o (Cur) ; o | r-# (Man) ; u (Man) 12, 14, 22, 79

\*a → a 1, 4, 12, 17

#### 6.12.8.5 Index of Cognate Sets

In the sets given below, the P Cur-Man is given first ; the Cur, second ; and Man, third. Dashes indicate the absence of a member of the set.

1. Adjectival \*da-li; -da-li, -da-li.
2. 'all' \*piyáu: phíú-ní<sup>3</sup>, phiyáume.
3. 'ash' \*tiyee-(fe-ni/wa): tiyé-wa<sup>3</sup>, tidiépe-ni.
4. 'big' \*maka-da-li: maka-da-ri, maka-da-li.
5. 'bird' \*(k)ui-pi(a)-IV: wi-pia-ru, kepiřei-ni.
6. 'bite' \*li-hūā-ka: li-řhuá-ka<sup>3</sup>, hōā-ka.
7. 'black' \*ittá-dali: itá-da-li, itá-da-li.
8. 'blood' \*i-la-natu/i: irana-tu<sup>3</sup>, i-řai.
9. 'bone' \*-ápi: -a<sup>3</sup>pi<sup>3</sup>, i-yápi.
10. 'burn' \*-íma-: alíma-kao<sup>3</sup>, himáita-ka.
11. 'chest' \*-kuu-da: -kú-da<sup>3</sup>, -kú-da.

12. 'come' \*-nu-ka: lí-nu-ka<sup>3</sup>, -nu-ka.
13. 'die' \*ma-řami-ka: mayámi-ka<sup>3</sup>, -dzami-ka.
14. 'dog' \*tsínu: tsí-nu, tšínu.
15. 'drink' \*-ila-ka: -ira-ka-tlia<sup>3</sup>, -za-ka.
16. 'dry' \*meeta-: mé-ta-ka-ni<sup>3</sup>, metá-da-li.
17. 'eat' \*-ha-kat-: -hakatlia<sup>3</sup>, -ha-ka.
18. 'egg' \*(li)-éfe: lí-e<sup>3</sup>fhe<sup>3</sup>, r-iépe.
19. 'eye' \*-thi: hú-řthi<sup>3</sup>, -thi.
20. 'fingernail' \*-ču(-ta): -tšu<sup>3</sup>, -tsúta.
21. 'fire' \*tiyé: ti<sup>3</sup>yé<sup>3</sup>, tídze.
22. 'fish' \*kúpe: kupé<sup>3</sup>, kíphé.
23. 'fly' \*-ala-ka-wa: -ara-káo, -ara-ka-wa.
24. 'foot' \*-ipa: -i<sup>3</sup>pa<sup>3</sup>, -ipa.
25. 'full' \*pa-ká-/na/i: paká-ni-ka<sup>3</sup>, lí-pana.
26. 'give' \*akani: akán, ákani.
27. 'good' \*(m)ačia: atšia-da-li, matšia.
28. 'green' \*hipulee-da-li: hipulé-dali, hipulé-dali.
29. 'hair' \*-čikú-le: -tši<sup>3</sup>kule, tšikule.
30. 'hand' \*kaapi: -ká-pi<sup>3</sup>, -ká-pi.
32. 'hear' \*-(h)imia-ka: -imika<sup>3</sup>, -hima-ka.
33. 'heart' \*káu-le: káule, -káale.
34. 'hot' \*hamáu-: hamú-dali, hámukani.
35. 'husband' \*hū(a): hū-, hūa.
36. 'I' \*nuwa: nū-a<sup>3</sup>, núa.
37. 'kill' \*-nu-a-ka: lí-nuka<sup>3</sup>, nua.
38. 'knee' \*-pa-si-(da): si<sup>3</sup>pada<sup>3</sup>, pásí.
39. 'leaf' \*panápe: panápe, panáphe.
40. 'lie down' \*-kua-kawa: řkua<sup>3</sup>kao<sup>3</sup>, kuako.
42. 'man' \*(aa)čia-li: á-tšia<sup>3</sup>, tšiáli.
43. 'many' \*hanipa: —, hanipa.
44. 'moon' \*kée-li: kékri<sup>3</sup>, kérí.
45. 'mouth' \*núma: nu<sup>3</sup>ma<sup>3</sup>, -núma.
46. 'neck' \*-hwedo/a: wéadoliku, -hvédá.
47. 'new' \*wali-te/dali: wali-dali, walíte.
48. 'night' \*déé-pi: dé-pis, dépi.
49. 'nose' \*-táku: tá<sup>3</sup>ku<sup>3</sup>, tákú.
50. 'one' \*(a)páda: páda<sup>3</sup>, apáda.
51. 'path, trail, road' \*(i)nípu: inípu<sup>3</sup>, pínu.
53. 'rain' \*iřjau: i<sup>3</sup>yáo, idza.
54. 'red' \*ilai-: iráidali, iřai-dali.
55. 'sand' \*kái-pai-da/na: hi<sup>3</sup>pái, kái-da.
56. 'say' \*-ákV: áku<sup>3</sup>, -aka.

57. 'see' \*-kapa-ka: *ka<sup>3</sup>páka<sup>3</sup>*, -kapa-ka.  
 59. 'sit' \*-ufa-ka-wa: *lí-ufa-kao<sup>3</sup>*, *úhako*.  
 61. 'sleep' \*-maa-ka: *ómá·ka<sup>3</sup>*, maa-ka.  
 62. 'small' \*tsuu-: *tsú·dali*, *tsúda-řo*.  
 63. 'smoke' \*iita: *i·ta*, ita.  
 64. 'star' \*hiwisi: —, *hiwisi*.  
 65. 'stone' \*hiipa-da: *hí·pa·da<sup>3</sup>*, *hipá·da*.  
 68. 'tail' \*-sípi: *-típih*, —.  
 69. 'this' \*r/tiyaahe: *tiyá·hi<sup>3</sup>*, —.  
 70. 'thou' \*píya: *p<sup>h</sup>íya<sup>3</sup>*, *p<sup>h</sup>íya*.  
 71. 'tooth' \*-éča: *-éča*, -étsa.  
 72. 'tree, stick' \*háiku: *háiku<sup>3</sup>*, *haiku*.  
 73. 'two' \*jamaa-da: *yamá·da<sup>3</sup>*, *dzamáda*.  
 74. 'walk' \*-a-ka-wa: *a-kao<sup>3</sup>*, *a-kawa*.  
 75. 'water' \*úuni: *u·ní<sup>3</sup>*, *úni*.  
 76. 'we' \*fá: *fa<sup>3</sup>*, *pá*.  
 77. 'white' \*halee-: *halé·dali*, *halé·dali*.  
 78. 'who' \*khu(a)ká(n): *kukán*, *khúaka*.  
 79. 'woman' \*-íina-ru: *i·naru*, *ína-řo*.  
 80. 'yellow' \*ewa(a)-: *ewá·dali*, *ewádali*.

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"At least ten manuscripts recorded by early Catholic Missionaries between 1600 and 1855, pertaining to Siona and related languages of the Napo-Putumayo-Caquetá region, are known to exist. All of these are cited and evaluated by Ortiz (1958) 416–19. Some of these are cited by Tovar (1961) 209–18, under the alphabetical listing, Anónimo. Those which have been published are cited elsewhere in this bibliography." (Quoted from Wheeler, "Proto Tupi-Guaranian Reconstruction").

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