

# TUPI STUDIES I

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David Bendor-Samuel

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# INTERNAL CLASSIFICATION OF THE TUPI-GUARANI LINGUISTIC FAMILY

Miriam Lemle

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0. Introduction.<sup>1</sup> It is evident from the most superficial inspection of word lists that there is a remarkable similarity among the nearly forty dialects that constitute the Tupi-Guarani family (geographically the most widely spread of any in South America, with representatives from northern Brazil--the Emerillon on the borders of the territory of Amapá and French Guiana--to the Guarani of Argentina in the south, and from the east coast, where Tupinambá was spoken at the time of the discovery of Brazil, to Peru in the west, where today the Kokama still live). Yet hypotheses of possible subgroups within the family need to be tested. Until a few years ago this would have been impossible because of the lack of descriptive data for most of the languages. Now such material is available thanks to the phonological analyses and the filling out of the "Formulário dos Vocabulários Padrões para Estudos Comparativos Preliminares nas Línguas Indígenas Brasileiras" by linguists of the Summer Institute of Linguistics who are working under contract with the Museu Nacional. This material, now available for comparative purposes, is more reliable than previous material collected without the methodological orientation of modern linguistics.

The present study presents a tentative reconstruction of the phonological system and a restricted portion of the lexicon of Proto-Tupi-Guarani insofar as this has been made possible by the data contained in the copies of the "Formulário Padrão" (which we consider to be reliably filled out) and by data from other sources accessible to us. Based on the reconstruction, a classification is proposed, and then dialects which were not used in establishing the classification are assigned to specific branches.

1. Sources of Data. Some of the vocabulary lists for Tupi-Guarani languages filed in the Linguistics Depart-

ment of the Museu Nacional are incompletely filled out or are not phonemicized. For making the reconstruction it was necessary to select the more complete ones and those that had been phonemicized. The following were selected:

Asurini, collected by Carl H. Harrison, 1960, Posto Trocará, Tocantins River, Pará.

Guajajara, David and Margaret Bendor-Samuel, 1960, Posto Gonçalves Dias, Pindaré-Mirim, Maranhão.

Parintintin, Helen Pease and LaVera Betts, 1962, Canavial, Ipixuna River, Amazonas.

Kamayurá, Carl H. Harrison, 1964, Posto Leonardo Villas Boas, Mato Grosso.

Urubu, James Y. Kakumasu, 1963, Posto Pedro Dantas, Canindé, Maranhão.

Guarani, Edna Aaron, 1966, Posto Laranjeiras do Sul, Paraná.

Kokama, Norma Faust, Ucayali, Marañon, and Amazonas Rivers, Peru.

Other sources used from published material were as follows:

Guarayo. Frei Alfredo Hoeller, O.F.M. Mis. Apco., Guarayo-Deutsches Wörterbuch. Guarayos, Dep. S. Cruz de la Sierra, Bolivia. Stuttgart, 1932.

Sirionó. P. Fr. Anselmo Schermair E., Vocabulario Siriono-Castellano. Innsbrucker Beiträge zur Kulturwissenschaft. Innsbruck, 1958. And Perry N. Priest, San Pedro, Departamento Beni, Bolivia, 1960.

Tupinambá. Vocabulário na Língua Brasílica. Second edition, revised and coordinated with Ms. fg. 3144 of the Biblioteca Nacional de Lisboa, by Carlos Drummond. Bulletin no. 137 and 164 of the Serie Etnografia e Tupi Guarani, Faculdade de Filosofia Ciências e Letras of the Universidade de São Paulo, São Paulo, 1953. The phonological analysis is by Aryon dall'Igna Rodrigues, Phonologie der Tupinambá Sprache, doctoral thesis submitted to the University of Hamburg, 1958. Although this is the only one of the languages that is already extinct, it is perhaps the one whose phonemicization is most certain, and we feel that the three centuries that separate it from the other languages do not

invalidate its inclusion in the comparison. Furthermore, there are special reasons for including it to establish its position in the group.

## 2. Phonemic Systems.<sup>2</sup>

Asurini:	p t k ʔ y w m n ŋ h r i e i a o
Guajajara:	p t k ʔ c y w m n ŋ h r i e i ə a u o
Parintintin:	p t k ʔ č y w m n ŋ h r b i e i a u o ĩ ě ĭ ã ũ õ
Kamayurá:	p t k ʔ č y w m n ŋ h r i e i a u o ĩ ě ĭ ã ũ õ
Urubu:	p t k ʔ s š y w m n ŋ h r i e i a u o ĩ ě ã ũ õ
Kokama:	p t k c č s š y w m n h r i ü a í u
Guarani:	p t k ʔ č y w m n ŋ h r b i e i a u o ĩ ě ĭ ã ũ õ
Guarayo:	p t k ʔ c č y w m n ŋ h r b i e i a u o ĩ ě ĭ ã ũ õ
Sirionó <sup>+</sup> :	p t k c s š y m n ŋ r b i e i a u o ĩ ě ĭ ã ũ õ
Tupinambá:	p t k ʔ s š y w m n ŋ r b i e i a u o ĩ ě ĭ ã ũ õ

3. Reconstructed Phonemic System of Proto-Tupi-Guarani.

\*p Before back rounded \*V.

p (As, Gj, Pt, Ub, Ko, Gn, Gy, Tb), h (Km), h, # (Si).  
61, 82, 183, 186.

Before \*w.

p (Tb), k (As, Ub, Gn, Gy), k, k#, # (Si), h (Km).  
9, 70, 119, 157, 173, 191, 206

In other environments.

p (As, Gj, Pt, Km, Ub, Ko, Gn, Gy, Tb), h, # (Si).  
1, 6, 8, 11, 13, 14, 15, 17, 21, 24, 36, 39, 42, 49,  
53, 65, 66, 79, 88, 90, 96, 98, 102, 108, 110, 112,  
121, 139, 140, 144, 152, 155, 160, 162, 164, 165, 168,  
172, 175, 177, 181, 184, 185, 194, 196, 198, 202, 203,  
205, 206, 212, 213, 219.

\*t Before \*i and \*ĩ.

t (Pt, Ko, Tb), č (As, Km, Gn, Gy), c (Gj), č, ʒ (Si),  
ʒ (Ub). 8, 30, 51, 56, 64, 73, 95, 128, 138, 145,  
162.

In other environments.

t (As, Gj, Pt, Km, Ub, Ko, Gn, Gy, Si, Tb). 10, 11,  
29, 50, 53, 55, 80, 83, 87, 90, 91, 95, 96, 97, 100,  
132, 134, 136, 137, 139, 161, 167, 184, 199, 205, 207,  
213.

\*k In final position.

k (Gj, Km, Ko, Tb), k, # (Ub), ŋ, # (As, Pt), # (Gn, Gy,  
Si). 12, 13, 23, 41, 45, 47, 52, 55, 63, 67, 80, 97,  
120, 180, 194, 208.

Before \*w.

k (As, Gj, Pt, Km, Ko, Gn, Gy, Si, Tb), # (Ub). 32,  
56, 73, 170, 195, 199. See also sequence \*kw.

In other environments.

k (As, Gj, Pt, Km, Ko, Gn, Gy, Si, Tb), k, ʒ (Ub). 29,  
33, 39, 43, 44, 46, 61, 64, 66, 68, 75, 76, 80, 85, 97,

107, 112, 116, 124, 125, 127, 129, 135, 150, 163, 171, 176, 178, 182, 186, 187, 188, 192, 197, 200, 216.

Note the development in Ub of the sequence kw in items 76, 124, and 186 under the influence of a preceding u.

- \*ʔ ʔ (As, Gj, Pt, Km, Ub, Gn, Tb), ʔ, # (Gy), # (Ko, Si). 11, 16, 21, 25, 34, 35, 39, 40, 45, 52, 58, 59, 60, 69, 71, 77, 82, 86, 87, 88, 89, 93, 94, 99, 102, 105, 108, 116, 120, 125, 130, 132, 152, 154, 162, 172, 183, 193, 197, 204, 210, 214, 220.
- \*c h, # (As, Gj, Pt), h, y, # (Km), s, h, # (Ub), c, č (Ko, Gy), č, # (Gn), s, š (Si, Tb). 13, 31, 62, 63, 83, 84, 85, 93, 95, 98, 100, 106, 111, 113, 115, 118, 122, 130, 140, 144, 147, 168, 175, 195, 200, 203, 210.
- \*m In final position.  
m (As, Gj, Pt, Km, Ub, Ko, Tb), ẽ# (Gn, Gy, Si). 62, 82, 96, 113, 129, 132, 163.  
Before \*w.  
m (Tb), ŋ (Gn, Gy). 2, 46.  
In other environments.  
m (all languages). 2, 3, 5, 12, 18, 26, 31, 46, 54, 55, 57, 67, 69, 75, 78, 81, 109, 114, 120, 123, 127, 131, 133, 136, 149, 167, 180, 203.
- \*n In final position.  
n (As, Gj, Km, Ko, Tb), n, ẽ# (Pt, Ub), r, ẽ# (Gy), ẽ# (Gn, Si). 50, 54, 78, 79, 123, 139, 157, 174, 175, 220.  
In other environments.  
n (all languages). 20, 24, 48, 55, 108, 120, 127, 131, 143, 149, 151, 185, 189, 218.
- \*ŋ ŋ (As, Gj, Pt, Km, Tb), n (Ko), ẽ# (Ub, Gn, Gy, Si). 30, 33, 69, 86, 95, 145, 150, 192, 211, 212, 213.
- \*y In final position.  
y (As, Gj, Pt, Km, Gn, Gy, Tb), y, #i (Ub, Si), i in monosyllabic words, #i in polysyllabic (Ko). 18, 28, 31, 44, 48, 57, 58, 72, 75, 111, 119, 133, 146, 168, 176, 179, 182, 193.

In other environments.

y (As, Gj, Pt, Km, Ub, Ko, Gn, Gy), ñ, ċ (Si). 7, 20, 27, 31, 37, 45, 78, 83, 86, 107, 115, 117, 124, 135, 143, 148, 154, 155, 156, 169, 188, 196, 200, 205. See also \*py, 208.

\*w As second member of consonant cluster.

w (all languages). 2, 9, 32, 46, 56, 70, 73, 119, 150, 157, 170, 173, 191, 195, 199, 206. See also sequence \*kuw, 187.

In other environments.

w (As, Gj, Km, Ub, Gn, Ko, Gy, Tb), ηw (Pt), g, k (Si). 43, 68, 148, 158, 179, 190, 211, 220.

\*b In final position.

b (Tb), b, # (Pt), p (Km), w, m (As), # after u, w elsewhere (Gj), # (Ub, Ko, Gn, Gy, Si). 7, 16, 19, 26, 34, 68, 71, 89, 92, 100, 110, 114, 126, 137, 151, 153, 166, 171, 178, 187, 191, 198, 202.

In other environments.

w (As, Gj, Km, Ub, Ko), b (Pt, Gn, Gy, Si, Tb). 15, 23, 28, 44, 47, 67, 90, 100, 103, 128, 132, 145, 146, 159, 180, 201, 207, 209, 210, 216, 217.

\*r In final position.

r (Gj, Ub, Ko, Tb), r, # (Pt, Gy), n, r, t (As), t (Km), # (Gn, Si). (Not only should conditions of the alternation n~r~t be reviewed for Asurini, but also its occurrence in the other languages should be investigated. The tentative nature of the grammatical data which we had did not permit a definitive evaluation of the actual situation.) 9, 11, 15, 32, 35, 38, 49, 53, 73, 74, 76, 90, 103, 109, 132, 141, 148, 150, 165, 169, 173, 188, 199, 203, 215.

In other environments.

r (all languages). 27, 31, 46, 60, 63, 81, 87, 93, 99, 104, 107, 114, 142, 156, 158, 159, 164, 165, 182, 185, 191, 195, 212, 221.

\*a Preceding a final nasal consonant.

a (Pt, Km, Ko, Tb), a, ǎ# (Ub), ǎ# (Gn, Gy, Si), ï, o (As), e (Gj). 33, 54, 62, 78, 82, 93, 132, 150, 157, 163, 192, 211, 212, 213. Note also that in Guajajara e occurs in some forms as a reflex of \*a preceding a final syllable that contains a nasal vowel or that is closed by a nasal consonant: 54, 95, 129, 131, 182.

Preceding a final y.

a (As, Gj, Pt, Km, Ub, Gn, Gy, Tb), # (Ko), #, o, e (Si). 31, 119, 176, 179.

In other environments.

a (all languages). 8, 9, 10, 11, 15, 16, 19, 20, 21, 29, 31, 32, 33, 34, 35, 36, 38, 39, 43, 46, 47, 51, 52, 55, 56, 65, 68, 71, 73, 74, 77, 83, 87, 91, 93, 94, 95, 99, 100, 101, 102, 105, 107, 110, 112, 115, 120, 122, 124, 125, 126, 128, 134, 137, 140, 144, 145, 147, 148, 149, 152, 154, 155, 156, 158, 159, 161, 162, 164, 166, 169, 170, 177, 178, 181, 183, 185, 186, 187, 191, 194, 195, 197, 199, 202, 203, 208. But note # reflex in some Sirionó items preceding a final -?V syllable. 116, 193.

\*ï Before a final nasal consonant.

ï (As, Gj, Pt, Km, Ub, Ko, Tb), ǐ# (Gn, Gy), ǐ#, ǐ# (Si). 96, 113, 129

In other environments.

Generally ï (As, Gj, Pt, Km, Ub, Ko, Gn, Gy, Tb), i (Si). 4, 8, 12, 13, 15, 16, 20, 21, 53, 63, 67, 80, 87, 98, 102, 110, 114, 115, 118, 126, 132, 133, 136, 137, 139, 140, 144, 146, 159, 160, 171, 177, 184, 188, 189, 190, 194, 200, 201, 203, 204, 207, 209, 213, 221. But note unexplained irregularities in 1, 22, 25, 26, 28, 38, 44, 47, 64, 83, 85, 89, 90, 93, 108, 117, 145, 158, 167, 168, 195, 197.

\*e Before a final nasal consonant.

e (As, Gj, Km, Tb), ẽ# (Ub, Gn, Gy, Si), I# (Pt), ü (Ko). 69, 86, 123, 220.

After \*k or \*y.



e (As, Gj, Km, Ub, Gn, Gy, Si, Tb), i (Pt), ĩ (Ko). 31, 76, 86, 200, 205.

In other environments.

Generally e (As, Gj, Pt, Km, Gn, Gy, Si, Tb), e, ĩ (Ub), ü, i (Ko). 1, 2, 3, 14, 17, 22, 23, 36, 42, 46, 48, 50, 53, 65, 66, 69, 77, 81, 84, 85, 96, 107, 108, 111, 112, 134, 141, 142, 143, 147, 150, 155, 165, 167, 173, 189, 191, 196, 205, 210, 217, 218, 219, 220. But note irregularities in 26, 58, 151, 204, 208, 216.

\*i Before a final nasal consonant.

i (As, Gj, Pt, Km, Ko, Tb), ĩ# (Ub, Gn, Gy, Si). 30, 79, 95, 145.

In other environments.

Generally i (all languages). 11, 39, 55, 56, 60, 73, 81, 84, 88, 100, 116, 120, 126, 128, 149, 152, 161, 162, 164, 165, 172, 175, 210, 212. But note nasalization of final i following ʔ in some Tb forms. 39, 88.

\*o In final syllable and in penultimate syllable preceding a final syllable with \*o.

o (Gj, Pt, Km, Ub, Gn, Gy, Si, Tb), a (As), u, ua (Ko). 17, 40, 41, 44, 45, 49, 57, 75, 81, 92, 106, 109, 120, 121, 155, 180, 181.

In other environments.

o (As, Pt, Km, Gn, Gy, Tb), u (Gj, Ub, Ko), u, o (Si). 12, 31, 67, 78, 88, 90, 93, 111, 142, 162, 168, 203, 205, 209, 210, 216.

\*u Preceding a final nasal consonant.

u (Gj, Pt, Km, Ko, Tb), u, ü# (Ub), ũ# (Gn, Gy), o (As), ø# (Si). 50, 139, 174, 175.

In other environments.

u (Gj, Pt, Km, Ub, Ko, Gn, Gy, Tb), u, o, i (Si), o (As). 7, 24, 25, 27, 29, 59, 61, 66, 68, 82, 89, 97, 100, 103, 104, 110, 122, 124, 127, 130, 135, 144, 151, 152, 153, 156, 165, 169, 178, 179, 183, 184, 186, 188, 190, 196, 207, 215.

\*ã Following \*Cw.

ã (Gn, Gy, Si, Tb), a (As, Km). 2, 46, 70, 206.

In other environments.

ã (Pt, Km, Ub, Gn, Gy, Si, Tb), a (Ko), o (As), ə (Gj). 24, 72, 98, 108, 135, 167, 182, 185. But note Sirionó ẽ preceding a final y. 72, 182.

\*ĩ ĩ (Pt, Km, Gn, Gy, Tb), i (As, Gj), ě, ĭ (Si), # (Ub, Ko). 58, 133, 146, 193. Note that examples are few and all precede a final \*y.

\*ě ě (Gn, Gy, Si, Tb), ě, e (Pt, Km, Ub), e (As, Gj), i (Ko). 6, 98, 154, 155, 206, 214, 219.

\*ĩ ĩ (Ub, Gn, Gy, Si, Tb), ĭ, i (Pt, Km), i (As, Ko, Gj). 8, 43, 51, 64, 138, 205.

\*ö ö (Pt, Gn, Tb), ö, o (Km), ö, ẽ (Si), ö, o, ũ, u (Ub), o (As, Gj, Gy). 5, 18, 48, 75, 87, 99, 131, 221.

\*ü ü (Gn, Gy, Tb), ũ, ö (Pt), ö (Km, Si), u (Gj, Ko), o (As). 37, 60, 102, 105, 112, 136, 172.

\*kw kw (As, Gj, Pt, Km, Gn, Gy, Si, Tb), w (Ub), ku (Ko). 32, 56, 73, 170, 195, 199.

\*kuw kuw (Tb), kw (all other languages). 68, 187.

\*Cu?V and \*Ci?V are generally reflected as CwV and CyV in Ko. 152, 162, 183. But note exception in 82.

\*V?V in which the vowels are identical is reflected as a single vowel in Ko. 11, 40, 220.

4. Vocabulary List. The reconstructed forms of 221 vocabulary items together with their reflexes in the languages studied are presented below. The gaps that exist are due either to the fact that the item is missing in the original vocabulary list or that the item is not a cognate.

1. \*pipe 'to, in' pipe (As, Pt, Gy), pupe (Gj, Km, Tb), ie (Si).

2. \*memwă 'accident' meŋwă (Gn, Gy), etomemwă (Tb).

3. \*aemee 'sharp' hoyme (As), hayme (Gj, Pt), ayme (Km, Ub, Gn, Gy), aimin (Ko), himey (Si), aemee (Tb).
4. \*i 'water' i (As, Ub, Gy, Tb), ?i (Gj, Km), ihî (Pt), iî (Gn), i (Si).
5. \*amõ 'some' omo (Gj), amuta (Ub), amõwe (Gn), amo (Gy), amõ (Tb).
6. \*pě 'align, braid' pě (Pt, Tb), ě (Si).
7. \*yub 'yellow' iyuahî (Gj), yup (Km), i'un (Ko), yu (Gn), žu (Si), yub (Tb). Cf. 188.
8. \*apitî 'tie' ?apitî (Pt), apitî (Tb).
9. \*pwar 'tie' hwat (Km), pukwar (Ub), kwa (Gn, Gy, Si), pwar (Tb).
10. \*ata 'walk' ata (As, Gj, Tb), wata (Ub, Gn, Gy, Tb), kwata (Si).
11. \*tapi?ir 'tapir' tapi?ira (As), tapi?ir (Gj, Pt, Ub, Tb), tapi?it (Km), tapira (Ko), tapi?i (Gn).
12. \*momik 'tighten' mumik (Gj), momî (Gy), mumi (Si), momik (Tb).
13. \*picik 'squeeze' pîhi (As), pii (Gn), picî (Gy), isi (Si), pisik (Tb).
14. \*pe 'that' eope (As), pero (Pt), pe (Gy).
15. \*ibirapar 'bow' iwirapar (As), wirapar (Gj), ibirapar (Pt, Tb), iwirapat (Km), irapar (Ub), wirapa (Gn), rapar (Gy), kiraá, raá ngira (Si).
16. \*?ib 'tree' iw.a (As), iba (Pt), ?ib (Tb).  
\*?ib ?a 'fruit' ib.a (Si). Cf. 94.
17. \*pepo 'wing' pepa (As), pepo (Gj, Pt, Km, Gn, Gy, Tb), pîpo (ub), pûpu (Ko), o (Si).
18. \*amõy 'grandfather' amõy (Pt, Tb), tamõy (Ub), aměy (Si).
19. \*kab 'fat' kaw (As, Gj), ikab (Pt), ikap (Km), iša (Ub), ikawa (Ko), kab (Tb).
20. \*yani 'lard' yani (Gn, Gy, Tb).

21. \*piʔa 'stomach, liver' piʔa (As, Gj, Pt, Km, Ub, Gn, Gy, Tb), pia (Ko), ia (Si).
22. \*ie 'stomach' herie (Gj), ie (Gn, Gy), r-ie (Si), iʔe (Tb).
23. \*ebek 'stomach' eweŋ (As), rebeŋ (Pt), cūwūka (Ko).
24. \*nupā 'hit' nopo (As), nupā (Pt, Km, Gy, Tb), inupa (Ko), noā (Si).
25. \*iʔu 'drink' iʔo (As), iʔu (Gj, Pt, Km, Gn, Tb), uʔu (Ub), yuti (Ko), iu (Gy, Si).
26. \*eimab 'animal' heomaw (As), herəmau (Gj), h-ima (Ub, Gn), eimba (Gy), imba (Si), eimbab (Tb).
27. \*yuru 'mouth' yoro (As), yuru (Gj, Pt, Km, Ub, Ko, Gn, Gy, Tb), čuru (Si).
28. \*bebiy 'float' wewoy (As), bebuy (Pt, Tb), wewiy (Km), wewi (Ub), bebiy (Gy).
29. \*katu 'good' kato (As), katu (Pt, Gj, Km, Ub, Gn, Gi, Tb), katupiri (Gy).
30. \*tiŋ 'white' čiŋ (As), ciŋ (Gj, Km), tiŋahi (Pt), tinin (Ko), čī (Gn, Gy), šī (Si), tiŋ (Tb).
31. \*yemocaray 'play' yemoaray (As), yemuaray (Gj), yiŋwaray (Pt), yemoray (Gn), yemoecaray (Gy), cemesa'ri ~ čumusari (Si), yemosaray (Tb).
32. \*kwar 'hole' kwar (Gy, Tb), kwa (Si).
33. \*akaŋ 'head' akiŋ (As), əkəŋ (Gj), akaŋ (Pt, Km, Tb), akā (Ub, Gn, Gy), yakī (Ko), ākī (Si).
34. \*ʔab 'hair' ʔaw (As, Gj), ʔab (Pt, Tb), ʔap (Km), ha (Ub), ca (Ko), ʔa (Gn), a (Gy, Si).
35. \*ʔar 'fall' ʔan (As), ʔar (Gj, Ub, Tb), ʔa (Pt, Gn), ʔat (Km), u'ari (Ko), a (Gy, Si).
36. \*pe, ape 'path' pe (As, Gj, Ub), pehe (Pt), tape (Km), pū (Ko), -ape (Gn), ape (Tb).
37. \*yū 'field' yū (Pt, Tb).
38. \*iar 'canoe' ihar (As, Pt, Gy), iar (Gj), iat (Km),

- yarusu (Ub), i'ara (Ko), iia (Gn), i'ar (Gy, Tb).
39. \*kapiʔi 'grass' kapiʔi (Gj, Ub, Gn, Gy), kapiʔi (Tb).
40. \*oʔo 'meat' aʔaa (As), hoʔo (Gj), aʔo (Km), oʔo (Ub, Gn, Tb), u (Ko), oo (Gy, Si).
41. \*ok 'house' aŋ (As), oŋa (Pt), ok (Km, Ub, Tb), uka (Ko), o (Gn), oi ~ oig (Gy).
42. \*pe 'bark' pekwer (Gj, Gy), ñipe (Pt), ipe (Km), e, eke (Si), ape (Tb).
43. \*kawĩ 'corn drink' kaŋwĩ (Pt), kawĩ (Tb).
44. \*ibikoy 'dig' iwikay (As), wikiy (Gj), ibikoy (Pt, Tb), čiuki (Ko), ibikoĩ (Si).
45. \*yoʔok 'dig' yoʔok (Km, Tb), yoʔo (Gn), yoo (Gy), čoo 'remove' (Si).
46. \*karamemwã 'basket' karamewã (Gn, Gy), karamemwã (Tb).
47. \*ibak 'sky' iwaŋ (As), iwak (Gj, Km), ibaŋ (Pt), iwa (?) (Ub), iba (Gn), iba (Si), ibak (Tb).
48. \*enöy 'call' enöy (Pt, Tb).
49. \*por 'full' por (Gj, Tb), po (Gy), o (Si).
50. \*etun 'smell' eton (As), etun (Gj, Pt, Km, Tb), etũ (Ub, Gn, Gy), etö (Si).
51. \*atĩ 'horn' ači (As), atĩ (Pt), ačĩ (Km, Gy), ašĩ (Si).
52. \*ʔak 'horn' ʔak (Gj, Tb), iʔak (Km, Ub), iaka (Ko), akwa (Gn).
53. \*piter 'suck' piten (As), piter (Gj, Ub, Tb), pite (Pt, Gn), pitet (Km), siite (Si).
54. \*aman 'rain' amin (As), əmən (Gj), aman (Pt, Km, Ub, Tb), amana (Ko), amar (Gy), amã (Si).
55. \*tanimuk 'ashes' tanimuk (Gj, Tb), tanimuŋ (Pt), tatimuk (Ub), tanimuka (Ko), tanimu (Gn, Gy).
56. \*kwati 'coati' kwači (Gy), kwati (Tb).

57. \*moy 'snake' may (As), moy (Gj, Pt, Km, Ub, Gn, Gy, Tb), mui (Ko), mey (Si).
58. \*eʔɨy 'scratch' eʔɨy (Pt, Tb), ĩ (Si).
59. \*ʔu 'eat' ʔo (As), ʔu (Gj, Pt, Km, Ub, Gn, Tb), ũyu (Ko), u (Gy, Si).
60. \*ʔirũ 'companion, brother' ʔirũ (Pt, Tb), irõ 'accompany' (Si).
61. \*puku 'long' poko (As), puku (Gj, Pt, Ub, Gn, Gy, Tb), huku (Km), ipukun (Ko), hoko (Si).
62. \*cam 'string' topahom (As), ihəm (Gj), tupaham (Pt, Km), tĭpaham (Ub), ičã (Gn), cã (Gy), sã (Si), sam (Tb).
63. \*cirik 'flow' irik (Gj), čiri (Gn), ciri (Gy), siri 'move' (Si), sĭrik (Tb).
64. \*kitĩ 'cut' kiči (As), kici (Gj), kiti (Pt), kiči (Km), kičĩ (Gn, Gy), kišĩ (Si), kitĩ (Tb).
65. \*ape 'back' ape (As), ʔape (Km).
66. \*kupe 'back' kupe (Gj, Gn, Gy, Tb), kupepĭter (Pt), šupe (Ub), yatukupi (Ko).
67. \*mobik, mobibik 'sew' miwĭk (Gj), miwĭ (Ub), o mo bibi (Gn), mo bibi (Gy), mobibik (Tb).
68. \*akakuwab 'grow' akakuwab (Tb).
69. \*meʔeŋ 'give' meʔeŋ (Km, Tb), meʔě (Ub, Gn), meě (Gy, Si).
70. \*pwã 'finger' ikwakiŋa (As), uã-ě 'fingernail' (Si), pwã (Tb). Cf. 206.
71. \*ʔab 'lie' ʔam (As), ʔaw (Gj, Km), ʔau (Pt).
72. \*ãy 'tooth' oy (As), iy (Gj), ãy (Pt, Km, Ub, Gy, Tb), ai (Ko), ěy (Si).
73. \*kwatiar 'draw' kwačia (Gy), kwatiar (Tb).
74. \*ar 'day' ar (As), ʔar (Gj, Tb), ʔat (Km), ara (Gn), ar(i) 'sun' (Gy), arõ (Si).
75. \*mokõy 'two' mokoy (As, Gj), mokõy (Pt, Km, Ub, Gn,

- Si, Tb), mu'kui (Ko).
76. \*ker 'sleep' ker (As, Gj, Tb), ki (Pt), ket (Km), ukwer (Ub), ukiri (Ko), ke (Gn, Si), k'ye (Gy).
77. \*aʔe 'he' aʔe (As, Gj, Km, Ub, Tb), ai (Ko), haʔe (Gn), ae (Gy, Si).
78. \*moayan 'push' muyən (Gj), omoayă (Pt), yumuyani (Ko), moayă (Gn), moayăi (Gy), maňă (Si), moayan (Tb).
79. \*pin 'rub' pin (As, Km, Tb), pĩ (Gn, Gy), ĩ (Si).
80. \*kitik 'rub' kitik (As), kitik (Gj, Ub, Tb), kiti (Pt, Gn, Gy), giti ~ kiti (Si).
81. \*emireko 'wife' (h)emireko (Gj, Km), (h)emirekohë (Pt), mirikua (Ko), emireko (Gn, Gy, Tb).
82. \*puʔam 'stand' poʔom (As), puʔəm (Gj), puʔam (Ub, Tb), ipamawa (Ko), puă (Gn, Gy), uă (Si).
83. \*yacitata 'star' yahita'ta (As, Gj), yaitataʔi (Pt), yaitataʔi (Km), yahirata (Ub), yačitata (Gn), časi-tata (Si), yasi-tata (Tb).
84. \*(i)ce 'I' iyee (As), ihe (Gj), iye (Km), ihë (Ub), ücü (Ko), čee (Gn), če (Gy), se (Si), (i)še (Tb).
85. \*kice 'knife' kihe (As), takihe (Gj), kie (Km), kise (Ub, Tb), kičikira (Ko), kiče (Gn), kice (Gy), kise (Si).
86. \*yeʔeŋ 'speak' yeʔeŋ (As, Gj, Km, Tb), yiʔĩ (?) (Pt), yeʔë (Ub), yeë (Gy), ñeë ~ čeë (Si).
87. \*ʔitarö 'full' ʔitarö (Pt, Tb).
88. \*poʔi 'thin' ipuʔiahiaʔi (Gj), poʔi (Km, Gn, Gy), puʔi (Ub), oi (Si), poʔĩ (Tb).
89. \*uʔib 'arrow' oʔiw (As), uʔiw (Gj), iʔip (Km), 'ua (Ko), uʔi (Gn), uhu (Gy), uu (Si), uʔub (Tb).
90. \*potir, ibotir 'flower' iwotira (As), putir (Gj, Ub), ibatiri (Pt), ipotit (Km), potir (Gy, Tb), uti (Si).
91. \*tata 'fire' tata (As, Pt, Km, Ub, Ko, Gn, Gy, Si, Tb), hata (Gj).
92. \*ob 'leaf' op (Km), o (Gn, Gy, Si), ob (Tb).

93. \*roʔi, roʔica 'cold' roihĩ, roʔioho (As), ruic (Gj), irotĩ (Pt), iroʔica (Km), risã (Ub), iroʔiçã (Gn), roi, roica (Gy), rui (Si), roʔi, roʔisa (Tb).
94. \*ʔa 'fruit' ʔa (Gj, Km, Gn, Tb), a (Gy, Si). Cf. 16.
95. \*tatatiŋ, catatiŋ 'smoke' tata-čĩŋ (As), hətəcin (Gj), tatatiŋ (Pt, Tb), tatačĩŋ (Km), tataši (Ub), tatatini (Ko), tatačĩ (Gn, Gy, Si).
96. \*petim 'tobacco' petim (As, Km, Tb), petipiar (Gj), pĩtim (Ub), pũtima (Ko), petĩ (Gn).
97. \*kutuk 'pierce' kotoŋ (As), kutuk (Gj, Km, Ub, Tb), kutu (Pt, Gn, Gy), kĩtika (Ko).
98. \*picãpẽ 'claw' piãpe (Gj), piãpẽ (Ub, Gn), picapi (Ko), piãpẽ (Tb).
99. \*ʔarõ 'like' ʔarõ (Pt, Tb), arõ (Si).
100. \*tubicab 'large' tuwiyap (Km), tiha (Ub), tubiça (Gn, Gy), tubișab (Tb).
101. \*aba 'man' awaceʔi (As), awa (Gj), sawaʔe (Ub), 'awa (Ko), aba (Gn, Gy, Si, Tb).
102. \*ipaʔũ 'island' ipaʔõ (Pt), ipaʔũ (Tb).
103. \*bubur 'swell' bubu (Pt), wuwut (Km).
104. \*ruru 'swell' iruru (Ko), i-ruru (Gn), ruru (Gy, Si).
105. \*paʔũ 'space' paʔõ (Pt), paʔũ (Tb).
106. \*co 'go' oho (Gj, Pt, Ub), ucu (Ko), o-o (Gn), co (Gy), so (Si, Tb).
107. \*yakare 'alligator' ya'kare (As), yakare (Gj, Km, Ub, Gn, Gy, Tb), yãkare (Pt), yakari (Ko), nikare (Si).
108. \*enipĩʔã 'knee' renipĩʔã (Pt), cünipa (Ko), renapĩʔã (Gn), enĩpia (Gy), eniã (Si), enipĩʔã (Tb).
109. \*momor 'throw' maman (As), momor (Gj, Tb), momo (Pt, Gy, Si), momot (Km), omor (Ub), yumuc (Ko), o-momo (Gn).
110. \*ipab, iupab 'lake' ipaw (Gj), iwpap (Km), ipa (Ub), i-upa (Gn), upab (Tb).



111. \*yocey, ey, c-ey, yac-ay 'wash' hey (As), yuhey (Gj), piēy (Km), yocey (Gy), yosey (Tb).
112. \*ape-kū, kū 'tongue' ko (As), apeku (Gj), kū (Pt, Gy), kō (Km), kumira (Ko), apekū (Gn, Tb), ekō (Si).
113. \*cim 'smooth' him (As, Gj, Ub), ihmāhī (Pt), yim (Km), iciman (Ko), čīī (Gn), cī (Gy), sim (Tb), ī, šī 'rough' (Si).
114. \*...mirib 'far' momiri (Gn), amomiri (Gy), wimirib (Tb).
115. \*yaci 'moon' yahī (As, Gj, Pt, Ub), yai (Km), yaci (Ko, Gy), yači (Gn), časi (Si), yasi (Tb).
116. \*kaʔi 'monkey' 'kaʔi (As), kaʔi (Gj, Pt, Km, Ub, Gn, Tb), kai (Ko, Gy), ki (Si).
117. \*yi 'ax' yi (As, Km, Ko, Gy, Tb), itayi (Gj), yīkwaʔri (Pt), yi (?) (Ub).
118. \*ci 'mother' hikee (As), hi (Gj), ihē (Pt), i (Km), čī (Gn), cī (Gy), si (Si), sī (Tb).
119. \*pway 'command' kway (Gy), kwa (Si), pway (Tb).
120. \*maniʔok 'manioc' maniʔaŋ (As), maniʔok (Gj, Ub, Tb), maniʔoŋ (Pt), maniʔo (Gn), manio (Gy).
121. \*po 'hand' pa (As), po (Gj, Pt, Ub, Gn, Gy, Tb), pua (Ko), o (Si).
122. \*acu 'left hand' (nepo ne)ahur (Gj), aču (Gn), (po)acu (Gy), asu (Tb).
123. \*men 'husband' man (As, Gj, Tb), mūna (Ko), mē (Gn, Si), mēr (Gy).
124. \*yuka 'kill' yoka (As), yuka (Gj, Pt, Km, Ko, Gn, Gy, Tb), yukwa (Ub), ika / ika (Si).
125. \*kaʔa 'woods' 'kaʔaa (As), kaʔa (Gj, Pt, Km, Ub, Gn, Tb), kaa (Gy), kʔaa (Si).
126. \*aib, aib (?) 'bad' ai (Km), ahi (Ub), ai (Gy), ay (Si), aib (Tb).
127. \*kunumī 'boy' kunuʔum (Km), kurumī (Ub), kunumi (Gy), kunumī (Tb).

128. \*abati 'corn' awači (As), awaci (Gj, Km), abati (Pt, Tb), awaši (Ub), aw (Ko), abači (Gn, Gy), ibaši / abači (Si).
129. \*akim 'wet' 'akim (As), ə'kim (Gj), akim (Pt, Ub, Tb), ʔakim (Km), akĩ (Gn, Gy).
130. \*cuʔu 'bite' oʔo (As), huʔu (Pt), uʔu (Km), suʔu (Ub), čuʔu (Gn), cuʔu (Gy), suʔu (Tb).
131. \*manǝ 'die' mǝno (Gj), manǝ (Pt, Gn, Si, Tb), mano (Km, Ub, Gy), uma'nwari (Ko).
132. \*ibitir, ibiʔam (+ -usu) 'hill' iwitir (As, Gj), ibiʔamuhu (Pt), iwiʔam (Ub), iwata (Ko), ibiti (Gn), ibitir (Gy, Tb), ibi (Si), ibiʔam 'ravine' (Tb).
133. \*mǝy 'move' mǝy (Pt, Tb).
134. \*eta, c-eta 'many' eta (As, Gj, Ub, Gy, Si, Tb), čita (Ko), heta (Gn).
135. \*kuyǎ 'woman' koyo (As), kuyǝ (Gj), kuyǎ (Pt, Km, Ub, Gn, Tb), 'kuyǎ (Gy).
136. \*mitũ 'variety of bird' mitũ (Pt, Tb), mitǝ (Si).
137. \*itab 'swim' itaw (Gj), ita (Pt, Gy), ʔitap (Km), ʔita (Gn), ita (Si), itab (Tb).
138. \*tĩ 'nose, beak' či (As), ci (Gj), tĩ (Pt, Tb), čĩ (Km, Gn, Gy), ti (Ko), šĩ (Si).
139. \*pitun 'night' ipiton (As), pitun (Gj, Ub, Tb), ipitun (Pt), ʔipitun (Km), ipitunin (Ko), pitũ (Gn, Gy), itǝ (Si).
140. \*pica 'night' ipica (Ko), isa (Si), pisare (Tb).
141. \*er 'name' er (As, Gj, Pt, Ub, Tb), et (Km), čira (Ko), e / ere (Si).
142. \*ore 'we (excl.)' oree (As), ure (Gj, Si), ore (Pt, Km, Gn, Gy, Tb).
143. \*yane 'we (incl.)' yanee (As), yane (Gj, Pt, Ub, Gn, Gy, Tb), yene (Km), ini (Ko), ñane, nane (Si).
144. \*picacu 'new' piahu (Gj, Pt, Ub), piau (Km, Gn), ipicacun (Ko), piacu (Gy), pisasu (Tb), iasu (Si).

145. \*ibatiŋ 'cloud' iwaciŋ (Gj), iwaciŋ (Km), ibĩčĩ (Gy), ibeisĩ (Si), ibatiŋ (Tb).
146. \*ibĩy 'hollow' ibĩy (Pt, Tb).
147. \*eca 'eye' eha (As, Gj, Ub), eakwar (Pt), ea (Km), čicakuara (Ko), eča (Gn), eca (Gy), esa (Si, Tb).
148. \*yawar 'jaguar' yawar (As, Gj, Gy, Tb), yãʔŋwãr (Pt), yawat (Km), yaŋwate (Ub), yaware (Ko), yawa (Gn), ñaka (Si).
149. \*nami 'ear' nami (As, Gj, Pt, Km, Ub, Ko, Gn, Gy, Tb).
150. \*kaŋ, kaŋ-wer 'bone' kiŋ (As), kəŋ (Gj), kaŋ (Pt, Km, Tb), šaŋwer ~ kaŋwer (Ub), kanwara (Ko), kã gwe (Gn), kã (Gy), kěy / kaŋ (Si).
151. \*enub 'hear' enom (As), enu (Gj, Pt, Ub, Gn, Gy), cunu (Ko), anu (Si), enub (Tb).
152. \*upiʔa 'egg' opiʔa (As), upiʔa (Gj, Pt, Km, Gn, Tb), piʔa (Ub), cupya (Ko), upia (Gy), [uθia]/ečia (Si).
153. \*ub 'father' ow (As), u (Gj, Ub, Gn, Gy, Si), ub (Pt, Tb), up (Km).
154. \*yaʔě 'pan' yaʔee (As), yaʔe (Km), yaě (Gy), ya'ʔě (Tb).
155. \*yaěpepo 'pan' yapepo (Gj, Ub, Gn), yaĩpepo (Pt), yaěpepo (Tb).
156. \*ayuru 'parrot' ayoro (As), ayuru (Gj, Km, Gy, Tb), ayuruʔi (Pt), čuru (Si).
157. \*pwan 'pass' kwã (Gy), kwa (Si), pwan (Tb).
158. \*wira 'bird' wira (As, Km, Ub, Ko, Gn, Gy, Tb), wirəmiri (Gj), ŋwiraʔi (Pt), gira (Si).
159. \*ibira 'stick' iwira(ʔi) (As, Km), iwira (Gj), ibira(ʔi) (Gn), ibira (Gy, Tb), ira (Si).
160. \*pi 'foot' pi (As, Gj, Pt, Km, Ub, Gn, Gy, Tb), pita (Ko), i (Si).
161. \*ita 'rock' ita (As, Gj, Km, Ub, Gn, Gy, Si, Tb), itaki (Pt), itaki (Ko).

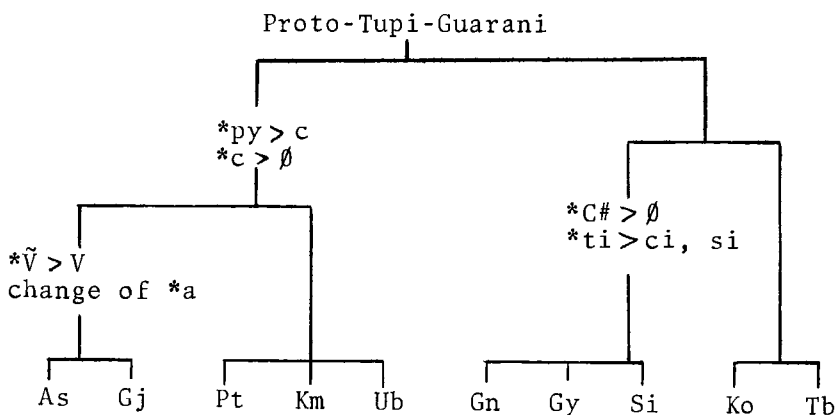
162. \*poti<sup>?</sup>a 'chest' poti<sup>?</sup>a (Pt, Tb), poci<sup>?</sup>a (Km), piši<sup>?</sup>a (Ub), putyakwara (Ko), poči<sup>?</sup>a (Gn), počia (Gy), isia (Si).
163. \*kam 'breast' kom (As), kəm (Gj), kami (Ub), kã (Gy, Si), kam (Tb).
164. \*pira 'fish' ipira (As, Km, Ko), pira (Gj, Pt, Ub, Gn, Gy, Tb), hira ~ sira (Si).
165. \*pir, piruer 'skin' pirer (As, Gj, Ub, Gy), ahampir (Pt), pîret (Km), piruara (Ko), pire (Gn), i (Si), pir, pîrwer (Tb).
166. \*ab, c-ab, c-a-wer 'feather' aw (As), hawer (Gj), ab (Pt, Tb), ap (Km), ca (Ko), a (Gy, Si).
167. \*etimã 'leg' etimoci<sup>?</sup>a (As), etimə (Gj), etimakaŋ (Km), timã (Ub), etimã (Gn, Gy, Tb), etimã (Si).
168. \*pociy 'heavy' pohoy (As), puhïy (Gj), pohïy (Pt), powïy (Km), puhî (Ub), i'puci (Ko), poïy (Gn), pocïy (Gy), usi (Si), posïy (Tb).
169. \*ayur 'neck' yor (As), ayu<sup>?</sup>iw (Gj), yur (Pt), ayut (Km), ayu<sup>?</sup>u (Gn), ayu (Gy), aču / ečurui (Si), ayur (Tb).
170. \*akwa 'person' akwaïme<sup>?</sup>e (Pt), akwama<sup>?</sup>e (Km).
171. \*kib 'louse' kiw (As, Gj), kib (Pt, Tb), kip (Km), iši ~ ki (Ub), kiwa (Ko), ki (Gn, Gy), ki (Si).
172. \*pi<sup>?</sup>ũ 'variety of gnat' pi<sup>?</sup>ũ (Pt, Tb).
173. \*pwer 'past tense' -ke (Si), -pwer (Tb).
174. \*un, c-un 'black' cunin (Ko), ũ (Gn), cũ, hũ (Gy), õ (Si), un (Tb).
175. \*picun 'black, dark' pihon (As), pihun (Gj, Ub), picun (Km), išõ (Si), pišun (Tb).
176. \*kay 'burn' kay (As, Gj, Pt, Km, Gn, Gy, Tb), kway (Ub), uki (Ko), key (Si).
177. \*api 'burn' api (As, Gj, Km, Gn, Tb).
178. \*akub 'hot' akom (As), aku (Gj, Ub, Gn, Gy, Si), hakub ahi (Pt), akup (Km), caku (Ko), akub (Tb).

179. \*uway 'tail' way (As, Km), uay (Gj), wayã (Pt), uway (Ub, Gn, Gy, Tb), cui (Ko), okoy (Si).
180. \*mobok, bok 'split' mowok (Km, Ub), mobo (Gn, Gy), moṃbo, bo (Si), mobok (Tb).
181. \*apo 'root' iwapa (As), apo (Gj, Km, Ub, Gn, Gy, Tb), hapo (Pt), capwa (Ko), ao (Si).
182. \*karãý 'scrape' kariy (As), kərəy (Gj), karãý (Pt, Gn, Gy, Tb), kari (Ko), karëy (Si).
183. \*apu?a 'round' iapo?a (As), iapu?a (Gj), i?ahu?a (Km), yupu?a (Ub), ya'pwan (Ko), iyapu?a (Gn), apua (Gy), hua (Si), apu?a (Tb).
184. \*pitu 'breathe' pitoekic (As), pituhem (Gj), ipitu (Pt), yepitu (Km), pituë (Gn, Gy, Tb), itu 'breath' (Si).
185. \*paranã 'river' parano (As), parana (Km, Ub, Ko), paranã (Gn, Tb).
186. \*puka 'laugh' poka (As), puka (Gj, Gn, Gy, Tb), huka (Km), pukwa (Ub), apukari (Ko), ika (Si).
187. \*kuwaab 'know' kwaham (As), kwaw (Gj), kwaha (Pt), kwahap (Km), kwa (Ub), ikwa (Ko), kwaa (Gn, Gy), kwa (Si), kuwab (Tb).
188. \*yukir 'salt' yokiri 'green' (As), yukir (Gj, Pt, Ub, Gy, Tb), yokit (Km), yuki (Gn). Cf. 7.
189. \*eni 'saliva' eni (As, Gj, Pt, Km, Gy(?), Tb), eni (Si).
190. \*uwi 'blood' owi (As), iwikwer (Gj), ṃwĩhi (Pt), wi (Km), uwi (Ub, Gn, Gy, Tb), cui (Ko), uki (Si).
191. \*pwerab 'heal' kwera (Gy), kera (Si)(?), pwerab (Tb).
192. \*kaṅ 'dry' kã (Si), kaṅ (Tb).
193. \*a?iy 'seed' a?iy (As), i?iy (Gj), a?iy (Pt, Km, Gn, Tb), a?ĩ (Ub)(?), cai (Ko), aiy (Gy), ëy (Si).
194. \*apik 'sit' apiṅ (As), apik (Gj, Km, Tb), api (Pt)(?), mapik (Ub), yapika (Ko), api (Gn), wapi (Gy).
195. \*kwaraci 'sun' kwarahi (As, Gj), warahi (ub), kuarači (Ko), kwaraĩ (Gn), kwarasi (Tb).

196. \*peyu 'blow' peyo (As), peyu (Pt, Ub, Gn, Gy, Tb).
197. \*ki'a 'dirty' ši'a ~ ki'a (Ub), ki'a (Gn, Tb), kia (Gy), kia (Si).
198. \*ipib 'dirty' ipiw (Pt), ipibuhu (Km).
199. \*takwar 'bamboo' takwar (Gy, Tb), takwa (Si).
200. \*cikiye 'fear' kiiye (As), kiye (Gj, Km, Ub, Gn), kihäyi (Pt), cikiye (Gy), sikiče (Si), sikiye (Tb).
201. \*ibi 'land' iwī (As, Gj, Km, Ub), ibi (Pt, Gn, Gy, Tb), ibi (Si).
202. \*pab 'all' paw (Gj), pabëy (Pt), upa (Ub), pabë (Gn), opa (Gy), ha (Si), (o)pab (Tb).
203. \*mocapir 'three' mohapi (Pt), mo'apit (Km), mapir (Ub), mucapirika (Ko), moapi (Gn), mocapi (Gy), mosapir (Tb).
204. \*i'e 'intestines' ie'i (As), ie (Gj, Gn), iapoyub (Pt), i.ʔiepo (Km), ie (Si), i'e (Tb).
205. \*oyepeteĩ 'one' oyepe (As, Tb), pitei (Gj), oyipeyĩ (Pt), oyepete (Km), pete'ĩ (Ub, Gn), wüpu (Ko), yepeĩ (Gy).
206. \*pwã-pë 'fingernail' koá-pe (As), hwa-pe (Km), pë kuã (Gy), oãë (Si), pwã pë (Tb). Cf. 70.
207. \*ibitu 'wind' iwīto (As), iwītu (Gj, Km, Ub, Ko), ibitu (Pt, Gn, Gy, Tb).
208. \*epyak 'see' ečaŋ (As), ečak (Gj, Km), usak (Ub), esa (Gn), epia (Gy), ea (Si), epyak (Tb).
209. \*obi 'green' huiahi (Gj), hobiahi (Pt), čowi (Km), howi (Ub), owi (Gn), obi (Gy, Tb), ubi (Si).
210. \*ceboʔi 'worm' ewoʔi (As, Km), eboʔi (Pt), ceboʔi (Gy).
211. \*waŋ 'red' i.ŋwaŋ (Pt), i.waŋ (Km), waŋ(Tb).
212. \*piraŋ 'red' piroŋ (As), pireŋ (Gj), pirã (Gy), irã (Si), piraŋ (Tb).

213. \*pitaŋ 'red' pitã (? Km, Gn), pitandin (Ko), itã (Si), pitaŋ (Tb).
214. \*(?)ẽ 'pour' ?ẽ (Pt), ẽ (Tb, Si).
215. \*ur 'come' on, ot (As), hu (Pt), ?ut (Km), u (Gn, Gy, Si), ur (Tb).
216. \*eko, ekobe 'live' iko (Gj), kowe (Km), šuwe (Ub), ikobe (Gn, Gy, Si), eko, ekobe (Tb).
217. \*bebe 'fly' wewe (As, Km), ewew (Gj), bebe (Pt, Gn, Si, Tb), uwũ (Ko).
218. \*ne, ene 'you (sing.)' enee (As), ene (Km, Tb), ünü (Ko), ne (Gj, Pt, Ub, Gy, Tb, Si), nee (Gn).
219. \*pe...ẽ 'you (pl.)' pehee (As), pehe (Pt, Ub), pehẽ (Km), üpü (? Ko), peč (Gn, Gy), hẽ (Si), pe?ẽ (Tb).
220. \*we?en 'vomit' we?en (As, Ub, Tb), u'wünü (Ko), weč (Gy).
221. \*irõ 'mad' irõ (Pt, Tb), irõ (Si).

5. Classification. Based on retained items and innovations common to the phonemic systems of the languages studied as compared to the system reconstructed for the proto-language, the following tree diagram representing the genetic classification of this group of languages is obtained:



The following statements may be made on the basis of a rapid inspection of certain Tupi-Guarani languages which, because of lack of data, were not used in the reconstruction.

Tapirapé (data from Yonne Leite) has much in common with Asurini, including the loss of contrast between \*u and \*o, the merging of certain other vowels with \*a, and the phonetic manifestation of /y/ as [y] in syllable-final position and as [ç] in other environments. However, its inclusion in the same section of the diagram as Asurini is difficult, since vowel nasalization remains as a phonemic feature of Tapirapé but not of Asurini and Guajajara.

Kayabi (data from Helga Weiss and Rose Dobson) and Emerillon (data from Vaughn Collins) have a zero reflex of \*c and phonemic vowel nasalization. Thus they belong to the Parintintin-Kamayura-Urubu branch. Kayabi appears to be closest to Parintintin.

Kaiwá (data from Loraine Bridgeman) and Xetá da Serra dos Dourados (data from Aryon Rodrigues) are similar to Guarani, including the characteristically Guarani distribution of zero and /c/ reflexes of \*c.

#### FOOTNOTES

<sup>1</sup>The present study was made possible through extended consultation with Prof. Aryon Rodrigues, author of a classification of the Tupi linguistic stock and of various studies of Tupinambá. Without his counsel and help in solving a number of problems we would not have been able to progress in the study. His assistance is here gratefully acknowledged.

<sup>2</sup>In order to standardize the use of phonemic symbols, we made certain substitutions for symbols used by the original authors. In most cases the substitution was on a one to one basis, thus not implying a different phonemicization. In cases in which we found complementary distribution, we took the liberty of substituting one symbol for various others. We have also reinterpreted /k<sup>w</sup>/ and /ŋ<sup>w</sup>/ as sequences, /kw/ and /ŋw/, rather than single phonemes.

Substitutions made in the various languages are as follows:

As: k<sup>w</sup> > kw; č > y. Gj: k<sup>w</sup> > kw; ŋ<sup>w</sup> > ŋw; z > y. Pt: k<sup>w</sup> > kw; j, ŷi, ŷñ > y; g<sup>w</sup> > w; g > ŋ; v > b; ŷi > ŷy; ŷñ > ŷy.  
 Km: k<sup>w</sup> > kw; m<sup>w</sup> > m; h<sup>w</sup> > h. Ub: k<sup>w</sup> > kw; ŋ > ŋ; ŋ<sup>w</sup> > ŋw.  
 Ko: iy > yv; uy > wv; Gn: k<sup>w</sup> > kw; j, ñ, ŷi > y; g<sup>w</sup>, ŋ<sup>w</sup>, ŷw > w; v > b; ~ on last nasal vowel only; ŷi > ŷy; Gy: k<sup>w</sup> > kw; z > c; ch > č; mb > m; nd > n; ŋ > ŋ; v > b; gu > w; y, ŷi, ŷv > y; ñv > y<sup>v</sup>.