

Jamamadí Preliminary Phonemic Statement

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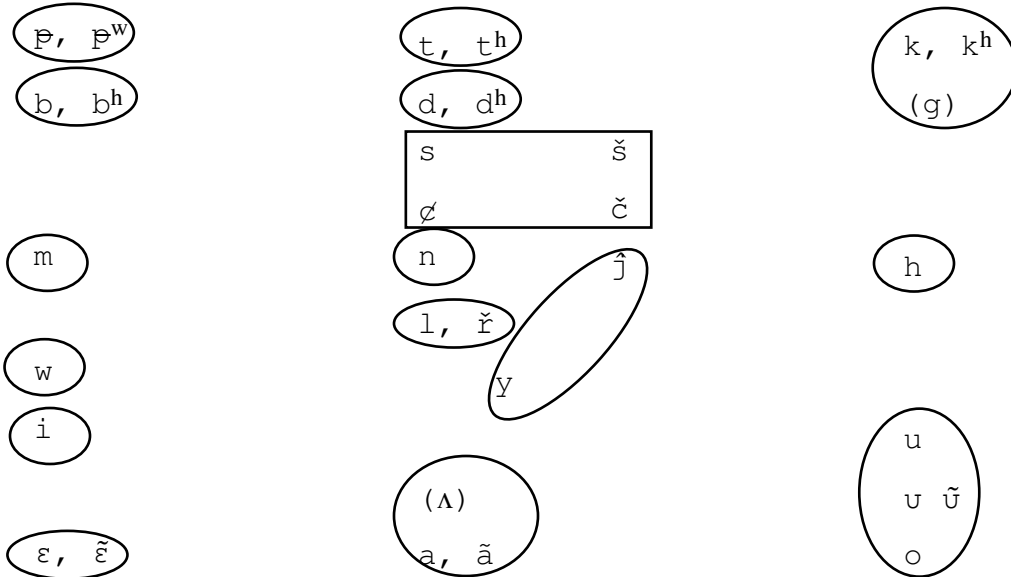
I. Introduction

The Jamamadí tribe is probably of a branch of the Arawak language family located on the high ground near the Purus River. There are known groups ranging from above the Boca do Acre to Labrea and some on the Purus side of the Tapaua River on the Cunhua. These may be divided into a number of distinct dialects which may or may not be mutually intelligible. The number of speakers is still undetermined but with all dialects included will run into the thousands probably.

This statement is based on two tribal visits made from December, 1963 through February, 1964 and May, 1964 through June, 1964 with two separate groups both living between the Purus and Curia, a tributary of the Piranha, which in turn is a tributary of the Cunhua, and then the Tapaua. Most of the data is identical, but where differences are found, that of the second group has been used in the analysis and the first placed as a footnote.

The informants for the first session were Casias, about 45, his son, Tati, about 19, and Waldemara, his daughter, about 24. They are able to converse in Portuguese enough to do trading but not much else. Second session was mainly Chico, about 28, Adegar 24, and Satonino, 20. Adegar has a fair speaking knowledge of Portuguese but cannot go into anything abstract. The other two are barely able to do trading.

II. Chart of Phones



III. Interpretation Procedures

A. Syllable patterns

CV

'baka

chest

bi'bidinařu

smaller

'maka

snake

'badεε

large deer

'tone

bone

di'disa

bow

V			
'alabə	'don't do it!	'oma	piranha
'ɛbɛnɛ	tongue	o'noɸini	I like
'aba	fish		

B. Segments which may be either consonant or vowel

We have interpreted non-syllabic h, u, and i to be consonants h, w, and y respectively. Not to do so would result in sequences of three vowels for which there is no non-suspect pattern.

'yimawa	knife	a'yoto	intestines
'wɛɸɛ	cotton	'kobaya	wild pig
'yɛɸɛ	hand	tika'makihi	come back soon
'yubɛ	house	'hima	let's go
'ahi	here		

y is also found to be in fluctuation with j which further strengthens the interpretation of y as a consonant.

C. Etic sequences which may be either emic units or sequences

There are no non-suspicious CC clusters. Therefore ts, tš, dž, bh, dh, th and kh are interpreted as units. They are also found to be allophones or single phonemes. (See section VI)

Labialized ɸ (ɸ^w) also patterns conveniently as one unit, an allophone of /ɸ/. (See section VI)

All vowels have nasalised variants which occur contiguous to nasals. Following nasals the nasalization in the vowel is heavier than preceding nasals.

Word initial and word final vowels also are nasalized, as also are sequences of two front vowels or two back vowels.

In fast speech, a glottal nasal /h/ may be dropped, but the nasalization feature remains in the vowel--which may then appear to contrast with an oral vowel in analagous environments. There are also a few instances where a vowel is nasalized unpredictably, but they are so rare that at this stage of the language it does not seem to justify a whole range of nasalized vowel phonemes. This may however be a direction in which language has begun to change and may eventually necessitate a modification in the analysis of the vowel phonemes.

When a nasalized vowel is followed by a stop, a transitional nasal consonant may be developed, e.g. [ũŋka'dãũ] [hĩmba'yatã]. Since no other consonant clusters occur in the language, and since these developed nasals are always homorganic with the following stop, they are considered to be a transitional feature and not functioning as part of the consonant system.

Because of the many reverse sequences of vowel clusters, we are interpreting ai, ia, ao, oa, aɛ, oi, ɛo, oɛ to be two segments, each the nucleus of a separate syllable. Phonetically, the sequences ai and au sound like one syllable but are interpreted as two on the basis of the other vowel sequences.

IV. Contrastive Chart of the Phonemes

Consonants	Bilabial	Alveolar	Post-alveolar
Voiceless stops		t	k
Voiced stops	b	d	
Fricatives	ɸ	s	
Nasals	m	n	h
Semi-vowels	w	l	y

Vowels	front	back
high	i	u
low	ε	a

V. Formational Statement of the Phonemes

Stops

Voiceless stops have aspirated allophones and voiced stops have breathy allophones which fluctuate freely in every environment with the unaspirated and non-breathy allophones.

/t/	[t]	voiceless unaspirated alveolar stop
	[t ^h]	voiceless aspirated alveolar stop
/k/	[k]	voiceless unaspirated velar stop
	[k ^h]	voiceless aspirated velar stop
	[g]	voiced velar stop fluctuating with [k] and [k ^h] in a few utterances
/b/	[b ^h]	voiced breathy bilabial stop
	[b]	voiced bilabial stop
/d/	[d ^h]	voiced breathy alveolar stop
	[d]	voiced alveolar stop

Fricatives

/ɸ/	[ɸ]	voiceless bilabial unrounded fricative
	[ɸ ^w]	voiceless bilabial rounded fricative fluctuating with [ɸ] before /a/
/s/	[ç]	voiceless alveolar grooved affricate occurring in word initial position
	[č]	voiceless alveo-palatal grooved affricate fluctuating freely with [ç] particularly between speakers
	[s]	voiceless alveolar grooved fricative occurs elsewhere
	[š]	voiceless alveo-palatal grooved fricative, fluctuating freely with [s] but less frequent than it.

Nasals

/m/		voiced bilabial nasal
/n/		voiced alveolar nasal
/h/		voiceless glottal fricative with nasal release

Semi-vowels

/w/	[w]	voiced labio-velar semi-vowel
/l/	[l]	voiced alveolar lateral occurring in word initial position, and usually before front vowels
	[ɫ]	voiced alveolar flap occurring usually before back vowels. There is occasional fluctuation between [ɫ] and [l]
/y/	[y]	voiced palatal semi-vowel
	[j]	voiced alveo-palatal grooved affricate fluctuating with [y] in word initial position.

Vowels

/i/	[i]	high close front unrounded vocoid
/ε/	[ε]	mid open front unrounded vocoid
/a/	[a]	low open central unrounded vocoid tending to a more close variant [ʌ] in unstressed syllables.
/u/		back rounded vocoid with variants ranging from high close [u], to high open [ʊ], to mid close [o].
	[o]	<u>tends</u> to occur in word initial position, in word final position following /h/ and as first member of a vowel sequence.
	[u]	<u>tends</u> to occur between /y/ and /m/, and as second member of a vowel sequence.

VI. Evidence for the Separation or Combining of Phones

Bilabials

		word initial syllables	
/b/		/p/	
	-i		-i
'bibi	fan	'pia	'toitini straight line
'bita	mosquito	'pisi	monkey
'bidi	child or small	'piři	snuff sniffer
'bide	small	piřu	'nabana to spit
bi'bidinařu	smaller		
'bidane	thin	pidu'	'nakini run after
'bisini	dirty	pidu'	'bunehε I'm going to leave
∅oko	'bisaba I wash		
	-ε		-ε
'beři	split or half	iřudi-	'pene saliva
	-a		-a
'badu	little type deer	'pa	ořimatia drink
'baku	chest		
'base	fish	'pasu	leaf
'bama	(bahama) cat fish		
'bani	meat		
'bahi	thunder	'paha	water
'bali	back		
'bata'olini	I hit	'patani	'pata 'owiti plant
'batehε	fruit		
'manu	'batuli upper arm		
'badehε	deer		
'baka'tokabe	break	pakaki'	'bunehε going to rain
		'yume	pa'pawε dog is drinking
		pařoε	winter
'banehε	ant eater	'nařabu	'pame 2 horns
bani-'ati	animal voice	'pamini	two
'bani'bidi	bird	'pamařu	two
'banani	went	'panawi	woman
uki'baneni	I hunt	'panaku	upper leg
'balana	(red & blue pencil)	'pala	'pawane drink water
		pařεmane	'como se chama'
		pani'	'polineni leave

Bilabials**word initial syllables**

/b/		/p/	
		ɸawanini	gone
		'ɸawana'tohawa	loose
		'ana'řika mɛ ɸawini	few 'pium'
-u		-u	
'butu	'tikanahi	light the lantern	'ɸue
'bute		sting ray or old	'mandioca'
'buni		wind	
'yiwa	'buni	clay	
'bunu		upper lip	ɸue'kisini
'buřa		dress	river rising
'owati'budi		half	'noku'ɸute
'noku'budi		eye	big eyes
'bunɛɛ		to go	'ɸuline
'awe	'bunɛni	pencil (complete wood)	ɸuli'lisamaha
			lying down
			put down
			leave
'wati-bunu-kuři	heart	'uka	'buřa
		'ɸuliti	Where are my
		'obalimani	clothes?

Bilabials**word final syllable**

/b/		/p/	
-i		-i	
'abi	father	'api	wet
'bibi	fan		
'nomɛ-ɸabi	cloud	'dapi	'bicho'
honi'abia	stick died (no good)		
-ɛ		-ɛ	
'yube	house	'yeɸɛ	hand
kasi'ɛbe	gourd	'weɸɛ	cotton
ɸina	'tabɛ	bani'ɛɸɛ	bird's wing
'baka	'tokabe	ɸeřɛɸɛ	dart
-a		-a	
'duba	bow string	'wapa	monkey
ɸaba'noku	ankle		
honi'aba	stick died		
ɸuku	'bisaba	'kusupa	fish

Bilabials**word final syllable**

/b/			/p/	
	-u			-u
'tɛmɛ-	'libu	ankle	'iɸu	lower lip
'wabu		tick	'maɸu	ant
'yo-	dabu	wrist	'muɸu	cotton-like head of dart
'hiabu		locust	'yiɸu	fire, hammock, or fruit
'nařabu		ear		
'uřubu		fish		

Bilabials**intervocalic**

/b/			/p/	
	i-i			i-i
bi'	bidinařu	smaller		
'ɸili	'tibirahə	(something about snuff)		
	ɛ-i			ɛ-i
	a-i			a-i
'abise	stepfather		'aɸi'oni	took bath
			'aɸiobunɛɛ	I'm going to take a bath
			'yama kaɸita toɛ	bad bug
			naɸi'kusařu	larger
'habise	'bicho'		oda'ɸimini	we're hungry
'kařabise	bee		'taɸini	eat
			'naɸini	much
	o-i			o-i
			loɸi'owini	roll up
			ɸa 'oɸimatia	drink
			o'ɸimini	I'm hungry
			ɸa 'oɸini	thirsty
			yɸinibařa	afraid
			hasi'noɸini	afraid
			o'noɸini	I like
	i-o			i-o

Bilabials

		intervocalic	
/b/		/p/	
	ε-ε		ε-ε
εbε 'kawali		hip	
'εbεε		tongue	hεpεεε egg
εbenia uka buřa		Where are my clothes?	
tibaliti			
	a-ε		a-ε
		'noku'bise	'napεřu very sleepy
	o-o		o-o
tu'tubεyυ		hummingbird	

Bilabials

		word medial syllable	
/b/		/p/	
	i-a		i-a
'hibati italimani		you put it down	
'∅ibati		banana	
'∅ibatali		liver (?)	
maowibana		tired	
witalibana		I'm sitting	
okumakibani		I'm not coming back	
tibanahi		roast	
aba ibanane		cook fish	
pakaya'nibana		rain passed by	
'hibaha		(response to "give it to me")	
'mahi 'tokε di'dibahi		at sundown I'll pick it up	
yυpεi'nibařa		afraid	
hiba'leya		wait	
tibalihi		she's going to put it down	
hibatiya 'hibaloni		she put it down	
hiba'yata		now	
	ε-a		ε-a
'mahi tokε odibani		at sundown I'll pick it up	
yε-'baři		knuckles	'εpaři 'budi ribs
	a-a		a-a
'aba		fish	
'nabadi		stomach	
oda'basini		I picked it up	oda'pamani we put it down
oda'basahi		I'm going to pick it up	hapama two

Bilabials

word medial syllable

/b/

/p/

piřv'nabana	to spit
owa'yakani 'yabani	I walk a lot
ona'habaho	I hit
tikabahi	you can eat
o'nabahi	I hit
aba'liku	moon
yama'hikabařv	scratching
pa 'abalini	leave the water alone
'tabařv	home

u-a

u-a

'yubati	knee	'yupali	tail
yubanini	walk	'nabv'paninɛni	fish swim
'ʒobali	stomach	o'nupalihi	I don't like
buřa obalimani	Where are my clothes?		
uba'lisamini	put down part way		
kubaya	'porco do mato'		

i-u

i-u

uka 'yibutɛ	my wife
dibunane	swim
ona'wanibunɛhɛ	I'm going to put it down
odi'bunɛhɛ	I'm going to pick it up

ɛ-u

ɛ-u

'wɛbutɛ	big
mɛ'bukini	river's rising

a-u

a-u

'kabutɛ	hurry	paʒoɛ	winter
'ɛpařa'budi	ribs	'aʒv'tikasahi	put out the light
nabv'paninɛni	fish swim		
yakabvunɛhɛ	I'm walking		
kařabuha	blow gun		
'yabuli	long	'kaʒv'limahi	pick up
manv'yabuřy	wing	tina'pulihi	she's going to put it down

u-u

u-u

kubv'nabani	arrive
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Bilabials, semi-vocoid and nasal

		word initial syllable	
/w/		/m/	
	-i		-i
'widi		nose	
'wiye		empty	
'winitinamiahi		come back	
'wisi 'wisi o 'matalʔa		cut to take out sliver	
	-ε		-ε
'wεpε		cotton	mεbokini
'wεku 'tikanisaho		screw or put together	mεka madεhe
poa 'weyanahi		carry 'mandioca'	mεshinamosini
	-a		-a
'wabu		tick	'made 'bide 'panawi
'wati		arrow	'madi 'tεhili
'wadi 'damini		lots of things	'maka
			'maɸu
'wapa		monkey	'yama 'toε 'mani
'wami		land	'manu
'waha		river	'mahi
'wati-kuřu		grass	matia
'watoni		I know	matamahi
'wa 'tolini		I don't know	matonali
'wadini		have or stay	'madεhe
wakananini tokomakini		run	'made wadini
tika 'wamaho		give it to him	'maduatone
'wamaka		'arara'	'makehe
'bidi 'wanařu		carry child	makekobani
'wanati		summer	ma 'mati
'wana- 'kuři		spider	ma 'mawa 'nařu
'wařa 'waha		grasp	mawibana
'wařεřu		cook	
'wařahini		she picked it up	
'wařatoni		pick up	'maibokibunεhe
'kimi 'walinεni		she is cooking corn	'maibupaninεni
'wayumata		turkey	'mauhatiři
			river will go down
			fish swim
			burnt

Bilabials, semi-vocoid and nasal

		word initial syllable	
/w/		/m/	
	-u		-u
		'mʊɛ	flower
		'mʊi	nut
		'mʊpʊ	cotton like material
		'modo'tiua'miahi	going around
		mokanahi	put in
		mʊ'mʊna	bee

Bilabials, semi-vocoid and nasal

		word final syllables		
/w/		/m/		
	-i		-i	
		'ami	mother	
		'kimi	corn	
		'ɔ̃mi	worm	
		'ɔ̃ami	pineapple	
		'wami	ground	
		'yutumi	raccoon	
'pʌnawi	woman	'adami	'ladeira'	
	-ɛ		-ɛ	
'yume	'pa'pawɛ	'onça' is drinking	'yume	dog
			'tɛmɛ	foot
			'pili dʌmɛ	lots of snuff
			'kome	hurt
			'nɛmɛ	sky
			'ati ɔ̃mɛ	good man
	-a		-a	
'dɛʊwa	intestines	'ama	blood	
'atiwa	stick	'bama	fish	
aʃa'kawa	chicken	'hima	let's go	
'yimawa	knife	'yama	jungle	
pawana 'tohawa	(lost?)	okoma	'bicho de pé'	
		'inu-'bařama	needle	
	-u		-u	
		'dɛmʊ	girl	

Bilabials, semi-vocoid and nasal

/w/		intervocalic	
		/m/	
i-i		i-i	
'tiwi'talihi	you sit down	o'pimini	I'm hungry
'hiwini	hot	'yimiti	'mucuim'
ɛ-i		ɛ-i	
a-i		a-i	
komi'awibařa	does it hurt?	'namidi	neck
'yawida	'pupunha'	owamisamini	rise up
ti'yawini	mad	'hamise	vine
hinawinini	lay down	ɸamini	two
'oda 'baka'nawiři	we broke the stick	mvinamini	bend
a'wilini	don't have		
o-i		o-i	
owita'matia	cloudy		
owidi	wind		
owinini	cry	'komini	pain
owini	see	'tamini	pretty
loɸi'owini	roll up		
i-ɛ		i-ɛ	
ɛ-ɛ		ɛ-ɛ	
ɛwetɛli	'casa dele'		
'ɛwete	home grown		
'nařabu 'owene	horns	'tɛmɛ-'libu	ankle
a-ɛ		a-ɛ	
iawa 'kawɛřu	eat 'massa'		
o-ɛ		o-ɛ	
i-a		i-a	
'tiwati	in your language (you talk)		
hi'wakini	carry		
tiwakaho	you take		
'yiwaha	clay pot		
'yama 'tiwahi	look	ɸolimahi	lay down
hokoliwahi	dry	yimawa	knife
ɛ-a		ɛ-a	

Bilabials, semi-vocoid and nasal

/w/	intervocalic		
		/m/	
	a-a	a-a	
'awa	wood	ma'mati	grass
tina'wadahi	raise	'wamaku	'arara'
tina wa'wamahi	move		
ma'mawa'nařu	red		
ɸawanini	lost	'hamaha	vine
'awani	wasp	tikamahi	you come
ukadau yanawaħɛ	my son grows	ʒinamaha	'cutia'
kawa'řɛřu	cook		
ɛbɛ'kawaři	hip	hodi'ɸamalini	
ukanawalineni	I put away	ma'mawa'nařu	red
	u-a	u-a	
owati	talk	'wisi'wisi o'matalʔa	cut to take out sliver
owati'bodi	half	wayumata	turkey
yama owasini	find	'wakananini tokomakini	run
owamisamini	rise up	'yumahi	dog
haowamani	I		
owa'yomini	sing		
	i-u	i-u	
	o-u	o-u	
	a-u	a-u	
		mɛsɛhinamusini	cleaning
		a'musini	pretty, good
		a'munanɛ	sleep
	u-u	u-u	
		mu'muna	bee

Nasals, alveolar and glottal

/n/	word initial syllables		
		/h/	
	-i	-i	
		'hima	let's go
		'hiabu	locust
		'hiama	wild hog
		hibalɛya	wait
		'hibaha	response to "give it to me"
		hiba'yata	now
		'hidini	she picked it up
		'hisiři	basket
		'baka'hisini	she broke the stick

Nasals, alveolar and glottal

		word initial syllables	
/n/		/h/	
		mesɛhinamosini	cleaning
		hiwakini	carry
		'hiwini	hot
<hr/>			
	-ɛ		-ɛ
nɛbuhawini	hear	'hika'hɛmuni	it is hidden
'nɛmɛ	sky	'hɛpɛnɛ	egg
'nɛmɛ-ɔabi	cloud		
<hr/>			
	-a		-a
'nanu	'mandioca' squeezer	'haʁu	there
		'hawi	trail
'nabadi	stomach	'habisɛ	'bicho'
		'mai 'hatilini	burnt
'naɸini	strong	'hadisa 'ɛni	sneeze
		'hasika	porpoise
'namidi	neck	'hasi'noɸini	afraid
'nahini	come apart	'hamaha	vine
'naʁabu	ear	'hananɛ	shout
'naʁabɛ 'ɛwɛnɛ	horns	hanipɔla	behind
<hr/>			
	-o		-o
		'husi	sweet potato
		hodi'ɸamalini	
'nokv-'baku	forehead	'okulini	dry
'nokv-'bisɛ	sleepy	'huni'aba	it's dead
'nokv-'boki	eye	huʁukani	to follow
'nokv-'yoaki	squirrel	huʁu'namini	to pull out

Nasals, alveolar and glottal

		word final syllable	
/n/		/h/	
	-i		-i
'bani	meat	'ahi	here
'boni	wind	'bahi	thunder
'aɸi-'oni	bath	'mahi	sun
waʁatuni	pick up	'yuihi	monkey
'odiʁi	I picked up	onabahi	hit
'wadini	have	'odihi	I go to pick up
'okini	I'm going	'tikahi	go
hasi'noɸini	afraid	aɸutikasahi	put out the light
'bisini	dirty	ɸolimahi	lay down

Nasals, alveolar and glottal

/n/	word final syllable		
		/h/	
o'pimini	I'm hungry	'yumahi	dog
'banani	I took	'tikamahi	come here
lopi'owini	roll up	owi'talihi	sit
	-ε		-ε
'one	other	'bahεhε	deer
'tone	bone	'kadεhε	'arara'
'yama 'tεnε	day	'tusehε	bird
'kone	feather	'onehε	alligator
'εbene	tongue	'banehε	anteater
'yatine	living	'bunehε	I go
zakane	I shot it	'buřehε	green
'hεpεnε	egg	'çεřehε	dart
'hanane	shout	'yanawahe	born
	-a		-a
		'iha	poison
		'daha	insect
		'kaha	parrot
çina	tobacco	'paha	water
'atuna	woman	'yaha	grease
'taukana	gun	kařabuha	blow gun
		di'disaha	bow
		çinamaha	'cutia'
		'yiwaha	clay pot
	-o		-o
'inu	tooth	ona'habaho	hit
'bunu	upper lip	tika'wamaho	give it to him
'nanu	'mandioca' squeezer	motonaho	pierce

Nasals, alveolar and glottal

/n/	intervocalic		
		/h/	
	i-i		i-i
yopinibařa	afraid		
	ε-i		ε-i
	a-i		a-i
'bani-'bidi	bird	a'hialini	begin
yubanini	walk	wařahini	she picked it up

Nasals, alveolar and glottal

/n/	intervocalic /h/	
	o-i	o-i
'omi	name	
honiaba	stick	
'yama'onini	make	
'yama 'kionini	look for	
	i-ε	i-ε
	ε-ε	ε-ε
'ɛnɛɔɔ	chin	'tɛhɛli white
	a-ε	a-ε
'banɛhɛ	anteater	
	o-ε	o-ε
'onɛbɛ	alligator, leaf	
	i-a	i-a
ɔinamaha	'cutia'	
mɛsɛhinamusini	cleaning	
mvinamini	bend	
ɔo'sokinali	black	
hinawinini	lay down	
	ε-a	ε-a
	a-a	a-a
kanaoni	run	ona'habaho I hit
'wanati	summer	
wanakvli	spider	
'pʌnaku	upper leg	
koanane	whistle	
'hanane	shout	
kananane	run	
'mokanahi	put in	
ana'lika	'pium'	
da'danali	short	
pʌnawi	woman	
yanawahe	born	
	u-a	u-a
'inu-'nakuři	gums	
di'bunane	swim	
motunaho	pierce	

Nasals, alveolar and glottal

/n/	intervocalic	
	/h/	
	i-u	i-u
'inodi	mouth	
'hasi'noɸini	afraid	
	ɛ-u	ɛ-u
	a-u	a-u
ɔaba-nokv	ankle	
yama kanahanoni		
	u-u	u-u
o'noɸini	like	

Alveolar, stops

/t/	word initial syllables	
	/d/	
	-i	-i
'piři 'tibimaho	snuff	di'bunane swim
tibalihi	she is going to put it down	
tibanahi	roast	
ti'tili	grasshopper	di'disaha bow
'tikahi	go	didihi he picked it up
tika'wamaho	give it to him	dida'basahi she is going to pick it up
'tikamahi	come	
tikiyohi	hurry out	
tikalini	have	
tika dau 'oni	What's the name of your child?	
baka'tisini	you broke	
tina'talihi	you will put it down	
tiwati omita 'matia	how do you say	
tiwati	in your language	
tiwi'talihi	sit down	
tiwi'tahi	you stay at home	
tiwakaho	you take	
tiyawini	mad	
	-ɛ	-ɛ
'tɛmɛ	foot, leg	'dɛmu girl
'yubɛ 'tɛɬɛli	white house	dɛʃɛnini grow
	-a	-a
		da'oni sell
'tati	head	'daɸi 'bicho'
		'daha insect

Alveolar, stops

/t/	word initial syllables		
		/d/	
'tabařv	home	'dařv	oyster shell
		da'daunali	round or short
'taminini	pretty	'damini	many
tamotiwitiho	disappear	'damini'tikit ahi	clench fist
		dama'tinaho	take hold of

-o		-o	
'tve	bad		
'toini	have	'duba	bow string
'toke	went	'dusi	lower back
'tune	bone		
tva'kamahi	let's walk a bit		
aɸi'tuobane	he'll get all wet		
tu'tubeyv	hummingbird		
aba'liku 'toke	moon sets		
baka'tukube	break		
tuki'yumini	entering		
'tusehe	bird		
aba'likutoi'tamaři	new moon		
tuma'witini	to pick up part way		
oda baka'tonini	we broke the stick		
baka'toni	it is broken		
ɸawana'tuhawa	loose		
'aɸi 'tuhe	he is wet		

Alveolar, stops

/t/	word final syllable		
		/d/	
	-i		-i
'bahi 'ati	thunder (speaks)	'bidi	boy
'tati	head	noku'budi	eye
'wati	arrow	'widi	nose
'yati	new	'yadi	trap
'hibati 'ita'limani	you put it down	'nabadi	stomach
'ɸibati	banana	yu'yumadi	insect
'damani 'hikiti	pull hard	ɸa'samadi	'meruim'
yimiti	chigger	'namidi	neck
ma'mati	grass	'inodi	mouth
wa'nati	summer	'řudi	mouth
'ebenia 'buřa tibuliti	Where are the clothes?	uwidi	wind
kařa'yati	'bicho'	'madi 'tve	Indian nearly unclothed

Alveolar, stops

		word final syllable		
/t/		/d/		
	-ɛ		-ɛ	
'bute		old, stingray	'bide	small
'ɛbete		cheek	'made-'yanini	birth
'kabute		quick		
'uka 'yɛbutɛ		my wife		
kamati		lice		
'ɛwete		raised	'ɛnɛdɛ	chin
	-a		-a	
'bita		mosquito		
'katata		bird	'ukadau	my son
wayumata		turkey		
'bolita		snuff box		
hiba'yata		now		
'kaɸita		bad bug		
	-o		-o	
'yutu		intestines	'modu	spider
'ukutu		my daughter		

Alveolar, stops

		intervocalic		
/t/		/d/		
	i-i		i-i	
'damini	'tikitahi	clench fist	mahi 'tuke	at sundown I will
yukutvitini		push	didibahi	pick it up
ti'tili		grasshopper	di'disaha	bow
winitinamiahi		come back	bidinani	very thin
kome 'kitini		to hurt a lot	'hidini	she picked it up
tuma'witini		pick up part way	bi'bidinařv	smaller
oda'benotvitini		we rolled it	di'dihi	he picked it up
	ɛ-i		ɛ-i	
	a-i		a-i	
ɸiwatiomitahi		how do you say		
'wati-'bunu-'kuři		heart		
owati'budi		half		
owatitukumi o'noɸalihi		I don't want to do it now		
'wati'kuřv		grass		
owa'ɸatisani		pull hard	ha'disa'oni	sneeze
bata'tisahi		she is going to break		
maki 'didatinaho		he gives		

Alveolar, stops

/t/		intervocalic		/d/	
kana'tinahi		get out of here			
dama'tinaho		take hold of			
yakatina'kosahi		walk fast			
ti atinahihi		clench fist			
owatihi onopalihi		don't want it to rain			
'mai'hatilini		burnt			
'atiwa		sticker			
o-i				o-i	
mo'tinamahi	I'm going to sleep		odi'bunεε		I'm going to pick up
			'odini		I picked it up.
			'odihi		I'm going to pick up
modutiwamiahi	'dando volta'		hodi'wadini		circle
i-ε				i-ε	
			hidewininεni		he took it
ε-ε				ε-ε	
bεtε'tusa'liahi	he will break				
εwetεli	'casa dele'				
'nεmε-'tεhεni	good day				
a-ε				a-ε	
'yama 'tεnε	day		'kadεhε		'arara'
'batεhε	fruit		'badεhε		deer
o-ε				o-ε	
'otε	fish		'mahi 'tuke ode'bani		at sundown I will pick it up
i-a				i-a	
damini tikitahi	clench fish		hida'basini		she picked it up
tiwitaha	you stay at home		maki didatinaho		he gives
'witahi	staying		'bidanε		thin
wi'talabana	I am sitting				
tina'italihi	you are going to put it down				
onaitaʔε'pawanini	(inf. put spool down & I took it)				
kitaya	hard				
ε-a				ε-a	
			'yε-'dabu		wrist
			mε'damalini		few (not many)

Alveolar, stops

		intervocalic		
/t/		/d/		
a-a		a-a		
bata'olini	I hit	da'daunali	round or short	
'katata	bird	'adami	'ladeira'	
'atařv	skin	kadařε	'bico'	
		bani'wadařε	little bit of meat	
o-a		o-a		
		oda'pamani	we put it down	
		odamvi'nimini	bent	
		yudanini	swing	
i-u		i-u		
ε-u		ε-u		
'yε-'tunε	knuckles			
madvε-'tunε	sticker			
a-u		a-u		
'yakane	'yanatvεhe	beginning to walk	madvε'tunε	sticker
baka'tukabe		break		
'atuna		young woman	yipv 'madone	rope
'watuni		know		
owa'tulini		I don't know		
matunali		man about to throw spear		
'matunε		man about to throw spear		
u-u		u-u		
yukutvitini	push			
oda'benvutvitini	we rolled it			
hanv'tvakane	fish is swimming			
tutubeyv	hummingbird			
'yutumi	raccoon			
nařabv mutunaho	he pierced his ear	'yεdunukuři	knuckles	

Alveolar, fricative

		intervocalic and word final syllables	
[s, ř]			
i-i			
'pisi	monkey		
'çina hisionahi	I want to sniff tobacco		
'bisini	dirty		
baka'hisini	she broke the stick		
'hisiři	basket		
i'sisinařv	small		

Alveolar, fricative**intervocalic and word final syllables****[s, š]**

a-i	
kasi'εbe	gourd
'hasika	porpoise
hasi'noḩini	afraid
o-i	
'dusi	lower back
'kusi	spank
'husi	sweet potato
a'musini	pretty
i-ε	
'base	fish
'kuse	frog
abise	stepfather
'habise	'bicho'
nokubise	sleepy
o-ε	
'tusεhe	bird
i-a	
hadisa-'oni	sneeze
di'disaha	bow
a-a	
'ḩa-'saini	water is falling
∅a'samadi	'meruim'
'basahi	to pick up
u-a	
yakatinakusahi	walk fast
i-u	
'isu	lower leg
u-u	
∅usukinali	black
'kusupā	fish

Alveolar, affricate

		word initial [ç, č]	
	-i		-ε
'çina	tobacco	'çεřεε	dart
'çiřε	turtle	'cεřεpε	dart
'çibati	banana	'çεyuli	green snake
çinamaha	'cutia'		
	-a		-u
'çami	pineapple	'çumi	worm
ça'osεnε	jump	çuku'bisiba	I wash
çabanuka	ankle	çukunane	to wash
çakanε	I shot it	çu'matia	I'm going to urinate
ça'samadi	'meruim'		

Palatal and Alveolar

		word initial syllable	
y		j (varies with y)	l
	-i	-i	-i
'yiɸu	fire	'jiɸu	fire
		'jimawa	knife
		'jima 'bide	small knife
		'jimiti	'mucuim'
		'jiwaha	clay pot
	-ε	-ε	-ε
'yεpε	hand		
'yεtεnε	new		
	-a	-a	-a
'yati	new	jau	grandaddy
'yadi	trap		
'yama	jungle		
'yakini	long		
'yakanini	walk		
'yapali	fast		
'yama 'hukini	hole		
'yama 'onini	make		
'yawida	'pupunha'		

Palatal and Alveolar

		word initial syllable	
y		j (varies with y)	
u		l	
		-u	-u
'yubε	house	'jubε	house
'yuali	breast	'juihi	monkey
'yubati	knee		
'yutume	raccoon		
yudanini	swing		
'yukuli	elbow		
'yupali	tail		
'yupini'bařa	afraid		'lup'i'owini roll up
'yumahi	'onça'		

Palatal and Alveolar

		word final syllable	
y		l, ř	
	front to back		
hiba'lεya	wait		
'iyu	feces		
tu'tubεyu	bird		
	back to front		
'ayi	ant (other group)	'bali	axe
		'yuali	breast
		'yupali	tail
		manubatuli	upper arm
		'yukuli	elbow
		'inu-'nakuli	gums
		'yabuli	long
	front to front		
i			
↑			
ε		'bεli	split or half
	back to back		
u		'buřa	clothes
↑ ↓		'dařu	oyster shell
a		i'sisinařu	small
		'hařu	here
		ma'mawanařu	red
		'yupinařu	afraid
		'atařu	skin

Palatal and Alveolar

		word final syllable	
y		l, ř	
homogenous vowel			
(i) (u) (ɛ) (a)			
'kubaya	wild pig	ti'tili	grasshopper
a-'yata-'ya	near	'pili	snuff
		'kadeře	'bico'
		'pamařa	two
		'yamařa	scratch
		'ɔɔɛɛ	
other group			
	'namidji	neck	
	'nabadji	stomach	
	'nuku'budji	eye	

Palatal and Alveolar

		word medial	
y		l, ř	
front to back			
'pɯɛ weyanahi	carry	'mandioca'	
'pɯɛ 'kai'wiyařa	'massa'	is ready	
back to front			
	kilihini	pinch	
	a'wilini	have not	
	hilinini	burning	
	tikilini	have	
	bɛtɛ'tusa'liahi	he will break	
	aba'liku	moon	
	ana'lika	'pium'	
	palemane	enough	
	hiba'leya	wait	
	kuřɛpɯ	stick for winding cotton	
	hukulini	dry ground	
	'mahi nukuřise	noon	
	'bulita	snuff box	
front to front			
back to back			

Palatal and Alveolar

y	word medial		
	l, ř		
	homogenous		
'kařa-'yati	bee	wařanini	swollen
hiba-'yata	wait	kařali	shoulder
pa kaya'nibana	rain passed by	kařa'buba	blow gun
a'yata-ya	near	ařa'kawa	chicken
		'nařabu	car
		děřenene	grow
		'kuřubu	fish

Velar, stop

word initial syllable		word final syllable	
k		k	
	-i		-i
'kimi	corn	'yaki	bird
'tiwa'kibalihi	she's going to put it down	mu'muna	black bee
'kitaya	hard	øuki	
'kume 'kitini	to hurt a lot		
'kini'owini	I rolled it		
kiřihini	pinch		
	-ε		-ε
		'tuke	went
	-a		-a
'kami	come in	'uka	my older brother
'kaha	parrot	'hasika	porpoise
'øibati kaine	baked bananas	'maka	snake
'kabute	hurry	ana'lika	'pium'
'katata	bird		
'kadehe	'arara'		
kake'pawanini	stopped raining		
kaɸulimahi	pick up		
'yama'kaɸita'tue	bad bug		
kasi'εε	gourd		
'kama 'kabute	come quick		
'kamati	bee		
kana'oni	run		
kanahařu	heavy		
kanatinahi	get out of here		
kařa'buha	blow gun		
kařa'yati	bee		

Velar, stop

word initial syllable		word final syllable	
kařu'itini	it rolled		
kařaři	shoulder		
	-u		-u
'kuse	frog	'baku	chest
'yama 'kume	fever	owařa øanamaku	to shoot arrow
'kune	hair or feather	'wamaku	'arara'
kuanane	whistle	øabanuku	ankle
'kubaya	wild pig	'haku	spider
kuba'nabani	arrive	aba'liku	moon
'kumini	hurt		
'kusu øa	fish		
'kuřubu	fish		
kuřeøu	stick for winding cotton		
'kuyali	triangle		

Velar, stop

		intervocalic	
k		k	
	i-i		ε-i
'damini	'tikatahi		clench fish
'damani	'hikiti		pull hard
tikiřini			have
tikiyuhi			hurry out
	a-i		u-i
okumaki'bani	I'm not coming back	uki'baneni	hunt
hiwakini	carry	mai'bukibunεhe	river will go down
timatinakihi	clench fist	'okini	I'm gone
		øu'sukinali	black
		mε'bukini	water's falling
		tuki'yumini	entering
		tuki'yanane	enter
	i-ε		ε-ε
	a-ε		o-ε
'makehe	boa constrictor		

Velar, stop

		intervocalic	
		i-a	ε-a
'yama hikabařu	scratching	εbekawaři	hip
'yadi hikabunεhe	he is going to set a trap		
'tikahi	go		
hikahεmuni	it is hidden		
tika 'wamaho	give it to him		
		a-a	u-a
'yaka'oni	walk	baka'tukabε	break
yaka'banani	walk	'taukana	gun
yakatina'kvauhi	walk fast	huřukani	follow
baka'tukabε	break	odahukakanahi	we are going to break
tυε'kamahi	let's walk a bit		
'∅akane	I shot it		
'wakana	black lead pencil		
'yakane	walk		
odahukakanahi	we're going to break it		
hanυ'tvakane	fish is swimming		
tiwakaho	you take		
ařa'kawa	chicken		
		i-u	ε-u
watikuřu	grass		
		a-u	u-u
wanakuři	spider	nukubise	sleepy
'nu-'nakuři	gum	nukubudi	eye
		yukutvitini	push
		'ukutu	my daughter
		nukupute	big eyes
		okuma	'bicho de pé'
		okumini	I'm going
		∅uku'matia	to wash
		ukuma'kabute	I'll come soon
		∅ukunini	washed
		'mahi nuku'řiε	midday
		'yeυ'dunukuři	knuckles
		'wati-'bunu'kuři	heart
		'wame 'hukulini	dry ground
		'yukuři	elbow
		nuku'yoaki	squirrel

Vowels, Front

word initial onsetless syllables

i		ɛ	
context of bilabial consonants		context of bilabial consonants	
'iɸu	lower lip	'obɛɛ	tongue
		ɛbɛ'nia	'lima 'ɸulita
		ɛ'ɸimini	where is the file
		owɛtɛli	hungry
			home grown
context of alveolar consonants		context of alveolar consonants	
'iyu	'fezes'		
'inudi'-ɸɛɛ	'saliva'	'ɛɛɛɛ	chin
'inu	tooth		
'inu'nakuři	gums		
i'sisini	small		
'isu 'hawinɛ	in the trail		
'iřudi	language or mouth		
context of velar consonants		context of velar consonants	
'iha	poison		
context of other vowel		context of other vowel	
'iawa	'massa'	ɛ'inu	tooth
i'isinařu	small	ɛ'isu'nabadi	calf of leg

Vowels, Front

word initial onsetted syllables

i		ɛ	
context of bilabial consonants		context of bilabial consonants	
'bibi	fan	'bɛli	half
'bita	mosquito		
'ɸisi	monkey		
'ɸiři	snuff		
'widi	nose	'wɛɸɛ	cotton
'bidani	thin		
'bisini	dirty		
'witahi	staying		
context of alveolar consonants		context of alveolar consonants	
'ɸina	tobacco	'tɛɛɛ	foot
'ɸiřɛ	turtle shell	'dɛɛɛ	girl
'yɸu	fire	'nɛɛɛ	sky
ti'tili	grasshopper	'yɛɸɛ	hand
tikilini	have		
tikamahi	come		

Vowels, Front

		word initial onsetted syllables	
i		ε	
'tiwati	you speak		
di'bunane	swim	'dɛʋwa	intestines
di'disaba	bow	'ɔɛřɛɛ	dart
'ɔɪbati	banana	'ɔɛyuli	green snake
context of velar consonants		context of velar consonants	
'kite	hard		
'kimi	corn		
'hima	let's go		
'hiabu	basket		
'hidini	she picked it up		
'hisili	basket	'hɛpɛɛ	egg

Vowels, Front

		word final syllables	
i		ε	
context of preceding bilabial consonants		context of preceding bilabial consonants	
'awi	tapir	'wɛpɛ	cotton
'bibi	fan	'yʊbɛ	house
'dapi	'bicho'	'yɛpɛ	hand
'kimi	corn	'tɛmɛ	foot
'wami	earth	'nɛmɛ	shy
'yʊtumi	raccoon	'ɔɛřɛpɛ	dart
'hawi	trail		
context of preceding alveolar consonants		context of preceding alveolar consonants	
'ayi	ant	'onɛ	other
'tati	head	'bʊtɛ	old
'yati	rock	'kite	hard
'wati	liver		
'bidi	little		
'dusi	lower back	'basɛ	fish
'pisi	monkey	'kʊsɛ	frog
'husi	sweet potato		
'bani	meat	'tʊnɛ	bone
'beři	half	'kʊnɛ	hair
'baři	axe, back	'ɔiřɛ	turtle shell
'piři	snuff		
'ɔɪbati	banana	'kabʊtɛ	quick
ma'mati	grass		
'yimiti	chigger		
'tiwati	you speak		

Vowels, Front

		word final syllables	
i		ɛ	
'inudi	mouth	'ɛnɛdɛ	chin
'namidi	neck	'habisɛ	'bicho'
ɔa'samadi	'meruim'	'abisɛ	stepfather
'apɪ'oni	I took a bath	'hamisɛ	vine
'watuni	know	'yɛtɛnɛ	new
'wadini	have	'ɔakənɛ	I shot it
'hasi'nupɪni	afraid	'hɛpɛnɛ	egg
'bisini	dirty	'hanənɛ	shout
'yuali	breast	'owɛnɛ	see
ɔvbali	stomach		
manu-batuli	upper arm		
ti'tili	grasshopper		
'yukuři	elbow		
'yupali	tail		
'hisili	basket		
'kařaři	shoulder		
'abi	father	'abɛ	dead
context of preceding velar consonants		context of preceding velar consonants	
'yaki	bird	'madɛhɛ	boy
'bahi	thunder	'badɛhɛ	deer
'mahi	sun	'kadɛhɛ	bird
'odihi	I'm going to pick up	'banɛhɛ	anteater
'yumahi	dog	'onɛhɛ	alligator
tikamahi	come	'ɔɛřɛhɛ	dart
'yuihi	monkey		

Vowels, Front

		word medial syllables	
i		ɛ	
bilabial-bilabial			
bilabial-alveolar			
'bani'bidi	bird		
'habisɛ	'bicho'	tutubɛyɪ	hummingbird
'abisɛ	stepfather	'ɛbɛnɛ	tongue
'kapɪta	'bicho'	'hɛpɛnɛ	egg
'yimiti	chigger		
'namidi	neck		
'hamisɛ	vine		
'kumini	hurt		
'owini	I am standing		

Vowels, Front

		word medial syllables	
i		ε	
'yawida	'pupunha'		
'mawini	tired	'owεnε	see
a'wilini	don't have		
bilabial-velar			
alveolar-bilabial			
'bani'bidu	bird		
'atiwa	sticker		
'tεmε'libu	ankle	'kuřεpυ	stick
alveolar-alveolar			
di'disaha	bow	'yεtεnε	new
'hidini	she picked it up		
'wadini	have		
'bisini	dirty		
'hisiři	basket		
'εnεdε	chin		
a'wilini	don't have	hiba'lεya	wait
alveolar-velar			
'odihi	I'm going to pick up	'madεhε	boy
'tati'kunε	hair	'badεhε	deer
'hasika	porpoise	'tuσεhε	bird
		'onεhε	alligator
aba'likυ	moon	'banεhε	anteater
ana'lika	'pium'	øεřεhε	dart
velar-bilabial			
velar-alveolar			
tikiřini	have		
velar-velar			
		'makεhε	snake

Vowels, Back

		word initial onsetless syllables	
a		u	
-bilabial			
'aba	fish	obalisamini	lay down
'ap̥i	wet	o'p̥imini	I'm hungry
'ama	blood	'owεnε	I saw
'awa	wood	'owinini	cry
'awi	tapir		

Vowels, Back

word initial onsetless syllables

a		u	
'abise	stepfather		
aba'liku	moon		
'aɸi'bunɛɛ	I'm going to take a bath		
a'musini	pretty		
a'munane	he's sleeping		
-alveolar			
'ayu	older brother	'ote	fish
'atona	young woman	'one	other
'ataɾu	skin	oda'basahi	I'm going to pick it up
'atiwa	sticker	'osini	fall
ana'lika	'pium'	onabahi	I hit
'alaba	stop it		
a'yatsua	near		
-velar			
'ahi	here	'ukutu	my daughter
ahialini	begin	'ukadau	my son
		o'kumini	I'm going

Vowels, Back

word initial onsetted syllables

a		u	
bilabial-			
'baku	front	'bulita	snuff box
'base	fish	'buni	wind
'bahi	thunder	'bula	clothes
'bali	back	'muɸu	cotton like
'pasu	leaf	ɸulini	leave
'paha	water	mumuna	bee
'madi	person		
'maka	snake		
'mahi	sun		
'wati	liver		
'wapa	monkey		
'wami	earth		
'badɛɛ	deer		
'bani'bidi	bird		
'banɛɛ	anteater		
'bahama	fish		
'madɛɛ	boy		
ma'mati	grass		
ma'mawa'naɾu	red		

Vowels, Back

word initial onsetted syllables

a		u	
'wadini	have		
'wamakv	'arara'		
alveolar-			
'tati	head	'duba	type of 'mandioca'
'dapi	'bicho'	'yube	house
'daha	insect	'tunehε	bird
'dařv	oyster	nukubisε	sleepy
'øami	pineapple	nukubudi	eye
'nabv	bird	'yubati	knee
'napv	ant	'yutumi	raccoon
'yati	rock	'yukuři	elbow
'yama	jungle	'yupεli	tail
'tati'kunε	hair	'yumahi	dog
'tapini	eat		
'taminini	pretty		
'damini	many		
da'daunali	short		
øabanvkv	ankle		
øa'samadi	'meruim'		
'nabadi	stomach		
'napini	much		
'nařabv	nose		
'yakane	long		
'yawida	'pupunha'		
velar-			
'kaha	parrot	'husi	sweet potato
'kabvte	quick	'kusupa	fish
'katata	bird	kumini	hurt
'kadεhε	'arara'	'kuřvbv	fish
'kamati	bird	huřunamini	to pull out
'halv	here		
'habisε	'bicho'		
'hanvnεni	swim		
'hasika	porpoise		
'hawi	trail		

Vowels, Back

		word final syllables	
a		u	
bilabial-			
'aba	fish	'wabu	tick
'ama	blood	'maɸu	ant
'bama	fish	'muɸu	cotton like
'awa	wood	'yiɸu	fire
'duba	type of 'mandioca'	'iɸu	lower lip
'hiama	wild hog	'demu	young girl
'atiwa	sticker	'ye-'dabu	wrist
'aŕa'kawa	chicken	'naŕabu	ear
		'teme'libu	ankle
alveolar-			
'bita	mosquito	'inu	tooth
ɸina	tobacco	'manu	arm
'buŕa	clothes	'nanu	'mandioca'
'bulita	snuff box	'haŕu	here
'atona	young woman	'uka 'ayu	brother
a'yataya	near	'ukutu	daughter
hiba'leya	wait	a'yutu	intestines
velar-			
'daha	insect	'baku	front
ana'ŕika	'pium'	'ɸaku	fish
ɸinamaha	'cutia'	'nuku'baku	forehead
di'disaha	bow	ɸabanuku	ankle
		aba'liku	moon
		tikaŕabaho	you leave it
		tiwakaho	you take
		tika'wamaho	give it to him
		dama'tinaho	take hold, of

Vowels, Back

		word medial syllables	
a		u	
bilabial-bilabial			
wa'mawanaŕu	red	luɸi'owini	to roll up
'mawini	tired	mu'muna	bee
bilabial-alveolar			
'ɸibati	banana	'kabute	quick
'nabadi	stomach	'yibute	wife
ɸibanuku	ankle	muku'budi	eye

Vowels, Back

		word medial syllables	
a		u	
aba'liku	moon	a'mvaini	pretty
'yupali	tail	mu'muna	bee
ma'mawanařv	red	a'munane	sleep
'awaři	one	di'bunane	swim
'awani	wasp	'yabuli	long
bilabial-velar			
tiwahaho	you take	tikařabuho	you leave
'hamaha	vine		
yanawahe	born		
çinamaha	'cutia'		
alveolar-bilabial			
'çinatabe	fresh tobacco	'yube	house
'ye-'dabu	wrist	'kuřubu	fish
'alaba	stop it	'kusupa	fish
ça'samadi	'meruim'	'yutumi	raccoon
çinamaha	'cutia'	wayumini	day
		o'nupalihi	I don't like
		tutubeyu	whipoorwill
alveolar-alveolar			
'atařv	skin	'inudi	mouth
a'yataya	near	'atuna	young girl
yudanini	swing	owatulini	I don't know
a'musařv	pretty	'manu'batuli	upper arm
bisinani	dirty	çeyuli	snake
a'munane	sleep		
anařika	'pium'		
ma'mawanařv	red		
da'daunali	short		
'kařaři	shoulder		
alveolar-velar			
'witahi	staying	çabanuku	ankle
baka'tisahi	she is going to break		
di'disaha	bow		
hanahařv	heavy		
ařa'kawa	chicken		
velar-bilabial			
baka'tukabe	bend & break	'nuku'budi	eye
tikamahi	come	okumini	I'm going

Vowels, Back

word medial syllables

a		u
ařa 'kawa	chicken	
'bahama	fish	
velar-alveolar		
'yakane	long	'mahi 'nukuřise noon
'çakane	I shot it	'wami 'hukulini the ground is dry
'pa kayanibana	rain passed by	'yε-odunukuři knuckles
yipɸ aɸukanamahi	to start a fire	
huřukani	follow	
velar-velar		
tiwakaho	you take	
'mahi 'kiki		

Environmental variations of /u/

Nagra tape recording

For the purposes of this paper we have conformed the phonetic variants of /u/ to the analysis as made from the tape recording. However, these lists do not cover every environment of /u/ that we have. Also we were not always in agreement that each set of lists had the same vowel quality. For this reason we plan to re-listen to larger lists to get more accurate and perhaps more symmetrical or logical conditioning factors.

List 1 between 2 nasals

mu 'muna	a 'munane	hanunene
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List 2 between preceding stop and following nasal

kumařu	bunehε	atuna
kune	dibunene	natunali
buni	aɸi bunehε	nařabu motunaho
wati bunukuli	watuni	ukuma
bunu	yεtunε	okumini
awe buneni		

List 3 between preceding nasal and following stop

nokubise	hodiwadini	a 'inodi
modu tiwamiahi	oda hokanahi	bunokuli
hodvlini		

List 4 between preceding y and following stop

yukuli	yutumi	yube
yukutvitini	yutu	yubanini
yubati	yudanini	

List 5 between y and following nasal

tuki yumini yumahi wayumini

List 6 between stop and l

yukuli hokulini bulita
inu nakuli wati bunukuli amanu batuli

List 7 stop and s

naḗi kusařu tusehe yaka tina kusahi
kusupa kusiolini baksona kusini

List 8 preceding nasal and following s

amusini mesahinamusini amusalini

List 9 between y and ḗ

yupali yupinibařa

List 10

muho muḗu

List 11

buřa kimi buřehē watikuřu

DOUBLE VOWELS

eu	ue		ui
	'mυε		'dvisi
'deuwa	'mvi		'yυini
wεunini	'tυε		'mvi
	'ḗυε 'kisini		'tvinε
	'ḗaḗυε		'ḗia 'tuitini
	'yamařa 'ḗuine		yuku'tuitini
			'awa 'kuisali
au	ua	ai	ia
'taukane	kuanane	'ḗaimane	bete'tusa'liahi
dau	'yuali	'ḗibati 'kaine	'hiabu
'yau	'ḗua 'wayanahi	'yai'tisahi	'ḗia'tuitini
da'daunali	'huni'tvakane	ḗa'saini	εbenia tina italiti
	'nuku 'yuaki	kaiya'tinahi	
		'maibuki'bunehē	
exception - 'matia (unstressed)			

Distribution of Phonemes

All consonants occur in the C slot of all syllable patterns with the possible exception of $\underline{\varepsilon}$ in the first V in 'CVV which in the present data does not occur.

Word initially (l) does not usually occur but we have one instance where it does.

Double vowels usually occur only on stress syllables but with one exception 'matia.

The number of double vowels is quite limited and hence many of the possible combinations are not found.

Distribution Charts

	'V	V	'CV	CV	'CVV
i	X	X	X	X	XX
ε	X	X	X	X	X
u	X	X	X	X	XX
a	X	X	X	X	XX

	'CV	CV	'CVV
b	X	X	X
d	X	X	X
t	X	X	X
k	X	X	X
p	X	X	X
s	X	X	X
w	X	X	X
y	X	X	X
l	X	X	X
m	X	X	X
n	X	X	X
h	X	X	X

iii ε iaia

	i	ε	a	u
b	X	X	X	X
d	X	X	X	X
t	X	X	X	X
k	X	X	X	X
p	X	X	X	X
s	X	X	X	X
w	X	X	X	
y	X		X	X
l	X	X	X	X
m	X	X	X	X
n	X	X	X	X
h	X	X	X	X

non-stress

	i	ε	a	u
b	X	X	X	X
d	X	X	X	X
t	X	X	X	X
k	X		X	X
p	X	X	X	X
s	X	X	X	X
w	X	X	X	
y	X	X	X	X
l	X	X	X	X
m	X	X	X	X
n		X	X	X
h	X	X	X	X

stressed

Notes

In the dialect of the first group with which we studied we heard a (j) in the final syllable of a word before (i) but when we checked these in slow speech they were (d). After we checked these and our data with that of other similar tribes, I suspect that what I was hearing was a (d^y) and wrote as (j). This (d^y) would then be a sub-member of (d) occurring word finally before (i). To strengthen this hypothesis we have one word (matia)/ma \varnothing ia which I feel will also turn out to be (mat^yia).

VII. Hyperphonemic observations

Glottal stop (?) occurs only pause group final

okini?

okumini?

okumakini?

okunilinakini?

okumilimakinabiahiahi?

øibati	banana	yumahi	dog
onvøini?	I like	wəbutɛ	big
øibati onvøini?	I like bananas	yumɛ wəbutɛ	big dog

Stress

On two syllable words stress falls on the first syllable. On three or more syllable words stress normally falls on the antepenult except when there is a reduplication of the first syllable when the stress comes on the second of the reduplicated parts. Words ending in ni, nɛ can be expanded by adding extra nɛ's and/or ni's in which case the ending carries a secondary stress on its own antepenult while not affecting the position of the primary stress. Compound words retain the stress of both parts with primary coming on the second.

'bali	'alaba	'øili'nɛni	'aba''liku	ti'tiři
'duba	'panaku	'øili'ninɛni	'ana''řika	di'disa
'abi	'nařabu		'hiba''lɛya	ma'mawanařu
'dapi	'napini		'hiba''yata	
'moøv	'øilini			

Tone

Tone in Jamamadí seems to be predictable by the segments of the following syllable and are therefore described beginning from the utterance final syllable and working backward to utterance initial.

1. Utterance final is always high.
2. The penult is low if unstressed and high if stressed, in words of three or more syllables. The final syllable of two syllable words when followed by a frame is always low. The first syllable functions as the antepenult in longer words.
3. A voiceless consonant on the penult is preceded by a rising glide on the antepenult.
4. If the consonant on the penult is voiced and the antepenult is a voiceless fricative or nasal, then the antepenult is a falling tone.
5. If the consonant on the penult is voiced and the antepenult is anything but a voiceless continuant then the antepenult will be low tone.
6. Syllables farther back than the antepenult seem to follow the same rules as the antepenult.
7. Words with reduplicated syllables are low except for utterance final high.

Examples - 2 syllable words with a following frame

low-low

bade
bibi
tɛmɛ
tone
dɛmʊ
duba
kimi
pawa
kune
widi
wabu
wami
yube
yume
nanu
nɛmɛ
ama
awi
inu
mʊɛ
mui
bai
yui

1st syllable non-voiceless fricative or nasal
2nd syllable voiced

exceptions: butɛ, hawi

rising-low

baku
base
baka
tati
pise
ɕuku
wapa
wati
wɛpɛ
yipʊ
yati
yɛpɛ
yuisi
bama (bahama)
1st syllable preceding
voiceless

high-low

piři
ɕami
ɕumi
ɕina

1st syllable preceding
voiced but a voiceless
fricative

Examples - three or more syllable words in isolation

low-low-high

baneɛ
bařana
bulita
balitu
badeɛ
buneɛ
buřeɛ
yiwaha
yibute

falling-low-high

hanune
hanane
ɕeřeɛ
ɕeřɛpɛ
pʊlini
ɕunane
ɕanane
ɕeyali
ɕamahi

rising-low-high

ɕakane
ɕukini
kisini
yakini
yatine
yutumi
bisini
yupali
yakani

1st syllable voiceless fricative or nasal followed by voiced

low-low-high

yubati
 yawida
 kuřubu
 nařabu
 'didihi
 tamini
 tamini
 yumahi
 kuřεpu
 tinahi
 abaliku
 analiku
 yakunini

3rd syllable utterance final
 2nd syllable unstressed & voiced
 1st syllable non-voiceless fricative or nasal

exceptions: wεbutε bunεni

falling-low-high**rising-low-high**

yakanε
 kusupa
 tisahi
 atařu
 tapini
 bahama

1st syllable followed
 by voiceless

Examples - three or more syllable words in isolation**low-low-high**

kakabi
 titili
 didisa
 mamawa
 mamati
 mumuna

reduplicated syllable
 stress on second

rising-high-high

kusařu
 bisařu
 kusεne
 amusini
 bisiba

2nd syllable stressed

Problem Area**low-high-high**

tapali
 yabařu
 yukani
 yukuli
 yakani

Nasalization

1. All vowels word initial or following nasals including h are nasalized.
2. All vowels word final or preceding nasals tend to be nasalized but are lighter and may drop in some speakers or vary from slight to nothing in others.
3. When two front or two back vowels occur together both are nasalized.

ĩpũ	ãyũ	õ'kũmĩnĩ
ĩnũ	ãlabã	kũãnãnẽ
ĩhã	ãtõnã	yũãli
ẽbẽnẽ	ãhĩ	tãũkãnã
ẽnẽdẽ	õ'pĩmĩnĩ	nũkũ yũãkĩ
ĩ'ĩsĩnãřũ	õtẽ	yãũ
õ'ĩnũ	õnẽ	ũkadãũ
ãpĩ	õsĩnĩ	da'dãũnãli

exception - kadεřε