RECONSTRUCTION OF THE CONSONANTS OF PROTO-AMAMI

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KEY TO ABBREVIATIONS AND SYMBOLS

Abbreviations :		Symbols :	
Sib	Siba dialect	/ /	Phonemic transcription
Sho	Shodon dialect	[ ]	phonetic transcription
Nas	Nase dialect	' _ '	irrecoverable segment
Ong	Ongachi dialect	/	in the environment of
Yen	Yen dialect	>	has become
Yoa	Yoan dialect	<	has come from
San	Sani dialect	#	morpheme boundary
		~	alternates with
Kyu	Kyushu dialect	〈L〉	loan
Kag	Kagoshima dialect	〈L?〉	possible loan
MdAm	Modern Amami	C	any consonant
MdJ	Modern Japanese	V	any vowel
MC	Middle Chinese	id	identical gloss
OJ	Old Japanese	IRC	irrecoverable
Ok	Okinawa dialect	INV	invalid
PA	Proto-Amami	(SF)	stem final
PJR	Proto-Japanese Ryukyuan	C$^{?}$	C with glottal element
PR	Proto-Ryukyuan		
Pre-OJ	Pre-Old-Japanese		
Proto-SS	Proto-Sib-Sho		
Proto-ONYY	Proto-Ong-Nas-Yen-Yoa		
SJ	Standard Japanese		
Ymt	Yamatohama dialect		

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INTRODUCTION

The aim of this article is to reconstruct the consonants of "Proto-Amami", the language from which the modern Amami dialects have descended.

In the past few decades some of the most controversial problems in the phonology of Old Japanese(OJ) have centred around a number of putative phonological contrasts represented in the orthography of the extant OJ texts and traditionally known as the 'Kō-rui' and 'Otsu-rui' (lit. 'A-type' and 'B-type') syllables. These A/B-type contrasts are supposed to have been lost in the Post-OJ period.

There are about a dozen important works on this topic already. However, these works have almost entirely been based upon the reconstructed phonetic values of the Chinese characters used to render the OJ syllables. Even though the results of the phonetic evaluation of OJ through this approach are as a whole supported by those of a morphophonemic analysis of OJ, the arguments remain moot, since the reconstruction of the Chinese values has been done through a quite complex process which partially takes into consideration how the Chinese characters were used to represent the OJ syllables.

The other approach often previously employed to this problem of OJ phonology has been by means of a comparison of OJ and the Ryukyu dialects, which have been proved to be related to Japanes. In this approach, the Amami dialects of Ryukyu are the most important of all. This is because a direct counterpart of the OJ A/B contrast has been claimed to exist today in some of the Amami dialects.

In view of this important fact, an attempt was made to reconstruct the Proto-Amami (PA) phonemes. This is because it was believed that PA, if reconstructed systematically and rigourously, would provide the most reliable data for a reconsideration of the OJ problem in the future.

As a phonological reconstruction of PA which follows the recognised principles of Indo-European comparative linguistics had never before been attempted, no data comprehensive enough for the purpose could be found. Hence, the need arose of collecting and transcribing data first hand.

Therefore the writer planned and carried out a series of fieldwork surveys in the Amami Islands. In the following subsections I will provide the details of those surveys in the Amami Islands.

Finally, please note that as the title shows, this article deals with the reconstruction process of the PA consonants only. This is simply because the writer intends, considering

the lengh of the present paper, to present the case of the vowels in another article under the tentative title, "Proto-Amami", in the Annals of Gifu University for Education and Languages, No 24.

1.0 LINGUISTIC SURVEYS IN THE AMAMI ISLANDS

With a view to finding possible evidence to shed light on the problems of OJ phonology, I undertook three fieldwork surveys in the Amami Islands between October 1985 and January 1988.

In the early days of this study, my concern was not only for the Amami dialects, but also for those of Okinawa. Both groups belong to the Nothern Ryukyuan languages. Therefore my first survey was designed to cover over twenty dialects found in Okinawa, Yoron, Okinoerabu, Tokunoshima, and the Amami Islands.

The second and third surveys, however, were targeted entirely at the Amami dialects, as the writer had by then establshed that this would best and most economically provide the comparative evidence desired.

1.1 Date and duration of surveys

The date and duration of the three surveys are as follows :

First survey	October 1985	to	December 1985
Second survey	March 1986	to	April 1986
Third survey	January 1988		

1.2 Selecting the dialects

The writer collected data from eleven Amami dialects. From these eleven dialects, I selected those dialects which would make the phonological reconstruction and examination the most economical and effective for the ultimate purpose of the examination of OJ phonology through the reconstruction of PA.

The selection was made based on the following priniciples :

1) The dialects should represent the entire geographical area of the Amami Islands.
2) The geographical distance between the selected dialects should be as far as possible

In accordance with the principles given above, the following dialects were selected. Abbreviations used henceforth for these dialects are given to the right (note that when we refer to the place name, the abbreviation is not used).

Siba	Sib	Yen	Yen
Shodon	Sho	Yoan	Yoa
Ongachi	Ong	Sani	San
Nase	Nas		

The name, sex and date of birth for each informant is given below, along with the dates during which the data were collected.

Figure 01. Informant information

Dial	Name	Sex	Date/Birth	Date/Collected
San	Kazuro Maeda	M	—	19 Nov 1985
Yoa	Tadashi Higo	M	9/2/1905	17 Nov 1985
	(Kei Higo	F	12/12/1906	17 Nov 1985)
Yen	Kaneyoshi Nagata	M	18/12/1898	21 Nov 1985
Nas	Yoshinobu Ebara	M	5/10/1905	22,26 Nov 1985
Ong	Gengo Mori	M	16/10/1921	25 Nov 1985
Sho	Minoru Yoshikawa	M	1/10/1916	24 Mar 1986
Sib	Shingi Nakajima	M	1916	25 Mar 1986

The professions of the informants before retirement were as follows.

Shi Fisherman
Sho Farmer
Ong School teacher
Nas School teacher
Yen General labourer. This informant stated that he had worked for six years in Kobe Japen as a cab driver.
Yoa School teacher. This informant was extremely well-educated.
San Silk weaver. This informant had a passionate hobby, singing and playing traditional music on the shamisen.

1.3 Selecting lexical items for the surveys

To set up a questionnaire, words and glosses from the known OJ lexicon were chosen, with the intention of finding the corresponding forms from each of the seven dialects.

The OJ words were carefully selected so that they would, as a whole, contain as many A-type, B-type, and Non-A/B-type syllables an possible, but in the most economical way.

The total number of lexical items which were chosen for research is 261 (cf. Appendix One-master list).

2.0 THE RECONSTRUCTION OF THE PROTO-AMAMI CONSONANTS

2.1 Phonemicization used for the reconstruction

In this section, I would like to discuss the traditional approach used to date by Japanese linguists to make a phonological analysis of the Menern Amami dialects.

These traditional conventions of phonemicization, applied systematically for the first time by Hirayama (in his pioneer work which resulted in a massive collection of data which include immense lists, wholely descriptive in nature, of lexical items found in the Ryukyu Islands) reveal certain problems in the setting up of the phonemes. I belive that these difficulties are the result of a rigid adherence to pre-determined abstract principles by pioneer researchers of the Ryukyu dialects such as Hirayama. Observe three examples which concern us closely :

'	absence of glottal element
Q	first element of geminated consonant
N	word-final moraic /n/

In the following subsections we will deal with these three 'phonemes'.

That the phonemic inventory of a language be as economical as possible, and consequently possibly rather abstract to a greater or lesser extent, may serve a useful purpose when analysis is required to be rigorously synchronic. However, I believe that this principle must be modified when setting up a phonemic inventory for the purpose of carrying out historical research such as the reconstruction of a proto-language. In this way we will not find ourselves too far distant from the phonetic reality of the languages.

Based upon this view, I would like to attempt in this section to provide some modification to the traditional inventories of the Amami dialects for the purpose of our historical reconstruction.

We observe in previous phonemicizations the use of some phonemes which I must simply regard as unnecessary. For example, the use of the phoneme /'/ reveals an unjustifiable level of abstraction. It is quite difficult for any reader of Hirayama to associate this phoneme with its phonetic reality. Observe the following set of phomene strings in terms of their phonemic notaton and the phonetic realization he gives (cf. Hirayama 1966, 25f):

/' i /	[ji]	/' o /	[o]
/' e /	[je]	/' j /	[j]
/' u /	[wu]	/'w/	[w]
/' ï /	[ï]	/'N/	[n]
/' a /	[a]		

Hirayama's notation as illustrated by the above examples, is so complex and abstract, that /'/ is realized as [j], [w], or ∅, depending on the segments which follow it. Hirayama uses this symbol in order to represent both syllables consisting of single vowels without a glottal stop, and semivowels without a glottal stop : e. g.

[i],[j], etc.

It is one of the phonological features of the Ryukyu dialects that the morpheme initial vowels and semi-vowels are often preceded by a glottal stop element : e. g. Nas / ʔirabï/ [ʔirabï] 'to choose', and /ʔju'u/ [ʔju :] 'fish'. But I do not see the necessity of introducing a phoneme /'/ when /ʔ/ has already been clearly established. Once we have realized that word-initial vowels are preceded by a glottal stop, the repetition is pointless, and we need only mark the presence or the absence of the glottal stop, but not both. For example, /ʔi/ and /i/ can, if need be, adequately denote the two contrasting syllables [ʔi] and [i].

Morever, using /'/ causes such complexities in transcribing some words as follows :

Nas /'o' osa' N/ for [o : san] 'funny' (cf. Hirayama 1966, 26f)

By retranscribing the above as /oosan/, we get a representation far closer to the phonetic quality [o:san].

As it happens, as far as our data are concerned, we do not find any examples for the contrast /ʔ/ : : /'/. In all cases, the morpheme initial vowels are preceded by [ʔ].

Therefore, we use neither /ʔ/ nor /'/ in our notation. We consider that word-initial vowels are preceded by a glottal stop. Only when we quote words from data other than our own will we use /'/ : e. g. Yoro /'ja'/ [ja :] 'house' (Hirayama, 36f).

According to Hirayama, the glottal/non-glottal contrast is observed even in cases other than morpheme-initial vowels. For instance, Yoro /ʔju'u/ [ʔju :] 'fish' : : /'ja'a/ [ja :] 'house' (Hirayama, 36f). In such cases, however, I will represent the contrast by 'jʔ'and'j', since we will set up Cʔ/C for the non-aspirated/aspirated (or pharyngealized/non-pharyngealized, or glottalized/non-glottalized) series of consonants.

In the traditional definition, /N/ is (as is /Q/, discussed below) a 'mora (ic) phoneme'. For this reason, and indeed for this reason alone, the phoneme /N/ has been set up by linguists in opposition to /n/ [n].

However, as far as both the data provided by Hirayama himself, and our own data are concerned, the appearance of /N/ and /n/ is in complementary distribution and, hence, completely predictable : the former stands only in the morpheme-final position, and the latter in all other positions. For example, Nas nabï 'cooking pot' (50) vs. kuN 'this' (88).

Hirayama may, of course, have had other evidence for positing a phonemic contrast /N/ : : /n/, but he does not provide us with any evidence or reasoning. However, as these two phonemes appear strictly in complementary environments in our data, I will unify all sounds represented by /N/ and /n/ into /n/ for the present work.

According to the traditional view assumed by Japanese linguists, the phoneme /Q/ is 'another moraic archiphoneme' (Vance (1987) ; 39f) known as 'sokuon'. The nature of this 'archiphoneme' varies according to the consonant which follows it. In other words, /Q/ represents the first element of a geminated consonant, the geminated consonant being a conspicuous element of Japanese phonology. Observe the following examples of

Standard Japanese from Vance 1987 (40f) :

orthographs	gloss	sound
a. happa	'leaf'	[hap :ˆpa]
b. hatta	'stuck'	[hat :ˆta]
c. hakka	'ignition'	[hak :ˆka]
d. hassha	'departure'	[haʃ :ˆʃa]
e. hatchu	'ordering'	[hac :ˆcʃw:]

The string of —QCV— generally has two moras, whereas —CV— has one. In this sense, —QC— is understood as a geminated consonant, or according to Vance (p.39f) a 'phonetic long voiceless obstruents'. Since our concern is not the minute analysis of Japanese phonetics, I would like to transcribe —QC— as simply [pp] , [ss] , etc.

Therefore, Vance's examples given above will be retranscribed as :

Vance's transcription	Our retranscription	No. of moras
a. /haQpa/	/happa/	3
b. /haQta/	/hatta/	3
c. /haQka/	/hakka/	3
d. /haQʃa/	/haʃʃa/	3
e. /haQtʃuu/	/hattʃu:/	4

Following this line, I will also transcribe the long consonant of the Amami dialects as /—CC—/ [—CC—] ; e.g. /—pp—[—pp] etc.

In the Amami dialects (in fact, in almost all of the Ryukyu dialects) we find a contrast between aspirated and non-aspirated consonants. Historically speaking, this contrast is partially the bi-product of the loss of an earlier vocalic contrast traditionally known as *u/ * o : viz. *C^hu>C^hu and *C^ho>Cu.

This deaspiration process is alternatively interperted as glottalization or laryngealization according to the traditional approach of Japanese linguitis such as Hirayama and Nakamoto.

Following Hirayama, I will represent this contrast by marking the glottalization rather than the aspiration. This choice is based on the fact that the frequency of the aspirated, hence non-glottalized consonants, is much higher. Therefore marking glottalization is the most economical way of phonemically representing the contrast. I will use the notation of Nakamoto 1979, i.e. $C^ʔ$, e.g. [$k^ʔ$ugi] 'nail' (Note 1) rather than

Hirayama's notation for the sake of convenience in typing.

The Amami dialects have seven vowels. These seven vowels in combination with a preceding consonant, form seven types of syllable, i.e :

Ci Ce Cï Cë Ca Cu Co

In addition to these, we find listed by Japanese linguists the following types of syllable with a palatal glide :

Cja Cju Cjo

These ten types of syllable form the main part of the syllable systems of the Amami dialects (Note 2).

For instance, we have , therefore, the following syllables for the case of the consonant [k] (/k/) :

[ki ke kï kë ka ku ko] ; [kja kju kjo]

However, in the case of [s], [z] , and [t], we have[ʃ], [ʒ] and [tʃ] in front of [i]. For example, observe the following set, especially the first item in it :

[ʃi se sï së sa su so] ; [ʃa ʃu ʃo]

In Standard Japanese, the traditional manner of phonemicizing is to represent [ʃi], [ʒi], and [tʃi] as /si/, /ti/, and /zi/ respectively. This is done because in SJ, the syllables [si], [ti], and [di] do not occur.

In the Amami dialects, on the other hand, there has been observed, though quite rarely, a contrast between [si] and [ʃi], for example, and Hirayama (1966,24f) in his syllable inventory for Nas, includes [ti] and [tʃi]. However, as far as our data is concerned, this contrast does not appear at all.

However, based on the phonetic reality, we will break with traditional Japanese linguistic practice, and use /ʃi/, /ʒi/ and /tʃi/.

In Japanese phonetics, the occurrence of[z]and[dz]remains a controversial problem. This is perhaps because the two phones appear to behave sometimes as allophones and sometimes as free variants. However, there will be no controversy in saying that they belong to the same phoneme, normally written as /z/.

A parallel phenomenon is observed in the Amami dialects. Observe the following from Hirayama 1966 (24f) :

/zi/	/ze/	/zï/	/zë/	/za/	/zu/	/zo/	;	/zjo/
[dʒi]	[dze]	[dzï]	[dzë]	[dza]	[dzu]	[dzo]	;	[dʒo]

According to the examples given in Hirayama, it seems that the [z] does not occur

in the Amami dialects.

However because it is more economical, and because, morphophonemically, it is the voiced counterpart of /s/ in the Modern Amami dialects, I will agree with Hirayama (and, in fact, with most of other Ryukyuan linguists), and use /z/ rather than /dz/ to represent [dz].

Hirayama 1966 uses /ç/for the affricate [ts] ([t'z] in Hirayama). However, I will use /ts/ for convenience in typing.

To sum up the above argument, I would like to list up here the consonent and vowel phonemes used in our data :

Figure 02. Phonemes used for reconstruction

Consonants :

Stops :				
	p	t		k
		t?		k?
	b	d		g
Fricatives :				
	F	s	ʃ	h
Nasals :				
	m	n		
Affricates :				
	ts		tʃ	
	z		ʒ	
Tap :				
	r			
Semi-vowels :				
	j	w		
	j?			

Vowels :

	Front	Central	Back
High	1	ï	u
			U
Mid	e	ë	o
Low		a	

2.2 Principles of reconstruction

2.2.1 Informant notation

1) (−) indicates the informant did not respond.

2) Definite loans : (〈L〉) indicates that the informant stated 'this word is from Japanese'.

3) Possible loans : (〈L?〉) shows the informant stated he or she thought the word might be from Japanese.

4) If the informant responded with doublets we give both forms (~).

5) When the same phoneme occurs more than once in a word, we use a and b to distinguish between them. E.g. the /u/'s in (117) mutu would be denoted by 117a and 117b.

2.2.2 Invalid cases

1) Unless we see three dialectal forms unmarked with 〈L〉 or 〈L?〉, we do not attempt PA reconstruction.

2) If we see three marks for 〈L〉 or 〈L?〉 we consider the material to be invalid for reconstruction.

3) If a word with an irregular reflex is also semantically deviant from OJ, we designate the comparison as invalid. The examples of this number only four, and are lexical items (5), (119), (168), and (173).

4) If we consider that a word is, although unmarked with 〈L?〉 or 〈L〉, nonetheless clearly a loan word from MdJ, we consider it to be invalid. In fact we have only one lexical item this kind, (260).

2.2.3 Irrecoverable cases

1) If we connot decide between two segments which is the 'true' PA segment, we consider the segment to be irrecoverable and mark it with '_' ; e.g. (103a,b) PA *j_k_.

2) If an entire PA word is made up of such segments, we consider it irrecoverable, and mark it IRC.

2.2.4 Position

1) Unless significant, we do not divide consonants according to their position in the word. Note that PA had no word-final consonants.

2) Vowels are always presented by position.

2.2.5 Glosses

1) Glosses are from OJ.

2) Unless specifically required, we do not give the dialectal gloss. When necessary (i.e when different from OJ), we cite dialectal glosses in our argument.

2.2.6 /U/ and /F/

1) Although /U/ is a potential phoneme of the MdAm dialects, it appears only sporadically in our data. We never see it throughout a lexical item. There is no case for setting up *U as a proto-segment, and its relevance as a marginal phoneme must be left for further study.

2) We have only a few cases of /F/ found in Sho, Ong, and Nas, and its phonemic status is very tentative. However, we have included /F/ in our inventory of phonemes because of its possible relevance to sound changes related to subgrouping of the dialects.

2.2.7 Excluding a form in parenthesis

We exclude various forms (by putting the relevant form in parenthesis) given by informants from our reconstruction for several reasons.

1) If it is a conclusive form suffix (jun) or an adjective suffix (sa), we exlude it from reconstruction unless the verb stem final is affected.

2) If we decide a form is not cognate with the others in a lexical item, we exlude it from reconstructios ; e.g. (83) Ong ju (ʒi) wa 'weak'; (113 Sho tun(kana)'fellow'.

2.3 Reconstruction

2.3.1 PA *p

In our data, we find eleven tokens of the correspondence series showing /p/ in San, /h/ in Yen and Yoa, /h/ or /F/ in Sho, Ong, and Nas, and /h/ or /hw/ in Sib (Pattern 1). Pattern 1 is observed only in word-final position.

For the occurrence of /F/ in Sho and Ong we find the following facts. In Sho, /F/ appears when the PA environment is __*a (Note 3) while /h/ occurs when it is __*i or __*u ; e.g. (143) Faak 'box' vs. (79) hugur 'bag' and (128) hirju-'wide'. The case of (261) hanï 'wing', with /h/ before /a/ is the only exception to this.

In Ong, /F/ appears when the PA environment is __*a and __*u, and /h/ appears before __*i. For example : (232) Fuʃi 'star' vs. (128) hiru— 'wide'. The /h/ of (157) is an exception to this. However we should consider that (157) is the only case where the reflexes are at a word-boundary (this may also be the reason for Sib /hw/ in (157), since Sib has /h/ in all the other relevant lexical items).

From the above facts, we can infer that all the reflexes in Chart 401 are from the same proto-consonant, which we reconstruct as *p.

Chart 01. Modern reflexes for PA *p Pattern 1

No.	Sib	Sho	Nng	Oas	Yen	Yoa	San
(79)	h	h	F 〈L〉	F	h	h	p
128,153 261	h	h	h	h	h	h	p
143	h	F	—	h	h	h	p
(157)	hw	F	h	h	h	h	p
216	h	h	—	h	—	h	p
231,232 233	h	h	F	h	h	h	p

Reconstructing *p, rather than *h or *F, will be seen to be the most appropriate choice if we consider the phonetic plausibility and systematic consistency of the PA plosive series : i.e. *p, *t, and *k (cf. 2.3.2 and 2.3.3 for *t and *k respectively) ; and *b, *d, and *g (cf. 2.3.4,2.3.5, and 2.3.6 respectively).

Judging from its shape, I would suggest the possibility that Nas /Fukuro/ for 'bag' (79) is also a loan word from MdJ /Fukuro/ 'id'.

We have another two examples to consider as coming from *p, but here the San slots are blank (Chart 02).

As far as these correspondence patterns are concerned, when the San slots are empty, there appears to be no telling whether the reflexes are from *p or *k. This is because, with the exception of the San slots, the patterns related to *p and *k in certain intervocalic environments (cf.2.3.3) resemble one another very closely.

Note, however, that the environments for the above mentioned *p and *k cases are different. The eleven *p cases in Chart 01 are all found morpheme-initially, whereas the *k cases are found intervocalically between certain vowels (generally *ë) (cf.2.3.3).

Because they occur in the morpheme-initial position, we shall therefore ascribe the reflexes found in (34) and (61) to PA *p.

Chart 02. Modern reflexes for PA *p Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
34	—	—	h	h	h	—	—
61	h	h	h	h	h	—	—

The sound changes that we have found for *p are as follows :

p > F/_a, h/_i,u — in Sho
> F/_a,u, h/_i — in Ong
> h — in Sib,Nas,Yen,Yoa
> p — in San

2.3.2 PA *t and allophone *ts

From almost forty items with /t/ throughout (pattern 1), we reconstruct PA *t (Chart 03).

In (46) for 'mountain', San has /d/ instead of /t/, as does Nas in (165) for 'place'. I would like to posit that these reflexes are from *t. Hence, the initial consonant of the PA words has become /d/ for an unknown reason. We can classify them as exceptions to Pattern 1, and unrelated to the similar reflexes we find in Pattern 4.

Chart 03. Modern reflexes for PA *t Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
9,12,70,96,108, 110,114a,114b, 115,116,146,147 164,225, 246	t	t	t	t	t	t	t
8	t	t	t	t	—	t	t
15	—	t	t	t	—	—	t
67	t	t	—	—	—	t	—
71	t	t	—	t 〈L〉	t 〈L〉	t	t
72	t	—	t	t	t	t	t
73	t	t	—	—	t	t	t 〈L〉
87	t	t	—	t	t	t 〈L〉	t
95	t	t	t	—	t	—	—
105,169a 169b	t	t	t	t	t	—	t
107	t	t	t	t	—	—	t
111	t	—	t	t	t	t	t
112	—	t	t	t	t	—	—
113	t	t	t	t	—	—	—
117	t	t	t	t	t 〈L〉	—	t
127	t	—	t	t	t	t	—
145b	—	t	t	t	t	—	t

162	t	t	t	t	t	t	—
167	t	t	t	t	—	t	—
191	t	t	—	t 〈L〉	—	—	t
244	—	—	—	—	t	t	t

Chart 04. Modern reflexes for PA *t Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
46	t	t	t	t	—	—	d
165	t	t	t	d	t	t	t

We find five tokens of a correspondence series which occurs both word-initially and word-medially (136) in the environment of _*ï. As this pattern is in complementary distribution with *t, we set up *ts as an allophone of *t.

Chart 05. Modern reflexes for PA *ts Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
(30)	t	t	ts	ts	ts 〈L?〉	ts	s
48	t?	t?	ts	ts	ts	ts	ts
77	—	t?	ts	ts	ts	ts	ts
136	—	t	ts	ts	ts	ts	ts
145a	—	ts	ts	ts	s	ts	ts

San /s/ in (30) and Yen /s/ in (145a) are exceptions.

The /ts/ in Sho (145a) is the only example we find for /ts/ for either Shi or Sho in our data. We will consider it an exception to Pattern 3, where otherwise in Sib and Sho we find that /t/ or /t?/ has replaced *ts. The choice of /t?/ may be influenced by the following consonant (_ïm in (48) and _ïn (77)), but we lack sufficient evidence for a firm determination. This patters, in fact, shows an interesting situation and is open to several different interpretations. We present this argument as the most plausible explanation, and note the issue of *ts as a point for further study.

In our data we have three cases where isolated /d/ appears in patterns otherwise consisting of /t/ throughout. This /d/ is (unlike Pattern 2) found in

Chart 06. Modern reflexes for PA *t Pattern 4

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
(7)	t~+d	+d	t	t	t	t	t
163	+d	t	t	—	—	t	—
166	t	+d	t	t	t	—	t 〈L〉

morpheme-initial position when the morpheme in quention is attached to another one which precedes it.

The voicing which takes place in this particular environment is similar to an occurrence in Japanese generally known as the 'rendaku' (lit. 'voicing') phenomena. There can be no doubt that this 'rendaku' is a synchronic phenomenon in the MdA dialects too. The alternation of Sib +duk~ toki 'time' (7) provides us with evidence for this.

Therefore the proto-segment for the above cases can be postulated to have been *t.

We find that PA *t has remained unchanged, and that tis allophone *ts has undergone the following change :

*ts	>	t or t$^{?}$	in Shi, Sho
	>	ts	elesewhere

2.3.3 PA *k and allophone *h

As discussed in the following subsections, there is good reason to assume that PA *k had an allophone *h. We will discuss the rather complex differences in environment of these two proto-segments in the following subsection.

Chart 07. Modern reflexes for PA *k Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
			*k~				
29,96, 155a,248, 249	k	k	k	k	k	k	k
67	k	k	—	—	—	k	k
76	k	k	k	—	k	k	k
95	k	k	k	—	k	—	—
97	k	—	k	k	—	—	k
100	—	k	k	k	k	k	k
(138)	k	k	k	k	k	k	p

196	—	k	k	k	k	k	k
205	k	k	k	k	k	—	—
222	k	—	k	k	—	k	k 〈L?〉
223	k	k	k	—	—	—	—
250	k	k	k	k	k	k	—
			*-k-				
7,30, 102,103, 225,251, 252	k	k	k	k	k	k	k
105	k	k	k	k	k	—	k
254	k	—	—	k	k	—	k 〈L?〉

The correspondences listed in Chart 07 above consist of MdA /k/ throughout. From these examples, we reconstruct *k.

San /p/ in (138) is as exception (cf. Chart 01 for PA *p in word-final position, and Chart 09 below for word-initial *k in complementary distribution).

On the other hand, we find seven tokens of a correspondence series consisting mainly of /h/ and an infrequent ø in Yen, Yoa and San (Pattern 2). From these correspondences, we reconstruct *h.

This *h, however, and *k reconstructed above are found to be in complementary distribution in terms of their PA environments.

We find *h between *ë_*ë (44,45,46), *u_ë (56), *o_*o (155b, 160, and 165), and *a *a (84) (Note4). On the other hand, *k is found in the following environments : *u_*i (7), *ĭ_*i (30), *u_*u (102,105), *u_*a (251,252), # _(nine lexical items, Chart 408) (Note 5).

Due to this distribution pattern, we must conclude that giving phonemic status to *h is not justifiable. Therefore, I shall recognize *h as an allophone of *k.

Chart 08. Modern reflexes for PA *k Pattern 2—*h

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
44	h	—	h	h	ø	ø	ø
45	h	h	h	h	h	ø	h
46	h	h	h	h	—	—	h
56	h	h	h	h	h	h	—
84	h	h	h	h	h	h	h
(104)	—	h	h	h	h	h	ø

(142)	h	h	h	h	h	—	h
(155b)	h	h	k	h	ø	ø	ø
(160)	h	h	h	h	k	h	ø
(165)	ø ~h	ø	ø	ø	k	k	ø

Yen /k/ in (160) is an exception.

The occurrences of ø in (165) are caused by the dropping of *h in this item, and are exceptions. Also, Yen and Yoa /k/ may be the result of lexical borrowing from MdJ tokoro 'id'.

The word-initial correspondences consisting of /h/ in San and /k/ throughout the other dialects may be the best evidence for postulating that *k had allophone *h (Pattern 3).

This correspondence pattern is found to be in almost exact complementary distribution with Pattern 1 (Chart 07). The PA environments for Pattern 3 are #_*aCï (40,41, and 42,), #_*ï (25,60,157) and #_*u (43,68,91,92,101,87,141). The environment for (259) is irrecoverable. Pattern 1 has different environments (notably #_*o), with the following exception : (100) and (248), where *k is found in #_*u. We therefore ascribe Pattern 3 to *k.

Chart 09. Modern reflexes for PA *k Pattern 3

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
4,40,41,42, 68,91,92, 101,157, (259)	k	k	k	k	k	k	h
25	k	k	k	k	k	k	h
43	k	k	—	k	k	—	h
60	k	k	k	k	k	k	h
87	k	k	—	k	k	k	h
141	k	k~h	k	k	k	—	h
(57)	k	k	k	k	—	k	—
(58)	k	k	k	k	k	—	—
(216)	k	k	—	k	—	k	h

The correspondences of (57) and (58) are vacant in the San slots. However, from the relevant PA environment, #_ï, I posit that the San reflexes would be /h/. Hence, I will classify these items into Pattern 3.

Correspondence Pattern 4, drawn from (88),(89), and (90) (Chart 10) may be lexically defined, and is, hence, an exception to Pattern 3.

From the initial consonants (/k/) of the lexical items in these three cases, and from the environments in which they are placed (#_u), we are able to predict that Yoa and San would have /h/.

The initial elements of the lexical items in (88),(89), and (90) (u- in Yoa and San, and ku- in the other dialects : perhaps for 'this') must have come from a common PA source. This can be reconstructed as *ku-'id'.

Chart 10. Modern reflexes for PA *k Pattern 4

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
88	k	k	k	k	k	ø	ø
89	k	—	k	—	k	—	ø
90	—	k	k	k	k	ø	ø

PA *h has remained unchanged in all dialects. For PA *k, we have found the following sound changes :

*k > h/ë_ë, u_ë, a_a, o_o — in every dialect
> n/#_Cï, #_ï, #_u — in San
> k elsewhere

2.3.4 PA *b

Seven items show the pattern consisting of /b/ throughout (Pattern 1, Chart 11)). From them, we reconstruct PA *b. Sib ø in (108) is an exception.

Chart 11. Modern reflexes for PA *b Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
50,60,68	b	b	b	b	b	b	b

108	ø	b	b	b	b	b	b
95	b	b	b	—	b	—	—
209	b	—	b	b	b	b	b
215	b	b	—	b	—	—	—

It is one of the sound changes specific to Sib and Sho that word-final *i and *u in the environment of C_# are lost. (Note 3).

This change has resulted in closed syllables for Sib and Sho. The voiced consonants which have thus become word-final, have subsequently been devoiced in both Sib and Sho.

For instance, PA *tabi 'journey' > Sib tap 'id' and Sho tap 'id' (191). The correspondence pattern found in Chart 12 having /p/ in Sib and Sho, and /b/ in the other dialects (Pattern 2) is the result of this devoicing process.

Chart 12. Modern reflexes for PA *b Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
193	p	p	b	b	b	b	b
196	—	p	b	b	b	b	b
191	p	p	—	b 〈L〉	b	b	b

The correspondences of both (226b) and (238) include /b/ and /m/ (Chart 13).

Chart 13. Modern reflexes for PA *b Pattern 3

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
226b	b	b	b	b	b	m	m
238	b	m	b	b	b	b	b

I would put the presence of /m/ to lexical borrowing from MdJ ; viz. (226b) Yoa mamor (in) 'to defend', San mamor (jun) 'id' : : MdJ mamor (u) 'id' ; (238) Sho k$^{?}$ umo 'spider' : : MdJ kumo 'id'.

One item shows a pattern consisting of /b/ and ø. I have not found any environmental or other evidence to justify a sound change PA *b > ø in Yen, Yoa, and San. Nor do we find any Japanese word(s) to suggest lexical borrowing. Therefore, I will simply treat this case as an exception.

Chart 14. Modern reflexes for PA *b Pattern 4

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
122	b	b	b	b	ø	ø	ø

For PA *b, we find the following sound changes :

*b > P/_i(> ø)# in Sib, Sho
> b elsewhere

2.3.5. PA *d

We find eight cases supporting a correspondence series consisting of /d/ throuhout (Chart 15). Therefore, we reconstruct *d.

Chart 15. Modern reflexes for PA *d Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
17,45 75,118	d	d	d	d	d	d	d
74	d 〈L〉	—	d	d	d	d	d
76	d	d	d	—	d	d	d
198	—	d	d	d	d	d	d

We treat the correspondence of (11) and (168) as a case of the 'rendaku' phenomena (cf.2.3.2) in PA.

Chart 16. Modern reflexes for PA *d Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
11	d	d	d	d	d	d	t

The /d/ in (11) found throughout the dialects with the exception of San is, in all cases, the initial segment of the second element of a compound word for 'spirit of the dead' (observe this in the master list).

The San word tʃuuntamasii should be analyzed as tʃuu 'person' (cf.(10) San tʃu 'person') plus a genitive marker n plus tamasii (perhaps tama + sii). Consider that we have no evidence that 'rendaku' applies when the element in question follows a genitive

marker in MdA.

Based upon the above argument, we must consider that, as a compound word, the initial phoneme of the second element was *d.

Unless PA had this *d as a 'rendaku' case, we connot account for the fact that all the modern dialects (except San, in which tamasi is not considered to be part of a compound word) show *d for this case.

PA *d has been retained as /d/ in all the modern dialects to the present day.

2.3.6 PA *g

We have twelve items with the correspondence /g/ throughout. We reconstruct PA *g from them (Pattern 1).

Sib /k/ in (158) is as exception. The reflex /g/ in Ong, Nas, and Yen stands as the initial consonant of the second element of a compound word (cf. master list). It is a retention of PA *g, which is hence relevant to the 'rendaku' phenomena (cf.2.3.2 ; 2.3.5) of PA. The Sib /k/ on the other hand, is the initial segment of an independent word, kumor 'to shout'. As we have in this series three +/g/'s and one /k/, we will treat the reconstruction as a case of 'rendaku'.

Chart 17. Modern reflexes for PA *g Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
31,32,40, 147,161	g	g	g	g	g	g	g
65	—	—	g	g	—	g	g
67	$^{+}$g	$^{+}$g	—	—	—	$^{+}$g	—
91	g	—	g	g	g	g	g
99	$^{+}$g	$^{+}$g	$^{+}$g	$^{+}$g	$^{+}$g	—	—
106	g	g	g	g	—	g	g
113	$^{+}$g	—	$^{+}$g	$^{+}$g	—	—	—
127	g	—	g	g	g	g	—
(158)	#k	—	$^{+}$g	$^{+}$g	$^{+}$g	—	—
162	g	g	g	g	g	g	—

We have a correspondence series consisting of /k/ in Sib and Sho, and /g/ in the other dialects (Pattern 2). We can relate this pattern to the devoicing process of PA * b as seen in Sib and Sho (cf.2.3.4).

Chart 18. Modern reflexes for PA *g Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
186	k	—	g	g	—	—	g
187	k	k	g	—	g	g	g 〈L〉
201	k	k	g	g	g	g	g
245	k	k	g	g	g	g	g

For PA *g, we have found the following sound changes :

*g > k/_i,u(> 0)# in Sib, Sho
> g elsewhere

2.3.7 PA *s

PA has *s, which has remained as /s/ in the seven modern dialects regardless of environment, with a few rare exceptions (Chart 19).

The Nase /ʃ~s/ in (258) may be due to lexical borrowing from MdJ or Kyushu dialect (hereafter Kyu), cf. Nas ase ~aʃe 'sweat', MdJ ase 'id', and Kyu aʃe 'id'. For Nas aʃe 'id', refer to Nas kaze 'wind', which may be from MdJ kaze 'id', or Kyu kaze 'id' (259).

Chart 19. Modern reflexes for PA *s

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
32,44, 245,249	s	s	s	s	s	s	s
80	s	s	s	s	—	s	s
130	s	—	s	s	—	s	s
(131)	ss	s	—	—	s	—	—
133	s	—	s	—	—	s	—
150a,b	s	—	s	s	s	s	s
184	s	s	—	s	—	—	s
(212)	ʃ	s	s	s	s	s	s
(224)	s	s	s	s	s	ss	ss
(258)	s	s	s	s~ʃ	s	s	s

The /ʃ/ in Sib (212), and in the Ong doublet in (258) must be treated as exceptions.

The occurrences of /ss/'s in Sib (131) and Yoa (224) are exeptions.

We have found the PA *s has not undergone any sound changes to date.

2.3.8 PA *z

Evidence in support of the existence of *z in PA is neither plentiful nor powerful. We find only three lexical items exemplifing it, as observed in the following subsections.

However, it is nevertheless possible to justify the reconstruction of *z, for although our cases are few in number, they show a certain consistency in their patterning.

We find two iters with a correspondence series consisting of /d/ in Sib and Sho, and /z/ in the other dialects.

Observe how *z contrasts with *d ; e.g. (92) *kuzu 'last year' vs. (17) *wuduri 'dance, jumping'. We therefore reconstruct *z from these correspondences.

Chart 20. Modern reflexes for PA *z Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
92	d	d	z	z	z	z	z
259	d	d	z	ʒ	z	z	z

We find /ʒ/ in Nas in the correspondence of (259). The syllable is /ʒe/. This may be due to lexical borrowing from Kyu Kaʒe 'wind' (cf.2.3.7).

Patters 2, discussed in this subsection, is represented by only one item. However, it becomes of particular interest if we observe it in parallel to PA *b and *g, which became /p/ and /k/ respectively in word-final position in Sib and Sho (cf,2.3.4 and 2.3.6). Observe that we have /d/ in Sib and Sho in (92) and (259), whereas we have /t/ in (203), where the reflex is in word-final position.

We can therefore reasonably ascribe the reflexes of (203) to the same PA segment as those of (92) and (259), that is to PA *z.

Chart 21. Modern reflexes for PA *z Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
203	t	t	z	z	z	z	z

We have found the following sound changes for PA *z :

*z > d/_u
t/_ï# in Sib, Sho
> z/elsewhere

2.3.9 PA *ʃ

We have four tokens of a correspondence series with /ʃ/ throughout (Chart 22). From them we reconstruct *ʃ for PA (Note 6).

Chart 22. Modern reflexes for PA *ʃ Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
82	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ
115	—	—	—	—	—	ʃ	ʃ
211	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	—
(104SF)	—	ʃ	—	—	—	ʃ	ʃ

The pattern consisting of /s/ in Nas and /ʃ/ throughout the other dialects is found in the seven items listed in Chart 23 below.

Chart 23. Modern reflexes for PA *ʃ Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
21,60, 232,252	ʃ	ʃ	ʃ	s	ʃ	ʃ	ʃ
8	ʃ	ʃ	ʃ	s	ʃ	ʃ	ʃ
15	—	—	ʃ	s	—	—	ʃ
149	—	ʃ	ʃ	s	ʃ	ʃ	ʃ
(4)	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ
(87)	ʃ	ʃ	—	ʃ	ʃ	ʃ	ʃ
(205)	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	—

The pattern is found when the environment comes from PA _*i.

Three lexical items (4,87, and 205) are exceptions to this Pattern. However, it is very likely that Nas /ʃi/ in (205) is caused by interdialectal lexical borrowing ; cf. (205) Nas këëʃi, from PA *kë:ʃi 'tidal wave caused by typhoon', is culturally very specific. Thus, Nas kuʃi, 'waste' in (4) and Nas kutuʃi (87) are the only unexplainable items which I will define as exceptions.

Therefore I shall ascribe the reflexes in Chart 25 to PA *ʃ.

For this ascription, remember also why we decided to phonemicize /ʃi/, /ʒi/, and /tʃi/ for the Amami syllables [ʃi], [dʒi], and [tʃi] respectively, rejecting the traditional pronemicization of /si/, /zi/, and /ti/. This was because we respected the phonetic reality rather than the more abstract phonemicization seen in Hirayama (1966). This approach has been used in setting up our PA phonemes too.

We have found the following sound change for PA *ʃ :

*ʃ	>	s/_i	in Nas
		ʃ	elsewhere

2.3.10 PA *ʒ

We find only one set of corresponding reflexes that lead us to the reconstruction of *ʒ for PA. As was the case for *z in 2. 3. 8, this reconstruction can be supported by examining it with reference to *ʃ and the devoicing phenomena of word-final consonants in Sib and Sho.

Chart 24. Modern reflexes for PA *ʒ

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
146	tʃ	tʃ	ʒ	z	ʒ	ʒ	ʒ

Observe first the /z/ in the Nas slot. This /z/ is found before /ĭ/.

For (146), let us refer to the fact that PA *ʃi has become /sĭ/ in Nas (2.3.9).

Sib and Sho /tʃ/ in (146) can be accounted for by a phenomenon parallel to the devoicing phenomena of word-final voiced consonants (e.g.2.3.4 for *bi)>p# in Sib and Sho, etc.).

Based upon the above examination, we shall recognize the existence of *ʒ in PA.

We have found the following sound changes for *ʒ :

*ʒ	>	tʃ_i#	in Sib, Sho
	>	z/_i	in Nas
	>	ʒ	elsewhere

2.3.11. PA *tʃ

In all environments other than _*i, we find correspondences consisting unpredictably of /ttʃ/ and /tʃ/, with isolated exceptions /t/ and /ʃʃ/ (Pattern 1). This denotes that

Pattern 1 and 2 are found in complementary distribution. Therefore, the reflexes of the two patterns should be ascribed to the same proto-segment.

Chart 25. Modern reflexes for PA *tʃ Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
10	ttʃ~ tʃ	tʃ	ttʃ	ttʃ	ttʃ~ tʃ	ttʃ	tʃ
11	ttʃ	tʃ	ttʃ	ttʃ	ttʃ~	tʃ	tʃ
14	ttʃ	tʃ	tʃ	ttʃ	—	tʃ	tʃ
15	—	tʃ	tʃ	ttʃ	—	—	tʃ
16	tʃ	tʃ	tʃ	t	ʃʃ	—	t
100	ʃʃ	ʃʃ	ʃʃ	ttʃ	—	tʃʃ	ʃ
125	—	—	—	—	tʃ	tʃʃ	tʃ
228	ttʃ	ttʃ	ttʃ	ttʃ	ttʃ	ttʃ	ttʃ

We find two items of a correspondence series with /ts/ in Nas and /tʃ/ in the other dialects (with an exception /ttʃ/ in Yen and San (235)). The common environment for these correspondences is PA *_i which has become /ï/ in Nas. Thus, the relevant Nas syllable is /tsï/.

Based upon the parellel phenonemon with /sî/ in Nas and /ʃi/ in the other dialects (cf.2.3.9), we reconstruct *tʃ for PA.

Chart 26. Modern reflexes for PA *tʃ Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
124	tʃ	tʃ	tʃ	ts	tʃ	tʃ	tʃ
235	tʃ	tʃ	tʃ	ts	ttʃ	tʃ	ttʃ

We find the following sound change for PA *tʃ :

*tʃ	>	ts/_i	in Nas
		tʃ/_i	in the other dialects
	>	ttʃ oh tʃ	in other environments

Note that a strong case can be made for reconstructing *s and *ts, rather than *ʃ and *tʃ, but that we have chosen to present the latter.

2.3.12 PA *m

We have numerous examples for the correspondence pattern consisting of /m/ throughout (Chart 27). We reconstruct *m for PA from these examples. Note that this pattern is observed only in word-initial position.

The occurrences of ø in Ong, Yen and Yoa (22) are exceptions.

The occurrence of ø in San (22) is also an exception, and unrelated to the argument presented in the next sub-section.

Sib doublet /n/ in (226a) is an exception.

Chart 27. Modern reflexes for PA *m Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
			*m-				
27,53a,62,78a, 125,126,207, 230a,234,235, 252	m	m	m	m	m	m	m
16	m	m	m	m	m	—	m
(22)	m	m	ø	m	ø	ø	ø
(23)	m	m	m	m	m	ø	m
63	—	—	m	m	m	m	m
64	m	—	m	m	m	—	—
65	—	—	m	m	—	m	m
73	m	m	—	—	m	m	m 〈L〉
85	m	m	m 〈L〉	m	m	m	m
117	m	m	m	m	m 〈L〉	—	m
127	m	—	m	m	m	m	m
142	m	m	m	m	m	—	m
194	m	m	m	m	m	—	m
199a	—	m	m	m	m	m	m
210	—	m	m	m	m	—	m
211	m	m	m	m	m	—	m
217	m	m	—	m	—	—	—
(226a)	m	m~n	m	m	m	m	m
237	m	—	m	m	m	—	m 〈L〉
255	m	m	m	m	—	m	m

However, PA *m has been lost in San in intervocalic position. This sound change has created a correspondence pattern having ø in San (Chart 28).

Four cases (11,23,28,29,169,236a) in Chart 428 are exceptions, uneplainably showing /m/ in San.

Although the San slots are blank for six lexical items, we can ascribe them to Pattern 2 based on their word-medial position.

The case of (230a,b) is the single example of the consonant string *mm. Note that the second /m/ has been lost in San.

Chart 28. Modern retlexes for PA *m Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
37,41,42,48 53b,78b, 164,230b	m	m	m	m	m	m	ø
(35)	m	m	m	n~m	n	m 〈L〉	ø
43	m	m	—	m	m	—	ø
97	m	—	m	—	—	—	ø
118	—	—	m	m	—	m	ø
123	m	—	m	m	m	m	ø
130	m	—	m	m	—	m	ø
135	m	—	m	m	—	m	ø
145	—	m	m	m	m	—	ø
149	—	m	m	m	m	m	ø
179	m	m	m	m	—	m	ø
(11,29, 236a,230a)	m	m	m	m	m	m	m
(23)	m	m	m	m	m	ø	m
(28)	—	m	m 〈L〉	m	m	m	m
(169)	m	m	m	m	m	—	m
(112)	—	m	m	m	m	—	—
(158)	m	—	m	m	m	—	—
(163)	m	m	m	—	—	m	—
(167)	m	m	m	m	—	m	—
(220)	m 〈L〉	m 〈L〉	m	m	m	m	—
(223)	m	m	m	—	—	—	—

We find two tokens of a correspondence series with /m/ in Sho, /n/ in San, with /m/ or /n/ in the other dialects and Sib blank in both cases). This correspondence pattern is observed only in the environment of _*i : (Note 3).

Chart 29. Modern reflexes for PA *m Pattern 3

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
199b	—	m	n	n	n	n	n
200	—	m	m	m	—	m	n

We have found the following sound changes for *m :

*m > ø /V_V in San
> m elsewhere

2.3.13 PA *n

PA had *n which has not undergone any changes to the time of MdAm. Examples for this are ample (Chart 30).

Chart 30. Modern reflexes for PA *n

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
23,50,70,84, 88,121,122, 123,126,157, 160,161, 201;233,241 251,261	n	n	n	n	n	n	n
6	n	—	n	—	n	n	n
18	n	—	n	n	n	n	n
19	n	n	n	n	n	—	n
67	n	n	—	—	—	n	—
77	—	n	—	n	n	n	—
89	n	—	n	—	n	—	n
97	n	—	n	n	—	—	n
106	n	n	n	n	—	n	n
113	n	n	n	n	—	—	—
127	n	—	n	n	n	n	n
166	n	n	n	n	n	—	n 〈L〉
171	n	—	n	n	n	n	n 〈L〉
172	n	—	n	n	n 〈L〉	—	—
198	—	—	n	n	n	n	n

As we observed in the previous subsection, we find that PA *n is retained as /n/ everywhere in every modern dialect.

2.3.14 PA *r

PA *r, like *n discussed in 2.3.14 above. is well-preserved in the modern Amami dialects (Chart 33).

Chart 33. Modern reflexes for PA *r

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
9,17,68,148, 153,155, 165,226, 248	r	r	r	r	r	r	r
6	r	—	r	—	r	r	—
18	r	—	r	r	r	r	r
19	r	r	r	r	r	—	r
28	—	r	r 〈L?〉	r	r	r	r
34	—	—	r	r	r	—	—
65	—	—	r	r	—	r	r
71	r	r	—	r 〈L〉	r 〈L〉	r	r
79	r	r	r 〈L〉	r	r	r	r
90	—	r	r	r	r	r	r
99	r	r	r	r	r	—	—
102	r	—	r	r	r	r	r
106	r	r	r	r	—	r	r
111	r	—	r	r	r 〈L〉	r	r
(113)	rj	—	r	r	—	—	—
121	r	—	r	r	—	r	r
122	r	—	r	r	r	r	r
127	r	—	r	r	r	r	—
129	—	r	r	r	—	r	r
134	—	—	—	r	—	r	r
149	—	r	r	r	r	r	r
152	—	—	r	—	r	r	r
158	r	—	r	r	r	—	—
160	—	—	—	r	—	r	r
163	r	—	—	—	—	r	—
172	r	—	r	r	r 〈L〉	—	—
175	r~d	r	r	r	—	r	r

176	r	r	—	r 〈L〉	r	r	r
180	—	r	r	r	r	r	r
202	r	—	—	r	r	r	r
215	r	r	—	r	—	—	—
220	r 〈L〉	r 〈L〉	r	r	r	r	—
237	r	—	r	r	r	—	r 〈L?〉
247	r	r	r	r	r	—	r
250	r	r	r	r	r	r	—
255	r	r	r	r	—	r	r

Shi /rj/ in (113) is the only exception to this pattern.

PA *r has not undergone any sound changes.

2.3.15 PA *j

2.3.15.1 Prevocalic *j

We find a correspondence series of 20 items with /j/ throughout. From them we reconstruct *j for PA.

Chart 32. Modern reflexes for PA *j

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
75,84,103,118, 189,214	j	j	j	j	j	j	j
35	j	j	j	j	j	j 〈L〉	j
74	j 〈L〉	—	j	j	j	j	j
83	j	j	j	—	j	—	j
(85)	n	j	n 〈L〉	j	j	j	j
89	j	—	j	—	j	—	j
102	j	—	j	j	j	j	j
132	—	—	j	j	—	j	j
133	j	—	j	—	—	j	—
134	—	j	—	j	—	j	j
135	j	j	j	j	—	j	j
136	—	j	j	j	j	j	j
152	—	—	j	—	j	j	j
175	j	j	j	j	—	j	j
200	—	j	j	j	—	j	j
209	j	—	j	j	j	j	j

217	j	j	—	j	—	—	—
254	j	—	—	j	j	—	j 〈L?〉

Sib /n/ in (85) is an exception, which may be the result of the change _*jo in PA *majo 'cocoon' to /n/, but the cause of the change remains unexplained.

2.3.15.2 Postcontonantal *j

We find eight lexical items with palatalized consonants in Sib and Sho (exceptions being Sho /n/ in (124) and blanks in (192) in both dialects), with unpredictably scattered palatalized consonants elsewhere.

These cases are found both word initially, and word-medially in the environment *i _V. As we find contrasting unmarked C ; e.g. (153) *piru vs. (128) *pirju we therefore ascribe these cases to *Cj.

Chart 33. Modern realexes for PA *Cj

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San	PA
				—*Cj—				
20	nj	nj	n	—	nj	n	n	*nj
21	rj	rj	r	r	r	r	r	*rj
22	nj	nj	n?j	mj	nj	nj	nj	*nj
73	nj	nj	—	—	n	nj	n 〈L〉	*nj
(124)	nj	n?j	n?j	n?j	n	n?j	n?j	*nj
128	rj	rj	r	r	r	r	r	*rj
				*Cj—				
192	—	—	nj	nj	nj	nj	nj	*nj
204	kj	kj	k	kj	kj	kj	h	*kj

PA *j has been retained as /j/ everywhere in all the modern dialects.

PA *Cj has undergone the following sound changes :

*Cj > Cj in Sib, Sho

Cj or C unpredictably elsewhere

2.3.16 PA *w

We have numerous tokens of a correspondence series consisting of mostly /w/ with scattered ø's. Therefore, we reconstruct *w for PA.

Although our data does not happen to contain any examples of word-initial /w—/ other thas /wu/, Hirayama (1966) attests the existence of word-initian /wa/.

The sporadic occurrence of ø in the word-initial environment of _*u is unexplainable. However, the occurrence of ø in word-medial position in Sib and Sho may be related to the environment _*a.

Chart 34. Modern retexes for PA *w

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
			*w—				
31,241	w	w	w	w	w	w	w
12	w	w	ø	w	w	w	w
17	w	ø	w	w	w	w	w
56	w	w	w	w	w	ø	—
178	w	ø	w	w	w	w	w
201	w	w	w~ ø 〈L?〉	w	w	ø 〈L?〉	w
239	w	w	w	ø	w	—	—
240	w	—	w	w	w	—	w
242	—	w	w	w	w	w	w
			—*w—				
83	ø	ø	—	w	—	w	—

We find the following sound changes for PA *w :

PA*w > ø _a in Sib, Sho
w elsewhere

2.3.17 PA *k? and allophone *kk

If we gather from our data all the correspondences with /k?/ and /or/ kk/, we find patterns which can be summarized as belonging to two types :

1) patterns having /k?/ (Pattern 1)

Eg. (20) k? k k? — kk k? k

2) pattern not having /k?/ (Pattern 2)

Eg. (183) k k k kk kk k k

These two patterns are found in complemontary

Chart 35. Modern retlexes for PA *k$^{?}$ Pattern 1

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
20	k$^{?}$	k	k$^{?}$	—	kk	k$^{?}$	k
148	k	k	k	k	k$^{?}$	kk	kk
176	k$^{?}$	k	—	k 〈L〉	kk	k	k
179	k$^{?}$	k$^{?}$	kk	kk	—	k$^{?}$	k$^{?}$
180	—	k	kk	k	kk	k$^{?}$	k$^{?}$
187	k$^{?}$	k$^{?}$	k	—	k	k	k 〈L〉
202	k$^{?}$	k	k	k	k	k	k$^{?}$
203	k$^{?}$	k$^{?}$	k	k	k	k	k
238	k	k$^{?}$	k$^{?}$	k	k	k	k
(255)	k$^{?}$	h	k	k	—	kk	—

distribution ; viz. Pattern 1 is found word-initially and pattern 2 intervocalically. Therefore we set up *k$^{?}$ and its allophone *kk.

Although we see a clear complementary distribution, the patterning is nonetheless very undifferentiated, an inconsistency perhaps pointing to a merger with the reflexes of *k.

Sho /h/ in (255) from Chart 35 is an exception.

Chart 36. Modern reflexes for PA *kk Pattern 2

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
79	kk	g	k 〈L〉	k	kk	k	kk
140	k	g	k	k	k~kk	—	—
(143)	k	k	—	kk	k$^{?}$	kk	kk
182	k	—	k	k	k	kk	k
183	k	k	k	kk	kk	k	k
184	k	k	k	kk	k	—	k
194	k	k	k	kk	k	—	k

Note that in Chart 36, Yen /k$^{?}$/ in (143) is an exception, being the only example of /k$^{?}$/ in the intervocalic position. Sho /g/'s in (79) and (140) are also exceptions.

We find the following sound changes for PA *k$^{?}$:

*k? > k?, kk, k/#_ ┐
*kk > kk, k/V_V ┘ in all dialects

2.3.18 Tentative reconstructions : PA *t?, *j?, and *kkw

We find three instances where only limited data (one or two lexical items) leads us to reconstruct tentative proto-segments for various reasons.

2.3.18.1 PA *t?

Although this reflex is found in just one item, we tentatively reconstruct *t?, noting its parallelism with *k? (2.3.17).

Chart 37. Modern reflexes for PA *t

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San	PA
13	t?	t?	t?	tt	t?	t?	t?	*t?

2.3.18.2 PA *j?

We find one case with /j?/ in Sho, Ong, Nas, Yen, San, and an exception /j/ in Yoa and blank in Sib. Because this item contrasts with (132) PA *ju 'lifetime' we reconstruct *j?.

Chart 38. Modern reflexes for PA *j?

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
243	—	j?	j?	j?	j?	j	j?

2.3.18.3 PA *kkw

We find one example with labio-velar /kkw/ throughout, Based on contrasts such as (41) -kamï 'pot' vs. (66) *kkwa 'child' we tentatively reconstruct *kkw.

Chart 39. Modern reflexes for PA *kkw

No.	Sib	Sho	Ong	Nas	Yen	Yoa	San
66	kkw	kkw	kkw	kkw	kkw	kkw	kkw

NOTES

1. Nakamoto 1979 gives the Ryukyuan forms only phonetic notation.
2. Note that we do very occasionally observe syllables in the shape of CwV ; i.e. with a labial glide. However, as this is irrelevant to our present argument, we shall pass over this type of glide for the moment.
3. The overall reconstruction process of the PA vowels will be presented in the article under the tentative title "Proto-Amami" in the Annals of Gifu University for Education and Languages, No 24.

   The annals is to be published in the Autumn of 1992.
4. The PA vowels before and after *h in (104) and (142) are irrecoverable bacause of the inconsistent shapes of the dialectal forms.
5. The PA vowels before and after *k in (103) are also irrecoverable.
6. For (4), (87), (205), see Chart 23 and the relevant paragraphs.

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APPENDIX ONE : MASTER LIST

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
1	'capital'	mijaku	—	—	—	—	—	mijako 〈L?〉	mi_1jako_1	1
2	'next door'	tunar	—	—	tonari 〈L〉	—	—	(so)tonari	to_1nari	2
3	'Shinto prayer'	—	—	nurito	—	—	nurito	norito 〈L〉	no_2rito_1	3
4	'waste'	kUʃ	kuʃ~ kuʃi	kuʃi	kuʃi	koʃi	kuʃi	huʃi	ko_2si	4
5	'steaming basket'	—	kuʃiki	kaʃiki—	kaʃike	kaʃiki—	kaʃiki	kuʃsi	ko_2siki	5
6	'impurity'	nikkrī(rjun)	—	nikkre—	—	nīgīre	nīguri	nīgīrī	$nigo_2ri$	6
7	'time'	—duk~ toki	—duk	tuki	tuki	tuki	toki	tuki	to_2ki_1	7
8	'time, years'	tuʃii	tuʃi	tuʃi	tusī	—	toʃi	tuʃi	to_2si	8
9	'bird'	tuur	tur	turi	turi	turi	tori	turi	to_2ri	9
10	'person'	tʃu~ ttʃuu	tʃuu	ttʃu	ttʃuu	tʃu~ ttʃu	ttʃu	tʃu	pi_1to_2	10
11	'spirit of the dead'	ttʃuu.dama	tʃuu.dama	ttʃudama	ttʃudama~ tʃuudama	ttʃudama~ tʃudama	tʃuudama	tʃuuntamasii	pi_1to_2dama	11
12	'husband'	wutu	wutuu	utu	wutu	wutu	wutu	wutu	$wopi_1to_2$	12
13	'one'	$t^{?}$Ī(t)	$t^{?}$Ī(t)	$t^{?}$Ī(tsī)	ttī(tsī)	$t^{?}$Ī(tsī)	$t^{?}$Ī(t:ī)	$t^{?}$Ī(tsī)	pi_1to_2	13
14	'one day'	ttʃui	tʃii	tʃui	ttʃui	—	tʃii	tʃii	$pi_1to_2pi_1$	14
15	'one year'	—	tʃutu(u)	tʃutuʃi	ttʃutusī	—	—	tʃuutuʃi	$pi_1to_2to_1se$	15
16	'three years'	mitʃuu	mitʃuu	mitʃuu	mitusī	miʃʃu	—	mituʃi	mi_1to_2se	16
17	'dance, jumping'	wudur	udur	wuduri	wuduri	wuduri	wuduri	wuduri	$wodo_2ri$	17
18	'paste'	nurii	—	nuri	nuri	nuri	nuri	nuri	no_2ri	18
19	'laver'	nurii	nurii	nuri	nuri	nori	—	nuri	no_2ri	19
20	'yesterday'	$k^{?}$injuu	kinjuu	$k^{?}$inu	—	kkinju	$k^{?}$inu	kinuu	ki_1no_2pu	20
21	'white'	ʃirju—	ʃirju	ʃiru—	sīru	ʃiru	ʃiru	ʃiru	$siro_1$	21
22	'straw raincoat'	minjo~ minjoo	minjo~ minjoo	$n^{?}$jo	mmjo	njo	njo	njuu	mi_1no_2	22

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
23	'chisel'	numi~ numii	numi	numi	numi	nomi	nuu	num	no_2mi_2	23
24	'waking'	uhi	uhi(jun)	hwī(ru)	hīr(jun)	hu(n)	hī(n)	uu(n)	oki_2	24
25	'tree'	kī	kī	kī	kī	kī	kī	hī	ki_2	25
26	'fire'	—	—	—	—	matsī	—	—	pi_2	26
27	'fruit'	mi	mii	mi	mi	mi	mi	mi	mi_2	27
28	'grudge'	—	uram	—urami 〈L?〉	uram(ī)	urami	urami	uram(jun)	$urami_2$	28
29	'god'	kam—~ kami	kam	kami	kami	kami	kami	kami	$kami_2$	29
30	'moon'	tīkii~ udēk	tik—~ —dīki—	tsīki	tsīki	tsīki 〈L?〉	tsīki	sīki	$tuki_2$	30
31	'reed'	wugi	wugii	wugi	wuqi	wugi	wugi	wugi	$wuoi_2$	31
32	'J cedar'	sīgi	sīgii	sīgi	sīgi	sīīgi	sīgi	sīgi	$sugi_2$	32
33	'clover'	hagi	—	—	—	—	hagi 〈L〉	hagi 〈L?〉	$pagi_2$	33
34	'winnower'	—	—	hiri	hiri	hir(u)	—	—	pi_2	34
35	'darkness'	—jam	—jam	—jam	—jan~ jami	jan—	jami—〈L〉	jaa—	$jami_2$	35
36	'pond'	ikee~ ike	—	ihe	—	ike	ihi	ike 〈L?〉	ike_2	36
37	'dream'	imī	imīī	imī	imī	imī	imī	j$^{?}$uu	ime_2	37
38	'surface'	uï	īī	uīī	ï~ īī	u	ī	w$^{?}$ī	upe_2	38
39	'plum tree'	—	—	ume 〈L〉	—	—	—	ume 〈L〉	ume_2	39
40	'shadow'	kagëë	kagëë	kagï	kagë	kagë	kagë	hagë	$kage_2$	40
41	'pot'	kamī	—gam~ kamī	kamī	kamī	kamī	kamī	hau	$kame_2$	41
42	'tortoise'	kamī	kamī	kamī	kamī	kamī	kamī	hau	$kame_2$	42
43	'rice'	kumī	kumī	—	kumī	kïmī	—	huu	ko_2me_2	43
44	'J liquor'	sïhë	se(ggwa)	sëhë	sëhë	sïe	sī(h)ë	see	$sake_2$	44
45	'bamboo'	dëhëë	dïhëë	dëhë	dëhë	dëhë	dë(h)ë	dehe	$take_2$	45
46	'mountain'	tëhëë~ —dëhëë	tïhëë	tëhë	tëhë	—	—	dehe	$take_2$	46

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
47	'sake'	—	—	—	—	—	—	—	$tame_2$	47
48	'claw'	$t^{?}$īmī	$t^{?}$īmīī	tsîmî	tsīmī	tsīmī	tsīmī	tsīī	$tume_2$	48
49	'seedling'	nei	nëë	nai	$n^{?}$jë	nae	nae	nai	$nape_2$	49
50	'cookingpot'	nabëë	nabīī	nabī	nabī	nabë	nabī	nabī	$nabe_2$	50
51	'paint brush'	—	—	—	—	hake 〈L〉	—	hake 〈L?〉	$pake_2$	51
52	'fly'	hīe~ hwei	Fëë	Fë	hīī	hë	hai	pai	$pape_2$	52
53	'beans'	mamī	mamī	mamī	mamī	mame	mamī	mau	$mame_2$	53
54	'serious'	—	—	—	—	—	—	—	$mame_2$	54
55	'seaweed'	—	wakame 〈L〉	wakame 〈L〉	—	—	wakame	wahame 〈L〉	$wakame_2$	55
56	'pail'	wuhī	wuhī	wuhī	wuhī	wuhë	uhu	—	$woke_2$	56
57	'hair'	kīī	kīī	kī	kī	—	kī	—	ke_2	57
58	'container'	—kī	—kīī	—kī	kī	—ke	—	—	ke_2	58
59	'sign'	—	—	—	—	—	—	—	ke_2	59
60	'smoke'	kībuʃi	kībuʃ	kībuʃi	kībīsi	kībuʃi	kībuʃi	kībuʃi	ke_2buri	60
61	'food receptacle'	—hi—	—hi— —hī—	hi	hi	—hi—	—	—	pe_2	61
62	'eye'	mī	mīī	mī	mī	mī	mī	mī	me_2	62
63	'bud'	—	—	mī	mī	—mī	mī	mī	me_2	63
64	'beloved'	më	—	më—	mī—	më—	—	—	me_2gusi	64
65	'cicrumference'	—	—	mīguri	mīguri	—	mīgīr(jīn)	muguri	me_2guri	65
66	'child'	kkwaa	kkwaa	kkwa	kkwa	kkwa	kkwa	kkwa	ko_1	66
67	'short sword'	kugatana	kugatanaa	—	—	—	kugatana	—	$ko_1gatana$	67
68	'calf'	kubura	kubura	kubura	kubura	kubura	kubura	hubura	komura	68
69	'cat'	—	—	—	—	—	—	—	$neko_1$	69
70	'public person'	tunëë—	tunī—	tunī—	tone—	tone—	tone	tone	to_1ne	70
71	'tiger'	turaa	turaa	—	tura 〈L〉	tora 〈L?〉	tura	tura	to_1ra	71

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
72	'trace'	atoo	—	ato	ato	ato	—ato	ato	ato_1 (ato_2)	72
73	'bay'	minjatUU	minjato	—	—	minato	minjato	minato 〈L〉	mi_1nato_1	73
74	'inn'	jado—〈L〉	—	jado	jado	jado	jado	jadU	$jado_1$	74
75	'door'	jadoo	jado	jado	jado	jado	jado	jadU	$jado_1$	75
76	'gateway'	kadoo	kado	kado	—	kadu	kado	kado	$kado_1$	76
77	'antler'	—	t^{s}ĩno	—	tsĩno	tsĩno	tsĩno	—	$tuno_1$	77
78	'thigh'	mUmoo	mumo	momo	momo	momo—	momo—	moo—	mo_1mo_1	78
79	'bag,sack pouch'	hukkuru	hugur	Fukuro 〈L〉	Fukuro	hokkoro	hukuro~ hokoro	pukkuru	$pukuro_1$	79
80	'hemp'	—so	—so	—so	—so	—so	—	—	so_1	80
81	'sky'	—	—	sora 〈L〉	—	—	—	—	so_1ra	81
82	'beach'	iʃo	iʃo	iʃo	iso~ iʃo	iʃo	iʃo	—	iso_1	82
83	'weak'	jua—	jua—	ju(ʒi)wa—	—	juwa—	—	juwa—	jo_1wa	83
84	'midnight'	junaha	junaha	junaha	junaha	junaha	junaha	junaha	jo_1naka	84
85	'cocoon'	man	maju	maju 〈L〉	majo	maju	maju	maju	$majo_1$	85
86	'this—'	ku— kur	—	ku~ kurĩ	—	—	—	—	ko_2	86
87	'this year'	kutuʃ	kutuuʃ	—	kutuʃi	kuruʃi	kutuʃi 〈L〉	hutuʃi	ko_2to_2si	87
88	'this—'	kun	kun	kun	kun—	kun—	un	un	ko_2no_2	88
89	'this world'	kun.ju	—	kun:ju	—	kun.ju	—	unju	$ko_2no_2jo_2$	89
90	'this'	—	kuur	kurĩ	kurĩ	kurĩ	urĩ	urĩ	ko_2re	90
91	'to row'	Kug(juru)	kug(zii)	kug(i)	hug(jun)	kug(jun)	kUg(i)	hug(jun)	ko_2gu	91
92	'last year'	kuduu	kuduu	kuzu	kĩzĩ	kuzu	kuzu	huzu	ko_2zo_2	92
93	'speech'	—	—	—	—	—	—	kutu	ko_2to_2	93
94	'thing'	—	—	—	—	—	—	—	ko_2to_2	94
95	'language'	kutuba	kutuba	kutuba	—	kutuba	—	—	ko_2to_2ba	95
96	'bull'	kĩtĩĩ	kutĩuʃ	kutĩ	kĩtĩ—	kote(kkwa)~ kote(usikkwa)	kutë	kotousi	$ko_2to_2pi_1usi$	96
97	'liking'	konom—	—	kunumi	kono(dĩ)	—	—	konoi	$ko_2no_2mi_1$	97

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
98	—	—	—	—	—	—	—	—	—	98
99	'congealing'	—gur	—guur	—guri	—gĩri	—guri	—	—	ko_2ri	99
100	'kill'	kuʃʃ(uu)~ kurus(un)	kuʃʃ(un)	kuss(u)	kuttʃ(un)	—	kuttʃ(un)	kuruʃ(un)	ko_2ro_2su	100
101	'voice'	kuii	kui	kui	kui	kui	kui	hui	ko_2we	101
102	'to become pleased'	jurukub—	—	juruku(dĩ)	jurukum(i)	jurukub(jun)	jurukum(i)	juruku(jun)	$jo_2ro_2ko_2ku$	102
103	'horizontal'	juku	juku	juku	juku	joko	joko	joko	jo_2ko_2	103
104	'to wake'	—	khuʃ(un)	hĩĩ hĩĩ(ʃi)	hĩĩ~	hu(suna)	huʃ(un)	uuʃ(un)	oko_2su	104
105	'bed'	tuk	tuuk	tuku	tĩkĩ	toko	—	tuku	to_2ko_2	105
106	'vestige'	nagur~ naguur	nagur	nagur(ĩ)	saguri	—	naguri	naguri	$nago_2ri$	106
107	'and'	tu	tu	tu	tu	—	—	tu	to_2	107
108	'to fly'	tu(dur)	tub(jun)	tub(uri)	tub(jun)	tub(jun)	tub(jun)	tub(jun)	to_2bu	108
109	'tree top'	—	—	—	—	—	—	—	to_2busa	109
110	'far'	tuu—	tuu—	tuu—	tuu—	tuu—	tuu—	tuu—	to_2po	110
111	'pass by'	toori—	—	tuuri	turi~ tuuri	toori 〈L?〉	tuuri	tuuri	to_2pori	111
112	'to stop'	—	tumĩ(jun)	tumĩ(ri)	tĩm(ĩ)	tĩm(ĩri)~ tum(ĩri)	—	—	to_2mu	112
113	'fellow'	tungarjaa	tun(kana)	tungara	tungara	—	—	—	to_2mo_2gare	113
114	'younger brother'	ututuu	utuutu	ututu	ututu	ututu	ututu	utuutu	$oto_2pi_1to_2$	114
115	'to drop'	—	utuu(tʃi)	utu(tʃi)	utu(sĩ)	utuʃ(an)	utuʃ(an)	utuʃ(un)	oto_2su	115
116	'sound'	utUU	utu	utu	utu	utu	utu	utu	oto_2	116
117	'trunk'	mutu	mutu	mutu	mutu	moto 〈L?〉	—	mutu	mo_2to_2	117
118	'stagnatdon'	judu(dur)	judu(dun)	judumi	judumi	judu(dĩ)	judumi	judui	$jo_2do_2mi_1$	118
119	'plover'	tʃiʒorja	tʃiʒorjaa	—tʃiʒoria	tsĩzĩrja	tider(i)	—tiʒurja	tiʒurja	$tide_2ri$	119
120	'J cypress'	hinok	hinok	hdnuki	hinoki 〈L?〉	hinoki 〈L〉	hinukki	hinoki 〈L〉	$pi_1no_2ki_2$	120
121	'to ride'	nor	nu(tĩ)	nur(u)	nur(i)	no(otĩ)	nor(jun)	nor(jun)	no_2ru	121

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
122	'climbing'	nubuur(jur)	nubu(utĭ)	nubur(jun)	nuburi	noor(jun)	noor(in)	noor(jun)	no_2bori	122
123	'to drink'	num(juur)	nu(dĭĭ)	num(un)	num(jun)	nUm(jun)	num(jun)	nu(jun)	no_2mu	123
124	'life'	injotʃ~ injootʃ	inotʃ	n^2jutʃi	n^2juutsĭ	nutʃi	n^2jutʃi	n^2jutʃi	ino_2ti	124
125	'to carry'	mu(tʃuur)	mu(ttsĭ)	mu(turi)	mĭ(tsĭ)	mutʃ(un)	muttʃ(un)	mutʃ(un)	mo_2tu	125
126	'thing'	mun	mon	mun	mun	mun	munu	mun	mo_2no_2	126
127	'talking together'	—mungatari	—	mungatare	mungatari	mungatare	mungatari	—	mo_2no_2gatari	127
128	'wide'	hirju—	hirju—	hiru—	hiru—	hiru—	hiru—	piru—	pi_1ro_2	128
129	'to lower'	—	uru(ti)	uru(sun)	uru(sĭ)	—	uruʃ(un)	uruʃ(un)	oro_2su	129
130	'to dye'	sĭmĭ(rju)	—	sĭmĭ(run)	sĭmĭ(rjun)	—	sĭmĭ	sĭëun	so_2mu	130
131	'slow'	usso—	uso—~ oso	—	—	oso—	—	—	oso_2	131
132	'lifetime,	—	—	ju	ju	—	ju	ju	jo_2	132
133	'to bring together'	jUs(r—)	—	jus(ĭ)	—	—	jus(ĭn)	—	jo_2su	133
134	'to approach'	—	ju(tĭ)	—	jur(jun)	—	jur(jun)	jur(jun)	jo_2su	134
135	'to count'	Jum(juur)	jU(dĭ)	jum(un)	jum(jun)	—	jum(jun)	ju(jun)	jo_2mu	135
136	'four'	—	jUUt	juutsĭ	juutsĭ	juttsĭ	juutsĭ	juutsĭ	jo_1tu	136
137	'thick'	—	—	—	—	ku	—	—	ko_1	137
138	'powder, flour'	ku—	koo	ku	ku	—	ku	pu	ko_1	138
139	'small—'	—	—	—	—	—	—	—	ko_1	139
140	'bamboo basket'	—ku	—gu	ku	—ku	—ku~ —kku	—	—	ko_1	140
141	'to cross over'	hu(irjuu)~ ku(ite)	ku(jati)	ku(ti)	ku(sĭ)	kĭ(sĭ)~ ku(sĭ)	—	huʃ(un)	ko_1su	141
142	'son—in—law'	muhoo	muho~ muho	muhu	muhu	mono	—	moho	muko~mo_1ko_1	142
143	'box'	hak	Faak	—	hakku	hak^{2}u	haku	paku	$pako_1$	143
144	'gate'	—	—	tu	tu	—	to 〈L〉	—	to_1	144

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
145	'to endeavour'	—	tsītom(ī)	tsītum(ī)	tsītīm(ī)	sītīm(ī)~ sītum(ī)	—	tsīto(on)	$tuto_1mu$	145
146	'housewife'	tuutʃ	tuutʃ	tuzi	tīzī	tuʒi	tuʒi	tuʒi	to_1zi	146
147	'to grind'	tug(jur)	tug(ii)	tug(i)	tīg(jī)	tug(jun)	tug(jun)	tug(jun)	to_2gu	147
148	'black'	kuru—	kuru—	kuru—	kuru—	kˀuro	kkuro	kkuru	$kuro_1$	148
149	'interesting'	—	umoʃire--~ omoʃire—	omoʃiru—	omosīrī—	omoʃiru—	omoʃiru—	ooʃiru—	$omosiro_1$	149
150	'skirting'	susU	—	sīso	sīso	sīso	susu	sīso	$suso_1$	150
151	'night'	ju—	—	ju	—	—	—	—	jo_1	151
152	'night'	—	—	juru	—	juru	juru	juru	jo_1ru	152
153	'day'	—hir	—hiru	—hiru	—hiru	—hiru	hiru	—piru	pi_1ru	153
154	'recently'	—	—	—	—	konogoro 〈L?〉	—	honogoro	$ko_2no_2ko_2ro_2$	154
155	'mind'	kuhoro	kohoro	kukoro	kohoro	kooro	kooro	kooro	$ko_2ko_2ro_2$	155
156	'answer'	—	—	kotae	kutae—	kutae(ru)	kotae(ru) 〈L?〉	kotae(ru) 〈L〉	ko_2tape_2	156
157	'leaf'	kinhwa	kīnFa	kīnha	kīnha	kīnoha	kīnha	hīnpa	ko_2no_2pa	157
158	'to shut in'	kumor	—	gumur(i)	—gomar(i)	—gomar(i)	—	—	ko_2mo_2ru	158
159	'J harp'	—	—	—	koto 〈L〉	—	koto 〈L?〉	—	ko_2to_2	159
160	'to remain'	noho(os)	noho(tʃaa)	noho(sī)	nohor(un)	noko(si)	nohor(i)	noor(jun)	no_2ko_2ru	160
161	'to wipe'	nugë(ë)	nuga(tī)	noga(u)	noga(i)	nuga(u)	nuga(i)	nuga(jun)	no_2go_2pu	161
162	'blame'	tugaa	—tuga~	tuga toga	tuga	tuga	tuga—	—	to_2ga	162
163	'wharf'	—domar	tUma(tī)	toma(të)	—	—	tumari	—	to_2mari	163
164	'stern'	tumoo	tomo	tomo	tomo	tomo	tomo	too	to_2mo	164
165	'place'	—turo~ tuhoro	toro~ toroo	toro	doro	tokoro	tokoro	toro	$to_2ko_2ro_2$	165
166	'mam's place'	—tuno— tunoo—	—dono	tusu—	tono—	tono—	—	tolo 〈L?〉	to_2no_2	166
167	'friend'	tumu	tomo	—tomo	—tomo	—	tomo	—	to_2mo_2	167

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
168	'thief'	nusīdo	nusudo	nusīdo	nusīdo	nīnīdo	nusuto	nusīdo~ nusudo	nusubi$_1$to$_2$	168
169	'sleeve'	tamuutu	tamotu	tamutu	tamutu	tamato	—	tamutu	tamoto$_2$	169
170	'to lodge at'	—	—	—	—	—	—	—	jado$_2$ru	170
171	'field'	—no	—	—no	—no	no—	no—	no 〈L?〉	no$_2$	171
172	'declare'	nur(o)~ nor(o)	—	nur(u)~ nor(o)	nor(o)	nor(o) 〈L?〉	—	—	no$_2$ru	172
173	'stony land'	sīnëë	sīne	sīnī	sone	sune~ sone	sone	sone	so$_2$ne	173
174	'good'	—	i(i)~ ji(i)	—	—	—	—	i(i)~ ji(i)	jo$_2$ka	174
175	'gathering'	jurë~ judë	juree	jore	jore	—	jurai	jurai	jo$_2$riapi	175
176	'fog'	k$^?$ir	kiri	—	kiri 〈L〉	kkiri	kiri—	kiri	ki$_2$ri	176
177	'shore'	kiʃi 〈L〉	kiʃi	—	—	kiʃi 〈L?〉	—	kiʃi	ki$_2$si	177
178	'nehpew'	wui	ui	wui	wui	wui	woi	wui	wopi$_2$	178
179	'internal organs'	k$^?$imu	k$^?$imo	kkimu	kkimo	—	kkimo	kkjoo	ki$_1$mo$_1$	179
180	'wear'	—	kir	kkir(i)	kir(jun)	kkir(jun)	k$^?$iri	k$^?$irjun	ki$_1$ru	180
181	'chrysan—themum'	kiku 〈L〉	—	—	kiku	kiku	kiku 〈L?〉	kiku 〈L?〉	kiku	181
182	'autumn'	akii	—	aki	aki	aki	akki	aki	aki$_1$	182
183	'inside'	uki	uki	uki	ukki	ukki	uki	uki	oki$_1$	183
184	'barrier'	sëkki	sīki	—	(sakku)	—	—	seki	seki$_1$	184
185	'snow'	juk	juk~ juhu	—	—	—	juki 〈L〉	juki 〈L〉	juki$_1$	185
186	'upper jaw'	ak	—	agi	agi	—	—	ago~ agu	agi$_1$	186
187	'nail'	k$^?$uuk	k$^?$uuk	kugi	—	k$^?$ugi	kugi	kugi 〈L?〉	kugi$_1$	187
188	'braid'	himo—	himo 〈L?〉	himo	—	—	himo 〈L?〉	—	pi$_1$mo	188
189	'to enshrine a god'	juwë	juë	jowe	joë	joë	joë	joo	ipapi$_1$	189
190	'shellfish'	—	—	—	—	—	—	—	kapi$_1$	190

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
191	'journey'	tap	tap	—	tabi 〈L〉	tabi	tabi	tabi	$tabi_1$	191
192	'shining red'	—	—	njuë	njoo	njoo	njoë	njoo	$nipopi_1$	192
193	'J belt'	(k²j)up	(k²j)up	(kkj)ubi	ubi	obi	ubi	obi	obi_1	193
194	'J sake'	miik	miik	miki	mikki	(o)miki	—	miki	mi_1ki_1	194
195	'cape'	—	—	—	—	—	—	misaki	mi_1saki_1	195
196	'paper'	—	kap	kabi	kabi	kabi	kabi	kabi	kami	196
197	'hair'	—	—	—	—	—	kami 〈L〉	—	$kami_1$	197
198	'tear'	—	—	nada	nada	nada	naada	nada	$nami_1da$	198
199	'ear'	—	mimi	min	min	min	min	min	mi_1mi_1	199
200	'bow'	—	jumi	jumi	jumi	—	jumi	jun	$jumi_1$	200
201	'woman'	wunak	wunak	wunagu~ onagu	wunagu(kkwa)	wunagu	onagu	wunagu	$womi_1na$	201
202	'to cut'	k²ir(jur)	ki(tii)	kir(i)	kir(u)	kir(jun)	kir(jur)	kir(jur)	ki_1ru	202
203	'bruise'	k²it	k²it	kizī	kizī	kizī	kizī	kizī	ki_1zu	203
204	'today'	kjuu	kjuu	kīu	kjuu	kjuu	kju	huu	ke_1pu	204
205	'turning over'	këëʃ	këëʃ	këëʃi	këëʃi	këʃi	këëʃi	—	$kape_1si$	205
206	'capsized'	—	—	—	—	—	—	—	$kape_1ri$	206
207	'front'	mīë	mëë	më	më	mëë	më	mī	$mape_1$	207
208	'royal servant'	—bë	—	—	—	—	—	—	be_1	208
209	'evening'	jubë	—	jubī	jubī	jubë	jubī	jubī	$jupube_1$	209
210	'female'	—	më	mīī—	mī	mīë—	—	mī	me_1	210
211	'seeing, governing	miʃor(e)	miʃor(e)	miʃor(i—)	miʃor(i)	miʃor(e)	—	miʃ(ore)	me_1si	211
212	'suppres—sion'	uʃë	usa(jun)	osa(tī)	osai	usa(jun)	osë—	ose—	$osape_2$	212
213	'generally'	uhu—	—	—	—	—	—	—	opo kata	213

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
214	'parent'	uja	uja	uja~ oja	uja	oja	uja	uja	oja	214
215	'crying out'	urab(jur)	urab(jun)	—	urabi	—	—	—	orabi$_1$	215
216	'outside'	huka	huka—	—	huka	—	huka	puha	poka	216
217	'temporary grave'	mooja	mooja	—	muja—	—	—	—	moja	217
218	'governing'	--	—	—	usame	osame(ru) 〈L〉	—	wusa(un)	wosame$_2$	218
219	'end'	uwar	oar	owari 〈L?〉	owari 〈L〉	owari	uwa(tan)	owari 〈L?〉	wo$_2$pari	219
220	'falling from heaven'	amore 〈L〉	amore 〈L?〉	amuro	amoro	amore—	amore	—	amori	220
221	'blue, green'	oo—	oo—	oo—	oo—	—	ao	oo—	awo	221
222	'face'	kau~ kao 〈L〉	—	kao	kao	—	kao	kao 〈L?〉	kapo	222
223	'admiration'	kam	—kam	kamo	—	—	—	—	kamo	223
224	'boat pole'	soo	soo	so	so~ soo	so	sso	sso	sawo	224
225	'ten days'	tuuka	tuuka	tuuka	tuuka	tuuka	tuuka	tuuka	to$_2$woka	225
226	'defense'	mabur	mabur~ nabur	maburi	maburi	maburi	mamor(in)	mamor(jus)	mamori	226
227	'growing older'	—	—	—	u(utan)	—	—	u(tejaa)	oi	227
228	'old man'	uttʃu	huttʃuu	wittʃu	uttʃu	uttʃuu	uttʃu(kwa)	uttʃu~ uttʃuu	oipi$_1$to$_2$	228
229	'fish hook'	—	—	uzi	uzī	—	—	—	opodi	229
230	'mother'	amma	amma~ ammaa	amma	amma	amma	amma	ama	omo	230
231	'sail'	hu	hu	Fu	huu	hu	hu	pu	po	231
232	'star'	huʃ	huʃ	Fuʃi	hīʃī	huʃi	huʃi	puʃi	posi	232
233	'bone'	hunī	husī	Funī	hīnī	hunī	husī	punī	pone	233
235	'duckweed'	mU	mo	mu	mu	mo	mo	mo	mo	234
235	'rice cake'	mutʃii	mutʃii	mutʃi	mutʃi	mutsī	muttʃi	moti	muttʃi	235
236	'unhulled rice'	mum	moom	mumi	mumi	mumi	mUmi	mumi	momi$_1$	236

No.	Gloss	Sib	Sho	Ong	Nas	Yen	Yoa	San	OJ	No.
237	'wood'	mur	—	muri	muri	mori	—	muri ⟨L?⟩	mori	237
238	'spider'	kubu	kˀumo	kubu	kubu	kubu—	kubu	kubu	kumo	238
239	'tail'	wu—	wu—	wu	u—	wu—	—	—	wo	239
240	'male'	wuu	—	wu	wuu	wu	—	wu	wo	240
241	'axe'	wun	wun	wun	wun	wun	wun—	wun	$wono_2$	241
242	'to exist'	—	wum	wuri	wun~ wuri	wun	wun	wun	wori	242
243	'fish'	—	jˀuu	jˀu	jˀu	jˀu	ju	jˀu	uwo	243
244	'ten'	—	—	—	—	tu	tu	tuu	to_2wo	244
245	'here'	usak	usak	usagi~ osagi	usagi	usagi	usagi	usagi	$usagi_1$	245
246	'singing'	uta	uta	ota	uta	uta	uta	uta	$utapi_1$	246
247	'inside mind'	ura	ura	ura	ura	ura	—	ura	ura	247
248	'eating'	—kuree	kura(te)	kura—	kurai	kura(u)	kurau	kurau	$kurapi_1$	248
249	'grass'	kusa	kusa	kusa	kīsa	kusa	kīsa	kīsa	kusa	249
250	'dark'	kura—	kura—	kura—	kura—	kura—	kura—	—	kura	250
251	'rice bran'	nuka	nuka	noka	nuka	nuka	nuka	nuka	nuka	251
252	'ancient times'	mukaʃ	mokaʃ	mokaʃi	mukasī	mukaʃi	mukaʃi	mukaʃi	mukasi	252
253	'village'	mura ⟨L?⟩	mura ⟨L⟩	mora	mura	mura	mura	mura ⟨L⟩	mura	253
254	'floor'	juka	—	—	juka	juka	—	juka ⟨L?⟩	juka	254
255	'pillow'	makˀīra	mahīra	makura	makura	—	makkura	makura	mukura	255
256	'spring'	haruu ⟨L?⟩	—	haru ⟨L?⟩	haru ⟨L?⟩	haru ⟨L?⟩	haru ⟨L⟩	haru	paru	256
257	'measure'	—	—	—	—	masī	—	masī ⟨L?⟩	masu	257
258	'sweat'	asīī	asīī	asī	asa~ aʃe	asj	asī	asī	asī	258
259	'wind'	kade	kade	kaze	kaze	kazī	kazī	hazī	kaze	259
260	'temple'	tera	teraa	—	tera	—	tera	tera	tera	260
261	'wing'	hanī	hanī	—han—	—hane	hane	hane	pane	pane	261