

# A LINGUISTIC SURVEY OF THE UPPER YUAT

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## 1. INTRODUCTION

The survey of the Upper Yuat described here was made from 25th to 30th June 1979, under the auspices of the Summer Institute of Linguistics by the authors and Leo de Pauls, who flew the Summer Institute of Linguistics helicopter and also recorded geographical and ethnographic information. The helicopter was refuelled at the Nazarene Mission airstrip at Dusin thanks to the co-operation of Rev. and Mrs Daryl A. Schendel. The help of the Officer-in-Charge at Simbai and the many people who helped us with linguistic and ethnographic information was very much appreciated. We wish to thank Richard G. Lloyd of the Summer Institute of Linguistics for his helpful comments on an earlier draft of this paper.

## 2. PURPOSE OF THE SURVEY

The main purposes of the survey were (1) to obtain such information on the Aramo and Pinai languages as would provide the basis for a rather more certain classification of their genetic relationships than has hitherto been possible, and (2) to establish as far as possible the geographical area occupied by speakers of those languages.

Most of the information available on the Aramo, Pinai and Wiyaw languages is contained in Laycock and Z'graggen 1975:758 and Laycock 1975:882 and 884-5. On the basis of the evidence Laycock and Z'graggen suggest that the three languages form a single stock-level Piawi Family with affiliations to the other two Yuat Stocks (Mongol-Langam and Yuat) in a Yuat Super Stock within the Sepik-Ramu Phylum. Laycock points out that 'the data is still so slight that any such reclassification can only be very tentative'.

The status of Wapi was also uncertain, in particular whether or not it was the same language as Pinai. Laycock 1975:882 lists Wapi as an alternative name for Pinai. However, Wurm 1975:469 lists Wapi as an Enga dialect and points out that a number of the people living in the Wapi Census Division are bilingual speakers of Enga and Pinai of the Piawi stock-level Family.

The geographical areas in which Pinai and Wapi (if different from Pinai) are spoken also needed to be clarified. In the map by Laycock of languages of the Sepik Region accompanying Laycock and Z'graggen 1975, Pinai is shown to be spoken on both sides of the Yuat between the Sepik-Enga border and the



confluence of the Maramuni with the Yuat. Laycock 1975:884 states that included with Pinai on the map of the Sepik Region languages is the language spoken at Erem, a village on the Upper Yuat. He writes that

whatever language is spoken there is not the same as any of the known languages of the Yuat River, and the distance between the location of this village and the villages of other known languages make it unlikely that the language spoken at Erem is any really "known" language of the area, although it is possible that Erem is a northern village of the Pinai language.

The map of languages of Enga Province in Wurm 1978 indicates that Pinai and Wapi are spoken on opposite sides of the Lai (or Gai) River. In the accompanying tree of the languages of the Trans-New Guinea Phylum, Pinai and Wapi are tentatively included with Waibuk (Wiyaw) and Aramo in the Waibuk Family within the East New Guinea Highlands Stock. Both the map and the tree indicate that the statements are very tentative.

In addition to the material which Laycock, Z'graggen and Wurm refer to, Wiyaw wordlists had been elicited from several native speakers by Davies, Scholz and Tonson of SIL subsequent to Laycock 1975. A list of 70 Aramo words had been obtained by Scholz in 1975, but their reliability was questionable since they were obtained from a Wiyaw. Scholz's list is 40% cognate with our Aramo list (21 out of 53) and 51% cognate with our Wiyaw list (27 out of 53); our Aramo and Wiyaw lists are 37% cognate, whereas the Scholz/Tonson Aramo and Wiyaw lists in Tonson 1976 are 62% cognate.

A secondary purpose of the survey was to investigate the area south of Bisorio and Iniai. Dye, Townsend and Townsend 1968:145ff say that at the village of Iniai on the upper Karawari River and at the village of Bisorio on the upper Korosameri River, two dialects of one language are spoken. They suggest that the Iniai language is a member of the West Central Family of the East New Guinea Highlands Stock. Wurm 1975:469 lists Lembena (Bisorio, Iniai) (sic) as a language of the Enga Sub-Family and in a footnote to this listing on page 518 *ibid.* refers to Lemben (sic) spoken on the Karawari River and towards the Middle Yuat area, and gives Iniai as an alternative name. The list upon which he bases his remarks shows 43% cognation between Lemben and Enga and he suggests that Lemben may be basically a northern Enga dialect or a language closely related to Enga. Wurm also mentions Laycock's (1973) report that Bisorio is spoken in four villages, one of them Iniai, that it shows close relationship with Nete to the south-west, and that it may be the same language as Lemben. Wurm also mentions that Brennan in personal communication to him identified Lembena (sic) as a separate language from Bisorio. J.M. Bowers in an unpublished map shows the Lembena language area as including Kopaipalu and the area west of Kopaipalu in the Enga Province (the Yalipa Endaka clan) and the area north-west of Kopaipalu on the border of the Enga and Sepik Provinces (the Yalipa Kamanda clan). The map of languages of Enga Province in Wurm 1978 shows Lembena to be spoken in an area which approximates with that indicated on Bowers' map except that the latter is further to the west. The words from a list taken by Bowers at Kopaipalu which have been used in the lexicostatistical comparison are included in the Appendix and this language is referred to as Lembena throughout the rest of this paper.

### 3. PROGRESS OF THE SURVEY

The afternoon of Monday, 25th June and the following morning were spent trying to make contact with the population on the north side of the Yuat between the Arame River and the Marango River and in the Marango and Marenk valleys. Attempts were hindered both by the terrain and the reticence of the people. The area is mountainous and covered with dense forest except for those areas that have been cleared for garden and house sites and kunai patches here and there. Thus a landing was potentially profitable only in those very few places where a level kunai-covered piece of ground was close to a garden or house site. Three such landings were made but no people were contacted.

Following the Yuat northwestwards beyond the Marango River, we observed a vine footbridge crossing the Yuat at  $5^{\circ} 0' S$ ,  $143^{\circ} 58' 30'' E$  and landed at a village  $4^{\circ} 59' 30'' S$ ,  $143^{\circ} 57' E$ . The village was 500 feet above sea level and the people called it Yambaïdo. The ground in the immediate vicinity of the village was very flat and the people had recently planted coconuts. They called their language Maibi and said it is also spoken at Yenkis and as far as Kompïam and Wabaq. A complete SIL Standard Wordlist was taken and a tape-recording of the list was made. We spent the night at Fankfank.

On Wednesday, 27th June we landed sound of the Jimi River and west of the Lai River at  $5^{\circ} 6' S$ ,  $144^{\circ} 7' 30'' E$  and were greeted by two men and later joined by three more men and some women and children. The people called their language Pinai and the place where we were Wakadadap. They said Pinai speakers are on both sides of the Jimi as far as the Sepik Province border, that the eastern border of their territory is the Lai River and that Pinai is spoken at Aperak, both Pinai and Enga at Paimanda and Lakamanda, and Enga only at Rurisau. They said they exchange wives with the Pinai to the north of the Jimi but not with the people east of the Lai (Medlpa). A full wordlist and tape-recording of the list were obtained.

We flew to  $5^{\circ} 9' S$ ,  $144^{\circ} 4' E$  and in the limited time available recorded words from three men and a boy. They called the language Pinai and it is clearly the same language as that recorded at the previous landing. In this paper the two wordlists are referred to as Pinai 1 and Pinai 2 respectively. We spent the night at Fitako.

On Thursday, 28th June our party was augmented by Hepen, who was bilingual in Wiyaw and Aramo, and another young man, who was bilingual in Wiyaw and Kobon and also spoke Papua New Guinean Pidgin. With Hepen's navigational assistance the pilot shuttled us into a grassy area between the Marango and Marenk Rivers (Aramo [ $'\check{r}uj\grave{a}$ ] and [ $m\grave{a}'\check{r}ag\grave{i}a$ ]) at  $5^{\circ} 6' 50'' S$ ,  $144^{\circ} 9' 50'' E$ . Thanks to Hepen's communicative ability contact was made with the Aramo and during the course of that day and the following morning a complete wordlist and recording of it were obtained, and also a recording of conversation and music played on a bamboo harp and on pipes made by binding thin bamboo tubes in a triangular form. The forty Aramo men, women and children slept together in a large shelter on the south bank of the Marenk. The shelter was rectangular, built on posts, with earth floor and no walls. The roof had a ridge pole and was thatched with leaves held in place with bamboo strips. We were told that all the Aramo people were present except for one family who were living at the head of the Marango River (and who arrived the following morning). The total number of Aramo we saw was about 50.

On Friday, 29th June a landing was made at 5° 2' 30" S, 143° 56' 30" E and a complete wordlist and recording of it were obtained from two men and a boy who called the language Nangenuwetan and the place where we were [awɔ̃iθi]. They said the area was Enga but was now administered from Angoram ([ambaɪŋkwə]).

On Saturday, 30th June a landing was made at Erem, 4° 41' S, 143° 56' E, and the village was found to be inhabited by two distinct ethnic groups, a Sepik group and a Highland group who had moved into Erem and the surrounding area 10-15 years ago with the consent of the administration and the Sepik group who were already there. The Sepik group called their language Kyaimbarang and said it was spoken on both sides of the Yuat for two days walk northwards. They mentioned Asangamut as one of the places where their language was spoken. In Laycock 1973:37 the language spoken at Asangamut is called Miyak. The Highlands group said they came from the Enga area and called their language Yariba. Yalipa is the name of the Lembena clans on Bowers' map. Complete wordlists of the two languages were obtained and a recording of part of the Yariba wordlist.

#### 4. BASIS OF LEXICOSTATISTICAL ANALYSIS

During the survey complete wordlists were elicited from native speakers of Aramo, Pinai, Nangenuwetan, Maibi, Kyaimbarang and Yariba. For the purposes of comparison and genetic classification, languages spoken in adjacent areas were included in the lexicostatistical comparison. Languages and dialects to the west and south of Pinai and Nangenuwetan and to the south of Maibi were included. The wordlists used were those elicited by Bowers at Kopaipalu in Kompam sub-district (referred to as Lembena in this paper) and at Yenki, also in Kompam sub-district (referred to as Wapi in the Table of Cognate Percentages and Appendix), by S. Malakali at Lapalama in Kompam sub-district, by K. Maini also at Lapalama (referred to as Lapalama 1 and 2 respectively in the Table and Appendix), by K. Lopa at Laiagam in Lagaip sub-district, by J. Kapi at Sari in Wabag sub-district and by Rev. L.A. Cupit at Lumusa in Lumusa sub-district (referred to as Kyaka in the Table and Appendix). Languages to the east and north of the Aramo were included in the comparison, viz. wordlists taken by John Davies of Wiyaw and Kobon. Languages to the west, north and east of Erem were included, viz. a wordlist of Rao taken by Lyle Scholz at Gokto and five wordlists taken by Wayne Dye of SIL, of Bisorio at Bisorio, of Iniai at Iniai, of Miyak (referred to in Dye's list as Biwat) at Asangamut, of Alfendio (referred to in Dye's list as Arafuni) at Wablamas and of Yimas at Yimas (all in Angoram sub-district), a list of Alamlak taken by Les Bruce of SIL at Amongabi and finally a list of Bonaro taken at Likan by William Butler of the Pioneer Bible Translators.

The wordlists used in the comparison are contained in the Appendix. The number which follows a word indicates that this word is considered to be cognate with such words in the same column as are followed by the same number. Results are set out in the Table of Cognate Percentages.

The principles adopted by Wurm and McElhanon 1975:152 for determining degrees of interrelationships of languages have been followed here in a generalised form:

above 80% cognate	-	dialects of the same language
below 80%		separate languages
50-80%		same subfamily
25-50%		same family
12-25%		same stock
5-12%		same phylum

Our citation of lexicostatistical material should not be taken to imply acceptance of this as a secure method of establishing genetic relatedness; rather, it represents a preliminary attempt at establishing an assessment of the degrees of similarity among languages of the area.

Except for Pinai 2, a complete SIL Standard Wordlist was obtained of the languages listed at the beginning of this section, but for the purposes of the comparison a basic list of 116 words selected from this list was used.

## 5. SUGGESTED RELATIONSHIPS

### 5.1. Aramo, Pinai, Nangenuwetan and Wiyaw

Aramo is 68% cognate with Pinai 1 and 70% with Pinai 2, indicating that Aramo and Pinai are distinct languages within the same subfamily. Aramo is 63% cognate with Nangenuwetan and thus a separate language within the same subfamily. Since Nangenuwetan and Pinai 1 are in turn 75% cognate (Pinai 2 82% cognate) these three languages, Aramo, Pinai and Nangenuwetan are members of the same subfamily – the Piana Subfamily. The relationship between Pinai 1 and 2 is 88%, indicating that they are the same language. Further evidence may well show Nangenuwetan and Pinai to be dialects of the same language, which together with Aramo would constitute the Pia Subfamily. The cognate percentage figures involving Wiyaw throw some doubt upon the correctness of the assignment of that language to the same family as Aramo and Pinai – the Piawi Family. That Wiyaw is 37% cognate with Aramo, 33% cognate with Pinai and 29% cognate with Nangenuwetan would support its inclusion in one family with them. However, Wiyaw shares 35% with Kobon and 22% with Kalam, both of the Kalam Family within the East New Guinea Highlands Stock. On balance this evidence supports the assignment of Wiyaw together with Aramo, Pinai and Nangenuwetan to a single family. The fact that one member of each family, Wiyaw and Kobon, share a percentage of cognates which of itself would place them squarely in the same family may well be due to extensive borrowing. The territories of these two language groups are, of course, contiguous.

### 5.2. Enga languages and dialects and Bisorio and Iniai

Yariba, spoken at Erem, is 79% cognate with both Maibi, spoken at Yambaído, and Lembena, as recorded by Bowers at Kopaipalu. Maibi and Lembena in turn share 77% and thus these three languages are at least in the same subfamily within the West Central Family of the East New Guinea Highlands Stock. It is very likely that they are the same language. The recent migration from an Enga area, the correspondence of the name of the language given by the people at Erem – Yariba – with the Lembena clan names, and their statement that their language was also spoken at Yambaído all add support to this hypothesis. Accordingly, the language recorded by Bowers at Kopaipalu, the Highlands language spoken at Erem and the language spoken at Yambaído are all considered to be dialects of the same language – Lembena.

	Iniai	Yariba	Maibi	Lembena	Wapi	Lapalama 1	Lapalama 2	Laiagam	Sari	Kyaka	Nangenuwetan	Pinai 1	Pinai 2	Aramo	Wiyaw	Kobon	Rao	Kyaimbarang	Miyak	Alfendio	Yimas	Alamblak	Banaro
Bisorio	70	45	46	46	48	47	48	44	42	44	11	11	7	9	5	6	3	2	2	3	0	5	5
Iniai		48	49	47	49	51	50	48	44	44	14	12	10	9	7	5	4	1	1	2	1	5	3
Yariba			79	79	59	59	57	55	52	58	13	13	6	11	10	6	4	2	1	3	0	5	5
Maibi				77	59	60	57	53	51	58	11	10	3	11	8	6	4	3	1	3	0	4	5
Lembena					64	61	59	62	58	62	13	14	9	11	7	6	4	0	0	3	0	5	5
Wapi						90	88	78	78	83	9	8	6	7	6	5	4	1	1	3	1	4	4
Lapalama 1							91	83	84	82	9	8	3	9	7	5	4	1	1	3	1	4	4
Lapalama 2								82	82	81	8	8	3	8	6	6	4	1	1	3	1	4	4
Laiagam									86	75	9	10	9	10	7	4	0	0	0	3	1	4	4
Sari										74	9	9	6	10	7	3	0	0	0	3	0	4	3
Kyaka											9	7	3	9	6	5	2	1	1	3	0	4	3
Nangenuwetan												75	82	63	29	16	2	2	2	7	2	6	7
Pinai 1													88	68	33	17	2	1	1	7	2	6	9
Pinai 2														70	36	18	0	0	0	9	3	3	3
Aramo															37	19	2	1	1	7	1	5	10
Wiyaw																35	7	3	3	5	3	4	9
Kobon																	9	1	1	5	3	5	6
Rao																		4	4	0	2	7	11
Kyaimbarang																			81	8	0	4	10
Miyak																				9	3	4	9
Alfendio																					3	3	13
Yimas																						8	2
Alamblak																							5

Table of cognate percentages

With Bisorio and Iniai, the Lembena dialects (Lembena, Yariba and Maibi) share between 45-49%, clearly indicating that they are distinct languages within the same family. The relationship between Wapi (spoken at Yenkis), Lapalama and Kyaka is 83-90%, indicating that they are dialects of the same language – Wapi, Lapalama Enga and Kyaka Enga. When Laiagam Enga and Sari Enga (themselves 86% cognate) are included in the comparison with these dialects, the figures remain at 74% or above. The Lembena dialects share between 51-64% with Wapi, Lapalama Enga, Kyaka Enga, Laiagam Enga and Sari Enga, indicating that the Lembena dialects (Lembena, Yariba and Maibi) belong to the same subfamily as those Enga dialects/languages. Bisorio and Iniai are 70% cognate with one another and both share between 42-51% with Wapi, Lapalama Enga, Kyaka Enga, Laiagam Enga and Sari Enga, showing that Bisorio and Iniai are in the same family as those Enga dialects/languages and the Lembena dialects, viz. the West Central Family of the East New Guinea Highlands Stock. Bisorio is probably the most northern language of the West Central Family and is probably contiguous with Enga to the south and the languages of the Sepik Hill Family to the north. Bisorio may be the same language as Nete.

### 5.3. The Piawi Family and the East New Guinea Highlands Stock

The languages of the Piawi Family, Pinai (and Nangenuwetan), Aramo and Wiyaw, are bounded to the west, south and east by languages of the East New Guinea Highlands Stock. Cognate percentages with those of the languages to the west and south compared in this paper vary between 3-14%. The percentages with the language to the east compared here, Kobon, are 16-35%. This evidence taken together suggests that the Piawi Family should be included within the East New Guinea Highlands Stock. The Wapi lists show only 8% and 6% respectively with Pinai 1 and 2, which clarifies that Pinai and Wapi (at least the Wapi spoken at Yenkis) are not the same language.

### 5.4. Kyaimbarang

Kyaimbarang, spoken at Erem, is 81% cognate with the language recorded by Dye at Asangamut and no doubt the same language – Miyak. This conclusion is supported by the statement of the people at Erem that their language is spoken on both sides of the Yuat for two day's walk northwards and their specific inclusion of Asangamut, where Dye elicited the Biwat list. Kyaimbarang is 8% or less cognate with all other languages included in the comparison.

### 5.5. Banaro

Banaro is 13% cognate with Alfendio, 11% with Rao, 10% with Kyaimbarang, 9% with Miyak, 7-10% with Pinai, Nangenuwetan, Aramo and Wiyaw and 6% or less with all other languages compared.



APPENDIX

All lists, other than our own (3, 4, 12-17, and 19) are reproduced in their original form.

Language	hair	head	mouth
1. Bisorio	yəmndldi 1	yəmɒdi 1	habu 1
2. Iniai	i'dihi 1	ayumbit 2	ambu'yu'tI 1
3. Yariba	k <sup>x</sup> a'want <sup>h</sup> 2	ɔn'deŋk <sup>h</sup> 3	am'buɕ 1
4. Maibi	ka'wande 2		ŋga'βoŋk' 2
5. Lembena	ingi 1	ondenge 3	ambulu 1
6. Wapi Enga	iti 1	aiumba 2	kambu 1
7. Lapalama Enga 1	iti 1	ayomba 2	kaita 3
8. Lapalama Enga 2	iti 1	aiyomba 2	kambu 1
9. Laiagam Enga	i'ri 1	matena 4	kɒbu 1
10. Sari Enga	iri 1	aiyomba 2	kaita 3
11. Kyaka Enga	kyawasi 2	kyawa 5	kata 3
12. Nanguwetan	id <sup>j</sup> imu'da 3	id <sup>j</sup> ibə'd <sup>j</sup> ə 6	adu'sa 4
13. Pinai 1	ɛdzɔmu'da 3	ɛdzɛbo'dzɛ 6	mabu'ɾə 1
14. Pinai 2	ɛdzɔmo'da 3	ɛdzɛ'bodzɛ 6	mabu'ɾə 1
15. Aramo	i <sub>1</sub> dzimə'da 3	idzua'xə 6	ada'fəne 4
16. Wiyaw	jedz <sup>ə</sup> 'fan 3	jedz <sup>ə</sup> 'matɕ 6	andz <sup>ə</sup> 'mɒl 5
17. Kobon	u'maŋɒ 4	'nambətɕ 6	'mandzəməŋ'gan 5
18. Rao	ŋint <sup>y</sup> honda 5	nd <sup>y</sup> ət 7	dotumo 6
19. Kyaimbarang	fə'ziru 6	fəp <sup>o</sup> 8	'm <sup>h</sup> baraŋ 7
20. Miyak	fusibɛ'yu 6	pəp 8	mamɒ'liŋ 7
21. Alfendio	gabəkɒduma 7	gabɒk 9	mambɒk 8
22. Yimas	wogwi 8	yembel'io 10	anduk 9
23. Alamblak	t <sup>h</sup> +'maʔʂ / t <sup>h</sup> +'maʔʂ <sup>v</sup> 9	'mɛb+gat <sup>h</sup> 11	t <sup>h</sup> +'ŋg+t <sup>h</sup> 10
24. Banaro	mɒ's <sup>y</sup> inɒ, bɛs 10	mɒ's <sup>y</sup> i 1	mɒ'maŋ 7

<i>nose</i>		<i>neck</i>	<i>belly</i>
1. ʔowi 1		masa 1	ʔi 1
2. ŋyede 2		ma'syedi 1	iteʔ 1
3. hiŋ'gara 3	<i>eye</i>	ma'ɽewa 2	ɽiŋk 2
4. iŋ'gara 3	le 1	maɽə'waŋk' 2	liŋk' 2
5. ingala 3	ʔe 1	malewa 2	tomba 3
6. lyaa 4	lee 1	mange 3	ingi 2
7. lya 4	lenge 1	mange 3	ingi 2
8. lyaa 4	lenge 1	mange 3	ingi 2
9. lya 4	leŋe 1	peɔko 4	tombɔ 3
10. lya 4	lenge 1	mange 3	toomba 3
11. gyee 5	lenge 1	pendoko 4	tomba 3
12. nama'ga 6	meme'dʒi 2	hemεje'du 5	wɔ't <sup>h</sup> ɔ 3
13. nau'ŋasi 7	məme'dʒi 2	he'mε:du 5	wə't <sup>h</sup> ə / wə'ɽə 3
14. nama'gə 6	meme'dʒi 2	he'medɔ 5	wə't <sup>h</sup> ə 3
15. nama'gə 6	memeɔzə'magə 2	he'mε-dɽyɔ 5	wə't <sup>h</sup> ə 3
16. haŋi'et <sup>h</sup> 8	'momak <sup>h</sup> 2	kaliant 6	ham'b <sup>w</sup> aɸ 4
17. 'mɔlu 9	'amɣɔ 2	uŋ'am 7	himbə'namp <sup>h</sup> 4
18. lat <sup>h</sup> 10	pəli 3	ɽot <sup>y</sup> 8	t <sup>y</sup> alo 5
19. 'ŋəŋəɽ 11	'ɸikw 4	'mbə <sup>m</sup> bad <sup>o</sup> 9	'ndau 6
20. nŋeɛɛŋ 11	sɽp <sup>h</sup> ala 5	mbɛmbat <sup>h</sup> 9	ndaw 6
21. bogok 12	nomguamguk 6	gumbugudʒimba 10	gubudik 7
22. t <sup>h</sup> agay 13	dʒŋ'goɽam 7	manduk <sup>h</sup> 11	dɽɽbaɽ <sup>h</sup> 8
23. 'k <sup>h</sup> uʒimɛt <sup>h</sup> /	'niŋgaŋ 8	'mεgɛtɽpit <sup>h</sup> 12	'ya't <sup>h</sup> ɽ <sup>h</sup> 9
'k <sup>h</sup> uʒimɛt <sup>h</sup> 14			
24. mɔ'ɔŋ 15	mɔ'ɽ <sup>ɔ</sup> 9	mɔ't <sup>h</sup> am 13	mɔ'm <sup>ɔ</sup> 10

<i>skin</i>	<i>man</i>	<i>woman</i>	<i>bird</i>
1. hapay 1	gay 1	wɪnta 1	hedə 1
2. imbət <sup>h</sup> 2	alagi? 2	winyɿ 1	igɿ 2
3. ja'nɔŋk <sup>h</sup> 3	'k <sup>x</sup> aɽi 3	wɪn'da 1	'ɛka 2
4. ja'nɔŋk' 3	'qɑɽi 3	'wində 1	'eka 2
5. yanungi 3	kali 3	winda 1	eka 2
6. yanungi 3	akali 3	enda 1	yaka 2
7. yanonge 3	akali 3	enda 1	yaka 2
8. yanungi 3	akali 3	enda 1	yaka 2
9. yanugi 3	akali 3	eda 1	yaka 2
10. yɔŋge 3	akali 3	eŋda 1	yaka 2
11. yanenge 3	akali 3	enda 1	yaka 2
12. ɽi'k'a 4	na'ba 4	jə'ma 2	jau't'u 3
13. ɽə'xa 4	na'ba 4	ja'ma 2	jau'ɕo / jau't <sup>h</sup> o 3
14. i'da 5	wo'du 5	jam'wa 2	jau'ɕu / jau't <sup>h</sup> u 3
15. wu'ri 6	na'ba 4	mə'gə 2	jau't <sup>h</sup> ə 3
16. jɪmay wɛɾ 6	'nabɿ 4	mɿ 2	'ja <sup>w</sup> ər 3
17. hap 6	bɪ 4	nɪm'bi 3	jaur 3
18. mino? 7	duwali 6	pɛndu 4	kəlo 4
19. 'vɪza 8	aβɪd 7	m <sup>j</sup> e 5	hɔp <sup>j</sup> ɛ 5
20. nɔɪsak <sup>h</sup> 8	abət 7	miandu 5	wanma 6
21. gumbukdea 9	nungumindʒa 8	nam 3	gɪnyɛ 7
22. nɿɛm 10	panmɛɽi 9	naɽmɛl 6	bebɿɛdowi 8
23. t <sup>h</sup> ɪ'gat <sup>h</sup> 11	'yi'maɽɔ 10	'metɪt <sup>h</sup> 7	'nungwaɽɔ 9
24. mɿ'mbuk <sup>h</sup> o 9	'wɪk <sup>h</sup> a 3	mɿ'nɛk <sup>h</sup> ɪn 8	'ŋgoɽa 9

<i>dog</i>	<i>he bites</i>	<i>he sits</i>	<i>he stands</i>
1. wlnya 1			
2. wλnyλ 1	dzeli 1	p <sup>h</sup> ɫdimali 1	ʔaɫamaɫe 1
3. 'wuna 1	'ajɛmɛn 2	'hatarɫ 'fɛɾum 1	'hisa'ɣarɛm 2
4. 'wɫɾ <sup>ə</sup> 1	wɪɾ a'jom 2	'pilim 1	'isa'ɣaiɾɛm 2
5. winya 1	wona peleme 3	pilimi 1	isakaeleme 2
6. yana 1	nelyame 4	pilyame 1	kalyame 2
7. yana 1	nenge 4	petenge 1	katenge 2
8. tuwa 2	nalanya pingi 4	petenge 1	katenge 2
9. yana 1		petɛge 1	katɛge 2
10. yana 1	nenge 4	petenge 1	katerige 2
11. suwa 2	nelyamo 4	petamo 1	karamo 2
12. wə'na 1	'xaixəɣədə 5	hemɛ'dədə 2	ja·ɣəβa 3
13. wə'na / wɛ'na 1	ja'dzɪ 6	hemɛdɛ'da / hemɛdə'da 2	muɕə'da 4
14. wɛ'na 1		hemɛ'dɛnə 2	muɕə'dɛnə 4
15. wɛ'na 1	je'βiədə 6	hem'dəβə 2	't <sup>h</sup> aha'doβədeni 5
16. wana 1	ambəɣa 7	'hamdɪg <sup>ə</sup> məndə 2	'ambəɫdua 6
17. k <sup>h</sup> ain 3	hau'amp <sup>h</sup> 8	'asiɣλɫ mən'dλɕ 3	u'raɣλɫ mən'dλɕ 7
18. əga 3	əganda / 'kui 9/10	sam'bək 4	əm'bək 8
19. k <sup>j</sup> ɛn 3	'irinen 11	iɕi'wari 5	bɪŋga'pari 9
20. gɛn 3	bλɫanʃiɫumba 12	isiwa 5	mbingapa 9
21. da <sup>w</sup> m 4	bokɔŋdʒɛ 13	koʃobedʒik 6	mawniyabλʒik 10
22. yuɫa 5	nɛnamɪn 14	tandon / tandok 7	yambalak 11
23. ɣau <sup>ɣ</sup> 6	'kɪwitwo <sup>ɣ</sup> 15	'k <sup>h</sup> oɾɣwo <sup>ɣ</sup> 8	't <sup>h</sup> ɛɣwo <sup>ɣ</sup> 12
24. 'k <sup>h</sup> as 3	'ɪndama 'ɪndɪgλɫk <sup>h</sup> as <sup>y</sup> ɛt 16	'ma 'iʃɛt 9	'ma t <sup>h</sup> λ <sup>h</sup> 'k <sup>h</sup> aɾλ <sup>h</sup> met 12

<i>road</i>	<i>stone</i>
1. yoɔo 1	hana 1
2. asiɛ? 2	ana 1
3. xa'se / xa'tɕe 2	'ana 1
4. ka'se 2	'anna 1
5. kase 2	ana 1
6. kaita 2	kana 1
7. kaita 2	kana 1
8. kaita 2	kana 1
9. ketini 2	kæn 1
10. kait 2	kan 1
11. kata 2	kana 1
12. 'dʒimot <sup>h</sup> 3	ɭi'gə 2
13. 'saba dzɪmuɕəmam 3	ɕi'gə 2
14.	ɕi'gə 2
15. 'diədə 4	ɕi'gə 2
16. 'gan+mɕ 5	ɕigɪ 2
17. 'andan 6	'k <sup>h</sup> ambɿ 3
18. ələdo 7	kamb <sup>ə</sup> 3
19. məj 8	mɪndəm 4
20. məyt 8	mɪndum 4
21. ʔindun 9	nəŋgum 5
22. yaw 10	iɭubun 6
23. yɪ'got <sup>h</sup> ogət <sup>h</sup> 11	t <sup>h</sup> ag <sup>ɕ</sup> ɕ/ɕ 7
24. 'm <sup>ə</sup> ban 12	'mɛ 4

<i>big</i>	<i>small</i>
gauwa 1	haugiya 1
andage 2	hoyen'dobɒlgi 2
'anan'daine 2	'eβa,ɣana 3
an'daingi 2	eβ'ana 3
andai 2	epana 3
andake 2	kuki 4
andake 2	yakane 5
yale 3	kuki 4
ədake 2	yækane 5
yale 3	yakane 5
andake 2	kuki 4
mə'də'gə 4	sa·li'gə 6
'mədə ɕi'gə 4	'saba ɕi'gə 6
ɕi'gə ma'deβe 4	ɕi'gə wɛtɕi'βe 7
diɕ 4	uɭə 8
k <sup>h</sup> ump <sup>h</sup> 5	ɕro 9
'lowe 6	t <sup>h</sup> ya'koli 10
ŋgasa 7	'samɪndəm 11
gɿsa 7	sa 11
ayɿmbo 8	daboa 12
kɿbɛn 9	waydʒagɛn 13
b <sup>h</sup> rot <sup>h</sup> 10	habgi'enɪɕ <sup>h</sup> 14
'ɛɾe'm <sup>ə</sup> b <sup>ə</sup> 8	'k <sup>h</sup> a'm <sup>ə</sup> bo <sup>p</sup> 15

<i>fire</i>	<i>smoke</i>	<i>ashes</i>	<i>ear</i>
1. siya 1	syεmλʒu 1	ʔεmu 1	hali 1
2. sieʔ 1	siemuʃut 1	ʔεmo 1	aʔet 1
3. i'sat(ε) 1	sogə'nəβo 2	p <sup>h</sup> ε'damp <sup>h</sup> 2	a'ʔeŋk' 1
4. sa:ʔε 1	'mɔʔu 1	'lanɣa 3	kem'bau 2
5. isate 1	mutu 1	'yanga / petambu 3/2	alengenai 1
6. itate 1	kena 3	sumulunga 3	kali 1
7. ita 1	kina 3	simulanga 3	kale 1
8. itate 1	kena 3	simulanga 3	kale 1
9. itæ 1	kinæ 3	itæ kuku 4	kai 1
10. ira 1	kena 3	'yanga 3	kale 1
11. isare 1	sukwa 2	pee 2	kale 1
12. na'bu 2	'muəyəd(ə) 1	me'sə 5	jənə'wad <sup>j</sup> ə 3
13. nabu / nabw 2	nabo'mə 1	ɪnabo'ŋa 6	jənəə'dzə 3
14.			jenu'adzɔ 3
15. na'bx 2	nabx'mu 1	ɪnabx't'e 6	jən'wəʔe 3
16. ʒɛn 3	ʒɛn 'haump 4	ʒɛn 'hau 7	ʒɛmintɕ 4
17. nɔʔ 4	'handu 5	ʒənə'me 8	'ʒɛmint <sup>h</sup> 4
18. piut <sup>Y</sup> <sub>u</sub> ʔoʔai 5	əmpɔʔi 6	bit <sup>h</sup> u 9	'lomɔ 5
19. mɪn 6	'mɔŋgu 7	'kopi 10	'twan 6
20. mɪn 6	mungu 7	k <sup>h</sup> upi 10	tandu 6
21. yam 7	yɪmweya 8	yəŋgayəm 11	gunduk 7
22. awt <sup>h</sup> 8	yɪɣɪn 9	asɪŋ 12	kwanɔmɔŋ 8
23. k <sup>h</sup> əgɪt <sup>h</sup> 9	xi'peβit <sup>h</sup> 10	yɪ'gɔnpam 11	yɪmbɪgɪn'dəŋgɪt <sup>h</sup> 9
24. 'əŋ 10	'əŋmɔ 'k <sup>h</sup> us 7	'bit <sup>h</sup> am 9	mɔ'k <sup>h</sup> owə 10

<i>tongue</i>	<i>tooth</i>	<i>breast</i>	<i>hand</i>
1. gɪdɑ 1	ni 1	ʔandu 1	gihabɑ 1
2. 'gɪdɑtɪ 1	nyɛdɪʔ 1	ʔanduʔ 1	'kiabɛ 1
3. ket' 1	ne / nɛ 1	an'du 1	ki'gɔ 1
4. 'kɛɾɑ 1	'neqɪŋge 1	'andu 1	kiɾɛŋge 1
5. ketanae 1	neenae 1	andu 1	kikonae 1
6. keke 2	nenge 1	andu 1	kingi 1
7. keke 2	nenge 1	andu 1	kingi 1
8. keke 2	nenge 1	andu 1	kingi 1
9. kek 2	neg 1	ɫdu 1	kig 1
10.	nerŋge 1	andu 1	kingi 1
11. kekenge 2	nenge 1	anju 1	kingi 1
12. su'wɔ 3	adʒu'abɿ 2	a'u 1	ɾɔ'bu 2
13. tsu'ə / tsu'ɛ 3	adzua'ɸə 2	a'u 1	ɾau'bo 2
14. sju'ə 3	adzua'ɸə 2		'wobo 2
15. syê / su'ə 3	ɪjɛdʒɪ 'magə 2/3	a'hu 1	nə'sa 3
16. aɪ <sup>ə</sup> 'bɫɾ 4	andz <sup>ə</sup> 'mak <sup>x</sup> 2/3	kau 1	ju'mak <sup>x</sup> 4
17. a'ɫamp <sup>h</sup> 5	meŋk <sup>h</sup> 3	tɕi 2	ɾɪ'maŋgɫ 4
18. 'ndʒɪto 6	'təʔok 4	tʒu 2	mi'gət <sup>h</sup> 5
19. 'mbʒe 7	'ŋandu 5	mi 3	kɪɾi 6
20. mpe 7	ŋandu 5	miʒu 3	gɫɾi saŋɸaŋ 6
21. danɫmayɫk 8	ganʒik 6	ɣɪɫɫk 4	goʔok 6
22. mɪŋyɪŋ 8	tɫɾiŋgi / mbɫŋ 7/8	nɫŋay 5	awgulim 7
23. 't <sup>h</sup> oŋt <sup>h</sup> 9	bɪ'čɛt <sup>h</sup> / bɪ'šɛt <sup>h</sup> 9	'miŋgat <sup>h</sup> 6	tɪŋt <sup>h</sup> 8
24. mɫ'ɣoŋan 8	mɫ'ð 10	mɫ'ɲjɔ 2	mɫ'əŋɫɪʔɔ 6

<i>sun</i>	<i>moon</i>	<i>star</i>	<i>cloud</i>
1. yage 1	hana 1	haʔaʔa 1	mo <sup>v</sup> i 1
2. naiʔ 2	ana 1	adʌdʌʔ 1	mo <sup>v</sup> i 1
3. 'nai 2	sa <sup>h</sup> kun(e) 1	'kui 2	'hai 2
4. 'na.i 2	o <sup>h</sup> goʔi 2	'bu.i 2	mogə <sup>h</sup> βaʔə 1/3
5. yapena 3	okolo 2	kui 2	mokopale 1/3
6. nita 2	kana 1	bui 2	mole 1
7. tina 2	kana 1	bui 2	kopa 3
8. nita 2	kana 1	bui 2	mole 1
9. nik 2	kæn 1	bwi 2	mole 1
10. nira / niki 2	kana 1	bui 2	mole 1
11. neta 2	kana 1	mbui 2	kopa 3
12. nu <sup>h</sup> ma 4	sək <sup>x</sup> o <sup>h</sup> nə 1	gu 2	du <sup>h</sup> ə 4
13. ʔə <sup>h</sup> ma 4	tsoxə <sup>h</sup> no 1	gu <sup>h</sup> u 2	boi <sup>h</sup> a 5
14.			
15. ʔə <sup>h</sup> ma 4	sə <sup>h</sup> kənə 1	gu <sup>h</sup> hu 2	jɣ <sup>h</sup> mɣ 6
16. naijʌ 2	ʕʌn 3	'guβʌ 2	womi 7
17. 'sʌndʌ 5	'ʕaɣʌn 3	'gaβi 2	'k <sup>h</sup> umi 7
18. kəlo / gə <sup>h</sup> lo 6	kə <sup>h</sup> u 4	su <sup>h</sup> na 3	wə <sup>h</sup> gu 8
19. βanma 7	'gəŋat <sup>o</sup> 5	'zünza 3	ʕiŋga 9
20. θanma 7	ŋg <sup>h</sup> iŋat 5	ʕunʕa 3	yaŋgəm 10
21. dum 8	dɪpar 6	bunɟutʕum 2	ɣumwiya 11
22. tumɛ <sup>h</sup> i 9	mɪ <sup>h</sup> iya 7	awak <sup>h</sup> 4	tumbun 12
23. 'ma <sup>h</sup> ʔi <sup>h</sup> 10	'yamit <sup>h</sup> 8	'gu <sup>h</sup> ri <sup>h</sup> 2	'g <sup>h</sup> i <sup>h</sup> ib <sup>h</sup> i <sup>h</sup> pam 13
24. 'yā 1	mʌ <sup>h</sup> ʔi 7	ʌ <sup>h</sup> k <sup>h</sup> un 2	p <sup>h</sup> i <sup>h</sup> riŋ 9



<i>rain</i>	<i>water</i>	<i>tree</i>	<i>root</i>
1. k <sup>h</sup> iŋk <sup>h</sup> i 1	?iba 1	siya 1	pəlihi 1
2. giŋgi? 1	iβa? 1	siε 1	yongobidi? 2
3. ɿhaβe'ɕε / ɿhaβe'ɕε 2	i'βa / ib'βa 1	'isa / 'itga 1	isəra'teŋke 3
4. a'βeɕe 2	'iβa 1	'isa 1	'ende 4
5. apele 2	ipa 1	isa 1	isa pilingi 5
6. apu 2	ipa 1	ita 1	kende 4
7. apu 2	ipa 1	ita 1	ita pyanga 6
8. apu 2	ipa 1	ita 1	ita pyanga 6
9. æyu 2	edæki 2	itæ 1	pig 5
10. ayu 2	indaki 2	ita 1	pinge 5
11. apu 2	ipwa 1	isa 1	isa pingi 5
12. me'ga 3	gw 3	mu'na 2	uɭək <sup>x</sup> obo'duə 7
13. me'ga 3	gw 3	mə'na 2	mə'na ma'du 8
14.			
15. ma'ga 3	gw 3	mɿ'na 2	ɿməna'gɨ 9
16. ɕua 4	ɕa'ba 4	bɨ 3	bɨ 'gɨdɨɨ 9
17. maŋ 3	ɾuŋk <sup>h</sup> 5	mamp <sup>h</sup> 4	'k <sup>h</sup> ɨndɨɨ 9
18. ələ 5	ba 1	baɩ(ə) 3	nəŋ'gələp 10
19. 'maŋim'ɕəjə 6	'maŋam 6	mu 5	u'rakən 11
20. ma'ɿumɕoɕba 6	maŋam 6	mii 5	'mɨŋiʂɿmbɨ 12
21. yuŋ 7	yum 7	?et 6	wunda 13
22. wa'li 8	a'ɕem 8	yan 7	binŋ 14
23. bu <sup>x</sup> ɣ 9	'buɕ <sup>h</sup> am 9	mɕ <sup>x</sup> /ʂ 5	nem'bebɾɿ 15
24. t <sup>h</sup> ɿ'wɨn 10	'mɔ 10	p <sup>h</sup> ɿ'k <sup>h</sup> a 8	p <sup>h</sup> ɿ'k <sup>h</sup> amɿ'ŋgɨn 9

<i>leaf</i>	<i>meat</i>	<i>fat (grease)</i>	<i>egg</i>
1. si'ye γλɔ 1	howa / huλmɛndi 1/2	howa k <sup>h</sup> adaya 1	hedaba 1
2. yoho 1	howλ? 1	gadiyλ 1	λba 1
3. so'mɛ / tɕo'mɛ 2	mun'diŋk' 2	ha'βəŋk 2	a'ɕəŋk 1
4. 'isæ 'joγo 1	mun'diŋk' 2	a'βɛŋɔ 2	ɿkora'βaŋɔ 1
5. yokonge 1	mindingi 2	apenge 2	apange 1
6. ita yoko 1	minju 2	kapa 2	kapa 1
7. ita yoko 1	minjo 2	kapa 2	kappa 1
8. yoko 1	miju 2	kapa 2	kapa 1
9. yokɔ̃ 1	miʃu 2	kæp 2	tuk 2
10. yoko 1	miŋjo 2	karaia 2	yaka tuku 2
11. isa yoko 1	mena 2	kapa 2	kapa 1
12. mu'nana 3	ma·'mu 3	a'xɛəβəðɛn 3	'jaut <sup>h</sup> umu'si 3
13. mə'nana / mən <sup>ə</sup> hana 3	ma'mū 3	'jɛna a'xə 3	jaurəmo'si 3
14.	nɛ'ma 3		
15. mənɛ ha'na 3	'jɛnɛ ju'ɛ 4	'jɛnɛ ha'dzɣ 4	jaut <sup>t</sup> umu'si 3
16. bɪ ɕan 3	han 'juλ 4	han ɕatɕ 4	jaur mintɕ 3
17. k <sup>h</sup> λɕ 4	'juλ 4	moλ 5	jaur 'maŋɔλ 4
18. bɪt <sup>ə</sup> kəli 5	tu'ʔu 5	tu'pəlosa 6	kəlonə 5
19. 'munda 6	'ɕaka 6	kəŋgarəŋ 7	'majmuma 6
20. mu andəŋa 6	nɕak <sup>h</sup> a 6	k <sup>h</sup> əŋɔaɪəŋ 7	wanmuma 6
21. edʒuwaŋga 7	gamɪya 7	nλmweya 8	mɪnda 7
22. nɪmbi 8	nλŋɔλəɪt 8	nanλŋ 9	əŋɔui 8
23. t <sup>h</sup> o'at <sup>h</sup> 9	'nɛmp <sup>h</sup> am 9	'ʒɪləpam 10	pə'gat 9
24. p <sup>h</sup> λ'p <sup>h</sup> a 10	λ'mə̃ 3	mλ'rɔ̃ 11	'mɔ̃ 3

<i>he eats</i>	<i>he gives it to me</i>	<i>he sees</i>	<i>he comes</i>
1.			
2. nama <sup>h</sup> ɛ 1	nalɒndi 1	'da <sup>h</sup> ɛwɔk <sup>h</sup> 1	heyɛ 1
3. nɔ <sup>h</sup> manə 1	dza / ɔza / ɔ'dza 2	ɔ'da 1	ja 1
4. ɪnɛnɛ <sup>h</sup> ɾɛm 1	nɪmɪbaɾɛn'dza 2	nɪmɪbaɾɛn'da 1	nɪmɪbaɾɛ'ja 1
5. nɛngɛnɛ 1	dilimi 3	dɛlɛmɛ 1	ɛlimi 2
6. nɛlyamɛ 1	dilyamɛ 3	kandɛlyamɛ 1	ɛpɛlyamɛ 2/3
7. nɛngɛ 1	dɪngi 3	kandɛngɛ 1	ɛpɛngɛ 3
8. nɛngɛ 1	dɪngi 3	kandɛngɛ 1	ɛpɛngɛ 3
9. nɛg 1	nɛb dig 3	kɛdɛg 1	ɛpɛg 3
10. nɛŋgɛ 1	naba digi 3	kadɛgɛ 1	ɛpɛngɛ 3
11. nɛlyamɔ 1	jilyamɔ 3	kandɛlyamɔ 1	ɛpɛlyamɔ 2/3
12. ja·'d <sup>h</sup> ɪmɪnə 2	jɛnə'banɔyɛ 4	mɔdu'abɛdɛg <sup>w</sup> a 2	ja 1
13. ja'dzɪ 2	ni'gan ə'ɾa 4	gwa 2	jɛmɔ'dɛ 4
14.			
15. ɪmomə'dɛɾɛ 3	nɪ'βɛnɛɾɛ 4	ɪgomə'dɛɾɛ 2	ɪjɛm'dɛɾɛ 4
16. nɪm'da 4	nɪnɛ 4	'nɔŋg <sup>w</sup> ə 2/3	ham'da 4
17. ɾɪŋ'amp <sup>h</sup> 5	ɾamp <sup>h</sup> 5	nəŋ'amp <sup>h</sup> 3	au'amp <sup>h</sup> 5
18. nɪmi 4	'nəŋkwəkwarŋɛni 6	kənənəŋgə nhai 4	'kwarŋgəpə 6
19. ɸɛnɸɛn 6	'munutu maɸiβɛ 7	uɾa 5	ŋɪma 7
20. tʃɛntʃɛntʃubə 6	maʃubə 7	wud <sup>h</sup> ɪa 5	ŋɪma 7
21. nalɒbidʒik 7	ma 8	dandɪyɪβɛ 6	wanɒɒɪɪɪ 8
22. nɛnamun 8	anɒŋ 9	nɒga day 4	nanayɛn 9
23. 'k <sup>h</sup> awɛ <sup>h</sup> 9	'nan: ka'gɔkwɛ <sup>h</sup> 6	xɪ't <sup>h</sup> ɪt <sup>w</sup> ɛ <sup>h</sup> 7	'n <sup>h</sup> ɛwɛ <sup>h</sup> 10
24. 'ma <sup>h</sup> ɪm <sup>h</sup> bos <sup>y</sup> ɛ <sup>t</sup> 10	'ma ŋɒ'ɾɪ <sup>t</sup> 10	'ma <sup>h</sup> ɪm <sup>h</sup> bɪ <sup>t</sup> 8	'ma p <sup>h</sup> ɒ'ɪyɛ <sup>t</sup> 11

<i>louse</i>	<i>one</i>	<i>two</i>	<i>his back</i>
1.	mʌndi 1	labu 1	moʃali 1
2. ʔema 1	mʌndi 1	labo 1	mosaʔe 1
3. ʔe'ma 1	wa'men 1	'ɾaman 1	mu'sete / mu'tgete 1
4. 'ɾema 1	wa'men 1	ɾa'man 1	mo'soɾ <sup>l</sup> 1
5. lema 1	wamena 1	lamana 1	musalingi 1
6. lema 1	mendai 1	lapo 1	maita 1
7. lema 1	medai 1	lapo 1	maita 1
8. lema 1	mendai 1	lapo 1	maita 1
9. ʌʒnatɔ 2	mede 1	læpɔ 1	met 1
10. tilya 3	mendai 1	lapoma 1	maira 1
11. oro 4	mendaki 1	lama 1	mata 1
12. ʔe'ma 1	'jɔ·ɣɔdɔ 2	'jadayɪn 2	sɪ'ɣi / sɪ'ɿɿ 2
13. nə'ma 1	jɔɾo'dɔ 2	jan'deɾimi 2	siɾi'bɔ 2
14.			ɿsiɾi'odu 2
15. i'mɪdʒi 1	a'gɔ 3	ɪhɛgɔ'nabɔma'ɾɿ 3	siɾi'βɔ 2
16. jɪm 1	wariŋ'geɸ 4	ji'mag 'jiŋg <sup>w</sup> ʌ 4	maip <sup>h</sup> 3
17. man 1	'wanɪŋkənəmbʌ 4	mə'hʌɸ 5	dʒʌl 4
18. mənam 1	gegeten <sup>ə</sup> 5	kapək 6	
19. uta 5	ŋajkɔ 6	aɾawi 7	'aɕi 5
20. wutut <sup>h</sup> oma 5	ŋayk <sup>h</sup> ʌk <sup>h</sup> 6	aʔawin 7	basoma 6
21. ɣɪmwin 6	k <sup>h</sup> undʌpam 7	k <sup>h</sup> undamwin 8	ndʒambuk 7
22. wʌŋdit 7	mɛn 8	ɣɪmbumbaʔi 9	maʔdogwa 8
23. 'nɛmɪt <sup>h</sup> 1	ɾɪp <sup>h</sup> at <sup>h</sup> 9	'xoʒɪp / xoʒip 10	'mɔŋɪt <sup>h</sup> 9
24. 'ma <sup>t</sup> 1	'wɔnɛ 4	'ŋɪnʌ'k <sup>h</sup> ɪn 11	mʌ'p <sup>h</sup> ɪnɪ 10

*his shoulder*

1. ganowa 1
2. oʃate 2
3. 'k' enawa 1
4. ɿkena'waŋk' 1
5. kenawange 1
6. lapangu 3
7. lapangu 3
8. latuya 4
9. eyʒkʒde 5
10. laraia 4
11. lange 3
12. a'sɔ̄·dʒə 6
13. asie'dze 6
14. ɿasi'edzɛ 6
15. a'si 6
16. ʒa'got<sup>h</sup> 7
17. sɔn'doŋ 8
- 18.
19. 'ɔkanəŋ 9
20. ganaŋ 9
21. 'gigigamba 10
22. nambunum 11
23. tɿnim'blaŋat<sup>h</sup> 11
24. ma'əbəɿʃam 12

*his forehead*

- wonu 1
- onote 1
- wɛ'naβa 1
- ɿwɛna'βɔnt' 1
- wenopande 1
- enomba 1
- enomba 1
- yonomba 1
- matɛn 2
- laŋgalu 3
- enamba 1
- mɛna'xa 4
- mɛnaxa'ɾa 4
- mɛn'axa 4
- mi'gwo 4
- 'maig<sup>w</sup>at<sup>h</sup> 4
- ɿnambə'le 1
- 'makɿ 5
- mbak<sup>h</sup> 5
- nuŋ'gwigɿbaɿk 6
- tɿmbɿɿam 7
- ɿum'biɿkɿt<sup>h</sup> 8
- ma'p<sup>h</sup>anɿ 9

*his thumb*

- yo 1
- k<sup>h</sup>inʒubat 2
- ɾe'man 3
- kin'doβa 2
- lemange 3
- kingimange 3
- mange 3
- mange 3
- omag 3
- maŋge 3
- mange 3
- ɿɿɿɿɿɿdʒə 4
- nɛsɛ'xo 4
- 'nɛsəxo 4
- ɿmɛjəhə'bə 5
- mamɿnd 6
- 'mamɿnt<sup>h</sup> 6
- mianma 7
- k<sup>h</sup>ɿliβa 8
- gapagoda 9
- naŋgɿɿim 10
- mɿma p<sup>h</sup>ɿ'ɿɿɿɿt<sup>h</sup> 11
- ma'sɿiman 12

*his leg*

- ʔaɿuma 1
- k<sup>h</sup>ingot<sup>h</sup>ɛ 2
- ɔ'ɾiŋk<sup>h</sup> 3
- o'ɾiŋge 3
- olemange 3
- paingi 4
- moka 5
- moko 5
- mɔk 5
- moko 5
- kimbu 6
- ɿaɿɔjɔ'du 7
- hə'da / ə'da 7
- a'ɾɛdʒə 7
- həɿdamə'si 7
- ʔə'let<sup>h</sup> 8
- k<sup>h</sup>uɿ 9
- ɔka<sup>m</sup>ba<sup>m</sup>gat<sup>o</sup> 10
- ɔgambaŋ 10
- banambɿk 11
- bumuŋ 12
- 'wo'ɾat<sup>h</sup> 13
- ma'ɿ<sup>ŋ</sup>gan 14

<i>his heart</i>	<i>his bone</i>	<i>his blood</i>	<i>wing</i>
1. sɪyɛ̃i 1	sobwi 1	guguba 1/2	paɾaɣliɑ 1
2. ɛnbɔ̃lɪt <sup>h</sup> 1	õlɪt <sup>h</sup> ɛʔ 2	dɔdɔmɑ 1	paβɔlytʂɪdɔʔ 1
3. saŋ'gɑɾi / tɔŋ'gɑɾi 1	hɔŋ'gɔ 3	wɛ 3	ɪpɛβɔ'βɑŋk' 1
4. fɑɾɑ'ɾɪŋgɛ 1	o'ɾɪŋgɛ 2	ta'jɔɔ 4	fɛfɑ'ɣɑŋgɛ 1
5. lipe 1	olɪŋgi 2	wɛŋgɛ 3	ɪŋgi 2
6. monɑ 2	kulɪ 4	taɛyokɔ 4	yɑkɑ kɪŋgi 2
7. monɑ 2	kulɪ 4	tayokɔ 4	pɛpɑ 1
8. monɑ 2	kulɪ 4	tayokɔ 4	pɛpɑ 1
9. mɔ̃n 2	kulɪ 4	tɛɣʂk 4	pɑpɑ 1
10. monɑ 2	kulɪ 4	taiyokɔ 4	pɑp 1
11. monɑ 2	kulɪ 4	tɑnjɑmɑ 4	pɑpɑkɛ 1
12. ɪlɪbɪ'mɑgɛ 1/3	jo'du 5	a't'ɑɣɪ 4	su'muxədɔ 3
13. mɔdɔ'mɑgɛ 3	jo'du 5	gɛ'jɑ 5	fɪ 1
14. ɪmɔdɔ'mɑgɛ 3			
15. mɛdɔ'mɑgɛ 3	je'dɔ 5	gɑ'jɑ 5	jɑu,tɔhɔ'fɪ 1
16. mɛndɔmɑk <sup>x</sup> 3	jɑnt <sup>h</sup> 5	hɑŋ 6	wɔβɪtɔ 4
17. ɪmɛndɔ'mɑŋɣɔ 3	lɛ 6	hɑŋ'gɑβɛ 2/5/6	ɑw'ɑn 5
18.			
19. fɔɾɔŋ 4	ɑmɔu 7	ɑmɔɑɾɑ 7	k'ɑ'k'ɑmbɑ 6
20. ɣɪndɑmpu 5	ɑmpuɑ 7	ɑmbɑlɑ 7	wɑnɔk <sup>h</sup> ɪk <sup>h</sup> ɑ 6
21. guɔudʒɪk mɑŋgɑ 3/6	ʔɛʒɪmbɔk / dʒɪmpɑ 8	ʔɔndɪ 8	dɔŋɔŋɔ 7
22. wubundɑmbɪŋ 5/6	dɑɣnɪm 9	yɑt <sup>h</sup> 9	nɑmbɔnum 8
23. 'mɑʔbɪɔ̃ 7	tɪ'pɪɔ̃ 10	kɪ'k <sup>h</sup> up <sup>h</sup> ɑm 10	'bɪʔnɑt <sup>h</sup> 9
24. mɔ'wɔ <sup>ŋ</sup> gɔɪ'ʔɔ 8	mɔ'ɪ 11	mɔ'βɪn 11	ɪŋgɔʔɑ mɔ's <sup>ɣ</sup> ɛ 10

<i>tail</i>	<i>his father</i>	<i>his mother</i>	<i>brother (older, of man)</i>
1. kombo 1	sal tɛ 1	ʔama 1	gauwa 1
2. ɛʔɛʔ 2	abo 2	ama 1	yawngɛ 1
3. ɛ't'əŋk' 2	t'aiŋk 3	ɛn'dɛŋk 2	jaŋ'gɔŋk' 1
4. 'ɾiŋge 2	tai.'aŋge 3	ɛn'dɛŋge 2	jaŋ'gɔŋge 1
5. etenge 2	taengenae 3	endengenae 2	
6. yaka kenge 3	takange 3	endangi 2	yangonge 1
7. etenge 2	takange 3	endangi 2	yangoge 1
8. etenge 2	takange 3	endangi 2	wamba yangoge 1
9. eteng 2	takage 3	endeng 2	keminig 2
10. erenge 2	takange 3	endaŋge 2	kaiminigi aingi 2
11. konali 4	takane 3	endangi 2	yangone 1
12. jau't' u gɔ'ɕɔ 5	a'ba 2	ma'ma 1	həgi'agɔ 1/3
13. b <sup>w</sup> u'ɕɔ 5	a'ba 2	ma'ma 1	ma'mɔ 4
14.	a'ba 2		
15. jau't' obu'ɕɔ 5	ɾat' i'la 3	mə'gə 1	mədə'həgə 3
16. hɪmbə'dzɔɪ 6	adza 3	mam 1	na'bat <sup>h</sup> 5
17. dzɔɪ 6	bəɕ 2	'amɪ 1	mam 4
18.			
19. aɕi / tangu 7/8	wawa 4	anaga / anaya 3	uŋg <sup>j</sup> a 1
20. asɪk <sup>h</sup> / laŋgum 7/8	wawa 4	anak <sup>h</sup> a 3	wuŋgyak 1
21. gunumwa 9	wɪdʒɪk 5	ama 1	ɔbwa ayɪmbowa 6
22. bip 10	abin 2	ŋay 4	kɪrɛn 7
23. 'guʔbɛnt <sup>h</sup> 11	yi' bɛmɪt <sup>ɕ</sup> 2	mɪ'mɛmɪt <sup>h</sup> 1	na'jɛmɪt <sup>ɕ</sup> 8
24. mɪ'ŋgun 9	ŋɪ'at <sup>h</sup> ɛ 6	ŋɪ'əmɪt <sup>ɕ</sup> 1	ŋɪ'á <sup>i</sup> 9

<i>sister</i>	<i>name</i>	<i>pig</i>	<i>cassowary</i>
1.		mena 1	layma 1
2. ima'iŋge? 1		mena? 1	?ayma 1
3. ɿp'ima'ɽeŋk 1	ɿ'geŋk 1	ja'waɽe 2	k <sup>x</sup> a'wan 2
4. pima'ɽeŋge 1	'p <sup>h</sup> ijə 2	ja'waɽe 2	ka'wəne 2
5.	genge 1	yaowale 2	kawaune 2
6. kikingi 2	kenge 1	mena 1	laima 1
7. pimalenge 1	kenge 1	mena 1	laima 1
8. pimalenge 1	kenge 1	mena 1	laima 1
9. pimaiege 1	keŋg 1	mena 1	lem 1
10. pimalenge aingi 1	keŋge 1	mena 1	laima 1
11. kakinyi 2	kingi 1	mena 1	lamya 1
12. ni+m'jai 3	a'tɕaβəde 3	je'nɻ 3	'jawaga 3
13. nima'i 3	mɛ'i 4	je'nə 3	do'dza 4
14.		je'nə 3	
15. ni'mɛ 3	nabamɿ'he 4	je'nɻ 3	'dowjə 4
16. mə'hənt <sup>h</sup> 4	hɿmp <sup>h</sup> 5	han 4	dau'aia <sup>h</sup> 4/5
17. 'aɾt <sup>h</sup> 5	himp <sup>h</sup> 5	k <sup>h</sup> antɕ 4	'waiɿŋ 5
18.			
19. ɕami 6	wuŋ 6	βeɾɿ 5	kaɾim 6
20. ba'ɿusɿkɿsami 6		be'e 5	k <sup>h</sup> a'ɿim 6
21. nambɿlayk 7		yay 3	gayɿma 6
22. abak <sup>h</sup> 8		nɿmu'lan 6	awa 5
23. 'minda'ɾemɿt <sup>h</sup> 9	'yubət <sup>h</sup> 7	'pɛgɿɕ 7	'bɛndɿgɔt <sup>h</sup> 7
24. ŋɿ'nagɿ <sup>n</sup> dom 10	mɿ'yɛ 4	'k <sup>h</sup> ɿp 8	'm <sup>h</sup> bon 8



<i>wallaby</i>	<i>flying fox</i>	<i>rat</i>	<i>frog</i>
1. wasɿla 1	sɿnabiya 1		godɿ 1
2. amayndzoɿok 2	sɿnawɿɛ 1	andabi 1	mɔŋk 2
3. ku'ɿi 3	ɿarəŋ'gauŋk 2	maŋ'giɿ 2	'mɔŋge 2
4. 'ajə 4	'kamjə 3	maŋ'giɿi 2	mɔŋge 2
5. kuliya 3	kamya 3	mangili 2	mɔŋge 2
6. mapuna 5	saima 4	koka 3	mɔŋge 2
7. mapuna 5	saima 4	koka / konai 3	mɔŋge 2
8. mapuna 5	simbunaiya 4	koka 3	mɔŋge 2
9. sibi 6	kepya 3	kɔŋe 3	mɔŋge 2
10. saa 6	tindi 5	yuwi 4	mɔŋgi 2
11. mapona 5	kamye 3	wui 4	mungi 2
12. ku'gia 3	dɿ'gɿ 6	jɛdʒɿna'ba 5	'sau 3
13. k <sup>h</sup> uɿi'a / xuɿi'a 3	də'gə 6	do'χo 6	sa'u 3
14.			
15. sɿ'βia 6	də'gə 6	dɔ'k <sup>h</sup> wə 6	'sau 3
16. w <sup>u</sup> ɿɿa 7	'gaunɿ 2	'daiu 6	hamb <sup>w</sup> u'mɿl 4
17. wai 7	'waimant <sup>h</sup> 7	ɿk <sup>h</sup> əβi'a 7	baŋ 5
18.			
19. m <sup>bi</sup> də 8	'jaŋgu 8	dɿ'dɿgasa 8	'ɿamu 6
20. bit 8	yaŋguŋa 8	dɿdɿgasa 8	samok <sup>h</sup> 6
21. gwɿandɿk 9	ayɿŋgwəŋ 8	gundugway 9	magay 2
22. wɿkabwi 10	gɿmbwi 9	giga 3	k <sup>h</sup> uk <sup>h</sup> ɿlak / k <sup>h</sup> ɿlayŋ 7
23. wɿɿ+'gɛβɿɿ 10	'gɛβɿɿ 9	'mɛŋgɿɿ 2	k <sup>h</sup> o'k <sup>w</sup> at <sup>h</sup> 7
24. p <sup>h</sup> ɿ't <sup>h</sup> a 8	t <sup>h</sup> ɿ'ɿgɿn 10	k <sup>h</sup> ɿ'woɿa 10	p <sup>h</sup> ɿ'k <sup>h</sup> ɿt <sup>t</sup> 8

<i>snake</i>	<i>taro</i>	<i>sugarcane</i>	<i>yam</i>
1. boya 1	sawi 1		
2. ma <sup>h</sup> lubaysi 2	asda <sup>h</sup> i 2	id <sup>h</sup> ? 1	kawi 1
3. jan <sup>h</sup> 'daɾ 3	mã 3	'hiɾa 1	je <sup>h</sup> 'βeɾa 2
4. jan <sup>h</sup> 'daiɾe 3	mã 3	'jiɾa 1	i <sup>h</sup> 'naβo 3
5. yandale 3	maa 3	ilya 1	inapo 3
6. kanopate 4	maa 3	lyaa 1	amu 4
7. konopate 4	maa 3	lyaa 1	amu 4
8. kanopate 4	maa 3	lyaa 1	amu 4
9. kənəpatr <sup>h</sup> 4	mæ 3	lyæ 1	
10. kanoparo 4	lipano 4	lyā 1	amu 4
11. kau 4	maa 3	lyεε 1	amu 4
12. nak <sup>h</sup> 'u <sup>h</sup> ma 5	nu <sup>h</sup> 'bu 5	sw <sup>h</sup> 'ya 2	ε <sup>h</sup> 'si 5
13. naxo <sup>h</sup> 'ma 5	nə <sup>h</sup> 'bo 5	si <sup>h</sup> 'ɾa 2	dʒu <sup>h</sup> 'a 6
14.			
15. nak <sup>h</sup> 'ə <sup>h</sup> ma 5	nɻ <sup>h</sup> 'bw 5	si <sup>h</sup> 'ɾa 2	he <sup>h</sup> 'si 5
16. kas 6	kɪm 6	ham <sup>h</sup> 'naŋ 3	ha <sup>h</sup> 'wɪt 7
17. ɟe 7	mɪ 3	bɪɿ 4	font <sup>h</sup> 8
18.			
19. maɟgasak 6		ɾamu 5	βɪɾ 9
20. maygasak <sup>h</sup> 6		nyamu 5	wa <sup>h</sup> ɿak 10
21. ambun 8	gwinyan 7	wɪ 6	
22. wəɟan 9		mayŋi 7	
23. nan <sup>h</sup> 'dɛmɪt <sup>h</sup> 10	'muk <sup>h</sup> op <sup>h</sup> at <sup>h</sup> 8	mɪʃ <sup>h</sup> ŋgɪt <sup>h</sup> 8	'maʃpat <sup>h</sup> 11
24. ʌ <sup>h</sup> 'k <sup>h</sup> un 5	'mak <sup>h</sup> a 3/8	'yim 9	'k <sup>h</sup> em 12

<i>banana</i>	<i>sweet potato</i>	<i>axe</i>	<i>net bag</i>
1. k <sup>h</sup> aya 1	o <sup>l</sup> iya 1		nu 1
2. haya? 1	anya? 2	u <sup>l</sup> ? 1	n <sup>a</sup> u 1
3. 'xaja 1	ma <sup>l</sup> bu / ma <sup>l</sup> βu 3	we 1	nū / nu 1
4. kaja 1	'maβu 3	we 1	nū 1
5. kaeya 1	mapu 3	wau 1	winda nuu 1
6. saya 1	mapu 3	wau 1	nuu 1
7. saeya 1	mapu 3	waa 1	nuu yanga 1
8. saya 1	kasepalya 4	waa 1	enda nuu 1
9. se 1	ena 2	ua 1	nu 1
10. sai 1	mapu 3	wya 1	mandi 2
11. kyaya 1	kwai 5	wau tombyuwa 1	nyuu 1
12. i <sup>l</sup> d† 2	'χoli 5	t <sup>l</sup> ub <sup>l</sup> jawa 1	jo <sup>l</sup> gu 3
13. h† <sup>l</sup> d† / † <sup>l</sup> d† 2	ja <sup>l</sup> si 6	ju <sup>l</sup> əswobo <sup>l</sup> xa 1	jo <sup>l</sup> gu 3
14.			
15. h <sup>l</sup> dw 2	k <sup>l</sup> wo <sup>l</sup> i 5	ju <sup>l</sup> e 1	jo <sup>l</sup> g <sup>w</sup> u 3
16. ham <sup>l</sup> ɿ 2	kuwai 5	ju 1	jaunkwə 3
17. 'k <sup>h</sup> an†m 1	mantɕ 7	ɕu 1	'wan†mp <sup>h</sup> 4
18.			
19. 'iɕaŋ 4	ɕuɕuara 8	ɕikajma 2	majmben 5
20. nʂaŋ 4	sɿsɿp <sup>h</sup> ɿk <sup>h</sup> 8	mɿndimaŋ 3	maymban 5
21. gay 1		mundum 3	wayl 6
22. moyen 5		kunambwi 4	yawgut <sup>h</sup> 3
23. 'gēnigat <sup>h</sup> 6	'maʂpat <sup>h</sup> 9	xo <sup>l</sup> da <sup>ɕ</sup> ɕ/ʂ 5	'yogit <sup>h</sup> 3
24. 'k <sup>h</sup> a <sup>l</sup> 1	's <sup>h</sup> on <sup>l</sup> p <sup>h</sup> a <sup>l</sup> ɿe 8	p <sup>h</sup> ɿ <sup>l</sup> am 6	k <sup>h</sup> ɿ <sup>l</sup> tuŋ 7

<i>house</i>	<i>earth</i>	<i>mountain</i>	<i>wind</i>
1. anda 1	yugΛŋi 1	hadi 1	
2. anda? 1	yu 1	adi 1	
3. 'anda 1	ipu'ɽi / iϕu'ɽi 2	man'dax 2	p'om'buə 1
4. 'anda 1	iβu'ɽi 2	'sa.u 3	ϕombu'ai 1
5. anda 1	ipuli 2	mandaka 2	pumbuwai 1
6. anda 1	yuu 1	yuu sau 3	poo lelyame 1
7. anda 1	yuu 1	sau 3	pyapo 1
8. anda 1	yuu 1	sau 3	po 1
9. ænd 1	yu 1	mænda 2	pɔ̃ 1
10. anda 1	yu 1	manda 2	popo 1
11. anda 1	yuu 1	yuu kyau 3	porambaiya 1
12. ja'be 2	me'ga 3	me'thi 2	so'mõ 2
13. ja'be 2	məga'ɾi 3	ma'χo 2	si'mõ 2
14. ja'be 2	me'garu 3		si'mũ 2
15. ja'be 2	mx'mɛn 3	ja'dau.ə 4	ɿsɿdu'anə 3
16. ɕam 3	'maŋgΛ 3	'maŋgΛ ϕit <sup>h</sup> 2	'handal 4
17. ɕam 3	'mənΛŋ 3	nΛ 'iɿΛ 5	'handal 4
18.			
19. mβot° 4	'manɕika 4	ɽäm 6	wəβeg° 5
20. mɸot <sup>h</sup> 4	maʃik <sup>h</sup> a 4	lam 6	wuβilim 5
21. yaw 2	ʔumwia 5	bunduŋ 7	waɿi 6
22. nam 3	andi 5	nΛmbuk 8	
23. 'k <sup>h</sup> uɾɕ/ʒ 5	b+buɾ'ɕɛβit <sup>h</sup> 6	k+muɾ'ɕɛβit <sup>h</sup> 9	'wiβɛɕt <sup>h</sup> 5
24. 't <sup>h</sup> ɿŋ 6	i <sup>n</sup> do <sup>p</sup> / i <sup>m</sup> bɿŋ 7	'ɽam / 'ɿam 6	k <sup>h</sup> Λ'wõ 7

<i>night</i>	<i>white</i>	<i>black</i>	<i>red</i>
1.			
2. iwete? 1	hak <sup>h</sup> ε? 1	dumu 1	dadɫma 1
3. wau'gat 2	k'ε'wanɫk' 1	wam'banɫk' 2	momo'ɣonɫk' / momoɔɔ'ɣonɫk' 2
4. wau'gwaɾ 2	ke'wanɣe 1	wam'banɫk' 2	'fɔɔɔɣe 2
5. wokate 2	kewange 1	wambungi 2	momokonge 2
6. kuka 3	kewa lenge 1	pumbuti 3	kone 2
7. kukuma 3	kewa lenge 1	pubuti 3	popo 3
8. kukuma 3	kewalapae 1	pumbuti 3	kalupae 3
9. kuku 3	kæke 1	pɔ̃bet 3	kæte pyæpe 3
10. kukuma 3	kyolapae 1	pubuti 3	kate pyapae 3
11. kukwa 3	kakepame 1	pupuri 3	kone 2
12. uy'majəthaya 4	oɔ'gu 2	ta'baχədə 4	hw'jə 4
13. seno'bi.a 5	t <sup>h</sup> a'ra / ɣa'ra 3	hi'ə / i'ə 5	gei.a'xa 5
14.			geia'xa 5
15. ma'gamə'di.εβə 6	ɔgwaɔi.a'xe 4	bi'diβw 6	ge'axaɔdənə 5
16. 'ɣuɫ 'wadia 7	aβle 5	'dɔɔɔɔɔβara 7	'naɔə 6
17. sump <sup>h</sup> 8	ɣunt <sup>h</sup> 6	'fɔɔɔɔɔ 8	'aɫɔ 6
18.			
19. uχwan 9	kəɾja 7	wɔɔɔɔɔm 9	fɔɔmea 7
20. wuk <sup>h</sup> an 9	k <sup>h</sup> ɫiɫak 7	wɔɔɔɔm 9	
21. mimbudɫn 9/11	k <sup>h</sup> andɫgaya 8	ɣumbiya? 10	
22. wut <sup>h</sup> 9	yaʔaʒigɔɔ 9	wɔʔgɔbɔɔdagɫn 11	
23. yi'buɫkɔt <sup>h</sup> 10	'ga'ɔmɔt <sup>h</sup> 10	kɔɔɔ't <sup>h</sup> at <sup>h</sup> 12	
24. 'im 8/11	ɫ'ye 11	ɫ <sup>h</sup> ε <sup>p</sup> 13	mɫ'nu <sup>p</sup> 8

<i>green</i>	<i>good</i>	<i>long</i>	<i>short</i>
1.			
2. sɛdɛbɪŋɛ 1			
3. ɪk <sup>x</sup> ayaɾu. 'aŋk <sup>c</sup> 2	kam'wən 1	ɾɔn'dɔŋk 1	'mũnə 1
4. ɪkakaɾu 'aŋk <sup>c</sup> 2	ke 'aŋk <sup>c</sup> 2	ɾɔn'dɔŋk <sup>c</sup> 1	mũ 1
5. kakange 2	imoya 3	londonge 1	
6. sakapae 2	epe 4	londe 1	
7. sakapae 2	epe 4	londe 1	muu 1
8. sakapae 2	keyange 2	londe 1	muu 1
9. sækape 2	ɛp 4	lɔnde 1	mũ 1
10. sakapae 2	epe 4	ogonya 1	muu 1
11. kyakapae 2	keyange 2	londe 1	muu 1
12. ɪxɔmɔ'xɔmɔ 3	g <sup>w</sup> ɔfi'gə 5	mɪ'gi 2	t <sup>c</sup> ɛ'fɛ 2
13. xomo'xomo 3	g <sup>w</sup> ɔnə'xə 5	mɛ'ɾɪ 2	t <sup>h</sup> ɛ'fɛ / ɾɛ'fɛ 2
14.			
15. ɪk <sup>x</sup> amə'k <sup>x</sup> aməɪxa 3	'aɾɪjeɪdənə 6	mə'ɾu 2	mo'xo 1/5
16. gam'gɔm 3	'wajɪŋə 7	mɪ 2	maɪɛf 1/2
17. ɪk <sup>h</sup> amɪŋ'k <sup>h</sup> amɪŋ 3	aɪntɛ 8	mɪ'lɪ 2	u'ɪɛf 2
18.			
19. tɪɾɪŋ 4	anaɸuaɾɪ 9	paɾjgaɸa 3	paɾəkə 3
20. wɔŋot <sup>h</sup> 4		paɾɪgasa 3	
21.		k <sup>h</sup> undapam 4	
22.		gɔŋgɪɪk <sup>h</sup> i 5	
23. 'nambɛmɪn'dɛɸp <sup>h</sup> am 5	'xiɸa 10	'yukaɸy 6	koko'pen 4
24.	'ɪɸəŋ 11	p <sup>h</sup> ɪ'sy <sup>k</sup> i 3	mɪ'k <sup>h</sup> uɾ 5

<i>heavy</i>	<i>cold</i>	<i>warm, hot</i>	<i>old</i>
1.			
2.			
3. 'k'enda,βiɾum 1	hiŋ'g <sup>j</sup> aɾem 1	'hanuβiɾum 1	wam'baŋk' 1
4. kenda'βiŋk' 1	'aβəβi,ɾim 2	'anə,βiɾim 1	wam'baŋk' 1
5. kenda pilimi 1	apu pilimi 2	ani pilimi 1	wambange 1
6. kenda pilyame 1	kupa pilyame 2	itata 2	wambetae 1
7. kenda 1	kupu 2	itaita 2	wambaketae 1
8. kenda 1	kupa 2	itaita 2	wambeketae 1
9. kɛndate 1	yəp 2	itəta pipe 2	wabatəke 1
10. keda 1	kupa 2	itaita 2	wabake 1
11. kenda 1	kupwa pilyamo 2	isesa pilyamo 2	wambarae 1
12. mu't'a·γədə 2	səmo'xəγədə 3	hə'bəxədə 3	ma'duaβə 2
13. mə'ɾaɾədə 2	,haxə'daxədə 3	ha'bəxədə 3	ma'duabəxəm 2
14.			
15. mə'bə 2	i'sihəβə 4	'həbə'həbə 3	ma'doəβe 2
16. may'wali 2	'g+dzəɾa 5	'ɸəbəɾa 4	ɪt <sup>h</sup> 3
17. 'maɾa ɟəɸ 2	'jɪŋaŋbɪ 6	'ɸəmbəŋ 4	'nəndəbɪ 2
18.			
19. 'gəɟiwa 3	a'ɾaɾəwa 7	kugurə 5	janɟik <sup>o</sup> 4
20. ŋgɟk <sup>h</sup> iβa 3	aɪuwak 7	maŋɟgat 5	
21. mi <sup>h</sup> k'yamba 4	ləa / yɪmba 7/8	yambaŋa 6	
22. tɪŋɟɛdɪk <sup>h</sup> i 5	taɾak <sup>h</sup> andɪaŋ 9	wuβik <sup>h</sup> andɪaŋ 7	madnyi 5
23. koɾ'ɟiwēt <sup>h</sup> 6	gɛn+ŋɟit <sup>h</sup> ewt <sup>h</sup> 10	kɪk <sup>h</sup> a'ɟet <sup>t</sup> i <sup>h</sup> 5	'yatɪkɪt <sup>h</sup> 4
24. 't <sup>h</sup> əβəɪs <sup>y</sup> ? 7	'ɾam 11	't <sup>h</sup> om 8	'wə nɪ,mɪn 6

<i>new</i>	<i>many</i>	<i>what?</i>	<i>who?</i>
1.			
2.			
3. wɛ'neŋk' 1	k' uβəɽ 1	bi' aɽɛ 1	'nuŋ' haina / nikaɟnə 1
4. wɛ'neŋk' 1	'kemb' wə 1	'men 'piɽim 2	nu 'kainə 1
5. wenenge 1	kupale 1	bangenaɪpe 3	kaina 1
6. enenge 1	balo silyamo 1	akisi 4	apipi 2
7. enenge 1	longo 2	aki? 4	api? 2
8. enenge 1	malu 3	aki 4	api 2
9. ɛneŋ 1	lɔŋgɔ 2	anung 5	æpi 2
10. enege 1	longo 2	aki 4	api 2
11. enenge 1	malu 3	aki 4	api 2
12. 'ja·n 2	ma' bɪdɛnej 4	aj' bayəm 3	'nanoxom 1
13. xo' mo 3	mədəma' bɪ 4	'aibama' dʒumɔ̃ 3	'ainoxom 1
14.			
15. mət' əβə 4	maβ' kwɔdənə 4	ixaj' βɛm 3	na, βajənə' βam 1
16. ɡam' ɡamɔ 3	mɪŋk' mɪŋgə mən' da 5	'aga ma. u 6	'ɡolobax 3
17. ɡɪ' sɔn 5	'iɽu 6	nan nə' hɔn 7	ban 4
18.			
19. apigə 6	ŋgaɣakamənəŋ 7	gateweɟ 8	'nanɪ 5
20.			
21.			
22. k <sup>h</sup> andumak <sup>h</sup> i 7	mundak 8		
23. nɪβ' ɽit <sup>h</sup> 8	'bɛkɪm 9	t <sup>h</sup> a' mɛgɪt <sup>h</sup> / pɛŋji 9	'pɽ' ɛgɛɽ 6
24. 'ŋgom 3	't <sup>h</sup> o <sup>p</sup> 10	's <sup>y</sup> iman 10	'āman 7



<i>wet</i>	<i>full</i>	<i>not</i>	<i>three</i>
1.			sebo 1
2.			tebo? 1
3. ɔɾeβaɾem 1	t'um'baɾam 1	na'βiɾum 1	t'εβo'man 1
4. ,iβə'βiɾum 1	thum'baɾam 1	'na'βiɾim 1	't <sup>h</sup> epho'manə 1
5. tombeleme 2	tumbaileme 1	na (nenge) nae 1	temanae 1
6. tombe lelyamo 2	tumbilyamo 1	nae 1	tepo 1
7. tombe 2	tubatae 1	daa 1	tepo 1
8. tombe 2	tumbilyamo 1	daa 1	tema 1
9. tʒmbe læpe 2	tumbæte 1	dæ 1	teɾʒ 1
10. tobelapae 2	tubou / tubas 1	daana 1	tepo 1
11. tombe letamo 2	simbualyamo 2	verb + na + ending 1	tema 1
12. 'gʷ'dɪnɒ 3	'wɔβə,bə 2	k <sup>x</sup> a'wɔβədə 2	,p'iga'nabaβum 2
13. t <sup>h</sup> a,raxə'də / ɾaraxə'də 4	wə'ɾə 2	'xawəɾə 2	'jandεɾim φi'la 3
14.			
15. ,asə'mɔɣw 5	asə'ɣo 'ɾəβə,dənə 2	'xa:ɾəβə,dənə 2	hix+'ɾaɾ+β+ 4
16. 'gogogɔa 6		aun wu'hɒɾ+la 3	mɒs <sup>a</sup> 'mɒndon 5
17. is 7	'andzəman ɾəuump <sup>h</sup> 3	-aɪ- infix 4	mə'hau nə'gan 5
18. .			
19. <sup>m</sup> barawa 8	'məməɾə'sewa 4	əβa məməɾə'sewa 5	aɾidam 6
20.			aliləŋwam 6
21.			gumayŋ 7
22.			ɣɒmb'endubət 8
23. bu'p <sup>h</sup> et+ <sup>h</sup> 9	βɾu'ki <sup>h</sup> g+ <sup>h</sup> 5	βɾɪji 6	xoʒ'biβp <sup>h</sup> at <sup>h</sup> 9
24. 'mɔβɒ,ɾon 6	'p <sup>h</sup> ɔβɒ,s <sup>h</sup> et <sup>h</sup> 6	a... (se)ɾan 7	'ŋ+ɒɒ,w <sup>o</sup> 10

<i>four</i>	<i>no</i>	<i>he says</i>	<i>he hears</i>
1. tumeda 1			
2. tũgumada 1	nabɪt 1		
3. ɽkiyimu'nɛn 1/2	'waiɾɛn 2	'piɾɛn 1	'taɾəβiɾum 1
4. 'k <sup>h</sup> iɾu'mɛna 1/2	wai 2	'piɾim 1	j <sup>w</sup> a 2
5. kipakita 2	wai 2	lɛmɛ 2	wilimi 3
6. kitumende 1/2	daa 3	lɛlyamo 2	silyamo 4
7. kitumende 1/2	daa 3	lɛlyamo 2	singi 4
8. kitama 1/2	daa 3	lɛngɛ 2	singi 4
9. kitɔmɛnd 1/2	dæ 3	ɔpa lɛlyamɔ 2	singi 4
10. ketumende 1/2	daaluma 3	legɛ 2	singi 4
11. kisima 1/2	daa 3	lɛtamo 2	silyamo 4
12. ɽnaba'mabɛm 3	'wamo 2	q'a'ɸam 3	ɽnat'ə'βɛjə 5
13. agəi'nə 4	wamɔ 2	ɸa 3	jɛ'ɾam 6
14.			
15. nəs'k <sup>w</sup> ə 5	wə'hoɔ 2	ɸa 3	g <sup>w</sup> ɔm'dəɾə 7
16. 'm <sup>w</sup> oihaq mɛs	'wuhɛ ɾɪ'la 2	'manə 'jadɛmdax 4	'nɔŋu mən'da 8
'm <sup>w</sup> oihaq mɛs 6			
17. mə'hau mə'hau 6	'wasɛ 2	haŋ'amp <sup>h</sup> 5	'aβdi nəŋ'amp <sup>h</sup> 8
18.			
19. 'aŋgadaɸaj 7	'mijak 4	'n <sup>h</sup> gətewɛj 6	bə'jalə 9
20. aŋɛdasum 7	k <sup>h</sup> ay 5		
21. gumayŋ 2	?awunda 6		
22. maɪmaɪɔm 8	gayak <sup>h</sup> 5		biyanandɪt <sup>h</sup> 10
23. 'xosβi'goɔɪp 9	nɪ'ga <sup>i</sup> / nɪ'ge 5	kɪ'biwɛɔ <sup>ɣ</sup> 7	wa'nuk <sup>wɛɔ</sup> 11
24. 'bɛ <sup>n</sup> do <sup>k</sup> 10	'waɾan 2	'ma 'wos <sup>yɛ</sup> t 8	'ma 'pras <sup>yɛ</sup> t 12

<i>he dies</i>	<i>it burns</i>	<i>he hits</i>	<i>he laughs</i>
1.			
2.			
3.	'wedzə 'maɾoɣə 'maɾam 1	'izət' ,ɛɾem 1	'ŋgiɛɾem 1
4.	ma:ɾam 1	i'na:ɾam 1	'ŋgia 1
5.	meleme 1	isate teleme 1	gii yelene 1
6.	kumilyamo 1/2	telyamo 1	gii kaelyamo 1
7.	kuoningi 2	doko tenge 1	gii kaenge 1
8.	kumingi 2	tenge 1	giingi 1
9.	kumi(n)g 2	ʒngʒ tɛ(n)g 1	gi ke(n)g 1
10.	kumigi 2	ita tege 1	gii kaego 1
11.	kumulyamo 1/2	isare telyamo 1	gilyamo 1
12.	'mɔwə 3	'nabɾ ha'wəxəbə 2	i'xamɔl 1
13.	mo'wə 3	'nɛdə 3	ixa'moa'də 1
14.			
15.	mɔ' bə / 'mɔbə'dənə 3	'nɛbə 'dɛnə 3	i'xemoəpɛɾɛɾɛ 1
16.	'wara mən'da 4	'jin+ŋk <sup>ə</sup> mən'da 4	ji'mom <sup>ə</sup> nda 2
17.	'umamp <sup>h</sup> 5	'mɪlɔŋgamp <sup>h</sup> 5	mə'hɪl gamp <sup>h</sup> 3
18.			
19.	sɪ'ŋginma 6	mɪnə wuma 6	'ɔewa 4
20.			
21.			
22.			
23.	'nogwɛ̃ <sup>ɣ</sup> 7	pu'newɛ̃ <sup>h</sup> t 7	niŋ'git <sup>wɛ̃<sup>ɣ</sup></sup> 1
24.	'ma 'krɛ <sup>t</sup> 8	'aŋ mɪ'jɔ <sup>t</sup> 8	'ma 'krɛ̃ <sup>ɣ</sup> lɪsɪ <sup>t</sup> 5

<i>I</i>	<i>thou</i>	<i>he</i>	<i>we two (excl.)</i>	<i>you two</i>
1. lamba 1				
2. namba 1	nimba 1	ogo 1	na'imba 1	labo 1
3. nam'baɽona 1	nam'baɽə 1	maɽayaɽ 2	'naɽum,baɽə 1	'naɽum,baɽə 2
4. nim'baɽa 1	nam'baɽa 1	'm'baɽa 2	p <sup>h</sup> i'ɽaga 2	'naɽum'baɽa 2
5. namba 1	nimbala 1	bala 2	nalimbala 1	nilimbala 2
6. namba 1	emba 1	baa 2	nalimba 1	nyakamba 3
7. namba 1	imba 1	baa 2	nalimba 1	nyakamba 3
8. namba 1	emba 1	baa 2	naimba 1	nyakamba 3
9. næb 1	ibɔ 1	bæ 2	neb 1	nyakæb 3
10. naba 1	eba 1	baa 2	naliba 1	nyakaba 3
11. namba 1	emba 1	baa 2	nambwa 1	nakamba 3
12. 'nigə 2	'naga 2	ɨjɛmə'naba 3	nant'gagim 3	'ɣəna,baɣim 4
13. nə'ga 2	na'ga 2	jɛ'də 4	,nanəgaɽi'mi 3	ni,gaɽi'mi 2
14.				
15. nəgai'dɬx 2	naga'dɬx 2	i'na: 5	i'naβa,dəm 4	
16. nɪn <sup>l</sup> 2	naŋ 2/3	au'nəŋ 6	ji'dəm 5	'handogaβ 'mɪs 5
17. jant <sup>h</sup> 3	ne 4	'nɪβe 7	hol 6	'k <sup>h</sup> ale 6
18.				
19. <sup>n</sup> du 4	ŋunu 5	'qatɨk 8	am'ba ara'wɪn 7	'na'rawɪn 7
20. ŋɪn 2	ndɪn 3	wunu 9	ambaɻawim 7	biyedawim 8
21. niŋ 2	nan 3	dugugwɪ 10	k <sup>h</sup> undamwin 8	
22.		nak <sup>h</sup> 11		
23. na 1	ni 4	ʃɛɛ 12	nɛ 9	'nibɬn 9
24. 'ŋgú 2	'ú 5	'ma 13	'á'ŋgú'án 10	'ú'ŋgú'án 10

<i>they two</i>	<i>we (pl. excl.)</i>	<i>you (plural)</i>	<i>they (plural)</i>
1.			
2. niɛmbɔ 1	nanima? 1	yaɽamba 1	pidowa 1
3. 'ɽaman 2	'nanimbəɽə 1	na·m'baɽə 2	ma'ɽaβən, dayəðə, tat 2
4. 'na:m'baɽa 1	'oɽadə 'ɸiɽəmin 2	'na:mbaɽa 'ɸiɽəmin 2	'na:mbaɽa ɸi'om 3
5. nyonolapu 3	nanimbala 1	nyonombu 2	ombu 4
6. nyakamba 4	naima 1	nyakama 3	nyakama 5
7.	naima 1	nyakama 3	dokaita 6
8. dolapo 3	naimba 1	nyakama 3	dutupa 7
9. ʒlæp 3	nem 1	nyakæm 3	utup 7
10. nyalaba 3	naima 1	eba 4	nyalama 8
11. nakamba 4	namwa 1	nakama 3	nakama 8
12. ja'nabayim 5	nanɿ'ga ja'mayin 'duən <sup>ə</sup> 1	ni'dja 5	jə'nababi 9
13. ɿjiandɛɽi'mi 5	nanə'ga 1	ni'ga / nig'ya 5	jəmona'ba 9
14.			
15.	'aβi 3		
16.	'anɿŋ 4		nig 10
17. 'k <sup>h</sup> ale 6	hon 5	'k <sup>h</sup> ale 6	'k <sup>h</sup> ale 11
18.			
19. 'baɽa 'aɽawɿn 7	am'ba oɸop <sup>o</sup> 6	'baɽa 'ŋajk+k 7	am'ba oɸop <sup>o</sup> 12
20. aŋgɿ'ɿɿm bɿlanʂu aɽawɿn 7	nye 7	aŋguɽɿn bɿlanʂu wopok 8	bɿlanʂu aɽidam 13
21.	k <sup>h</sup> umayŋ 8		
22.	yibæ 9		
23. 'ɽɛp 8	'nɛm 1	'nikɛm 9	ɽɛm 14
24. 'n <sup>da</sup> 'nin 9	'a 10	'n <sup>u</sup> 10	'n <sup>da</sup> 15

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