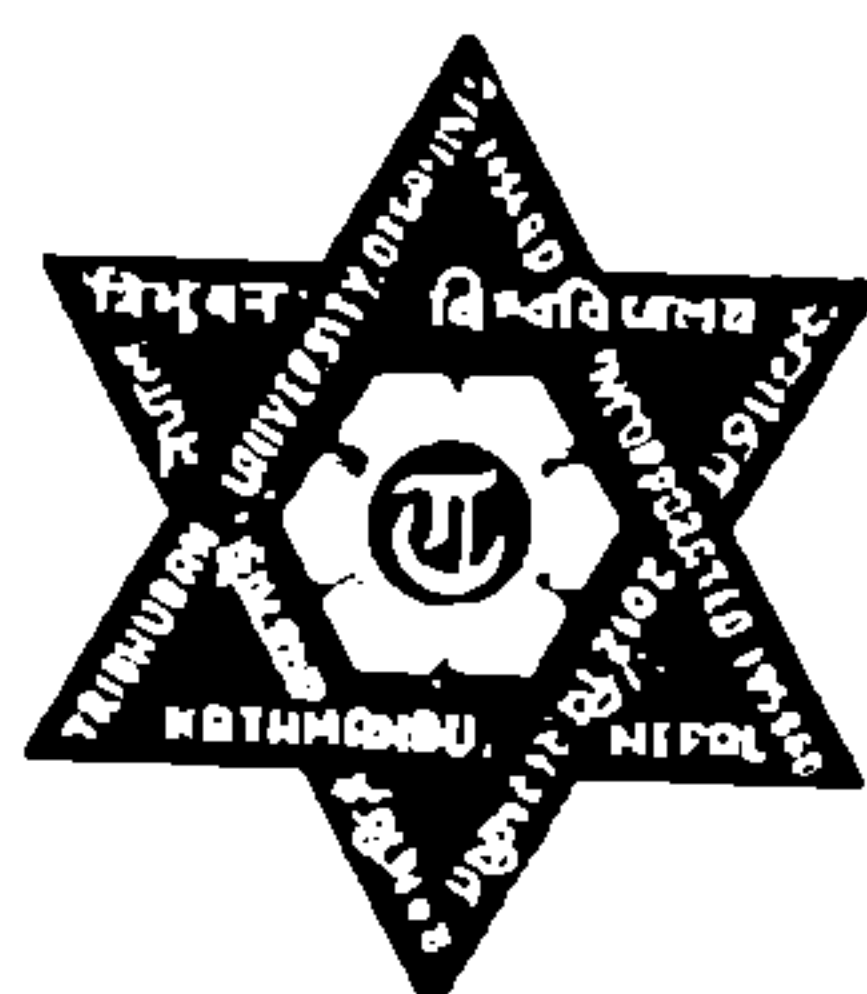


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# CHEPANG SEGMENTAL PHONEMES

C.M. Bandhu, B.M. Dahal, R.C. Caughley

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## 0 Introduction

0.1 Chepang is a little known language belonging to the Tibeto-Burman group. It is spoken by about 9,000<sup>1</sup> people who live on the Southern slopes of the Mahabharat Range, in the Southern Dhading, Western Makwanpur, Northern Chitawan and Southern Ghorka districts of Nepal.<sup>2</sup>

0.2 This paper is a preliminary study of the segmental phonemes of Chepang. The data on which the paper is based were gathered over a six-week period, partly spent in Maiserang village in Makwanpur District of Narayani Zone, and partly with two Chepangs in Kathmandu. The main informant was Bhobikan Chepang, a young man who has had no schooling but who speaks Nepali as well as Chepang.

The study was undertaken during January–February 1969 by the above two staff members of Tribhuvan University in collaboration with R. Caughley of S I.L. Because of the short period of study no rigorous analysis of suprasegmental features has been made and it is therefore possible that further work in this area may alter the conclusions of this paper to some extent. For this reason the emphasis is on description rather than on interpretation, through some possible interpreta-

tions are discussed in section 5.

0.3 Orthography. The phonetic values of the segmental symbols are outlined in section 4. ( a ) is a mid central unrounded voiced vocoid and ( aa ) is a low central unrounded voiced vocoid of the *same* length as ( a ). There appear to be two contrastive supra-segmental features, herein termed 'high' and 'low' tone respectively. Closed syllables with a voiceless final consonant are always high tone, high closed syllables with a voiced final consonant are distinguished by writing the corresponding voiceless homorganic stop after the final consonant, e.g. ( sin high tone ) is written [sint]. Open syllables with high tone are written with a final (q), e.g. ( la high tone ) is written [laq]. Thus any word written with a voiceless stop (including q) in final position has high tone. Parentheses ( ) enclose phonetic or partly phonemicised data, diagonals / / enclose the fully phonemicised forms.

1 Contrasts. In this section contrasting features of the language are outlined. Not all possible contrasts between *phonemes* are illustrated. ( See section 4 ).

### 1.1 Contoid<sup>3</sup> Contrasts

1.11 Voiced/Voiceless. Chepang contoids and non-syllabic vocoids have a basic contrast between voiced and voiceless except for the fricatives ( s ) and ( h ) for which there are no voiced counterparts.

#### Stops

(pop) lungs (tik) frog (keq) hook  
(bop) snail (dik) dog wasp (geq) single finger

#### Affricates

(cyaar) weave end  
(jyaar) chuiya, a root vegetable

#### Nasals

(Mas) bad smell (Naap) bed (NGaalt) bitter honeycomb  
(mas) sandfly (naap) bamboo (ngaalt) brown<sup>4</sup>

**Liquids**

(Laak) half (ngaaL) pot black (Rekna) smell sweet  
 (laak) wild root (ngaalt) brown (rekna) exclaim

**Non-syllabic Vocoids**

(Waana) sharpen (Yokna) fit  
 (waana) come (yokna) swallow

(kaaWna) pluck (haaYna) cry  
 (kaawna) pour (haayna) work

- 1.12 Aspiration.<sup>6</sup> There is also contrast between aspirated and unaspirated stops and affricates.

(pop) lungs (taap) fish stick (kos) sugar cane  
 (phop) bliter (thaap) fire place (khos) chest

(bop) snail (daang) a root (caa) wound  
 (bhop) bubble (dhaang) oneself (chaa) knot

- 1.13 Palatalisation. Contrast exists between palatalised and non-palatalised contoids.

(taap) fish stick (dunt) residue (caang) crab  
 (tyaap) gullet (dyunt) firewood (cyaang) small reptile

(paak) sole (rong) horn (saaq) earth  
 (pyaak) pig (ryong) perungo (syaaq) beast

(laang) bread (naap) bamboo root  
 (lyaang) earth quake (nyaap) bee

There is little clear contrast between aspiration and palatalisation.

Two examples are :

(ghaang) hole (dhaah) hot

(gyaang) long (byaah) now

- 1.14 Labialisation is rare, and there are alternative pronunciations of some words, labialised and non-labialised.

(kweq, keq) hook (gweq, geq) single finger

- 1.15 There are three contrastive points of articulation for stops and nasals – bilabial, alveo-dental and velar.

#### Voiceless Stops

initial (pos) breast of bird  
(tos) foundation  
(kos) sugar cane

final (paap) feather (nyaap) bee  
(nyaat) wet

(paak) sole

(pyaat) leech  
(pyaak) pig

#### Voiced Stops

initial (bum) bluff (baal) scapula  
(dum) gourd (du) red  
(gu) taro (gaal) black

#### Nasals

initial (Moku) tipout (maaq) yes  
(Noku) break (naaq) Didi  
bone  
(ngaaq) fish

final (thoM) calf (paam) abdomen (pum) swarm  
of leg  
(pan) bug (pun) skin  
(thoNG) waking (paang) Dewar  
moment  
(pang) gorge

- 1.16 Sound Types.** There is contrast between stops, affricated stops, spirants, nasals, lateral and trill.

**Stops/Nasals**

**initial** (bah) wife's elder brother (taap) fish stick (daang) root  
 (mah) wife's father's sister (Naap) bed (naang) you  
 singular

**final** (syaak) unripe  
 (syaanG) tomorrow

**Stops/Affricates**

**initial** (tik) frog (thuq) arrow (dunt) residue  
 shaft  
 (cik) wart (cuq) thorn (junt) two front  
 teeth

**Grooved Spirant/Affricates**

**initial** (soq) vein (syaar) side  
 (coq) child (cyaar) weave end

**Trills/Laterals**

**initial** (laa) rope  
 (raa) nanglo

**final** (yaal) measure  
 (yaar) besar

**medial** (kriq) a goi  
 (kliq) faeces

**Stops/Laterals**

**initial** (daang) root  
 (laang) bread

**Fricatives**

**initial** (saaq) earth (Yunk) flea (Waana) sharpen

(haaq) light (hunk) a root (haana) gobble

- 1.2 Voooid Contrast. With vocoids there is contrast between front, central and back tongue positions and higher and lower positions.

Front		Central		Back	
Higher	Lower	Higher	Lower	Higher	Lower
Closed Syllables					
(tik)		(tak)	-	(tuk)	
	(pes)	(pas)	(paas)		(pos)
	(mes)	(mas)		(mus)	(mos)
(rik)	(rek)	(rak)			
(cik)	(cek)		(caak)		(cok)
(tip)			(taap)	(tup)	
	(leng)		(laang)	(lung)	

#### Open Syllables

		( ra )	(raa)	( ru )	( ro )
( ki )	( ke )				
( riq )				(ruq)	
( liq )			( laaq )		( loq )
	(meq)		(maaq)		(moq)
	(peq)			(puq)	

#### Meanings

(tik) big frog	(tak) hoe	(tuk) stomach
(pes) flatus	(pas) body odour	(paas) wild fruit
(pos) breast of bird	(mes) before	(mas) sandfly
(mus) cloud	(mos) ghost	(rik) rafter
(rek) animal	(rak) hen	(cik) wart
(cek) rough	(cak) hard	(cok) hoof
(tip) fish trap	(taap) fishstick	(tup) half full
(leng) layer	(laang) bread	(lung) ball
( ra ) single vine	(raa) nanglo	( ru ) snake
( ro ) flower	( ki ) long grass	( ke ) barb )

(riq) Spirit	(ruq) fish poison	( liq) heavy
(laaq) arrow	(loq) leaf	(meq) tail
(maaq) yes	(moq) wife	(peq) maggot
(puq) Daju elder brother		

## 2 Syllable and Distribution

### 2.1 Syllable patterns. There are the following non-suspect patterns.

	Low	High
i ) VC	(on) thatch	(aaM) cooked rice
ii ) CV	(laa) rope	(laaq) arrow
iii ) CVC	(paang) Dewar	(paap) feather
iv ) CCV	(bri) net bag	(kraaq) white ant
v ) CCVC	(klong) spreading	(kraas) body louse

They may be symbolised  $(C_i C_m) V (C_f)$  where brackets indicate non-obligatory consonants,  $C_i$  indicates initial consonant,  $C_m$  indicates medial consonant ( i.e. second of a consonant cluster),  $C_f$  indicates a final consonant and V indicates a vowel.

### 2.2 Distributional Restrictions. In the data so far collected ( some 1,000 words, including polysyllables ) the following restrictions have been found:

- $C_i$  There are no restrictions as to the contoid filling this position.
- $C_i$  The initial position of a consonant cluster appears to be limited to bilabial and velar stops ( voiced or voiceless ), voiced nasals and the grooved fricative ( s ).
- $C_m$  Medial consonants are restricted to voiced liquids.<sup>8</sup>
- $C_f$  No affricates, voiced, aspirated, palatalised or labialised stops are found in final position.
- V There are no restrictions on the vocoid occupying the vowel position

### 2.3 Vocoid Clusters do occur but always have ( i ) or ( u ) as one member of the cluster, giving the possibility of several different

interpretations. Some co-occurrence restrictions occur as shown.<sup>9</sup>

		Second					
		i	e	a	aa	u	o
First	i	-	x	-	x	x	x
	e	-	-	-	-	x	-
	a	x	-	-	-	x	-
	aa	x	-	-	-	x	-
	u	x	x	x	x	-	-
	o	x	-	-	-	x	-

x occurrence  
- non-occurrence

2.31 Note the unusual distribution of ( e ) also the only occurrences of ( ia ) are as alternants of ( e ). e.g. ( tiam, tem ) 'jaw' and ( piam, pem ) 'chin', or when there is no initial consonant e.g. ( ial ) 'churi fruit'. In the latter case there is no alternation and ( ia ) contrasts with ( e ) in ( el ) 'churi seed', though there is an obvious semantic connection.

2.32 Note also that the cluster ( wa ) exists, though only in two instances - ( kwart ) 'owl' and ( gwart ) 'fish net frame'.

2.33 These restrictions appear to hold regardless of whether the syllable is isolated or part of a polysyllabic word. About three-quarters of the word stems are monosyllabic; many of the polysyllabic stems are compound in form.

### 3 Interpretation

#### 3.10 Single/Cluster

3.11 Affricates are treated as single phonemes. Although voiceless affricates do not occur syllable final as do the other voiceless contoids, the absence of ( z )<sup>10</sup> as a separate contoid necessitates the above conclusion.<sup>13</sup>

3.12 Aspirated Stops are treated as clusters of two phonemes, Ch.  
Reasons:

- i ) Non-suspect CC initial cluster.
- ii ) Like affricates, they do not occur syllable final, i.e. they do not function as other single phonemes.
- iii ) ( h ) exists separately and patterns like other medials in that it occurs finally.
- iv ) This reduces by half the number of stop and affricate phonemes.

3.13 Palatalised Contoids are treated as clusters of two phonemes Cy if initial, e.g. ( pyaak ) [pyaak] 'pig' or as [CCiy] if phonetically (CCy), e.g. (gryaang) [griyaang] 'big doko'.

Reasons:

- i ) Palatalised contoids do not occur syllable final.
- ii ) ( y ) exists separately.
- iii ) This interpretation reduces by half the number of consonant phonemes and does not increase the number of syllable types.

3.14 Vocoid Clusters. The high front vocoid ( written phonetically as ( i ) or ( y ) and the high back vocoid ( written phonetically as ( u ) or ( w ) are interpreted as consonants when occurring before or after another vocoid, except when ( i ) is followed by a contoid. In this case, when the cluster ( Vi ) is interconsonantal it is regarded as [ -Vyi -].

e.g. ( maaiq ) 'meat' is written [ maayk ].

( bhaau ) 'son-in-law' is written [ bhaaw ]

but (saik ) 'tooth' is written [ sayik ].

( oik ) 'flour' is written [ oyik ].

Reasons:

- i ) Non-suspect VVC or CVV do not occur.
- ii ) ( w ) and ( y ) have voiceless counterparts as do all other consonants.
- iii ) In non-syllabic position ( w ) is more a contoid in form as it has more friction than a syllabic ( u ). There is no contrast between ( w ) and ( u ) however.

3.15 An alternative to 3.13, 3.14 would be to regard (-Vi-) and (-iV-)

after an initial contoid cluster as ‘olose kint nuclei]composed of two vocoids acting distributionally in the syllable as a single simple nuclear phoneme’.<sup>1 1</sup>

4 Segmental Phonemes

4.1 Summary

	Bilabial	Alveodental	Velar
Stops	p b	t d	k g
Spirants		s	h
Affricates		c j	
Nasals	M m	N n	NG ng
Liquids		R r	L l
Non-syllabic W Vocoids )	w	Y y	
Vowels	x	i  e aa	u  o

Of the 276 possible contrasts in identical environment between pairs of the 24 consonants some 190 have found.<sup>1 4</sup> Of the 86 that are lacking 79 involve voiceless nasals, liquids and non-syllabic vocoids, none of which occur frequently. Important contrasts, such as with the voiced counterparts, have been established, either in indentical or in analogous environments. Of the 15 possible contrasts between the 6 vowels, all have been found ( see section 1.2 ).

## 4.2 Description of Phonemes

4.21 Stops. All stops are unreleased in word final position and voiceless stops are intense, occasionally glottalised in initial position.

The stops are:

[p] Realised as a voiceless bilabial stop.

[b] Realised as a voiced bilabial stop.

[t] Varies from a voiceless interdental or dental stop ( t ) when adjacent to high front vocoids, to an alveodental stop ( t ) with low mid and back vocoids. ( tip ) fish trap ( cit ) day after tomorrow ( tort ) down ( taap ) fish stick

[d] A voiced stop with the same positional variants as [ t ].

( dik ) a wasp ( daas ) a fly

( dol ) a worm ( dun ) thick

[k] Varies from a voiceless front velar stop ( k ) with front vocoids to a more backed velar stop ( k ) with back vocoids. ( kil ) hip joint ( kop ) roof bamboo ( kaas ) kaolin

[g] A voiced stop with the same positional variants as [k].

( ging ) back ( gonk ) bend

( gaal ) black

## 4.22 Fricatives

[h] Occurs as ( h ), a voiced glottal fricative after voiced stops and as ( h ), a voiceless pharyngeal<sup>15</sup> fricative elsewhere. ( haal ) footstep ( paah ) bamboo pot ( bhop ) bubble

[ s ] Occurs as a voiceless front lamino-alveopalatal grooved fricative ( s ) with tongue tip in dental position and strong friction when adjacent to high and mid front vocoids. With central and high back vocoids it occurs as a voiceless apico-alveodental grooved fricative ( s ) and as an apico-alveolar grooved fricative ( s ) elsewhere.

( siag ) wood ( sant ) fingernail

( saal ) kadzura ( sot ) dry

## 4.23 Affricates

[ c ] Realised as a voiceless dental stop released as a lamino-alveopalatal grooved fricative ( ts ) before high front

vocoids, and as a voiceless alveodental stop with release varying from a back apico-alveolar grooved fricative ( s ) before low central and back vocoids, to a front lamino-alveopalatal grooved fricative s elsewhere.

( tsit ) day after ( tsek ) rough

tomorrow

( tsus ) bull frog ( tsan ) crab

( tsaak ) hard ( tsok ) hoof

[ j ] A voiced affricate with the same positional distribution of allophones as [ c ].

( dzip ) big needle ( dzer ) kindling sticks ( dzunt ) two front

( dzam ) a god

teeth

( dzomp ) tree size ( dzaaq ) tiger

#### 4.24 Nasals

[m] Occurs as a voiced bilabial nasal.

[M] Occurs as a voiceless bilabial nasal.

[n] Varies from a voiced dental nasal ( n ) with front vocoids to a voiced alveolar nasal ( n ) with low central and back vocoids.

( ning ) you pl. ( nek ) this year

( nal ) gum ( naap ) bamboo

( nort ) dirt

[N] Voiceless nasal with presumably the same positional distribution of allophones as [n]. There are insufficient examples to confirm this.

[ng] Occurs as a voiced front velar nasal ( ng ) before front vocoids and as a voiced velar nasal ( ng ) elsewhere.

( ngi ) we ( ngan ) gummy

( ngaalt ) brown ( ngol ) wasp

[NG] Voiceless nasal with presumably the same positional allophone distribution as [ ng ].

#### 4.25 Liquids

[ r ] Occurs as a strong voiced alveodental trill ( r ) before front vocoids and as an alveolar trill ( r ) elsewhere except post

consonantly i.e. in medial position where it is usually realised as an alveolar flap ( r ).

( ring ) wasp      ( rong ) horn

( raang ) clearing ( brak ) with

[R] A voiceless trill with presumably the same allophonic distribution as [r].

[ l ] Occurs as a voiced alveolar clear lateral ( l ) with low vocoids and as a voiced alveodental clear lateral ( l ) elsewhere.

( lis ) a boil      ( les ) a grass

( loq ) leaf

[L] A voiceless clear lateral with the same allophonic distribution as [ l ].

( Lek ) slippery      ( Laak ) half

#### 4.26 Non-syllabic Vocoids

[w] Occurs as a voiced labial fricative ( w ) with front vocoids and as a voiced high back rounded non-syllabic vocoid ( w ) elsewhere.

( wint ) bat      ( wer ) hailstone

( waas ) abee

[W] A voiceless high back rounded non-syllabic vocoid (W).

[ y ] Occurs as a voiced high front unrounded non-syllabic vocoid ( y ).

[Y] A voiceless high front unrounded non-syllabic vocoid (Y).

#### 4.3 Vowels

[ i ] Varies from a voiced high close front unrounded vocoid ( i ) with velar nasals and open syllables, to a high open front unrounded vocoid ( i ) elsewhere.

( ning ) you pl.      ( mik ) eye

( kil ) hip joint ( liq ) heavy

[ e ] Occurs as a voiced front unrounded vocoid varying from a mid close height ( e ) in low open syllables to a mid open height ( E ) elsewhere.

( le ) tongue      ( pEq ) maggot

( nEk ) this year      ( prEnk ) big ant.

[a] Occurs as a voiced central unrounded vocoid varying in

height from a mid open ( ʌ ) with liquids to mid close ( ə ) elsewhere.

( sɔrt ) wasp (gwər) trap frame

( sʌn ) fingernail

[aa] Occur as a voiced low close unrounded vocoid ( æ ) fluctuating between front and central positions following [y] and as a voiced low open central unrounded vocoid ( a ) elsewhere.

( pyæk ) pig ( paak ) sole or palm.

[ u ] Occurs as a voiced, high, open, back to central rounded vocoid ( u ) after ( y ) and as a high open back rounded vocoid ( u ) elsewhere.

( tuk ) stomach ( cyut ) nest

[ o ] Occurs as a voiced, back to central rounded vocoid varying in height from a mid open position ( o ) when adjacent to ( r ) or ( y ), to a low close position ( o ) elsewhere.

( nort ) dirty ( tyoR ) nest

(khos) chest

For any vowel some fluctuation can occur over the area of its allophones but the tendency is for the position to be higher and more forward when adjacent to [y] or to a lesser extent, with [r], and higher in open syllables.

A vowel following aspiration tends to have a breathy quality.

## 5

### Additional Notes.

5.1 Relationship Between Segmental Features. It has previously been mentioned that all words with voiceless final consonant have a high tone ( Section 0.1 ).

Furthermore it has been observed that all other high tone words have a potential glottal stop in final position i.e. in many environments a high tone word or syllable is terminated with a glottal stop. Low tone words are never terminated by a glottal stop. VC syllables in word initial position also have a potential glottal stop.

Examples – have high tone alternatives.

( laaqʔ, laaq ) 'arrow' and ( nyaampʔ, nyaamp ) 'cricket'.

This makes it possible to regard a glottal stop as a full phoneme with high tone as one of its allophones.

Advantages of this interpretation,

- i) Tone would not be phonemic. This would explain why there is no tone contrast on words with voiceless final consonants such as [P], [t] W.
- ii) VC syllables would become CVC as glottal would be a consonant, reducing the number of syllable patterns.
- iii) It would allow interpretation of voiceless resonants<sup>1 2</sup> as two segments ( see below ).

Disadvantages,

- i) It would necessitate a new syllable pattern with a final consonant cluster.

More study is needed before the distribution of ( ? ) and high tone can be determined.

## 5.2 Interpretation of Voiceless Resonants, Single Phonemes as Clusters.

If the above interpretation ( 5.1 ) is adopted then by giving (h) an identical distribution to (?) in final clusters voiceless resonants would be interpreted as two segments, a voiced resonant plus [h]. Thus ( siN ) 'liver' could be written [sinh] and ( Meq ) 'fire' as [mhe?]. This would reduce the number of phonemes.

Glottal stop would not however have an identical distribution to [h] as it could not occur in medial position of a consonant cluster as [h] can.

## 5.3 Existence of [ e ] and [ o ] as Separate Phonemes. Since ( ya ) exists only in alternation with ( e ) following a consonant it is possible that ( e ) is phonemically [ ya ]. Though this may have been the case in the past, there is now a contrast between ( ya ) 'churi fruit' and ( el ) 'churi seed'.<sup>7</sup> Probably also ( o ) was once phonemically [ wa ]. Now there are two cases where ( wa ) exists not in alternation with ( o ), ( kward ) 'owl' and

( gwart ) 'fish frame'. There is no direct contrast however with ( o ).

5.24 Labialisation is rare and occurs often as an alternative pronunciation to aspiration, palatalisation, or neither/.

e g. (khiY, kwiY) one cupped hand

(gyer, gwer) cheek

(gyiraay, gwiraay) a shrub

(gweq, geq) finger

( kweq, keq) hook

#### Footnotes

- 1 According to the 1961 Census, H.M.G. of Nepal.
- 2 Bista, D.B , 1967.
- 3 The terms 'vocoid' and 'contoid' are used as in Pike, K., 1944. His definition of 'vocoid' is 'a central resonant oral continuant'. 'Contoids' are non-vocoids. Note that this is a phonetic classification.
- 4 Adjectives can be used as free forms or with an adjective suffix e.g. ( ngaal, ngaal to ) 'brown'.
- 5 Contrast in analogous environment only, as in (aaY) 'soft' and (aay) 'mother-in-law', one high and one low tone respectively.
- 6 See Section 3 interpretation.
- 7 Later information makes this contrast doubtful.
- 8 This does not include the glottal fricative ( h ) or non-syllabic vocoids ( y,w ) later interpreted as medials.
- 9 Treating palatalisation as ( i ) and labialisation as ( w ).
- 10 Checked also by asking informant to repeat words containing ( z ). He always repeated with ( dz ) instead of ( z ) in initial position, and ( s ) for ( z ) in final position.

- 11 Pike, K.L 1947, pp. 147-148.
- 12 Nasals, liquids and non-syllabic vocoids.
- 13 (z) of the cluster (dz) could be treated as a voiced allphone of [s] occurring after ( d ). However ( s ) does not occur in medial position after any other consonant.
- 14 Later data supplies many of these missing pairs.
- 15 Sometimes there appears to be friction at the velar position especially when [h] is syllable final, e.g. (kaaxna) 'beat'.

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