

YESSAN-MAYO PHONEMES

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1. INTRODUCTION

This paper is a statement of the phonemes of the Yessan-Mayo language. This language is spoken by approximately 900 speakers who live in the Ambunti sub-district of the East Sepik District, Papua New Guinea.

There are two major dialects: one spoken by approximately 500 people living on or near the Sepik River, 20 to 30 miles upriver from Ambunti; the other dialect is spoken by approximately 300 speakers who live north and west of the river dialect in the flat forest area. This paper is based on the river dialect.

A previous paper was written in June 1963. This present paper is a re-write of the 1963 paper. It corrects various statements of the first paper and adds new information which has come to light since the first paper was written.

Research into the Yessan-Mayo language was first begun in May, 1962. Various language helpers have been used over the years, all of whom have contributed directly or indirectly to the analysis of the phonemic system of the language. Most of these helpers have been fluent speakers of Pidgin, a few have been English speakers. All have come from the two villages of Yessan and Mayo.

We wish to express our thanks to Miss Eunice Pike and Miss Dorothy James, both of the Summer Institute of Linguistics, for the help they gave, especially in the analysis of the vowels.

2 CHART OF PHONEMES

2.1 CHART OF PHONEMIC NORMS

| CONSONANTS | <u>Bilabial</u> | <u>Alveolar</u> | <u>Velar</u> |
|-----------------------|-----------------|-----------------|-----------------------------|
| Stops, Non-Labialized | | | |
| Voiceless | | t | k |
| Voiced | m _b | n _d | ŋ _g |
| Stops, Labialized | | | |
| Voiceless | | | k ^w |
| Voiced | | | ŋ _g ^w |
| Fricative | p | s | h |
| Nasals | m | n | |
| Lateral | | l | |
| Vibrant | | ʀ | |
| Semi-Vowel | w | y | |
| VOWELS | <u>Front</u> | <u>Central</u> | <u>Back</u> |
| High | | ɨ | |
| Mid | | ʌ | |
| Low - Close | | | ɔ |
| - Open | | | a |

2.2 DESCRIPTION OF CONTRASTIVE FEATURES

2.2.1 CONSONANTS. Consonants are divided into bilabial, alveolar, and velar on the basis of point of articulation. Consonants contrast in manner of articulation as to stops, fricatives, nasals, lateral, vibrant, and semi-vowels. Stops contrast as to labialized and non-labialized and voiceless and voiced.

2.2.2 VOWELS. Vowels contrast in point of articulation as to high, mid, and low. High and low contrast only at the central point of articulation. Low vowels contrast as to open and closed.

3 INTERPRETATION

3.1 STATUS OF ITEMS WHICH MAY BE EITHER CONSONANT OR VOWEL.

3.1.1 The phoneme /ɨ/ with its allophones (ɨ), (i), and (u) is interpreted as vowel when it carries the peak of syllabicity and occurs in the V position of the various CV patterns.

| | | | | |
|-----|-----|------------------------------------|--------------------------------------|--------------------------|
| /ɨ/ | (i) | /kɨy/ | ('k ^h ɨy) | 'drum' |
| | | /lɨyp/ | ('liyp) | 'moon' |
| | | /m [^] tɨy [^] / | ('mɛ [^] tiy [^]) | 'heard, under- stood' |
| | (ɨ) | /sɨtɨ/ | ('sɨtɨ) | 'will sit' |
| | | /nɨrɨn/ | ('nɨrɨn) | 'you, singular' |
| | | /tɨtɨ/ | ('t ^h ɨtɨ) | 'will stand' |
| | (u) | /mɨws/ | ('muws) | 'grasshopper' |
| | | /ɨwt/ | ('uwt ^h) | 'over there' |
| | | /tɨw/ | ('t ^h uw) | 'bamboo torch' |

The phoneme /ɨ/ with its allophones (i) and (u) is interpreted as a consonant when it does not carry the peak of syllabicity and occurs in the C position of the various CV patterns.

| | | | | |
|-----|-----|----------------------|-----------------------|-------------------|
| /ɨ/ | (i) | /tiy/ | ('t ^h ii) | 'bed' |
| | | /ey/ | ('ei) | 'lime' |
| | | /k ^w y/ | ('k ^w ɨi) | 'yam' |
| | | /m [^] bay/ | ('m [^] bai) | 'cuticle' |
| (u) | | /ow/ | ('ou) | 'pot' |
| | | /ɔw/ | ('ɔu) | 'grub' |
| | | /naw/ | ('nau) | 'bow (and arrow)' |
| | | /tuw/ | ('t ^h uu) | 'torch' |

3.1.2 The phonemes /y/ and /w/ are interpreted as consonants because they do not carry the peak of syllabicity and occur only in the C position of the various CV

patterns.

| | | | |
|-----|----------------------------------|----------------------|---------------|
| /y/ | /y [^] n/ | ('y [^] n) | 'child' |
| | /y [^] y/ | ('yey) | 'grandmother' |
| | / [^] wy [±] / | ('owy [^]) | 'grandmother' |
| /w/ | /wan/ | ('wan) | 'ear' |
| | /w [±] y/ | ('wiy) | 'grass skirt' |
| | /nawa/ | ('nawa) | 'mother' |

3.2 STATUS OF ITEMS WHICH MAY BE EITHER SEQUENCE OR UNIT

3.2.1 The following consonant sequences are suspect of being either a sequence or unit: (mb), (ng), (kw), (ngw), (th), (kh), (mph), (nth), and (nkh). Since there are no non-suspect sequences of phones, all the pre-nasalized, labialized, and aspirated sequences are interpreted as units.

Prenasalized Stops

| | | |
|------------------------------------|------------------------------------|-----------------|
| / ^m b ⁱ y/ | ('mbiy) | 'bark painting' |
| /ŋga ^m b [^] / | (ŋgamb [^]) | 'evil spirit' |
| /ŋg [^] ^m b/ | (ŋg [^] mph) | 'mud' |
| /r ^a ŋ ^g / | (^a r ^a ŋkh) | 'termite' |
| /wa ⁿ d/ | ('wanth) | 'snake type' |
| /gwan/ | (ŋgwan) | 'fog' |

Labialized Stops

| | | |
|-----------------------------------|-------------------------------------|------------|
| /k ^w k ^w / | ('kw [^] kw [^]) | 'chicken' |
| /k ^w as [±] / | ('kwas [±]) | 'bat type' |
| /ŋg ^w ay/ | ('ŋgway) | 'thigh' |

Aspirated Stops

| | | |
|--------------------|----------------------|--------------------|
| /tak/ | ('thakh) | 'chin' |
| /kas/ | ('khas) | 'plant type' |
| /m ^a t/ | ('m ^e th) | 'hear, understand' |

4 DESCRIPTION OF PHONEMES

4.1 DESCRIPTION OF CONSONANTS

- /t/ (t^h) voiceless aspirated alveolar stop occurs word initially and finally.
- | | | |
|-------|------------------------------------|---------------|
| /tak/ | ('t ^h ak ^h) | 'chin' |
| /ta/ | ('t ^h a) | 'woman' |
| /wat/ | ('wat ^h) | 'house posts' |
- (t) voiceless alveolar stop occurs word medially.
- | | | |
|----------|------------|---------------------|
| /mʌtiyʌ/ | ('mʌ'tiyʌ) | 'heard, understood' |
| /watɪ/ | ('watɪ) | 'breadfruit' |
| /matɪ/ | ('matɪ) | 'string bag' |
- /k/ (k^h) voiceless aspirated velar stop occurs word initially and finally.
- | | | |
|------------|---------------------------|--------------|
| /kaɾ/ | ('k ^h aɾ) | 'old person' |
| /wak/ | ('wak ^h) | 'neck' |
| /kʌpʌwsɪy/ | ('k ^h ʌpʌwsɪy) | 'fish type' |
- (k) voiceless velar stop occurs word medially.
- | | | |
|-----------|--------------------------|--------------|
| /tʌwkɪnɪ/ | (tʰowkɪ'nɪ) | 'will sleep' |
| /yakʌl/ | ('yakʌl) | 'snake type' |
| /kʌnakʌm/ | (k ^h ʌ'nakʌm) | 'lots' |
- (g) voiced velar stop occurs word medially in free fluctuation with (k).
- | | | |
|---------|---|----------------|
| /ʌygiw/ | ('eyguw/'eykuw) | 'cane type' |
| /tagʌ/ | ('t ^h agʌ/'t ^h akʌ) | 'hair' |
| /lakʌ/ | ('lagʌ/'lakʌ) | 'kinship term' |
- (k̥) voiceless back velar stop occurs in free fluctuation with (k) particularly when contiguous to /ʌ/.
- | | | |
|----------|-------------------|----------|
| /akʌ/ | ('akʌ/'akʌ) | 'house' |
| /yʌwkʌm/ | ('yowkʌm/'yowkʌm) | 'enough' |

/ak^ʷʀ^ʷ/ ('ak^ʷʀ^ʷ/'ak^ʷʀ^ʷ) 'bush rat'

/k^ʷ/ (k^ʷ) voiceless labialized velar stop occurs word initially and medially.

/k^ʷa^ʷʀ^ʷ/ ('k^ʷa^ʷʀ^ʷ) 'tree type'

/k^ʷa^ʷy^ʷ/ ('k^ʷa^ʷy^ʷ) 'rattan type'

/k^ʷʌ^ʷʷstɪ^ʷ/ ('k^ʷʌ^ʷʷstɪ^ʷ) 'break sticks'

/p^ʷak^ʷɪ^ʷl/ ('p^ʷak^ʷɪ^ʷl) 'something to hit with'

/t^ʷɔ^ʷk^ʷʌ^ʷ/ ('t^ʷɔ^ʷk^ʷʌ^ʷ) 'pay'

/ʀ^ʷʌ^ʷwk^ʷatɪ^ʷ/ ('ʀ^ʷʌ^ʷwk^ʷatɪ^ʷ) 'drill holes'

/m^ʷb/ (m^ʷp^ʰ) voiceless prenasalized aspirated bilabial stop occurs only word finally.

/t^ʷʌ^ʷb/ ('t^ʷʌ^ʷow^mp^ʰ) 'cassowary'

/sɪ^ʷb/ ('sɪ^ʷɪ^mp^ʰ) 'back of house'

/kɪ^ʷb/ ('k^ʷɪ^hɪ^mp^ʰ) 'bat type'

(m^ʷb^ʷ) voiced prenasalized labialized bilabial stop occurs only in fluctuation with (m^ʷb) contiguous to (ɔ).

/m^ʷbɔ^ʷ/ ('m^ʷb^ʷɔ^ʷ/'m^ʷbɔ^ʷ) 'not to have'

/m^ʷbɔ^ʷm^ʷbɔ^ʷ/ ('m^ʷb^ʷɔ^ʷm^ʷb^ʷɔ^ʷ/'m^ʷbɔ^ʷm^ʷbɔ^ʷ)

'hornet type'

(m^ʷb) voiced prenasalized bilabial stop occurs word initially and medially.

/m^ʷbɪ^ʷy/ ('m^ʷbɪ^ʷy) 'husks'

/m^ʷbɑ^ʷʀ^ʷʌ^ʷ/ ('m^ʷbɑ^ʷʀ^ʷʌ^ʷ) 'to play'

/m^ʷbɑ^ʷs^ʷʌ^ʷ/ ('m^ʷbɑ^ʷs^ʷʌ^ʷ) 'fruit type'

/m^ʷbɪ^ʷy^mbɪ^ʷy/ ('m^ʷbɪ^ʷy^mbɪ^ʷy) 'to tighten'

/m^ʷbɪ^ʷt^mɪ^ʷ/ ('m^ʷbɪ^ʷt^mɪ^ʷ) 'the face'

/p^mɑ^mbɪ^mlɑ^m/ ('p^mɑ^mbɪ^mlɑ^m) 'to scatter seed'

/ŋ^g/ (ŋ^hk^ʰ) voiceless prenasalized aspirated velar stop occurs only word finally.

| | | |
|---------------------|------------------------------------|-----------|
| /s ^ŋ g/ | ('s ^ŋ k ^h) | 'name' |
| /la ^ŋ g/ | ('la ^ŋ k ^h) | 'thorn' |
| /ra ^ŋ g/ | ('ra ^ŋ k ^h) | 'termite' |

(^ŋg) voiced prenasalized velar stop occurs word initially and medially.

| | | |
|--|---|---------------|
| / ^ŋ gab [^] / | (' ^ŋ ga ^m b [^]) | 'evil spirit' |
| / ^ŋ g [^] b/ | (' ^ŋ g [^] p ^h) | 'mud' |
| / ^ŋ g [±] la ^ŋ g ^w [^] w/ | (' ^ŋ g [±] la ^ŋ g ^w ow) | 'snake type' |
| /ra ^ŋ giy/ | ('ra ^ŋ giy) | 'nose' |
| /s ^ŋ ga ^m b/ | ('s ^ŋ ga ^m p ^h) | 'shrimp' |
| /sa ^ŋ g [^] / | ('sa ^ŋ g [^]) | 'corn' |

/^ŋg^w/ (^ŋg^w) voiced prenasalized labialized velar stop occurs word initially and medially.

| | | |
|---|---|--------------|
| / ^ŋ g ^w ay/ | (' ^ŋ g ^w ay) | 'thigh' |
| / ^ŋ g ^w an/ | (' ^ŋ g ^w an) | 'fog' |
| / ^ŋ g [^] w ^m b/ | (' ^ŋ g ^w ow ^m p ^h) | 'tree knots' |
| /la ^ŋ g ^w [^] / | ('la ^ŋ g ^w [^]) | 'lizard' |
| /m ^ɔ ^ŋ g ^w ^ɔ r/ | ('m ^ɔ ^ŋ g ^w ^ɔ r) | 'crocodile' |
| /ta ^ŋ g ^w [^] / | ('t ^h a ^ŋ g ^w [^]) | 'take away' |

/ⁿd/ (ⁿt^h) voiceless prenasalized aspirated alveolar stop occurs only word finally.

| | | |
|---------------------|------------------------------------|--------------|
| /wa ⁿ t/ | ('wa ⁿ t ^h) | 'snake type' |
|---------------------|------------------------------------|--------------|

(ⁿd) voiced prenasalized alveolar stop occurs word initially and medially.

| | | |
|---|--|---------------------|
| / ⁿ d [±] w/ | (' ⁿ duw) | 'meet together' |
| / ⁿ d [±] s/ | (' ⁿ d [±] s) | 'go about doing' |
| / ^m ba ⁿ d [±] / | (' ^m ba ⁿ d [±]) | 'wipe with a cloth' |

/p/ (^pw) voiceless labialized bilabial fricative occurs only in free fluctuation when con-

tiguous to /ɔ̃/.

/pɔ̃r̃/ ('p^wɔ̃r̃/'pɔ̃r̃) 'pig'

/pɔ̃tɪtɪ/ ('p^wɔ̃tɪtɪ/ 'get'

'pɔ̃tɪtɪ)

/tɔ̃p/ ('t^hɔ̃p^w/'t^hɔ̃p) 'grass'

- (p) voiceless bilabial fricative occurs word initially, medially, and finally.

/pʌr̃ɪy/ ('pʌr̃ɪy) 'paddle'

/pʌyp/ ('peyp) 'yam type'

/pa/ ('pa) 'stone'

/yapʌr̃/ ('yapʌr̃) 'bad'

/r̃ʌwpʌ/ ('r̃ʌwpʌ) 'sago leaves'

/tɔ̃patɪ/ (t^hɔ̃'patɪ) 'to buy'

/pʌyp/ ('peyp) 'yam type'

/kʌp/ ('k^hʌp) 'string'

/aɾ̃ɪp/ ('aɾ̃ɪp) 'machete'

- /h/ (h) voiceless glottal fricative occurs word initially and medially.

/ha/ (ha) 'father'

/hanʌy n/ (hanʌyʌn) 'older person'

/habɔ̃/ ('habɔ̃) 'think'

/yahʌw/ ('yahow) 'no'

- /s/ (s) voiceless alveolar grooved fricative occurs word initially, medially, and finally.

/sam/ ('sam) 'died'

/sɪtɪ/ ('sɪtɪ) 'will sit'

/sʌl/ ('sʌl) 'ground'

/k^wasɪ/ ('k^wasɪ) 'bat type'

/r̃astɪ/ ('r̃astɪ) 'will put'

/masʌ/ ('masʌ) 'kinship term'

| | | |
|---------|----------|----------|
| /pʌs/ | ('pɛʷs) | 'two' |
| /las/ | ('las) | 'navel' |
| /nɪsɪs/ | ('nɪsɪs) | 'we two' |

/m/ (m^w) voiced labialized bilabial nasal occurs only in free fluctuation with (m) contiguous to /ɔ/.
 /mɔʀɪ/ ('m^wɔʀɪ/'mɔʀɪ) 'real'
 /mɔk^w/ ('m^wɔk^w/'mɔk^w) 'forehead'

(m) voiced bilabial nasal occurs word initially, medially, and finally.

| | | |
|-----------|------------------------|---------------|
| /matɪ/ | ('matɪ) | 'string bag' |
| /mɪ/ | ('mɛ^) | 'tree' |
| /ma/ | ('ma) | 'where' |
| /tamʌ/ | ('t ^h amʌ) | 'man' |
| /kamtɪ/ | ('k ^h amtɪ) | 'will sew' |
| /amʌwɔ/ | ('amowɔ) | 'mosquitoe' |
| /sam/ | ('sam) | 'died' |
| /lɪm/ | ('lɪm) | 'heaviness' |
| /lʌwanɪm/ | ('lowanɪm) | 'fish basket' |

/n/ (n) voiced alveolar nasal occurs word initially, medially, and finally.

| | | |
|----------|------------------------|----------------|
| /nan/ | ('nan) | 'kinship term' |
| /niy/ | ('niy) | 'louse' |
| /niʀɪn/ | ('niʀɪn) | 'you' |
| /nɪntɪ/ | ('nɪntɪ) | 'will make' |
| /tʌmnʌ/ | ('t ^h ʌmnʌ) | 'shoulder' |
| /mʌwnɪw/ | ('mownuw) | 'bird type' |
| /wan/ | ('wan) | 'ear' |
| /yʌn/ | ('yʌn) | 'child' |
| /wɪn/ | ('wun) | 'tree type' |

- /l/ (l) voiced alveolar lateral occurs word initially, medially, and finally.
- | | | |
|---|--|------------------|
| /las/ | ('las) | 'navel' |
| /l ^h y/ | ('ley) | 'plantable seed' |
| /l ^h wsɿ/ | ('lowsɿ) | 'tongs' |
| /p ^h wlɿ/ | ('powlɿ) | 'breeze' |
| /wa ^h g ^w ɿl ^h / | ('wa ^h g ^w ɿl ^h) | 'ankle' |
| /al ^h / | ('al ^h) | 'catfish' |
| /sɛl/ | ('sɛl) | 'ground' |
| /ak ^w ɿl/ | ('ak ^w ul) | 'home' |
| /yak ^h l/ | ('yak ^h l) | 'snake type' |
- /r̥/ (r̥) voiceless alveolar trill occurs word medially and finally (much more often finally) in free fluctuation with (r̥).
- | | | |
|----------------------|--|-------------|
| /w ^h r̥ɿ/ | ('w ^h r̥ɿ/w ^h r̥ɿ) | 'tomorrow' |
| /p ^h r̥/ | ('p ^h r̥/'p ^h r̥) | 'pig' |
| /m ^h r̥/ | ('m ^h r̥/'m ^h r̥) | 'centipede' |
- (r̥) voiceless alveolar trill occurs in fluctuation with (r̥) in the environments described above.
- (^hr̥) voiced alveolar flap with vowel onset occurs utterance initial only.
- | | | |
|-------------------------------------|--|--------------|
| /r̥ ^h w/ | (' ^h r̥ ^h w) | 'Jew's harp' |
| /r̥ ^h wɿ/ | (' ^h r̥ ^h owɿ) | 'Black Palm' |
| /r̥ ^h g ^h ɿy/ | (' ^h r̥ ^h g ^h ɿy) | 'nose' |
- (r̥) voiced alveolar flap occurs medially and finally.
- | | | |
|--------------------------------------|--|----------|
| /p ^h r̥ɿy/ | ('p ^h ɛr̥ɿy) | 'paddle' |
| /yɿw ^h r̥ɿ/ | ('y ^h w ^h r̥ɿ) | 'later' |
| /m ^h ba ^h r̥w/ | ('m ^h ba ^h r̥ow) | 'play' |

| | | |
|------------------------|-------------------------|--------------|
| /kař/ | ('k ^h ař) | 'old person' |
| /n^ř/ | ('nɛř) | 'night' |
| /m>ŋg ^w iř/ | ('m>ŋg ^w uř) | 'crocodile' |

/y/ (y) voiced high close front unrounded non-syllabic vocoid occurs word initially, medially, and finally.

| | | |
|-----------------------------------|-----------------------|--------------------|
| /y^w/ | ('yow) | 'enough' |
| /y^y/ | ('yey) | 'kinship term' |
| /y [±] wř [±] / | ('yuwř\) | 'later' |
| /^wy [±] / | ('owy\) | 'kinship term' |
| /t^ya/ | (t ^h e'ya) | 'coconut' |
| /s [±] y^/ | ('siy^) | 'sat' |
| /t [±] y/ | ('t ^h iy) | 'bed' |
| /ŋgay/ | ('ŋgay) | 'to park' |
| /tay/ | ('t ^h ay) | 'stretch out hand' |

/w/ (w) voiced high close back rounded nonsyllabic vocoid occurs word initially, medially, and finally.

| | | |
|------------------------|-------------------------|---------------|
| /wan/ | ('wan) | 'ear' |
| /w [±] y/ | ('wiy) | 'grass skirt' |
| /w>řams [±] / | (w>'řams [±]) | 'tobacco' |
| /naw [±] y/ | ('nawiy) | 'mother' |
| /m [±] ws/ | ('muws) | 'grasshopper' |
| /nawa/ | ('nawa) | 'female' |
| /naw/ | ('naw) | 'a bow' |
| /t [±] w/ | ('t ^h uw) | 'torch' |
| /^wk [±] w/ | ('owkuw) | 'sugar cane' |

4.1.1 CONTRASTS OF CONSONANT PHONEMES

/p/ and /^mb/ contrast in identical and analogous environments.

| | | |
|-----------|-------------|-----------------|
| /p̥iy/ | ('p̥iy) | 'spear' |
| /ᵐbiy/ | ('ᵐbiy) | 'bark painting' |
| /p̥iyř/ | ('p̥iyř) | 'pus' |
| /ᵐbiyř/ | ('ᵐbiyř) | 'snake type' |
| /kʌp/ | ('kʰʌp) | 'string' |
| /ŋgʌᵐb/ | ('ŋgʌᵐpʰ) | 'mud' |
| /kapɔlaw/ | ('kʰapɔlaw) | 'short' |
| /kaᵐbi/ | ('kʰaᵐbɛ) | 'swamp grass' |

/p/ and /w/ contrast in identical and analogous environments.

| | | |
|---------|----------|---------------|
| /p̥iy/ | ('p̥iy) | 'spear' |
| /wiy/ | ('wiy) | 'grass skirt' |
| /ap̥iy/ | ('ap̥iy) | 'father' |
| /nawiy/ | ('nawiy) | 'mother' |

| | | |
|------|-------|----------|
| /ap/ | ('ap) | 'bird' |
| /ɔw/ | ('ɔw) | 'a grub' |

/t/ and /ᵐd/ contrast in identical and analogous environments.

| | | |
|----------|-----------|---------------------|
| /waᵐd/ | ('waᵐtʰ) | 'snake type' |
| /wat/ | ('watʰ) | 'rafters' |
| /t̥iw/ | ('tʰuw) | 'torch' |
| /ᵐdiw/ | ('ᵐduw) | 'meet together' |
| /ᵐbaᵐdi/ | ('ᵐbaᵐdi) | 'wipe with a cloth' |
| /mat̥i/ | ('mat̥i) | 'net bag' |

/t/ and /s/ contrast in identical environments.

| | | |
|------|--------|-------------------------|
| /sa/ | ('sa) | 'baste tissue of palms' |
| /ta/ | ('tʰa) | 'woman' |

| | | |
|---------------------|----------------------|-----------------|
| /mas [^] / | ('mas [^]) | 'kinship term' |
| /mat ⁱ / | ('mat ⁱ) | 'net bag' |
| /ŋ ^g as/ | ('ŋ ^g as) | 'little finger' |
| /ŋ ^g at/ | ('ŋ ^g at) | 'knuckles' |

/t/ and /l/ contrast in identical and analogous environments.

| | | |
|--|---|----------------|
| /tak [^] / | ('t ^h ak [^]) | 'hair' |
| /lak [^] / | ('lak [^]) | 'kinship term' |
| /ta ^ŋ g ^w [^] / | ('t ^h a ^ŋ g ^w [^]) | 'take away' |
| /la ^ŋ g ^w [^] / | ('la ^ŋ g ^w [^]) | 'lizard' |
| /t ⁱ tan [^] / | (t ^h ⁱ 'tan [^]) | 'to be' |
| /ŋ ^g ila ^ŋ g ^w / (ŋ ^g ⁱ 'la ^ŋ g ^w) | | 'snake type' |
| /kiwl/ | ('k ^h uwl) | 'underneath' |
| /kiwt/ | ('k ^h uwt ^h) | 'bird type' |

/s/ and /y/ contrast in identical and analogous environments.

| | | |
|--------------------------------------|---------------------------------------|--------------------------------|
| /sa/ | ('sa) | 'baste tissue of coconut palm' |
| /ya/ | ('ya) | 'to come' |
| /mas [^] / | ('mas [^]) | 'kinship term' |
| /may [^] may [^] / | ('may [^] may [^]) | 'tadpole' |
| /las/ | ('las) | 'navel' |
| /lay/ | ('lay) | 'to wrap' |

/k/ and /ŋ^g/ contrast in identical and analogous environments.

| | | |
|--------------------------------------|-------------------------------------|---------------|
| /ki ^ŋ isiy/ | ('k ^h ⁱ isiy) | 'insect type' |
| /ŋ ^g i ^ŋ isiy/ | ('ŋ ^g ⁱ isiy) | 'frog' |
| /ra ^ŋ giy/ | ('ra ^ŋ giy) | 'nose' |
| /akiy/ | ('akiy) | 'dagger' |

| | | |
|---------------------|-------------------------------------|-----------|
| /řa ^ŋ g/ | ('řa ^ŋ k ^h) | 'termite' |
| /tak/ | ('t ^h ak ^h) | 'chin' |

/^ŋg/ and /^ŋg^w/ contrast in identical and analogous environment.

| | | |
|--|--|-----------------|
| / ^ŋ gan/ | (' ^ŋ gan) | 'next to' |
| / ^ŋ g ^w an/ | (' ^ŋ g ^w an) | 'fog' |
| / ^ŋ gay/ | (' ^ŋ gay) | 'grease' |
| / ^ŋ g ^w ay/ | (' ^ŋ g ^w ay) | 'thigh' |
| /ta ^ŋ g [^] / | ('t ^h a ^ŋ g [^]) | 'canoe landing' |
| /ta ^ŋ g ^w [^] / | ('t ^h a ^ŋ g ^w [^]) | 'take away' |

/k/ and /k^w/ contrast in identical and analogous environment.

| | | |
|---------------------|------------------------|--------------|
| /kař/ | ('k ^h ař) | 'old person' |
| /k ^w ař/ | ('k ^w ař) | 'tree type' |
| /k ^h iy/ | ('k ^h iy) | 'drum' |
| /k ^w iy/ | ('k ^w iy) | 'cut meat' |

/m/ and /^mb/ contrast in identical and analogous environment.

| | | |
|-----------------------------------|---|-----------------|
| /mas [^] / | ('mas [^]) | 'kinship term' |
| / ^m bas [^] / | (' ^m bas [^]) | 'fruit type' |
| /ř ^h ma/ | (ř ^h 'ma) | 'to strengthen' |
| /ř ^h ^m ba/ | (ř ^h (' ^m ba) | 'flea' |
| /y ^h m/ | ('y ^h (m)) | 'went' |
| /k ^h ^m b/ | ('k ^h ^m p ^h) | 'bat type' |

/n/ and (nd) contrast in identical and analogous environment.

| | | |
|--|---|---------------|
| /wan/ | ('wan) | 'ear' |
| /wa ⁿ d/ | ('wa ⁿ t ^h) | 'snake type' |
| /man [^] / | ('man [^]) | 'can not' |
| /k ^w řa ⁿ d [^] / | (k ^w řa ⁿ d [^]) | 'lizard type' |

| | | |
|---------------------|----------------------|------------------|
| /nɪs/ | ('nɪs) | 'we two' |
| / ⁿ dɪs/ | (' ⁿ dɪs) | 'go about doing' |

/l/ and /ⁿd/ contrast in identical and analogous environment.

| | | |
|--|---|------------------|
| /lɪs/ | ('lɪs) | 'make fire' |
| / ⁿ dɪs/ | (' ⁿ dɪs) | 'go about doing' |
| /mal/ | ('mal) | 'sharp' |
| /wa ⁿ d/ | ('wa ⁿ t ^h) | 'snake type' |
| /al [^] / | ('al [^]) | 'catfish' |
| /k ^w ɔ̌ra ⁿ d [^] / | (k ^w ɔ̌'ra ⁿ d [^]) | 'lizard type' |

/ř/ and /ⁿd/ contrast in identical and analogous environment.

| | | |
|--|---|---------------|
| /řaŋg [^] ř ^m b [^] / | ('ɔ̌řaŋg [^] ř ^m b [^]) | 'preventing' |
| / ⁿ daŋg [^] ř ^m b [^] / | (' ⁿ daŋg [^] ř ^m b [^]) | 'profit' |
| /wař [^] / | ('wař [^]) | 'fly type' |
| /k ^w ɔ̌ra ⁿ d [^] / | (k ^w ɔ̌'ra ⁿ d [^]) | 'lizard type' |
| /kař/ | ('k ^h ař) | 'old person' |
| /wa ⁿ d/ | ('wa ⁿ t ^h) | 'snake type' |

/ř/ and /l/ contrast in identical and analogous environment.

| | | |
|----------------------|--------------------------------------|-----------|
| /las/ | ('las) | 'navel' |
| /řas/ | ('ɔ̌řas) | 'to put' |
| /la ⁿ g/ | ('la ⁿ k ^h) | 'thorn' |
| /řa ⁿ g/ | ('ɔ̌řa ⁿ k ^h) | 'termite' |
| /tawlɪ/ | ('t ^h awl [^]) | 'tongue' |
| /tawř [^] / | ('t ^h awř [^]) | 'male' |
| /n [^] l/ | ('nɛl) | 'cloud' |
| /n [^] ř/ | ('nɛř) | 'night' |

/ř/ and /t/ contrast in identical and analogous environment.

| | | |
|-----------------------------------|------------------------------------|----------------|
| /ř ^h aw ^h / | (' ^h row ^h) | 'Black Palm' |
| /t ^h aw ^h / | ('t ^h ow ^h) | 'foot' |
| /nař ^h / | ('nař ^h) | 'kinship term' |
| /nat ^h / | ('nat ^h) | 'kinship term' |
| /nař/ | ('nař) | 'tree type' |
| /nat/ | ('nε ^h th) | 'house type' |

/h/ and /t/ contrast in identical and analogous environment.

| | | |
|----------------------|----------------------|-------------|
| /ha/ | ('ha) | 'father' |
| /ta/ | ('t ^h a) | 'woman' |
| /yah ^h w/ | ('yahow) | 'no' |
| /yat ^h / | ('yat ^h) | 'will come' |

/h/ and /k/ contrast in analogous environment.

| | | |
|----------------------|-------------------------------------|-------------|
| /hay ^h ř/ | ('hayεř) | 'good' |
| /kayt ^h / | ('k ^h ayt ^h) | 'will pull' |
| /yah ^h w/ | ('yahow) | 'no' |
| /akiy/ | ('akiy) | 'dagger' |

/h/ and /^hg/ contrast in analogous environment.

| | | |
|-------------------------------------|-------------------------|---------------------------|
| /han ^h y ^h n/ | ('han ^h yεn) | 'older person' |
| / ^h gan/ | (' ^h gan) | 'next to' |
| /yah ^h w/ | ('yahow) | 'no' |
| /ya ^h ga/ | ('ya ^h ga) | 'burning end of firewood' |

/h/ and /p/ contrast in identical and analogous environment.

| | | |
|------------------------|---------------------------------------|-------------|
| /ha/ | ('ha) | 'father' |
| /pa/ | (pa) | 'stone' |
| /yah ^h w/ | ('yahow) | 'no' |
| /kap ^h siy/ | ('k ^h ap ^h siy) | 'fish type' |

4.2 DESCRIPTION OF VOWELS

/ɪ/ voiced high close central unrounded vocoid has allophones which range from high close front (i), and high close central (ɪ) to high close back (u); from high open front (ʌ), and mid open front back (ɛ') to high open back (ʊ). There is a tendency to fluctuation between allophones, but they never contrast.

(i) tends to occur preceeding /y/.

| | | |
|-----------|-----------------------|----------|
| /tɪy/ | ('t ^h ɪy) | 'bed' |
| /kɪy/ | ('k ^h ɪy) | 'drum' |
| /wiɪyakʌ/ | (wi'yakʌ) | 'salt' |
| /kɪyɪ/ | ('k ^h ɪyʌ) | 'before' |

(ʌ) tends to occur following /y/; following /r/ and /l/ word finally, and between bilabials and alveolars.

| | | |
|-----------------------|------------------------|---------------|
| /wiɪɪ/ | ('wiʌ) | 'hornet type' |
| /yɪm/ | ('yʌm) | 'went' |
| /aɪɪrɪ/ | ('aɪɪrʌ) | 'my' |
| /wɪrɪ/ | ('wuɪrʌ) | 'one' |
| /m ^b ɪtmi/ | ('m ^b ɪtmi) | 'face' |

(u) tends to occur preceeding /w/.

| | | |
|----------|----------------------|---------------|
| /tɪw/ | ('t ^h uw) | 'torch' |
| /mɪws/ | ('muws) | 'grasshopper' |
| /nɪwkɪw/ | ('nuwkuw) | 'May fly' |
| /ɪwt/ | ('uwt ^h) | 'over there' |

(ʊ) tends to occur following /w/ or preceeding labialized consonants.

| | | |
|--------------------------------------|--|-------------|
| /wɪs/ | ('wʊs) | 'skin' |
| /wɪn/ | ('wʊn) | 'tree type' |
| /k ^w ɪntɪ/ | ('k ^w ʊntɪ) | 'boil soup' |
| /m ^b ɪwtk ^w ʊ/ | ('m ^b bowtk ^w ʊ) | 'to kill' |

(ɛ') tends to occur word finally following or between bilabials.

| | | |
|---------------------|----------------------|--------|
| / ^m bɛ̃/ | (' ^m bɛ') | 'what' |
| /mɛ̃/ | ('mɛ') | 'tree' |

(ĩ) tends to occur in all other environments.

| | | |
|--------------------------|---|------------------|
| /kɪ̃tɪ̃tɪ̃/ | ('k ^h ɪ̃tɪ̃tɪ̃) | 'will lock door' |
| /nɪ̃rɪ̃rɪ̃/ | ('nɪ̃rɪ̃rɪ̃) | 'yours' |
| /ʌlɪ̃ ^m bɪ̃w/ | ('ɛlɪ̃ ^m buw) | 'cane type' |
| /kɪ̃b/ | ('k ^h ɪ̃ ^m p ^h) | 'bat type' |

There is restricted free variation of the (u) allophone of /ɪ̃/ with the (o) allophone of /ʌ/. This occurs only in certain words.

| | | |
|--|---|-------------|
| /kɪ̃lɪ̃w/kɪ̃lʌw/ | ('k ^h ɪ̃luw/'k ^h ɪ̃low) | 'road' |
| /a ^ŋ gɪ̃lɪ̃w/a ^ŋ gɪ̃lʌw/ | ('a ^ŋ gɪ̃luw/'a ^ŋ gɪ̃low) | 'house fly' |

/ʌ/ voiced mid open central unrounded vocoid has allophones which range from mid close front (e) to mid close back (o); from mid open front (ɛ) to mid open central (ʌ), to mid open central fronted (ʌ'), to mid open front lowered (ɛ'). There is a tendency to fluctuation between allophones but they do not contrast.

(e) tends to occur before /y/.

| | | |
|---------------------|----------------------|------------|
| / ^ŋ gɛy/ | (' ^ŋ gey) | 'cockatoo' |
| /ʌyʌ/ | ('eyʌ) | 'cooked' |
| /ʌys/ | ('eys) | 'four' |
| /amɛyʌ/ | ('ameyʌ) | 'ran' |

(ɛ) tends to occur contiguous to /l/ and /r̃/.

| | | |
|--------------------------|--------------------------|-------------|
| /ʌlɪ̃ ^m bɪ̃w/ | ('ɛlɪ̃ ^m buw) | 'cane type' |
| /ʌr̃ɪ̃wɪ̃w/ | ('ɛr̃ɪ̃wuw) | 'door' |
| /pɛl/ | ('pɛl) | 'tree type' |
| /aylɛn/ | ('aylɛn) | 'slowly' |

| | | |
|--------------------|---------------------|----------|
| /s _Λ l/ | ('s _ε l) | 'ground' |
| /n _Λ l/ | ('n _ε l) | 'cloud' |

(o) tends to occur preceeding /w/.

| | | |
|--|---|--------------|
| / ^Λ wk _i w/ | ('owkuw) | 'sugar cane' |
| / ^Λ w/ | ('ow) | 'pot' |
| /t ^h _Λ w ^m _b / | ('t ^h _{ow} ^m _p ^h) | 'cassowary' |
| /t ^h _Λ w _Λ / | ('t ^h _{ow} _Λ) | 'foot' |

(^Λ) tends to occur in fluctuation with (ε) in the environments named above.

| | | |
|--------------------|--|-------------|
| /p _Λ l/ | ('p _ε l/'p ^Λ _Λ l) | 'tree type' |
| /n _Λ l/ | ('n _ε l/'n ^Λ _Λ l) | 'cloud' |
| /s _Λ l/ | ('s _ε l/'s ^Λ _Λ l) | 'ground' |

(ε^v) tends to occur preceeding /p/, /t/, and /s/ in closed syllables.

| | | |
|--------------------|--|--------------------|
| /p _Λ s/ | ('p _ε ^v s) | 'two' |
| /n _Λ p/ | ('n _ε ^v p) | 'blood' |
| /n _Λ t/ | ('n _ε ^v t ^h) | 'house type' |
| /m _Λ t/ | ('m _ε ^v t ^h) | 'hear, understand' |

(^Λ) tends to occur in all other environments.

| | | |
|---|--|------------------|
| /k _Λ m/ | ('k ^h _Λ m) | 'you all' |
| /k _Λ s/ | ('k ^h _Λ s) | 'mosquitoe type' |
| /a ⁿ _g _Λ / | ('a ⁿ _g _Λ) | 'rest' |
| /n _i n _y _Λ / | ('n _i n _y _Λ) | 'made' |

/ɔ/ voiced low close back rounded vocoid has allophones which range from low close back (ɔ) to voiced low open back rounded vocoid (ɔ̃) to low close front rounded (ö). There is a tendency to fluctuation between allophones but they never contrast.

(ɔ) tends to occur contiguous to labialization.

| | | |
|---|---|-----------|
| /kw _ɔ k _ɔ / | ('kw _ɔ k _ɔ) | 'chicken' |
| /ŋg _ɔ t _ɔ p _t i/ | ('ŋ ⁿ _g _ɔ t _ɔ p _t i) | 'today' |
| /ɔw/ | ('ɔw) | 'grub' |

(ɔ̃) tends to occur preceeding /y/.

| | | |
|----------------------|-----------------------|------------|
| /k ^w ɔ̃y/ | ('k ^w ɔ̃y) | 'yams' |
| /wɔ̃y/ | ('wɔ̃y) | 'yam type' |

(ɔ) tends to occur in all other environments.

| | | |
|--------|----------------------|------------|
| /sɔk/ | ('sɔk ^h) | 'dry' |
| /sɔpɾ/ | ('sɔpɾ) | 'snake' |
| /ᵐbɔ/ | ('ᵐbɔ) | 'not have' |

/a/ voiced low open front unrounded vocoid.

| | | |
|---------------------------------------|--|---------|
| /ɛk / | ('akə) | 'house' |
| /ap/ | ('ap) | 'bird' |
| /a ^ŋ gɾta ^ŋ gɾ/ | ('a ^ŋ gɾta ^ŋ gɾ) | 'hurry' |
| /sɪpa/ | (sɪ'pə) | 'seed' |
| /ta/ | ('ta) | 'woman' |

4.2.1 CONTRAST OF VOWEL PHONEMES

/ɪ/, /ʌ/, /ɔ/, and /a/ contrast in identical and analogous environments.

| | | |
|----------------------|-------------------------------------|-------------------|
| /ɪwk/ | ('uwk ^h) | 'over there' |
| /ʌk/ | ('ʌk ^h) | 'over there' |
| /ɔk/ | ('ɔk ^h) | 'water' |
| /ak/ | ('ak ^h) | 'then' |
| /řɪwɾ/ | ('ɔřuwɾ) | 'wind blows hard' |
| /řʌwɾ/ | ('ɔřowɾ) | 'Black Palm type' |
| /řɔw/ | ('ɔřɔw) | 'Jew's harp' |
| /řaw/ | ('ɔřaw) | 'piece of wood' |
| /mɪ/ | ('mɛ) | 'tree' |
| /mʌw/ | ('mow) | 'rain' |
| /mɔk ^w ɾ/ | ('mɔk ^w ɾ) | 'forehead' |
| /ma/ | ('ma) | 'where' |
| /tɪ ^m bɾ/ | ('t ^h ɪ ^m bɾ) | 'drawing water' |
| /tʌ ^m bɾ/ | ('t ^h ʌ ^m bɾ) | 'calling' |
| /ta ^m bɾ/ | ('t ^h a ^m bɾ) | 'biting' |
| /tɔ ^m bɾ/ | ('t ^h ɔ ^m bɾ) | 'meaning' |

| | | |
|-----------|------------|------------|
| /wǝřǝ/ | ('wuřǝ) | 'one' |
| /wǝřǝ/ | ('wǝřǝ) | 'tomorrow' |
| /wařǝ/ | ('wařǝ) | 'fly type' |
| /wǝřamsǝ/ | (wǝ'ramsǝ) | 'tobacco' |

4.3 SUPRA-SEGMENTAL ITEMS

4.3.1 PHONEMIC STATUS OF TONE, STRESS, AND LENGTH

Tone and length are not phonemically pertinent.

Stress is predictable and, therefore, non-phonemic. The following rules apply to the placement of stress on the word level.

1. The first syllable of a word which contains /a/ is stressed.

2. When there is no syllable containing /a/ in a word, the first syllable of the word is stressed.

| | | |
|--------------------------|--|--------------|
| /am ^m ǝǝ/ | ('am ^m ǝǝ) | 'running' |
| /tǝwkna ^m ǝǝ/ | ('t ^h owk'na ^m ǝǝ) | 'sleeping' |
| /sǝǝǝ/ | (sǝ'ǝǝ) | 'seed' |
| /wǝřamsǝ/ | (wǝ'ramsǝ) | 'tobacco' |
| /tǝtǝtǝ/ | ('t ^h ǝtǝtǝ) | 'will stand' |
| /lǝwsǝ/ | ('lowsǝ) | 'tongs' |

4.3.2 INTONATION

Two contrastive intonation patterns have been observed: tentative pause, and final pause. Tentative pause is rising and unrelaxed and may be symbolized by /,/. Final pause is falling and relaxed and may be symbolized by /./.

| | |
|--|---|
| /an awos atǝ./ | 'I will eat food.' |
| /an awos atǝ, an ak yǝtǝ./ | 'When I eat then I will go.' |
| /an yǝřǝ yǝm./ | 'I went yesterday.' |
| /an yǝřǝ yǝm, ^ŋ g ^w ǝptǝ sǝnǝ yawǝ./ | 'I went yesterday and came back today.' |

5 NON-CONTRASTIVE FEATURES

The following non-phonemic transition between consonant clusters occurs across syllable boundaries.

5.1 No transition is found between consonant clusters as follows:

a) between /w/ or /y/ plus anything

| | | |
|--------------------------------------|---------------------------------------|--------------|
| / ^m bɪy ^m bɪy/ | (' ^m bɪy ^m bɪy) | 'to tighten' |
| /ʌys/ | ('eys) | 'four' |
| /tawli/ | ('t ^h awli) | 'tongue' |

b) between anything plus /w/. /y/, and /ř/

| | | |
|-----------|------------|---------------|
| /amwiy/ | ('amwiy) | 'shrimp trap' |
| /nɪnyʌ/ | ('nɪnyʌ) | 'made' |
| /nařɪmřɪ/ | ('nařɪmřɪ) | 'ours plural' |

c) between nasal plus /s/, /p/, nasal, and stop

| | | |
|-------------------------|--------------------------|---------------|
| /kamtɪ/ | ('k ^h amtɪ) | 'will sew' |
| /yʌmnʌ/ | ('yʌmnʌ) | 'tree type' |
| /mɔmsɪ/ | ('mɔmsɪ) | 'snake type' |
| /k ^w anpɪtɪ/ | ('k ^w anpɪtɪ) | 'portion out' |

d) between voiceless stops plus nasal

| | | |
|-----------------------|------------------------|--------|
| / ^m bɪtmɪ/ | (' ^m bɪtmɪ) | 'face' |
|-----------------------|------------------------|--------|

e) between /s/ or /l/ plus anything except pre-nasalized stops

| | | |
|----------|-------------------------|---------------|
| /kɪwlkɪ/ | ('k ^h uwlkɪ) | 'underneath' |
| /wɪswař/ | ('wɪswař) | 'Sepik River' |
| /naswɔy/ | ('naswey) | 'disagree' |

5.2 There is an (ə) transition between /ř/ and any stop.

| | | |
|------------|--------------------------------------|-------------|
| /kʌřtɪ/ | ('k ^h ʌř ^ə tɪ) | 'to scrape' |
| /ŋgʌřməyʌ/ | ('ŋgʌř ^ə meyʌ) | 'broken' |

5.3 There is an (m) transition between any stop, /l/, /r/, or /s/ plus a prenasalized bilabial stop.

| | | |
|--|---|------------------|
| / $\text{b}^{\text{m}}_{\text{A}}\text{r}^{\text{m}}\text{b}_{\text{A}}\text{/}$ | ($\text{'b}^{\text{m}}_{\text{A}}\text{r}^{\text{m}}\text{b}_{\text{A}}$) | 'planting yams' |
| / $\text{b}^{\text{m}}_{\text{A}}\text{s}^{\text{m}}\text{b}_{\text{A}}\text{/}$ | ($\text{'b}^{\text{m}}_{\text{A}}\text{s}^{\text{m}}\text{b}_{\text{A}}$) | 'laying a floor' |
| / $\text{k}^{\text{h}}\text{i}^{\text{r}}\text{A}^{\text{m}}\text{w}^{\text{m}}\text{k}^{\text{m}}\text{b}_{\text{A}}\text{/}$ | ($\text{'k}^{\text{h}}\text{i}^{\text{r}}\text{owk}^{\text{m}}\text{b}_{\text{A}}$) | 'cleaning up' |

5.4 There is an ($\text{h} \sim \text{ə}$) transition in the following environments:

a) between /p/ plus /l/ and voiceless stop

| | | |
|---|--|---------|
| / $\text{g}^{\text{h}}\text{p}^{\text{h}}\text{t}_{\text{A}}\text{/}$ | ($\text{'g}^{\text{h}}\text{p}^{\text{h}}\text{t}_{\text{A}}$) | 'today' |
| / $\text{sap}^{\text{h}}\text{l}_{\text{A}}\text{/}$ | ($\text{'sap}^{\text{h}}\text{l}_{\text{A}}$) | 'hole' |

d) between voiceless stops plus voiceless stops, nasals and /l/.

| | | |
|---|--|------------|
| / $\text{likt}_{\text{A}}\text{/}$ | ($\text{'likt}^{\text{h}}\text{t}_{\text{A}}$) | 'bring up' |
| / $\text{latlan}_{\text{A}}\text{/}$ | ($\text{'lat}^{\text{h}}\text{lan}_{\text{A}}$) | 'five' |
| / $\text{tAwkna}^{\text{m}}\text{b}_{\text{A}}\text{/}$ | ($\text{t}^{\text{h}}\text{owk}^{\text{h}}\text{'na}^{\text{m}}\text{b}_{\text{A}}$) | 'sleeping' |

c) between prenasalized stops and /p/

| | | |
|---|---|------------|
| / $\text{p}^{\text{h}}\text{g}^{\text{h}}\text{p}^{\text{h}}\text{g}\text{/}$ | ($\text{'p}^{\text{h}}\text{g}^{\text{h}}\text{p}^{\text{h}}\text{k}^{\text{h}}$) | 'bat type' |
|---|---|------------|

6 DISTRIBUTION

6.1 GENERAL

The syllable is the unit chosen as the basis for the discussion of distribution. A syllable consists of only one vowel with optional onset or terminus.

The following six CV patterns occur in the syllables:

| | | | |
|----|--|---|-----------|
| V | /a/ | ('a) | 'to eat' |
| | / $\text{ɔ}^{\text{m}}\text{ɔ}^{\text{m}}\text{t}_{\text{A}}\text{k}_{\text{A}}\text{/}$ | ($\text{'ɔ}^{\text{m}}\text{ɔ}^{\text{m}}\text{t}_{\text{A}}\text{k}_{\text{A}}$) | 'truly' |
| CV | /ma/ | ('ma) | 'where' |
| | /ha/ | ('ha) | 'father' |
| | /mat t_{A} / | ('ma.t_{A}) | 'net bag' |

| | | | |
|------|-----------|-----------------------|-----------------|
| VC | /ʌy/ | ('ey) | 'lime' |
| | /ʌw/ | ('ow) | 'pot' |
| | /ɔw/ | ('ɔw) | 'grub' |
| | /ɔm/ | ('ɔm) | 'flesh' |
| CVC | /nan/ | ('nan) | 'kinship term' |
| | /lam/ | ('lam) | 'saw' |
| | /ɾastɪ/ | ('ɔɾas.tɪ) | 'will put' |
| CVCC | /nʌys/ | ('neys) | 'mucas' |
| | /mɪwk/ | ('muwk ^h) | 'breast' |
| | /pʌyk/ | ('peyk ^h) | 'river' |
| VCC | /ʌys/ | ('eys) | 'four' |
| | /ɪwt/ | ('uwt ^h) | 'over there' |
| | /ʌyp/ | ('eyp) | 'basket type' |
| | /ɪys ɪys/ | ('iys 'iys) | 'calling a dog' |

6.2 SPECIFIC

6.2.1 DISTRIBUTION OF PHONEME INTO THE SYLLABLE

The following classes of phonemes have been set up on the basis of their occurrence within the syllable:

Class A - Vowels. Vowels occur filling the nucleus of the syllable. Vowels have been divided into sub-classes on the basis of distribution.

Subclass 1 - All vowels comprise this subclass and occur in the nucleus of CV and CVC syllables.

Subclass 2 - All vowels except /ɪ/ comprise this subclass and occur in the nucleus of VC syllables.

Subclass 3 - /ɪ/ and /ʌ/ comprise this subclass and occur in the nucleus of VCC and CVCC syllables.

Subclass 4 - /ɔ/ and /a/ comprise this subclass and occur in the nucleus of V syllable.

Class B - Consonants. Consonants may occur filling either the onset or terminus of the syllable and are

divided into subclasses on the basis of distribution.

Subclass 1 - All consonants comprise this subclass and occur in syllable initial C slot.

Subclass 2 - occurs filling the final C slot of the syllable terminus and consist of all consonants except /h, k^w, and ŋ^w/.

Subclass 3 - occurs filling the pre-final C slot of the syllable terminus and consists of /y/ and /w/. /w/ in this slot has been observed preceeding /k, l, s, n, ʃ, m, and t/. /y/ has been observed preceeding /l, t, s, ʃ, p, and k/.

6.2.2 Consonant clusters across syllable boundaries.

There seems to be no particular pattern as to the way consonants can cluster across syllable boundaries. The following chart shows which clusters of two have been observed thus far. The phoneme /h/ never occurs in a cluster and /d/ never occurs as the first phoneme of a cluster. /y/ and /w/ can occur as the first consonant of a cluster with almost every other consonant phoneme. When clusters of three consonants occur, /y/ and /w/ are always one of the consonants. The following clusters of three have been observed: ykt, wlk, ysk, wtk, ysř, ykrř, ypř.

6.2.3 Distribution of the syllable into the phonemic word, a word being a meaningful unit which may occur in isolation.

Class A - may occur only word initially and singly as a phonemic word. There are four members of this class: V, VC, CVCC, VCC.

Class B - may occur word initially, medially, finally and singly as a phonemic word. There are two members of this class: CV, and CVC.

7. ORTHOGRAPHY

7.1 SUGGESTED ORTHOGRAPHY

| <u>Phoneme</u> | <u>Allophones</u> | <u>Orthographical Symbol</u> |
|---------------------------------|---|------------------------------|
| /t/ | (t), (t ^h) | t |
| /k/ | (k), (k ^h) | k |
| / ^m b/ | (^m b, ^m p ^h , ^m b ^w) | b |
| / ⁿ d/ | (ⁿ d), (ⁿ t ^h) | d |
| / ^ŋ g/ | (^ŋ g), (^ŋ k ^h) | g |
| /k ^w / | | kw |
| / ^ŋ g ^w / | | g ^w |
| /p/ | | p |
| /s/ | | s |
| /h/ | | h |
| /m/ | (m), (m ^w) | m |
| /n/ | | n |
| /l/ | | l |
| /r̃/ | (r̃, r̃, r̃, °r̃) | r |
| /w/ | | w |
| /y/ | | y |
| /i̇/ | (i, ɿ, i̇, ε>) | i |
| | (u, ʊ) | u |
| /ʌ/ | (e, ʌ, ε, ε ^v , ʌ ^z) | e |
| | (o) | o |
| /ɔ/ | (ɔ, ɒ, ɔ̃) | o |
| /a/ | (a) | a |

7.2 SAMPLE TEXT

ŋgɔ̌rɔ̌^m bakɪnɪ wamɪnkɪnɪ

řɪm k^hiyɔ̌ ŋgɔ̌rɔ̌^mba řɪm t^hɔ̌mapiy ^mbowkrá na
 rim kiyi goroba rim tomapiy bowkra na
 they before Goroba they beak big and

wamɪn řɪm t^hɔ̌mapiy eysɔ̌. řɪm ɔ̌p t^hɪm nɪm,
 wamin rim tomapiy eyso. rim op timenim,
 hornbill they beak small. They thus were,

na ŋgɔ̌rɔ̌^mba řɪm ʌt^h ap eysɔ̌. na wamɪn
 na goroba rim et ap eyso. na wamin
 and kingfisher they there bird small. And Hornbill

řɪm ap ^mbowkrá. na řɪm ha^mɔ̌laweyɪm,
 rim ap bowkra. na rim habolaweyim,
 they bird big. and they thought in vain,

na ŋgɔ̌rɔ̌^mba řɪmni wamɪn řɪm wɔ̌m. na
 na goroba rimni Wamin rim wom. na
 and Kingfisher them Hornbill they said. And

řɪm ɔ̌k^h wař wiyɪm. na řɪm ʌk^h warɪn
 rim ok war wiyim. na rim ek warin
 they water down washed. And they there go-down

wɔ̌n k^wɔ̌řʌtanʌ eymiy na řɪm ʌtʌk^h
 won kworetane eymiy na rim etek
 ironwood crossed place and they there

ɔ̌k^h ʌtʌk^h wařɪn wiyɪm. na k^hiyɔ̌ wamɪn
 ok etek warin wiyim. na kiyi wamin
 water there go-down washed. And before Hornbill

| | | | | | | |
|------|-------------------------|-------|--------|-------|-----|-------------------------|
| řim | ŋgɔ̌rɔ̌ ^m ba | řimni | yɔ̌puw | tɪm. | na | ŋgɔ̌rɔ̌ ^m ba |
| rim | goroba | rimni | yopuw | tim. | na | goroba |
| they | Kingfisher | them | trick | were. | And | Kingfisher |

| | | | | | | |
|------|--------------------|-----------------------|-----|----------|------|--------------------|
| řim | ^m bařki | tɪm^ ⁿ ɪm, | na | wamɪn | ^t^m | k ^h iy. |
| rim | barkī | timenim, | na | wamin | etem | kiyi |
| they | shore-at | were, | and | Hornbill | they | before |

| | | | | | |
|------------|----------|------|--------------------|---------|----------|
| warim. | wamɪn | řim | k ^h iy. | warɪn | wiyɪn |
| warim. | wamin | rim | kiyi | warin | wiyn |
| went-down. | Hornbill | they | before | go-down | wash-and |

| | | | | | |
|------|-------------------|-----------|-------|------------------------|-------------------------|
| řim | way^ ⁿ | řimkɪni | sɪni | way^ ^m bɪm. | ŋgɔ̌rɔ̌ ^m ba |
| rim | wayen | rimkini | sini | wayebim. | goroba |
| they | come-up | with-them | again | came up | Kingfisher |

| | | | | | |
|-----------|-----------------------|-----|----------|------|-------------------|
| řimkɪni | war ^m bɪm, | na | wamɪn | řim | way^ ⁿ |
| rimkini | warbim, | na | wamin | rim | wayen |
| with-them | went-down, | and | Hornbill | they | come-up |

| | | | | |
|-------------------------|--------|---------------------------|----------|------------------------|
| ŋgɔ̌rɔ̌ ^m ba | ^t^mrɪ | t ^h ɔ̌mapiykr̥ | pɔ̌tɪn | t ^h eyktɪm. |
| goroba | etemri | tomapiyker | potin | teyktim. |
| Kingfisher | their | beak | took-and | fastened. |

Free Translation:

Once upon a time the Kingfisher had a big beak and the Hornbill had a small beak. They were like that and the Kingfisher was a small bird. The Hornbill was a big bird. They thought in vain and the Hornbills said to the Kingfishers. They went down to wash. They went down to the place where the ironwood tree was across the water and they went down and washed there. Before

the Hornbills tricked the Kingfishers. The Kingfishers stayed on the shore and the Hornbills went down first. The Hornbills went down first and washed and while they were coming up the Kingfishers went down. While the Kingfishers went down the Hornbills came up and took the Kingfishers' beaks and put them on.