On Takeo Dialects of Khmer: Phonology and Word List

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0. Introduction

It is generally admitted that the modern Khmer orthography reflects the phonological state of the former standard Khmer. Two sets of initial consonants are assumed from the present orthography; 'aghosa (voiceless)' and 'ghosa (voiced)'. On the other hand, a vowel nucleus is assumed to correspond to each vowel symbol in the orthography. Later, influenced by the contrast of initial consonants, each vowel nucleus split into two nuclei (some vowels split into more than two types due to the differences of some final consonants). Finally, because of the later loss of certain contrasts of the initial and some final consonants, these split-nuclei obtained the phonemic contrast.

Consequently, the modern Khmer orthography, in general, has two letters for a single initial stop, and one symbol for two vowel nuclei; e.g. in case of the standard Khmer, **ka** and **ga** for /k/, **ā** for [a:] and [eə]. Thus **kā** stands for [ka:], **gā** for [keə] respectively.

In addition to this articulatory differences of vowel nuclei, so-called 'phonation contrast', such as head register for 'aghosa', chest register for 'ghosa', has been observed since Henderson (1952),[1] However, compilers of recent Khmer dictionaries do not seem to agree as to whether they should regard this register contrast as a distinctive feature. According to the author's latest examination (in 1982–84), only few informants have retained such a suprasegmental contrast. Instead, a number of regional varieties in segmental differences, especially in vowel nuclei, are observed.[2]

As is often the case with language communities where political centralization has not been achieved, the standard Khmer (hereafter ST) is not prevailing in Cambodia. It follows that almost every individual has his own idiolect in this country. This paper deals with the data collected in 1984 in Japan

1) Henderson, Eugénie J. A. "The main features of Cambodian pronunciation" BSOAS 14, pp. 149–74, 1952.
2) For a survey of Khmer dialects, see Minegishi, Makoto "Modern Khmer Orthography and its Dialects", 'Gengo Kenkyu' No. 88, pp. 41–67, 1985.

from two informants, whose dialects we will call hereafter as TK 1 and TK 2.

place of birth	sex	age (in 1984)
TK 1: Khaet Takeo, Srok Treang, Khum Prei Sloek.	male	32
TK 2: Khaet Takeo, Srok Kaoh Ondaet, Khum Prei Khlaa.	female	19

The speaker of TK 1 lived in his birthplace for seventeen years and stayed in Phnom Penh for a year, then came to Japan. The speaker of TK 2 also lived in her birthplace for seventeen years and came to Japan by way of Thailand.

Takeo is one of the Cambodian Province (Khaet) located in about sixty-five kilometers south of Phnom Penh. TK 1, TK 2 and Phnom Penh dialect are apparently similar with regard to the fact that we can establish a set of consonant correspondences among them. Furthermore, the same historical change of */r/ into /ɦ/ and the successive development of the tonal contrast are observed in TK1 and Phnom Penh dialect. However as far as the vowel contrasts are concerned, there are striking similarities among TK 1, TK 2, and the northwestern Khmer dialects, such as the ones in Siem Reap and Bat Dambang, the cities which are located about 300 kilometers from Takeo.

The aim of this paper is to elaborate the author's description of Takeo phonological systems in order to show the similarities among these dialects. Since Khmer dialectology is still in its earliest stage, it would be helpful to present the word list together with the phonemic inventory. It should be noted that the English translations given in the word list are presented only for the convenience of the readers who are not acquainted with the Khmer transliteration developed and used by Huffman et al. (1978).[3]

1. Consonants

The phonemic inventory of initial consonants in TK 1 and TK 2 is the same as that in ST, except that /ɦ/ in TK 1 is not found in ST. The /ɦ/ in TK 1 corresponds to /r/ in ST. There is also /r/ in TK 1 which corresponds to /r/ in ST, but this phoneme can be regarded as a sophisticated pronunciation adopted from the prestigious standard language. Therefore it can be regarded as exceptional.

It should be noted that the /ɦ/ is accompanied by a rising-falling tone (/2-3-1/) which contrasts with a normal level tone (/3-3/). The development of the tonal contrast, though it has not yet reached to the stage of being 'phonemic' contrast, could be motivated by the historical change of */r/ into /ɦ/ in TK 1. In this respect, TK 1 appears to be related to the neighboring

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3) Huffman, F. E. and Proum, Im 'English-Khmer Dictionary' New Haven and London, 1978.

Phnom Penh dialect where, according to Sakamoto (1968),[4] three-tone system is observed.

As for final consonants in TK 1 and TK 2, k in the present-day ortho-graphy corresponds to either one of [c] [ʔ] and [k] according to its preceding vowel. The consonant [c] appears after /ii/, /ee/ and /ae/. The palataliza-tion of */k/ to /c/ is assumed from the orthography, which is due to the assimilation to the front vowels. Note that the palatalization is not exclusive phenomenon in TK 1 and TK 2, but occurred in many other Khmer dialects, including ST. As long as the author has examined so far, /k/ is palatalized into /c/ in the speech of all the subjects.

As is the same as in ST, the reduction of the elements in the first syllable (so-called minor syllable) is common in most of the bisyllabic words; *i.e.*, the loss of the initial, or final consonant, or the vowel in the first syllable.

Furthermore, the phonological changes of some initial consonant clusters occurred in TK 2. Notice that in the following examples, /s/ /c/ /k/, the first element of the cluster, in TK 2 corresponds to /c/ /s/ /t/ respectively in ST.

ST	TK 2
/cb/	/sb/
/cv/	/sv/
/cm/	/sm/
/cr/	/sr/
/cl/	/sl/
/cn/	/sn/
/ck/	/sk/
/sm/	/cm/
/sr/	/cr/
/sn/	/cn/
/sk/	/ck/
/sŋ/	/cŋ/
/tn/	/kn/

These data, as well as the present-day orthography, suggest that the consonant clusters in TK 2 are derived from the consonant clusters of the earlier stage which is assumed to have the same consonant clusters as ST. There are some words which were not subject to such changes. But these exceptions could be explained as the adoption of standard forms. The last correspondence has only one example in the collected data: ST [thnɔl] and TK 2 [khnɔl], where aspiration is not phonologically distinctive.

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2. Vowels

The vowel systems in TK 1 and TK 2 are slightly different from each other. However they share some significant characteristics which is common to some of the northwestern dialects. That is,[5]

1. Loss of the so-called register contrast.
2. Merger of the three front vowels, e_1, e_2, and ae_2 in the orthography.
3. Merger of the two middle long vowels, oe_2 and y_1 in the orthography.
4. Merger of the two back vowels, o_2 and u_1 in the orthography.

It is important to note here that these characteristics are not observed in the dialect of Phnom Penh, even though Phnom Penh is closer to the area where TK 1 and TK 2 are spoken than the northwestern areas of the country.

We tentatively assume that phonological contrast of vowels is as given below. Transliterations are also given in parentheses.

TK 1	TK 2
Long vowels	Long vowels
/ii ɨɨ uu /	/ii ɨɨ uu /
/ ee əə /	/ ee əə oo /
/ aa ɔɔ /	/ aa ɔɔ /
Long diphthongs	Long diphthongs
/iə ɨə uə /	/iə ɨə uə /
/ eə ae ou /	/ ae ou /
/ aə ɔɔ /	/ aə /
/ ao /	/ ao /
Short vowels	Short vowels
/i ɨ u /	/i ɨ u /
/ e ə o /	/ e ə o /
/ a ɔ /	/ a ɔ /
Short diphthongs	Short diphthongs
/ɛa wo /	/ wo /
/ ɔə /	/ /

TK 1	TK 2
Long vowels	Long vowels
/ii/ = (ī₂)	/ii/ = (ī₂)

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5) Hereafter, we will attach subscripts $_1$ and $_2$ to the vowel symbols in the orthography. The subscript $_1$ indicates that the vowel symbol co-occurs with the so-called 'aghosa' (voiceless) letters, and the subscript $_2$ with the 'ghosa' (voiced) letters. In case a vowel symbol always stands for a single vowel nucleus, no subscript is added to the vowel symbol.

/ee/ = (e$_1$; e$_2$; ae$_2$)
/ɨɨ/ = (ȳ$_2$)
/əə/ = (ȳ$_1$; oe$_2$)
/aa/ = (ã$_1$)
/uu/ = (ū$_2$)
/ɔɔ/ = (a$_1$)

Long diphthongs
/iə/ = (ia)
/eə/ = (ã$_2$)
/ɨə/ = (ẏa)
/ae/ = (ae$_1$)
/aə/ = (oe$_1$)
/ao/ = (o$_1$)
/uə/ = (ua)
/ou/ = (ū$_1$; o$_2$)
/oɔ/ = (a$_2$; ăr$_2$)

Short vowels
/i/ = (iḥ$_2$)
/e/ = (ic$_2$, ec$_2$, iñ$_2$, eñ$_2$; eḥ$_1$;
　　　aeḥ$_1$; eḥ$_2$, aeḥ$_2$; ai$_2$)
/ɨ/ = (ẏ$_2$, i$_2$)
/ə/ = (ī$_1$, ẏ$_1$, i$_1$; ic$_1$, ec$_1$, iñ$_1$,
　　　en$_1$; ūv$_1$; au$_2$)
/a/ = (â$_1$, ãṃṅ$_1$, aḥ$_1$, āṃ$_1$; ai$_1$,
　　　au$_1$)
/u/ = (u$_2$; aṃ$_2$, uṃ$_2$)
/o/ = (u$_1$; uṃ$_1$)
/ɔ/ = (á$_1$; aṃ$_1$)

Short diphthongs
/ɛa/ = â$_2$, ãṃṅ$_2$, aḥ$_2$)
/wo/ = (á$_2$, oḥ$_2$)
/ɔə/ = (â$_2$, āṃ$_2$)

/ee/ = (e$_1$; e$_2$; ae$_2$)
/ɨɨ/ = (ȳ$_2$)
/əə/ = (ȳ$_1$; oe$_2$)
/aa/ = (ã$_1$)
/uu/ = (ū$_2$)
/oo/ = (a$_2$)
/ɔɔ/ = (a$_1$)

Long diphthongs
/iə/ = (ã$_2$; ia)
/ɨə/ = (ăr$_2$; â$_2$; â$_2$, ãṃṅ$_2$, aḥ$_2$; ẏa)
/ae/ = (ae$_1$)
/aə/ = (oe$_1$)
/ao/ = (o$_1$)
/uə/ = (ua)
/ou/ = (ū$_1$; o$_2$)

Short vowels
/i/ = (iḥ$_2$)
/e/ = (ic$_2$, ec$_2$, iñ$_2$, eñ$_2$; eḥ$_1$, aeḥ$_1$;
　　　　　eḥ$_2$, aeḥ$_2$; ai$_2$)
/ɨ/ = (ẏ$_2$, i$_2$)
/ə/ = (ī$_1$; ẏ$_1$, i$_1$; ic$_1$, ec$_1$, iñ$_1$, eñ$_1$)
/a/ = (â$_1$, ãṃṅ$_1$, aḥ$_1$, āṃ$_1$; ai$_1$, au$_1$)
/u/ = (u$_2$, áp$_2$; aṃ$_2$, uṃ$_2$)
/o/ = (u$_1$; ūv$_1$; au$_2$; uṃ$_1$)
/ɔ/ = (á$_1$; aṃ$_1$)

Short diphthongs
/wo/ = (á$_2$)

It should be noted here that â$_2$ in TK 2 did not split according to its following consonant; while in ST, â$_2$ split into [ɛə] and [ɔə].　This is a unique characteristics of the TK 2 dialect.

3. Word list[6]

TRANSLITERATION	TK 1	TK 2	MEANING
1. a$_1$			
ka	[kɔ:]	[kɔ:]	neck
kra	[kɦɔ:]	[krɔ:]	poor
kraḷa	[kəlɔ:]	—	potter
ṭampa	[təbɔ:]	—	four
ta	[tɔ:]	[tɔ:]	to continue
thma	[thmɔ:]	[thmɔ:]	stone
panta	[pətɔ:]	[bɔntɔ:]	to continue
lqa	[ləʔɔ:]	[ləʔɔ:]	good
sa	[sɔ:]	[sɔ:]	white
par	[bɔ:]	[bɔ:]	to drive
sarasar	[səsɔ:]	[təsɔ:]	pillar
skar	[skɔ:]	[chkɔ:]	sugar
qaksar	[asɔ:]	[asɔ:]	letter
qaṅkar	[ŋkɔ:]	[ɔŋkɔ:]	husked rice
qar	[ɔ:]	[ʔɔ:]	glad
kak	[kɔ:ʔ]	[kɔ:ʔ]	to congeal
kracak	[kəcɔ:ʔ]	[kɔcɔ:ʔ]	nail
kqak	[kʔɔ:ʔ]	[kʔɔ:ʔ]	to cough
pak	[bɔ:ʔ]	[bɔ:ʔ]	to answer
sampak	[səbɔ:ʔ]	[sɔmbɔ:ʔ]	skin
kaṅ	[kɔ:ŋ]	[kɔ:ŋ]	wheel
khnaṅ	[khnɔ:ŋ]	[khnɔ:ŋ]	back
khyaṅ	[khcɔ:ŋ]	[khcɔ:ŋ]	shellfish
caṅ	[cɔ:ŋ]	[cɔ:ŋ]	to tie
chlaṅ	[chlɔ:ŋ]	[slɔ:ŋ]	to cross
ṭampaṅ	[təbɔ:ŋ]	[dɔmbɔ:ŋ]	stick
paṅ	[bɔ:ŋ]	[bɔ:ŋ]	elder brother
ṭap	[dɔ:p]	[dɔ:p]	bottle
tap	[tɔ:p]	[tɔ:p]	to answer
kraham	[kəhɔ:m]	[kəhɔ:m]	red
thay	[thɔ:i̯]	[thɔ:i̯]	to retreat

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6) An asterisk * in the word list indicates that the word form in TK 1 or TK 2 is an exception to the rules of phonological correspondences between the Takeo dialects, TK 1 and TK 2, and the former standard Khmer assumed from the present-day orthography.

TRANSLITERATION	TK 1	TK 2	MEANING
2.　**a₂**			
ga	[ko·ɔ]	–	dumb
ṅa	[ŋo·ɔ]	–	curved
janla	[cəlo·ɔ]	–	to threaten
ba	[po·ɔ]	[po:]	to carry on the hip
la	[lo·ɔ]	[lo:]	to try
gar	[ko·ɔ]	[ko:]	kapok
jhar	[cho·ɔ]	[cho:]	to stand up
phgar	[phko·ɔ]	[phko:]	thunder
bhar	[pho·ɔ]	[pho:]	to tell a lie
var	[ʋo·ɔ]	[ʋo:]	to spoil
sgar	[sko·ɔ]	[sko:]	drum
babak	[pəpoɔk]	[pəpo:k]	cloud
mak	[ma·o]	[mao]	to come
yak	*[jo·ɔ]	*[jo:]	to take
rak	*[ɦo·ɔ]	*[ro:]	to look for
ralak	[aloɔk]	[lɔlo:k]	wave
jralaṅ	[cəloɔŋ]	–	valley
baṅ	[poɔŋ]	[po:ŋ]	egg
raṅ	[ɦoɔŋ]	[ro:ŋ]	to support
grap	[kɦoɔp]	[kro:p]	to cover
bram	[pɦoɔm]	[pro:m]	to agree
sgam	[skoɔm]	[sko:m]	thin
ray	[ɦoɔi̯]	[ro:i̯]	a hundred
3.　**á₁**			
krakhʋák	[kəkhʋɔʔ]	[krɔkhʋɔʔ]	dirty
pák	[bɔʔ]	[bɔʔ]	to fan
sák	[sɔʔ]	[sɔʔ]	hair
qākrák	[a:krɔʔ]	[a:krɔʔ]	bad
cáṅ	[cɔŋ]	[cɔŋ]	to want
tráṅ	[tɦɔŋ]	[tɦɔŋ]	straight
tháṅ	[thɔŋ]	[thɔŋ]	bag
thláṅ	[thlɔŋ]	[thlɔŋ]	deaf
klás	[khlɔh]	–	parasol
rapás	[ləbɔh]	[rɔbɔh]	thing
qás	[ʔɔh]	[ʔɔh]	all
koḥ	[kɔh]	[kɔh]	island
canloḥ	[cənlɔh]	[cɔnlɔh]	interval

TRANSLITERATION	TK 1	TK 2	MEANING
ṭoḥ	[dɔh]	[dɔh]	breast
poḥ	[bɔh]	[bɔh]	to throw away
stoḥ	[sdɔh]	[sdɔh]	to spit
hát	[hɔt]	[hɔt]	exhausted
qán	[ʔɔn]	[ʔɔn]	to diminish
ṭáp	[dɔp]	[dɔp]	ten
sqáp	[sʔɔp]	[sʔɔp]	to hate
khyál	[kcɔl]	[kcɔl]	wind
thnál	[thnɔl]	[khnɔl]	street

4. á₂, oḥ₂

jañják	[ɲcwok]	[coɲcwok]	to suck
lák	[lwok]	[lwok]	to sell
khbás	[khpwoh]	[khpwoh]	high
bás	[pwoh]	[pwoh]	snake
rás	[rwoh]	[rwoh]	to live
jhmoḥ	[chmwoh]	[smoh]	name
jhloḥ	[chlwoh]	[sloh]	to quarrel
boḥ	[pwoh]	[pwoh]	stomach
rát	[rwot]	[rot]	to run
sambát	[səpwot]	[sɔmpot]	sarong
dán	[twon]	[ton]	soft
dhṅán	[thŋwon]	[thŋon]	heavy
prabandh	[pəpwon]	[prɔpon]	wife
randh	[ɦwon]	[ron]	hole

5. ăr₂

jăr	[coˑɔ]	[cɨˑa]	sap
ñăr	[ɲoˑɔ]	[ɲɨˑə]	to tremble
dambăr	[təmpoˑɔ]	[təmpɨˑə]	page
dharm	[thoˑɔ]	[thɨˑə]	Buddhist Law
barṇ	[poˑɔ]	[pɨˑə]	color
bibarṇ	[piʔpoˑɔ]	—	exhibition
bhjăr	—	[pcɨˑə]	to fix
rañăr	[aɲoˑɔ]	[aɲɨˑə]	to shiver
valli°	[voˑɔ]	[vɨˑə]	creeping plant

6. ā₁

caṅkā	[cəkaː]	[cəkaː]	jaw
phkā	[phkaː]	[phkaː]	flower

TRANSLITERATION	TK 1	TK 2	MEANING
snā	[snaː]	[cnaː]	bow
smā	[smaː]	[chmaː]	shoulder
srā	[sɦaː]	[craː]	alcohoric drink
kār	[kaː]	[kaː]	work
caṃkār	[cəmkaː]	[cəkaː]	field
samrāk	[sɔmraːʔ]	*[sɔmraʔ]	to rest
khāṅ	[khaːŋ]	[khaːŋ]	side
kradās	[kədaːh]	[krɔdaːh]	paper
khlāc	[khlaːc]	[khlaːc]	worried
paṅhāñ	[pəŋhaːɲ]	[bɔŋhaːɲ]	to show
pād	[baːt]	[baːt]	yes
sqāt	[sʔaːt]	[sʔaːt]	clean
qaṇtāt	[ndaːt]	[ɔndaːt]	tongue
crān	[cɦaːn]	*[cɦaːn]	to push
pān	[baːn]	[baːn]	to obtain
p″onmān	[pomaːn]	[pomaːn]	how much
slāp	[slaːp]	[slaːp]	wing
chṅāy	[chŋaːi̯]	[sŋaːi̯]	far
phkāy	[phkaːi̯]	[phkaːi̯]	star
kpāl	[kbaːl]	[kbaːl]	head
srāl	*[sɦɛəl]	[sraːl]	light weighted
ṭāv	[daːu̯]	[daːɯ̯]	sword
pāv	[baːu̯]	[baːɯ̯]	sack made of jute
qāv	[ʔaːu̯]	[ʔaːɯ̯]	clothes

7.　ā₂

jā	[ceˑə]	[ciˑə]	to be
raṅā	[ləŋeˑə]	[rəŋiˑə]	cold
lā	[leˑə]	[liˑə]	to leave
vā	[veˑə]	[viˑə]	he, it
dvār	[thveˑə]	[thviˑə]	door
vār	[veˑə]	[viˑə]	to crawl
bāky	[peəʔ]	[piəʔ]	word
bāṅ	[peəŋ]	[piəŋ]	jar
lāṅ	[leəŋ]	[liəŋ]	to wash
lṅāc	[ləŋeəc]	[ləŋiəc]	evening
dāñ	[teəɲ]	[tiəɲ]	to pull
jāti	[ceət]	[ciət]	taste
gmāṅ	[khmeən]	[khmiən]	not to be

TRANSLITERATION	TK 1	TK 2	MEANING
ghlān	[khleən]	[khliən]	hungry
mān	[meən]	[miən]	to have
sbān	[speən]	[spiən]	bridge
jamrāp	[cɔmɦeəp]	[cɔmriəp]	to inform
dāp	[teəp]	[tiəp]	low
rāp	[reəp]	[riəp]	level
sdāp	[steəp]	[stiəp]	to search for
jhām	[cheəm]	[chiəm]	blood
mrām	[məɦeəm]	[məriəm]	finger
dūlāy	[təleəi̯]	[təliəi̯]	wide
niyāy	*[njai̯]	*[njei̯]	to talk
yāy	[jeəi̯]	*[jai̯]	grandmother
vāy	*[wai̯]	*[wai̯]	to hit
vāl	[ʋeəl]	[ʋiəl]	plain

8. â₁, āṃṅ₁, aḥ₁, āṃ₁

khvâk	[khʋaʔ]	[khʋaʔ]	to lack
câk	[caʔ]	[caʔ]	to sting
ṭâk	[daʔ]	[daʔ]	to put on
prâk	[praʔ]	[praʔ]	silver
m″âk	[maʔ]	[maʔ]	friend
kamlāṃṅ	[kəmlaŋ]	[kɔmlaŋ]	power
khlāṃṅ	[khlaŋ]	[khlaŋ]	strong
chnāṃṅ	[chnaŋ]	[snaŋ]	pan
chpāṃṅ	[chbaŋ]	[sbaŋ]	to fight
qāṃṅ	[ʔaŋ]	[ʔaŋ]	to roast
krâs	[krah]	[krah]	thick
câs	[cah]	[cah]	old
ṭâs	[dah]	[dah]	to raise
thṅâs	*[thŋa:h]	[thŋah]	forehead
phlâs	[phlah]	[phlah]	to move
khlaḥ	[khlah]	[khlah]	some
sraḥ	[srah]	*[sɛah]	pond
kâc	[kac]	[kac]	to break
khsâc	[khsac]	[khsac]	sand
sâc	[sac]	[sac]	meat
khlâñ	[khlaɲ]	[khlaɲ]	fat
câñ	[caɲ]	[caɲ]	to lose
pâñ	[baɲ]	[baɲ]	to shoot

TRANSLITERATION	TK 1	TK 2	MEANING
saṃṇâñ	[səmnaɲ]	[sɔmnaɲ]	net
kât	[kat]	[kat]	to cut
pât	[bat]	[bat]	to disappear
satv	[sat]	[sat]	animal
kân	[kan]	[kan]	to hold
câp	[cap]	[cap]	to catch
prâp	[pɦɛap]	[prap]	to tell
samlâp	[səmlap]	[sɔmlap]	to kill
stâp	[sdap]	[sdap]	to listen
qăbd	[ʔap]	[ʔap]	fog
khāṃ	[kham]	[kham]	to bite
cāṃ	[cam]	[cam]	to remember
chnāṃ	[chnam]	[chnam]	year
ñ″āṃ	[ɲam]	[ɲam]	to eat
thnāṃ	[thnam]	[thnam]	medicine
prāṃ	[pɦɛam]	[pram]	five
stāṃ	[sdam]	[sdam]	right
kap″âl	[kəpal]	[kəpal]	ship

9.　â₂, āṃ₂

gât	[kɔət]	[kɨət]	he, she
dât	[tɔət]	[tɨət]	to kick
dhât	[thɔət]	[thɨət]	fat
mât	[mɔət]	[mɨət]	mouth
jân	[cɔən]	[cɨən]	to step on
mân	[mɔən]	[mɨən]	chicken
grâp	[krɔəp]	[krɨəp]	seed
ṅâp	[ŋɔəp]	[ŋɨəp]	to die
ñâp	[ɲɔəp]	–	fast
râp	[ɦɔəp]	[rɨəp]	to count
nāṃ	[nɔəm]	[nɨəm]	to accompany
rāṃ	[ɦɔəm]	[rɨəm]	to dance
thbâl	[thpɔəl]	[thpɨəl]	cheek
bâl	[pɔəl]	[pɨəl]	to touch
râl	[hɔəl]	[rɨəl]	every
sgâl	[skɔəl]	[skɨəl]	to be acquainted with

10.　â₂, āṃṅ₂, aḥ₂

trajâk	[təcɛaʔ]	[trɔcɨəʔ]	cool

TRANSLITERATION	TK 1	TK 2	MEANING
dhâk	[thɛaʔ]	[thɨəʔ]	to kick
dhlâk	[thlɛaʔ]	[thlɨəʔ]	to fall
bâk	[pɛaʔ]	[pɨəʔ]	part
bhñâk	[phɲɛaʔ]	[phɲɨəʔ]	surprised
lâk	[lɛaʔ]	[lɨəʔ]	to hide
qnak	*[nɛaʔ]	*[nɨəʔ]	you
jañjāṃṅ	[ɲcɛaŋ]	[ciɲcɨəŋ]	wall
dāṃṅ	[tɛaŋ]	[tɨəŋ]	all
rāṃṅ	[rɛaŋ]	[rɨəŋ]	dry
khdaḥ	[khtɛah]	[khtɨəh]	pan
jhnaḥ	[chnɛah]	[snɨəh]	to win
phdaḥ	[phtɛah]	[phtɨəh]	house
braḥ	[pɦɛah]	[prɨəh]	saint
raḥ	[rɛah]	[rɨəh]	to rise

11. iḥ₂

khdiḥ	[khtih]	[khtih]	coconut milk
jiḥ	[cih]	[cih]	to ride
jriḥ	[crih]	[crih]	to brush past
mliḥ	[məlih]	[məlih]	jasmine
riḥ	[rih]	[rih]	to think
viḥ	[vih]	[vih]	almost
neḥ	*[nih]	*[nih]	this

12. ī₁

ktī	[kdəi̯]	[kdəi̯]	legal case
khcī	[khcəi̯]	[khcəi̯]	young
khñī	[khɲəi̯]	[khɲəi̯]	ginger
khlī	[khləi̯]	[khləi̯]	short
chī	[chəi̯]	[chəi̯]	to eat
ṭī	[dəi̯]	[dəi̯]	earth
trī	[tɦəi̯]	*[trai̯]	fish
thī	[thəi̯]	[thəi̯]	why
thmī	[thməi̯]	[thməi̯]	new
thvī	[thvəi̯]	[thvəi̯]	skill
pī	[bəi̯]	[bəi̯]	three
p″ī	[pəi̯]	–	oboe
pārī	[bəɦəi̯]	[bərəi̯]	cigarette
ptī	[pdəi̯]	[pdəi̯]	husband

TRANSLITERATION	TK 1	TK 2	MEANING
lpī	[ləbəi̯]	[ləbəi̯]	famous
stī	[sdəi̯]	[sdəi̯]	to speak
srī	[sɦəi̯]	[srəi̯]	woman
sqī	[sˀəi̯]	[sˀəi̯]	what
qī	[ˀəi̯]	[ˀəi̯]	what
qvī	[əʋəi̯]	[əʋəi̯]	what

13. ī₂

jī	[ci:]	[ci:]	ancestor
ñī	[ɲi:]	[ɲi:]	female
dī	[ti:]	[ti:]	place
bī	[pi:]	[pi:]	from
qaṃbī	[mpi:]	[ɔmpi:]	about
mī	[mi:]	[mi:]	noodle
lī	[li:]	[li:]	to bear on one's shoulder
dhūlī	[thu:li:]	[thu:li:]	dust
s'ī	[si:]	[si:]	to eat
bīr	[pi:]	[pi:]	two
jĭk	[ci:c]	[ci:c]	to dig
rīk	[ri:c]	[ri:c]	in bloom
lĭṅ	[li:ɲ]	[li:ɲ]	to roast
mamīs	*[mmih]	[mmi:h]	hair, feather

14. ẏ₁, ĭ₁

phẏk	[phək]	[phək]	to drink
slẏk	[slək]	[slək]	leaf
khẏṅ	[khəŋ]	[khəŋ]	to get angry
chqẏṅ	[cˀəŋ]	[cˀəŋ]	bone
ṭẏṅ	[dəŋ]	[dəŋ]	to know
pẏṅ	[bəŋ]	[bəŋ]	lake
sravẏṅ	[səʋəŋ]	[səʋəŋ]	drunk
kāṃpit	[kəbət]	[kəmbət]	knife
citt	[cət]	[cət]	heart
pid	[bət]	[bət]	to close
phcit	[psət]	[psət]	navel
phsit	[psət]	[psət]	mushroom
hit	[hət]	[hət]	to smell
klin	[khlən]	[khlən]	scent

TRANSLITERATION	TK 1	TK 2	MEANING
hẏr	[həl]	*[haə]	peppery
qaṃpil	[mbəl]	[ɔmbəl]	salt

15.   ẏ₂, i₂

dadẏk	[tətik]	[tətik]	to get wet
dẏk	[tɨk]	[tɨk]	water
nẏk	[nɨk]	[nɨk]	to think
brẏk	[pɦɨk]	[prɨk]	morning
nẏṅ	[nɨŋ]	[nɨŋ]	and
rẏṅ	[rɨŋ]	[rɨŋ]	hard
sdẏṅ	[stɨŋ]	[stɨŋ]	pond
ṛs	[rɨh]	[rɨh]	root
git	[kɨt]	[kɨt]	to consider
ṅaṅẏt	[ŋɨt]	[ŋəŋɨt]	dark
jit	[cɨt]	[cɨt]	near
qādity	[atit]	–	sun
min	[mɨn]	[mɨn]	not
brẏl	[pɦɨl]	[prɨl]	hail
ril	[rɨl]	[rɨl]	blunt
manuss	*[mənɨh]	*[mənɨh]	man
prāṃbīr	*[mpɨl]	*[prampɨl]	seven

16.   ȳ₁

pȳr	[bə:]	[bə:]	Fr. beurre
tȳṅ	[tə:ŋ]	[tə:ŋ]	to get angry
m″ȳṅ	[mə:ŋ]	[mə:ŋ]	tight
m″ȳn	[mə:n]	[mə:n]	ten thousand
raṭȳn	[lədə:n]	[ədə:n]	to speak slowly with modulation
kaṃp″ȳt	[kəpə:t]	–	tight
kpȳt	[kbə:t]	–	to suck slowly
khlȳt	–	–	stern
khsȳt	[ksə:t]	[khsə:t]	to sniff at
pȳt	[bə:t]	–	to suck
praṭȳt	[pədə:t]	[prɔdə:t]	lean
stȳt	[stə:t]	[stə:t]	slender
slȳt	[slə:t]	[slə:t]	fast
hȳt	[hə:t]	[hə:t]	bronchitis
lȳt	[lə:t]	–	haughty

TRANSLITERATION	TK 1	TK 2	MEANING
khnȳp	[khnə:p]	[khnə:p]	to flatter
p″ȳm	[pə:m]	[pə:m]	surprised

17. ȳ₂

gȳ	[kɨ:]	[kɨ:]	to be
jamṅȳ	[cəmŋɨ:]	[cəmŋɨ:]	disease
jhȳ	[chɨ:]	[chɨ:]	sick
ḍȳ	[dɨ:]	[dɨ:]	to insinuate
pañjhȳ	[pəchɨ:]	[bənchɨ:]	to worry
banlȳ	[pəlɨ:]	[pənlɨ:]	light
bhlȳ	[phlɨ:]	[phlɨ:]	bright
randȳ	[əntɨ:]	[rəntɨ:]	to sound
sbȳ	[spɨ:]	[spɨ:]	gear
r̤̄	[rɨ:]	[rɨ:]	or
l̤̄	[lɨ:]	—	to hear
banyȳt	[pənjɨ:t]	[pənjɨ:t]	to prolong
bȳt	[pɨ:t]	[pɨ:t]	to try
yȳt	[jɨ:t]	[jɨ:t]	slow
rȳt	*[rɨt]	—	to rub
yȳn	[jɨ:n]	[jɨ:n]	long life

18. u₁

puk	[bǫk]	[bǫk]	to pound
saṃpuk	[səbǫk]	[sɔmbǫk]	nest
sruk	[sɦǫk]	[crǫk]	country
knuṅ	[khnǫŋ]	[khnǫŋ]	inside
kruṅ	[kɦǫŋ]	[krǫŋ]	town
khus	[khǫh]	[khǫh]	wrong
dus	[dǫh]	[dǫh]	rub
prus	[pɦǫh]	[prǫh]	man
cuḥ	[cǫh]	[cǫh]	to get off
cramuḥ	[cəmǫh]	[cəmǫh]	nose
dut	[dǫt]	[dǫt]	to set fire
samudr	[səmǫt]	[səmǫt]	sea
puṇy	[bǫn]	[bǫn]	festival
squy	[sʔǫi]	[sʔǫi]	to smell bad

19. u₂, áp₂

qāyu	[ʔajuʔ]	[ajuʔ]	age

TRANSLITERATION	TK 1	TK 2	MEANING
graluk	[kəlok]	[krəlok]	wave
duk	[tok]	[tok]	keep
buk	[pok]	[pok]	beard
mukh	[mok]	[mok]	face
aubuk	[əpok]	[pok]	father
khduḥ	[khtuh]	[khtuh]	clot
cambuḥ	[cəpuh]	[cɔmpuh]	beak
damluḥ	[təmluh]	[tənluh]	to pierce
noḥ	*[nuh]	*[nuh]	that
buḥ	[puh]	[puh]	to boil
manuss	*[mənɯh]	*[mənɯh]	man
ruñ	[ɦoɲ]	[roɲ]	to push
buddh	[pot]	[pot]	Buddha
mut	[mot]	[mot]	sharp
mláp	[məlop]	[məlop]	shade
yáp	[jop]	[jop]	night
láp	[lop]	[lop]	to erase
kanduy	[kətoi̯]	[kətoi̯]	tail
ruy	[ɦoi̯]	[roi̯]	fly
qaṅguy	[ŋkoi̯]	[ɔŋkoi̯]	to sit
jul	[col]	[col]	to weave
mjul	[məcol]	[məcol]	needle

20.   ū₁

kūr	[koˑu]	[koˑu]	to stir
ṭūr	[doˑu]	[doˑu]	to change
papūr	[bəboˑu]	[pəboˑu]	lip
ptūr	[pdoˑu]	[pdoˑu]	to change
sūr	[soˑu]	[soˑu]	sound
hūr	[hoˑu]	[hoˑu]	to flow
qūr	[ʔoˑu]	[ʔoˑu]	stream
ṭūṅ	[douŋ]	[douŋ]	coconut
tpūṅ	[təbouŋ]	[dəbouŋ]	south
qaṇtūṅ	[ndouŋ]	[ndouŋ]	well
khūc	[khouc]	[khouc]	to go bad
ṭūc	[douc]	[douc]	same
tūc	[touc]	*[tuːc]	small
crūt	[cɦout]	[srout]	to harvest
kūn	[koun]	[koun]	child

TRANSLITERATION	TK 1	TK 2	MEANING
ṭūn	[doun]	[doun]	grandmother
pqūn	[pʾoun]	[pʾoun]	younger brother
sūny	[soun]	[soun]	zero
mhūp	[məhoup]	[məhoup]	food
caṅkūm	[cəkoum]	[cɔŋkoum]	canine tooth
cūl	[coul]	[coul]	to enter
ṭampūl	[təboul]	–	roof
pramūl	[pəmoul]	[promoul]	to collect

21. ūv₁

chlūv	[chləṷ]	[slọṷ]	ox
ṭankūv	[təkəṷ]	[təkọṷ]	grub
tamrūv	[təmɦəṷ]	[tɔmrọṷ]	to require
trūv	[tɦəṷ]	[tɦọṷ]	correct
phlūv	[phləṷ]	[phlọṷ]	road
satrūv	[sətɦəṷ]	[sətrọṷ]	enemy
sūv	[səṷ]	[sọṷ]	rather
saṃkūv	[sɔmkəṷ]	–	gray-haired
skūv	[skəṷ]	[chkọṷ]	gray-haired
spūv	[sbəṷ]	[sbọṷ]	thatch
sramūv	[səməṷ]	[sɔmọṷ]	hairy
srūv	[sɦəṷ]	[crəṷ]	paddy
ilūv	[ələṷ]	[əlọ̰ṷ]	now
u	[əṷ]	–	father

22. ū₂

dhnū	[thnu:]	[thnu:]	bow
lū	[lu:]	[lu:]	to bark
gaṃnūr	[kəmnu:]	[komnu:]	to draw
jūr	[cu:]	[cu:]	sour
dhūr	[thu:]	[thu:]	relaxed
jrūk	[cɦu:k]	[sru:k]	pig
dūk	[tu:k]	[tu:k]	boat
drūṅ	[tɦu:ŋ]	[tru:ŋ]	chest
gūs	[ku:h]	[ku:h]	to make a trace
mūs	*[muh]	*[muh]	mosquito
būj	[pu:c]	[pu:c]	species
sdūc	[stu:c]	[stu:c]	to fish
gūth	[ku:t]	[ku:t]	bottom

TRANSLITERATION	TK 1	TK 2	MEANING
jūt	[cu:t]	[cu:t]	to wipe
jūn	[cu:n]	[cu:n]	to give
lūn	[lu:n]	[lu:n]	to crawl
rūp	[ru:p]	[ru:p]	picture
bhūmi	[phu:m]	*[phum]	village
mūl	[mu:l]	[mu:l]	round

23. ua

khuar	[khu·o]	[khu·o]	brain
byuar	[pcu·o]	[pcu·o]	to suspend
bhjuar	[pcu·o]	[pcu·o]	to plough
suar	[su·o]	[su·o]	to ask
juaṅ	[cuoŋ]	[cuoŋ]	bell
juas	[cuoh]	[cuoh]	to replace
jaṃnuas	[cəmnuoh]	[comnuoh]	to replace
rabuas	[ləbuoh]	[lɔbuoh]	wound
huas	[huoh]	[huoh]	to pass
paṅquac	[bəŋʔuoc]	[bɔŋʔuoc]	window
ruac	[ruoc]	[ruoc]	to finish
luac	[luoc]	[luoc]	to steal
jhmuaṅ	[chmuoɲ]	[chmuoɲ]	marchant
bruañ	[pɦuoɲ]	[pruoɲ]	arrow
kquat	[kʔuot]	[kʔuot]	to vomit
chkuat	[ckuot]	[skuot]	mad
suat	[suot]	[suot]	lung
sṅuat	[sŋuot]	[cŋuot]	dry
khluan	[khluon]	[khluon]	body
caṃnuan	[cəmnuon]	–	number
puan	[buon]	[buon]	four
juap	[cuop]	[cuop]	meet
kmuay	[khmuoi̯]	[khmuoi̯]	nephew
juay	[cuoi̯]	[cuoi̯]	to help
muay	[muoi̯]	[muoi̯]	one
raluay	[aluoi̯]	[ləluoi̯]	to decompose
ṭual	[duol]	[duol]	to fall over
dadual	[tətuol]	[totuol]	to receive
mual	[muol]	[muol]	twist
srual	[sruol]	[cruol]	easy

TRANSLITERATION	TK 1	TK 2	MEANING
24. oe₁			
poe	[ba·ə]	[ba·ə]	if
soe	[sa·ə]	[sa·ə]	surface
ṭoer	[da·ə]	[da·ə]	to walk
ṭamṇoer	[təmna·ə]	[dɔmna·ə]	travel
serasoer	[səsa·ə]	[sɔsa·ə]	to praise
hoer	[ha·ə]	[ha·ə]	to fly
kamroek	[kəmɦaək]	[kɔmraək]	to move
poek	[baək]	*[bə:k]	to open
stoeṅ	[sdaəŋ]	*[sdə:ŋ]	thin
ḷoeṅ	[laəŋ]	[laəŋ]	to ascend
soec	[saəc]	*[sə:c]	to laugh
koet	[kaət]	*[kə:t]	to be born
croen	[cɦaən]	[sraən]	many
paṅkoen	[pəkaən]	[bɔŋkaən]	to increase
thoep	[thaəp]	[thaəp]	to smell
ciñcoem	[ɲcaəm]	[ɲcaəm]	eyebrow
chnoem	[chnaəm]	[snaəm]	wonderful
ṭoem	[daəm]	[daəm]	trunk
ṭaṅhoem	[təŋhaəm]	[dəŋhaəm]	to breathe
thloem	[thlaəm]	[thlaəm]	liver
soem	[saəm]	*[sə:m]	damp
hoem	[haəm]	[haəm]	swollen
chloey	[chlaəi̯]	[slaəi̯]	to answer
raṃhoey	[ləhaəi̯]	[lɔmhaəi̯]	fresh
hoey	[haəi̯]	[haəi̯]	already
25. oe₂			
kañjoe	[kəcə:]	[kɔɲcə:]	basket
jhoe	[chə:]	[chə:]	tree
dhvoe	[thə:]	[thə:]	to do
boe	[pə:]	[pə:]	to imitate
loe	[lə:]	[lə:]	above
loek	[lə:ʔ]	[lə:ʔ]	to raise
joeṅ	[cə:ŋ]	[cə:ŋ]	foot
phloeṅ	[phlə:ŋ]	[phlə:ŋ]	fire
yoeṅ	[jə:ŋ]	[jə:ŋ]	we
jroes	[cɦə:h]	[crə:h]	to choose
ñoes	*[ɲəh]	[ɲə:h]	sweat

TRANSLITERATION	TK 1	TK 2	MEANING
roes	[rə:h]	[rə:h]	to choose
qañjoeñ	[ɲcə:ɲ]	–	to invite
doep	[tə:p]	[tə:p]	just
moel	[mə:]	[mə:]	to look at

26. ẏa

ṅẏa	[ŋɨˑə]	–	a kind of bed
jẏa	[cɨˑə]	[cɨˑə]	to believe
jamṅẏa	[cəmnɨˑə]	[cɔmnɨˑə]	belief
tẏa	[tɨˑə]	–	short
ṅẏak	[ŋɨəʔ]	[ŋɨəʔ]	to claim
thẏak	[thɨəʔ]	[thɨəʔ]	stick
smẏak	[smɨəʔ]	[smɨəʔ]	sober
kẏaṅ	[kɨəŋ]	[kɨəŋ]	to go aground
ktẏaṅ	[kdɨəŋ]	[kdɨəŋ]	mortar with pestle
kpẏan	[kbɨəŋ]	[kbɨəŋ]	tile
grẏaṅ	[krɨəŋ]	[krɨəŋ]	machine
ṅẏaṅ	[ŋɨəŋ]	–	dobtful
paṅkẏaṅ	[pəkɨəŋ]	[bɔŋkɨəŋ]	to strand
rẏaṅ	[rɨəŋ]	[rɨəŋ]	story
lẏaṅ	[lɨəŋ]	[lɨəŋ]	yellow
sẏaṅ	[sɨəŋ]	[sɨəŋ]	brave
srẏaṅ	[srɨəŋ]	[crɨəŋ]	drunk
khẏan	[khɨən]	[khɨən]	foundations
grẏan	[krɨən]	[krɨən]	to make progress bit by bit
jẏan	[cɨən]	[cɨən]	to make progress
jamrẏan	[cɔmrɨən]	[cɔmrɨən]	progress
tẏan	[tɨən]	[tɨən]	to warn
banlẏan	[pəlɨən]	[pɔnlɨən]	to hasten
bhẏan	[phɨən]	[phɨən]	friend
lẏan	[lɨən]	[lɨən]	fast
lpẏan	[ləbɨən]	[ləbɨən]	speed
nẏay	[nɨəi̯]	[nɨəi̯]	tired
lmẏay	[ləmɨəi̯]	[ləmɨəi̯]	soft
rẏay	[rɨəi̯]	[rɨəi̯]	often

27. ia

biar	[piˑə]	[piˑə]	enemy

TRANSLITERATION	TK 1	TK 2	MEANING
traciak	[trɔ:ciəˀ]	[təciəˀ]	ear
sliak	[sliəˀ]	[sliəˀ]	to wear
criaṅ	[criəŋ]	[criəŋ]	to sing
camriaṅ	[cəmɦiəŋ]	[cɔmriəŋ]	song
bhliaṅ	[phliəŋ]	[phliəŋ]	rain
caṅqiat	[cəŋˀiət]	[cɔŋˀiət]	narrow
diat	[tiət]	[tiət]	again
ciñjian	[ɲciən]	[cəɲciən]	ring
paṅrian	[pəŋɦiən]	[bɔŋriən]	to teach
mian	[miən]	[miən]	longan
vian	[ʋiən]	[ʋiən]	bowel
qian	[ˀiən]	[ˀiən]	ashamed
dhiap	[thiəp]	[thiəp]	to compare
priap	[priəp]	[priəp]	to compare
ciam	[ciəm]	[ciəm]	sheep
rial	[ɦiəl]	[riəl]	currency
rasial	[ˀəsiəl]	[əsiəl]	afternoon
khiav	[khiəy̯]	[khiəy̯]	green, blue

28.　e_1

kertiᵒ	[kẹ:ɪ]	[kẹ:]	fame
kañche	[kəchẹ:ɪ]	—	basket
ṭer	[dẹ:ɪ]	[dẹ:]	to sew
saraser	[səsẹ:ɪ]	[təsẹ:]	to write
ṭek	[dẹ:ɪc]	[dẹ:ɪc]	to sleep
phlek	[plẹ:ɪc]	[phnẹ:ɪc]	lightning
srek	[sɦẹ:ɪc]	[srẹ:ɪc]	thirsty
kmeṅ	[khmẹ:ɪɲ]	[khmẹ:ɪɲ]	child
chveṅ	[chʋẹ:ɪɲ]	[sʋẹ:ɪɲ]	left
preṅ	[prẹ:ɪɲ]	[prẹ:ɪɲ]	oil
phseṅ	[phsẹ:ɪɲ]	[psẹ:ɪɲ]	other
saṃḷeṅ	[səmḷẹ:ɪɲ]	[sɔmḷẹ:ɪɲ]	voice
ces	[cẹ:ɪh]	[cẹ:ɪh]	thread
saṅket	[ŋkẹ:t]	[sɔŋkẹ:t]	to observe
sen	[sẹ:n]	[sẹ:n]	1/100 rial

29.　e_2

ge	[kẹ:ɪ]	[kẹ:]	they
de	[tẹ:ɪ]	[tẹ:]	(negative particle)

TRANSLITERATION	TK 1	TK 2	MEANING
dade	[təte̯:ɪ]	[tɔ:te̯:]	vacant
danle	[təle̯:ɪ]	[tɔnle̯:]	river
daṃner	[təne̯:ɪ]	[tɔmne̯:]	free
megh	[me̯:ɪc]	[me̯:ɪc]	sky
lekh	[le̯:ɪc]	[le̯:ɪc]	number
bhleṅ	[phle̯:ɪɲ]	[phle̯:ɪɲ]	music
leṅ	[le̯:ɪɲ]	[le̯:ɪɲ]	to play
vaṅveṅ	[ŋve̯:ɪɲ]	[vɔŋve̯:ɪɲ]	to get lost
damret	[təmɦe̯:t]	[tɔmre̯:t]	to take a nap
bel	[pe̯:l]	[pe̯:l]	time

30. ic₁, ec₁, iñ₁, eñ₁

ktic	[kdəc]	[kdəc]	to nip
cpic	[cbəc]	[cbəc]	to pick
tic	[təc]	[təc]	little
m″ec	[məc]	[məc]	why, how
mtec	[mdəc]	[mdəc]	why, how
lpic	[ləbəc]	[ləbəc]	trick
samrec	[səmɦəc]	[səmrəc]	to decide
stec	[sdac]	[sdac]	king
ceñ	*[cəɲ]	*[cəɲ]	to go out
chiñ	[chəɲ]	*[chəɲ]	to gleam
ṭeñ	[dəɲ]	*[dəɲ]	to chase away
sñiñ	*[sɲəɲ]	*[sɲəɲ]	bareness
hiñ	[həɲ]	[həɲ]	sour

31. ic₂, ec₂, iñ₂, eñ₂

khdec	[khtec]	[khtec]	in small bits
gec	[kec]	[kec]	to avoid
grec	[kɦec]	[krec]	to sprain
jhlec	[chlec]	[slec]	to break up
ñec	[ɲec]	[ɲec]	to crush
thbec	[thpec]	–	to nip
dic	[tec]	[tec]	to sting
dhmec	[thmec]	[thmec]	to close the eyes
bejir	[pec]	[pec]	diamond
bric	[pɦec]	[prec]	to blink
brec	[prec]	[prec]	a kind of bamboo
bhlec	[phlec]	[phlec]	to forget

TRANSLITERATION	TK 1	TK 2	MEANING
mic	[mec]	[mec]	to blink
mrec	[mrec]	[mərec]	pepper
rec	[rec]	[rec]	chipped
lic	*[ləc]	*[ləc]	west
lic	[lec]	[lec]	to sink
vec	[*v*ec]	[*v*ec]	to pack
jreñ	[cɦeɲ]	[creɲ]	bored
diñ	[teɲ]	[teɲ]	to buy
dhmeñ	[thmeɲ]	[thmeɲ]	tooth
beñ	[peɲ]	[peɲ]	full
miñ	[meɲ]	[meɲ]	just past
viñ	[*v*eɲ]	[*v*eɲ]	to return
veñ	[*v*eɲ]	[*v*eɲ]	twist

32.　ae₁ {#}

$$32.\quad \mathbf{ae_1}$$

kae	[ka·ę̣]	[ka·ę̣]	to repair
khae	[kha·ę̣]	[kha·ę̣]	month
khsae	[ksa·ę̣]	[ksa·ę̣]	rope
chkae	[chka·ę̣]	[ska·ę̣]	dog
tae	[ta·ę̣]	[ta·ę̣]	tea
panlae	[pəla·ę̣]	[pəla·ę̣]	vegetable
phlae	[phla·ę̣]	[phla·ę̣]	fruit
m″ae	[ma·ę̣]	[ma·ę̣]	mother
srae	[sɦa·ę̣]	[cra·ę̣]	paddy field
ṭaer	[da·ę̣]	*[dę̣:]	also
kqaek	[kʔaec]	[kʔaec]	crow
caek	[caec]	[caec]	to distribute
ṭaek	[daec]	[daec]	iron
paek	[baec]	[baec]	to break
paṃpaek	[mbaec]	[bɔmbaec]	to break
rahaek	[ləhaec]	[ləhaec]	torn
saṇtaek	[səndaec]	[sədaec]	bean
spaek	[sbaec]	[sbaec]	skin
sraek	[sɦaec]	[craec]	to shout
sqaek	[sʔaec]	[sʔaec]	tomorrow
haek	[haec]	[haec]	to tear
kanlaeṅ	[kəlaeɲ]	[kɔnlaeɲ]	place
kaeṅ	[kaeɲ]	[kaeɲ]	elbow
phsaeṅ	[phsaeɲ]	[phsaeɲ]	smoke

TRANSLITERATION	TK 1	TK 2	MEANING
saeṅ	[saeɲ]	[saeɲ]	to carry
snaeṅ	[snaeɲ]	[snaeɲ]	horn
eṅ	[ʔaeɲ]	[ʔaeɲ]	oneself
ṅ″aet	[ŋaet]	[ŋaet]	baby
chqaet	[cʔaet]	[sʔaet]	bored
qantaet	[ndaet]	[ʔɔndaet]	to float
paep	[baep]	[baep]	sort
phqaem	[pʔaem]	[pʔaem]	sweet
kqael	[kʔael]	[kʔael]	dirt
hael	[hael]	[hael]	to swim

33. ae₂

gae	[kẹːɩ]	[kẹː]	gizzard
babae	[pəpẹːɩ]	[pɔːpẹː]	goat
bhnaek	[phnẹːɩc]	[phnẹːɩc]	eye
maek	[mẹːɩc]	–	branch
raek	[rẹːɩc]	[rẹːɩc]	to carry with a pole on one's shoulder
prajaeṅ	[pəcẹːɩɲ]	[prɔcẹːɩɲ]	to compete
baeṅ	[pẹːɩɲ]	[pẹːɩɲ]	grass
laeṅ	*[laeɲ]	*[laeɲ]	to give up
lambaeṅ	[mpẹːɩɲ]	[lɔmpẹːɩɲ]	javelin
vaeṅ	[vẹːɩɲ]	[vẹːɩɲ]	long
bedy	[pẹːt]	[pẹːt]	doctor
maen	[mẹːn]	[mẹːn]	true

34. eḥ₁, aeḥ₁

kṅeḥ	[kŋɛh]	[kŋɛh]	to complain
khmeḥ	[khmɛh]	[khmɛh]	vinegar
khveḥ	[kvɛh]	[kvɛh]	to scratch out
caṅkeḥ	[cəkɛh]	[cəŋkɛh]	waist
ceḥ	[cɛh]	[cɛh]	to know
cheḥ	[chɛh]	[chɛh]	to burn
peḥ	[bɛh]	[bɛh]	to pick up
preḥ	[prɛh]	[prɛh]	to crack
phaeḥ	[phɛh]	[phɛh]	ash
seḥ	[sɛh]	[sɛh]	horse
sraeḥ	–	[crɛh]	to patch up

TRANSLITERATION	TK 1	TK 2	MEANING
slaeḥ	[slɛh]	[clɛh]	to stop telling for a moment
qeḥ	[ʔɛh]	[ʔɛh]	to scratch
35. eḥ₂, aeḥ₂			
babhlaeḥ	[pəphlɛh]	[pəphlɛh]	to insist
radeḥ	[ətɛh]	[rətɛh]	cart
laeḥ	[lɛh]	[lɛh]	to excuse
veḥ	—	[vɛh]	to escape
sandeḥ	—	[səntɛh]	distorted
samyeḥ	[səmjɛh]	[səmjɛh]	with the hem down
sdaeḥ	[stɛh]	[stɛh]	with the hem down
sbaeḥ	[spɛh]	[spɛh]	to hang down
mdes	*[məteːh]	*[məte·h]	chili
36. ai₁			
khvai	[khʋai̯]	[khʋai̯]	to steam
cai	[cai̯]	[cai̯]	louse
chnai	—	[chnai̯]	to grind
ṭai	[dai̯]	[dai̯]	hand
thai	[thai̯]	[thai̯]	Thai
thṅai	[thŋai̯]	[thŋai̯]	day
prai	[pɦai̯]	[prai̯]	salty
m″ai	[mai̯]	[mai̯]	to doubt
r″ai	[rai̯]	[rai̯]	a unit for area (Thai)
spai	[sbai̯]	[sbai̯]	awrap
hai	[hai̯]	[hai̯]	liable
vāy	[ʋai̯]	[ʋai̯]	to hit
37. ai₂			
gai	[kei̯]	[kei̯]	to cheat
dai	[tei̯]	[tei̯]	cloth-shoulder bag
dhmai	[thmei̯]	[thmei̯]	jute
nai	[nei̯]	[nei̯]	of
pambhlai	[mphlei̯]	[bɔmphlei̯]	to add in
phdai	[phtei̯]	[phtei̯]	stomach
brai	[phei̯]	[prei̯]	forest
mamai	[mɔmei̯]	[mɔmei̯]	to imagine
mbhai	[məphei̯]	[məphei̯]	twenty
rai	[ɦei̯]	[rei̯]	to contribute

TRANSLITERATION	TK 1	TK 2	MEANING
raṅai	[ɦəŋei]	[rɔŋei]	to blot
ravai	[ləvei]	[lɔvei]	to spin
raṃbai	[rəpei]	[rɔmpei]	to look constantly
lai	[lei]	[lei]	to divide up
lalai	[ləlei]	[blei]	high and distant
vai	[vei]	[vei]	quick witted
sdai	[stei]	[stei]	to sieve
sbai	[spei]	[spei]	cabbage

38. o₁

kho	[khaˑo]	*[khoː]	trousers
kor	[kaˑo]	[kaˑo]	to shave
cor	[caˑo]	[caˑo]	thief
sṅor	[sŋaˑo]	[chŋaˑo]	to boil
krok	[kɦaok]	*[kɦoːk]	to get up
traṭok	[tədaok]	[tɔdaok]	bell
thok	[thaok]	[thaok]	cheap
pok	[baok]	[baok]	to beat
sok	[saok]	[saok]	to mourn
koṅ	[kaoŋ]	[kaoŋ]	bent
m″oṅ	[maoŋ]	[maoŋ]	hour
khmoc	[khmaoc]	*[khmoːc]	ghost
sramoc	[smaoc]	[səmaoc]	ant
krom	[kɦaom]	*[kɦoːm]	under
srom	[sɦaom]	*[sɦoːm]	envelope
kroy	[kɦaoi]	*[kɦoːi]	behind
khsoy	[ksaoi]	*[ksoːi]	weak
ṭoy	[daoi]	*[doːi]	by means of
paṇtoy	[bəndaoi]	[bɔndaoi]	length
oy	[aoi]	[aoi]	to give
col	[caol]	[caol]	to throw away
sramol	[smaol]	[smaol]	shadow

39. o₂

go	[koˑu]	[koˑu]	ox
lok	[louk]	[louk]	you, world
yoṅ	[jouŋ]	[jouŋ]	to swing
raloṅ	[alouŋ]	[blouŋ]	wet
dos	[touh]	[touh]	guilt

TRANSLITERATION	TK 1	TK 2	MEANING
pandos	[bɔntouh]	–	to criticize
roc	[rouc]	[rouc]	wane of moon
lot	[lout]	[lout]	to jump
nom	[noum]	[noum]	urine
rom	[roum]	[roum]	hair
jhmol	[chmoul]	[smoul]	male
yol	[joul]	[joul]	to hang down

40.　au$_1$

ktau	[kdaṷ]	[kdaṷ]	hot
kracau	[kəcaṷ]	[krɔcaṷ]	to claw at
krau	[kɦaṷ]	[kraṷ]	outside
khcau	[khcaṷ]	[khcaṷ]	a kind of shellfish
khmau	[khmaṷ]	[khmaṷ]	black
khlau	[khlaṷ]	[khlaṷ]	ignorant
cau	[caṷ]	[caṷ]	grandchild
chau	[chaṷ]	[chaṷ]	raw
ṭau	[daṷ]	[daṷ]	destination
pau	[baṷ]	*[baǫ]	to suck
msau	[məsaṷ]	[məsaṷ]	flour
saur°	[saṷ]	[saṷ]	Saturday
smau	[smaṷ]	[smaṷ]	grass
hau	[haṷ]	*[hao]	to call
ḷau	[laṷ]	[laṷ]	floor

41.　au$_2$

jrau	[chəṷ]	[crǫṷ]	deep
jaṃrau	[cəmɦəṷ]	[cəmrǫṷ]	depth
dau	[təṷ]	[tǫṷ]	to go
nau	[nəṷ]	[nǫṷ]	to be
bau	[pəṷ]	[pǫṷ]	youngest of a family
brau	[pɦəṷ]	[prǫṷ]	unmarried
bhlau	[phləṷ]	[phlǫṷ]	thigh
laṃnau	[ləmnəṷ]	[lomnǫṷ]	address
lbau	[ləpəṷ]	*[ləpəṷ]	pumpkin
saṃbau	[səmpəṷ]	*[səmpəṷ]	junk
qaṃbau	[ɔmpəṷ]	[ɔmpǫṷ]	sugarcane

42.　aṃ$_1$

kraṃ	[kɦɔm]	[krɔm]	suffering

TRANSLITERATION	TK 1	TK 2	MEANING
kham	[khɔm]	[khɔm]	to try
cam	[cɔm]	[cɔm]	to darn
cram	[cɦɔm]	[crɔm]	to stamp
craḷam	[cəlɔm]	[crɔlɔm]	to mistake
dam	[dɔm]	[dɔm]	to hit with a hammer
pratham	[pəthɔm]	[prɔthɔm]	impatient
phñam	[phŋɔm]	[phŋɔm]	to steam
phsam	[phsɔm]	[phsɔm]	to unite
ham	[hɔm]	[hɔm]	sober

43. um₁

TRANSLITERATION	TK 1	TK 2	MEANING
kum	[ko̧m]	[ko̧m]	to prohibit
krum	[kro̧m]	[kro̧m]	group
khñum	[khɲo̧m]	[khɲo̧m]	I
ṭum	[do̧m]	[do̧m]	piece
phtum	[pdo̧m]	[pdo̧m]	to form
phlum	[phlo̧m]	[phlo̧m]	to blow
mtum	[mədo̧m]	[mədo̧m]	a piece
sum	[so̧m]	[so̧m]	to ask
smum	[smo̧m]	[smo̧m]	beggar
qum	[ʔo̧m]	[ʔo̧m]	to row

44. am₂, um₂

TRANSLITERATION	TK 1	TK 2	MEANING
grum	[krom]	[krom]	shellfish
ghum	[khom]	[khom]	village
ghmum	[khmom]	[kmom]	bee
jum	[com]	[com]	around
dum	[tom]	[tom]	ripe
dham	[thom]	[thom]	big
nam	[nom]	[nom]	cake
phgum	[phkom]	[phkom]	to assemble
phjum	[phcom]	[phcom]	to gather
phnam	[phnom]	[phnom]	mountain
mum	[mom]	[mom]	angle
yam	[jom]	[jom]	to cry
rum	[rom]	[rom]	to wind
h″um	[hom]	[hom]	to wind
q″um	*[ʔo̧m]	*[ʔo̧m]	uncle, aunt