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0) Introduction

Among the fourteen or so extant branches of the Mon-Khmer family, only three or four have developed preserved enough differentiation today to yield proto-branch reconstructions of great antiquity. They are: The Bahnaric, the Aslian, the Palaungic and probably the Viet-Muong branches. It is mostly from these reconstructions that we will be able some day to cast a glance at Proto-Mon-Khmer and beyond. The Katuic, Khmuic and Nicobarese branches, while extremely useful, do not appear to be as diversified as the first four. Monic and Khmeric, in spite of their written records and resulting prestige, ironically rank even lower in this respect.

Reconstructions of proto-Bahnaric, proto-Aslian and proto-Viet-Muong are already well on the way, but that of Proto-Palaungic now needs to be pursued beyond the advances made by Schmidt (1904), Shafer (1952), Shorto (1963) and Benedict (1975). The main problem in this branch has been the poverty of the data available; even when good collections were made, they often remain unpublished for lack of funding or other reasons.

In the last few years however, more data has become available on the Waic branch of Palaungic: Mitani has published descriptions and vocabularies of several Lawa dialects (Mitani, 1966, 1972), and is currently working on reconstruction in this area; tape recordings have been made of Wa, and for the first time, of Samtau, and I have collected some material on Lawa dialects not studied by Mitani. This new material complements what is already available in scholarly publications, in Bible translations and in political pamphlets,
so that it is now possible to attempt a phonological reconstruction of the whole Waic branch of Palaungic.

By Waic, I refer to all the languages included by Ferlus under the label "04-WA" (Ferlus, 1974), plus the newly discovered Samtau. The historical unity and distinctiveness of the group within Palaungic is supported by lexical and phonological evidence which I provide below. The diversity and probable time-depth within the Waic sub-branch are sufficient to make reconstructions interesting, but not great enough to render the task hopeless with the limited data available at present.

A) The Waic languages

1) Location

The eastern drainage of the Salween, between the 18th and the 24th parallels (the latitudes of Bhamo and Lampang respectively) is where most of the Waic languages are to be found today. In the South, several groups have remained in (or moved into?) the Chao Phraya basin: the K halo (Flatz, 1970), the Kien Ka "Lawa" (Wenk, 1965), and some dialects of Lawa proper. In the East also, Samtau, K'ala (Harding, 1927) and the Waic languages of China extend into the western drainage of the Mekong. But the narrow, 600 Km-long corridor mentioned above appears to be of historical significance to the Waic languages, as Schmidt suggested seventy-five years ago.

The exact location of all the groups is not always clear from the published evidence, but the southern and eastern parts of
the area are the most diversified linguistically. This will eventually give us some clues about the historical movements of the whole group, but there has certainly been much moving about in the past, and the evidence of toponyms, borrowings, oral traditions and other historical indices will have to be collected and compared.

2) The data

The reconstruction proposed here is based essentially on a comparison of six different vocabularies which are abundant enough for the purpose. All other Waic sources available to me have also been used and inserted in the basic framework to compose a more complete picture of the linguistic history of the group.

a) The six basic sources

i) Lawa

The term Lawa, like so many other ethnic names in South East Asia, has been used locally to refer to all sorts of minority groups without regard for their linguistic affiliation. Some speak Waic languages, others belong to Monic, others even to Tibeto-Burmese. I will use the term Lawa in a strict linguistic sense to refer to the /rvia/? of the Mae Sariang - Hot area, South-West of Chieng Mai.

The data is primarily from Mitani (1972), who collected vocabulary from the Bo Luang, Umphai and Ban Phae dialects. I will also use my own brief notes from the Northern and Ban Saam dialects, as well as field notes kindly given to me by Dr. Suriya Ratanakul on the Ban Pa Pae dialect, and Don Schlatter on the Northern
and the La?up dialects.

ii) Samtau

This newly discovered language was recorded in Thailand in 1976 by J. Harris and J. Gainey. About 1,000 words are given in careful pronunciation, together with the Wa equivalent (see below). The Samtau speaker came from an area North-East of Keng Tung between the Nam Loi and the Chinese border. As an ethnic group, the Samtau had been sketched in a few lines by Dodd (1923, p.61) and mentioned by name in a recent Burmese work (anon. 1968), but the language remained unknown.

iii) South Wa

This Wa dialect, from an area not very far North of Keng Tung, was recorded together with Samtau. The starting point of elicitation was a word list established for its relevance to Thai, but not necessarily Mon-Khmer, comparative phonology. I am very grateful to J. Gainey for having provided me with copies of the tapes. Without such incentive, this paper would not have been written. The transcriptions used here are mine and may contain errors on my part, although the quality of the recording is good.

iv) Bible Wa

I have extracted a fair amount of vocabulary from the American Baptist Mission translations of John and Matthew (Young, 1934, 1935) by retranslating these books back into English. The Wa teachers who worked on the original translations used a dialect similar to the 'South Wa' just mentioned, but the orthography disregards certain phonemic contrasts, especially among the final consonants.

v) Kawa

Using a similar method, I have assembled a vocabulary
of the Wa spoken in China, also known as Kawa. This comes from several pamphlets in Kawa with Chinese translations on alternate pages which have been published in Kunming by the Yunnan National Publishing Company (anon. 1958, 1959a, b, 1960a,b,c,d,e) The two names represent the same dialect, but I will use the term Kawa here to refer to the language of these publications. I am very grateful to M. Ferlus for letting me have copies of these pamphlets which are very useful for their precise notation. I also wish to thank L. Yen for carefully translating the Chinese texts for me.

vi) Drage's Wa

This fascinating and little known work (Drage, 1907) is unfortunately marred by a number of typographical errors. But the vocabulary is abundant and repetitive, and the characteristics of this dialect are peculiar enough to often permit restoration of the intended spelling. Variants will be given in the Lexicon. The location of the dialect is not explicitly stated but, from internal evidence, it appears to be spoken in the North-western part of the Wa territory, probably in "Moi tre Circle", somewhere between the Nam Ma and the Nam Nang.

b) Minor sources

Instead of making the older sources obsolete, the new information from our six basic sources permits a fresh understanding of all the other publications on Waic, old and new, brief and not so brief. Their notations can be interpreted with more confidence than was possible in Schmidt's and Shafer's times, and etymologies can be improved and multiplied.
The first recording and publication of material in a Waic language is due to P. Lefèvre-Pontalis (1892): his vocabulary of 'Kha Kem Dègne' from Xieng-Hung (i.e. Yínhóng, Yunnan Province) was not recognised as such until very recently (Ferlus, 1974): this language is a close relative of Samtau and Tai-Loi.

It is Scott's Gazetteer (1900) which attracted scholarly attention to the Waic languages. All four of his Waic languages were recorded in Kengtung State: Tai-Loi, Son, En, and Wa of Kengtung: the last three are closely related to each other, while the first belongs to a separate sub-branch of Waic, together with Samtau and three other languages. Scott also gave a vocabulary of "Wa or Vü" which was much used by Schmidt, Shafer and Benedict, but is in fact a collection of two or three Waic languages or dialects; with patience, things could be sorted out, but I have not used this composite vocabulary in the present work. Scott's vocabularies (and later Luce's) have remained up to now the only source of data used in comparative studies, except in Shorto's work.

Davies (1907) has a Wa vocabulary which belongs to Wa proper, and a La vocabulary which is related to Scott's En, Son, and Wa of Kengtung; both of Davies' vocabularies were recorded near the Chinese border. His P'uman, included in the same work, belongs to the Angkuic branch of Palau, and will not concern us here.

Antisdel's Wa (1911) belongs to Wa proper; it is the first source of information on Wa syntax after Drage (1907), whose Wa is outside Wa proper.

Harding (1927) has a short vocabulary of a language he calls K'ala, which forms an independent sub-branch of Waic; the people apparently call themselves "ss'va", whatever such information might mean. It is located in Kokang circle and has
not been investigated again since 1927.

Milne (1931) gives a few words of a Waic language which seems to belong to Wa proper, but has some unusual characteristics, such as retention of final -s; no location is given.

Rangsit (1945) gives a long vocabulary in three dialects of Lawa: Umphal, Bo Luang and Mapă. For the first two dialects, Mitani (1972) gives more information with a more precise transcription; but the third belongs to the Northern group of Lawa dialects not found in Mitani (1972). Rangsit also gives a very good account of the position of Lawa within Palaungic.
Sherto (1963) gives the first precise notation of a Waic language called Praok, which belongs to Wa proper; the vocabulary, unfortunately brief, is supplemented by more Praok words in the etymological data for some entries of the Mon Inscriptions dictionary (Sherto, 1971). Praok seems to be similar to 'Bible Wa' (see above), but looks quite different due to Sherto's use of IPA. No location is given.

Luce (1965) has a very carefully noted vocabulary of Tung Va Wa, which also belongs to Wa proper; this is a North-East dialect, from Lâncăng district, in the Western Mekong drainage, Yunnan. Luce also gave a comparison with some other Palaungic languages and etymological notes extending to the rest of Mon-Khmer.

Wenk's (1965) 'Kien Kā Lawa' does not belong to Lawa in the strict linguistic sense; it is a member of the Samtau sub-branch of Waic; the location, between Chiang Mai and Chiang Rai, is noteworthy. To avoid ambiguities, the language will be referred to as Kien Ka, a village name.

Fatz (1970) contains another short vocabulary of a fascinating and previously unknown language called Lua by Thais and Khalo by the speakers themselves; it seems to form a separate sub-branch of Waic all by itself. The location, North-East of Chiang Mai is again remarkable.

Ferrell's (1971) P'uman only has a very remote connection with Davies' P'uman; it belongs to the Samtau sub-branch of
Waic, together with Tai-Loi, Klen Ka, Kem Dège and Samtau itself. The conditions of the recording, in Taiwan, from a single speaker who hardly used the language for twenty years, should call our caution; and yet, it does provide useful information on the little known Samtau sub-branch.

3) Subclassification of Waic

The only classification of Waic languages ever proposed is Schmidt's (1904). Noticing a variety of phonological and lexical agreements in seventeen words from Scott's lists, he classified together Tai-loi and En (and Vü) in one group, Son and Wa-Kengtung in another. Some of these words are notoriously subject to being borrowed in the cultures concerned ("copper", "iron", "trousers"), others ("younq", "yellow") also contain borrowings; such evidence is not convincing. The rest contains morphology ("sun"), or accidental lexical agreements due to the extremely small size of the sample. In brief, while Schmidt is to be credited for identifying the Waic branch for the first time, his subclassification within Waic is not reliable: En, Son and Wa-Kengtung now appear to be more closely related to each other than to Tai-loi. Rangsit (1943) noticed that Lawa and Wa were more closely related to each other than to the other Palaungic languages, including Lamet (his "PaPao"), but the question has not progressed since then. And yet, a linguistic history presupposes a classification which provides us not only with a nomenclature, but also with a historical framework to discuss borrowings, diffusion etc. Without it such discussion would remain vague.

The classification I propose here is based for the most part on shared phonological innovations (see Section C), and to a lesser
extent of lexical replacements, only rarely on geographical facts. Sub-branch names will be used hereafter with the meaning shown here. Basic sources are underlined.
4) Palaungic relatives of Waic

The Waic languages form only one of the six branches of Palaungic: the other five are: the Lamet of Northern Laos and Chiang Rai Province, the Rumai languages (Palaung, Pale, Darang etc..) in the Shan States, West of the Salween, the Riang in the same area, the Angku languages spread along the Western bank of the Mekong, and Danau near Inle Lake, Shan States. Historical relations among these branches are not yet clear, and the branching diagram suggested in Diffloth (in press) should be modified at least to the extent of making Rumai (Palaung) and Riang more closely related to each other than to the rest; but even this remains just a suggestion.

Only the Rumai and Angku branches seem to equal Waic in internal diversity: but the data on the Rumai branch available in print consists primarily in one language: Palaung (Milne, 1931), the rest are very short word lists; as for the entire Angku branch, a few poorly noted word lists is all we have. The other branches consist of isolates (Danau) or single languages with some dialectal diversity (Lamet, Riang). This gives Waic a unique position of importance for the reconstruction of Palaungic: not only the diversity and time depth are there, but also just enough data.

B) Phonological history

Since the material is so patchy and diverse in quality, my research proceeded mostly in zigzags and circles, which it would be confusing to retrace here. Instead, I will make a deductive
presentation, starting from the reconstructed Proto-Waic and going down in time to the six main sources of data just mentioned. Whenever desirable, I will insert comments about the other sources.

1) Finals

The final consonant system of Proto-Waic can be reconstructed as follows:

- p - t - c - k - ?
- m - n - ñ - ñ
 - r - s - h
- w - l - ñ

Some languages have undergone partial mergers in certain restricted environments. In Davies' Wa for example, some PWaic *-ñŋ rimes change to -an and some PWaic *-ñŋ rimes change to -um, a unique development in Waic.

A few finals are affected by the height of the preceding vowel, thus producing or eliminating final palatais, but this question must be treated together with the evolution of the vowel system.

The only total mergers affect *-s and *-h on the one hand, *-r and *-l on the other.

a) *-s and *-h

Very few Waic languages have a final /-s/ contrasting with a final /-h/ today. The Umphaí dialect of Lawa is the only clear case. In Drage's Wa and Kawa, *-s has evolved phonetically to a [-ɔ] which creates notation problems, as usual in Mon-Khmer languages. Drage has -ich after a variety of vowels; and in Kawa, -ih is found after back vowels, representing the reflex
of PWCic *-s : PW *?mês "to love" (S 20), Kawa: muhih /=mûs/
    PW *prês "to blossom" (S 25), Kawa: bruhih /=prûs/
        (cf. Palaung: prôr, prâh)
    PW *hôs "price" (S 7), Kawa: ngôih /=/hôs/
but after Central and Front Proto-Waic vowels, only *-h is found:
    PW *rmôs "banana" (S 17), Kawa: mûah =/=mûah/
    PW *lês "six" (S 27), Kawa: lTah =/lêh/
However, the orthography of Kawa appears ambiguous when the vocalic
nucleus already ends in an orthographic "1"; Kawa: seih "lower"
could represent either /sêh/ or /sás/; in this particular word, the
first reading is probably correct since the Umphai Lawa cognate:
/kaseh/ indicates a PW *-h. But even when PW *-s went to Kawa /-h/
without any ambiguity of notation, the former presence of *-s is
often betrayed by the quality of the preceding vowel:
    PW *knas "to smile" (S 8), Kawa: ngTah =/nâh/
In this word, PW *a has been preserved as /â/ because the final was
originally an *-s (see: 3.a.i.3); if it had been a PW 8-h
the low tone *a would have become /ê/:
    PW *ghô "to give" (H 7), Kawa: gTeh =/kêh/

In Samtau and in South Wa, PW *-s and *-h have merged to /-h/,
but, here again, there are traces of the old contrast in some of
the vowel reflexes: *-ns rimes do not have the same history as
*-nh rimes.

The orthography of Bible Wa does not represent final *-h at all
even though it probably exists and represents the merger of PW*-s
and *-h: open syllables in this orthography may represent not only
PW*-s and *-h, but also PW *-r and *-i, as well as *-?. Some *-w's
and *-y's, and a good number of borrowings with original open syllables. A seven-fold notational merger of this kind makes certain etymologies hazardous.

Among the minor sources, Tai-Loi has preserved *-s:

PW *mis "nose" (S18), T-L: mus
PW *pos "deer" (S15), T-L: puss
PW *tis "breast" (S11), T-L: tuss (in: om -- :"milk")
PW *lps "quick" , T-L: lass (in: om -- :"river, stream")

cf. Khmu: làč (Muong Sai dialect, Htani, 1965)

PW *mis "name" (S19), T-L: mûth
PW *gis "salt" (S6), T-L: kith

We also find /-s/ in Milne's short collection of Wa words:

PW *ŋk-s "mouth" , Wa M: nkûs
PW *mis "nose" (S18), Wa M: mûs

The data is not abundant, but it indicates retention of *-s in all three branches of Waic: Wa (Drage), Lawa (Umphai) and Samtau (Tai-Loi). The frequent merger of *-s and *-h into -h in most Waic languages has therefore little diagnostic value for subclassification within Waic.

Proto-Waic *-s corresponds to Proto-Palaungic *-s, preserved in Riang and Lamet. But while some P. Pal. *-s's go un Proto-

Mon-Khmer *-s, others do not (Diffloth, 1976a).

b) *-r and *-l

These two are a little more difficult to reconstruct. Five of the basic sources have Ø as a reflex of both *-r and *-l; but Ø is also found in numerous borrowings from Thai and other languages.

Samtau, however, has a final /-l/ which represents a merger
of PW *-r and PW *-l, and only these two. This gives us already one proto final liquid, say *-l. See numerous examples in L and R sections of the Waic Etymological Lexicon.

But several of the minor sources have two different reflexes for this *-l:

i) Davies' La (1909) has -n in some words, -Ø in others:

*-L₁= -n: PW *ʔer "fowl"(R1), La: en
     PW *kier "wind"(R5), La: ken
     PW *p-er "to ask", La: pwan
     PW *pr "to fly"(R11), La: pun
     PW *mar "field"(R13), La: ban
     (note one exception: La: ā "two" < PW*l?ar (R2) )

*-L₂= -Ø: PW *kol "ten"(L4), La: kow
     PW *gol "fire"(L7), La: go
     PW *kbol "thick"(L15), La: p'u
     PW *kmil "silver, money"(L19), La: bai
     PW *hril "thin"(L21), La: ri
     PW *hil "go"(L26), La: hu
     PW *cerl "gold"(L20), La: k'ri

ii) Wenk's Klein Ka (1965) has -Ø in some words, and post-vocalic -l in others, presumably a notation for */-y/:

*-L₁= -Ø PW *ʔer "fowl"(R1), KK: ā
     PW *pr "to fly"(R11), KK: pū
     PW *-bor "evening"(R12), KK: tapū
     PW *mar "field"(R13), KK: mā
     PW *pher "bee"(R18), KK: phāh(ā)
\( *-L_2^= -l \)
PW *k\text{\textbar}\text{\textbar}l "stomach"(L1), KK: ka\text{\textbar}\text{\textbar}i
PW *k\text{\textbar}a\text{\textbar}l "pot"(L2), KK: k\text{\textbar}a\text{\textbar}i
PW *\text{\textbar}\text{\textbar}l "fire"(L7), KK: h\text{\textbar}i
PW *k\text{\textbar}\text{\textbar}l "money"(L19), KK: k\text{\textbar}m\text{\textbar}i
PW *h\text{\textbar}l "to go"(L26), KK: h\text{\textbar}i, h\text{\textbar}i
PW *k\text{\textbar}\text{\textbar}l "thick"(L15), KK: p\text{\textbar}i

(note one exception: h\text{\textbar}i "thin" < PW *h\text{\textbar}l (L21) due to the vowel?)

iii) Scott's Tai-Loi (1900) has both final \(-r\) and final \(-l\), as well as \(-rr\) and \(-ll\). I doubt that these represent four different finals; these fall into two series of correspondances: \(-rr\) corresponds to \(*-L_1\), and \(-ll\) to \(*-L_2\):

\(-L_1\)\(-rr\) PW *?\text{\textbar}l "fowl"(R1), TL: err
PW *s\text{\textbar}l "warm"(R3), TL: sa-urr
PW *k\text{\textbar}l "wind"(R5), TL: kurr
PW *?mar "field"(R13), TL: marr

\(-L_2\)\(-ll\) PW *k\text{\textbar}\text{\textbar}l "pot"(L2), TL: kaw-all
PW *\text{\textbar}\text{\textbar}l "fire"(L7), TL: ngall
PW *k\text{\textbar}\text{\textbar}l "thick"(L15), TL: ka-pull
PW *k\text{\textbar}\text{\textbar}l "silver, money"(L19), TL: ka-mull
PW *h\text{\textbar}l "go"(L26), TL: hull

The single example of \(-r\) (s\text{\textbar}ng-char: "to lighten") has no known etymology; as for \(-l\), it sometimes represents \(*-r\); TL: la-al "two" < PW *l\text{\textbar}ar. or an authentic \(*-l\): TL: pul "grey" < PW *p\text{\textbar}l (L14) (cf. Khmu (Delcros, 1966): puul), but also \(*-?\): TL: sa-mol "stone" < PW *sm\text{\textbar}l (? 67).

Some \(-r\)'s and \(-l\)'s also appear in Scott's Son, as well as \(-rr\)'s and \(-ll\)'s in Scott's Kengtung Wa, but they do not pattern
with the rest of the data available. Some -r's may have been used
to note central vowels, e.g.: nyur (Son, Wa Kengtung) "needle"
<PW*-nē? (22), as Schmidt also suspected, but this is probably
not always the case.

IV) Ferrell's P'uman (1971) also shows two series of corres-
pondances: -h and one case of -y on the one hand, vs. -∅ and
one case of -l on the other:

*-L₁= -h, -y: PW *ʔɛr "fowl" (R1), Pm: ʔɛh⁻

PW *lʔar "two" (R2), Pm: ləy⁻

PW *pvr "to fly" (R11), Pm: puah⁻

PW *ʔmar "field" (R13), Pm: mah⁻

PW *hᵲr "skin" , Pm: hah⁻ (cf. Riang: hur⁻ )

*-L₂= -∅, -l: PW *köl "ten" (L4), Pm: kul⁻

PW *ŋnl "fire" (L7), Pm: ŋwae⁻

PW *mpal "shoulder" (L12), Pm: mwa⁻ (cf. Semai glpaal)

PW *h̪l "go" (L26), Pm: hwo⁻

In all four languages (La, Klen Ka, Tai-Loi, P'uman), lexical
items of the first series correspond among themselves, and so do
those of the second series. The phonetic qualities of *-L₁ and
*-L₂ are easy to guess: agreeing with Tai-Loi, Riang has /-r/
for *-L₁, and /-l/ for *-L₂. We can thus reconstruct PW *-r
and *-l, and this is confirmed within Palaungic by the Laos
dialect of Lamet (Izikowitz, 1951), and in the rest of Northern
Mon-Khmer by Khmu (Delcros, 1966, Lindell, 1974). Other Mon-Khmer
languages such as the Senolic languages of Malaysia will occasio-
nally be quoted for support in the Etymological Lexicon.
Reconstructing final *-r and *-l will be useful to explain certain reflexes of the PW vowel *a which would otherwise seem irregular. This also suggests that the loss of these two finals may be fairly recent in different branches of Waic.

2) **Initials**

My treatment of Waic initials will be as limited as the data itself is. In order to determine the history of certain clusters and the role and form of prefixes and infixes, about ten times more information would be necessary. For the moment, I can only treat the simple initial consonants, and the more common types of complex initials. In section 4, "Complex initials", I will return to these problems.

**a) Simple initials**

The system of Proto-Waic initials found in #CVC# words can be reconstructed as follows:

\[
\begin{align*}
p- & \quad t- \\
\text{b-} & \quad \text{d-} \quad \text{j-} \quad \text{g-} \\
m- & \quad \text{n-} \quad \text{n̥-} \\
r- & \quad s- \quad \text{h-} \\
w- & \quad l- \quad y-
\end{align*}
\]

The only difference with the system of final consonants is the addition of a complete series of voiced stops. There is actually some difficulty in reconstructing the phonetics connected with this series of proto-stops, although the phonological contrast is clear.

The problem is that none of our six basic sources have preserved
this series phonetically intact.

i) Samtau tones

Samtau has only one series of voiceless initial stops, with a simple two-tone system:

PW *kap "chin"(P3), Sm: káp (Khmu: kaap)
PW *gap "to hold in jaw", Sm: käp (Khmu: gaap)
PW *kot "cold"(T5), Sm: kót (Palaung: kät)
PW *gat "old (hum.)"(T7), Sm: kät
PW *kam "chaff"(M5), Sm: kám (Khmu-Theng (Haspero, 1955):

kaam, Palaung: kám)
PW *gan "rat"(NII), Sm: kā (cf. Khmu: gaaŋ "house"?)
PW *cak "deer"(KII), Sm: cák (Khmu: tyaaŋ "deer")
PW *get "to bite"(T6), Sm: cêt (Khmu: gêt "to nip",

Pal.: gêt "to pick flowers, leave
PW *joŋ "foot"(N18), Sm: cuŋ (Khmu: juŋ, Pal.: jwŋ (Shorto, 1971))
PW *tan "to weave"(N4), Sm: tän (Khmu: tāŋ, Pal.: tēŋ)
PW *dém "short"(M16), Sm: tēm
PW *tēw "mushroom"(S9), Sm: tūt (Khmu: tīh, Pal.: tīr)
PW *th "head", Sm: tōh (Khmu: k’dah, Pal.: k’a-dāh"forehead")
PW *piŋ "to blow"(N40), Sm: pōŋ (Khmu: puŋ)
PW *bim "fence"(M25), Sm: pūm (Pal. kār-būm "fenced garden")

Not surprisingly, voiced initials produced a low tone and were then devoiced.

ii) Register and aspiration in Drage's Wa

In Drage's book, Wa is said to have five tones, indicated by numbers 1 to 5; but actually there are no words with tone 2 in the vocabulary, and in fact, very few words have any tone marks at all. Drage's excuse that they "are best learnt by practice with a native" betrays perhaps an uncertainty with regard to tones.
Tone 5, more frequent than the other three added together, appears to be mostly a notation for \(-?\) and sometimes \(-h\), neither of which are otherwise noted consistently. Drage's description of tone 5 as "abrupt, uttered with emphasis - emphatic tone" says nothing about pitch and is consistent with a consonantal reading. Exx:

* PW *khi? "month"(7105), Dr: ke5 (also: ke3)
* PW *sɔ? "dog"(798), Dr: hso5
* PW *r̥i? "deep"(705), Dr: rɔi5
* PW *hle? "rain"(788), Dr: leh5
* PW *kho? "tree"(708), Dr: kao5
* PW *hņo? "rice plant"(720), Dr: ngo5
* PW *rwa? "Wa"(773), Dr: vua5
* PW *br? "yo. sib."(756), Dr: po5 (also: pu)
* PW *ta? "gd. father"(729), Dr: ta5
* PW *n̥a? "house"(723), Dr: nia5 (also: niua)
* PW *n̥a? "sesamum"(718), Dr: ngö5
* PW *gah "to give"(H7), Dr: hko5
* PW *pin "to pick (fruits..)"(H15), Dr: peh5

As the list shows, there is no apparent correlation between tone 5 and the nature of the proto initial; whereas final \(-?\) and \(-h\) account for most words noted with tone 5 (102 out of 114), the rest has final \(-m\)'s (chõm5 "rotten peas") or \(-k\)'s (muk5 "to cut"), or \(-t\)'s (kut5 "ears of grain"), or \(-ŋ\)'s (rawang5 "to follow up") which I cannot explain.

For the remaining tones 1, 3 and 4, I have not found any significant pattern in either finals or initials; see for example:

* PW *r̥ŋŋ "house post"(H56), Dr: rong3
* PW *r̥ŋŋ "horns"(H62), Dr: rong4
where the apparent tonal contrast may simply be a way of noting different vowel qualities: from the history of the vowel system, we would expect /roŋ/ and /ruŋ/ respectively for these two words. There are also some inconsistencies: "chief": kraw3, kraw5, "month": ke3, ke5 etc.. In any case, the number of words where tones 1, 3 and 4 are noted is too small to make a comparison.

What does appear significant, though, is aspiration in initial stops. Proto voiced stops become aspirated stops, noted with a preposed h-, while voiceless stops remain unchanged.

PW *gim "to winnow", Dr: hkōm (Khmu: guum)
PW *gaŋ "rat"(N11), Dr: hkōăng (Khmu: gaŋ "house")?
PW *gah "to give"(H7), Dr: hkō5
PW *kdiŋ "large"(N29), Dr: hting
PW *dok "food tray"(K21), Dr: htōk
PW *dak "Jungle"(K17), Dr: htōak
PW *bi? "human being"(?51), Dr: hpi (Pal. bi)
PW *kbiŋ "thick"(L15), Dr: hpu4C (Khmu: mbw1)

There are, to be sure, many cases where an aspirate would be expected and a simple voiceless stop is found; some of these cases may be explained by the former presence of pre-nasalisation:

PW *ndbn "pot"(N33), Dr: tawng
PW *rŋgoŋ "pillow"(N14), Dr: kōng
PW *ŋgoŋ "scabbard"(N12), Dr: kōăng

In some cases, the notation is unstable:

PW *kdim"ripe"(M18), Dr: htōm, tōm (Khmu: nduum)
PW *rndak"sole, palm"(K19), Dr: (h)tōak (Khmu: kdaak)

I have no explanation for the other exceptions, but the notation is consistently skewed: while there are discrepancies
in one direction:

PW *-bor "evening"(R12), Dr: pua
PW *got "old(hum.)"(T7), Dr: kut

there are no cases of proto voiceless stops represented by Drage as aspirates; the discrepancies noted above thus seem to be notation failures; in fact, even the original clusters of voiceless stop + h are often represented as plain stops:

PW *kho? "tree"(ʔ108), Dr: kao5
PW *khi? "month"(ʔ105), Dr: ke5

The historical evolution of former voiced stops into aspirates is a well known phenomenon in Thai linguistics10, and suggests an intermediate stage with breathy vowels which would later create aspiration in the initials (Haudricourt, 1965).

iii) Aspiration in two dialects of Lawa.

The Umphai dialect of Lawa, and apparently also the Ban Pa Pae dialect, show the same development, while the other dialects have merged the two series in favor of unaspirates.

Umphai Lawa:

PW *gaŋ "rat"(Н11), UL: khiaŋ
PW *koŋ "to dig"(Н9), UL: kauŋ
PW *kdım "ripe"(М18), UL: thum
PW *ktam "crab"(М9), UL: tam
PW *-bor "evening"(R12), UL: phu
PW *pr "to fly"(R11), UL: peu

In addition, all dialects of Lawa show vowel developments which are conditioned in part by the original voice feature of initial stops; but these involve a natural class of vowels which can be called "buzzy" (see Sec. 3.a.1.4. below) and overlaps with the breathy vowels postulated for Drage's Wa.
In Wa proper, devoicing of initials has also taken place. This was probably preceded by a stage where a Clear vs. Breathy contrast in the vowels was established, as in Drage's Wa. But the contrast in phonation type has now been lost in most Wa dialects, except in Kawa. The two series of Kawa vowels are described phonemically by the terms Tense vs. Lax (Dai, 1958), but the author points out that this contrast is manifested phonetically by differences in pitch, in vowel length, in vowel quality as well as in phonation type, all of which vary according to the dialect. In the standard orthography, Lax vowels are marked with a - while Tense vowels are left unmarked.

Dai (1958) gives the pitch correlates for three dialects of Yunnan Wa (Kawa):

Meng Gong dialect has high falling pitch on tense vowels
   low falling pitch on lax vowels

Mang Won dialect has high level or high falling pitch on
   tense vowels, low falling or low rising pitch on
   lax vowels

Shi Xi dialect has high level pitch on tense vowels
   low level pitch on lax vowels

In the Yan Shuai dialect, the contrast is manifested by vowel quality, at least for the high vowels, which are slightly lowered and backed for tense vowels.

In terms of length, tense vowels are generally shorter than lax ones, and this is why, the author explains, Chinese borrowings with the fifth tone have tense vowels in Kawa: cf: ści "pencil", ty (sic) "poison" ( indicates tense vowels).

But the basic distinction in Kawa is one of phonation type;
Tense vowels are described as being produced with the arytenoid cartilages "moved" to a position which influences the tension of the vocalis muscle, presumably by creating more tension than in the lax vowels. If I am right in interpreting this as being a description of creaky voice, we have to assume that the older Clear vs. Breathy contrast conditioned by Voiceless vs. Voiced initials has been shifted in Kawa to a Creaky vs. Clear contrast, respectively. This interpretation would also throw a very interesting light on vowel developments in Wa Proper (See Sec. 3), including Kawa.

Tense (Creaky?) vowels = original voiceless initials:

PW *kɔn "child" (N 4 ), KW: gon /kɔn/
PW *cak "deer" (K 11 ), KW: jag /cak/
PW *tɪʔ "vegetable, curry" (? 31 ), KW: daexe /taw?/
PW *pon "four" (N 10 ), KW: boun /pɔn/

Lax (Clear?) vowels = original voiced initials:

PW *gat "much" , KW: gTed /kɛt/
PW *jɔŋ "foot" (N 18 ), KW: jəong /cəŋ/
PW *daj "flower" (Y 14 ), KW: däi /tay/
PW *bon "able, get" (N 13 ), KW: bōun /pɔn/

Among the minor sources of Waic material, there are many traces of the PW voicing contrast in initial stops, but no language has kept it phonetically unchanged.

v) No real tones in Luce's Wa.

For the Wa of Tung Va, Luce (1965) noted five tones. Tone 4 represents unaccented, i.e. non-final syllables. Tones 2 and 5 are conditioned by finals, but tones 1 and 3, only found with final stops, depend on the voicing of the initial, as Luce noted: "surd initials" with tone 1, "sonant initials" with tone 3.
However, the surd-sonant distinction noted by Luce is of recent origin and has nothing to do with the contrast between Proto-Waic Voiced and Voiceless initials we are discussing here.

Tone 1 does occur with original (PW) voiceless stops:

PW *kaʔ "fish"(? 6 ), WaL: kaʔ
PW *teʔ "hand"(? 25 ), WaL: taiʔ
PW *pEʔ "you"(? 48 ), WaL: pêʔ

but also with PW voiced stops which have been devoiced:

PW *get "to bite"(16 ), WaL: ki:t
PW *git "quail" , WaL: kwɪ:t
PW *_diʔ "silk"(? 40 ), WaL: taaʔ
PW *bʔ "carry on back" , WaL: puʔ

Tone 3 occurs with initial stops which are voiced today, but this voicing is usually due to pre-nasalisation of stops which may have been either voiceless or voiced in Proto-Waic:

PW *kntiʔ"hole"(?33 ), WaL: n\dawʔ
PW *ndiʔ "dumb"(?39 ), WaL: n\dauʔ

The phonetic tones of Luce's Wa are entirely determined by the present quality of initials and finals, and are probably a recent innovation, more recent than devoicing of the old voiced initials. They are not (yet?) contrastive.

vi) No "α-switching" in Scott's Son and Wa

Two of Scott's Waic languages have a strange development noticed by both Schmidt and Shafer, but not explained. In Son and Wa of Kengtung, the original voiceless stops are now voiced, and the original voiced, voiceless.

To this rule there are three exceptions:
PW *ka? "fish"(N6) ka ka
PW *k6n "child"(N4) kun kawn
PW *k6l "ten"(L4) kaw kaw

and one irregular case:
PW *keŋ "head"(N7) gaiŋ kaingo

otherwise, *voiceless stop → voiced:
PW *kiŋ "wind"(R5) gur gur
PW *ktɕ? "earth"(?28) dé de
PW *pos "deer"(S15) buh bwe
PW *p6n "wife"(N12) bun bun
PW *tɕp "flea"(P8) dup dup
PW *cak "deer"(K11) jāk jāk
PW *kiŋ "man,(class.)"(?10)gao gao
PW *poŋ "four"(N10) b/wun b/wun
PW *teŋ "hand"(?25) de de
PW *piŋ "grey"(L14) bao
PW *k6ŋ "cold"(T5) gut
PW *kiŋ "father"(N3) gung
PW *tiŋ "breast"(S11) dwe

(A number of examples shown by Schmidt actually represent older pre-nasalised stops, e.g. Son: dim "eight"<PW *sntem (M13), and follow different rules.)

and *voiced stop → voiceless
PW *k6ŋ "old"(T7) kot kut
PW *k6ŋ "big"(N29) ting ting
PW *k6ŋ "belly"(L11) tu tu
PW *d6m "short"(M16) tum tum
Son          Wa (Kengtung)
PW *bɛʔ  "goat" (?53)  pé  pé
PW *gis  "salt" (?56)  kyi  kwi
PW *kbiʔ "thick" (?15)  pu  po
PW *byʔ  "yo. bro." (?56)  po
PW *briʔ  "breast" (?57)  pu
PW *driʔ  "hill" (?8)  tur
PW *dang  "top, above" (?43)  pāŋ

This may appear to be a case of so-called "α-switching" rule (α Voice → -α Voice, α = + or -), but actually it may be explained phonetically in a natural fashion: notice that the Proto-Waic clusters: Stop + h are noted as simple, unaspirated stops:
PW *khiʔ  "moon" (?105)  kyi  kyi
PW *khoʔ  "tree" (?108)  kao  kau
PW *phon  "five" (?22)  pūon  pawn

or Shan

even though aspirated stops found in Thai, borrowings are noted, Burmese style:

"snare"  hköm
"chief"  hkun

These facts indicate, I think, that Son and Wa (Kengt.) went through a stage where the Proto-Waic voiced stops became aspirates, like Drage's Wa and two Lawa dialects; then, the initial Proto-Waic voiceless stops became voiced; later on, all aspirates, including the original *kh-, *ph- clusters, lost their aspiration: finally, Thai borrowings brought a few aspirates back into these languages.
Proto-Waic > Proto-Wa-Lawa > Present-day Son, Wa Kg.

*P- *P- *P- *B- B-
*B- *PY- *Ph- *Ph- P-
*Ph- *Ph- *Ph- *Ph- P-

This way, it is not necessary to postulate a criss-cross of features which would be extremely difficult to imagine in real psychological and sociological terms.

vii) Contrastive tone in P'uman

Ferrell's P'uman has a two-way tone contrast which does reflect the earlier voice feature of the initials: low tone for proto voiced initials, high tone for proto voiceless. Since a similar situation, not surprisingly, is found in Riang (a Palaungic language outside Waic), Ferrell noticed the agreement in tones between P'uman and Riang, and the lack of agreement with Luce's Wa in this respect; he concluded that P'uman and Riang were more closely related than P'uman and Wa. But the vocabulary, and, more importantly, the vowels of P'uman show it to be a Waic language. It is closely related to Samtau where a two-way tone system having the same origin is also found. The resemblance in the tone systems of P'uman and Riang is a clear case of typologically identical sound changes which are historically distinct. This does not bring about a historical convergence of the two languages because a variety of other changes took place in the earlier history of each language (e.g. simplification of certain initial clusters), and these create different inputs to the tone rules, resulting in a few, but important, tonal disagreements between P'uman and Riang. This question would require a full representation of
Proto-Palaungic. See P'uman examples in the Lexicon.

b) Initial clusters

Much of the early history of Mon-Khmer languages consisted in gradually reducing the imposing array of initial consonant clusters which existed at one time in most of the branches, and was itself the result of a Proto Mon-Khmer disyllabic stage with a rich morphology. The work in this area has barely begun (Shorto 1963, Gradin 1976, Ferlus, 1976, in press, to appear).

The data on Waic does not permit yet a full treatment of the question for that sub-branch of Mon-Khmer. I will only examine initial Stop + Liquid clusters in this section and widen the scope in section 4.

Initial Stop + Liquid clusters are frequent, well preserved, and interesting for their effect on the register of the following vowel. Much will be said about this in the chapter on gliding (Section 3), so, I will only use two languages here, Samtau and Kawa to establish the important notion of "permeability".

Proto-Waic had the following initial Stop + liquid clusters:

(leaving aside initial ?- for the moment)

*kr- *gr- *pr- *br-

*kl- *gl- *pl- *bl-

another cluster: *cr- is rare and of doubtful origin, but has the same effect on the following vowel as the other clusters.

In Samtau and Kawa, the tone and register of the main vowel following these clusters are high and tense respectively after *kr- *kl- *pr- *pl-, low and lex respectively after *gr- *gl- *br- *bl-.

It is exactly as if the liquid did not exist or presented no obstacle to the forward influence of the initial consonant.
This very common mechanism in South East Asia will be referred to as "permeability".12

- **Proto Voiceless Initials:**
  - **Samtau**
    - PW *kris "a bear" (S 22) khrīh
    - PW *klyŋ "fat, adj." (N 15) klāŋ
    - PW *prem "old (thing)" (M 27) phrım
    - PW *play "liquor" (Y 28) plāy
  - **Kawa**
    - PW *kris
    - PW *klyŋ
    - PW *prem
    - PW *play

- **Proto Voiced Initials:**
  - PW *griŋ "things" (N 64)
  - PW *gro? "clothes"
  - PW *gloŋ "escape"
  - PW *glic "wrong"
  - PW *breŋ "outside, weather" (777 phrè?)
  - PW *blin "plant shoot"
  - PW *blan "mountain"
    - Samtau
    - Kawa

As we will see later, certain nasals and semi-vowels in some Waic languages are also permeable to the preceding initial; and consonants other than stops, e.g. s-, h-, may or may not permeate through them.

In addition to register patterns, the original contrast in stops has sometimes left traces in the consonants themselves. In the Lawa dialects of Umphai and Ban Pa Pae, stops follow the same aspiration rules when they precede liquids as they do when they are single initials; but in the La'up dialect we find that same pattern, aspiration of proto voiced stops, before -l- (and not before -r-) even though single original voiced stops do not aspirate in this dialect. This could indicate that aspiration as a reflex of breathiness was more widespread among Lawa dialects in the past than it is today.
Exx:

PW *pli? "fruit"(?87), Lp Lawa: plie?
PW *blo? "betel"(?94), Lp Lawa: phlu?
PW *klọŋ "river"(?76), Lp Lawa: klọŋ
PW *glak "to lick"(?48), Lp Lawa: klọŋ

To summarize with regards to the whole question of voiced initials, we find a two-way tone system in one branch of Waic (Samtau, P'uman, Khala?13), and we can reconstruct a two-way register distinction in another (Wa-Lawa). But nowhere do we find in the present-day languages an actual voiced vs. voiceless distinction preserved in the initial stops. Yet, there is little room for doubt that such a distinction existed at some time in the Palaungic past, and, before that, in Proto-Mon-Khmer (cf. Palaung, Khmu, and many other languages, including the whole Aslian branch). But the question remains: did it survive in Proto-Waic, or had devoicing already taken place at that stage?

The question cannot be answered by looking at simple initials alone; I have found some evidence that devoicing had not yet taken place in Proto-Waic by examining complex initials and their effect on the following vowel. Since vowel developments are crucial in this respect, let's turn to them first and then come back to this matter.

3) **Vowels**

Initial devoicing, and the ensuing tone or register contrasts, are known to have affected vowel qualities in many Mon-Khmer
languages (Henderson 1952, Huffman 1976, Gregerson 1976). Waic languages display a unique variety of developments in this regard, ranging from a small shift in one vowel (Samtau), to great upheavals in the entire vowel system (Lawa).

After systematically comparing the vowels of four Waic languages and their dialects, it is possible, or at least tempting, to make the following generalisation:

- **Phonation types (registers)** affect vowel systems by causing diphthongisation, but Tones have little effect on vowel quality and do not create diphthongs.

Thus, in the Wa-Lawa branch where a register contrast can be reconstructed, the breathy vowel system has a different history from the clear vowel system. The differences have become so great in Lawa for example, that it is now very difficult to equate individual vowels of one system to those of the other without extensive comparisons outside Lawa\(^{13}\). And the problem is solved as soon as we look at the vowels of Samtau where tones have left most vowels undifferentiated.

a) Vowels and registers

The above generalisation is not meant to be "universal", whatever that term may mean; in fact, we will see shortly that register in Lawa is something quite different from register in Wa proper and in Drage's Wa; and yet there are striking and detailed similarities in the way registers affect the vowels of Wa-Lawa and those of a remotely related language like Khmer for example.

Very broadly speaking (for details see Pinnow 1957), Khmer
has a breathy register conditioned by older voiced initials, and a clear register by voiceless ones.

The vowel qualities of Khmer breathy vowels are different from those of clear vowels, but, to describe the difference, we must isolate the most open vowels *aa and *a from all the others. The most open vowels are not affected by clear register; in breathy register, they are diphthongised: the end of the vowel remains open, but the initial part is raised to a mid-high or high glide: *áa → /aa/  *á → /a/

*àa → /ea/  /ia/  *à → /eə/

The other, non-open, vowels are affected by register in a doubly reverse manner: they are affected by the clear, not the breathy register, and the initial part of the vowel is lowered, not raised:

*āa → /aa/  *ūu → /ou/  *àa → /aa/  *ũu → /uu/ etc...

The history of Wa-Lawa vowels has some remarkable similarities to that of Khmer vowels just outlined: the same doubly reverse treatment of open vs. non-open vowels, due to the same historical process: emergence of register due to devoicing of initials.

i) On-gliding of breathy *a

From the point of view of the system, there is only one open vowel in Proto-Waic:

<table>
<thead>
<tr>
<th>Proto-Waic Vowel System:</th>
</tr>
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<tbody>
<tr>
<td>i</td>
</tr>
<tr>
<td>e</td>
</tr>
<tr>
<td>ū</td>
</tr>
<tr>
<td>a</td>
</tr>
</tbody>
</table>
i) Samtau: /á/ and /à/

In Samtau and those languages which are outside the Wa-Lawa branch, the quality of *a is not affected by the devoicing of stops:

PW *kntak "tongue"(K14), Sam.: ñták
PW *rndak "sole"(K19), Sam.: ñták

(numerous exx. in the Lexicon)

In Wa-Lawa, breathy *a has been diphthongised by raising the initial part of the vowel to a front or central glide. The present-day result depends on the language and so does the actual conditioning: however, in all cases, the modification of PW *a can be traced to an element of voicing in the initial which first produced breathiness.

ii) Drame's Wa: Central glides

Diphthongisation of *a produced a vowel nucleus usually noted öa by Drame (sometimes also úa or ö, or even o by misprint); this probably represents /æa/; when *a is not diphthongised, it remains /a/, usually noted á:

PW *ña? "house"(?23), Dr: niúa, nía5
PW *(n)wa? "Wa"(?72), Dr: vúa
PW *ma? "mother"(?61), Dr: möa
PW *la? "La tribe" , Dr: lóa
PW *dak "jungle"(K17), Dr: htöak, htök
PW *gæŋ "rat"(H11), Dr: hköang
PW *daŋ "to cross"(H31), Dr: htöang, htöng
PW *gac "shy"(C4), Dr: hkōit
PW *wac "sword"(C12), Dr: vöit, voit
PW *næŋ "army"(N5), Dr: nöin
PW *bæŋ "white"(N7), Dr: pöin
PW *gæt "very" , Dr: kót
PW *yan "to weep"(M42), Dr: yöm
PW *knas "to smile"(S8), Dr: nioich
PW *day "flower"(Y14), Dr: htoi, töi
PW *gah "to give"(H7), Dr: hkö5
PW *wah "broad"(H18), Dr: vöach
PW *lah "to slice"(H23), Dr: löch

This list suggests that PW *a was diphthongised after all voiced initials. However, there are also many words with initial nasals and liquids where *a is retained as /a/; these words actually had preglottalised or pre-aspirated initial nasals and liquids:

PW *hla? "leaf"(?90), Dr: la
PW *hman "to ask"(N8), Dr: main
PW *hran "tooth"(N54), Dr: räng, h'rang
PW *?lan "long"(N68), Dr: läng4
PW *hmac "sand"(C10), Dr: mait5
PW *hlat "to fear"(T18), Dr: lat
PW *hnap "to yawn"(P4), Dr: ngāp
PW *hnam "blood"(M19), Dr: nām
PW *?mar "field"(R13), Dr: ma
PW *?nay "eye"(Y8), Dr: ngai
PW *?lay "squirrel"(Y27), Dr: lai

Note that certain borrowings behave with respect to *a as if they had preglottalisation or preaspiration: na "face" (from PW *hna? see Thai ᪃لوح), while others do not: ngōa "tusk" (from PW *ŋa? see Thai: ฉล). This point is confirmed by Samtau initial clusters (see Sec. 4).
The voicelessness of the initial *h- and *2- has simply permeated through the sonorant and prevented the appearance of breathy register in these words. This analysis is confirmed when we look at Stop + Liquid initial clusters: the presence or absence of diphthonguisation of *a depends on the voiced or voiceless character of the Proto-Waic Stop:

**Retention of *a:**

PW *kra? "road"(?79), Dr: kра
PW *krak "buffalo"(K39), Dr: krāk
PW *pran "roof"(N55), Dr: prang
PW *klan "eagle"(N69), Dr: klāng
PW *plai "liquor"(Y28), Dr: plai
PW *plah "Classifier"(H24), Dr: blach

**Diphthongisation of *a:**

PW *bra? "to eat"(?80), Dr: parō
PW *gray "to talk" , Dr: krōi

There are no Stop + Nasal initials, since Proto-Wa-Lawa times, but there are a few cases of /s/ + Nasal initials: surprisingly, most of them undergo diphthongisation of *a, as if nasals were not permeable to the Voiceless feature of /s/. There are several possible explanations for this: the initial /s-/ may represent a proto voiced consonant such as *j- (as perhaps in "far", see below), or the sN- initial may be the reduction of an earlier *snN- initial where *sn- plays the role of a separate syllable, or proto-Waic may have inserted an automatic vowel between s and N to break up the cluster. In the latter two cases, syllable boundaries would have proven to be impermeable to the forward spread of register. Note that Drage always writes an -a- to split the initial cluster, while being much less consistent in other types
of consonant groups.

PW *snak "vein" (K 22), Dr: sanök
PW *snat "gun" (T 13), Dr: (h)sanöt
PW *ṣn̪ar "green", Dr: sangō(a)
PW *ṣmał "seed" (L 17), Dr: (h)samō(a)
PW *ṣn̪ay "far" (Y 10), Dr: (h)sängei

The only case of sN - initial without diphthongisation I have found in Drage actually contains a preglottalised nasal in P.Waic and does not represent a case of permeability of nasals to initial s-:

PW *sʔnaʔ "middle, between" (ʔ44), Dr: sanā(5)

In Nasal + Liquid initials, we would expect diphthongisation to take place regularly since the whole initial group is voiced; and it does in some cases:

PW *mraʔ "to steal, property" (ʔ81), Dr: marō5
PW *mrān "Burman" (H 17), Dr: marōn, maron

but not in others:

PW *ʔmlak "bat sp.", Dr: malāk
PW *ʔ-hlar "to scare" (T 19), Dr: nglāt
PW *ʔ-hlar "to disappear", Dr: ngarai4

these latter examples represent affixed forms where the initial seems to have disappeared ("bat") or was originally voiceless.

Finally, Liquid + Approximant initials produce diphthongisation, as expected:

PW *rwaʔ "door" (? 72), Dr: ravōa, ravūa, ra-wōa
PW *rwaŋ "thigh" (Ñ 50), Dr: ravuang
PW *rway "tiger" (Y 24), Dr: ravōa, rawoi
One exception, "hundred", is probably a borrowing, or a deficient notation after a palatal (cf. "house"(? 23)):  

PW *ryah "hundred"(H 28), Dr: riya

3) Wa Proper: Front Glides

In Wa, the reflex of *a after proto voiced initials is a fronted diphthong (or monophthong): /ea/ or /ea/ or /ɛ/, depending on the environment and the dialect. Kawa regularly shows /ia/ before velar finals and /ɛ/ elsewhere, with some special reflexes when the initial is a voiced palatal (γ- or η-, see "house", "weep"). Bible Wa has a notation -eh-, and, in a few cases -eha-, which probably represent /ɛ/ and /ea/ respectively, as a reflex of breathy *a. South Wa also has /ea/ generally, and /ɛ/ with /-?/ finals. Examples from the closely related dialects of Wa proper are included here, they all have mid front vowels and diphthongs as reflexes of breathy *a.

(abbreviations: SW= South Wa, KW= Kawa, BW= Bible Wa, DW= Davies’ Wa, LW= Luce’s Tung Va Wa, AW= Antisdell’s Wa, SPW= Shorto’s Praok)

<table>
<thead>
<tr>
<th>PW</th>
<th>SW</th>
<th>KW</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ma?</td>
<td>&quot;mother&quot;(? 61)</td>
<td>mc?</td>
<td>mɛ?</td>
</tr>
<tr>
<td>*na?</td>
<td>&quot;house&quot;(? 23)</td>
<td>ne?</td>
<td>nɛ?</td>
</tr>
<tr>
<td>*ra?</td>
<td>&quot;big&quot;(? 78)</td>
<td>rè?</td>
<td>reh</td>
</tr>
<tr>
<td>*wa?</td>
<td>&quot;pull, take&quot;(? 71)</td>
<td>vɛ?</td>
<td>veh</td>
</tr>
<tr>
<td>*ya?</td>
<td>&quot;gd. mo.&quot;(? 102)</td>
<td>ye?</td>
<td>yɛ?</td>
</tr>
<tr>
<td>*dak</td>
<td>&quot;jungle&quot;(K 17)</td>
<td>teak</td>
<td>tɛk</td>
</tr>
<tr>
<td>*lak</td>
<td>&quot;to buy&quot;</td>
<td>leak</td>
<td>lɛk</td>
</tr>
<tr>
<td>*gan</td>
<td>&quot;rat&quot;(N 11)</td>
<td>kean</td>
<td>LW: kian³</td>
</tr>
</tbody>
</table>


PW *baŋ "top"(N 43) plan pehang
PW *gat "very" kêt keht AW: keht
PW *yam "to weep"(M 42) yem ylam yehm SPW:yem, LW:yIm², DW:yam
PW *gah "to give, to let"(H 7) kêh keh
PW *wah "broad"(H 18) vëh vëh vëh

As in Drage's Wa, register permeates through continuants to either prevent or allow diphthongisation of *a, depending on the original voicing feature of the initial:

---Diphthongisation prevented:
PW *krak "buffalo"(K 39) kyak krâk LW: krak
PW *plak "side"(K 49) plak plåk SPW: plak, AW: plak
PW *lanŋ "long"(N 68) lanŋ låŋ AW: lanŋ
PW *hranŋ "tooth"(N 5+) yan hranŋ rang LW: ranŋ², DW: rang
PW *pranŋ "roof"(N 55) pyan pranŋ prang
PW *hlat "to fear"(T 18) hlät lat
PW *hnam "blood"(M 19) nam hnam nam LW: nam²
PW *klaŋ "testicle"(V 3) kla LW: klo²
PW *marŋ "field"(R 13) ma má ma SPW: ma, DW: ma, LW: me²
PW *plah "Classif."(H 24) plåh plå

---Diphthongisation allowed:
PW *rwaŋ "door"(? 72)³ sveŋ saweŋ siveŋ DW: ra-vet
PW *braŋ "to eat"(? 80) prêŋ preh AW: preh
PW *mraŋ "to steal"(? 81) byeŋ mprêŋ breŋ SPW: bre
PW *ryah "hundred"(H 28) dayeŋ yeŋ siyeh AW: riyeh, LW: yI?³

And, again as in Drage's Wa, an initial *s- preceding a Nasal
probably forms a separate syllable, and has no effect on the following syllable; therefore diphthongisation is allowed:

PW *sнак "vein"(K 22), SW: sәнеәк - tәneәк
PW *smәл "seed"(L 17), KW:sәмәә, BW:sимәә, SPW: sимә

In addition, and unlike Drage's Wa, some dialects of Wa proper have initial voiced stops. As we saw earlier, these go back to either prenasalised voiced stops or to prenasalised voiceless stops. With these initials, register and diphthongisation of *a depend on the P. Waic nature of the stops, not on their recently acquired voice.

PW *sәтаʔ "tail"(? 30), SW: daʔ BW: sida SPW: sida
PW *к(1)ntәk "tongue"(K 14), SW: dәk SPW: dәk, DW: ndә
PW *rntәh "medicine"(H, 9), SW: sәдәәh BW: sida KW:sәntәh
PW *ndәk "to cook"(K 18), SW: deәk

But there is a more important difference between Wa proper and the rest of Wa-Lawa: in Wa proper, diphthongisation of *a does not take place if the word ends in a palatal (*-c, *-ƞ, *-s, *-y). The original quality of *a is preserved, and the Kawa material shows that register appears in these words with the same conditioning as usual, including the same permeability patterns of nasals and liquids.

Lack of diphthongisation in spite of voiced initials:

PW *gәc "shy"(C 4), LW: kәәic⁵
PW *wәc "sword"(C 12), SW: вәәc, KW: вәәc, BW: вәит, LW: вәәic⁵
DW: wәи

PW *nән "army"(Ñ 5), KW: нән, BW: naing, SPW: нән
PW *баң "white"(Ñ 7), SW: пәәn, KW: пәәn, BW: пәән, DW: пәәn
PW *daŋ "flower"(Y 14), SW: тәәy, KW: тәәy, BW: тәәи, LW: tәәi⁵
This apparently odd restriction has in fact a natural explanation which gives us some indications about the early phonetics of Wa proper. Diphthongisation in Wa proper produced at first a front glide [æ] or [ια], not a central glide as in Drage's Wa. This is probably why it did not take place with words ending in palatals. In Waic, as in Mon-Khmer generally, palatal finals have a distinct palatal on-glide. In Wa proper, front-diphthongisation of a *a before these finals would have created vocalic nuclei like [ιαι], and it seems that the creation of such 'see-saw' triphongs with the same on-glide and off-glide was avoided, even though triphongs having different on- and off-glides, such as [ιαι], are tolerated. Diphthongisation of *a in Wa proper and in Drage's Wa probably had different phonetics from the start.

The pattern of register assignment in Kawa is also revealing: it takes place regardless of the palatal or non-palatal nature of the final. See the above examples and the following:

PW *hman "to ask" (N 8 ), KW:hman, BW:maing, SPW:man, LW:məi 2, DW:main

PW *ŋay "eye" (Y 8 ), SW:ŋay, KW:ŋay, BW: ngai, LW:əi 2

PW *mey "with" (Y 20 ), SW: may, KW: máy, BW: mai:, AW: mai

PW *lay "squirrel" (Y 27 ), LW: 1əi 2

PW *play "liquor" (Y 28 ), SW: play, KW: pləy, LW:pləi 2, AW: plai
This shows that register formation and diphthongisation of *a are two separate historical processes in Wa proper. In fact, the formation of the Lax register in Wa proper and gliding of *a in Drage's Wa have exactly the same conditioning, down to the last details of permeability of nasals; we could therefore posit register formation as a single event in Proto-Wa, and diphthongisation as two separate innovations occurring after the split of Drage's Wa from Wa proper. Diphthongisation in Drage's Wa applies to all breathy vowels and creates a central glide; diphthongisation in Wa proper applies to breathy vowels except with final palatalals, because it creates a front glide.

4) Lawa: "buzzy" central glides.

Lawa diphthongisation of P.Waic *a is clearly of the central type, and occurs before all finals, palatalals included. There are further developments with these final palatalals in the various dialects of Lawa (see below), but the quality of the reflexes point to a Proto-Lawa *i*a before these as before other finals. The evolution of PW *a to PLw *i*a looks very similar to what we saw in Drage's Wa, but the conditions for the appearance of diphthongisation in Lawa are partly different from those of the Wa languages. These conditions have been discovered by Mitani (personal communication) and also apply to the Northern dialect which was not included in his survey; they are characteristic of the whole Lawa branch and no other branch of Waic.

As expected, diphthongisation of *a takes place after P.Waic voiced stops:
And, also as expected, liquids are premeable to the voicing of preceding stops, either allowing or preventing diphthongisation of PW *a:

Proto-Voiceless initials:

PW *tnda? "hand-span" (? 38); (Pa Pae): dia?
PW *da? "to sow" (? 37); (BL): tia? , (Um): thia?
PW *ba? "father" (? 54); (BL, L'up, Phae): pia? (Um): phia?
PW *rndak "sole" (K 19); (BL): ?andiak (Um): rathiak (North): latiak
PW *ndak "to cook" (K 18); (Um): ndiak
PW *gan "rat" (? 11); (BL, L'up, Phae): kian (Um): khian
PW *dan "to cross" (? 31); (BL): tian (Um): thian
PW *dap "to cover up" (? 9); (BL): tia
PW *gah "to give" (? 7); (BL, L'up, Phae): kiah (Um): khia

(see also below: *gac "shy", *ban "white", *bas "lighted", *day "flower")

Proto-Voiced initials:

PW *kra? "road" (? 79); (BL, L'up): khra? (North, Um): kra? (Phae): khya?
(Pa Pae): kya?
PW *krak "buffalo" (K 39); (BL, L'up): khrak (North, Um): krak
(Pa Pae): kyak (Phae): khyak
PW *pran "roof" (? 55); (BL, L'up): phran (Um): pran (Phae): phyan
PW *kran "hornbill" ; (BL, L'up): khran (North, Um): kran
PW *kian "eagle" (? 69); (North): kian
PW *klaw "testicle" (? 3); (North): kla

Proto-Voiceless initials:

PW *glak "to lick" (K 48); (BL, Phae): klia (L'up, Um): kliia
PW *gran "weaving loom" ; (BL): khriia
PW *braw "coconut tree" ; (BL, Um): phria (Pa Pae, Phae): phia

North: (Rangsit, 1945): phria
But surprisingly, single initial nasals and liquids have no effect on PW *-a- in Lawa\textsuperscript{22}, although these initials are voiced and create diphthongisation in the Wa branch:

PW *ma? "mother"(? 6l); (BL, Um, L'up, Phae, North): ma?
PW *ra? "big"(? 78); (BL, Um, L'up, North): ra? (Phae): ya?
PW *la? "to place" ; (BL, Um, Phae): la?
PW *lac "ruined" ; (BL, Um, Phae): laic

Preglottalised and preaspirated Nasals and Liquids, a fortiori, do not affect PW *-a-:

PW *hla? "leaf"(? 90); (BL, Um, L'up, Phae): hla? (North): lha?
PW *?laŋ "long"(˚68), (BL): ?daŋ (Um, Phae): ?laŋ
PW *?may "with"(Y 20); (BL): ?mea (Um, L'up, Phae): ?mai
PW *?lay "squirrel"(Y 27); (BL): ?dea (Um, Pa Pae): ?lai
PW *?mar "field"(R 13); (BL, Um, Phae): ?ma
PW *hlat "fear"(T 18); (BL, Um, L'up, Phae): hlat
PW *hmaŋ "ask"(˚8); (BL, Um, Phae): hmaŋ
PW *ŋap "yawn"(P 4); (BL, Um): ŋap
PW *hnam "blood"(M 19); (BL, Um, L'up, Phae): hnam (North): nhām (Rangsit):

What is even more surprising, initial palatal nasals do not function like other nasals and do create diphthongisation of *a:

PW *ŋa? "house"(? 23); (BL, Um, L'up, Phae, Pa Pae, North): ŋia?
PW *ŋnas "to smile"(S 8); (BL, L'up, Phae, North): ŋia

(UM); ŋnas (L'up): ŋia (Phae): ŋioh

In this respect, Lawa/ŋ-/behaves exactly like /y-/ and /v-/ which also trigger diphthongisation of *a:

PW *ya? "gd. mo."(? 102); (BL, Um, Phae): yia? (L'up, North): yia?
PW *rwa? "Lawa"(? 73); (BL)\textsuperscript{23}: lawia? (Um): rawia? (Phae): l/yawia?
Unexpectedly, preaspirated *-w- also creates diphthongisation:

\[ W *\text{wah} \quad \text{"monkey"}(? 74); (BL, Um, Phae): \text{fia? (North): fia?} \]

This would suggest that *-w- is not permeable to voiceless initials, and that f- somehow behaves like a voiced initial.

At this point, it becomes obvious that voicing and permeability of PW initials will not explain the diphthongisation of *-a- in Lawa, as they do in the Wa branch.

Diphthongisation of *-a- in Lawa is conditioned by two different factors: either the presence of an initial proto voiced stop, followed or not by a liquid, or the presence of a proto initial semi-vowel or palatal nasal, whatever may precede it.

The fact that single initial liquids and non-palatal nasals do not affect PW *-a- indicates that Lawa diphthongisation may have nothing to do historically with its counterpart in the Wa branch. In Lawa, initial voicing, although it is necessary, is not sufficient. In addition, we will see in the rest of the vowel system that initial *hy- and *hn- function just like *(h)w-, *y- and *n- in their effect on vowels.

There are two ways to explain Lawa diphthongisation:
by supposing either that it took place in two separate steps, e.g. first after *G(L)- initials, a Wa-like innovation, then after *(H)W,n- initials; or that it is a single innovation with an apparently strange conditioning. There seems to be no argument in favor of the first explanation; the second appears strange only in terms of phonological classes: in terms of distinctive features, what sort of natural class would contain G(L)- and (H)W,n- and exclude L-,m-,n-,η-, K(L)-, HL-, H(m,n,η)-? There seems to be no answer; but phonetically there is an explanation: First we should notice that Lawa /y/ has a great deal of friction in all dialects, especially in the North where it is often transcribed [z-] (Cf. ziam "to weep" < PW *yam, lazi "gibbon" < PW *ryol), that PW *hy-, like *hw-, have so much friction that they produce true fricatives, s- and f- respectively, in all Lawa dialects (Cf. suvok, sik "ear" < PW *hyok, fia? "monkey" < PW *hwia?), that *w- itself is often transcribed /v-/ in several Lawa dialects, and finally that the release of n- is also very fricative; Secondly, if we assume that *G(L)- initials gave rise to breathy vowels before breathiness turned into aspiration or disappeared, and if we keep in mind that breathy voice contains more aperiodic turbulence than clear voice, we can see that during Proto-Lawa times there probably was a single phonetic conditioning for diphthongisation: voiced noisiness, which would be found in all the sounds listed above and only in them.

Thus, the phonologically disjunct environments G(L)- and (H)W,n- do form a natural class, but only in acoustic terms, and only when we examine the low-level phonetic details of these segments; the natural class of vowels having such voiced noisiness will hereafter be called the "buzzy" vowel class.
Thus, Lawa diphthongisation of PW *-a- may well have taken place as a single innovation, and the conditioning, "buzziness", shows it to be independent of what happened to *-a- in the rest of the Wa branch.

Finally, it should be noted that, unlike Wa proper, Lawa does diphthongise *-a- before final palatals. There are several further developments before these finals, but the qualities of the reflex vowels in the various dialects of Lawa point to a Proto-Lawa *-a- before these as before other finals.

Buzzy reflexes of PW *a before palatals:

<table>
<thead>
<tr>
<th>Proto-Wa</th>
<th>Ban Sam,</th>
<th>L'up</th>
<th>Umphai</th>
<th>Bo Luang</th>
<th>North</th>
</tr>
</thead>
<tbody>
<tr>
<td>*-lawa</td>
<td>Ban Phae</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*-ay</td>
<td>-uai</td>
<td>-iə</td>
<td>-ia</td>
<td>-ia</td>
<td>-i</td>
</tr>
<tr>
<td>*-ac</td>
<td>-uacic</td>
<td>(-ic)</td>
<td>-iaic</td>
<td>-ik</td>
<td>(-ic)</td>
</tr>
<tr>
<td>*-ap</td>
<td>-uaĩ</td>
<td>-iŋ</td>
<td>-iãn</td>
<td>-iŋ</td>
<td>-iŋ</td>
</tr>
<tr>
<td>*-as</td>
<td>-uais</td>
<td>-uah</td>
<td>-as</td>
<td>-iah</td>
<td>-iəh</td>
</tr>
</tbody>
</table>

Examples:

PW *wayne"to borrow"(Y 23):(B.Sam, B.Phae): wuai, (BL): wia
PW *rwayne"tiger"(Y 24):(B.Sam, B.Phae): yawuai, (L'up): ṭawiə
        (Um.): rawiə, (BL): ṭawiə (North): ṭawi
PW *mlay "young man"      :(B.Sam,B.Phae): mbluai, (Um): mblia
        (BL): plia
PW *day "flower"(Y 14):(B.Sam, B.Phae): tuai, (L'up): tia
        (Um.): thia, (BL): tia
PW *gac "shy"(C 4):(B.Sam, B.Phae): kuic, (Um): chiaic
        (BL): kik
PW *wac "knife"(C 12):(B.Sam,B.Phae): wuic, (Um): wlaic,(BL): wik
PW *ban "white" (N 7) : (B. Sam, B. Phae) : puin , (L'up) : pin
(Um) : phiala , (BL) : pin , (North) : pin
PW *bas "lighted" : (B. Sam, B. Phae) : puaih , (Um) : phias
(BL) : piah
PW *kas "to smile" (S 8) : (B. Sam, B. Phae) : noih , (L'up) : nuah
(Um) : nias , (BL) : niah , (North) : niah

One way to explain this complicated situation is to start from *-a- → -ia- before all palatals, as before other finals: then the -i- on-glide is either backed to -u- (cf. B. Sam, B. Phae) or fronted to -i- (cf. Um, BL, North) or to either, depending on the nature of the final (cf. L'up); the see-saw triphthongs [-iai-] thus created are preserved in only one dialect, Umphai, and there, only before obstruents; otherwise, they are simplified in various ways.

If this explanation is correct, it would indicate that the difficult [-iai-] triphthongs are not absolutely impossible but can only arise through certain historical routes and not others: i.e., *-aia- → -aja- → -aia- is a possible route, but *-aia- → -saia- → -ai- may not be (cf. Wa proper, B.3.a.1.3.).

ii) **Off-gliding of clear mid vowels**

In the mid vowels of Waic languages, we again find types of changes which remind us very much of what happened in Khmer (Pinnow, 1957): diphthongisation occurs, but only after the proto voiceless initials, not the voiced, and proceeds by lowering the first half of the vowel, not by raising it.

In many Waic languages, we find evolutions of this type:
e.g. *-o- becomes -au-, or *-e- becomes -ai-, or *-e- becomes -ai-, usually, but not always, after voiceless initials; but here again, the actual conditioning environments for these changes are not the same in every branch of Wâic, and there is no compelling reason to assume that they all go back to a single historical instance of diphthongisation. The latter hypothesis would in fact force us in many cases to imagine several complicated changes, some of which do not seem natural.

The Samtau branch, here again, has not undergone any diphthongisation, and provides crucial evidence for the history of Wâic vowels, after its own changes are understood and taken into account.

1) Off-gliding of PW *o

Proto-Wâ *-o- before final Labials does not follow the same sound changes as it does before other finals. This is due to a Proto-Wâ innovation which will be described later; therefore, no examples of *-o- before *-p and *-m will be discussed in this section (see Sec. C.1.).

a) Drage's Wâ

In Drage's Wâ, PW *-o- is diphthongised to -ao-, only for clear vowels, and only before velar finals, laryngeal finals, and, surprisingly *-1:

PW *cro? "new"(?83), Dr: shrao
PW *kho? "tree"(?108), Dr: kao5
PW *?mok "to cough"(K30), Dr: maok
PW *prok "side, rib"(K42), Dr: praok
PW *hyok "ear"(K54), Dr: yaok
PW *hok "go up"(K60), Dr: haok
PW *kon̂g  "to dig"(N 9 ), Dr: kaong
PW *hlon̂g  "high"(N 77 ), Dr: laong, laung
PW *yōng  "village"(N 86 ), Dr: yaong
PW *koh  "to get up"(H 5 ), Dr: kaoh
PW *kol  "ten"(L 4 ), Dr: kao
PW *hol  "to vomit"(L 25 ), Dr: hao

The breathy reflex of *o before these finals remains:-o-
PW *boŋ  "each other"(? 55 ), Dr: po
PW *yoŋ  "to see"(? 103 ), Dr: yo
PW *nok  "full"(K 23 ), Dr: nōk
PW *mbok  "to stab"(K 26 ), Dr: pōk
PW *yok  "to raise"(K 53 ), Dr: yōk
PW *mrok  "wild dog"(K 44 ), Dr: maruk
PW *(r)ŋong  "pillow"(N 14 ), Dr: kōng
PW *jōŋ  "foot"(N 18 ), Dr: chōng

Before other finals, no diphthonguisation takes place in either
breathy or clear vowels; the reflex is generally: o, but before PW *-r,
we find: -ua# which may either represent a diphthong or indicate
an open syllable; in any case, the reflex is clearly distinguishable
from that of clear *-o- before *-l which is ao#:
PW *hoc  "to arrive"(C 17 ), Dr: hoit

PW *loc  "heel"(C 14 ), Dr: loit
PW *yot  "wild" , Dr: yōt
PW *nor  "wax" , Dr: niua
PW *bor  "evening"(R 12 ), Dr: pua
PW *l̃os  "fat"(S 2 ), Dr: loich
b) Wa proper

In Wa proper, on the other hand, all Proto Waic *-o-*'s before final velars, laryngeals and *-l* diphthongise, regardless of register:

<table>
<thead>
<tr>
<th>PW *b0?</th>
<th>&quot;each other&quot;(?55)</th>
<th>SW</th>
<th>KW</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW *bmo?</td>
<td>&quot;rope&quot;(?65)</td>
<td>mau?</td>
<td>mao</td>
<td></td>
</tr>
<tr>
<td>PW *sno?</td>
<td>&quot;stone&quot;(?67)</td>
<td>smau?</td>
<td>simao</td>
<td></td>
</tr>
<tr>
<td>PW *cro?</td>
<td>&quot;new&quot;(?83)</td>
<td>khráo?</td>
<td>hkráo</td>
<td></td>
</tr>
<tr>
<td>PW *yo?</td>
<td>&quot;see&quot;(?103)</td>
<td>yau?</td>
<td>yao</td>
<td></td>
</tr>
<tr>
<td>PW *nok</td>
<td>&quot;full&quot;(K23)</td>
<td>nàok</td>
<td>naok</td>
<td></td>
</tr>
<tr>
<td>PW *prok</td>
<td>&quot;side, rib&quot;(K42)</td>
<td>práok</td>
<td>prao</td>
<td></td>
</tr>
<tr>
<td>PW *hyok</td>
<td>&quot;ear&quot;(K54)</td>
<td>yaök</td>
<td>yaok</td>
<td></td>
</tr>
<tr>
<td>PW *yok</td>
<td>&quot;lift&quot;(K53)</td>
<td>ýaök</td>
<td>ýao</td>
<td></td>
</tr>
<tr>
<td>PW *hok</td>
<td>&quot;to go up&quot;(K60)</td>
<td>hak</td>
<td>hak</td>
<td></td>
</tr>
<tr>
<td>PW *jøn</td>
<td>&quot;foot&quot;(N18)</td>
<td>tsaøŋ</td>
<td>caøŋ</td>
<td></td>
</tr>
<tr>
<td>PW *holø</td>
<td>&quot;high&quot;(N77)</td>
<td>laøŋ</td>
<td>laøŋ</td>
<td></td>
</tr>
<tr>
<td>PW *yøn</td>
<td>&quot;village&quot;(N86)</td>
<td>yaøŋ</td>
<td>yaøŋ</td>
<td></td>
</tr>
<tr>
<td>PW *køh</td>
<td>&quot;to get up&quot;(H5)</td>
<td>kaøh</td>
<td>kæøh</td>
<td>kæø</td>
</tr>
<tr>
<td>PW *kol</td>
<td>&quot;ten&quot;(L4)</td>
<td>kau</td>
<td>køø</td>
<td>køø</td>
</tr>
</tbody>
</table>

Before other finals, -o- is found as a reflex of PW *-o-* for both registers:

<table>
<thead>
<tr>
<th>PW *koc</th>
<th>&quot;hot&quot;(C3)</th>
<th>SW</th>
<th>KW</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW *hoc</td>
<td>&quot;to arrive&quot;(C17)</td>
<td>hoc</td>
<td>hoc</td>
<td>hwet</td>
</tr>
</tbody>
</table>
c) Lawa

Lawa dialects display a great variety of reflexes of PWaic vowels: most of the vocalic differences among Lawa dialects are due to the influence of final consonants. In the present work I will not say much about these developments which have been intensively studied by Mitani. On the other hand, those vowel shifts which are conditioned by the buzzy or clear nature of the vowels have taken place quite early in the history of Lawa, and many of them are shared by all Lawa dialects. These are the innovations I will concentrate on in the following pages.

At the Proto-Lawa stage, we can assume diphthongisation of PWaic *-o- to */ao/ before all finals, but only for clear vowels. The buzzy reflex of PWaic *-o- seems to be Proto-Lawa */o/.

Diphthongisation: (off-gliding)

(L'up):rako?

PW *ʔmo? "rope" (?65), (BL):ʔmau?, (Um,L'up,Phae):ʔmo?

PW *rmo? "dream" (?66), (BL):ʔamu?, (Um):ramo?

PW *smo? "stone" (?67), (BL):samou?, (Um,Phae):samo?, (PaPae,L'up, North): samo?

PW * kho? "tree" (?108), (BL):ʔhou?, (Um,Phae,Sam,L'up,North): kho?

PW *ʔmok "to cough" (?30), (BL):ʔmook, (Um,L'up,Phae):ʔmauk
PW *hok  "to go up"(K60 ), (BL): hoak, (Um, Phae): hauk
PW *kon  "to dig"(N9 ), (BL): koan, (Um, Phae): kau
PW *holq  "high"(N77 ), (BL): hloaŋ, (Um, Phae, L'up): hlauŋ, (North): hɔŋ
PW *koc  "hot"(C3 ), (BL): kaik, (Um, Phae, L'up, North): kɔic

PW *hoc  "to arrive"(C17 ), (BL): haik, (Um, Phae, L'up, PaPae): hɔic
PW *hot  "to dwell"(T3 ), (BL): ʔaiŋ, (Um, Phae, L'up): ʔaut, (north): ʔoat
PW *pon  "four"(N10 ), (BL): paŋ, (Um, Phae, L'up, Sam, North): paun
PW *hon  "tuber"(N23 ), (BL): hain, (Um, Phae): haun
PW *mor  "to crawl"(R14 ), (BL, Um, Phae): mau, (L'up): mao, (North): moa
PW *kol  "ten"(L4 ), (BL): koa, (Um, Phae): kau, (L'up): kao, (Sam): kao

PW *pos  "deer"(S15 ), (BL): pauh, (Um): paus, (Sam): paɪh, (North): paɪ
PW *koh  "to get up"(H5 ), (BL): kauh, (Um, Phae): koh
PW *roh  "to bark"(H20 ), (BL): rauh, (Um, L'up): roh

No off-gliding:

PW *bo?  "each other"(?55 ), (BL): poʔ, (Um): phoʔ, (L'up, Phae): puʔ
PW *yo?  "to see"(?103 ), (BL, Um, Phae): yoʔ, (Phae, L'up): yuʔ
PW *mbok  "to stab"(K26 ), (BL, Um, Phae): mbuak, (L'up): mbaŋ
PW *hyok  "ear"(K54 ), (BL, Um, Phae, PaPae): suak, (North): sɪk
PW *yok  "to lift"(K53 ), (BL, Um): yuak
PW *jon  "foot"(?18 ), (BL, Phae): cuŋ, (Um): chuan, (L'up): chuan, (North): ciŋ
PW *?yon  "village"(N86 ), (BL, Um, Phae): ʔyuŋ, (Sam): ʔuŋ, (North): ɣuŋ
PW *bor  "evening"(R12 ), (BL, Phae): pu, (Um): phu
PW *ŋəh "to strike" , (BL): ŋəh, (Um): ŋəh, (Phae): ŋəh

Faced with such an array of similar sound shifts with partly shared environments in all Wa-Lawa languages, one could be tempted to isolate a common denominator and propose that as a single shared innovation at the Proto-Wa-Lawa level. For example: PW *-o-→PWL*aəu after Voiceless Stops optionally followed by liquids. However, this solution would require a number of additional changes in each language which are more complicated and have less natural environments than the ones proposed here.

2) Off-gliding of PWL *ə.

There is only one central vowel which undergoes off-gliding, and this vowel must be reconstructed as PWaic *-i- for a variety of reasons28. However, this PWaic vowel underwent an early change soon after the separation of the Samtau branch from the rest of Waic; in Proto-Wa-Lawa, PWaic *-i- was lowered to a PWL *-ə-, and was therefore ready to undergo off-gliding like the other mid-high vowels, PWL *-o- and *-e-.

The adventures of PWL *-ə- are very similar to those of PWL *-o-, except for two details:

- there is no diphthongisation of clear register *-ə- before *-i in Drage's Wa, although it does occur in Wa proper, and, of course, in Lawa; but I can only propose this tentatively since only one reliable example is available at the moment: "money" (L 19).

- in Lawa dialects, the contrast between PWL *-ə- and *-o-
is preserved only before final velars and *-l. Otherwise
the two merge in favor of -o- in all dialects, except in the
North where the distinction is maintained for all finals, besides -7.

The reflexes of PWL *-a- are the following:

Drage's Wa
PWL *-a- → -aü- in clear register vowels before velar and laryngeal
PWL *-a- → -ö- elsewhere. finals.

Off-gliding:
PW *kiʔ "body" (?10 ), Dr: kaü
PW *tiʔ "vegetable" (?31 ), Dr: taü
PW *riʔ "deep" (?85 ), Dr: raü, rau
PW *siʔ "pain" (?99 ), Dr: hsaü
PW *hik "hair" (?61 ), Dr: haük, hauk
PW *kən "country" (?10 ), Dr: kaüŋ
PW *pən "to blow" (?40 ), Dr: paüng, paung, paong
PW *ʔiʔ "sweat" , Dr: laoch

No off-gliding:
(breathy vowel with velar or laryngeal final)
PW *niʔ "to drink" (?24 ), Dr: niö
PW *grən "things, clothes" (?64 ), Dr: hkrüng, khrüng
PW *blən "shoot of plant" , Dr: plöng
( other finals, both registers)
PW *giʔc "to burn" (?5 ), Dr: köit
PW *hiʔc "to sting" (?18 ), Dr: höit
PW *hməc "ant" (?19 ), Dr: möit, moit
PW *kiʔn "father" (?3 ), Dr: köin
PW *hiʔt "to smell sth." (?26 ), Dr: höt
PW *?y(n)yt "to extinguish" (T 9 ), Dr: yȫt
PW *?in "to put" (N 2 ), Dr: ön, on
PW *yin "to press down" , Dr: yön
PW *gim "to winnow" , Dr: hkȫm
PW *jim "peas" , Dr: chöm5
PW *kdim "ripe" (M 18 ), Dr: htōm, tȫm
PW *knrim "under" (M 31 ), Dr: krȫm
PW *him "to bathe" (M 48 ), Dr: hȫm
PW *rmhim "nest" (M 49 ), Dr: mȫm
PW *bis "to bake" , Dr: pöl̄ch
PW *?iy "to raise (anim.)" (Y 3 ), Dr: öi
PW *kiy "cotton" (Y 6 ), Dr: kȫi
PW *kmil "money, silver" (L 19 ), Dr: mȫa

Wa proper

PWL *-o- -aw- before final velars, laryngeals, and *-l, with both registers

PWL *-o- -w- elsewhere

Off-gliding:

<table>
<thead>
<tr>
<th>PW</th>
<th>SW</th>
<th>KW</th>
<th>BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW *ki?</td>
<td>&quot;body&quot; (? 10 )</td>
<td>kaa?</td>
<td>kaw?</td>
</tr>
<tr>
<td>PW *ni?</td>
<td>&quot;drink&quot; (? 24 )</td>
<td>naa?</td>
<td>naw?</td>
</tr>
<tr>
<td>PW *?ri?</td>
<td>&quot;deep&quot; (? 85 )</td>
<td>daw?</td>
<td>raw?</td>
</tr>
<tr>
<td>PW *si?</td>
<td>&quot;pain&quot; (? 99 )</td>
<td>saa?</td>
<td>saw?</td>
</tr>
<tr>
<td>PW *hik</td>
<td>&quot;hair&quot; (K 61 )</td>
<td>haăk</td>
<td>haw̆k</td>
</tr>
<tr>
<td>PW *kiŋ</td>
<td>&quot;country&quot; (N 10 )</td>
<td>kawŋ</td>
<td></td>
</tr>
<tr>
<td>PW *m-piŋ</td>
<td>&quot;wind&quot; (N 40 )</td>
<td>mpawŋ</td>
<td>baung</td>
</tr>
<tr>
<td>PW *griŋ</td>
<td>&quot;things, clothes&quot; (N 64 )</td>
<td>kyaŋ</td>
<td>krawŋ</td>
</tr>
<tr>
<td>PW *bliŋ</td>
<td>&quot;shoot of plant&quot;</td>
<td>plawŋ</td>
<td></td>
</tr>
<tr>
<td>PW *?liŋ</td>
<td>&quot;sweat&quot;</td>
<td>lauŋ</td>
<td></td>
</tr>
<tr>
<td>PW *kmil</td>
<td>&quot;money&quot; (L 19 )</td>
<td>maŋ</td>
<td>maŋ</td>
</tr>
</tbody>
</table>
No off-gliding:

PW *gic  "to burn" (C 5 ) kwc
PW *hic  "to sting" (C 18 ) hwc hui-ik
PW *kin  "father" (N 3 ) kwn Kûn kui-ing
PW *hit  "to smell sth." (T 26 ) ñwt
PW *?in  "to put" (N 2 ) ñwn ñwn uin
PW *yin  "to press down" ywn
PW *cip  "to wear" (P 6 ) tswp cuip
PW *jim  "peas" cûm
PW *kdim  "ripe" (M 18 ) ñwm tuim
PW *rmbim  "garden" (M 25 ) spwm smpûm sipuim
PW *him  "to bathe" (M 48 ) hwm huim
PW *mîs  "nose" (S 18 ) mwh mwûs
PW *?îy  "to raise (anim.)" (Y 3 ) ñwy ñwy uî-e
PW *diy  "to take" (Y 15 ) twy tûy tui-e

Lawa

In the Northern dialects, diphthongisation of PWL *-ã- gives rise to an -ai- nucleus, except with final laryngeals where the merger with PWL *-o- was probably completed in Proto-Lawa times. Unfortunately, the amount of data available is not sufficient to give a wide variety of examples. In the Umphai dialect, all reflexes of PWL *-ã- have merged with *-o-.

In the remaining dialects, only final velars and *-l show diphthongisation with distinct reflexes, usually -aî-. In all cases, Lawa only diphthongises clear, i.e. non-buzzy, vowels.

Off-gliding:

PW *hîk  "hair" (K 61 ), (BL, Phae, L'up): hâik, (Sam): hæk, (Um): hauk
(North): hâik
PW *pịŋ "to blow"(N 40), (BL, Phae): paŋ(um): pauŋ
PW *kɾpiŋ "to bury"(N 41), (BL): ?apaŋ, (Um): rapauŋ, (L'up): rapaŋ (Phae): yapaŋ
PW *kriŋ "drum"(N 63), (BL, L'up): kraŋ, (Um): kraŋ, (Phae): khyāŋ
PW *kmil "money"(L 19), (BL, Phae, PaPae): maŋ, (Um): mau, (North): maŋ
  (merger with *-o- except in North):
PW *hım "to bathe"(M 48), (BL, Um, Phae, L'up): haum, (North): haim
PW *rmhım "nest"(M 49), (BL): ?ah maum, (Um): rahmaum, (North): lam haim

No off-gliding:
PW *griŋ "clothes"(N 64), (Um): khran, (Phae): khyāŋ
PW *gım "to winnow" , (PaPae): kim
PW *kdım "ripe"(M 18), (BL): tum, (Um): thum

Diphthongisation of *-o- is evidently quite similar to that of *a in each Wa-Lawa sub-branch. The only significant difference is found before *-l, and the data in this respect is not abundant. The various mergers of *-o- and *-a- in Lawa do not argue against a common treatment of *-o- and *-a-. Separate diphthongisation rules in each sub-branch of Wa-Lawa affected *-o- and *-a- together, unless the two had already merged.

3) Off-gliding of front vowels

The diphthongisation of *-e- to /ai/ probably occurred later than that of the other mid vowels. It does not take place at all in some languages, like Drage's Wa, which do diphthongise other mid vowels; and where it does occur, the conditioning environments
diff: widely from language to language.

*e of Wa proper

rising diphthong /ai/ is found in Wa proper as a reflex of *-e- in both registers; I have found no reason to o' that Drage's Wa ever underwent such a change. Moreover, / is found, in Wa proper, only before -? and velar finals; t re other finals, Proto-Wa-proper *-e- and *-i- merged in favor i/.

*te? "hand"(?25), SW tai? KW tái? BW t'ai
*snte? "eight"(? 26) dal? ntái? sidai
*sne? "day"(? 16) sñai? sñäi? singai

F *bre? "forest"(? 77) prái? pral
PW *khe? "after"(? 106) khái? hkai
PW *?ek "El. bro."(K 3 ) ?ac aik
PW *hwek "dark"(K35) hväik vaik
PW *lek "to enter" lac làik laik
PW *ken "head"(N 7 ) kan kàiŋ kaing
PW *gen "work" kàiŋ kaing
PW *hmen "male"(N 47) man hmaiŋ

b) Lawa *e

Lawa dialects have two sets of closing front diphthongs. There is an /ai/ set which has this quality in all recorded dialects, and another set with a higher initial vowel: /ei/, /ai/ or /ei/,
depending on the dialect. These two sets represent different proto vowels: /ai/ goes back to PW *e, except before *-t and *-n where it goes back to PW *i, while the other set goes back to PW *e. There is also some evidence to suggest that /ai/-gliding took place in Proto-Lawa itself while the other type occurred later, after the splitting up of Lawa into three major proto-dialects.

But in either set, gliding only occurs with the clear, i.e. non-buzzy vowels of Lawa.

/ai/ glides:

_from PW *i:

PW *?it "to sleep"(T 1 ),(BL,Um,L'up,Phae,North):?aic

PW *sin "cooked"(N 21 ),(BL,Um,Phae):saiń

_from PW *e:

PW *ken "head"(N 7 ),(BL,Um,Phae,L'up,PaPae,Sam,North):kaiń

PW *hmеn "male (anim.)"(N 47 ),(BL,Um,PaPae):hmain


PW *rep "grass"(P 10 ),(BL):raic,(Um,L'up,Phae,North):raip

PW *?em "to live"(M 1 ),(BL):?aiń,(Um,L'up):?aim

PW *sntem "nine"(M 8 ),(BL):sataiń,(Um,Phae,L'up):sataim

(Sam):stain,(North):staim

PW *prem "old"(M 27 ),(BL):phraiń,(Um):praim,(Phae):phayaim

PW *sem "bird"(M 37 ),(BL):saiń,(Um,Phae,L'up,PaPae,Sam,North):saim

PW *mhem "fingernail"(M 45 ),(BL):hmain,(Um,Phae,Sam):hmain

(North):mhaim

PW *crel "gold"(L 20 ),(BL):khrea,(Um,L'up):khrai,(Sam,Phae):khyai

PW *tes "mushroom"(S 9 ),(BL,L'up,Phae,PaPae):taih,(Um):tas

PW *rmpes "broom"(S 14 ),(BL):aphaiń( Um):rapas,(North):rbeh
There are wide gaps in the distribution of /ai/ with finals; these are not accidental: for example, there are no Lawa -ait or -ain rimes because Proto-Wa-Lawa *-et and *-en gave rise to -iat and -ian finals in Pre-Lawa, regardless of register, creating a structural gap which was then filled by PWL *-it and *-in; there are no -aik rimes because PWL *-ek merged with PWL *-eik in favor of *-eik, early in Proto-Lawa; there are no /ai/ diphthongs with final palatals because there are no *-ec, *-en, or *-ey rimes at all in Proto-Waic; before -? and -h, gliding to /ai/ would be expected, and is actually found, but only in the Bo Luang dialect; there is evidence that this latter change is recent, yet another example of similar innovations occurring in different dialects at different times.

The other set of glides, from PW *i, is more evenly distributed with finals;

PW *gni? "pestle" (? 75), (BL):ŋrai?, (Um):ŋre?, (Phae):ŋreį?
      North):graį?

PW *kli? "penis" (? 86), (BL):klaį?, (North):klaį?

PW *pli? "fruit" (? 87), (BL):plai?, (Um, L'up):ple?, (Phae, Sam):pled?
      (North):płaį?

PW *si? "louse" (? 96), (BL):sai?, (Um):se?, (Phae, Sam):seį?.
      (North):sai?

PW *khi? "firewood" (? 104), (BL):khai?, (Um):che?, (L'up):khe?


PW *?iik "a tuber"(K 1 ), (BL):?iic, (Um):?iic, (Phae):?iic

PW *lik "pig" (K 45 ), (BL, PaPae):laic, (Um):leic, (Phae, Sam, North):leic
The parallel between Khmer and Waic ends here; there are eight independent innovations within Waic which find equivalents in Khmer: Drage's Wa breathy *a → òa

- Wa proto breathy *a → ea
- Lawa buzzy *a → ia

Dragre's Wa clear *o and *ə → ao and aʊ

- Wa proto clear *o and *ə → ao and aw
- Lawa clear *o and *ə → au and ai
- Wa proto clear *e → ai
- Lawa non-buzzy *e and *i → ai and ai

These innovations are too recent to be connected to each other, and a fortiori to those of Khmer, and yet too much alike in every detail to be the result of coincidence. It can always be argued that register contrasts are too difficult acoustically or articulatorily to be maintained for a long time; they need support in other phonetic correlates such as pitch and diphthongisation: the same needs operating on languages of similar structures will give rise to similar solutions; the pitch patterns are not too surprising, but why precisely the same vowel-gliding patterns, and not others? Why the same
division of open vs. non-open vowels, and the same doubly reverse gliding in each division? One of the aims of this study was to raise the question in precise terms and in a real language context, so that phoneticians can perhaps one day give us some ideas.

iii) a reconstructed on-glide

The Khmer model also suggests some reconstructions and histories of PWaic vowels, which might otherwise seem arbitrary or even far-fetched.

One Proto-Waic vowel not mentioned so far has quite a dramatic history, as such things go. The Samtau reflexes of this vowel are /ɔ/ for both tones (and /o/ before PWaic *-h), which indicate an even more open quality for Proto-Waic.

PW *ŋdɔk "blind"(K 20),     Sam:ʔntɔk
PW *ŋhɔk "to dry"(K 58),     Sam:hɔk
PW *ŋŋɔk "knife"(Ñ 15),      Sam:ŋɔŋ
PW *ŋɔŋk "waist"(Ñ 20),      Sam:ŋɔŋ
PW *ŋɔŋk "bamboo shoot"(Ñ 44), Sam:ŋɔŋ
PW *ŋhɔŋk "to hear"(Ñ 48),   Sam:ŋɔŋŋ
PW *ŋŋɔŋk "pole"(Ñ 56),      Sam:rɔŋ
PW *ŋɔŋŋk "roof"(Ñ 73),      Sam:plɔŋ
PW *ŋɔt "cold"(T 5),         Sam:kɔt
PW *ŋɔt "old"(T 7),          Sam:kɔt
PW *ŋɔnn "five"(N 22),       Sam:phɔn
PW *ŋɔn "civet"(R.16),       Sam:sɔl
PW *ŋɔn "el. sis!"(L 1),     Sam:ŋɔl
PW *ŋɔl "fire"(L 7),         Sam:ŋɔl
Comparison with other Mon-Khmer languages shows that this vowel is a reflex of Proto-Palaungic short *a, an open vowel which acquired a back quality in Waic when the contrast between long and short vowels disappeared, at some point in Pre-Waic times. The very open reflexes of this proto-vowel in Lawa dialects, at least for the non-buzzy register, confirm the value *o postulated for this proto vowel.

PW *kɔk "to call"(K 7 ),(BL):kɔk,(Um,Phae):kɔk
PW *hɔk "to dry"(K 58 ),(BL):hɔk,(Um):hɔk
PW *hɔŋ "to hear"(N 48 ),(BL):hɔŋ,(Um, L'up,Phae):hɔŋ,(North):mɔŋ
PW *ʔɔŋ "pole"(N 56 ),(BL):ʔɔŋ,(Um):ʔɔŋ,(Phae):ʔɔŋ,(L'up):ʔɔŋ
PW *mɔŋ "horse"(N 58 ),(BL):mbɔŋ,(Um,L'up):mbɔŋ,(Phae):mbɔŋ

PW *lɛŋ "black"(N 171 ),(BL):lɛŋ,(Um,Phae,L'up):lɛŋ
PW *hɔŋ "morning"(P 5 ),(BL):hɔŋ,(Um):hɔŋ
PW *klɔm "to carry on should."(M 34 ),(BL):klɔm,(Um,Phae):klɔm
PW *sɔŋ "to wake s. one up" , (BL):sɔŋ,(L'up):sɔŋ
PW *ŋɔ "fire"(L 7 ),(BL):ŋɔ,(Um,L'up,Phae):ŋɔ
PW *ʔɔŋ "to swell"(S 1 ),(BL):ʔɔŋ
PW *kɔŋ "charcoal"(S 32 ),(BL, Sam):sɔŋ,(Um):sɔŋ,(North):ləŋ
PW *sʔɔŋ "dry"(H 3 ),(BL):sʔɔŋ,(Um,L'up,Phae):sʔɔŋ,(North):sʔɔŋ

However, in the breathy register of Wa proper, this proto vowel has the highest back vowel, /u/, as a reflex:
This would not be a problem, were it not for the fact that the back vowel system of Waic languages is already very crowded, having four vowels in addition to *u, and it is difficult to see how a breathy *o could have acquired the value /u/ without colliding with at least one of the other back vowels.

The only solution that I can see is to posit an intermediate stage where PWaic *o became a diphthong. The breathy reflexes of *o in Drage's Wa give us a clue as to what sort of diphthong it may have been:

<table>
<thead>
<tr>
<th>PW *ndək</th>
<th>&quot;blind&quot;(K 20)</th>
<th>Dr:tuak</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW *mbraŋk</td>
<td>&quot;to ride&quot;(K 41)</td>
<td>Dr:puak</td>
</tr>
<tr>
<td>PW *ŋŋəŋ</td>
<td>&quot;knife&quot;(N 13)</td>
<td>Dr:ranguang, rangōng</td>
</tr>
<tr>
<td>PW *ŋŋəŋ</td>
<td>&quot;hip&quot;(N 20)</td>
<td>Dr:niuung</td>
</tr>
<tr>
<td>PW *marŋəŋ</td>
<td>&quot;horse&quot;(N 58)</td>
<td>Dr:maruung</td>
</tr>
<tr>
<td>PW *ləŋ</td>
<td>&quot;black&quot;(N 71)</td>
<td>Dr:luang</td>
</tr>
<tr>
<td>PWL*ŋŋəŋ</td>
<td>&quot;to stand&quot;(N 19)</td>
<td>Dr:chuang</td>
</tr>
<tr>
<td>PW *ŋəŋ</td>
<td>&quot;old&quot;(T 7)</td>
<td>Dr:kuat, kut</td>
</tr>
<tr>
<td>PW *ləŋ</td>
<td>&quot;to go out&quot;(N 19)</td>
<td>Dr:luen</td>
</tr>
<tr>
<td>PW *r̥məs</td>
<td>&quot;banana&quot;(S 17)</td>
<td>Dr:muech</td>
</tr>
</tbody>
</table>
If PWaic $\star a$ first goes to $\star u a$, it can easily go on traveling through the back vowel system without colliding with any other vowel, and reach the value $[u]$. This evolution could also be expected from a look at the Khmer example: PWaic $\star o$ would have functioned as an open vowel in PWaic\textsuperscript{25}. Like PWaic $\star a$, it would be diphthongised in breathy register, and, like $\star a$, would do so by raising the initial part of the vowel to an onglide. While PWaic $\star a$ gave rise to front and mid on-glide, PWaic $\star o$ would produce a back on-glide.\textsuperscript{30}

4) **Complex initials**

The interaction of initials, registers, and vowel gliding will now help us understand some of the problems about initials which were left pending in Sec. 2.

a) Pre-aspirated sonorants

Both Lawa and Kawa have initial clusters consisting of an h- followed by any Nasal, Liquid or Approximant. The remaining dialects of Wa proper, and Drage's Wa, do not have these clusters, or do not show them in the notations\textsuperscript{31}, but the vowels found in these words and their cognates belong to the clear series\textsuperscript{32}, indicating that preaspiration is old in Waic.

<table>
<thead>
<tr>
<th>Bo Luang Lawa</th>
<th>Kawa</th>
</tr>
</thead>
<tbody>
<tr>
<td>PW $\star h\etaap$ &quot;to yawn&quot; (P 4)</td>
<td>$h\etaap$</td>
</tr>
<tr>
<td>PW $\star h\eta\dot{o}2$ &quot;rice plant&quot; (720)</td>
<td>$h\eta\dot{o}2$</td>
</tr>
<tr>
<td>PW $\star h\etaap$ &quot;difficult&quot; (P 7)</td>
<td>$h\etaap$</td>
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<tr>
<td>PW $\star h\etaam$ &quot;blood&quot; (H 19)</td>
<td>$h\etaam$</td>
</tr>
<tr>
<td>PW $\star h\etaun$ &quot;to ask&quot; (Ny 8)</td>
<td>$h\etaun$</td>
</tr>
<tr>
<td>PW $\star h\etaun$ &quot;to hear&quot; (Ny 48)</td>
<td>$h\etaun$</td>
</tr>
</tbody>
</table>
In the North group of Lawa dialects, these initial clusters appear in the reverse order: sonorant first followed by -h-, sometimes separated by a predictable epenthetic vowel. The pattern however does not appear when the sonorant was a PWaic approximant: in such cases, all Lawa dialects have simple voiceless fricatives as reflexes:

**Bo Luang Lawa**  |  **Kawa**
---|---
PW *hwa?  | "monkey" (?74)  | fia?  
PW *hwek  | "dark" (?35)  | flak  | hvfak  
PW *hran  | "tooth" (?54)  | hrän  | hrän  
PW *hlæ?  | "rain" (?88)  | hlai?  | hlæ?  
PW *hla?  | "leaf" (?90)  | hla?  | hla?  
PW *hlat  | "to fear" (?18)  | hlat  | hlát  
PW *hlon  | "high" (?77)  | hloän  | hlåön  
PW *hyok  | "ear" (?54)  | suak  | hyåck  

**North Lawa**

| PW *\textit{hnam} | "blood" (?19)  | nhäm  | (Rangsit, 1942) 
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</thead>
<tbody>
<tr>
<td>PW *\textit{hmo} ?</td>
<td>&quot;lung&quot; (?68)</td>
<td>mho?</td>
<td></td>
</tr>
</tbody>
</table>
| PW *(r)*\textit{hmeŋ} | "male" (?47)  | ramhain  | (Rangsit) 
| PW *\textit{hman} | "to hear" (?48)  | mhæŋ  | 
| PW *\textit{hmac} | "sand" (?10)  | mhait  | (Rangsit) 
| PW *\textit{hem} | "nail" (?45)  | mhaim  | 
| PW *\textit{rmhím} | "nest" (?49)  | lamhaim  | 
| PW *\textit{hwa} ? | "monkey" (?74)  | fia?  | 
| PW *\textit{hlæ} ? | "rain" (?88)  | ıhe?  | 
| PW *\textit{hla} ? | "leaf" (?90)  | ıha?  | 
| PW *\textit{hlæ} ? | "tree bark" (?92)  | ıaho  | (Rangsit) 
| PW *\textit{hlon} | "cool" (?74)  | ıhoän  | 
| PW *\textit{hlon} | "high" (?77)  | ıhoη  | 
| PW *\textit{hyok} | "ear" (?54)  | sîk  |
Samtau also has -h- in second position, but with this difference that the initial sonorant has become devoiced; hy- initials are not reduced to s-, but hw- initials yield an f-; hŋ- initials are also reduced by losing the nasal entirely, while hr- initials are simplified by losing the h-:

PW *ŋŋit "to smell"(T 26)
PW *ŋŋap "difficult"(P 7)
PW *ŋnam "blood"(M 19)
PW *ŋməŋ "male"(N 47)
PW *ŋməŋ "to hear"(N 48)
PW *ŋwa? "monkey"(? 74)
PW *ŋraŋ "tooth"(N 54)
PW *ŋlɛ? "rain"(? 88)
PW *ŋla? "leaf"(? 90)
PW *ŋloŋ "tree bark"(? 92)
PW *ŋlik "iron"(K 46)
PW *ŋloon "high"(N 77)
PW *ŋyok "ear"(K 54)

Samtau
hũt
ŋhãp
ŋhãm
ŋhĩŋ
ŋhũŋ
fã?
rãŋ
ŋhẽ?
ŋhã?
ŋhõ?
ŋhêt
ŋhũŋ
xhũk

Since no available Waic language or dialect shows any contrast between Sonorant + h and h + Sonorant initials, there is no simple way to decide if one kind of cluster or the other, or both, were present in Proto-Waic.

A rapid look at cognate words outside Waic shows that for most of them, h + Sonorant was the most likely possibility:

Palaung(Milne 1931), Khmu(Delcros 1966)

PW *ŋŋo? "rice plant"(? 20)
PW *ŋŋap "to yawn"(P 4)
PW *ŋŋap "difficult"(P 7)
The initial h- in these words actually represents an innovation common to Proto-Palaungic and perhaps Proto-Khmuic; it corresponds to initial s- in other branches of Mon-Khmer and in Proto-Mon-Khmer: cf. Lit. Mon: śnu "husked rice", Proto-Semai: smaṇ "to ask" (Diffloth, 1977), Khmer: svaa "monkey", Proto-Semai: slaa? "leaf", Lit. Mon: slūn "high".

This evidence supports a reconstruction h + Sonorant at the Proto-Waic stage. However, there are a few words where it may be possible to reconstruct an initial Sonorant + h cluster even in Proto-Waic. The evidence for this comes mostly from outside Waic: from Lamet: mkho "lung" (Wenk, 1965), from Riang: rəmhím "nail", or from further away: Proto-Semai *nsɔ̄m "nest", Chrau: masôm "nest".

The problem will only be cleared up for Proto-Waic when a great deal more is known about the Samtau branch or K'ala and Khalo. For the moment, I have reconstructed h + Sonorant almost everywhere, knowing that some items will have to be modified in this regard.

b) Pre-glottalised sonorants.

Lawa has a full series of preglottalised sonorant initials, which correspond in Kawa to simple sonorants followed by tense vowels. This allows us to reconstruct complex initials of the type ʔ + Sonorant, at least at the Proto-Wa-Lawa level. Besides Kawa, the other dialects of Wa proper, and Drage's Wa, do not show glottalisation in their notations, but the vowel qualities
are always those of the clear series, confirming the reconstruction of initial clusters with ?. In Lawa, the vowels following *?ŋ-, *?n-, *?m-, *?r-, *?l-, belong, as expected, to the clear (non-buzzy) series, but after *?w- and *?y-, either series may be found, a first indication that preglottalised initials might have several historical origins. In addition, the Bo Luang dialect of Lawa shows preglottalised voiced stops\(^{35}\) as reflexes of *?w- and *?r-, and sometimes of *?m- and *?l-, respectively.

<table>
<thead>
<tr>
<th>Bo Luang Lawa</th>
<th>Kawa</th>
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<tbody>
<tr>
<td>PW *?moʔ &quot;rope&quot;(7 65)</td>
<td>?muʔ</td>
</tr>
<tr>
<td>PW *?riʔ &quot;deep&quot;(7 85)</td>
<td>?muʔ</td>
</tr>
<tr>
<td>PW *?mok &quot;to cough&quot;(K 30)</td>
<td>?moak</td>
</tr>
<tr>
<td>PW *s?wok &quot;elbow&quot;</td>
<td>sa?buak</td>
</tr>
<tr>
<td>PW *?moŋ &quot;to look up&quot;(N 49)</td>
<td>mácŋ</td>
</tr>
<tr>
<td>PW *?raŋ &quot;house pole&quot;(N 56)</td>
<td>?daŋ</td>
</tr>
<tr>
<td>PW *?raŋ &quot;horn&quot;(N 62)</td>
<td>?daŋ</td>
</tr>
<tr>
<td>PW *?aŋ &quot;long&quot;(N 68)</td>
<td>?daŋ</td>
</tr>
<tr>
<td>PW *?yŋ &quot;village&quot;(N 86)</td>
<td>?yuŋ</td>
</tr>
<tr>
<td>PW *?nac &quot;drunk&quot;(C 7)</td>
<td>?yuŋ (Um: ?ñuŋ)</td>
</tr>
<tr>
<td>PW *?mar &quot;dry field&quot;(R 13)</td>
<td>?ma</td>
</tr>
<tr>
<td>PW *?n(r)ε1 &quot;forehead&quot;(L 23)</td>
<td>?de</td>
</tr>
<tr>
<td>PW *?nǝs &quot;to love&quot;(S 20)</td>
<td>mús</td>
</tr>
<tr>
<td>PW *?nas &quot;finger&quot;</td>
<td>?dǝh</td>
</tr>
<tr>
<td>PW *?las &quot;loud&quot;(S 30)</td>
<td>?dǝh</td>
</tr>
<tr>
<td>PW *?nay &quot;eye&quot;(Y 6)</td>
<td>?ńea</td>
</tr>
<tr>
<td>PW *?may &quot;with&quot;(Y 20)</td>
<td>?mea</td>
</tr>
</tbody>
</table>
Bo Luang Lawa  Kawa

PW *?moy "axe" (Y 22)  ?mau (Um: ?moi)
PW *?lay "squirrel" (Y 27)  ?dea
PW *r?ich "to exchange" (H 25) ra?ich  lóh

In Samtau, most of the cognates have a simple initial
sonorant followed by high tone:

PW *?ri? "deep" (7 85)  rú?
PW *?mon "to look up" (N 49)  ?eηmúη 36
PW *?rnη "house pole" (N 56)  róη
PW *?rnη "horn" (N 62)  róη
PW *?lnη "long" (N 68)  lóη
PW *s?mnη "star" (N 10)  smán
PW *?mns "to love" (S 20)  máh
PW *?lns "loud" (S 30)  lóh
PW *?nay "eye" (Y 8)  náy
PW *?lay "squirrel" (Y 27)  láy

But there are a few cases where the Samtau cognate has a
devoiced sonorant + h initial, as if the proto initial was a
preaspirated sonorant:

PW *?mo? "rope" (?) 65  mhú?
PW *?mar "dry field" (R 13)  mhál
PW *?moy "axe" (Y 22)  mhúy

and one case of Samtau h + nasal vowel corresponding to Proto-
Wa-Lawa *?r-, or perhaps *?nr-:

PW *?nře1 "forehead" (L 23)  hěl

The last five examples certainly have a different proto
initial from the regular preglottalised sonorants, but, here again, the data is not sufficient to decide precisely what the Proto-Waic situation was. These words will simply be noted *[]?- in the Etymological Lexicon.

A rapid look at the rest of Palaungic and beyond shows that the preglottalised sonorants of Proto-Wa-Lawa are the result of a variety of factors.

For some words, there is no trace of anything besides an initial sonorant; even the tones of Riang and the registers of Lamet indicate a simple voiced initial:

PW *ʔyoŋ "village"(N 86) Lamet: yèŋ (Mitani, 1965)
PW *ʔmar "field"(R 13) Lam.: màal, Riang: mòr (Luce, 1965)
PW *ʔnay "eye"(Y 8) Lam.: ñàay, Riang: ñòy
PW *ʔmoŋ "axe"(Y 22) Lam.: mûy

In such words, PWaic appears to be alone in keeping an element of the initial which has been lost elsewhere in Palaungic.

For some other words, there are complex initials in one or more Palaungic languages, or beyond, in Northern Mon-Khmer:

PW *sʔnaʔ "middle"(?44) Palaung: sâr-nâ
PW *ʔmoʔ "rope"(?65) Khmu: cmo?
PW *ʔriʔ "deep"(?85) Riang: tsârû?, Khmu: jru?
PW *ʔmok "to cough"(K 30) Lamet: rmbôok, Palaung: kâŋ-ʔ
PW *ʔrąŋ "house pole"(N 56) Riang: kârnâŋ, Khmu: cndraŋ
PW *ʔrąŋ "horn"(N 62) Riang: kâmrâŋ, Khmu: cndrâŋ
PW *sʔməŋ "star"(N 10) Riang: sâkmâŋ, Khmu: srmeŋ
PW *ʔmos "to sneeze" Lamet: tmbês,
Khmu(Ferlus, to appear): tmʔeh

or even further beyond:

PW *ʔroŋ "finger" Semai: cnroos, Temiar: cęnoos
But these two sets partly overlap with the two other sets
of correspondances between Samtau and Proto-Va-Lawa: the raw
material of Palaungic (and further) can only partly explain
the Samtau reflexes.

We are dealing here with a recurrent problem in Mon-Khmer
historical phonology. Ferlus (1975, p. 42) has proposed, in
similar cases, that a -ʔ- was introduced in several Mon-Khmer
languages during the transition from disyllabic to monosyllabic
structure: at some point in time, the initial part of a complex
initial would separate itself from the rest of the word and form
a distinct syllable; as the vowels of such syllables would be
unstressed and short (usually an epenthetic -ə-), they would
require a final -ʔ- to form a full syllable: CCVC → CaCVC → Caʔ CVC.
We then have to assume that the initial of Caʔ would disappear,
leaving the glottal stop free to create a new preglottalised initial.
I think reanalysis of one complex syllable into two can be
expected when speakers of strictly monosyllabic languages
borrow disyllabic words, or switch to a language of
the Mon-Khmer type. In the case of Waic, a few words could be
explained in this fashion:

Pre-Waic: jaru? → jaʔ ruʔ → PW:ʔriʔ "deep"
Pre-Waic: hamuc → haʔ muc → PW:ʔmic "ant"

but the sociolinguistic implications would need to be confirmed.

And this explanation does not account for the evolution of full
presyllables into a -ʔ-: if *kanraʔ splits into two syllables,
/kanʔ/ can very well stand as a free syllable since it already has
a final consonant.

Other explanations can be proposed which all involve some
morphological element - a dangerous thing to handle since we know
something about the forms (Shorto, 1963), but almost nothing about the meaning of what little Palaungic morphology survives today.

There are Mon-Khmer languages (e.g. Jah Hut: Diffloth, 1976) which insert an automatic -?- at the end of many morphemes, especially if they are infixes. This would nicely explain cases like PW *?mic "ant", which is clearly derived from the PWaic verb "to sting": PW *hic (C 28) 37. We would have: Pre-Waic *h-rm-uc → *hm?uc → *m?uc → PW *?mic. The word for "field" might also fit here, if Ferlus' explanation (pers. com.) of Lamet: màal "field" as being derived from a PMK root *TSaar (Cf. Khmu: caar "to dig with a pick") is valid: we would have Pre-Waic *c-m-aar → *cm?aar → *m?aar → PW *?mar. Note that in both cases, the Samtau ṣh-reflexes would be accounted for, and would in fact argue for reconstructing PW *m?ic and *m?aar. The registers of the Lamet cognates would still remain problematic (compare Lamet: rmbóok "to cough", PW *?mok), and so would the semantics: the presumed Agentive meaning of the -m- infix can explain "ant" but not "field".

The troublesome -?- might also be a morpheme by itself, or rather, one of the manifestations of a variable infix: there are indications that Palaungic had an infix similar, at least in form, to the pan-Aslian "infixed final-copying" (Diffloth, 1972). For example, in PW *rmh-im "nest" and PW *rmhem "nail", the initial -m- 's may well be infixed copies of the final -m's; similarly, in Riang: cǎŋgï: "stump", pilwil: "turban" (Scott, 1900), saypûv "Carea arborea tree" (Shorto, 1971), tjärŋûr (White striped Riang, honey bee Luce, 1965), rmkiam: "plan" (Luce, 1950), rmîm: "to faint" (Luce, 1950), kmir: "numb", ràndõn: "way", and perhaps pâkçâk: "to erect";
Khmū also has numerous cases of infixed final copies, especially in Expressives: cpkop: "round shaped", cə̀ŏk: "straight but slanted (of a branch)", crdswr: "fan-shaped", ltvet: "move like a fish tail".


Oldual: "go up in smoke", rcbic: "mixing tears and mucus" (cf. rcbic: '(tears, mucus) to flow out"), rknk: "numerous (people) standing", rkywb: "darkness due to clouds", rmtn: "pale", rŋdəŋ: "(breasts) pointing forward". This is probably a feature inherited from Proto-Mon-Khmer, since traces of it are found in Nicobarese under the form of prefixed final-copying (Hestermann, 1926), which also have been recently claimed for Khmer (Shorto, 1976a).

Such an infix could explain PWaic *2ri̯?, *2mo̯?, *s2na̯?, and even *2mok, provided the semantics can be worked into such an explanation, one day, and the loss of a consonant before the ʔ- is explained.

Finally, there remains a possibility that the glottal stop is simply an original part of the root. Proto-Mon-khmer almost certainly had initial clusters consisting of C2-, as shown by the form and the pan-Mon-Khmer distribution of etyma like "bone", and "centipede" (PW *s2əŋ, and PW *s2ep). The etymology of "to cough" would also suggest an original -ʔ- in the root: The Khmer cognate: *k2IPP" to cough" indicates that the initial k- of Palaung: kən-ʔ "to cough" is also original, and was lost in Va and Lawa; as we shall see shortly, it may well have been retained in the Samtau branch, and therefore in Proto-Waic, but the cognate has not been recorded in that branch. If the Samtau cognate does have an initial k-, the Proto-Waic form will be *kmʔok, going back to a Proto-Palaungic *k-ʔmʔok, which would also explain the unexpected high register of Lamet: rmbóok "to cough".

This latter explanation also suggests metathesis of at least
some glottal stops with sonorants, so that both *?N- and *N?- would be needed for Proto-Waic. The morphological explanation would also support this, and so would the two series of Samtau reflexes, but, until more information comes to light, I will only reconstruct the Proto-Wa-Lawa state of affairs in this respect: a single series of *? + Sonorant initials.

In the case of liquids, however, both possibilities, *?L- and *L?- are well represented: *?L- would account for the cases shown above, and *L?- will now be discussed.

c) Complex initials starting with a Liquid.

Most Lawa dialects have words with r?- and l?- initials, separated by an epenthetic vowel, and followed, of course by vowels of the "non-buzzy" series. The Bo Luang dialect, and perhaps also Pa Pae, have merged the two initials in favor of l?:-

PW *r?o? "to crow"(? 3 ), Pa Pae: ra?o?  
PW *r?aŋ "rock, cave"(R 4 ), L'up, North: ra?anaŋ, BL: la?anaŋ  
PW *r?om "water"(M 2 ), Um, L'up: ra?amaŋ, PaPae: la?amaŋ  
       BL: la?amaŋ  
PW *l?ar "two"(R 2 ), BL, Um, Phae, Sam: la?a, L'up: la?a
       Sam, L'up: la?ua  
       North: la?oh

One word has a more complex initial, at least in Lawa where some dialects seem to have a nasal infix:

PW *l(n)ak "crow (N.)"(K 5 ), BL: la?ak, Um: ra?nak, North: la?nak
In all these words, the presence of an original PW *-ʔ-

is confirmed by Samtau, but there is some irregularity in the
nature of the initial liquid:

PW *rʔoʔ "to crow"(¥3) Sam: raʔoʔ
PW *rʔom "water"(M2) " : ?úm, also: tarʔúm "vapor, cloud"
PW *lʔar "two"(R2) " : ləʔál
PW *lʔos "fat (N.)"(S2) " : raʔúh
PW *lʔoy "three"(¥1) " : ləʔóy
PW *l(ŋ)ʔak "crow"(K5) " : ?aʔák

In Wa, the glottal stop of these clusters was lost in the
whole branch, although Drage seems to have noted it in two
cases: "crow"(K5), and "rock"(N4). The vowels in these words
are all in the Clear, Tense category:

PW *rʔoʔ "to crow"(¥3), Dr: ro
PW *rʔoŋ "rock, precipice"(N4), Dr: raʔ-ang, rāng, BW: rang
PW *rʔom "water"(M2), Dr: rām, BW: rawm, SW: yom KW: róm
PW *lʔar "two"(R2), Dr: rā, BW: ra, SW: ya, KW: rá
PW *lʔos "fat"(S2), Dr: loich
PW *lʔoy "three"(¥1), Dr: loi, oi, BW: lo-e, SW: lọy, KW: lọy
PW *l(ŋ)ʔak "crow"(K5), Dr: lāk, lōak, WB: lāk, KW: lāk

Here again, the reconstructions I propose are valid only at
the Proto-Wa-Lawa level, as there are a number of problems here
which require more and better information. Morphology is certainly
involved in some of these cases: in "water", the initial *r- is
probably a nominalising prefix\textsuperscript{38}; the rest of Palaungic, and
Khmuic, only show an initial ?- for this root, which may have
been a verb originally\textsuperscript{39}. 


In "two" we may even have two prefixes: Lawa and the Samtau branch agree on initial 1- (Tailoi: 1a-al, KemDègne: 1a,Ferrell:1lay) but the whole of Wa, and close relatives, have r- (La, En: ra, K'ala: gha), while others have reflexes of the bare root, PPal. *ʔaar: Son: a, K halo: ʔa, Wa Kengtung: á. This distribution of 1-, r-, and ʔ- does not agree with either *ʔ?- or *r?- correspondances. And while so-called "irregular" developments can be expected with numerals, it is also well known that MK numerals are basically verbs (Zide, 1976) and may have a rich morphology (Cf. Riang: őr, kʔor, sʔor, tərʔor). A PWaic *1-r-ʔar, with infixed final-copying, is a distinct possibility.

The initial *1- reconstructed for PWaic "two" is also found only in "three", but the Palaungic cognates outside Waic have an initial glottal stop: Lamet: ?səy, Palaung: uəy, Riang: wây. This suggests PWaic *1-ʔəy, with *1- as a prefix.

Only two examples are left where the outside evidence argues for original *ʔ?- and *r?- initials in the root itself: "fat" and "rock" respectively; but the evidence is sparse and remote: Lamet: rʔəŋ "stone", Palaung: ra-ʔəng "precipice", and: Semai: lʔuus "fat, grease".

Initial *r-, but apparently not *1-, can also occur in complex initials followed by practically any consonant, besides -ʔ-.

Here again, morphology will explain some, but not all, occurrences of these clusters. Since *r- is inherently voiced, it will have no effect on the tone or register of the main vowel which follows: only the voiceless C₁ initials of C₁C₂ clusters play an active role in this regard. This asymmetry is due to
the fact that the only C₂ consonants which are permeable are voiced, while all voiceless consonants are impermeable.

In most of Wa proper, but apparently not in Davies' Wa, *r- before non-laryngeals has turned to s-; in Drage's Wa, *r- is maintained, as in Proto-Lawa:

PW *rki? "dove, pigeon"(?11 ), BW: sikau, Um.-Lawa:rako?
PW *rme? "male" (?59 ), Wa(Antisdel):hsime, Wa(Luce):ʃi⁴me³³

KW: samê? - mê? (but: SW: mi?, BW: me),
Wa(Davies): rame(t), Drage: rameh, Um.-Lawa: rami?
PW *rwa? "door" (?72 ), SW: svc?, BW: siveh, Wa(Davies): rave(t)

Drage: rava³³

PW *rmić "grave" (?21 ), BW: si-mui-ik, Drage: ramoit. Um.-Lawa: ramić

PW *rnm "thunder" (?21 ), BW: sinum, Wa(Luce):ʃi⁴num², Drage: ranem

North-Lawa: ranaom

PW *rway "tiger" (?24 ), SW: savay, KW: savay, Wa(Luce):ʃi⁴vwoi²

Wa(Antisdel): hsvai, Wa(Davies): ra-wai,
Drage: rava³³, ravo, North-Lawa: rawia

PW *rntah "medicine" (?9 ), SW: sadah, BW: sida, KW: santäh,
Wa(Luce):ʃi⁴tah⁶, Wa(Antisdel): hsita, Drage: ratäh

The interesting aspect of this Wa innovation is its possible effect on the following vowel; s- being voiceless, unlike r-, we would expect that feature to permeate perhaps through nasals, and certainly through approximants; but nothing happens: the phonation types and gliding patterns were already settled by the time the innovation *r- → s- took place in Wa (cf. "male", "door" "thunder", "tiger").

A similar situation is found in Samtau: the initial *r- 's in question turned into k-, but the tone remained low in spite of the permeability of nasals and approximants. Very probably, the tones
of Samtau had already appeared when the innovation *r- → k- occurred; in fact this k- only appears in Samtau, KienKa and Ferrell's P'uman, but not in the other two languages of the Samtau branch: Tailoi and Kha Kem Dègne. The innovation *r- → k- is later than Proto-Samtau and the emergence of tone.

**PW *rwa?** "door"(?72), Sam:kaṽaʔ, Ferrell:kä-waĥ

**PW *rmeʔ** "man, male"(?59), Sam:kaṽeʔ, KienKa:kä meʔ, Ferrell:ka-meʔ

**PW *rmoʔ** "dream"(?66), Sam:kaṽuʔ, (Tailoi:l'mo)

Um.Lawa:ramoʔ

**PW *rwaŋ** "thigh"(A 50), Sam:kaṽaŋ, (KemDègne:rewaŋ, Tailoi:ma-wang)

Dr:rauvuang, Um.Lawa:rawiaŋ

**PW *rms̩** "banana"(S 17), Sam:kaṽôh, Ferrell:kä-mô

Um.Lawa:ramôs

**PW *rway** "tiger"(Y 24), KienKa:kawai, Ferrell:(kä)-waŷ, (Sam:vày)

**PW *rwŷ** "whirl of hair"(Y 25), Sam:kaṽây

Um.Lawa:rawuy

Palaungic cognates are not especially helpful for this initial: while some words evidently had an initial *r- (e.g. "dream": Lamet:rmeʔ, "tiger": Palaung:ra-vāt, Riang:rawây), others had more complex initials where *r was not absolutely initial, but only a vocalic element, or even an infix. This would require a full treatment of Palaungic history.
d) Two-stop initials

The various forms of Wa, Lawa, and some other Vaic languages (La, En, Son, Scott's Wa Kengtung), are peculiar in the Mon-Khmer family for lacking the usual complex initials consisting of two stops separated by an epenthetic unstressed vowel. The Samtau branch, as well as Khalo and K'ala, does have initials of this sort, but only with k- as a first stop. Comparison outside Vaic shows that this initial k- is a preservation. The loss of k- without a trace as we shall see, is probably an important and old innovation, which sets apart Lawa, Wa, La, En, Son and the Wa-Lawa-La branch, Wa Kengtung as a major branch of Vaic: The position of Khalo, having three retainings of k- and two losses in the examples below, is not exactly clear.

PW *kʔɔ? "bamboo" (? 2), Tailoi: ko-aw (Dr: o, Um.Lawa:ʔɔ?)
PW *ktɛʔ? "earth" (? 28), Samtau: katɛʔ, Tailoi: ka-de, Ferrell: kǎ-tay-

PW *kdoʔ "banana" (? 27), Samtau: klɛʔ, KienKa: kβtɔ, (L'upLawa: ku?)
PW *kdiŋ "big" (? 29), Samtau: kətŋ, K'ala: kɑ-ting (but Khalo: tʊŋ)
(KW: tʊŋ, Dr: hting)

PW *ktam "crab" (? 9), Samtau: katɔ́m, Khalo: ka dam
(Dr: tɔ́m, Um.Lawa: tam)

PW *ktam "egg" (? 11), Samtau: katɔ́m, KemDègne: khotɔm,
Ferrell: kǎ-tam, K'ala: kæ-tun, KienKa: khotom
(Dr: tawm, Um.Lawa: tam)

PW *kdim "ripe" (? 18), Samtau: katʊm
(Dr: htʊm, Um.Lawa: thum)

PW *kʔɔl "cooking pot" (? 2), Tailoi: kaw-all, KienKa: ḳauí
(but Khalo: o) (BV: aw)
Cognates in the rest of Palaungic show not only that this *k- is necessary for PWaic, but that it is probably Proto-Palaungic as well:

PW *kɛʔ?  "earth"  Pal. : kə-tɛ, Riang : kətɛʔ, Lamet : ktɛʔ, Angku : katę\textsuperscript{1}
PW *kTam  "crab", Riang : katôm, Lamet : ktāam, Danaw : kāton\textsuperscript{2}
PW *ktam  "egg", Pal. : kə-tām (but Riang : tām), Danaw : kāton\textsuperscript{4}
PW *kʔɔl  "cooking pot", Lamet : ṇəən, Angku : ka-āl
PW *kdɛl  "stomach", Riang (Scott) : kadell "leg"\textsuperscript{41}, Lamet : ktəl

YaAng (Venk) : khatu

Wider Mon-Khmer comparisons are beyond the scope of this work, but several cognates show that this Palaungic *k- corresponds to a wide variety of consonants, k- among them. Their merger into *k- can perhaps be used as one of the characteristic innovations of the Palaungic branch, to the exclusion of Khmuic:

PW *ktɛʔ?  "earth", Khmu : pteʔ?
PW *ktam  "crab", Yuan Khmu (Lindell, 1974) : kataam
PW *kʔɔl  "cooking pot", Jah Hut : kʔɔl
PW *kdɛl  "stomach", Semai : pədəl, "bulging part of the body"
PW *kdɛl  "thick", Khmu : nbwəl
PW *kʔɔʔ  "bamboo", Semai : pʔooʔ, Bahnar : pʔoo
PW *kdɨŋ  "big", Khmu : ᵐaŋ
PW *kdəm  "ripe", Khmu : ndum

Besides two-stop initials, we also find Palaungic k-‘s preceding Nasals and Approximants. These too are lost in the Wa-Lawa-La branch of Waic, and preserved in the Samtau branch.
since Nasals and Approximants are permeable to the voice feature of preceding initials, this early innovation will give us a tool for observing the development of tones and registers in Waic. It may even give us a clue to the original question about the voice of Proto-Waic stops.

e) Shreds of evidence for late devoicing

As I mentioned previously, there is little doubt that devoicing stops did occur at some time later than Proto-Palaungic, since Palaung itself has preserved the voice distinction, which was inherited from Proto-Thern-Mon-Khmer and even Proto-Mon-Khmer. The problem is: when did it occur. Specifically, did it take place later than Proto-Waic or not?

If we recall that tones, registers and buzziness are all correlates of the old voicing distinction, it is clear that devoicing cannot have occurred before these innovations took place: it must occur later, or, at the limit, simultaneously. The question then shifts to one of dating the appearance of tone, registers and buzziness, or their predecessors, with relation to Proto-Waic.

If we find that all three phonation features can be explained as the result of a single Proto-Waic factor (the voice feature of the initials), plus a number of later innovations (i.e. the shift from breathiness to buzziness in Lawa), then we have here no argument for dating their appearance later than in Proto-Waic.

But if we find discrepancies in phonation types among the various branches of Waic, and if these discrepancies can be explained as the result of some other, Post-Waic innovation, then the appearance of the phonation type contrast must be Post-Waic too, unless some other explanation can be found; and voiced initial stops must have existed in Proto-Waic.
One of the earliest Post-Vaic innovations was the loss of *k- before Stops, Nasals (and probably Approximants) in Proto-Wa-Lawa-La. If register-tone contrasts had already appeared at that time, *kN- and *kW- initials would have "high" register-tone in both the Samtau and Wa-Lawa-La branches, due to the permeability of Nasals and Approximants. For example, in Kawa, the loss of *k- would not have affected the tenseness of the vowel, just as the loss of *z- did not affect the tenseness of vowels with *zN- initials. And Samtau should, of course, have a high tone.

I think what actually happened was the opposite: *k- was lost in Proto-Wa-Lawa-La, and that branch later acquired registers according to the voice of initials: the old *kN- and *kW- words, reduced to N- and W- acquired a breathy register. In the Samtau branch, tone developed independently, and *kN- and *kW- words received a high tone. Devoicing of the Stop initials then took place any number of times in the various branches of Vaic which had formed by then.

Unfortunately, the number of words where this could have happened is extremely small, and I have not yet found a fully documented and reliable example; only scattered, but telling, shreds. The word for "silver, money" (L 19) had a Proto-Palaungic *km-initial (cf. Lamet:kmúul, Angku:kmúll, MóngLwe:kamún) which is confirmed outside Palaungic by Khmu:kmuul. The initial *k- is preserved in the Samtau branch of Vaic: Tailoi:ka-mull, Kienka:kámōi, and in K'ala:KA-mal. In Wa-Lawa-La, *k- was lost: Drage:mōa, BWa:mau Um.Lawa:mau, and in Kawa, we find a lax vowel: KWa:màwu. Unfortunately, Samtau itself appears to have borrowed the word from a W-L-L language, as the tone and loss of k-show: Sam.:mùl. In the word for "earthworm" we may have a better candidate when
more data comes to light; the Waic word seems to be cognate with Proto-Semai *kmoor, which would indicate a Proto-Palaungic *km-initial. Samtau₄₂ does have a high tone: kmɔ́l, and Wa-Lawa-La shows the expected loss of initial: Drage: mu 3, SMa: mo. Another candidate is "soot": Samtau: kvāŋ.

The high tone of the last two Samtau words shows that Nasals and Approximants are indeed permeable to the preceding Stops in that language; so, the stage is set for a convincing argument to be made...when the data appears.

C) CHRONOLOGY OF WAIC INNOVATIONS

In this section, I would like to propose a relative chronology for some of the changes already discussed, and for several others which will only be presented very briefly. This chronology and the sub-branching given in section A, are interrelated. The unity and identity of Waic as a group also depends, to a certain extent, on the reconstructions and on the sound changes postulated for the Pre-Waic period (i.e. the stretch of history between Proto-Palaungic and Proto-Waic).

1) Pre-Waic innovations

There is no systematic reconstruction of Proto-Palaungic available in print as yet: Shafer's attempt (1952) could not include the crucial evidence of Lamet and Danau. But some features of Proto-Palaungic are now apparent beyond Shafer's findings and will be used here without full documentation.

Certain lexical innovations appear to be characteristic of Waic, especially in the numeral system: "six" : PW 胼s, and "seven". PW 伉alẹs, are derived from each other; the 伉 prefix of "seven" might be connected to PW 伉ar "two", making "seven" perhaps a
"second six". In any case, the root *læs itself is an innovation found in every Waic language and nowhere else in Mon-Khmer; its origin is not known. The number "eight": PV *snte? is also unique to Waic and may well be derived from PV *te? "hand"⁴³.

The phonological form of certain well-known MK etyma also distinguishes the Waic branch from the rest of Palaungic. For example: "snake": PV *sʔĩn has a sʔ- initial in the whole of Waic and nowhere else. This is probably not a lexical innovation, but an unusual case of metathesis: the Palaungic evidence suggests an initial Labial + s- cluster: Lamet: phũn⁴⁴, Danau: pãgěn⁴⁵, even though Palaung-Riang only suggests initial *s-: Palaung: hĩŋ, Riang: hiŋ⁴⁵. In the Viet-Muong branch, Vietnamese: răn indicates a non-initial *s- (Ferlus, 1976), and Sâch: psɨn, confirms the labial initial. At the other (geographic) end of Northern Mon-Khmer, Khasi: bsen, suggests that the labial may have been preglottalised, and can be reconstructed for the whole NMK division. In the South, several Katuic languages have a kus- initial where the k- may or may not be original (Smith, 1975): Brũ: cusán, Pacōh: cuxẽnh, Sô: kũxẽnh (Cuaz, 1904), but the -u- Minor Vowel suggests an initial labial element other than p- or b-. Finally, Khmer⁴⁶: msaɲ, brings a possible solution: a PMK *ʔmsan would become Proto-Palaungic *ʔmsan, and then Pre-Waic *ʔaːsan. The metathesis required to go from there to Proto-Waic *sʔĩn would be a characteristic of the Waic branch and no other.

In addition to these anecdotal elements, there are honest, regular sound changes which can serve to identify a Mon-Khmer language as being Waic, should anyone stumble upon a new language in that part of the world. I will only mention two: a merger, and a
etic shift, both in the vowel system:

The Proto-Waic vowel *o represents a Pre-Waic merger of two incert Proto-Palaungic vowels which I reconstruct *o and *a in the moment. In Lamet, the reflexes of these vowels are /oo/ /eel/ respectively, in Palaung: /o/ and /wl/, in Riang: /o/ and /ɔ/.

PW *o from PPal *oo:

*pos "deer" Lam.: póos, Pal.: pōr, Ri.: pós
*pon "four" Lam.: pōne (Lefèvre-Pontalis, 1896), Pal.: pōn, Ri.: pón
*r?om "water" Lam.: rōm, Pal.: ōm, Ri.: óm (Kraisri, 1963)
*rŋko? "rice" Lam.: rǎk, Pal.: ra-kō, Ri.: ko?

PW *o from PPal. *a:

*phom "heart", Lam.: phüm, Pal.: pōm (Shorto: phwm), Ri.: phóm
*phroŋk "side, rib", Lam.: prēk (Wenk, 1965), Pal.: prō (prw?), Ri.: phroŋk
*phoj "foot", Lam.: cēŋ, Pal.: jēŋ (jwŋ), Ri.: tsōŋ
*phon "able", Lam.: pëen, Pal.: bōn, Ri.: bûn
*phol "ten", Lam.: kel ʔa (Kraisri, 1963), Pal.: kōr, Ri.: kîl

Far as can be guessed at present, this merger appears to be quite old, i.e. dating from the early period of Pre-Waic: at that time, long and short Proto-vowels were still in contrast, and the merger in question only affected two long vowels, leaving aside the short /a/ which later became PW *y.

The other Pre-Waic innovation is a late one, according to my opinion: Pre-Waic *u moved to Proto-Waic *i without causing any merger and leaving a gap in the Proto-Waic vowel system:

Proto-Waic: i i e ə o

This text is not formatted into a table or diagram.
PV *nim "urine", Lam:núm, Pal:hnūm, Ri:nūm
PV *hik "hair", Lam:múk, Pal:hu, Ri:húk
PV *hlit "deaf", Lam:lúut, Pal:hlu, Ri:lút
PW *hîm "bathe", Lam:húm, Pal:hūm
PW *tiʔ "curry, vegetable", Lam:túʔ, Pal:tū

The Lamet reflexes show that this Pre-Waic *u is, itself, the result of an earlier merger, presumably of PPal.*u and *uu; but the phonetic shift to Proto-Waic *i affects both vowels indifferently, and probably occurred after the vowel length distinction disappeared in Pre-Waic times. The loss of vowel length, although it is a distinct innovation, cannot be used as a defining feature for Waic since it also took place in all the Palaungic languages West of the Salween: Palaung45, Riang, and Danau; it is an areal feature which cuts across historical classifications.

2) Post-Waic innovations

The gap left in the [u] position was soon to be filled by one of the nearest vowels: PV *o or PW *ə; and the choice of one or the other distinguishes Samtau, where PV *o moves to /u/, from Proto-Wa-Lawa-La where *ə fills the empty position. From the poor notations available, it is difficult to judge how early the move PV *o → u occurred in the Samtau branch; but it conditions and probably precedes the other vowel shifts which took place in Samtau, such as the raising of *o to /o/ without merger, and the later movement of *ə to /ə/ (except before *-h but including *-s, i.e. earlier than the merger of these two finals). As for PW *ə, it
simply went to /ə/ in Samtau. For this vowel, Wenk's data show

that KienKa agrees with Samtau, and not with Wa-Lawa-La:

(24)
*χιν "many", KK: hün

(42)
*χιν "snake", KK: saün

(41)
*χύμ "to plant", KK: tásūm

(43)
*χύμ "to die", KK: yōm

(17)
*χύμ "to fly", KK: pū

(11)
*κίδι "stomach", KK: kātōi

(26)
*χύμ "to go", KK: hūi, hōi

As we go down in time in the Wa-Lawa-La branch, one of the
ly innovations which separates Proto-Wa from Proto-Lawa is
merger of *-om and *-em finals in Proto-Wa. This can be seen in
following etyma where Samtau and Lawa maintain the older

contrast:

PW *-om:

(7a)
*χομ "delicious, well", KW: nōm, Um.-Lawa: nūm, Sam.: nūm

(40)
*χομ "night", KW: sōm, Um.-Lawa: saum, Sam.: nōsūm

PW *-em

(7)
*χσμ "young", KW: nōm

(39)
*χσμ "to eat", KW: sōm, Um.-Lawa: som, Sam.: sōm

Although vowel notations in Scott (1900) leave something to be
sired, it seems that the merger of *-om and *-em did not occur
neither Son nor En:

Son: nyawm "young" vs. nyom "well"

Em: sawm "eat" vs. sōm "night"

As we may be reaching here the limit of what can be said with
confidence about the "minor sources".
The regularity of sound changes within Maic is actually quite impressive, as soon as spurious cognates are mercilessly abandoned; but this becomes apparent only when we can work with precise notations and sizable collections, and not just the deficient but fascinating material available until recently. This regularity, and the apparent rarity of intra-Maic borrowings, are probably due to certain social values shared by speakers of Maic languages, and to the geographic dispersal connected to such values; but I, unfortunately, have no personal knowledge of either.

Such historical patterns also offer encouraging prospects for building a Proto-Palaungic, and, hopefully, one day, a Proto-Mon-Khmer Etymological Dictionary: the various Palaungic languages are not only scattered, but also physically separated from each other by other language families and solid geographic barriers.
D. WAIC ETYMOLOGICAL LEXICON

Abbreviations:

Ant : Wa (Antisdel, 1911)
Bib : Wa from Bible translations (Young, 1934)
BL : Bo Luang dialect of Lawa (Mitani, 1972)
Dav : Wa (Davies, 1909)
Dr : Wa (d'rage, 1907)
En : En (Scott, 1900)
Ferr : P'uman (Ferrell, 1971)
K'ala : K'ala (Harding, 1927)
Kawa : Wa (also called Kawa) (Yinnan Min'qu Qu'banse, 1958-60)
KemD : Kha Kem Dègne (Lefèvre-Pontalis, 1892)
Khalo : Khalo (Flatz, 1970)
KK : Kien Ka (Wenk, 1965)
La : La (Davies, 1909)
L'up : L'up dialect of Lawa (also La-oop) (Schlatter, 1976 and notes)
Milne : Wa (Milne, 1931)
North : Mapa dialect of Lawa (Rangsidh, 1942)
and North dialect of Lawa (Diffloth, 1976 notes)
Pap : Ban Pa Pae dialect of Lawa (Ratanakul, 1976 notes)
Ph : Ban Phae dialect of Lawa (Mitani, 1972)
Praok : Praok-Wa (Shorto, 1963, 1971)
Saam : Ban Saam dialect of Lawa (Diffloth, 1976 notes)
Sam : Samtso (Harris-Gainey tapes, 1976)
Son : Son (Scott, 1900)
SW : South Wa (Harris-Gainey tapes, 1976)
Tailoi : Tailoi (Scott, 1900)
TV : Tung Va Wa (Luce, 1965)
Um : Umphai dialect of Lawa (Mitani, 1972)
WaKng : Wa of Kengtung (Scott, 1900)

NB1. In the following Lexicon, some reconstructions are given in parentheses, e.g.: ??5*(qri?) "pestle". This indicates that the data available at present is not sufficient to reconstruct the etymon for Proto-Waic; e.g. no cognate for "pestle" has been recorded so far in the Samtso branch. The form in parentheses is a prediction of what the proto-form is likely to be when and if such data becomes available. In most cases, cognates outside Waic, not quoted here, support these reconstructions.

NB2. Probable borrowings, mostly from the Thai family, have not been systematically discriminated from indigenous Mon-Khmer material. In several cases, the direction of borrowing is not evident.

Order of Consonants: ?, k, Ñ, c, p, t, n, p, m, w, r, l, s, y, h.
71 *?E? "We, Inclusive, more than two"

Sam: ?é?

PWL*?e? . Wa: Dr: i, e; TV: e?1; SW: ?e?; Bib: e; Kawa: eix /??e?/

Lawa: BL, Um, Ph: ?e?; L'up: qeq

72 *k?ɔ7 "bamboo"

TL: ko-aw

PWL*ɔ7. En: u; La: o

Wa: Dr: o; Ant: o; TV: o?1

Lawa: BL: ɔ7; Um, Ph, Pap: ɔ?

73 *r?o? "to crow"

Sam: ra?ó?

PWL*r?o?. Wa: Dr: ro

Lawa: Pap: ra ɔ?

74 *ʔi? "I"

Sam: ʔú?; TL: u

K'ala: (?) awn

PWL*ʔa?. La: o; Son: au; En, WaKng: ao

Wa: Dr: aü, ao; Ant: au, au.; Pr: aə; Bib: au; TV: ɓə?1

SW: ʔaə?; Kawa: ex /ʔə?/

Lawa: BL: ʔai?; Um: ʔau?; Ph: ʔai?; L'up: qaĩq

76 *ka7 "fish, N."

Sam: ká?; KK: kā; KemD: cã; TL: ká

K'ala: kã; Khało: kə

PWL*ka?. La: ka; Son, En, WaKng: ka

Wa: Dr: ka(5); Bib, Pr, Daj: kə; TV: ka?1, SW: ka?

Kawa: gax /ká?/

Lawa: BL, Um, Ph, Pap, Saam: ka7; L'up: kaq
*skɔ? "wet"

Sam: skɔ?

PWL*skɔ?. Wa: SW: skɔ?

Lawa: BL: sakɔ?; Um, Ph: sakɔ?; L'up: sakɔq

*rŋko? "rice (uncooked)"

Sam: ?əŋkù?; Ferr: kə-kû?; TL: en-ko

K'ala: a-kao; Khalo: kó

PWL*rŋko?. La: kao; En: gao; Son, WaKng: kao (??from Thai: kʰaʔàw ?)

Wa: Dav: 'n-gow; Milne: gāu; TV: ŋ-gáu?³; Kawa: ngaox /ŋɒkɔ/?

Lawa: BL: ?akou?; Um: rako?; Ph: ḡako?; L'up: rakoq

*N-ko? "yesterday"

Sam: namkù?

PWL*N-ko?. Wa: SW: pungɔ? (irreg. vow. but cf. kau? "day after tomorrow")

Lawa: BL: ŋgɔu?; Um: ŋgo?

*ki? "body, Classifier for humans", in Lawa, also:"animal".

in Kawa, also:"name"

PWL*kə?. Son, WaKng: gao; En: kāu

Wa: Dr: kāu; Ant: kau; Milne: k̥ai; Dav: ka; Praok: kə;

SW: kaə?; Bib: kau; Kawa: gaeex /kaw?/

*rkɔ? "dove, pigeon"

Sam: kǔ?

PWL*rkɔ?. Wa: Bib: sikau

Lawa: BL: ?akou?; Um, Pap: rako?

*ŋgi? "pine tree"

PWL*ŋgi?. Wa: Dr: ki5, chi5

Lawa: BL: ŋgai?; Um: ńji?; Ph, Pap:ŋgi?; L'up: gi?
713 *(rga?) "to get thin"

PWL*rga?. Lawa: BL: ?akʰa?: Um: rakhía?: Ph: l-/γakía?

714 *(ŋgo?) "live coal" (in cpd. w. -*ŋol "fire" L3) DML: p.32R

PWL*ŋgo?. Va: Praok: gao; Bib: gao

715 *ŋe? "day"

Sam: ņi?
Khalo: ngo

PWL*ŋe?, La: go-e: Son: nyé; Wākng: nöe: En: ngai

Va: Dr: nyi, nie, ni; SW: njai?: Praok: nay: Kawa: ngai R /ŋai/?

716 *sunè? "sun, day"

Sam: saŋi?; KK: sani; Ferr: sāŋi-; Kem: seigné;

TL: si-nyi, s'ngi
K'ala: ss-ngai, singai; Khalo: sangi

PWL*sunè?. En: s'ngai, Son: nge

Va: Dr: sanie, hsani; Dav: si-ngai; Ant: (hsii)ngai:

Milne: sa-ngyē; Bib: singai; Praok: singay: TV: sŋai?3;

SW: sjai?: Kawa: si'ngāix /saŋi/?

Lawa: BL: saŋai?: Um: saŋi?: Ph: saŋe?: L'up: saŋeq;
North: sunè?/-e?

717 *ŋa? "tusk"

Sam: ᶣa?: KK: ᶣa

PWL*ŋa?. Va: Dr: ngoa, SW: ŋa? (irreg. vow.)

718 *(ŋa?) "sesamum"

Cf. Thai: ŋaa: Austronesian *laŋa?

Sam: kəŋa?


719 *(sŋa?) "be clean"

PWL*sŋa?. Va: Bib: singa, Kawa: si'ngax /səŋə?/

Lawa: BL, Um: səŋa?
1 *ŋə? "rice plant"
   KemD: ngoə, TL: ngaw
   K'ala: ngaw; K halo: ngo
   PVL*ŋə? L a: go; Son: En: ngo; VaKng: ngu
   Wa: Dr: ngo5; Dav: ngo; TV: ŋə?3; Praok: ŋə; Bib: ngo;
   SW: (h)ŋə?; Kawa: hngoux /ŋə?/
   Lawa: BL: ŋə?; Um, Pap, Ph, L'up: ŋə?; North: ŋəu?
   *ŋ/-jiŋ? "to make"
   KK: khT
   PVL*jiŋ? Wa: Ant: ci; Bib: chi; Kawa: jTx /ciŋ?/
2 *k/-ŋeŋ? "needle"
   Sam: ŋeŋ?; KK: kŋT; TL: kall-nye
   PVL*ŋeŋ? WaKng, Son: nyur; En: ngyé
   Wa: Dr: ngyi; SW: nŋiŋ?; TV: ŋeŋ?3; Bib: ngye
   Lawa: BL: ŋeŋ?; Um: nŋiŋ?
3 *ŋaʔ "house"
   Sam: ŋaʔ; Ferr: nyaʔ-; KemD: nha; TL: nya
   K'ala, K halo: nya
   PVL*ŋaʔ L a: cha(t); WaKng: nha; En, Son: nya
   Wa: Dr: niūa, nia5; Dav: nyen; Ant: nyeh; TV: ŋeŋ?3;
   Milne: nT-ö; Bib: nyeh; SW: ŋeʔ; Kawa: nyTiex /ŋëʔ/
   Lawa: BL, Um, Ph, Pap, North: ŋiaʔ; L'up: ŋëeq
4 *ŋiʔ "to drink"
   Sam: ŋuíʔ (irreg. tone): Ferr: nyúʔ-; KemD: nga-(lo); KK: yú
   TL: nyu
   K'ala: nyū
   PVL*ŋaʔ Son: nuy-a; WaKng: nuy; En: ya
   Wa: Dr: nio; Milne: nyū; Ant: nyau; Bib: nva; SW: ŋa(ə)?
725 *te? "hand"
Sam: tí; Ferr: tay?; Tailoi: ti; KK: tā
Khalo: di; K'ala: tai

PWL *te?. La: teh; WaKng: dae; Son: de; En: tai
Wa: Dr: te, tê; TV: twi?1; Dav, Ant, Bib: tâi; Praok: tay;
Sw: tâi?; Kawa: daix /tâi?/
Lawa: BL: tâi?; Um, L'up, Sam, North: te?

726 *nte? "eight"
Sam: sati?; Ferr: hönte?; KemD: leti
K'ala: ss-tai; Khalo: di

PWL*nte?. La: tai; Son: dai; En: pindai; WaKng: tâi
Wa: Dr: sate5; Ant: hsindai; Dav: sdai; Bib: sidai; TV: n\dwi?3
Sw: (7a)dai ; Kawa: ndaix /ntâi?/
Lawa: BL: satai?; Um, Ph: sate?; Saam: sate?: L'up: sate?:
North (Rangsit's Mapä): sande

727 *(rnte?) "eighty"

PWL *rnte . Wa: Ant: ridai
Lawa: BL: latai?, Um: rate?, North (Rangsit): rande

728 *kte? "earth"
Sam: kate?; Ferr: kā-tay?; KemD: kâdè; Tailoi: ka-de; KK: kā tī
Khalo: ka de; K'ala: kâ-tê

PWL *te?. Dav: te; WaKng: de; Son: dé; En: té
Wa: Dr: tê. teh5; Bib: teh; Praok: te; TV: dè?3; Sw: te?
Kawa: diex /te?/
Lawa: BL: tai?; Um, Ph, Saam: te?: L'up: te?: North (R.). te

729 *ta? "grand father, old man"
Sam: tə-ta?; Tailoi: ta
Khalo: da

PWL *ta?. Son: ta
Wa: Dr: ta(5): Praok: ta; TV: ta(?1: Sw: ta?; Kawa: daix /ta?/
Lawa: NL, Um, Ph, L'up. North: ta?

*snta? "tail"

Sam: sntá?: KK: sātā

PWL *snta?. Wa: Dr: shata(s), sata; Bib: sida; Praok: sidā;

TV: jī4taʔ1; SW: da?

Lawa: BL, Um, Ph: sataʔ; L'up: sataʔ

*tiʔ "meat, vegetables, foodstuff, curry"

Sam: tūʔ; KK: tō

Khalo: dō

PWL *taʔ. Wa: Dr: taū: TV: tōwʔ1; SW: twʔ; Kawa: daex /təwʔ/

Lawa: BL: tōwʔ; Um, Ph, Pap. North: toʔ

*(ntiʔ) "inside"

PWL *ntaʔ. Wa: Dr: taū; Bib, Ant: dau; Kawa: ndaeex /ntāwʔ/

*kntiʔ "hole"

Sam: ktūʔ

PWL *ntaʔ. WaKng: dao

Wa: Dr: taū; TV: n\dawʔ3; Bib: dau; SW: dāʔ?

Lawa: Um, Ph, North: toʔ

*k-diʔ "one"

Sam: (k)tīʔ; Ferr: kateʔ; KK: tT; Tailoi: ka-ti

Khalo: tī

PWL *diʔ. La: t'ie; En, Son: tē; En: tai; WaKng: te

Wa: Dav: tī; SW: tiʔ; Bib, Ant: ti; Ant: te; Kawa: dīx /tīʔ/

Lawa: BL, Ph, L'up, Saam: tiʔ; BL: teʔ; Um: thiʔ

*(ndiʔ) "last (as in: last year)"

PWL *ndiʔ. Wa: Kawa: ndīx /ntiʔ/

Lawa: BL: ndeʔ; Um: thiʔ
736 *s-nde? "near"
   Sam: ?antèʔ; KK: tē; Tailoi: en-tē
   Khalo: dē; K'ala: tē
PWL *snde?. En, Son: dē
   Wa: Dr: tē, te; Dav: de; SW: de; Bib: de
   Lawa: BL: sandaiʔ; Ph, Um: sandiʔ; L'up: sondiʔ

737 *daʔ) "to sow (broadcast)"
PWL *daʔ. Wa: Dr: htoŋ
   Lawa: BL: tāʔaʔ; Um: thīaʔ

738 *tn-daʔ? "finger-span (from thumb to little-finger)"
   Sam: tāntāʔ
PWL *tn-daʔ?. Wa: Dr: tatō
   Lawa: Pap: dīʔaʔ?

739 *(ndiʔ?) "dumb, mute"
PWL *ndoʔ. Wa: TV: n dōuʔ3; SW: daʔ
   Lawa: BL: ndōuʔ; Um, Ph: ndoʔ

740 *(sdiʔ?) "silk"
PWL *sdaʔ?. Wa: TV: tōʔ1
   Lawa: BL: satoʔ; Pap, Um: sathoʔ

741 *(ʔ)neʔ? "muscle, meat"
   Sam: nēʔ?
   Khalo: kā nā
PWL *ʔneʔ?. Wa: Dr: nēʔ, neʔ; SW: niʔ; Bib: neʔ; TV: neʔ3
   Lawa: BL: naiʔ; Um: niʔ; Ph: ?neʔ?

742 *ʔneʔ? "(Shan) hat"
   Tailoi: ka-ne
PWL *ʔneʔ?. La: deh; En: néʔ; WaKng: ne
   Wa: Dav: ne(t)Kawa: niex /nēʔ/
   Lawa: BL: ?naiʔ?; Um: ?neʔ?
"(n-)na? "sour"

Sam: ?əŋnà?; KK nā

'WL *(n-)na?. Wa: Dr: nō5; SW: ?ənne?

Lawa: BL Um, Ph: na?

*(s?na?) "middle"

'WL *s?na?. Wa: Dr: sanā(5); Kawa: si'na? /sanā?/, na? /nā?/

Lawa: Um: sa?na?

*hna? "face"

Sam: ḡhá?

PWL *hna?. Wa: Dr: na

Lawa (Rangsit): BL, Um, North: nā

*(nō?) "he, this"

PWL *nō?. Wa: Ant, Bib: naw

Lawa: Ph: nō?

*spī? "millet"

Sam: sapī?

PWL *spī?. Lawa: BL: sapi?

*pE? "you Pl."

Tailoi: pe

PWL *pE?. En, WaKng: pi; En: pē

Wa: Dr: bè, be; Praok, Bib: pe; TV: pè?1; Kawa: beix /pē?/

Lawa: BL: pai?; Um, Ph: pe?

*s(m)pa? "cheek"

Sam: sapá?

PWL: *s(m)pa?. Wa: Dr: pao (?); SW: pa?; Bib: siba

Lawa: BL, Um, Ph, Saam: sapa?; L'up: sapa?, Pap: spa?

*(pə/c?) "to wake up"

PWL *pə/c?. Wa: Kawa: box /pə?/

Lawa: L'up: pəo?; North: pəo?
?51 ضبط "person"

KemD: phé
PWL ¢bi?. La: p'i; En: pi
Wa: Dr: hpi

?52 .*(r(m)be?) "clothes"

PWL *=r(m)be?. La: p'ei; En: s'be
Wa: Dr: hsafe; Dav: sha-be; SW: sabe?; Bib: sibe; Ant: hsimbe
Ph: yapi?, lapi?

?53 бег? "goat"

San: ?a-pè?; Ferr: me?_; Tailoi: pé
K'ala: pè-ê
PWL бег?. En: lé; Son, VaKng.: pé
Wa: Dr: pè; Dav: pe; SW: pè?; Praok: pe; TV: bè3
Lawa: BL: pe?; Um: phe?; L'up, Ph: pi?

?54 *ba? "father"

Tailoi: paw
Khalo: pa
PWL *ba?. Lawa: BL, Ph: pīa?; L'up: pīa?; Um: phīa?

?55 *(bo?) "each other"

PWL *bo?. Wa: Dr: po; SW: pau?; Kawa: bāox /pāc?/
Lawa: BL: po?; L'up; Ph: pu?; Um: pho?

?56 *br? "younger sibling"

Khalo: po
PWL *bu?. En, Son: po
Wa: Dr: pu, po5; SW: pou?; Bib: pu; Kawa: būx /pū?/
Lawa: BL, L'up, Ph: pu?; Um: phu?

?57 *br? "to suck breast"

KK: pū
**PWL** *bu?. Son: pu

Wa: Dr: pū

Lawa: L'up: pu?

*me? "you, Sg."

Sam: mūi?; Tailoi: mō (irreg. vowels)

**PWL** *me?. La: bō; Son: mē; WaKng: me

Wa: Dr: me; Milne: mē; SW: mai?; Praok: may; Bib: mai; Ant: mai;

TV: mōi?3; Kawa: maix /māi?/ (tone irreg.)

Lawa: BL: mai?; Um: mi?; North: me?

*me? "male"

Sam: kamē?; Ferr: ka-me?_; KK: kā mē; khāmē; Tailoi: ra-me, ru-me

Khalo: ta mā; Khalo: a-mē

**PWL** *r(me?. En. Son. WaKng: mē

Wa: Dr: rameh; Dav: rane(t); SW: mi?; Bib: (si)me; Ant: hsiime;

TV: jī4mēi?3; Kawa: (si')mēix /sā)mēi?/


North (R.): (r)ami

*rme? "sugar (cane)" (rm- may be a reduced form of the word

*r?om "water")

Sam: hamē?: Ferr: ?um-mē?; KK: kmē; KemD: lāmμi

**PWL** *(rm)-me?. Wa: Dr: me, meh, awm meh5; SW: sābi?; TV: me2;

Kawa: mēix /mēi?/


*ma? 'mother'

Sam: mà?; Ferr: ma-ma? ; KK: ma; Tailoi, KemD: ma

Khalo. K'ala: ma

**PWL** *ma?. La, En. Son. WaKng: ma

Wa: Dr: mōa; Dav: me; SW: mē?; Bib: meh; TV: mē73, mé73, ma73;

Kawa: mēTEX /mē?/

Lawa: BL, Um. L'up, Ph. North: ma?
?63 *(mo?* "who"

PWL *(mo?*. WaKng: ma

Wa: Dr: mo, maw; SV: moom; Praok: mo; Bib: maw; Ant: maw;
Kawa: mox/mo?/
Lawa: BL: ?mo?; Um: ?mo?

?64 *(?mo?* "to hide (oneself)"

PWL *(?mo?*. Wa: Kawa: moux /mo?/
Lawa: BL: ?mo?; Um: ?mo?

?65 *?/hmo? "rope"

Sam: mhu?; Tailoi: mo

PWL *(?mo?*. En, Son: mao; WaKng: mow

Wa: Dr: mao; SV: mau'; Bib: mao; Ant: mau'; TV: mou?3;
Lawa: BL: ?mou?; Um, L'up, Ph: ?mo?; Pap: mo?

?66 *rmo? "dream (V., N.)"

Sam: kamu?; Tailoi: l'mo

PWL *rmo?. En: nay; Son: s'mao; WaKng: s'mo

Wa: Praok mao; Bib: camao
Lawa: BL: ?amou?; Um: rama?

?67 *smo? "stone"

Sam: (s)mů?; KK: samun; Tai loi: sa-nol; KemD: samo
Khalo: ta mo; K'ala: ss-nao

PWL *smo?. La: bao; En: s'mao; Son: mow; WaKng: mo

Wa: Dr: hsamo; Dav: shi-mao; Milne: smō; SV: (t)mau?; Praok: simaw;
Bib: simao; Ant: hsimao; TV: si'mau?3
(hmo?) "lung"

PWL *hmo?. Wa: Dr: nao (?) 
Lawa: BL: hmo?; Um, Pap, Ph, L'up: hmo?; North: mho?

*we? "to buy"

Sam: vè?

PWL *we?. Wa: Dr: vè, ve; Dav: ve 

*ve? "left (side)"

Sam: ?a?-ve? (tone?)

PWL *ve?. Wa: Dr: kave; Praok: qwe; Bib: qweh; Kawa: nguiex /ŋkwé?/.

Lawa: BL, Pap: we?; Ph: wi?; L'up, Saam: vi?; North: viə?

*(wa?) "to pull, take along"

PWL *(wa?). Wa: Bib: veh; Kawa: vTeX /wè?/

*r-wa? "door" (cf. to pull" *wa? )

Sam: kvà?; Ferr: kã-wah-

K'ala: a-va, a-va

PWL *rwa?. La: tao-wa

Wa: Dr: ra-vöa, ravüa, ravöa; Dav: ra-ve(t); SW: sve?;

Bib: siveh; Kawa: si'vTeX /sawè?/

*(r-)wa? "a La, a Lawa, a Wa"

K'ala: ss-va

PWL *(r-)wa?. La: wa

Wa: Dr: vüa5; Dav: rave(t); Ant: hsiveh

Lawa: BL: awïa?; Um: rawïa?; Ph: ɣ/lawïa?; North (R): rawëa

*hwa? "monkey"

Sam: fâ?

Khalo: wa

PWL *hma?. Lawa: BL, L'up, Um, Ph: fïa?; Sam, North: fwa?
?75 *(gri?) "pestle"

PWL *(gri?). Wa: Dr: ngri; Praok: gri; TV: η4gri?3
Lawa: BL: ɳgrai?; Um: ɳgre?; Ph: ɳgrei?; North: grai?

?76 *pre? "sharp, harsh taste"

San: phri? (vowel unclear)
PWL *pre?. Lawa: BL: phrai?; Um: pre?; Ph: phye?

?77 *bre? "forest, outside, sky, weather"

Sam: phrè?; Tailoi: pri
Khalo: pi
PWL *bre?. Son, WaKng: pre

Wa: Dr: preh, pre(1); Praok: pray; Bib: prai; TV: brai?3
Kawa: braï /prai?/
Lawa: BL, Um: phre?; Ph. Saam: phyi?; Pap: phye?; L'up: phri?
North: priə?

?78 *ra? "big"

Sam: rà?
PWL *ra?. WaKng: mra ("strong (of persons)"")

Wa: SW: ra?.(irreg. vowel); Bib: reh; Kawa: rTeX /rè?/
Lawa: BL, Um, L'up, North: ra?; Ph: yə?

?79 *kra? "road, way"

Sam: khrà?; KK: kha
Khalo: kha; K'ala: kya
PWL *kra?. La: kra

Va: Dr: kra; Dav: ka-ra; SW: kya?; Bib; Ant: kra;
Kawa: grax /krà?/
Lawa: BL; L'up: khra?; Um: kra?; Pap: kya?; Ph: khya?;
North: kra?

?80 *bra? "to eat"

Sam: phrà?
Khalo: pa

PWL *bra?. Son: pra

Wa: Dr: parö; Bib, Ant: preh; Kawa: brêx /prè?/

*mra? "to steal"

Sam: ?eņrâ?

PWL *mra?. Wa: Dr: marö(5); SW: byê?; Praok: brê; Bib: breh;
TV: brê?3; Kawa: nбрêx /mprê?/

Lawa: BL, Un: mbra?; Ph: mbya?

*kro? "enough (food)"

Sam: khrô?

PWL *kro?. Lawa: BL: khrô?; Um: kro?; Ph: khyo?

*cro? "new"

Sam: sú?; Ferr: thyo--; KK: sq

K'ala: sao

PWL *cro?. La: sao

Wa: Dr: shrao; Dav: se-ro; SW: sau?; Bib: khrao; TV: k'ro?1

Kawa: kraox /khrao?/

Lawa: BL: khrôu?; Um, L'up: khrô?; Ph: khyo?

*brî? "cloth, blanket, clothes"

Sam: phrû?, KemD: proô

PWL *bru?. Son: pro

Wa: Dr: pru; SW: pyu?; Bib: pru

Lawa: BL, Um, L'up: phru?; Pap, Ph: phyu?

*?ri? "deep"

San: rû?; KK: hû

PWL *?ra?. Wa: Dr: raû5, rau; SW: ?daã?, yaa?; Praok: rav; Bib: rau

Ant: rao, rau; TV: rôw?3; Kawa: raeex /râw?/

Lawa: BL: ?dou?; L'up: ?do?

*kli? "penis"

Khalo: kü
PWL *kliʔ. Wa: Dr: kle; SW: kliʔ; TV: kliʔ1
   Lawa: BL: klaiʔ; North: klaiʔ

787 *pliiʔ "fruit"
   K'al a: plə-li
PWL *pliiʔ. La: bli
   Wa: Dr: ple; Dav: lle(t); Milne: plii; SW: pliiʔ; Bib, Ant: oli
   TV: pl̥eʔ1; Kawa: blix /pliiʔ/
   Lawa: BL: plaiʔ; Un, L'up: pleʔ; Ph, Saam: pl̥eʔ; North: plaiʔ

788 *hliʔ "rain"
   Sam: ihéʔ; KK: li; Tailoi: le
   Khalo: la
PWL *hliʔ. En, Son, WaKng: le
   Wa: Dr: leh(5); SW: teʔ; Bib: leh; TV: leʔ3; Kawa: hliex /hliʔ/
   Lawa: BL: hlaiʔ; Un, Ph, L'up, Pap, Saam: hleʔ; North: lhɛʔ

789 *plaiʔ) "tool, knife (classif.)"
PWL *plaiʔ. Son, WaKng: bla
   Lawa: Um: plaʔ

790 *hlaʔ "leaf"
   Sam: ihʔaʔ; Ferr: hyaʔ; Tailoi: la
   K'al a: la
PWL *hlaʔ. La, En, Son, WaKng: la
   Wa: Dr: la; Dav: nla; SW: laʔ; Praok, Bib: la; TV: laʔ3
   Kawa: hlax /hlaʔ/
   Lawa: BL, Um, Pap, L'up, Ph: hlaiʔ; North: lhæʔ

791 *nloʔ "snail"
   Sam: ?əŋloʔ(h) (irreg. final)
PWL *ləʔ. Wa: SW: loʔ
   Lawa: BL: ləʔ; Saam, Ph: ləʔ

792 *hləʔ "tree bark"
   Sam: lhəʔ
PWL *hlo?. Wa: Dr: lo, lō; SW: lo?
Lawa: BL: hlə?; Um. L'up, Pap, Ph: hlo?; North (R): lahə
3 *(?lo?) "voice, language"

PWL *(?lo?. Wa: Dr: lo; SW: lo?; Bib: lo; Kawa: loux /lō?/
4 *(blo?) "betel"

PWL *blo?. Wa: Dr: bo; TV: pu2
Lawa: BL: plo?; Um, Ph: phlo?; L'up, Ph: phlu?
5 *(glo?) "swamp, pond"

PWL *glo?. Wa: Ant: glao; Kawa: mglōox /ŋklə?/
Lawa: BL: ngləu?; Um. Ph: nglo?; L'up: glo?
6 *si? "head louse"
Sam: si(?); Ferr: si?

PWL *si?. Wa: Dr: hse5; SW: si?; TV:ji?1
Lawa: BL: sai?; Um: se?; Saam, Ph: seɪ?; North: sae?
7 *(sa?) "(time to) eat; Lawa:"breakfast, morning"

PWL *sa?. WaKng: sha
Lawa: BL. Um, Ph: sa? (in cpd. with ma-, miə- "time to")
8 *sə? "dog"
Sam: sō?; Ferr: so?—; KK: sū
Khala: sō; K'ala: saw(k)

PWL *sə?. La: ts'ou; En, Son, WaKng: so
Wa: Dr: hso5; Dav: so; SW: so?; Bib: so; TV: so?1:
Kawa: soux /sō?/
Lawa: BL: sə?; Um, Ph, L'up, Pap, Saam: sə?; North (R): sə
9 *si? "pain, disease"
Sam: sū?; KK: sō; Tailoi: su
K'ala: sāl

PWL *sə?. La: sao; En, WaKng: sao; Son: sau
Wa: Dr: hsaü. hsau; Dav: so; SW: saə?; Praok: saa; Bib: sau
100 *(si?)* "grand-child"

PWL *sa?. Wā: Dr: hsaū5; SW: saa?; Praok: saa; TV: sūa?1
Lawa: BL: sōu?; Um, L'up, Ph: so?

101 *yi?* "We Excl."

Tailoi: ye

PWL *yi?. Wā: Kawa: yix /yɪ?/

102 *ya?* "grand-mother"

Sam: yà?

Khalo: nxa

PWL *ya?. Wā: Dr: via; SW: ye?; Praok: ye; TV: ya?3 (irreg. vowel)
Kawa: yTIex /yɪɛ?/
Lawa: BL, Um, Ph: yüa ; L'up, North: yiə?

103 *yo?* "to see"

Sam: nù?; Tailoi: nyo (initials unexplained); KK: yū, iu

PWL *yo?. Lā: yow; En: yau; WāKng: yo; Son: ya
Wā: Dr: yo, yö; Dav: yow; SW: yau?; Bib: yao; Kawa: yəox /yəɔ?/
Lawa: BL, Um, Ph: yo?; Ph, L'up: yu?

104 *khī?* "wood. firewood"

Sam: ma khē? (irreg. vowel); Ferr: khi?-

PWL *khī?. Wā: Dr: ki5, ke3; Praok: khī; TV: k'ī?1; Ant: hkae
Lawa: BL: khāi?; Um: che?; L'up: khe?

105 *khī?* "moon, month"

Sam: khill?; KemD: khi

Khalo: khū

PWL *khī?. Lā: k'i; En: sī; Son, WāKng: kyī
Wā: Dr: ke5; Dav: kyo; SW: khi?; Bib, Ant: hki; Kawa: kix /khī?/
Lawa: BL: khāi?; Um: che?; L'up: khei?; Ph: khēi?
06 *(khe?) "after"

PWL *khe?. Wa: Bib: hkai; Kawa: kaix /khái?/
    Lawa: BL: khai?; Um: che?; L'up, Ph, North: khe?

07 *ha? "to burn (intr.)"

Sam: há?

PWL *ha?. Wa: SW: ha?; Kawa: hax /há?/
    Lawa: BL, Um, L'up, Ph: ha?

08 *kho? "tree"

Sam: khú?; KK: khū; Tai loi: ko
    Khalo: kò, K'ālā: k'āo

PWL *kho?. La: k'āo; En, Son, Wa Kng: kao
    Wa: Dr: kao5; Dav: k'o, k'ow; Milne: kau; SW: khau?;
        Praok: khaw; Bib, Ant: hkaö; TV: khâu?1; Kawa: kaox /kháö?/
    Lawa: BL: khâu?; Um, Saam, L'up, Ph, North: kho?

--K

1 *?ik "taro"

Sam: ?a?ik (tone unclear)

PWL *?ik. Wa: SW: ?ek
    Lawa: BL: ?eic; Um: ?eic; Ph: ?eic

2 *(?ek) "few"

PWL *(?ek. En: ek, Son: yek
    Wa: Dav: ek; SW: ?ek, ?eak; Bib: ehk, eh-ak; Ant: iak;
        Kawa: iag /?fak/

3 *(?ek "elder brother"

Sam: ?ét; Tai loi: ek

PWL *(?ek. Son, Wa Kng: ek
Wə: Dr: ḍək, ḍət; SW: ?ac; Bib: aik
Ləwa: BL, Um, Ph: ?iak

K4 *ʔak "bow (N.)"
Sam: ?ák; KemD: hák; Tailoi: āk
Khalo: āk; K'ala: ā(k)
PVL *ʔak. La: ak; En: āk; WaKng: āk
Wə: Dr: āk; Dav: ak; SW: ?ak; Praok: ak; TV: aʔ1
Ləwa: BL, Um, L'up, Ph: ?ak

K5 *l(ŋ)-ʔak "crow (N.)"
Sam: ?aʔak
PWL *l(ŋ)-ʔak. Wə: Dr: lōak, lāk; SW: ?ak; Praok: lāk; TV: lāk3
Kawa: lāg /lāk/
Ləwa: BL: laʔak; Um: raʔənak; Pap: ləŋak; North: ləŋəak

K6 *kak "branch"
Sam: kāk
PVL *kak. Wə: Dr, Praok, Bib: kak; Dr: kak; Kawa: gag /kāk/
Ləwa: BL, Um, Ph, Pap, L'up: kak

K7 *kək "to call"
Tailoi: kawk (kōk)
PWL *kək. Son: kōk
Wə: Dr: kōk; Bib: kok; Kawa: gouq /kōk/
Ləwa: BL: kōk; Um, Ph: kōk

K8 *gək "to eat (of animals)"
Sam: kək
PWL *gək. Ləwa: BL: kōk; Um, Pap: khok

K9 *ŋək "neck"
Sam: ŋək; Ferr: ṣoʔ-; KK: ṣōk
Khalo: ngək
PWL *ŋək. Wə: Dr: (h)sangawk; SW: ŋək; Praok: ŋək; Bib: ngawk
TV: งำ?3; Kawa: นี่อง /นอง/
Lawa: BL: นอง; Um, Ph, L'up, Pap: นอง
10 *(n)cik "cock's comb"
Sam: นองศิค
PWL *cik. Wa: SW: cik
11 *cak "sambhar deer"
Sam: ควัก: KK: ควัก; Tailoi: หัวก
Khalo: จาก
PWL *cak. En: หัวก: Son, WaKng: จาก
Wa: Dr: ชัก, ชัก; SW: ssak; Kawa: jag /ควัก/
Lawa: BL, Um, L'up, Ph, Saam, Pap, North: ควัก
12 *(cök) "to pierce"
PWL *cök. La: chawk
WA: SW: ควัก
13 *-tök "lizard (flying - )"
KK: ก้าก
PWL *-tök. Lawa: Saam: แซงไทย
14 *k-l/n-tak "tongue"
Sam: แซงไทย; Ferr: (ka)tak-; KK: ก้าก; Tailoi: ลีตก
KemD: นาะก
K'ala: ต่(k)
PWL *ntak. La: tak; En: ลำก; Son, WaKng: ดัก
Wa: Dr: tak; Dav: nda; SW: dak; Praok: dak; TV: n-dak3
Lawa: BL: tak; Um, Ph, L'up, Pap: นาะก; Saam: North: นัก
15 *tök "to nibble"
Sam: ตอก
PWL *tök. Wa: SW: ตอก
16 *trk "to hold hand"
Sam: ตอก
PWL *tuk. Wa: SW: ตอก (irreg. vowel); Kawa: dug /ตูก/
**K17** *(dak) "jungle, hill, wilderness" (a semantic shift from the original MK meaning: "water, river")*

**PWL** *dak. En: tāk*

*Wa*: Dr: htoāk, htōk; Nav: te(k); Milne: te-āk; SW: teak

*Bib*: tehk; Ant: tiak; Kawa: dTag /tīak/

**K18** *(ndak) "to fry"

**PWL** *ndak. Wa: SW: deak*

*Lawa*: Um: ndīak

**K19** *(ndak) "palm, sole"

**Sam**: tāktāk

**PWL** *(ndak). Wa: Dr: (h)toāk, (h)tāk; SW: dak (irreg. vowel); TV: tīak*

*Lawa*: BL: (t)ndīak; Um: rathīak; L'up: lātīak; Saam: tawāk;

*Pap*: ḻathīak; North: lātwa̱k

**K20** *(ndāk) "blind"

**Sam**: tāntāk; Ferr: hu-ńāk-

**PWL** *(ndāk). Wa: Dr: tuak; Bib: duk: Kawa: ndūq /ntūk/

**K21** *(dok) "tray"

**KK**: tōk

**PWL** *(dok). Wa: Dr: htōk*

*Lawa*: BL: tuak; Um: thuak; L'up: tuāk

**K22** *(snak) "vein"

**Sam**: snāk; KK: sānāk

**PWL** *(snak). Wa: Dr: sanōk; Va: tneak*

*Lawa*: BL: sanak; L'up, Saam, North: sānāk

**K23** *(nok) "full"

**KK**: nok
PWL *nok. Wa: Dr: nok; Praok, Bib: naok; TV: nauk3, mūk3;
Kawa: nāog /nāok/ 
Lawa: Um: nauk

+m-puk "to snap, to break (tr.)"
Sam: pāk; KK: mbūk
PWL *m-puk. Wa: Dr: puk
Lawa: BL: pəup; Um, Ph: mbak

+r(n)pik "bridge"
Sam: ?əŋpūk
PWL *rpāk. Wa: Dr: rapaūk, rapauk
Lawa: BL: ?apaūk; Um: rapaūk (irreg. vowel); Ph: yapaūk, lapaūk

+mbok) "pierce, stab"
PWL *mbok. Wa: Dr: pōk
Lawa: BL, Um, Ph: mбуak; L'up: mbuək

*bik "to tie"
KK: pōk
PWL:*bok. La: p'uk
Lawa: BL, Ph: puk; Um: phuk

+mok "to cut down, to slash"
Sam: mūk
PWL *mok. Wa: Dr: muaa, muka; SW: nuk; TV: mūk3
Lawa: L'up: mōk

+hmoŋk "hat"
Tailoi: mok
PWL *hmoŋk: Son, WaKng: mawk; En: māk
Wa: Dr: mawk; Praok, Bib: mok

+(?mok) "to cough"
PWL * mok. Wa: Dr: maok
Lawa: BL: ?moak; Um, L'up, Ph: ?mauk
K31 *mok "to sit"
   Sam: mōk, mūk (tone unexpl.); KK: mōk, mok; Tailoi: mawk (mōk)
PWL *mok. Lava: North: mōk

K32 *māk "cow"
   Khalo: muk
PWL *muk. Son: mōk
   Lava: BL: mœup; Um, Ph: māk; Pap: māok

K33 *wēk "earthworm"
   Khalo: wēk
PWL *wēk. Lava: Saam, Pap: wiak

K34 *wēk "belly"
   Sam: vāc (irreg); Tailoi: wait
PWL *wēk. La: wet
   Wa: Dr: vēt; Dav: vetch; Bib: vaik; SW: wac
   Lava: BL, Um, Ph, L'up, Pap: wiak

K35 *hwek "dark"
   KK: fēk; khāwēk
PWL:*hwek. En, WaKng: vyek
   Wa: Bib: vaik; Kawa: hvaig /hwāik/
   Lava: BL, Um, Ph: fāk

K36 *wāk "insect, worm"
   Sam: vāk
PWL:*wāk. Wa: Dr: vōak, vök; SW: vak (irreg. vow., cf. Sam.)
   Lava: BL, Um, L'up, Pap: vāk; North: vōak; BL also: ?bak (unexpl.)

K37 *(hwak) "to take off (clothes)"
   PWL *hwak. Wa: Kawa: hvag /hwāk/
   Lava: Um: fāk; BL: hoak (irreg.)
*rak "to moan; to cry (anim.)"

Sam: ràk

IL *rak. Wa: Dr: rak; SW: ṣvak (irreg. vowel, cf. Sam.)

Kawa: rTag /rìak/

Lawa: Pap: rak

*krak "buffalo"

Sam: ṣakhrāk; Ferr: khak^-; KK: khāk; Tailoi: krāk; KemD: krāc

Khalo: kāk; K'ala: kya(k)

IL *krak. La: ka-rak; En, Son, VaKng: krāk

Wa: Dr: krāk; Dav: ka-rak; SW: kyak; TV: krakī; Kawa: orag /krāk/

Lawa: BL. L'up, Pap: khrak; Um. North: krak; Ph: khyak;

Saam: kyak

*s(η)krak "red"

Sam: sakhrāk; KK: tākhāk; Tailoi: su-krāk

Khalo: k(r)ak; K'ala: si-kyā(k)

IL *s(η)krak. La:krak; En: sung grāk; Son: krāk

Wa: Dr: (h)sakrāk; Milne: sgrāk

Lawa: BL: sakhrak; L'up: sakhrak; Um: sakrak; Pap: sakyak;

Ph: sakhyak; North: sakrak

*m'brōk "to ride"

Sam: ph'k; KK: kahok

K'ala: pyāwk

IL *m'brōk. La: pruk

Wa: Dr: pruak; SW: byuk; Ant: brook; Bib: bruk; Kawa:nbrūg /mprûk/

*prōk "ribs"

Sam: khrūk

IL *prōk. Wa: Dr: praok; SW: ra(ɔ)k; Bib: praok; Kawa: braog /prâsk/

Lawa: Saam: phyâok
K43 *rok "toad"
   Sam: ?ərʊk
   PWL *rok. Wa: SW: ruk
   Lawa: BL: roak; Um: rauk; Pap: raok

K44 *mrok "wild dog"
   Sam: ?əŋrʊk
   PWL *mrok. Wa: Dr: maruk
   Lawa: Sam: mbyaık; North: mbroık

K45 *lik "pig"
   Sam: lik; Ferr: le·k_; KK: lāk, lā; KemD: lék
   Khalo: lük; K'ala: lT(𝑘)
   PWL *lik. La: lik
   Wa: Dr: lik; Dav: lik; SW: lik; Praok, Bib, Ant: lik; TV: li:k3
   Kawa: 1Tg /lɪk/
   Lawa: BL, Pap: laic; Um, L'up: leic; Ph, Saam, North: leic

K46 *hlic/k "iron"
   Sam: ġhét; Tailoi: lek
   PWL *hlic/k. La: lik; En: lek; WaKng: lit
   Wa: Dr: lik; SW: lek
   Lawa: BL, Pap: hlaic; Um: hleic; Ph: hleic

K47 *(kle) "armpit"
   PWL *kle. Son: le
   Wa: TV: kľaiʔ1
   Lawa: Pap: kliak; North: kliak

K48 *(glak) "to lick"
   PWL *glak. Wa: TV: k'leak1
   Lawa: BL, Ph: kliak; Um: khliak; L'up: kljik

K49 *plak "side, direction, (river) bank"
   Sam: plák
PL *plak. Wa: plak; Praok, Bib. Ant: plak; Kawa: blag /plák/
   Lawa: BL, Ph, Ph: lak

*lok "inside"
   Tailoi: lōk

PL *lok. Wa: Kawa: lōg /lēk/
   *sak "full (with food)"
   Sam: sāk; Ferr: sak--; KK: sak

PL *sak. Wa: (Dr: hsōk ?); SW, Bib: sak; Kawa: sag /sāk/
   Lawa: BL, Um, L'up: sak

*sak "to wash clothes"
   Sam: sak (tone ?)

PL *sak. Lawa: BL, Um, Ph: sak

3 *yok "to lift"
   Sam: yūk

PL *yok. Son: yawk
   Wa: Dr: yōk, yuk; SW: yaök; Praok, Bib: yaok; TV: yúk3;
   Kawa: yāog /yàök/
   Lawa: BL, Um: yuak

4 *yok "ear"
   Sam: yhūk; Ferr: hyūk--; KK: yuk; Tailoi: yok; KemD: (la)yok
   Khalo: yōk; K'ala: yāw(k)

PL *yok. La: yok; En: yōk; Son, WaKng: yawk
   Wa: Dr: yaok; Dav: yow(k); SW: yaök; Bib: yaok, yawk; Ant: yaok
   TV: yow?3; Kawa: hyaog /hyāök/
   Lawa: BL, Um, Ph, Pap: suak; Sam: suök: L'up: hyuak; North: sik

5 *hak "skin"
   Sam: hák; Tailoi, KK: hāk
PWL *hak. Son. En, WaKng: hāk

Wa: Dr: hāk, hak; SW: hak; Bib,Praok: hak-; TV: ho?1;
Kawa: hag- /hāk/-
Lawa: BL, Um, Pap, L'up, Ph, North: hak

K56 *phak "wash dishes"

San: phák

PWL *phak, Wa: SW: phak
Lawa: BL: phak

K57 *phak "vegetable"

Ferr: phak-

PWL *phak, Wa: TV: p'ak1 (="tamarind")
Lawa: BL, Um: phak

K58 *hok "to dry sth. in the sun"

Sam: hōk

PWL *hok, Wa: Dr: hōk; SW: hok
Lawa: BL: hōk; Um: hōk

K59 *thok "to spit out"

Sam: thōk

PWL *thok, Wa: SW: thōk

K60 *hok "to climb"

Sam: hōk; Ferr: hu?-; KK: huk, hūk; Tailoi: huk
Khalo: hōk; K'ala: hāw(k)

PWL *hok. La: hōk; En: hawk

Wa: Dr: Hao; Dav: hu-; SW: haok; Bib: haok; Kawa: haog /hāok/
Lawa: BL: hoak; Um, Ph: hauk; Pap: haok; L'up: haok

K61 *hik "hair"

Sam: hūk; Ferr: huk-; KK: hūk; Tailoi: huk; KemD: huc
Khalo: hūk; K'ala: hō(k)
*hək. La: hök; En: hak; Son, Wakng: hāk

Wa: Dr: hauk, hauk; Dav: how(k); SW: həæk; Praok: həæk;
Bib: hauk; TV: həwk1; Kawa: haeeg /həwk/
Lawa: BL, Ph, L'up: hąił; Um: hauk; Saam: həæk; North: həik

-- Ñ

?iŋ "to come, return"

Sam: ?iŋ; Ferr: ?in̂; KK: in; Tailoi: ing
K'ala: iŋ

WL *ʔiŋ. Son, Wakng: ing; En: in

Wa: Dr: ing; SW: ?eŋ; Praok: iŋ; Bib: ing; TV: iŋ2; Kawa:ing /ʔiŋ/
Lawa: BL, L'up, Pap: ?aiŋ; Um: ?eiŋ; Ph: ?eiŋ

ʔiŋ "dung"

Sam: ?eŋ/?eŋ

PWL *ʔeŋ. Wa: Dr: ēŋ, ēn; SW: ?eŋ; TV: ʔiŋ2
Lawa: BL, Um, Pap: ?iaŋ; North: ?iŋ

ʔaŋ) "not"

PWL *ʔaŋ. Son: ang; Wakng: āŋ

Wa: Dr: ang; SW: ?aŋ; Bib, Ant: ang; Kawa: ang /ʔaŋ/

ʔ(rʔaŋ) "rock"

PWL: *rʔaŋ. Wa: Dr: ra-āŋ, rāŋ; Bib: rang
Lawa: BL: laʔaŋ; L'up, North: laʔaŋ

ʔsʔaŋ "bone"

Sam: sʔaŋ; KK: sāan; Tailoi: sa-āŋ

PWL *sʔaŋ. Son, Wakng: āŋ; En: sāŋ

Wa: Dr: hsaang; Milne: sa-āŋ; SW: sʔaŋ; Bib: si-ang; TV: sāʔaŋ2
Kawa: si'ang /səʔaŋ/
Lawa: BL; Um, Ph, Pap: saʔaŋ; L'up, Saam, North: saʔaŋ

Ng *?ɔŋ "hornet"

Sam: (?a-)ʔɔŋ

PWL *?ɔŋ. Wa: TV: ɔŋ2

Lawa: BL:ʔɔŋ: North: ʔɔŋ

Ng *ken "head"

Tailoi: ching; KK: kiŋ; KemD: kighe

Khalo: King, K'ala: kyen

PWL *ken . La: kën; En, WaKng: kaŋŋ; Son: gaŋq

Wa: Dr: kën; Dav: kain; SW: kaŋ; Bib: kaŋq; TV: kën2:

Kawa: gaŋq /kain/ or /kəŋ/

Lawa: BL, Um, L'up, Pap, Ph, Saam: kain; North: kain

Ng *(koŋ) "peacock"

PWL *koŋ. Wa: Dr: kaong; Milne: kāun; TV: kəwŋ2; Kawa: gaong /kəŋ/

Ng *koŋ "to dig"

Sam: kūŋ; KK: kuŋ

PWL *koŋ. Wa: Dr: kaong, kaung; SW: ka(o)ŋ

Lawa: BL: koŋ; Um, Ph: kaŋ; L'up: kaŋ

Ng10 *kin "country, lowlands, whet rice-field"

Sam: kūŋ; Tailoi: kung; KemD: keugne

K'ala: kōŋ

PWL *kəŋ. En: kōŋ

Wa: Dr: kaʊŋ; Kawa: gaeeng /kəwŋ/

Ng11 *gan "mouse"

Sam: kəŋ; Ferr: kaŋ

Khalo: kāŋ

PWL *gan. Wa: Dr: hkoang; TV: kian2; SW: keŋ, kyəŋ;

Lawa: BL, L'up, Ph: kiaŋ; Um: Pap: kiiaŋ
12 *ŋgari "scabbard"
   Sam: ?əŋkàŋ
   PWL: *ŋgari. Dr: kōang

13 *ŋog(ə) "mountain" (vowel uncertain: apparently a TB borrowing)
   Sam: ?əŋkōŋ; KK: mkoŋ; Tailoi: an-kōng; KemD: ngoogung
   K halo: gōng; K'ala: kawng
   PWL *g(ə). La: k'awng
     Wa: SW: gaung; Kawa: mgūang /ŋkùəŋ/

14 *ŋo-goŋ "pillow"
   Sam: ?əŋkùŋ
   K halo: gōng
   PWL *ŋo-goŋ. Wa: Dr: kōng; SW: -kaʊŋ; -gaʊŋ
     Lawa: Um: ranguŋ

15 *ŋoŋ "knife"
   Sam: ŋùŋ
   PWL *ŋoŋ. Wa: Dr: ranguang, rangōng
     Lawa: BL: ?aŋŋaŋ; Um: râŋŋaŋ; Ph: laŋâŋ

16 *ŋuŋ "knee"
   Sam: ŋùŋ
   PWL *ŋuŋ. Wa: Praok: ŋuŋ; Bib: ngawng
     Lawa: BL: ŋuŋ; Um, L'up, Saam, North: ŋûŋ

17 *jen "to sew"
   Sam: ciŋ
   PWL *jen. Wa: SW: tsaiŋ; Praok: caŋ
     Lawa: BL: ciŋ; Um: chiŋ; Ph: ciŋ, chiŋ; L'up: chiŋ

18 *joŋ "foot"
   Sam: cûŋ; Ferr: tyuŋ_; KK: cuŋ; Tailoi: cong; KemD: kio
   K halo: jōŋ
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PW L *joŋ. La: shon; En. Son: sawng; Son: saung; WaKng: song, shong
Wa: Dr: chong; Dav: chan; Milne: chun; SW: tsanŋ, tsacŋ;
Praok, Bib, Ant: caong; TV: tjoŋŋ; Kawa: jaoŋ /caŋ/
Lawa: BL, Ph: cuon; Um, Ph: chuon; Pap: chuon; Saam: cuon;
L'up: chuon; North: ciŋ

N19 *j(n) "to stand (up)"
Sam: c(ə)n (vowel unclear); Tailoi: sang; KK: cong
K'ala: chawng
PW L *joŋ. La: shong; En: chwong; Son, WaKng: song
Wa: Dr: chuang, chuang; Dav: jong; SW: tsunŋ; Bib: cung;
Kawa: jungen /cunŋ/
Lawa: BL: cont; Um: choŋ; Ph: cuŋ; North: juoŋ

N20 *ŋoŋ "waist"
Sam: nəŋ(Vowel not certain): KK: qyoŋ
PW L *ŋoŋ. Wa: niuɑng
Lawa: BL, Um, Ph: ŋoŋ

N21 *(ntiŋ) "wall"
PW L *ntiŋ. Wa: Dr: təng5
Lawa: BL: tain; Um: ndeiŋ; Ph: ndeiŋ

N22 *(taŋ) "different"
PW L *taŋ. Wa: Bib: tang; Kawa: dang /təŋ/
Lawa: L'up: tanŋ

N23 *tɔŋ "to burn, to roast"
KK: (hong)toŋ
PW L *tɔŋ. Wa: Dr: taunŋ; Kawa: douŋ /tɔŋ/
Lawa: BL: tɔŋ; Um, Ph: tɔŋ

N24 *sntɔŋ "brain"
Ferr: ŋ-tawng
PWL *s(n)tɔŋ. Wa: Dr: tōng

Lawa: L'up: sətawŋ; Saam: stɔŋ; North: sədaŋ

25 *ktɔŋ "cooking pot"

Sam: ktɔŋ

PWL *tɔŋ. Wa: Dr: tawŋ

26 *(tɔŋ) "to trap"

PWL *tɔŋ. Wa: Dr: taŋŋ

Lawa: BL: toŋŋ; Um: tæŋ

27 *(tɔŋ) "to boil (tr.)"

PWL *tɔŋ. Wa: Dr: tɔŋ

Lawa: BL: tɔum; Um, Ph: təŋ; L'up, Pap: tɔŋ

28 *dìn "paternal uncle/aunt; parent's elder brother; father's elder sister"

Sam: tì(/)

PWL *dìn. Wa: Dr: hting

Lawa: BL: tìn; Um: thin

29 *kδn "big"

Sam: kətìŋ

Khalo: tung; K'ala: kə-tìng

PWL *dìn. La: ting; Son: təŋ; En. WaKung: ting; En: tin

Wa: Dr: hting; Dav: ting; Milne: tū-ōŋ; SW: tIn, teŋ; Bib: tin
Ant: dìn; Kawa: dTŋ /tìŋ/

30 *k/r-dın "navel"

Sam: kteŋ

PWL *rdìn. Wa: SW: teŋ/p

Lawa: BL: tìn; Um: rathìŋ; Ph: lathìŋ, yathiŋ; Pap: ləthiŋ;
Saam: totìŋ; North: lətiŋ

31 *(daŋ) "to cross, to ford"

PWL *daŋ. Wa: Dr: htōang, htōŋ; Ant: tiang

Lawa: BL: tìŋŋ; Um: thỳŋ
32 *ndan "pot, kettle"
Sam: ?əntəŋ
PWL *ndan. Lawa: Um: ndian

33 *ndəŋ "jar, cooking pot"
Sam: ma-təŋ
PWL *ndəŋ. Son, WaKng: dawng
Wa: Kawa: dūŋ/tūŋ/
Lawa: BL: təŋ; Um, Ph: ndon

34 *(ʔnəŋ) "forest"
PWL *ʔnəŋ. Wa: Dr: nong; Kawa: noung /nəŋ/
Lawa: L'up: ʔnəŋ

35 *m-ŋiŋ "to roast" (tr.)
Sam: ?əŋpíŋ
PWL *piŋ. Wa: Dr: peng; SW: pŋ

36 *mpəŋ "tooth"
Tailoi: en-paiŋ
Khalo: peng
PWL *mpəŋ. Son: beng
Lawa: BL: piaŋ; Um, Ph: mbian; L'up, Saam, North: mbien

37 *(m-)pəŋ "bamboo cluster"
Sam: ?əŋpāŋ
PWL *pəŋ. Wa: SW: pəŋ; Kawa: bang /pəŋ/
Lawa: BL, Pap: pəŋ

38 *pəŋ "window"
Sam: pəŋ
PWL *pəŋ. Lawa: BL: pəŋ; Um, Ph: pəŋ
"stairs, ladder"
Sam: ṭɭəŋ
Khalo: bōŋ

PWL *mpəŋ. Wa: Dr: pawng; Kawa: nbong /mpəŋ/
Lawa: BL: pəŋ; Um: mboŋ

40 *piŋ "to blow (instr.)"
Sam: pũŋ
PWL *peŋ. Wa: Dr: paũng, paung, paing.
Lawa: BL, Ph: paŋ; Um: paŋ

41 *kripəŋ "to bury"
Sam: kpũŋ; Kh: tapüm
PWL *rapəŋ. Wa: SW: spana; Bib: sipaung
Lawa: BL: ?apaŋ; Um: rapaung; L: up: rapaŋ; Ph: yapaŋ
(cf. PWL *r-m-peŋ "burial": Kawa: si'nbæeng /səmpaŋ/)

142 *(mbiŋ) "mud"
PWL *mbiŋ. Wa: Dr: bing
Lawa: BL: mbəiŋ; Um, Ph: mbiŋ

43 *baŋ "top, above"
Sam: pāŋ
PWL *baŋ. Wa: Kng: pāŋ
Wa: hōang; Bib: pehang; Kawa: bTang /p̥Ian/

44 *bəŋ "bamboo shoot"
Sam: ṭa-pəŋ
PWL *bəŋ. Lawa: BL: pəŋ; Um, Ph, Pap: phəŋ; Ph: phuŋ

45 *bəŋ "to speak"
Sam: pəŋ
Khalo: pong
PWL *bəŋ. Wa: Dr: pawng, porng
*bəŋ "language": Lawa: Ph: yapuŋ, lapuŋ

46 *(miŋ) "bamboo tube, pot"
PWL *miŋ. Wa: Dr: ming
Lawa: L: up, North: meiŋ

47 *hməŋ "male"
Sam: mhīŋ; Tailoi: ming
PWL *hməŋ. En, Wa: Kng: maing
Wa: SW: maŋ; Ant: maihın; TV: məŋ2; Kawa: hmaing /hməŋ/ or /hməŋ/
Lawa: BL, Um, Pap: hmaiŋ; North (Rangsidh): ramhain (<*rhmen?)

48 *hməŋ "to hear, listen"
Sam: mhōŋ
Khalo: mōŋ
PWL *hməŋ. La: bōŋ
Wa: Dr: mōŋ; Dav: mong; SW: məŋ; Praok: mon; Bib: mong;
Kawa: hmoun /hmōŋ/
Lawa: BL: hməŋ; Um, Ph, L: up: hməŋ; North: mhə(w)ən
(Rangsidh: mhōŋ)
N49 *ʔmonŋ "to look up"
   Sam: ?əŋmʊŋ
   PWL *ʔmonŋ. Wa: Dr: mawng; Bib: mao ; Kawa: maong /maŋŋ/ (also maong /maŋŋ/, perhaps an error)

N50 *rwanŋ "thigh"
   Sam: kavəŋ; Tailoi:ma-wang; KemD: rewang
   K'ala: a-vang
   PWL *rwanŋ. Son, WaKng: wāŋŋ; En: wōŋ
   Wa: Dr: rawung
   Lawa: BL: ?awtəŋ; Um: rawiəŋ; Ph: yawiəŋ, lawiəŋ; Pap: lawiəŋ
   L'up: rəviəŋ; Saam: ?awwaŋ; North: lawiəŋ

N51 *hr(e)nŋ "thousand" (the vowel is irregular in most of Waic)
   KemD: seugne
   K'ala: ying
   PWL *hr(e)nŋ. La: riəŋ; WaKng: həŋ
   Wa: Dr: rihiəŋ; Dav: rein; Bib: reng; Ant: hring;
   Kawa: hreing /hrɛŋ/ (or /hrɛŋ/)

N52 *reŋ "strong" (cf. Thai).
   Sam: rèŋ
   PWL *reŋ. En: reng
   Wa: Dr:riəŋ; SW: yəŋ; Kawa: rTəŋ /riəŋ/
   Lawa: BL, Um: rianŋ

N53 *ranŋ "to be light, clear"
   Ferr: həŋ-
   PWL *ranŋ. Son, WaKng: rang; En: rāŋ
   Wa: Dr: rang, h'rang; Bib:rehang; Kawa: rTəŋ /riəŋ/

N54 *hraŋ "tooth"
   Sam: rāŋ; KK: hāŋŋ; KemD: ragne
   K'ala: ghanga
   PWL *hraŋ. La: Sa-rang; En, WaKng: rāŋ
   Wa: Dr: h'rang, rang, rāng; Dav: rang; SW:yaŋ; Bib:rang
   TV: rəŋ2; Kawa: hrang /hrəŋ/
   Lawa: L'up: hraŋ

N55 *praŋ "roof"
   Sam: phraŋ (tone unclear)
   PWL *praŋ. (Son: blong ?)
   Wa: SW: pyaŋ; Bib:prang; Kawa: brang /praŋ/
   Lawa: BL, L'up: phraŋ; Um: prəŋ; Ph: phyəŋ;
   cf. Dr: prəŋ tua:"top, crest of hill"

N56 *ʔraŋŋ "house pole"
   Sam: rəŋ
   K'ala: wawŋ
   PWL *ʔraŋŋ. Wa: Dr: rōŋ(3); Dav: rum; Ant: rong

N57 *cranŋ "bowl, cup"
   Sam: krəŋ
   PWL *cranŋ. Wa: Kawa: krong /krəŋŋ/
*mrōŋ "horse"
Sam: ?aŋŋāŋ; Ferr: (ǹ)-hāŋ-; KK: kāhōŋ; Tailoi: n'rāŋ
KemD: proge
Khalo: mōŋ; K'ala: pyung
PWL: *mrōŋ. La: brōng; En: m'blawng; Son: m'lōŋ; WaKng: m'lōŋ, l'lōŋ;
   Wa: Dr: maruŋ; Dav: brum; SW: byōŋ; Ant: broong; TV: bruŋ2;
   Kawa: nbruŋg /mprūŋ/, (also: nbruŋg /mprūŋ/, probably a
   misprint)
   Lawa: BL: mbroŋ; Um: mbrōŋ; Ph: mbyōŋ; Papi: byōŋ; North: mbrēŋ

*(rōŋ) "ravine, ditch, stream" (cf. Shan)
PWL *rōŋ. En: hawng
   Wa: Dr: rawng; Praok: rōŋ; Kawa: rōŋ /rōŋ/

*krōŋ "the back"
   K'ala: (ss-)kyaung
PWL *krōŋ. La: (an-)graung
   Wa: Dr: krawng, Kawa: grong /krōŋ/

*sōŋrōŋ "knee cap"
   KK: sōkhōŋ
PWL *sōŋrōŋ: Wa: Dr: shangrōŋ
   Lawa: Saam: ngaŋ; North: sōŋrōŋ

*ʔrōŋ "horn (anim.)"
   Sam: rōŋ
PWL *ʔruŋ. Wa: Dr: rōŋ4; Praok: rōŋ
   Lawa: BL: ʔdeiŋ; Um: ʔrōŋ; Ph: ʔγəŋ

*krōŋ "drum"
   Sam: khruŋ
PWL *krōŋ. Wa: (Dr: klōŋ ?)
   Lawa: BL: khraŋ; Um: kraŋ; L'up: khraŋ; Ph: khyaŋ

*grōŋ "clothes, tools, belongings"
   KK: khōŋ
PWL *grōŋ. Wa: Dr: hkrōŋg, hkrung, khrōŋg; SW: kya(ə)ŋ;
   Bib, Ant: kraung; Kawa: grēeng /krōŋg/
   Lawa: Um: khrēŋ; Ph: khyaŋ

*ʔliŋ "long (time)"
   Sam: lēŋ; Ferr: lēŋ-
PWL *ʔliŋ. Wa: Kawa: liŋg /liŋ/
   Lawa: BL: ʔdēŋ

*(lēŋ) "to raise (animals)"
PWL *lēŋ. Wa: Bib: lehäng; Kawa: lTang /lēŋ/
   Lawa: BL, Um: liŋ

*(hlaŋ) "house (classif.)" (cf. Thai)
PWL *hlaŋ. Wa: Bib: lang; Kawa: hlaŋg /hlāŋ/
   Lawa: BL: laŋ (irreg. init.)

*ʔlaŋ "long"
   Sam: lāŋ
   Khalo: lāŋ; K'ala: lang
PWL *ʔlaŋ. Wa: Dr: lāŋ4; SW: laŋ; Ant: lang; Kawa: lang /lāŋ/
   Lawa: BL: ʔdaŋ; Um, L'up, Ph: ʔlaŋ
N69 *klan* "hawk, eagle"
PWL *klan*. Wa: Dr: klang; Bib: klang; TV: klan2
Lawa: North: klan

N70 *plan* "clear, fine (weather)"
  : Sam: plañ
PWL *plan*. Wa: Dr: pläng, plang; Praok: blañ (irreg. initial)

N71 *loñ* "black" (perhaps also: "blue")
  Sam: lóng; KK: loklyn
  Khaol: lông, K'ala: lawng
  PWL *loñ*. La: long; En: lawng, lwong; Son: long; WaKng: lu-ong
  Wa: Dr: luang (in: luang nam leh "gathering storm"); Dav: lüm
  SW: lʊŋ; Bib: l族群.; Kawa: lʊŋ /lʊŋ/
  Lawa: BL: loñ; Um, L'up, Ph: loñ

N72 *(klon)* "rice-bowl"
  PWL *klon*. Wa: Dr: klong; SW: kloñ; Bib, Ant: klong;
  Kawa: gloong /kloñ/
  Lawa: Um: kloñ

N73 *plan* "thatching-grass"
  Sam: plón
  K'ala: pl-lung
  PWL *plan*. La: plong; Son, WaKng: blong
  Wa: Dr: plñ, plong; Dav: blum; SW: plon; TV: plon2
  Lawa: BL: plñ; Um, L'up, Pap: plon

N74 *hloñ* "cool"
  Khaol: long
  PWL *hloñ*. Son: long
  Wa: Dr: lông
  Lawa: BL: hloñ; Um, L'up, Ph: hloñ; North: lhacñ

N75 *(?loñ)* "coffin"
  PWL *(?loñ). Wa: Dr: lawng; Kawa: long /lőŋ/
  Lawa: Um, Ph: ?loñ

N76 *klon* "river"
  Sam: klón; Tailoi: klong
  PWL *klon*. En: klong; Son: klong
  Wa: Dr: klawng; Dav: klawng; SW: kloñ; Bib, Ant: klawng;
  Praok: kloan; Kawa: gloong /klon/
  Lawa: BL: kloeñ; Um, L'up, Ph, Pap: klon
(Note: there seems to be a conflicting *kron* form: K'ala: kyawng;
La: krong; WaKng: krawng)

N77 *hloon* "high"
  Sam: lhún; KK: l znajdują; Tailoi: long; KemD: loung
  Khaol: long; K'ala: lawng
  PWL *hloon*. La: long; En: lawng, laung; Son, WaKng: long
  Wa: Dr: laong, laung; Dav: lông; SW: lou; Praok: laon;
  Bib: laong; Ant: long; Kawa: hlaong /hlacñ/, also: laong
 /lāon/
  Lawa: hloon; Um, Ph: hlaun; L'up, Pap: hloan; North: lhacñ
8 *(mlŋ) "mountain"
   PWL *mlŋ. Son: m³long; En: blao
   Wa: Dr: m³long, malong; Dav: lang; Praok: blaŋ; Milne: brëŋ
   Kawa: mbloŋ /mplaŋ/
   Lawa: BL: mbloŋ; Um, Ph: mblaŋ; L'up: mbloŋ; North: mlŋ

1 *(ksan) "elephant"
   Sam: kesāŋ; Ferr: tyan--; KK: kāsāŋ; Tailoi: k'śang;
   KemD: kesang; Khalo: ka sāŋ
   PWL *san. Son: sāŋ
   Wa: Dr: hsāŋ; SW: sāŋ; Praok: san; Ant: hsāŋ; TV: sāŋ
   Lawa: BL, Um, Pap, L'up, Saam, Ph, North: sāŋ

1 *(sāŋ) "bitter"
   Sam: sāŋ
   PWL *sāŋ. Wa: Dr: hsāŋ; SW: sōŋ, shōŋ; Praok: sōŋ; Bib: song;
   TV: sōŋ; Kawa: soung /sōŋ/
   Lawa: BL: sāŋ; Um, Ph: sōŋ

1 *(sāŋ) "to open a house"
   PWL *sāŋ. Wa: (Dr: hsōŋ ? in: hsōŋ ravūa "to shut a door")
   Kawa: soung /sōŋ/
   Lawa: BL: sāŋ; Um, Ph: sōŋ

2 *(sāŋ) "small bag"
   PWL: *sāŋ. Wa: Dr: hsiung
   Lawa: BL: sōŋ

3 *(n-)γoŋ "to know"
   Sam: ŋōŋ; KK: γōŋ; Tailoi: yang
   Khalo: yong, K'ala: yawng
   PWL *γoŋ. La: yong; En: yawng; Son, WaKng: yong
   Wa: Dr: yuung, yōng; Dav: yong
   Lawa: BL, Um, Ph: yōŋ; L'up: yun

4 *(γroŋ) "rainbow"
   Sam: pewnγ (tone unclear)
   PWL *γroŋ. Wa: Dr: riawng; SW: səγoŋ; TV: siγoŋ
   Lawa: BL: ?ayon; Um: rayon

5 *(c)ɣoŋ "light (in weight)"
   Sam: ɬγoŋ; Ferr: sǎ-γuŋ (no tone mark)
   K'ala: kə-chung
   PWL *ɣoŋ. La: shōŋ
   Wa: Dr: chaong; Dav: ch'ōŋ
   Lawa: Um, Ph: chaŋ (BL: thoŋ ?)

6 *(γoŋ) "village (small)"
   Ferr: yuŋ--; KK: yuŋ ("house"); Tailoi: yung
   Khalo: yōŋ; K'ala: yung
   PWL *(γoŋ. La: yonγ; En: yawng, yaung; Son: yaung; WaKng: yawng
   Wa: Dr: yaong; Dav: yan; SW: youŋ; Bib, Ant: yaong;
   TV: yuŋ; Kawa: yaong /yāŋ/
   Lawa: BL, Um, Ph: yuŋ; Pap: yuŋ; Saam: yuŋ;
   North (Rangsidh): yuŋ
N87 *(hɛŋ) "clever"
  PWL *hɛŋ. Wa: Dr: hɛŋ
       Lawa: BL, Um: hian
N88 *höŋ "to steam rice"
  Sam: hūŋ; KK: höŋ
  PWL *höŋ. La: höŋ
       Wa: Dav: höŋ
       Lawa: BL: hoan; Pap: hoŋ
N89 *rŋ-höŋ "rice-steamer"
  Sam: ?anhūŋ
  Khalo: hōng
  PWL *rŋöŋ. Wa: SW: ñūŋ, ñaŋ
       Lawa: BL(Kraisri): ahuang; North: ləŋŋəŋ

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C1 *ʔic/k "a tuber"
  Sam: ?aʔik
  PWL: *ʔic/k. Wa: SW: ʔik
       Lawa: BL: ʔaic; Um: ʔeic; Ph: ʔeic
C2 *ʔxc "all, out of, exhausted"
  Sam: ?əc
  PWL *ʔəc. Wa: Dr: uit; SW: ʔuc; Bib: u-ik; Ant: oet; Kawa: uig /ʔuc/
C3 *koc "hot"
  Sam: kūc; KK: kuint
  Khalo: kot
  PWL *koc. Wa: Dr: koit; SW: koc; Kawa: gouig /koc/
       Lawa: BL: kaik; Um, Ph, L'up, North: koic
C4 *(gac) "ashamed, shy"
  PWL *gac. Wa: Dr: hköit, kōit; TV: koiic5
       Lawa: BL: kik; Um: chiaic; Ph: kuic
C5 *gic "to burn (tr.)"
  Sam: kuc
  PWL *gac. Wa: Dr: kōit; SW: kuc
C6 *(nac) "wet"
  Sam: nacnac
  PWL *nac. Wa: SW: nac
C7 *(ʔnuc) "drunk"
  PWL *(ʔnuc. Wa: Dr: yoit
       Lawa: BL: ʔyuic; Um, L'up, Pap: ʔnuiic
C8 *(dac) "thrash, tread out (grain)"
  PWL *dac. Wa: Dr: htōit, htüit
       Lawa: BL: tik
*pic  "put away, take off (clothes)"
    Sam: púc (irreg. vowel)
    PWL *pac. Wa: Dr: pöit, poit; Bib: pui-ik
    Lawa: BL: paɪk; Um, Ph: poic

1 *(hmac)  "sand"
    PWL *hmac. Wa: Dr: mait5; Praok: mac; Bib: maik
    Lawa: BL, Um, L'up, Pap: hmaic; North (Rangsidh): mhait

1 *(rmic)  "grave"
    PWL *rmic. Wa: ramoit; Bib: si-mui-ik
    Lawa: BL: ?amaɪk; Um: ramaɪc; Ph: yamɔɪc

2 *wac  "sword"
    Sam: vəc; Tailoi: waik
    K'ala: və(t)
    PWL *wac. La: wet; En, Son, WaKng: waik
    Wa: Dr: vöit, voit; Dav: wai; SW: wac, vac; Bib: vait;
       TV: wɔɪc5; Kawa: ṽai ɡ/wač/
    Lawa: BL: wɪk; Um: wiaic; Ph: wuic

3 *prxc  "bird wing"
    Sam: phræc
    PWL *pruc. Wa: Dr: pʁoît; SW: phrʌc (irreg. vowel ?); TV: p'ʁʁiomanip"1
    Lawa: BL: phraɪk; Um: prɔɪc; Ph: phyoic; North: proic

4 *(?loc)  "back of heel"
    PWL *(?loc. Wa: Dr: loit; Bib: lo-ek
    Lawa: BL: ?daɪk; Saam: ?loic

5 *(hac)  "to scratch (self)"
    PWL *(hac. Wa: Dr: hait
    Lawa: BL, Um, Ph, L'up: haic

6 *(hɔc)  "finished"
    Sam: hɔc
    PWL *(hɔc. Wa: Dr: hoit, hait; SW: hɔc, hɔc; Bib: hoit; Ant: hoieht;
       Kawa: hoig /hɔc/
    Lawa: BL: hoic; Um: hoic; L'up: hɔic [fuic]; Saam: huic

17 *(hɔc)  "arrive"
    Tailoi: hwit
    K'ala: hɔ(t)
    PWL *(hɔc. La: huit; WaKng: hwe
    Wa: Dr: hoit; SW: hoic; Bib: hwet; Ant: hoet; Kawa: houig /hɔc/
    Lawa: BL: haɪk; Um, Ph, L'up, Pap, North: hoic

18 *(hɔc)  "to sting"
    Sam: huc
    PWL *(hɔc. Wa: Dr: höit; SW: huc; Bib: hui-ik

19 *(h-m-ic)  "ant"
    Sam: ʔa-mhuc; Ferr: kə-muy; KK: kəmɯit; Tailoi: mut
    PWL *(hmac. En: mwêt; Son: mwet; WaKng: mawt
    Wa: Dr: möit, moit, mōit; SW: mwuc; TV: mɔɪt3
    Lawa: BL: ?maɪk; Ph, Um: ?mɔɪc; Pap: mɔɪc
C20 *khoc  "to wash (self)"
   Sam: khúc; KK: khuit
   PWL *khoc. Wa: Dr: koit; SW: khoc; Bib: hko-ek
   Lawa: BL: khaïk; Um, Ph: khoïc

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N1 *?aŋ  "wasp"
   Sam: ?aŋ
   PWL *?aŋ. Lawa: North: ?aiñ

N2 *s?ŋ  "snake"
   Sam: s?ŋ; Ferr: sã-?uän-; KK: sãün; KemD: saeuigne
   PWL *s?uŋ. Wa: Dr: hsaün; SW: s?uŋ; Bib: si-u-îng; TV: jûñiñ2;
      Kawa: si'uîng /sa?ũn/
   Lawa: BL: sa?òïñ; Um, Ph: sa?óiñ; L'up, Pap: sa?óiñ;
      North: sa?uíñ

N3 *kîŋ  "father"
   Sam: ?a-kwû (tone unclear); Ferr: kôñ-; KemD: keuigne;
      K'ala: kôn
   PWL *kên. La: keng; En: kuwin; WaKng: gung
      Wa: Dr: kôin; SW: kûŋ; Bib: ku-iîng; Ant: kuîng; TV: krîñ2;
      Kawa: gêeîng /kû'n/

N4 *taŋ  "to weave, to plait"
   Sam: tîŋ; KK: tâîn
   PWL *taŋ. Wa: Dr: taîn; SW: tan; Bib, Ant: taîng; TV: taîñ2;
      Lawa: BL, Um, Ph, Pap, L'up, North: tain

N5 *(naŋ)  "war, army"
   PWL *(naŋ). Wa: Dr: nîn; Praok: naŋ; Bib: naiîng; Kawa: nàîng /nàŋ/

N6 *pûŋ  "to shoot"
   Sam: pân
   PWL *pûŋ. Wa: Dr: poin; SW: puŋ; TV: pûîñ; Kawa: buîng /pûŋ/ 
      Lawa: BL: pûïŋ; Um, Ph, L'up: poin

N7 *baŋ  "white"
   Sam: pân (also pán?); KK: pûnt; Tailoi: païng
      Kâlô: phân; K'ala: pan
   PWL *baŋ. La: p'ain; Son, En, WaKng: paîng
      Wa: Dr: pöîn; Dav: pain; Milne: pîîn (!); SW: pûŋ; Bib: païng 
      Kawa: bûîng /pûŋ/
      Lawa: BL: pîng; Um, Ph, L'up: puiîn

N8 *hman  "to ask"
   KK: hîîmâint
   K'ala: hu-man
   PWL *hman. La: main
      Wa: Dr: main; Praok: man; Bib: maing; TV: maîñ2;
      Kawa: hmaîng /hmâŋ/
      Lawa: BL, Um, Ph: hmaiîñ
9 *mɔŋ "mouth"
   Sam: mɔŋ; KemD: moëgne
   Khalo: muan; K'ala: mawn
   PWL *mɔŋ. La: bwain
   Wa: Dr: moin; Praok: mɔŋ; Bib: mo-eng
   Lawa: L'up: muəŋ; North: muŋ

10 *sʔmʊŋ "star"
   Sam: s(m)məŋ; KemD: samigne
   Khalo: mun; K'ala: ezm-un
   PWL *sʔmʊŋ. La: mu-bun; Son, WaKng: semwayn; En: si məin
   Wa: Dr: (h)simün; Dav: samui; SW: smuŋ; Praok: simun;
      Bib: sim-u-ing; TV: si4mʊiŋ2
   Lawa: BL: sa?baŋ; Um, Ph: sa?moiŋ; L'up: sa?moiŋ

11 *rʊŋ "wife"
   Sam: məŋ; KK: khāmain; Tailoi: ra-mən, ramwin
   PWL *rʊŋ. Son: mwē; En: mu-win
   Wa: Dr: ramōin; SW: mʊŋ; Bib: mo-eng; Kawa: mōuing /məŋ/

12 *(hwan) "to fish with a landing net"
   PWL *hwan. Wa: Kawa: hvaing /hwāŋ/
   (cf. Lawa: North: lafiŋ "small fish-net" from PWL *r-hwaŋ)

13 *mrəŋ "body louse"
   Sam: ?əŋrəŋ
   PWL *mrəŋ. Wa: Dr: maruín
   Lawa: BL: mbrəŋ; Pap: byoiŋ; Saam: mbyoiŋ

14 *ŋrəŋ "termite"
   Sam: ?əŋrəŋ
   PWL *ŋrəŋ. Wa: Dr: ngrēn
   Lawa: L'up: reim

15 *kləŋ "fat"
   Sam: klēŋ; Tailoi: kling
   PWL *kləŋ. En: Klwing; Son: klwing; WaKng: klwing, g1w1n
   Wa: Dr: kloîn, kloîn; SW: kluŋ; Kawa: gluing /klun/
   Lawa: Um, Ph: kloîŋ

--T

T1 *ʔit "to sleep"
   Sam: *ʔit; KK: Tt; Tailoi: it
   Khalo: Tt
   PWL *ʔit. En, Son, WaKng: it
   Wa: Dr: it; SW: *ʔit; Praok, Bib: it; TV: it1; Kawa: id /*ʔit/
   Lawa: BL, Um, Ph, L'up, North: ?aic

T2 *ʔɛt "small, a few"
   Sam: *ʔɛt; Ferr: *ʔɛt; KK: ŋt; Tailoi: et
   K'ala: ŋt
   PWL *ʔɛt. En: et; Son, WaKng: yet; WaKng: yit
T3 *(?ot) "dwell, be located"
    PWL *?ot. La: ut
    Wa: Dr: awt; Dav: ut; SW: ?ot; Bib, Ant: ot; Kawa: oud /?ót/
    Lawa: BL: ?aik; Um, L'up, Ph: ?aut; Ph: ?aıt; North: ?aot

T4 *kat "thorn"
    SAM: kát
    PWL *kat. Wa: Dr: kät; SW, Bib: kat; TV: kat
    Lawa: Um, L'up, Pap: kat

T5 *kot "cold"
    SAM: kót; KK: kot; Tailoi: kat
    K halo: kuat; K'ala: kawt
    PWL *kot. La: Kwat; WaKng: gut
    Wa: Dr: kuat; Dav: kwet; SW: kot; Bib: kwat; Kawa: guad /kúat/
    Lawa: BL: koat; Um, Ph: kot

T6 *get "to bite"
    SAM: cët
    PWL *get. Wa: Dr: chiet; SW: jet; Praok: kiat; Bib: ki-eht;
    TV: ki:lt; Kawa: gTad /kiat/
    Lawa: BL, Ph: kiat; Um: chiat; L'up: kiat

T7 *got "old (hum.)"
    SAM: kót
    K'ala: kû(t)
    PWL *got. La: k'u-at; En: kwat; Son: kót; WaKng: kut
    Wa: Dr: kuat, kut; Dav: ku-at; SW: kót; Bib: kuwat;
    Kawa: guad /kúat/
    Lawa: BL, Ph: kuat; L'up: kuat; Um: khuat

T8 *hje/et "to hear"
    KK: níit
    K'ala: nye(t)
    PWL *hje/et. Wa: Dr: niet; Bib: ngeht; Kawa: hngiad /hʃfat/

T9 *(?nit) "to extinguish"
    PWL *(?net. Wa: Dr: yót; Bib: yuit
    Lawa: BL: ?yit; Um, Ph, L'up: ?nít

T10 *(ntot) "to smoke (tr.), to swallow"
    PWL *ntot. Wa: Dr: tawt
    Lawa: BL: tuat; Um: nduat

T11 *tit "to pull"
    SAM: tüt; Tailoi: tut
    PWL *tit. Son: dawt
    Wa: Dr: tüt, tut; SW: twt

T12 *(ndt) "to be torn"
    SAM: ?antêt
    PWL *ndut. Wa: SW: dut
T13 *snat  "gun"
  Sam: sa?nát
  Khalo: sināt; K'ala: ss-nā(t)
  PWL *snat. La: dat
  Wa: Dr: (h)sanōt; Dav: nat; SW: nat; Kawa: nād /nāt/
  Lawa: BL, Um, Ph: sanat; Pap: s nát

T14 *bit  "sticky, glutinous (rice)"
  Sam: pit
  PWL *bit. Wa: Dr: pit; SW: pit
  Lawa: BL, L'up, Ph: pit; Um: phit

T15 *hmēt  "to catch, feel, grope"
  Sam: mhēt
  PWL *hmēt. Lawa: BL: hmēk; Um, Ph: hmēt; L'up: hmēt

T16 *?mit  "cloud, smoke"
  Tailoi: mut
  PWL *?mit. En: mut
  Wa: Dr: (a)mēt
  Lawa: BL: ?maik; Um: ?maut; Ph: ?maît

T17 *s-wet  "to twist"
  Sam: væt
  PWL *s-wet. Wa: SW: sivīt
  Lawa: BL, Um: saviat

T18 *hlát  "to fear"
  Sam: ḥlāt; KK: lat
  Khalo: lāt
  PWL *hlát. Wa: Dr: lāt; SW: ṭat; Bib: lat; Kawa: hlād /hlāt/
  Lawa: BL, Um, Ph, L'up: hlāt

T19 *?η-hlát  "to frighten"
  Sam: ?ηẖlāt
  PWL *?η-hlát. Wa: Dr: nglāt

T20 *lot  "to take out, draw out"
  Sam: lōt
  PWL *lot. Wa: Dr: lawt
  Lawa: BL, Um: luat

T21 *hlit  "deaf"
  Sam: ?ηẖhift
  PWL *hlit. Wa: Dr: lot; SW: lwt; TV: lat3
  Lawa: BL: hlāt; Um: hlaut; Ph: hlaît

T22 *sat  "sleeping-mat"
  KemD: sat
  PWL *sat.
  Lawa: BL, Um: sat

T23 *sat  "to comb"
  Sam: sat (tone unclear)
  PWL *sat. Wa: SW: sat; Kawa: sad /sáit/
  Lawa: BL, Um: sat

T24 *n-sat  "a comb"
  Sam: ?tentsát; KK: msât
N1 *?in "this"
Tailoi: en
PWL *?in. Wa: Dr: in; SW: ?in; Bib, Ant: in

N2 *?in "to place, to put"
Sam: ?ůn; KK: ũn; Tailoi: un
PWL *ʔan. La: ōn; En, Son, WaKng: un
Wa: Dr: ōn, on; SW: ?un; Bib: uin; Kawa: een /ʔůn/

N3 *(ŋkên) "small finger"
PWL *ŋkên. Wa: Dr: kien; Bib: gehn; Kawa: mgian /ŋkîn/
Lawa: BL: kean; Saam, North: ŋën

N4 *kôn "child"
Sam: kôn; Ferr: kun--; KK: kun; Tailoi: kôn
Khalo: khan; K'ala: kawn
PWL *kôn. La: kuan; En: kôn; Son: kun; WaKng: kawn
Wa: Dr: kawn; SW, Praok: kôn; Bib, Ant: kawn; TV: kôn
Kawa: gon /kôn/
Lawa: BL, Um, Ph: kuan; L'up: kuan; Pap: kuon

N5 *ŋkôn "thumb"
Sam: ?əŋkôn; KemD: ngeune
PWL * kun. Wa: Dr: kun
Lawa: BL: koŋ; Um: ŋên; Pap: ŋkə̂ːn; Saam: ŋəwən; North: ŋaor

N6 *s-jen "heavy"
Sam: səkə̂n, sacə̂n; Ferr: sə-kı̂n--; KK: səcə̂n
K'ala: kə̂-chyen
PWL *jen. La:shen; En: chen
Wa: Dr: chien, kin; Dav: chen; SW: tSiñ, tsen; Praok: cə̂n
Bib: cehn
Lawa: BL: cian; Um, Ph: cian; Um: chǐan

N7 *jon "to take sth. s.where"
Sam: cûn
PWL *jon. Wa: SW: tson

N8 *tôn "to order"
Sam: tôn
PWL *tôn. Wa: SW: tôn

N9 *non "soft"
Sam: nún
PWL *non. Wa: SW: non
N10 *pon "four"
   Sam: pûn; Ferr: pun--; Tailoi: pun; KemD: pûne
   Khalo: bon; K’alâ: pun
   PWL *pon. La: pon; Son, WaKng: wun; En: pun
      Wa: Dr: bun; Dav, SW, Praok, Bib: pon; TV: pon2;
      Kawa: boun /pûn/
      Lawa: BL: pàiŋ; Um, Ph, Saam: paun; L’up: paon

N11 *(r-pon) "forty"
   PWL *rpon. Wa: Dr: rabun; Bib: tipon; Ant: ripon
      Lawa: BL: lapaïŋ; Um, Ph: râpaun

N12 *rmpyn "woman, wife, female"
   Sam: ?əŋpûn; Ferr: kâ-pûn--; KK: kâ-pûn; Tailoi: en-pun
   KemD: beune
   Khalo: bun
   PWL *rmpun. Son, WaKng: wun
      Wa: Dr: rabun; Dav: mbûn; Hilne: â-pûn; SW: bun; Bib: bon;
      Ant: boon; TV: mbûn2; Kawa: nbûn /mpûn/
      Lawa: BL: ?apœŋ; Um: râpaen; Ph: yapœn; L’up: râpaon

N13 *bon "to be able, to get"
   Sam: pûn
   PWL *bon. Wa: Dr: pun, puen; Bib, Ant: pon; TV: pon2;
   Kawa: bûn /pûn/

N14 *kmın "wife, bride, daughter in law"
   Sam: kêmûn
   K’alâ: kâ-mûn
   PWL *mun. Wa: Praok: mun

N15 *(hmun) "ten thousand"
   PWL *hmun. Wa: Dr: mûn; Kawa: hmeen /hmûn/
   Lawa: BL: hmaŒŋ; Um: hmaun

N16 *wın "angry, mad"
   Sam: vân
   PWL *wun. Wa: Dr: wun

N17 *(mran) "Burman"
   PWL *mran. Wa: Dr: marôn, marûn
   Lawa: BL: mbûn; Um: mbûn

N18 *lan "earring"
   Tailoi: lan
   PWL *lan. Lawa: BL, L’up: lan

N19 *lûn "to go"
   K’alâ: lun
   PWL *lûn. Son, WaKng: lun
   Wa: Dr: luen; Kawa: lûn /lûn/

N20 *(klûn) "python, rock snake"
   PWL *klun. Wa: Dr: klûn
   Lawa: BL: klaŒŋ; Um: klûn; Pap: klaŒn
N21 *sin  "cooked, ripe"
Sam: sín; KK: sin; KemD: -sine
K'ala: ch'yen
PWL *sin. Wa: Dr: hsin; SW: sin; TV: jī:n2
Lawa: BL, Um, Ph, L'up: saiñ

N22 *phn  "five"
Sam: phn; Ferr: phun̚; Taioloi: pan; KemD: hone
Khalo: pūn; K'ala: p'un
PWL *phn. En: pan; Son: pū-on; WaKng: pawn
Wa: Dr: puawn; Dav: p'wan; SW: phn; Bib: hpoon; TV: p'ūn2;
Kawa: puan /phūan/
Lawa: BL: phoan; Um, Ph, L'up, Saam: phn

N23 *(hon)  "a tuber"
PWL . *hon. Wa: Dr: hawn; SW: hon; Kawa: houn /hōn/
Lawa: BL: haín; Um, Ph: haun; L'up: haon

N24 *hun  "many"
Sam: hán; KK: hún
PWL *hun. En, Son, WaKng: hun
Wa: Dr, SW, Bib: hun; Kawa: hun /hún/
Lawa: BL: heín; Um, Pap, Ph: hën; L'up: hōn

--p

P1 *s?ep  "centipede"
KK: sahāk
North: sʔaip

P2 *?īp  "cooked rice"
Sam: ?ŵp; KK: ūp, up; KemD: hup
Khalo: ōp; K'ala: ō(p)
PWL *ʔiːp. La: op
Wa: Dr: ōp; Dav: up; SW: ?wp; Ant: up; Kawa: eeb /ʔŵp/
Lawa: BL, Um, Ph: ?aup; L'up, Pap:ʔaup

P3 *kap  "chin, jaw"
Sam: káp; KK: kāp
PWL *(ŋ)kap. Son, WaKng: āng kāp
Wa: Dr: kāp
Lawa: BL: ᵇgap; um, Ph, L'up, Saam, North: kap

P4 *(ŋap)  "to yawn"
PWL *ŋap. Wa: Dr: ngāp; TV: ŋap3
Lawa: BL, Um: ŋap

P5 *ŋēp  "early (in morning)"
Sam: ŋūp
PWL *ŋēp. Wa: Dr: ngawp; SW: ñap; Bib: ngawp; Kawa: ngūb /ŋēp/
Lawa: BL: ŋap; Um: ñap
6 *(cip) "to put on, to wear"
   PWL *cap. Wa: SW: tsuw; Bib: cuip
   Lawa: BL, Um, L'up, Ph: caup

7 *ŋap "difficult"
   Sam: ŋáp
   PWL *ŋap. Wa: SW: yap; Kawa: hnyab /ŋáp/

8 *tep "flea"
   Sam: ?a-tep; Tailoi: tep
   PWL *tep. Son, WaKng: dup; En: lep
   Wa: Dr: tip
   Lawa: BL: teap; Um, Ph, Pap, Saam, North: tep; L'up: tæp

9 *(dap) "to cover (with a roof), to obstruct (a road)"
   PWL *dap. Wa: Dr: təp
   Lawa: BL: təp; Um, Ph, Pap, Saam, North: t p; L'up: t p
   (cf. Lawa: BL: ?andəap; Um: randəap: "a cover, a lid" from *rən-dap)

10 *rep "grass"
   Sam: ?a-rəp; Ferr: hep-; KK: həp; Tailoi: rip
   K'ala: yip(p)
   PWL *rep. En: rəp; Son: rip; Dr: rəp; Kawa: rIp /rəp/
   Lawa: BL: raip; Um, L'up, Pap, North: raip; Ph: yaip

11 *rip "fishing net"
   Sam: rəp
   PWL *rip. Son, WaKng: rup
   Wa: Dr, Bib: rup
   Lawa: BL: rəup; Um: reup

12 *(kli̞p) "shoulder"
   Lawa: BL, Um, Ph: klep; North: kleip

13 *(yip) "to fan, wave the hand"
   PWL *yip. Wa: Bib: yip; Kawa: yIp /yip/
   Lawa: Um: yip

14 *(yəp) "to close one's eyes"
   Sam: yəp (tone unclear)
   PWL *yəp. Wa: Dr: yip
   Lawa: BL, Um: yip

**M**

1 *(?em) "to be alive"
   Sam: ?ím
   PWL *(?em. Wa: Dr: im; SW: ?im; Praok, Bib: im; Kawa: im /?ím/
   Lawa: BL: ?aiñ; Um, L'up: ?aim
M2 *r?om "water"
Sam: ?ûm; Ferr: ?um—; KK: ôm, um; Tailoi: om; KemD: loum
Khalo: ôm; K'ala: kñ-awm
PWL *r?om. La: rûm; En: rûm, rom; En, Son, WaKng: om; Son: ôm
Wa: Dr: rawm, lawm; Dav: rowm; Milne: õm; SW: õm;
Praok: rûm; Bib, Ant: rawm; TV: rûm; Kawa: rom /rûm/
Lawa: BL: la?um; Um: ra?um; Ph: ya?um; L'up: ra?om

M3 *?ûm "salty"
Sam: ?ûm

M4 *s?ùm "rotting"
Sam: s?ùm
PWL *s?ùm. Wa: Dr: sa-am; Bib: si-om
Lawa: sa?um (irreg. vowel); Um: sa?eum; L'up: sa?eim

M5 *kám "husk (of grain)"
Sam: kám
PWL *kám. Wa: Dr: kãm; SW: kam; TV: kom2
Lawa: L'up: kam

M6 *nôm "to sit"
Khalo: ngûm; K'ala: ngawm ("to get up" !)
PWL *nôm. En: nawm; Son: ngawm; WaKng: yawm
Wa: Dr: ngawm3, ngawm4; Dav: ngawm; SW: ñom; Bib: ngawm;
Lawa: BL: ñaum; Um, Ph: ñaum; L'up: ñaom

M7 *nôm "young"
Sam: ñañoûm; Tailoi: nyawm
Khalo: -yoûm; K'ala: ka-nyawm
PWL *nôm. En: yoûm; Son, WaKng: nyawm
Wa: Dr: niawm; SW, Praok: ñom; Bib, Ant: nyawm; Kawa: nyûm /nûm

M7a *nôm "delicious, sweet"
Sam: ñûm
PWL *nôm. Son, WaKng: nyom
Wa: Dr: nyûm, ngûm; SW: ñom; Ant: nyawm; Kawa: nyûm /nûm/
Lawa: BL, Um: ñûm; Ph: ñûm; L'up: ñûm

M8 *s(n)tem "nine"
Sam: satûm; Ferr: setûm—; KemD: setine
Khalo: dim; K'ala: ss-tûm
PWL *s(n)tem. La: tûm; En, Son, WaKng: dim
Wa: Dr: shatûm; Dav: sdiûm; SW: ñûm; Bib: siûm; Ant: hsindûm
TV: dim2; Kawa: ndûm /ntûm/
Lawa: BL: sataûm; Um, Ph: sataûm; L'up, Saam: sataûm

M9 *ktam "crab"
Sam: katûm
Khalo: ka dam
PWL *tâm. Wa: Dr: tâm; SW: tam (tan ?); TV: tôm2
Lawa: BL, Um, Ph, saam, L'up, Pap, North: tam

M10 *kn-tôm "right (side)"
Sam: ?atûm
PWL *(kn-)tôm. Wa: Dr: kataûm; SW: tôm; Praok: ñom; Bib: dawm;
Kawa: ñûm /ntûm/
Lawa: BL: katûm; Um, Ph, L'up, North: ñûm; Um: tôm; Saam: ntûm
M11 *ktom  "egg"
    Sam: katōm; Ferr: kā-tam--; KK: khatom; KemD: khatom
    K'ala: kā-tun
PWL *tōm. La: tōm
    Wa: Dr: tawm; Dav: tam; SW, Praok: tām; TV: tōm2
    Lawa: BL: tōm; Um, Ph, Pap, L'up: tōm

M12 *(tōm)  "to give orders"
PWL *tōm. La: tawm
    Wa: Dr, Bib: tawm; SW: tōm
    Lawa: BL: tōm; Um: tōm

M13 *ktom  "liver"
    Sam: katōm
PWL *tōm. Wa: Dr: tawm
    Lawa: BL: tōm; Um, Ph, L'up, Pap, North: tōm

M14 *tōm  "to fill up"
    Sam: tōm
PWL *tōm. Wa: Bib: tōm; Kawa: dom /tōm/

M15 *(ntum)  "to begin, to start, to just V"
PWL *ntum. Wa: Kawa: ndum /ntūm/
    Lawa: BL: tēm; Um: ndeum; Ph: ndum

M16 *dēm  "short, low"
    Sam: tēm; Tailoi: tim; KemD: -tēme; (cf. KK: kātem "below")
PWL *(n)dēm. La: t'ēm; Son, WaKng: tūm
    Wa: Dr: tiem, tem1K; Dav: tem; SW: tēm; Bib: tehm;
    Kawa: dTām /tiam/
    Lawa: BL: ndiam; Um, Pap: thiam; Ph: tiam

M17 *dōm  "table, plank"
    Sam: tōm (tone unclear)
PWL *dōm. Lawa: BL: tōm; Um: thom

M18 *kdīm  "ripe"
    Sam: katūm
PWL *dām. Wa: Dr: htōm, tōm; TV: tēm2; SW, Praok: tūm
    Lawa: BL: tūm; Um: thum

M19 *hnām  "blood"
    Sam: ṃhām; Ferr: nam--; KK: nam; Tailoi: nam
PWL *hnām. En, WaKng: nām
    Wa: Dr: nām, nam; SW: (h)nam; Praok: nam;
    Kawa: hnam /hnām/
    Lawa: BL, Um, Ph, L'up: hnam

M20 *(?)ntum  "plant (N)"
    KK: nūm; Tailoi: num
PWL *(?)num. En: num
    Wa: Dr: nam5, nem; Bib, Praok: num; Kawa: num /num/

M21 *(rnum)  "thunder"
PWL *rnum. Wa: Dr: ranem; Bib: sinum; TV: ši4num2.
    Lawa: BL: nēum; Um: neum; Pap: nēom; Ph: nam; North: ranaom
M22 *num "year"
Sam: nam (tone unclear)
Khalo: num
PWL *num. Wa: nöm, nem; SW, Praok, Bib: num; Ant: noom; TV: num2;
Kawa: nüm /nüm/
Lawa: BL: naum; Um: neum; Ph: nam; L'up: naím

M23 *( )num "urine, urinate"
Sam: nhüm
PWL *näm. Wa: Dr: nöm, nöm4; SW: nwm; TV: nwm2
Lawa: BL, Um: naum; L'up: naom

M24 *bam "to chew"
Sam: pâm
PWL *bam. Wa: Dr: pöm; SW: pam

M25 *(rm)bım "fence, garden"
Sam: püm; KK: tăpüm
PWL *(rm)bım. Wa: SW: spüm ("garden"), püm ("fence"); Bib: sipüm;
Kawa: si'nbēem /sämpüm/
Lawa: BL: ?apum; Um: raphum; Ph: yaphīm

M26 *hmım "good, beautiful"
K'ala: maw-m[ö]
PWL *hmım. La: bom; En, Son, WaKng: mōm; WaKng: mōm
Wa: Dr: mawm; Dav: mowm; SW: mōm; Bib, Ant: mawm;
Kawa: hmom /hmöm/

M27 *prem "ancient"
Sam: phrīm
PWL *prem. La: pyim
Wa: Dr, Dav, Praok, Bib: prim; SW: pım; TV: pă4prim2;
Kawa: brīm /prim/
Lawa: BL: phraiñ; Um: praim; Ph: phyaim; L'up: phraim

M28 *(rem) "to weed (out)"
PWL *(rem. Wa: Dr: riem, h'riem; Kawa: rTam /riam/
Lawa: BL: ream; Um, L'up: rem

M29 *hrem "iron"
K'ala: yīm
PWL *hrem, Son, WaKng: rum
Wa: Dr: h'riem, riem; Dav: rheem; Bib: rehm; TV: riẽem2;
Kawa: hrīm /hrīm/

M30 *(krım) "fish-trap, fish-basket"
PWL *kram. Wa: Dr: kröm
Lawa: BL: khraum; Um: kraum

M31 *(khrım) "under"
PWL *(k)ram. Wa: Dr: kröm; Bib: grūm; Kawa: mgreem /ŋkrūm/
Lawa: BL: ñgraum; Um: kaŋgrum; Ph:ŋgīm

M32 *(?1öm) "knife"
PWL *(?)öm. Wa: Dr: löm; Kawa: löm /löm/
Lawa: BL: löm
33 *ləm "sharp"
   Sam: ləm
   Khalo: ləm
   PWL *ləm. Wa: Dr: ləm; SW: ləm; Bib: lawm
   Lawa: BL: ləm; L'up, Um, Ph: ləm

34 *kləm "to carry on shoulder"
   Sam: kləm
   PWL *kləm. Wa: Dr: kləw; Praok, SW: kləm; Kawa: gləm /kləm/
   Lawa: BL: kləm; Um, Ph: kləm

35 *pləm/om "land-leech"
   Sam: pləm
   Khalo: prom
   PWL *pləm. Wa: Dr: pləw; SW: pləm (irreg. vowel, see Samtau)
   Lawa: BL, Um, Saam, North: pləw; Pap: pləm

36 *(ləm) "pus"
   PWL *ləm. Wa: Dr: ləm
   Lawa: BL, Um: laum

37 *sem "bird"
   Sam: sım; Ferr: sim-; KK: sīm; KemD: xim;
   Khalo: sim; K'al'a: sīm
   PWL *sem. La: sim
   Wa: Dr: hsım; Dav, SW, Praok, Bib: sim; Ant: hsım; TV: fi:m2
   Lawa: BL: saiñ; Um, Ph, L'up, saam, North: saim

38 *(y)əm "Shan, Northern Thai, Siamese"
   K'al'a: syəm
   PWL *(y)əm. La: shym
   Wa: Dr: hsiem; Dav: shem; Praok: sem; Ant: hsiehm; TV: fiəm;
   Kawa: siasm /siasm/
   Lawa: BL: sem; Um: sem

39 *som "to eat (rice)"
   Sam: səm; Ferr: sum-; KK: sum; Tailoi: sawm; KemD: səm
   Khalo: səm; K'al'a: tsəwım
   PWL *som. En, Son: sawm
   Wa: Dr: hsam, həsəm; SW, Praok: səm; Bib: sawm; Ant: hsawm;
   Kawa: som /səm/
   Lawa: BL: sawm; Um, Ph, L'up, Pap: som

40 *som "night"
   Sam: nəŋ-səm; Tailoi: ta-som
   K'al'a: pəlsəwım
   PWL *som. En: səm; Son, WaKng: sawm
   Wa: Dr: sawm; SW: pn-səm; Bib: pən-sawm; TV: səm2;
   Kawa: som /səm/
   Lawa: BL, Um: saum; L'up: saom; Ph: lasaum, ýasaum;
   North: larhaum, rəmhaum, (Rangsidh: ranhəum)

41 *-səm "to plant (e.g. a tree)"
   Sam: ʔəŋ-səm; KK: tasım
   PWL *sum. Wa: Dr: hsam, hsem; TV: sUm2; SW, Praok, Bib: sum;
   Kawa: sum /səm/
   Lawa: BL: səum; L'up: saim
M42 *yam "to weep"
    Sam: yăm; KK: yām
    KhaIo: yām; K'ala: yam
    PWL *yam. La: yam
        Wa: Dr: yōm; Dav: yam; SW: yem; Bib: yehm; TV: yIm2;
        Kawa: yTam /yTam/
        Lawa: BL, Um, Ph: yām; L'up: yām; North: zwām

M43 *yım "to die, dead"
    Sam: yām; Ferr: yum-; KK: yōm; Tailoi: yum, yim
    PWL *yım. La: yung; En, Son, WaKng: yum
        Wa: Dr: yım; Dav, SW, Bib: yum; TV: yUm2; Kawa: yūm /yım/
        Lawa: BL, Um, Ph, L'up: yum

M44 *-yım "to kill"
    Sam: ?aqyèm
    PWL *-yım. Wa: SW: pæyım; Bib: pa yum; Ant: payoom; TV: tɐ́i2yUm2

M45 *hmem/mhem "fingernail"
    Sam: ?aqhım; Ferr: ħ-hım-
    PWL *hmem. Wa: Dr: mem, mım, min; SW: hIm
        Lawa: BL: hmaiñ; Um, Ph, Saam: hmaiñ; North: mhaem, mhaım

M46 *rmhom "heart, mind"
    Sam: mhum; KK: tānپūm, phūm, phūm; Tailoi: pōm
    PWL *(r)m)mom. En: pōm; Son: kom, kōm; WaKng: kōm
        Wa: Dr: pawm, rahawm, rawm; SW: yom; Bib: rawm;
        Kawa: hrom /hrōm/
        Lawa: BL: ?aphaum; Um: raphaum; Ph: laphaum, ɐphermaids;
        L'up, Pap: pham; North: phaum

M48 *phım "to fart"
    Sam: phım
    PWL *phum. Wa: Dr: pōm; SW: phum
        Lawa: BL: pham; Um: pheum

M47 *hım "bedbug"
    Sam: ?a-hım
    PWL *hum. Lawa: BL: haum

M48 *him "to bathe"
    Sam: hūm; Ferr: hum-; KK: hūm
    PWL *ham. Wa: Dr: hom; SW: hum; Bib: huım; TV: hım2
        Lawa: BL, Um, Ph: haum; North: haim

M49 *(rhmım/rmhım) "nest (N.)"
    PWL *rhım/rhmım. Wa: Dr: mùm; Praok: mım; Bib: muım
        Lawa: BL: ?ahmaum; Um: rahmaum; North: lamhaim

W1 *raw "sky"
    Tailoi: hau
    PWL *raw. Son, WaKng: rao
        Wa: Dav: ru (-ma); Bib: rao (-ma)
"to speak"
PWL *law. La: lao
  Wa: Kawa: lāo /lāw/
  Lawa: BL: lau

"testicle"
Sam: klāw, klāw
PWL *klaw. Wa: Dr: kla; TV: kła2; SW: kła
  Lawa: North: kla

"fowl"
Sam: ?é1; Ferr: ?eh--; KK: ā; Tailoi: err; KemD: ea
  Khalo: yai; K'alal: T
PWL *(l/r-)?er. La: en; En: ya; Son, WaKng: yer
  Wa: Dr: iâ; SW: ?ea; Bib: i-ya; Ant: ia; TV: iə2;
    Kawa: ia /?əa/
  Lawa: BL, Um, Ph, Saam, Pap, North: ?e; L'up: ?ə

"two"
Sam: laʔâl; Ferr: lay--; Tailoi: la-al; KemD: la
  Khalo: ā; K'alal: gha
PWL *(l/r-)?ar. La, En: ra; WaKng: â: Son: a
  Wa: Dr: ra; Dav: ra; SW: ya; Praok, Bib, Ant: ra; TV: rə2;
    Kawa: ra /rə/;
  Lawa: BL, um, Ph, Saam: la a; L'up: l a

"warm"
Sam: saʔâl; Tailoi: sa-urr
PWL *stur. En: su; Son, WaKng: ur
  Wa: Dr: sa-ua; SW: sʔu; Praok: siao; Kawa: si'u /səʔû/
  Lawa: BL: saʔeu; Um, Ph: saʔeu

"strong"
Sam: kól; Tailoi: ko-karr
PWL *kôr. Lawa: BL: kə; Um, Ph, L'up: kə

"wind"
Sam: kúl; KK: kük; Tailoi: kurr
  K'alal: kâl
PWL *kər. La: ken; En: kō; Son, WaKng: gur
  Wa: kūâ, kua, kia; SW: kwI; Milne: kū
  Lawa: BL, Pap, Ph, L'up: kâ; Um: kau

"twenty"
Khalo: ngai; K'alal: nga
PWL *(l/r-)?ar. Son, WaKng: nga
  Wa: Dr: nga; Ant: nga; Kawa: nga /ŋâ/
  Lawa: BL, Um, Ph, L'up: ?ŋa

"slippery"
Sam: ?əŋnûl
PWL *(l/r-)?nor. Wa: Dr: niua
  Lawa: Um: ?ũua
R8 *djr "hill"
   PWL *dur. Son: tur
   Wa: Dr: tua, tua; Bib: tu; Kawa: du /tû/
   Lawa: Um, Pap: thu; Ph: tu

R9 *(mpér/1) "watermelon"
   PWL *(mpér/1. Wa: Kawa: nbi /mpí/
   Lawa: BL: pāi; Um: mbaï

R10 *por/1 "to wrap"
   Sam: pó1
   Khalo: po
   PWL *(por/1. Wa: SW: po; Praok: poa; Bib: pu-a

R11 *pir "to fly"
   KK: pū; Ferr: puah-
   Khalo: pu
   PWL *pir. La: pun
   Wa: Dr: pūa, pua; Dav: pu; Bib: po; Kawa: pu /pû/
   Lawa: BL: pēu; Um, Ph: peu; L'up: pəo; North (Rangsídh): pōi

R12 *bor "evening"
   Sam: nem-pū1; KK: tāpū
   PWL *(bor. La: p'ūn
   Wa: Dr: pua; SW: po; Bib: ponbo; Kawa: mbōu /mpŏ/
   Lawa: BL, Ph: pu; Um: phu

R13 *(mar "dry ricefield"
   Sam: mhāl; Ferr: mah-; KK: mā; Tailoi: marr
   PWL *(mar. La: ban; En: ma; Son, WaKng: mar
   Wa: Dr, Dav: ma; SW: ṭma; Praok, Bib: ma; TV: ma2;
   Kawa: ma /mâ/
   Lawa: BL, Um, Ph, L'up: ṭma

R14 *mor/1 "to crawl"
   Sam: múl
   PWL *(mor/1. Wa: SW: mu
   Lawa: BL, Um, Ph: mau; L'up: mao; North: moa

R15 *kmor/1 "earth-worm"
   Sam: kmöl
   PWL *(mor/1. Wa: Dr: mu3; SW: mo

R16 *sor/1 "civet-cat"
   Sam: só1
   PWL *(sor/1. Wa: Dr: hsa; Kawa: sua /súā/
   Lawa: l'up: so

R17 *(sir/1) "to pour, to water"
   PWL *(sor/1. Wa: SW: saw; Praok: sw; Bib: sau; Kawa: saee /saw/
   Lawa: l'up: so

R18 *phér/1 "bee"
   Sam: ?a-phē1; KK: phâh(a), p, pă
   Khalo: pŤ(yai)
   PWL *(p)hor/1. Wa: Dr: hâ; SW: phya; Praok: hîa; Bib: hi-ya;
   TV: hîa
   Lawa: Bl, Um, Ph, Saam, L'up, Pap: he
1 *?dl "elder sister"
   Sam: ?śl, ?śl
   Khalo: o
   PWL *?dl. En, WaKng: u; Son: o
   Wa: Dr: o; SW: o; Kawa: ou /?ō/
   Lawa: Ph: ?ọ

2 *kɔl "cooking pot"
   KK: kau;i; Tailoi: kaw-all
   Khalo: o
   PWL *?ɔl. En: aw
   Wa: SW: ?ọ; Bib: aw; TV: ɔ2

3 *kɛr/1 "cucumber"
   Sam: ?a-cé1
   PWL *kɛ1/r. Wa: SW: kɛ
   Lawa: BL, Ph, Pap: kɛ; Um: cɛ

4 *kol "ten"
   Sam: kul (tone unclear); Ferr: kul-; KemD: koul
   Khalo: kô, K'ala: kao
   PWL *kol. La: kow; En: ko
   Wa: Dr, Bib, Ant: kao; Dav: kow; SW: kau; TV: kōu2;
   Kawa: gao /káɔ/
   Lawa: BL: kɔa; Ph, Um: kau; L'up: kao; Saam: kəɔ

5 *ŋgɔl/r "to cut down (trees)"
   Sam: ?aŋkɔl
   PWL *ŋgɔ1/r. Wa: Kawa: mgū /ŋkǜ/
   Lawa: BL: ŋgɔ

6 *sŋal "green"
   Sam: səŋəl
   Khalo: ngā
   PWL *sŋal. En: s’nga; WaKng: ngall; Son: nga
   Wa: Dr: səŋōa, sango; SW: ŋa
   Lawa: North: səŋə

7 *ŋdol "fire"
   Sam: ɳəl; Ferr: ngwac-; KK: hqi; Tailoi: ngall; KemD: ngo
   Khalo: ngō; K'ala: ngaw
   PWL *ŋgl. La: go; En, Son: ngo; WaKng: ngall
   Wa: Dr, Dav: ngu; Milne: ngū; SW: ɳu; Praok: ɳu; Bib: ngu;
   TV: ɳu2; Kawa: ngū /ŋu/
   Lawa: BL: ɳu; Um, Ph, L'up, Pap: ɳo

8 *tɔl "to run"
   KK: tǫ; Tailoi: tal
   Khalo: tûn
   PWL *tɔl. Wa: Milne: tu-ŋ; SW, Praok, Bib: to; Kawa: dou /tō/
   Lawa: BL: tɔ; Um, Ph, Pap: tɔ; North: tə

9 *dɔl/r "shallow"
   Sam: tɔl
   PWL *dɔl/r. Lawa: BL: to; L'up: tu
L10 *(ndl)l/r: "large bottle, goblet"
PWL *ndl r: Wa: Kawa: si'ndū /santū/
        Lawa: BL: ?ando; Um: (ra)ndo

L11 *kdvl "stomach"
    Sam: kētâl; KK: ka tōi
    Khalo: ka tū; K'ala: k -tu
    PWL *dul. En, Son, WaKng:tu
    Wa: Dr: tu
    Lawa: BL, North: tu; Pap: thu

L12 *Impal/r "shoulder"
    Ferr: mwa-
    PWL *(lm)pal/r. Wa: Dr: laba
    Lawa: L'up: pa

L13 *(pol/r) "mortar"
    PWL *pol/r. Wa: Dr: paw; TV: po2
    Lawa: (Rangsidebar): Um, North: mbō; BL: pō

L14 *pil "grey, blue"
    Tailoi: pūl
    PWL *pol. Son: pao
    Lawa: BL: paT; Um: pau; Saam: paə

L15 *kdv "thick"
    Sam: kepē; KK: pōi; Tailoi: ka- pull
    K'ala: ka-paw
    PWL*bul. La: p'ū; En, Son: pu; WaKng: po
    Wa: Dr: hpu4C; Dav: pu; SW: pa; Kawa: pū /pū/
    Lawa: BL, L'up, Ph: pu; Um: phu

L16 *(hmal/r) "bamboo strips"
    PWL *hmal/r. Wa: Kawa: hma /hma/
    Lawa: BL, Um, L'up: hma

L17 *smal/r "seed"
    Sam: semāl
    PWL *smal/r. Wa: Dr: hsa'mō, tsamōa; Praok: simē; Bib: simeh;
    Kawa: si'mā /samē/
    Lawa: BL, Um, Ph: sama

L18 *?()ml/r "round, classifier for round objects"
    Sam: ?aməl; KK: mū
    PWL *mul/r. Son: mu
    Wa: SW: tmu; Ant: moo; Bib: mu; Kawa: mu /mū/
    Lawa: BL: ?bəu; Um: ?meu

L19 *kmil "silver, money"
    Sam: mūl (irreg. initial); KK: kāmōi; Tailoi: ka-mull
    K'ala: kə-mal
    PWL *mel. La: baî; Son: mu; En: mō; WaKng: mur
    Wa: Dr: mōa; Dav: mō; SW: ma(a); Bib: mau; Ant: mau::;
    TV: mōu2; Kawa: māe /məw/
    Lawa: BL, Ph, Pap: maT; L'up: maî; Um: mau; North: mai

L20 *crel/r "gold"
    Sam: sil;
    K'ala: si
    PWL *crel/r. La: k'ri; En: kō; Son: kyu we
    Wa: Dr: shre; Dav: Khre; Milne: se-re; Bib: hkri; SW: si
    Lawa: Bl: khre: Um, L'up: kə-; Ak: i-
*hril "thin"
Sam: hīl; KK: hā; Tailoi: vil
K'ala: yi
PWL *hril. La, Son, En, WaKng: rī
Wa: Dr: re; Dav: ri; SW: sli (irreg. initial)
Lawa: BL: hrei; Um: hre; L'up: hre; Ph: khyei
*prel/r "hail"
Sam: ?a-phēl
PWL *prel/r. Wa: Dr: prel; SW: pli; Praok: pre
Lawa: BL: phre; Um: pre; Ph: phyē; Pap: pyē;
*?nrel/r "forehead"
Sam: hēl
PWL *?nrel/r. Wa: Dr: re
Lawa: BL: ?de; Um: ?re; Ph: ?ye; North: nare
*(ryol) "gibbon"
PWL *ryol. Wa: Dr: uē
Lawa: BL: ?ayua; Um: rayua; Pap: iayua; Saam: ?ayoa;
North: ləzw
*hol "to vomit"
Sam: hūl
PWL *hol. Wa: Dr: hao; SW: haw; TV: hōu2
Lawa: Um, L'up: hao
*hril "to go"
Sam: hāl; Ferr: hwe-; KK: hūi, hūi; Tailoi: hull
Khalo: hu
PWL *hul. La: hu
Wa: Dr: ho; Dav: hu; Milne: hē-o; SW, Bib:hu; Ant: hoo;
Kawa: hu /hū/
Lawa: BL: hau; Um, Ph: heu; L'up: hao; North: hao

-- S

*?os "to swell, be swollen"
Sam: ?ōh
PWL *?os. Wa: Dr: o-ech, oich; SW: ?ōah; TV: ūah5; Kawa: uah /?ūah/
Lawa: BL: ?ōih
*?os "fat, grease"
Sam: r?ūh
PWL *?os. Wa: Dr: loich
Lawa: BL: laʔauh; Um: raʔaus; Ph: laʔcīh; L'up: ləʔcīh;
North: ləʔcō
*(kes) "ibex"
PWL *kes. Wa: Dr: kich
Lawa: BL: kaih; Um: cēs; L'up: keh; North: keh
S4 *(ŋkos) "porcupine"
  PWL *ŋkos. Wa: Dr: koih; TV: ŋ-goh5
  Lawa: BL: kauh; Um: ŋaus; North: ŋaŋ

S5 *kr̥s "to cook"
  Sam: käh
  PWL *kus. Wa: Dr: kwich; SW: kuh
  Lawa: BL: kœuh; Um: kœs; L'up, Ph: koih

S6 *gis "salt"
  Sam: c'ih; Ferr: kih−; Tailoi: kith; KemD: kê
  PWL *gis. En: gyi; Son: kyi; WaKng: kwi
  Wa: Dr: kich; SW: kih; Bib: ki; TV: ki:h5
  Lawa: BL, Ph, L'up: kih; Pap: kih; Um: chis

S7 *(ŋos) "price"
  PWL *ños. En, WaKng: noi
  Wa: Dr: ngoiçh, ngôiçh; SW: ŋôh; Praok: ŋo; Bib: ngaw;
  TV: ŋôh5; Kawa: ngôiçh /ŋôs/
  Lawa: BL: ŋuah; Um: ŋus; Ph: ŋoih

S8 *kn̥as "to smile"
  Ferr: ka-nyah−; KK: kāyā
  K'ala: ka-nyai
  PWL *nas. La: che
  Wa: Dr: ni oich; Dav: nia; SW: ŋah; Bib: ngeh; TV: ŋéh5, ŋah5;
  Kawa: ngTah /ŋlah/ or /ŋah/
  Lawa: BL, Ph: ŋčah; Um: ŋcas; L'up: ŋwah, ŋtaih; North: ŋwəh

S9 *tes "mushroom"
  Sam: tūh; KK: tō
  PWL *tes. Wa: Dr: tōich; SW: tIh; Praok: ti; TV: tI:h5
  Lawa: BL, L'up, Ph: tainh; Um: tas

S10 *(tis) "thunder"
  PWL *tus. Wa: Dr: tōīch
  Lawa: BL: tōuh; Um: tas; Ph: tōih

S11 *tīs "breast"
  Sam: tūw; Ferr: təh−; KK: tā; Tailoi: tuss
  PWL *tis. En: tū; WaKng: dwe
  Wa: Dr: toich; SW: tawh; Praok: tw; TV: tawh5
  Lawa: Um: taus; Ph, Pap: tainh; Saam: taaw; North: təeh

S12 *(des) "to start a fire"
  PWL *des. Wa: Dr: tia
  Lawa: BL: teh; Um: thias

S13 *pes "to sweep"
  Sam: pîh
  PWL *pes. Wa: Dr: pích; SW: pîh; Praok, Bib: pi; TV: bi:h5;
  Kawa: bih /pîh/
  Lawa: L'up: paih

S14 *rm-pes "broom"
  Sam: ?æpîh; KK: mpT
  PWL *r(m)pes. Lawa: BL: ?aphaih; Um: rapas; North: rabeh
15 */pos* "barking deer"
   Sam: púh; Tailoi: puss
   PWL */pos. En: po; Son: buh
   Wa: Dr: poich3; TV: poh5
   Lawa: BL: pauh; Um: pau; Pap: paoh; Saam: poih; North: poh

16 */bus* "to carry on back"
   Sam: paḥ (tone unclear)
   PWL */bus. Wa: Dr: puich, pwich; SW: pwh
   Lawa: BL: pūh; Um: phūs; Ph, L'up: puīh

17 */rms* "banana"
   Sam: kāmō; Ferr: kā-mō-
   Khalo: pu moi
   PWL */rms. Wa: Dr: mwech, muech; SW: mōah; Kawa: mūah /mēah/
   Lawa: BL: ?amōih; Um: ramos; Ph: yamōih; L'up, Pap: iamosih;
   North: lamaoh

18 */mis* "nose"
   Sam: mūh; Ferr: mūh-; KK: mū; Tailoi: mus
   Khalo: mō
   PWL */mis. La: pei; En: mō; Son: mu; WaKng: mwe
   Wa: Dr: muich, mwich; Dav: mui; Milne: mūs; SW: mwh; TV: mū5;
   Kawa: mēei /mūs/
   Lawa: BL, Pap, L'up, Ph: ma'iḥ; Um: maus; Saam: maah

19 */mis* "name"
   Sam: mūh; Tailoi: muths
   PWL */mis. Wa: Dr: much; Praok: mō
   Lawa: BL: ma'iḥ; Um: maus; L'up, Ph: moih; North: mō

0 */mis* "to love"
   Sam: máh
   PWL */mis. Wa: Dr: moich3; SW: muh; Bib: mo; Kawa: muih /mūs/

1 */ris* "spider"
   Sam: ʔ-rūh
   PWL */ris. Wa: SW: rwh/lwh
   cf. Lawa: BL: ḥanṛaih; Um: ḥanres "spider web"

22 */kris* "a bear"
   Sam: khrīh; Ferr: kheh-
   Khalo: kui
   PWL */kris. Wa: Dr: kreich5; SW: klih; TV: krih5; Kawa: grih /kṛīh/
   Lawa: BL: khrāih; Um: kres; Saam: khyeih; North: khraih

23 */res* "root"
   Sam: rēh; KK: he
   PWL */res. Wa: Dr: riach, rich; Praok: ria; Bib: ri-a; TV: riah5;
   Kawa: yTeih /yēs/ or /yēh/
   Lawa: BL: rēh; Um: res; Ph: yëh

24 */ros* "to choose"
   Sam: rōh
   PWL */ros. Lawa: BL: rōih; Um: rōs; Ph: yōih
S25 *prəs "to blossom"
   Sam: prəh
   PWL *prəs. Wa: Dr: pruich, pröh; Kawa: bruih /prəs/
   Lawa: BL: prəuh; Um: prəs; L'up: phroih; North: proah

S26 *ris "turtle"
   Sam: rαrúh
   PWL *rəs. Wa: Dr: rich, rTch; SW: ruh
   Lawa: BL: raı̂h; Um: raus; Ph: ýaïh

S27 *les "six"
   Sam: lëh; Ferr: lIH_; KemD: lè
   Khalo: li; K'ala: lé
   PWL *liès. La: lie; En: li-a; Son: lu-a; WaKng: lu-a, lu-erh;
      Wa: Dr: lIcch; Dav: lla; SW: leah; Bib: li-a; Ant: lia;
      TV: lyah5; Kawa: lTah /lѩh/

S28 *ʔar-les "seven" (cf. R2 "two")
   Sam: harréh; KemD: halè
   Khalo: ali
   PWL *ʔa-lès. La: a-lie; En: a-li-erh; Son, WaKng: a-lu-a
   Wa: Dr: aIcch; Dav: a-lia; SW: ʔəliah; Bib: ali-a; Ant: alia;
      TV: aIyah5; Kawa: aITah /ʔalIah/
   Lawa: BL, Ph, Saam: ʔa-ləh; Um: ʔa-lès

S29 *bles "spear (N.)"
   K'ala: p(ʌ)lè
   PWL *bles. La: piāo; En: bla; Son, WaKng: plur
   Wa: Dr: plech, plIach; Dav: plia; Praok: plia; Bib: plI-a;
      TV: plIah5
   Lawa: BL: pleh; Um: phlias; Ph: pliah

S30 *ʔləs "loud"
   Sam: ləh
   PWL *ʔləs. Wa: Dr: lOIch; SW: ləh; Kawa: luah /luah/
   Lawa: ʔdoi̯h

S31 *(ləs) "to answer"
   PWL *ləs. Wa: Dr: lwlIcch
   Lawa: BL: ləuh; Um: ləs; Ph: loih

S32 *kəsəs "charcoal"
   Sam: psəh (perhaps ksəh); Ferr: kə-nyoʰ-; KK: kəyə
   PWL *kəsəs. Wa: Dr: hsoI5; SW: soh; TV: suah5
   Lawa: BL, L'up, Saam: soIh; Um: səs; North: lə-səcəh

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Y1 *ləcy "three"
   Sam: ləcy; Ferr: luy-; Tailoi; KemD: loye; (KK: lyp ?)
   Khalo: òi; K'ala: wei
   PWL *ləcy. La, En: loi; Son, WaKng: oi
12 *s?øy  "to smell (intr.)"
   Sam: s?üy
   PWL *s?øy. Wa: Dr: sa oi, (h)saoi; SW: s?øy; Bib: si o e
   Lawa: BL: sa au; Um: sa?oi

13 *?iy  "to bring up, raise animals"
   Sam: ?üy
   PWL *?ay. Wa: Dr: òi; SW: ?wy; Praok: wî; Bib: ui e; Kawa: eel /?üy/

14 *koy  "to have"
   Sam: kûy; KK: kuy; Tailoi: kwe; KemD: kouille
   PWL *koy. WaKng: gwe
   Wa: Dr: koi; SW: koy; Bib: kwe; Ant: koe; Kawa: gouï /kôy/
   Lawa: BL, L’up: kai; Um, Ph: koi

15 *(ŋkoy)  "lizard"
   PWL *ŋkoy. Wa: Dr: kwe
   Lawa: Pap: ŋkoi; Saam: ŋgoy

16 *kîy  "cotton"
   Sam: kûy
   PWL *kîy. Wa: Dr: koi; SW: kuy, kuy; TV: kwi2;
   Lawa: BL: kau; Um, Ph: koi

17 *gøy  "slow, slowly"
   Sam: kûy
   PWL *gøy. Lawa: BL: koi; Um: kua

18 *(ŋnay)  "eye"
   Sam: ŋnay; Ferr: ŋay; KK: ńai; Tailoi: ngai; KemD: ngè;
   Khalo: ngai; K’ala: ngai
   PWL *(ŋnay. La: gai; En, Son, WaKng: ngai
   Wa: Dr, Dav, Bib: ngai; SW: ŋnay; TV: ŋöl2; Kawa: ngai /ŋnay/
   Lawa: BL: ŋnæa; Um, Ph, L’up: ŋnai; North: ŋe

19 *sŋay  "far"
   Sam: sœŋay; Ferr: kay; KK: sānai; Tailoi: sa-ngai
   Khalo: sa ngai; K’ala: ss-ngai
   PWL *sŋay. La: gai; En, Son, WaKng: ngai
   Wa: Dr: hsangöi; Dav: si-ngai; SW: sœŋay; Praok: sîŋay;
   Bib: singai; Ant: hsingai; TV: ʃ4ŋo2; Kawa: si’ngai /sœŋa
   Lawa: BL: saŋia; Um, Ph: saŋai; L’up: saŋai; North: sœŋe

20 *(cay)  "to pay"
   PWL *cay. Wa: Kawa: jai /cây/
   Lawa: BL: cea; Um: cai

21 *(ŋgoy)  "waist"
   PWL *(ŋgoy. Wa: Dr: ni o i; SW: ŋgoy; Bib: ngoi; Kawa: ngôi /ŋgøy/
12 *ntay "skirt"
Tailoi: en-tai
PWL *ntay. En: lal; Son, WaKng: dai
Lawa: BL: tea; Um, Ph: ndai

13 *(ntoy) "orphan"
PWL *ntoy. Wa: Bib: do-e; Kawa: ndoue /ntöy/
Lawa: L'up: doi

14 *day "flower"
Sam: tay
PWL *day. Wa: Dr: htöi, töl; Dav: tai; Bib: tai; SW: tay; TV: töl2;
Kawa: däi /tay/
Lawa: BL: tla; Um, Pap: thia; L'up: tia; Ph: tuaï

15 *díy "to take, to bring"
Tailoi: tue; K'ala: tui
PWL *díy. Wa: SW: twy; Kawa: dëeë /túy/
Lawa: Um: thui

16 *pay "to use medicine"
Tailoi: pai
PWL *pay. Wa: Dr: pai; Kawa: bai /páy/

17 *m-pay "medicine, tobacco"
Sam: ?apáy; KK: mpáj; Tailoi: mpáj

18 *r-píy "shadow"
Sam: spúy
PWL *(r)pay. Wa: Dr: poi; SW: spuy (irreg. vowel, cf. Samtau);
TV: pri2
Lawa: BL: ?apau; Um: rapçi

19 *bry "person"
Sam: pây; Ferr: pwe_; KK: pói; KemD: peuei
Khalo: pui; K'ala: püï
PWL *buy. Wa: Dr: (h)pwi; Dav: pui; SW: puy; Bib: pwi; Ant: pooy;
Kawa: büy /püy/
Lawa: BL, Ph, L’up, Saam, North: pui; Um: phui

20 *(?may) "with"
PWL *(?)may. Wa: SW: may; Bib: mai; Ant: mai; Kawa: mai /mái/
Lawa: BL: ?mea; Um, L’up, Ph: ?mai

21 *(k)may "(wild) cow, buffalo"
Sam: ?amöy; Ferr: kā-mean_; KK: pói; Tailoi: moi; KemD: moë;
K'ala: ka-moi
PWL *møy. La: boï; En, WaKng: moi
Wa: Dr, Dav, Bib: moi; SW: møy; Ant: moe, moie; Milne: mō-e;
Kawa: mōl /môy/
Lawa: BL: moi; Um: mua; Saam: mœ

22 *(mo/?)y "axe"
Sam: mhûy; Tailoi: mwe
Khalo: mui
23 *(way) "to borrow"
   PWL *way. Wa: Dr: voi; Praok: vay; TV: vway2
   Lawa: BL: ?mau; Um, Ph, L'up: ?moi; North: moa

24 *rway "tiger"
   Sam: vay; Ferr: (kà)-way-; KK: kāwai; KemD: revè
   Khalo: ka wai; K'al a: a-vai
   PWL *rway. La: wai
   Wa: Dr: ravôa, ravoi, rawoi; Dav: ra-wai; Milne: ra-vi-er;
      SW: sa-/taway; Ant: hsi vai; TV: š14vway2;
      Kawa: sivay /səwai/
   Lawa: BL: ?awia; Um: rawia; L'up: ra viə; Ph: yawia, yawuai;
      Pap: Iowia; Saam: ?vuc; North: ravi, ləvi

25 *rwayy "whirl in hair"
   Sam: kəvay
   PWL *rwuy. Lawa: BL: ?awuy; Um: rawuy; Saam: ?awuy

26 *(roy) "fly (N.)"
   PWL *roy. Wa: Dr: roi, rui; TV: roi2
   Lawa: BL: roi; Um, Ph: yuai; L'up: ruə

27 *play "squirrel"
   Sam: lây
   PWL *play. Wa: Dr: lai; TV: lai2
   Lawa: BL: ?dea; Um, L'up: ?lai

28 *play "liquor"
   Sam: plây
   PWL *play. Wa: Dr: plai; SW: play; Ant: plai; TV: plai2;
      Kawa: blai /plây/
   Lawa: BL: plæ; Um, L'up, Ph: plai; Saam: plæ;

---

41 *(?eh) "to need, take, want, wear, eat"
   PWL *(?eh. La:i
   Wa: Dr: ich; Dav, Bib: i; SW: ?ih; Kawa: ih /?ih/
   Lawa: BL: ?eah; Um, L'up, Ph: ?aih

42 *(?ah) "to say"
   PWL *(?ah. Wa: Dr: ach, āch; SW: ?ah; Bib: a; Kawa: ah /?əh/
   Lawa: BL, L'up, Um, Ph: ?ah

43 *(s)əh "to be dry"
   Sam: səh
   PWL *(s)əh. La: o
   Wa: Dr: hsa-och, hsaoch; SW: səh
   Lawa: BL: sa?əh; Um, L'up, Ph: sa?əch; North: səəoch
H4 *kah  "to untie, separate"
   Sam: kāh
   PWL *kah. Lawa: BL, Um, Ph, L'up: kah

H5 *koh  "to get up"
   Sam: kūh
   Khalo: kô
   PWL* koh. La: kow
      Wa: Dr: kaoh; Dav: kow; SW: kauh; Bib: kao; Ant: kao;
      Kawa: gaoh /kaəh/
      Lawa: BL: kōuh; Um, L'up, Ph: koh

H6 *(geh)  "to be born"
   PWL *geh. Wa: Dr: kīh; Bib: ke; Kawa: gēih /kēh/
      Lawa: BL: keh; L'up: kīh; North: kīah

H7 *gah  "to give"
   Sam: kāh
   PWL *gah. Wa: Dr: hkōś; Bib: keh; Kawa: gōeh /kēh/
      Lawa: BL, Ph: kīah; Um: khōah

H8 *tah  "to rest"
   Sam: tāh
   PWL *tah. Wa: SW: dah (initial uncertain)
      Lawa: BL: tah

H9 *(rntah)  "medicine"
   PWL *rntah. En: ta; WaKng: da
      Wa: Dr: ratch, ratāch; SW: sādāh; Bib: sida; TV: sītah5;
      Kawa: si'ndah /sēntāh/

H10 *toh  "to pound"
   K'ala: takh
   PWL *toh. La: ta
      Wa: Dr: taoch, tāch
      Lawa: BL: tōuh; Um, Pap: toh
      cf. L'up: rōtoh "pestle" (PWL = rntoh)

H11 *dah  "buttocks"
   Sam: tāh
   PWL *dah. Lawa: BL: tīah; Um, Pap: thīah; North: tīah

H12 *(ndah)  "to slap, to clap hands"
   PWL *ndah. Wa: Kawa: ndTeh /ntēh/
      Lawa: BL, Um: ndīah

H13 *ndīh  "to fall (off, down)"
   K'ala: pō-to
   PWL *ndīah. Wa: Dr: htōch; Dav: dō; SW: t(a)oh
      Lawa: BL: ndōuh; Um, Ph: ndoh; Ph, L'up: nduh

H14 *(s-ndīh)  "to fall (headlong)"
   PWL *sndīah. Wa: Dr: hsatōch
      Lawa: BL: sandōuh; Um: sandoh
H15 *pih  "to pick, to pluck"
    Sam: pīh
    PWL *pih. Wa: Dr: piach, pech, peh5; Praok: pē
              Lawa: BL: pēih; Pap: peh

H16 *p(i)h  "to flower, to blossom"
    Ferr: pah-
    K'ala: puikh
    PWL *p(a)h. Wa: Dr: pōh, pō

H17 *bih  "to beat, gound, launder"
    Sam: pūh; Tailol: pu
    PWL *bēh. Wa: Kawa: bāeēh /pàwē/
              Lawa: BL: pōh; L'up: puh; Um: phūh

H18 *wah  "wide"
    Sam: vāh
    PWL *wah. La: wa(h); En, Son, WaKng: wa
    Wa: Dr: vōač; Dav: va; SW: vēh; Bib: vēh; Kawa: vTēh /vēh/
    Lawa: BL, Um, Ph: wūh

H19 *krih  "unmarried woman"
    Sam: khrīh; KK: khā
    PWL *krih. Wa: SW: kih; Kawa: grih /krīh/
    Lawa: BL: khrīh; Um: kreh; Ph: khyēih

H20 *(roh)  "to bark"
    PWL *roh. Wa: Dr: ruch; SW: yah (irreg. vowel); Kawa: rāoh /râoh/
    Lawa: BL: roh; Um, L'up: roh

H21 *lih  "to go down, fall"
    Sam: lih; Ferr: le-
    Khalo: lū; K'ala: likh
    PWL *lih. La: lie
    Wa: Dr: lih, lich; Dav, Bib, Praok: li
    Lawa: BL: laih

H22 *lih  "to go out"
    Sam: lih
    PWL *lih. La: lie
    Wa: Dr: lih, lich; Praok, Bib:li; SW: līh; TV: līh5;
    Kawa: līh /līh/

H23 *(lah)  "to slice"
    PWL *lah. Wa: Dr: lōch
    Lawa: BL, Um: lah

H24 *(plah)  "classifier for sheet-like objects"
    PWL *plah. Wa: Dr: blach: Bib, Ant: pla; Kawa: blah /plāh/
    Lawa: BL, Um: pla

H25 *(l)oh  "to exchange"
    Sam: plōh
    PWL *(l)oh. Wa: SW: loh; Bib: lo; Kawa: louh /lōh/
    Lawa: BL, Um: ra?loh
H26 *s(e)h  "down"
    Khalo: si
    PWL *s(e)h. En: hsé; WaKng: se
    Wa: Dr: seh; SW: se(h); Kawa: seih /séh/
    Lawa: BL: -saih; Um, Ph, Saam, Pap, L'up: -seh

H27 *səh  "to cut grass"
    Sam: sôh
    PWL *səh. Wa: Dr: hsoh; SW: soh
    Lawa: BL: səh; L'up: səh; North: səch

H28 *ryah  "hundred" (often in cpd. with *di? "one")
    KemD: t-reia
    K'ala: ti-pə-cha
    PWL *ryah. La: t'le-ya; Son: ya; WaKng: ti-ya
    Wa: Dr: (ta)riya; Dav: ta-ra-je; SW: dəyeh; Bib: siyeh; Ant: riyeh;
    TV: y1?3; Kawa: yティeh /yίeh/
    Lawa: BL: ?ayιah

H29 *yəh  "to do"
    Sam: yəh; KK: yō, yōk
    K'ala: yukh
    PWL *yəh. La: yuh; Son: yu
    Wa: Dr: yuch; SW: yuh; Bib: yu; Ant: yoo; Kawa: yūh /yゅh/
    Lawa: BL, Um, Ph: yuh

H30 *(hoh)  "more"
    PWL *hoh. Wa: Kawa: haoh /haşh/
    Lawa: BL: həuh
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<td>Hand</td>
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Footnotes

1) The term is mine, unfortunately; I would be happy to replace it with some other convenient label, especially since some of the people who speak these languages are said to resent the appellation "Wa". Suggestions are welcome.

2) In Ferlus (1974), a small error occurs on his map (p.52) regarding the location of the K'ala, labelled "4.6". Harding (1927) places it "on the Mekong slope of the Salween watershed, near the Wa country". This would place 4.6 much further East, a location consistent with the linguistic similarity of K'ala to Samtau.

3) Drage does not say anything about "-ich" noting a [-ç]. He only describes -ch as being "somewhat like ch in Scott loch"; but as he notes /-c/ and /-n/ with "-it" and "-in", I take his "-ich" to also represent a final palatal, with a palatal glide typical of Mon-Khmer languages.

4) Here and in the rest of this paper, references like (S26) indicate entry numbers in the Waic Etymological Lexicon; the capital letter represents both the final consonant and the section of the Lexicon where such finals are listed; the number indicates the entry number in that section.

5) Words of Proto-Palaungic and Mon-Khmer origin always have a final consonant in Proto-Waic. Certain Mon-Khmer languages, such as Khmer, have words of Mon-Khmer origin with open syllables; these have final *- in Proto-Waic. See: *67 "stone", *98 "dog", *74 "monkey", *87 "fruit", *108 "tree" etc. The necessity to have a final consonant is also found in Senuic (Diffloth, 1977).

6) For *-s in this word, and in "breast" and "name" see Diffloth, 1976.
7) In the South Wa tape, I sometimes hear a very faint friction (velar? pharyngeal?) at the end of these open syllables. But I may be overhearing.

8) The phonetic correlates of this two-way tone contrast are not simple: the high tone is mid-high rising, the low tone is mid falling except in checked syllables where it is mid level. Low tone is sometimes accompanied by breathy voice. The inflection in pitch for the high tone is very pronounced. Absolute pitch seems to vary from one word to the next, but this is probably due to the long pauses which often occur between them and include translations, comments and conversations in Thai and Shan. The discovery of a two-way tone contrast is to be credited to J. Harris and J. Gainey.

Samtau tone appears to be distinctive only in final syllables. The first member of disyllabic compounds seems to have a neutralised level tone. This is why certain entries in the Etymological Lexicon have no tone marks: they only occurred in the recordings as first member of a compound.

9) Except one: hke2 "they" (p.66), but this pronoun is also written scores of times as: hke5, and sometimes both ways in the same sentence (p.62).

10) No direct diffusion is implied by this remark: the change did not occur in Shan where most Thai influence on Waic presumably came from.

11) There are, in Luce's Wa, a few initial voiced stops which are probably not explainable in this fashion, eg. bêʔ9 "goat", dêʔ3 "earth". The data is not sufficient to detect a pattern, but since they condition tone 3 with final stops, they do not affect the status of tone in this Wa dialect.
12) I am thankful to A. Manaster-Ramer for suggesting this appropriate term.

13) One way would be to use morphophonemic alternations, but the débris of morphology found in Lawa is often suspect of analogical levelling, and the amount of data is too small at the moment.

14) The evidence for these initial clusters is given in Sec. 4 "Complex initials". By preaspirated, I refer to sonorants with a voiceless beginning. If aspiration is defined as a "delay in the onset of voicing", these sounds could justly be called aspirates; but the term preaspiration is useful since it points out that the delay occurs at the beginning of these inherently voiced sonorants. whereas in aspirated stops it occurs after the release of the inherently voiceless sounds.

15) There are a few rare instances of proto voiceless initial stops noted by Drage as voiced (e.g. "you, Sg" bê, be <PW*PE?(748)). Since the true proto voiced stops have become aspirated in Drage's Wa, this was perhaps an English speaker's way of emphasising the lack of aspiration in these other stops.

16) the -a- of Drage's notation (without any diacritic) represents unstressed /ə/ which seems to be entirely predictable. See Drage p. 7.

17) This is by no means a phonetic necessity, but a language specific rule of phonology; in Khmer, syllable boundaries within the word are generally permeable to register.

18) Comparison shows that final *-h and *-ʔ are not noted in Bible Wa: words with final -eh are no exception: they may represent /-εʔ/ (nyeh "house, ʔ23), or /-ε/ (simeh "seed" L17), or even /-ch/ (keh "give", H7).
19) In several, but not all dialects of Wa proper, \*rC⇄sC-, but this change has no effect on registers and diphthonguisation and seems to be fairly recent. See Sec. 4.

20) The patterns of aspiration or lack thereof, are sufficient, even without dâta outside Lawa, to establish the proto-voiced nature of the initials in these clusters, and confirm the history of the vowels.


22) Good examples of single initial Nasals and liquids preceding \*a- are not easy to find, but more will be given with vowels other than \*a, where the same pattern is found.

23) Bo Luang would be expected to have \?a-, the initial /l-/ is probably a contamination from Thai netinet "Lawa".

24) We should be able to predict that when reflexes of \*hna- and \*hya- are found in Lawa they will be diphthonguised; for example, PW \*hnap "difficult" (P12) should be /hniap/ if the word has been kept.

25) It is also necessary to assume that voiced sonorants, except w-, y- and \?, either did not produce breathiness at all in the following vowel, or lost it; while breathiness due to stops was preserved. The latter, more likely, hypothesis would suggest that breathiness due to originally voiced stops became phonetically more noisy than breathiness due to sonorants; noise in the first kind of breathiness increased to the point of being classed together with the kind of friction due to w-, y-, and \?, and then turning into aspiration, while the second, weaker kind of breathiness eventually disappeared.
26) I owe this term to the poetic awareness of Jung Hai-Rhin.

27) The Bo Luang dialect of Lawa has seen some drastic changes in its finals due to vowel off-gliding, more drastic in fact than any other Waic dialect: after an -i off-glide, all obstruents turn to velars, after -l off-glides, all obstruents turn to palatals, and after -u off-glides, to labials. This is independent of other, much earlier changes occurring in Proto-Lawa whereby *-it, *-in, and *-ik, *-in all palatalised to *-ic, *-ip.

28) The Samtau reflex of this vowel is /u/, regardless of tone; and this high quality is inherited from pre-Waic times: this vowel represents a merger of Proto-Palaungic *uu and *u, and probably kept this value [u] quite late. The shift Pre-Waic *u → PWaic *ι is taken here as one of the defining features of the Waic branch. See Sec. C. 1.

29) This evolution could indicate that the PWaic value of *ι was in fact a short *a contrasting with a long *aa (PWaic *a in this study): if support is found for such a notion, Proto-Waic would have maintained the original Proto-Mon-Khmer vowel length contrast only for the value [a], very much like Viet-Namese did.

30) There still remain problems to be solved in the history of PW *ι; for example, the proposed diphthong does not explain the /o/ reflexes of PW *ι in the clear registers of Drage's Wa and Wa proper which present a similar, but lesser difficulty.

31) Drage did note an occasional h'r- or h'1- initial, but the vowel qualities show that he failed to note preaspiration in some other words, especially with nasals.
32) and to the non-buzzy series of Lawa. In case of h + Approximant, the Lawa vowels belong to the buzzy series, as noted earlier.

33) Riang normally has a simple sonorant with high tone as a reflex of the usual h + Sonorant initials: ʔoʔ- "rice", ʔon- "ask", ʔonʔ- "monkey", ʔonʔ- "tooth", ʔaʔ- "leaf", ʔut- "deaf".

For "nail", see Shorto (1971) p.374: Old Môn: sinlem "nail", and perhaps also Semai:ɾnsεp "tip of leaves". The Samtau cognate: Sam.:ʔonʔim also shows that this word does not have a simple *hn- initial.

34) If both types of clusters existed in Proto-Waic, then it would be tempting to reconstruct PWaic *nham "blood" and not *hnam as I have done here. The Mon-Khmer etymologies for PW *khoʔ "tree, PW *phym "to fart", *phiʔ "otter", show that PWaic, and therefore PPalaungic, did preserve medial *-h-′s. The statement by Diffloth (in press) about their loss should be restricted to Khmuic alone. In that case, the history of "blood" would simply be: PMK *jinhaam, →PW *nham, →Wa: hnám.

35) The normal pattern in South East Asian languages is for preglottalised (or implosive) voiced stops to condition the following tones and vowels as if they were voiceless. This is the case at least in Khmer and Thai. This bizarre fact has never been explained phonetically. In the case of Khmer, the present b- and d-, implosive for many speakers, derive historically from voiceless stops, so the problem may reduce itself to a simple matter of chronological ordering; but this is not the case in Thai. Given the permeability patterns of Thai approximants and liquids, it is difficult to see how an initial Proto-Thai ʔʔb- or ʔʔd- cluster could produce tone of the same class as voiceless initials do: stops are typically impermeable to the voiceless feature of preceding segments. On
the other hand, a *?w- and *?r- reconstruction would predict
the correct tones, and the evolution *?w- → ?b- and *?r- → ?d-
is shown by Bo Luang Lawa to be quite plausible phonetically
and areally. *?m- and *?l-, or even *?n- would also be worth trying.
36) This process can be observed today with speakers of Tai
languages borrowing Khmer or Sanskrit disyllabic words, or
words with complex initials.
37) Compare with Proto-Semai *sirc "to sting", and *s-m-irc
"stinging insect" (Difffloth, 19-7, p. 437). See also Shorto, 1976 p. 1065
38) Evidence for such a prefix is found in words like: KW: pih
"to sweep", and : Umphai Lawa: rapas "broom" (in: hla? -). Cf (S 14).
39) The Proto-Mon-Khmher word for water: *Jaak (or, I would
propose, *?naak), has undergone semantic shift in Waic: PW *dak
means "jungle, hill country" (= "up-river")?, while the original
word for "forest" (cf. Khmu: bri? "forest, nature") acquired the
meaning: "weather, conditions outside" (PW *bre?), not to be confused
with PMK *brVy "drizzle, light rain" (cf. Khmu:brav) and PMK*priəl
40) The original k- should not be confused with the final
consonant of the compound found in BV: hakteh "earth, territory" which
goes back to *hak "skln" + *kte? "land", i.e. the surface of the
land, as opposed to BV: teh "land, soil". Kawa also has both: hakte? 
and t?", but neither has: kte?. The syntactic contexts where
these words are found, in both BV and KW, argue against an inter-
41) This etymon seems to mean more than just "stomach". The Semai
cognate; pdal does mean "stomach" or "gizzard" (in:pdal puk), but
also "calf of leg" (in: pdal kmuŋj, where kmuŋ means:"lower leg"),
or "biceps" (in: pdal kiriitj, where kiriit means:"arm"): it is also
used in compounds where it appears in the syntactic position of a
modifier: ?Ec pdal "stomach".(where ?Ec means "stomach, feces"")
or even as the root of an Expressive: plpdal, describing a bulging part of the body. This latter meaning, as well as the compound pdal kmuŋ, can easily explain the apparently aberrant meaning "leg" of the Riang cognate.

42) But the Samtau word only appears in the construction: vak-kmöl, and from the tape it is difficult to be sure that there are two consecutive k's and not just one, though the tone is clear.

43) The semantic connection between "eight" and "hand" is confirmed in the rest of Palaungic: Pal: tā, Riang: tő?, Lamet (Lef. - Pont.): ta. Amok (Scott) (Angkuic branch): n'ta. These are not cognate with PWaic *sn̂ te?, but appear to be connected to a Karen word meaning "hand(palm)". Only Danau, the oldest branch-off from Proto-Palaungic has preserved the Mon-Khmer etymon for "eight": tsön⁴ (Luce), sam (Scott

As for the pragmatic reason for an "eight"-"hand" semantic connection, one should look for it in Palaungic methods of counting; my guess is that the thumb tip is used to touch the eight inner joints of the knuckles of one hand.

44) The phonology of the Viet-Muong forms does not really support (Coedes, 1935) Coedes' often quoted speculation that the names of the animal cycle would have been borrowed by Khmer from a Muong language.

45) Milne's notations are often sub-phonemic; most of the vowels she noted "short" occur before final stops, including ?, the reflex of *-k most of the "long" vowels occur elsewhere. There are a few apparent contrasts in the dictionary, but Shorto (1960) recognizes only one set of vowels.
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anon. 1960 a. Nben yam iaq Mao jusi (When Chairman Mao was a child). Id.
anon. 1960 b. Mgaig rTang mgaee mTxlai (Look at pictures and learn letters). Id.
anon. 1960 c. Mao jusi houq dol yu8 nyo6 nyTiex yix (Chairman Mao came to visit our house). Id.
anon. 1960 d. Yao jun kom ra (The two leaps forward). Id.
1960 e. Yaong Makoong ndOx glex ngaIx (Makhung village yesterday and today). Id.

Rangoon


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