PALAUNGIC VOWELS
IN MON-KHMER PERSPECTIVE

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Thirteen years ago, H.L. Shorto pointed to the vowel system of Proto-Mon-Khmer as being the 'crux' in the historical phonology of this family (Shorto 1976). His assessment remains as valid today as it was then, even though some advances in reconstruction have been made; our data base has considerably expanded and improved, but the mirage of Proto-Mon-Khmer vowels continues to recede, even as we penetrate further into the past.

The solution proposed then: vowel variation in the proto-language, is consistent with certain facts which can be observed in several Mon-Khmer languages spoken today. In Bahnar, Sre, Khmu and Semai, to select but a few, whole families of Expressives (Diffloth 1979; in press) are often built on vowel permutations, and such Expressives occasionally find their way into the prosaic (Non-Expressive) vocabulary; conversely, prosaic words often serve as a starting point for building families of Expressives which differ, for example, only by their major vowel. This has surely contributed to the formation of word-families such as those identified in Shorto (1973). This explanation, however, has its limits: presumably, these processes would have affected a word here and a word there, at different times, but it is difficult to see how it could have pervaded the thousands of items which form the non-expressive lexicon of one language, not to speak of an entire family. Other factors are needed in order to account for the numerous vowel correspondences which have been detected so far.

For example, it may well be that the Proto-Mon-Khmer vowel system reconstructed until now, although sizable, is not rich enough for the purpose, and that we need to expand it with some additional phonological dimensions.

Tone has been practically ruled out for Proto-Mon-Khmer since the simple tone systems of Bùlăng and Riang, and the tone-cum-register system of Nyah Kur (Diffloth 1980, 1984) can all be explained as innovations; but the newly recorded Angkuic languages U and Man Met (see below) have four-tone and six-tone systems respectively, the origins of which remain partly unknown for the moment. Then again, Haudricourt's account of Vietnamese (VN) tonogenesis has generally been accepted, but it leaves out, as tonally irregular or unexplained, a large number of words which do belong to the indigenous Mon-Khmer stratum of the language. And the recently discovered Palyu language, called Lai in Chinese, also has six tones which may, or may not, turn out to be

recalcitrant—Palyu is apparently Mon-Khmer (Liang 1986, Benedict, in press), but its position in the family is still undecided.

Register is a better candidate. This is, typologically, a well-established feature of Mon-Khmer languages (Huffman 1976). The general consensus is that Register is a relatively recent phenomenon, and Shorto, accordingly, does not reconstruct it for Proto-Mon-Khmer. Ferlus (1979) desribed all Mon-Khmer register systems found until then as being the result of one type of evolution: devoicing of initial consonants. This explanation has long been accepted in the case of Spoken Mon (Blagden 1910) and of Modern Khmer (which ironically has now lost phonation-type distinctions), and it does account for the registers of several other newly recorded languages (e.g. Kuy, Bruu, Phalok). But it is inadequate in certain other languages: the Pacoh register system, admittedly an innovation, has nothing to do with the process of devoicing which has independently taken place in this language. It is also inapplicable to the North Bahnaric languages where no devoicing has taken place, except in Sedang. In Pacoh, the genesis of register is due to changes in vowel quality, namely, the fronting or backing of certain proto-central vowels (Diffloth 1982), and a similar innovation has apparently also taken place in North Bahnaric (Diffloth 1983). So, we do not have yet a case of reconstructing register as being ancient in Mon-Khmer.[1]

However, the Pearic branch might force us to do that: recently, Huffman (1985) has shown that Chong, a language of the Pearic branch, had a Clear vs. Breathy distinction, criss-crossing a Plain vs. Glottalised contrast, giving rise in effect to a four-register system. Theraphan (this volume) describes in detail the complex bundle of phonetic features these four registers contain. This phenomenon has no historical explanation, and Headley himself (1985) has abandoned to the sagacity of future historical linguists any attempt in this regard.

Gage (1985) has pointed out that certain unexpected occurrences of the sắc tone in Vietnamese seem to find an echo in the register system of Pearic. The tonogenesis of Vietnamese requires that the sắc tone occur with final proto-stops, and indeed cannot explain the tones of many VN words which have excellent Mon-Khmer etymologies, such as: bốn 'four', chín 'cooked', gió 'wind', or: ngái 'far'. Cognates to all four of these words happen to have glottalisation in Pearic. In Chong, as I have recorded it, the first three have the 'tight' register:[2] /phɔ̰ɔn/ 'four', /chḭin/ 'cooked', /kəya̰ay/ 'wind'; the fourth word has a 'breathy-creaky' register[3]: /ɳa̰ay/ 'far'. Other examples can be found, e.g. VN: cám, Chong /ŋəna̰am/ 'rice-husk', but there are counter-examples as well, e.g.: VN: chim, Chong /chḭim/ 'bird'. Since the Pearic and the Việt-Mường branches are only distantly related, the implications of this fact could go back directly to Proto-Mon-Khmer.

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1. Smith's opinion to this effect (Smith 1972) was not based on the establishment of sound correspondences, but on statistical tendencies within a very small set of possible Mon-Khmer cognates, which a more thorough comparison does not confirm.
2. Clear voice plus glottalisation in Huffman's (1985) analysis.
3. Huffman's (1985) breathy voice plus glottalisation.

There are also less exotic vowel features which have not been fully used in Mon-Khmer reconstruction. Diphthong systems can be much richer than the simple *iə and *uə usually proposed; I have reconstructed Proto-Katuic with five proto-diphthongs (Diffloth 1982), and Nancowry Nicobar (Radakrishnan 1981:25) is described even today as also having five diphthongs: /iá/, /ia/, uá/, /úa/ and /úa/, which seem to correspond with what we can reconstruct for Proto-Aslian.

Some of these phonological features may have to be reconstructed back to Proto-Mon-Khmer, and could well explain a number of Shorto's variations as being regular outcomes of a much richer proto-vowel system. But then, the number of proposed Proto-Mon-Khmer etyma becomes a relevant issue, and what has been published so far can be said to represent only a sample.

In this paper, I will not explore these possibilities, but only prepare the comparative ground to do so; I will try to clarify some points in the history of vowel systems in the Palaungic branch, where recently recorded material allows us to make systematic reconstructions. This may seem at first to be somewhat irrelevant: if Waic and Palaung are notable for one thing, it is precisely the poverty of their vowel systems. The old vowel-length contrast was already lost in Proto-Waic, and the best source of information on Milne's Palaung (=Ta-ang)[4] appears not to have a phonemic contrast of this kind.

But the Palaungic branch has an important role to play in reconstruction: it belongs to a distinct division of the family, the Northern Division, and it provides us with an independent testimony for the reconstruction of Proto-Mon-Khmer vowels. Besides, as I will try to show, Palaungic vowel systems are not as poor as they first seem to be.

1. *Proto-Waic*

The term 'Waic' covers (1) several Wa languages, e.g. Paraok, Avüa', La (Zhōu & Yán 1984) and their dialects; (2) the Phalok language,[5] formerly referred to as Khalo or Mae Rim Lawa (Flatz 1970); (3) Lawa and its dialects (Mitani 1972); and (4) the Bulang-Phang complex with its many dialects[6] (Diffloth 1980). Certain Waic languages, Lawa and Paraok in particular, currently have rich and complicated vowel systems[7] but this is

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4. Professor Shorto has let me use his own notes from Riang and from the same Palaung language, Ta-ang, as described in (Milne: 1931); this is the source of the 'Ta-ang' and 'Riang' words quoted here. Let the present article be a small token of appreciation for his kindness.
5. I collected the information on Phalok included here in two separate field trips, one in April 1981 with the help of Theraphan L. Thonkum, and the second by myself in July of the same year. This research was financed by a grant from the National Science Foundation (NSF) entitled 'An etymological lexicon of Mon-Khmer'. More information on Phalok will be made available in the forthcoming volume 'Wa-Lawa-Bulang'.
6. In that study, I called 'Samtao' a language which later turned out to be identical to that spoken by the Bùlăng National Minority in Yunnan, China. No linguistic information was available on Bùlăng at the time, as Zhōu & Yán (1983) had not yet appeared.
7. Because of a somewhat artificial analysis, Zhōu & Yán (1984) describe Paraok as having 50 vocalic nuclei.

due, in part, to the influx of Tai borrowings[8] and in part to recent processes of vowel warp, conditioned by Registers and final consonants. Only nine proto-vowels are needed at the Proto-Waic stage[9]

Proto-Waic Vowel system

i	ɨ	
e	ɤ	o
ɛ		ɔ
	a	ɒ

This maximum system is found with most final consonants, but there are certain distributional gaps; for example, with final *-ʔ, only eight proto-vowels are found (all the above except *ɒ); with final *-h, only seven are found (*ɤ and *ɒ are excluded); and there are no open final syllables in Proto-Waic.

2. *Proto-Palaung-Rumai*

The term 'Palaung-Rumai' also covers several languages, the best known of which is Ta-ang, i.e. the Palaung of Nam Hsan described by Milne (1931). The Rumai language and its dialects, also belongs here[10], as well as the dialects of Riang;[11] it also includes another distinct group sometimes called 'Palê', which contains at least Da-ang and Na-ang; and several other languages, like Ka-ang and Ra-ang[12]. Other Palaung-Rumai languages surely await description in Burma or Yunnan, and they may or may not belong to one of the seven groups mentioned here.

There is considerable diversity within Palaung-Rumai, but this is not the place to present all the phonological innovations which can now be documented. Mitani (1977, 1979) has already reconstructed the Palaung-

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8. Lawa has borrowed from Northern Thai and more recently from Standard Thai; Paraok has borrowed from Shan (referred to in China as 'Déhóng Dǎi'), Bùlǎng has borrowed from Lü (referred to in China as 'Xīshūangbǎnnà Dǎi', or Xī Dǎi for short).
9. This reconstruction was presented in (Diffloth 1980); since then, a Paraok-Chinese dictionary has been published (Yán *et al.* 1981), and, in 1984, I was fortunate to collect Waic linguistic material in China, with the help of Zhōu, Z.-Z., under another NSF grant entitled 'Comparison of the Mon-Khmer languages of China with other languages of the Mon-Khmer family'; with this new material, the number of reconstructed Proto-Waic words has now more than doubled, and the reconstruction of a few etyma given in Diffloth (1980) has been modified; this new information confirmed the nature of the Proto-Waic system I had reconstructed in 1980 with the help of Y. Mitani.
10. All the Rumai examples quoted here were collected in May 1981, with the help of a family of Rumai emigrants living in Chiang Mai at the time.
11. See note 4 above.
12. The information on Na-ang included here was kindly given to me by Yán, Q.-X. as part of a research programme in China (see n.9). She is the author of a valuable sketch on the Běnglóng language(s) (Yán 1983). I collected myself the Ka-ang data from a native speaker in Kūnmíng, in the course of the same research programme. The Da-ang and Ra-ang data were collected in 1981 (see n.5), and 1984, during my stays in Thailand. It was not possible for me to determine with precision the geographic spread of these languages, especially for those spoken in the Shan States (Burma) where there seems to be a lot of small-scale migrations. For China, Svantesson *et al.* (1981), Yán (1983), Zhōu & Yán (1983, 1984) provide geographic and demographic information.

Rumai vowel system, using older material; and even though none of the sources used had indicated the vowel length contrasts which are clearly present today in most of these languages, he did reconstruct vowel length contrasts at the Proto-Pal-Ru stage. Remarkably, his reconstructions, which he termed as tentative, are confirmed by the better material we now have; this is true at least for the presence of a proto-length contrast, and for the number of proto-vowels: 10 (although this represents a minimum); only the reconstructed quality of some of these vowels can now be improved upon.

Briefly, with only a few rare gaps and notation problems, we find the following correspondences in words having a proto final Velar Nasal:[13]

	Rumai	Na-ang	Da-ang	Ra-ang	Ta-ang	Ka-ang
(1)	-aaŋ	-aaŋ	-aaŋ	-aaŋ	-aŋ	-aaŋ
(2)	-ɒŋ	-ɔŋ (-ɔɔŋ)	-ɔŋ	-ɒŋ	-əŋ	-ʌŋ
(3)	-ɒɒn	-eeɲ (-ɛɛɲ)	(?)	-ɤŋ	-ɯŋ	-oŋ
(4)	-aŋ	-aŋ	-ʌŋ	-aŋ	-ɯŋ	-ɒɒŋ
(5)	-ɯŋ	-ɤŋ (-ɤɤŋ)	-ɯŋ	-ɤŋ	-uŋ	-uŋ
(6)	-oŋ	-ooŋ	-ɔɔŋ	-ɔuŋ	-oŋ	-oŋ
(7)	-ɛɛŋ	-eaŋ	-ɛʌŋ	-eaŋ	-ɔŋ (-oŋ)	-ɒɒŋ
(8)	-ɛn	-eeɲ	-iŋ	-eŋ	-iŋ	-iŋ
(9)	-ɒɒn	-ɛɛɲ (-eeɲ)	-eeŋ	-ɛŋ	-eŋ	-eeŋ
(10)	-(y)oŋ	-iaŋ	-iaŋ	-iaŋ	-eaŋ	-iaŋ

Phonetic values for reconstruction of these proto-rimes do not come to mind immediately, to say the least. But the first four are relatively easy: Mitani (1977) reconstructs *aa, *a, *ɯɯ, and *ɯ respectively, for (1), (2), (3) and (4).

Correspondence (1), includes items such as:
'bone' Ru, Na, Da, Ra: /kəʔaaŋ/, Ta: /kənʔaŋ/, Ka: /kəʔaaŋ/
'hawk' Ru: /klaaŋ/, Na: /ma-glaaŋ/, Da, Ra: /glaaŋ/, Ta: /klaŋ/, Ka: /klaaŋ/
'elephant' Ru: /saaŋ/, Na, Da: /ma-saaŋ/, Ra: /saaŋ/, Ta: /saŋ/, Ka: /saaŋ/
'house' Ru: /gaaŋ/, Na, Da, Ra: /kaaŋ/, Ta: /gaŋ/, Ka: /gaaŋ/
'rancid, sour' Ru: /byaaŋ/, Na: /praaŋ/, Ta: /braŋ/, Ka: /braaŋ/
'torch, lamp' Ru: /raaŋ/, Ta: /raŋ/.

Riang-Lang cognates have a back /ɑ/ in these words:
/tsnʔáŋ/ 'bone', /kláŋ/ 'kite', /sí tsáŋ/ 'elephant', /káŋ/ 'house, shrine', /pràŋ/ 'sour, acid, rancid'.

Waic cognates always have Proto-Waic *a:
*səʔaŋ (Diffloth 1980: Ṅ5) 'bone'; *klaŋ (Ṅ69) 'hawk'; kəsaŋ (Ṅ79) 'elephant' *ʔŋ-gaŋ (Ṅ12) 'scabbard' (a derivate, from an earlier verb *gaaŋ ('to cover, to protect'); *raŋ (Ṅ53) 'brilliant, bright'.

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13. Evidently, some vowels have caused PPal-Ru *-ŋ to palatalise to -ɲ, and sometimes further merge with *-n; but both *-ɲ and *-n must be reconstructed at the proto-Palaung stage, in contrast with *-ŋ.

Lamet cognates have a long /aa/:
/xə?áaŋ/ 'bone', /kláaŋ/ 'hawk', /kəsáaŋ/ 'elephant', /kàaŋ/ 'shelter, shell, bark, husk';

And in the Angkuic branch of Palaungic, Man Met[14] has /-àaŋ/ finals with a low-falling tone, and U[14], which does not have vowel length contrasts, shows finals in /-âŋ/ with a high-falling tone:
MM: /?àaŋ/, U: /sə?âŋ/ 'bone'; MM /khàaŋ/, U: /khlâŋ/ 'hawk'; MM: /sàaŋ/ 'elephant'; U: /kâŋ/ 'house'; MM: /háaŋ/ (high-rising tone unexplained) 'bright'.

Outside Palaungic, Mitani's reconstruction of *-aaŋ is confirmed, for instance, by Khmu:
/cə?aaŋ/ 'bone', /klaaŋ/ 'hawk', /səcaaŋ/, 'elephant', /gaaŋ/ 'house'

Note that we will not be concerned here with the history of initial stops in these languages, interesting as that may be. In a nut-shell, Rumai and Ta-ang have preserved the original values of proto-voiced and proto-voiceless stops; the same state of affairs also exists in Ka-ang, except that initial *p- and *t- have become implosive ɓ- and ɗ- respectively; in Ra-ang, *p- and *t- have followed the same evolution, and *k- has become a voiced stop g-, while all proto-voiced stops have become voiceless; Da-ang and Na-ang have followed the same course as Ra-ang, and, in addition, have lost the implosion of ɓ- and ɗ-, which then become ordinary b- and d-; Da-ang and Na-ang therefore show a total reversal of the voicing values of PPal-Ru stops: another illusion of 'flip-flop', with implosiveness as the point of transition in this game of musical chairs. Angkuic, on the other hand, has undergone a completely regular 'Germanic'-type of sound change where proto-voiceless stops are now aspirated, and proto-voiced stops are now voiceless. But note that Angkuic tono-genesis is mainly due to vowel qualities and quantities, with some influence from the final consonant; it is unrelated to the earlier or the present voice features of initials.

Correspondence (2) includes:
'bitter, gall' Ru: /sɒŋ/, Na, Da: /sɔŋ/, Ra: /sɒŋ/, Ta: /səŋ/, Ka: /sʌŋ/
'thatch-grass' Ru: /plɒŋ/, Na: /blɔɔŋ/, Da: /blɔŋ/, Ra: /ɓlɒŋ/, Ta: /pləŋ/
'bamboo-shoot' Ru: /bɒŋ/, Na: /pɔɔŋ/, Ta: /bəŋ/, Ka: /bʌŋ/
'house-pole' Ru: /rɒŋ/, Na, Da: /rɔŋ/, Ka: /rʌŋ/
'horse' Ru: /mbyɒŋ/, Da: /mprɔŋ/, Ta: /brəŋ/, Ka: /brʌŋ/
Riang-Lang cognates have a front /a/ in these words:
/tsáŋ/ 'bitter', /pláŋ/ 'thatch-grass', /knràŋ/ 'post, upright', /mràŋ/ 'horse'

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14. I recorded Man Met and U from native speakers, in Yúnnán, during the research project mentioned above (n.9); they were introduced to me as speaking 'dialects', or more exactly 'fāngyán', of the Bùlǎng language. The Chinese term 'fāngyán' corresponds most of the time to what Western linguists consider to be different languages; this was true of these 'fāngyán' of Bùlǎng which do not even belong to the Waic branch of Palaungic, but to the little known Angkuic branch (Diffloth, 1974). The location of the U language is given in (Zhōu & Yán 1973), Man Met is spoken a few miles from Jinghong, Xīshuāngbǎnnà, Yúnnán.

Palaungic vowels in Mon-Khmer perspective

Proto-Waic cognates have *ɒ:
   *sɒŋ (Ṅ80) 'bitter', *plɒŋ (Ṅ73) 'thatch-grass', *təbɒŋ (Ṅ44) 'bamboo-shoot', *ʔrɒŋ (Ṅ56) 'house-pole', *mrɒŋ (Ṅ58) 'horse'.
Lamet has a short /a/:
   /cáŋ/ 'bitter'; /pláŋ/ 'thatch grass'; /təpàŋ/ 'bamboo-shoot'; /mxàŋ/ 'horse'
And in the Angkuic branch, Man Met has /-áŋ/ rimes with a high-rising tone, and U has /-ăk/ rimes with mid-rising tone:
   MM: /sáŋ/, U: /chăk/ 'bitter'; MM: /pháŋ/ U: /phlăk/ 'thatch-grass'; MM: /háŋ/, U: /crăk/ 'house-pole'; MM /páŋ/, U: /mbrăk/ 'horse'.
Here again, Mitani's reconstruction of a short *a is confirmed, outside Palaungic, by Khmu which regularly shows cognates with short /a/:
   /caŋ/ 'bitter', /tbaŋ/ 'small bamboo-shoot', /cndraŋ/ 'house-pole', /mbraŋ/ 'horse'.

The contrast between correspondences (1) and (2) shows that length vs. shortness has been preserved everywhere in the Palaung-Rumai languages, at least for this pair of vowels, except in Ta-ang which does not show any length distinctions anywhere in its system.

It also shows that in the Angkuic branch, tonogenesis is directly due to vowel-length, and has nothing to do with the proto-voice feature of initials; this kind of tonogenesis is unique in the Mon-Khmer family, but, annoyingly, it accounts for only some of the tonal contrasts found in Angkuic languages. It should also be noted that Man Met does undergo this kind of tonogenesis even though the older length distinction is retained; in U however, the length contrast, before disappearing, leaves another trace in the final consonant; it de-nasalises final nasals after short vowels.

Another remark: if we only had the Waic and the Riang-Lang material at our disposal, it would appear that a so-called flip-flop has taken place: Waic has a front *-a- where Riang-Lang has a back /ɑ/; and vice-versa: Waic has a back *-ɒ- for Riang-Lang's front /a/. The former presence of a length contrast shows this apparent flip-flop to be nothing but a synchronic illusion.

Correspondences (3) includes:
   'high' Na: /ḽeeɲ/, Ta: /hlɯŋ/, Ka: /hloŋ/
   'to dig (a hole)' Ta: /kɯŋ/
   'yarn' Ru: /sɒɒn/, Na: /seeɲ/, Ra: /sɤŋ/, Ta: /sɯŋ/, Ka: /soŋ/
   'foot' Ru: /jɒɒn/, Na: /cɛɛɲ/, Da: /ceen/, Ra: /cɤŋ/, Ta: /jɯŋ/, Ka: /joŋ/
Riang-Lang has an /ɔ/ reflex:
   /kɔ́ŋ/ 'to dig', /tsɔ́ŋ/ 'foot'
and Proto-Waic shows *-o-:
   *hloŋ (Ṅ77) 'high', *koŋ (Ṅ9) 'to dig', *joŋ (Ṅ18) 'foot'
Lamet has /ee/:
   /léeŋ/ 'high, long', /keéŋ/ 'to dig', /cèeŋ/ 'foot'.

19

In Angkuic, Man Met has long /ee/ with a low falling tone, U has /e/ with a high-falling tone and a final nasal:
MM: /lèeŋ U: /hlêŋ/ 'high, long'; U: /khêŋ/ 'to make with a dibble-stick'; MM: /cêeŋ/, U: /cêŋ/ 'foot'.
Outside Palaungic, Khmu has cognates with /ɨa/:
Khmu Yuan (Svantesson, personal notes): /khɨáŋ/ (aspiration unexplained) 'to dig up', Southern Khmu: /jɨaŋ/ 'foot'.

Correspondence (4):
'bamboo' Ru: /hraŋ/, Na: /hrɔŋ/ (Vowel ?), Da: /hrʌŋ/, Ra: /hraŋ/, Ra: /hrɯŋ/, Ka: /ʂɹɒɒŋ/
'bed-bug' Ru, Na, Ra: khaŋ/, Ta (Milne, 1931): kōng
'stalk, trunk, post' Ru, Na: /taŋ/, Ta: /təŋ/ (Milne: tīng, tōng), Ka: /ɗɒɒŋ/
'meat' Ru, Na: /yaŋ/, Ta: /yɯŋ/, Ka: /yɒɒŋ/
The Riang reflex is /ə/:
/rə́ŋ/ 'bamboo', /tə̀ŋ/ 'tree-trunk', /yə̀ŋ/ 'meat'
Proto-Waic has *-ɤ-:
*hɤŋ (Paraok: /hu̱ŋ/, Drage's Wa: hōng, Phalok: /hu̱ŋ/, Phang: /hǘŋ/ 'bed-bug'
Lamet has a short /ə/:
/rə̀ŋ/ 'bamboo', /hə́ŋ/ 'bed-bug'
In Angkuic, Man Met has a short /ə/ with a high-rising tone (but the tone of 'bed-bug' seems to be low-rising), while U has a /ə/ with a mid-rising tone and de-nasalisation of the final:
MM: /hə́ŋ/, U: /hrə̌k/ 'bamboo'; MM: /sə̌ŋ/ (tone?), U: /sə̌k/ 'bed-bug'
Outside Palaungic, Khmu has a short /ɯ/:
/hɯŋ/ 'bed-bug'
Another etymon with the same proto-vowel, unfortunately without Palaung-Rumai attestations, is:
'horn': Riang /kmrə̀ŋ/, Proto-Waic *ʔrɤŋ (N62), Lamet /krùŋ/, Angkuic: MM: /kə́ŋ/, U: /krə̌k/; Khmu: /cndrɯŋ/.

Mitani's reconstruction of a length contrast, *ɯɯ vs. *ɯ, for these two proto-vowels is confirmed independently by the evidence of Lamet and Angkuic (both Man Met and U); in Palaung-Rumai, Na-ang and Rumai also display the same contrast, which appears to be a retention, not only from Proto-Palaungic, but from still earlier periods, as the Khmu evidence indicates.

For all four proto-vowels *aa, *a, *ɯɯ and *ɯ, Na-ang and Rumai have thus preserved the older length feature. I depart slightly from Mitani in terms of vowel-qualities: (3) and (4) were probably central mid-vowels, *əə and *ə. This would explain how (3) became *ee in both Lamet and Angkuic and *o in Proto-Waic, and why (4) has very open vowel quality reflexes throughout Palaung-Rumai, except in Ta-ang where (3) and (4) merged and were pushed higher to /ɯ/ by the shift of *a to /ə/. The original value of (4) is preserved in Riang, Lamet and Angkuic.

20

For the remaining vowel correspondences, Mitani does not reconstruct any length contrast. For (5), (6) and (7) he proposes a back-rounded series: *u *o and *ɔ respectively.

Correspondence (5) includes:
  'big village, country' Ru: /kɯŋ/, Ta: /kuŋ/
  'drum' Na: /grɣɣŋ/, Ra: /grɣŋ/, Ta: /kruŋ/, Ka: /krɯŋ/
  'bamboo-strip mat' Ru: /blɯŋ/, Ra: /plɣŋ/, Ta: /bluŋ/
  'love, like' Ru, Da: /ʔɯŋ/, Ra: /ʔɣŋ/, Ta: /ʔuŋ/
  'to bury' Ta: /krpuŋ/, Ka: /kəɓuŋ/ (Vowel ?)
The corresponding PWaic vowel is *ɨ:
  *kɨŋ (Ṅ10) 'wet field, country', *krɨŋ (Ṅ63) 'drum', *krpɨŋ (Ṅ41) 'to bury'
In Angkuic, Man Met has a short /u/ with high tone, and U has /u/ with a mid-rising tone and de-nasalisation of the final:
  MM: /khúŋ/, U: /khŭk/ 'wet rice-field'
And outside Palaungic, Khmu has /u:/: /kuŋ/ 'village'

Lamet cognates are missing, although there are other etyma with apparently the same proto vowel, but without Palaung-Rumai attestations; these show the Lamet reflex to be short /u/:
  'to blow': Lamet /púŋ/, PWaic *pɨŋ (Ṅ40), Man Met: /phúŋ/, Khmu /puŋ/
  'a sprout': Lamet: /pluŋ/ (tone ?), PWaic *blɨŋ (Paraok /plaə̯ŋ/), Khmu: /bluŋ/
For this correspondence, the evidence for proto-shortness is clear: in Palaung-Rumai, only Na-Ang has a long vowel (in a single item which could have been misrecorded); all other languages where a length contrast exists, Rumai, Da-ang, Ra-ang, Ka-ang, Lamet, Angkuic, Khmu, have a short reflex.

The other two correspondences (6) and (7), seem, by contrast, to be on the long side:

Correspondence (6)
  'knee-cap' Ru: /gyoŋ/, Da: /krɔuŋ/, Ra: /krɔoŋ/, Ta: /grɔŋ/, Ka: /groŋ/
  'male bird' Ru: /koŋ/, Ta: /ʔə-kɔŋ/, Ka: /koŋ/
  'Classifier: round objects' Ru: /poŋ/, Ta: /pɔŋ/, Ka: /ɓoŋ/
  'buttocks' Na: /səpooŋ/, Da: /səpouŋ/, Ra: /səpɔoŋ/, Ta: /səbɔŋ/ (my own recording, cf. Milne sa̱-bōng which would indicate /səboŋ/)
  'far, long' Ru: /doŋ/~/ndoŋ/, Na: /tooŋ/, Ra: /tɔoŋ/, Ka: doŋ/
The Proto-Waic reflex is *o:
  *sŋroŋ (Ṅ61) 'knee-cap', *koŋ (Ṅ8) 'peacock'
Lamet has a long /oo/ reflex:
  /kxòoŋ/ 'knee'
In Angkuic, Man Met has a long /oo/ with a low-falling tone, and U has an /o/ with high-falling tone but no denasalisation of the final:
  MM: /kòoŋ/ 'knee'; U: /khôŋ/ 'peacock', U: /phôŋ/ 'round object' (in the expression: /khĭk phôŋ/ 'pubis', where /khĭk/ = 'head')

21

Correspondence (7) is well documented and contains well-known etyma; it also includes some surprising Front reflexes for what is certainly a proto Back vowel:

'hornet' Ru: /ʔɛɛŋ/, Da /ʔɛʌŋ/, Ta /ʔɔŋ/, Ka: /ʔɒɒŋ/
'rainbow' Ta: /pəryɔŋ/, Ka: /ʔəyɒɒŋ/
'back (of body, of knife)' Ru: /kyɛɛŋ/, Ra: /grɛaŋ/, Ta: /krɔŋ/. Ka: /krɒɒŋ/
'stairs' Ru: /ndɛɛŋ/, Na: /ntɛaŋ/, Ka: /dɒɒŋ/

In Riang, the normal reflex is a diphthong /ua/ or / uɔ/:
/ʔúaŋ/ 'hornet', /prɲùɔŋ/ 'rainbow', /rəŋdùaŋ/ 'stairs'

Proto-Waic regularly shows *ɔ:
*ʔɔŋ (N̈6) 'hornet', *pryɔŋ (N̈84) 'rainbow', *krɔŋ (N̈60) 'back'

Lamet has a long /ɔɔ/ reflex:
/ʔɔ́ɔŋ/ 'hornet', /pxyɔ́ɔŋ/ 'rainbow', /kxɔ́ɔŋ/ 'back'

In Angkuic, the Man Met reflex is a long /ɔɔ/ with a low falling tone, and the U reflex is a diphthong /ua/, with a high-falling tone and no denasalisation of the final:
MM:/ʔɔ̀ɔŋ/, U: /ʔûaŋ/ 'hornet'; U: /phyûaŋ/ 'rainbow'; U: /ʔaŋ-ghrûaŋ/ 'backbone'

Outside Palaungic, the Khmu reflex is regularly a long /ɔɔ/:
/ʔɔɔŋ/ 'hornet', /pryɔɔŋ/ 'rainbow', /kndrɔɔŋ/ 'back', /rŋdɔɔŋ/ 'stairs'

Mitani was certainly justified, on phonemic grounds, in leaving the feature of length unspecified in the back vowels series of Proto-Palaung-Rumai; but we can afford to be more precise now, and say that *u was probably short, while *o and *ɔ were probably long *oo and *ɔɔ. This will allow for an easier description of the gradual collapse of the older vowel-length system in languages like Ta-ang and Proto-Waic. And for Front vowels, the same line of reasoning will help us to solve a curious problem.

The proto Front Vowel system was also left unspecified as to length by Mitani, who reconstructed *i, *e, and *ɛ for our correspondences (8), (9) and (10) respectively.

Correspondence (8):
'to sew' Ru: /jɛn/, Na: /ceeɲ/, Ra: /ceŋ/, Ta, Ka: /jiŋ/
'head' Ru: /kɛn/, Na: /geeɲ/, Da: /giŋ/, Ra: /geŋ/, Ta, Ka: /kiŋ/
'navel' Ru: /kədɛn/, Na: /kəteeɲ/, Da: /kətiŋ/, Ra: /kəteŋ/, Ta: /kərdiŋ/, Ka: /kədiŋ/
'bamboo water-container' Ru: /dɛn/, Ra: /teŋ/, Ta, Ka: /diŋ/
'husband' Ru: /mɛn/

Riang has an /i/ reflex for this correspondence:
/kíŋ/ 'head', /kndíŋ/ 'navel'

But PWaic has an *e:
*jeŋ (N̈17) 'to sew', *keŋ (N̈7) 'head', *krdeŋ (N̈30) 'navel', *deŋ (Paraok: /tạɲ/) 'bamboo water container', *hmeŋ (N̈47) 'male of animal'

Lamet normally has a short /i/, except for one case of long /ii/:

22

/cìɲ/ 'to sew', /kíŋ/ 'head', /tìŋ/ 'bamboo-container', /míiŋ/ 'male of animal, endearing term for son'

This last item may actually be one of the many words Lamet has borrowed from the neighbouring Khmu; unfortunately, I have not yet found the expected word /hmiiŋ/ in any dialect of it. But the Khmu reflex of correspondence (8) is indeed a long /ii/:

Khmu Yuan (Svantesson, personal notes): /kñtìiŋ/ 'navel', /tìiŋ/ 'bamboo water-container'

In Angkuic, Man Met has a short /i/ with a high-rising tone, and U has /i/ with a mid-rising tone and denasalisation of the final Nasal:

MM: /khíŋ/, U /khĭk/ 'head'; MM: /m̥tĭŋ/ (tone ?) 'bamboo container';[15] MM: /-tìŋ/ 'the middle of (in a compound: /kaŋ-/)'; U: /hmĭk/ 'male of animal'

The Paluang-Rumai evidence, except for Na-ang, points to a proto-short vowel *i, and this is confirmed at the Proto-Palaungic level by Lamet and Angkuic.

Correspondence (9):

'sky' Ru: /plɒɒn/, Na: /blɛɛɲ/, Da: /bleeŋ/, Ra: /ɓlɛŋ/, Ta: /pleŋ/, Ka: /ɓleeŋ/

'way, path' Ru: /ndɒɒn/, Na: /nteeɲ/, Da: /nteeŋ/, Ra: /ʔantɛŋ/, Ta: /(rə)-deŋ/, Ka: /deeŋ/

'yellow' Ru: /tɒɒn/, Na: /deeɲ/, Da: /teeŋ/, Ra: /ɗɛŋ/, Ta: /teŋ/, Ka: /ɗeeŋ/

'wheel' Ru: /kəlɒɒn/, Ra: /kəlɛɲ/, Ta: /kənleŋ/

'equal amount' Ta: /krpreŋ/

Riang cognates have an /e/ vowel:

/pléŋ/ 'sky', /rəŋdéŋ/ 'way', /kənlèŋ/ 'wheel', /trkrèŋ/ 'equal amount'

And Proto-Waic, surprisingly, has an *i:

*kliŋ (Paraok: /kli̱ŋ/) 'to spin (yarn)'; *mriŋ (Bo Luang and Umphai Lawa: /mbriŋ/) 'to compare quantities, to match'

The Lamet evidence is, unfortunately, limited to a single item:

/təmplíiŋ/ 'sky'

In Angkuic, I do not have Man Met cognates, but U has the same reflex as in correspondence (8): /i/ with mid-rising tone and denasalisation:

U: /phlĭk/ 'sky'

This merger of (8) and (9) is specific to U and not general in Angkuic: there are other cognate sets, unfortunately without attestations in Palaung-Rumai, where this U rime corresponds to Man Met /-eeŋ/ with middle tone, (and to Proto-Waic *-iŋ, as correspondence (9) requires):

'to return home' U: /ʔĭk/, PWaic *ʔiŋ (Ñ1)

'wall, partition' U: /ndhĭk/, Mok (a close relative of Man Met spoken in Thailand, Wenk's (1965) 'Ya Ang Lawa'): /theeŋ/, PWaic *ntiŋ (Ñ21)

'ginger' U: /səkhĭk/, MM: /khēeŋ/, PWaic *sŋkiŋ (Paraok: /səŋgi̱ŋ/, La: /ki̱ŋ/, Avïa': /səŋkiaŋ/, Phalok: /ku̱ŋ/, Bulang (Da-Luo): /kàkíŋ/, Lawa (Umphai): /səceŋ/

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15. The initial /m-/ is probably a trace of the word /ʔòom/ 'water' with which *diŋ often forms compounds, e.g. Bùlăng /ʔúm tèŋ/ 'bamboo water-container'.

I propose to reconstruct PPal-Ru *ee for correspondence (9), and for PPalaungic as well. The Palung-Rumai reflexes indicate a long vowel, even in Rumai, where the strange reflex, /-ɒɒn/, represents a merger with *-əəŋ (correspondence 3), itself a proto-long vowel.

This reconstruction also provides a simple explanation for what would appear to be yet another case of flip-flop: if we kept Mitani's reconstruction, without length, the correspondences would be:

(8) *-i-: PPal-Ru *-i- = PWaic *-e-
(9) *-e-: PPal-Ru *-e- = PWaic *-i-

If, however, we reconstruct PPal-Ru *ee for (9), head-on collisions are easily averted, and gradual phonetic change can proceed smoothly.

In addition, we can also explain the Lamet and Angkuic reflexes: in those two sub-branches, Proto-Palaungic *əə (correspondence 3) was fronted to a long /ee/, pushing the older *ee (corr. 9) out of the way: in Lamet, this *ee was raised to /ii/, keeping its long feature and filling a gap in the vowel system; but in Angkuic, Man Met and U evolved differently: in Man Met *ee and *əə merged in terms of qualities and length, but seem to have acquired different tones, whereas in U, *ee simply merged with *i. If this is correct, the movement of *əə to /ee/ is probably not an innovation shared by Lamet and Angkuic; it may have happened independently in these two sub-branches which do not appear to be especially closely related to each other.

The last correspondence, (10), poses a special problem in that it is difficult to decide if *ɛɛ or *iə should be reconstructed, for either PPal-Ru or PPalaungic. In any event, a short *ɛ seems a very unlikely value for this correspondence in view of its reflexes:

'to drink' Ru: /coŋ/, Na, Da: /diaŋ/, Ra: /ɗiaŋ/, Ta: /teəŋ/, Ka: /ɗiaŋ/
'excrement' Ru: /ʔyoŋ/, Na, Da: /ʔiaŋ/, Ta: /ʔeəŋ/, Ka: /ʔiaŋ/
'rice straw' Ru: /hrooŋ/, Na: /ɣiaŋ/, Ra: /hriaŋ/, Ta: /hreəŋ/, Ka: /ʂɹiaŋ/
'oily, unctuous, delicious' Ru: /pyoŋ/, Na: /briaŋ/, Ra: 6riaŋ/, Ta: /preəŋ/, Ka: /priaŋ/
'wrist, ankle; bracelet' Ru: /kyoŋ/, Na: /giaŋ/, Ta: /keəŋ/

The Riang reflex is a diphthong, usually transcribed /iɛ/:

/tíɛŋ/ 'to drink', /yáŋ/ 'excrement', /ríɛŋ/ 'straw', /príɛŋ/ 'delicious'

In PWaic, the reflex is *ɛ:

*ʔɛŋ (N̄3) 'excrement'

The normal Lamet reflex is a long /ɛɛ/, although 'excrement' has unexpected reflexes, possibly due to euphemistic deformation:

/tɛɛŋ/ 'drink', /ʔɛ́ŋ/~/ʔáŋ/ 'excrement', /prɛ́ɛŋ/ 'oily', /kɔ́ŋ-kɛ́ɛŋ/ 'elbow'

In Angkuic, the Man Met reflex is a short /ɛ/, usually with a high tone, whereas in U, we find a diphthong /ia/ with a high-falling tone and a Nasal final; 'excrement' is irregular only in U, having what seems to be an otherwise unattested proto-short diphthong:

MM: /thɛ́ŋ/, U: /thîaŋ/ 'drink'; MM: /ʔɛ́ŋ/, U: /ʔɛ̆ak/ 'excrement', MM: /mphɛ̆ŋ/, U: /phrîaŋ/ '(pig) fat'

Only one cognate has been found so far in Khmu[16]: /kiaŋ/ 'elbow'.

For the sake of consistency with Mitani's notation, I will arbitrarily reconstruct *εε for this correspondence at the PPal-Ru level.

The vowel system reconstructed for PPal-Ru now appears as follows:

<div align="center">

Proto-Palaung-Rumai Vowel System

*i   *u

*ee   *əə   *ə   *oo

*εε   *ɔɔ

*aa   *a

</div>

In contrast to the 9-vowel system shown above for Proto-Waic, this 10-vowel system shows the vowel length contrast to be still operating, but with a small functional load. I have not attempted here to reconstruct the Proto-Palaungic state of affairs, because Lamet and Angkuic are still too poorly known; but it seems likely that the vowel system will be, if anything, richer at that stage, probably filling some of the gaps in the long vs. short contrasts.

The Proto-Palaung-Rumai vowel system appears to be, typologically, half-way between a full South-East Asian system, as found for example in Khmu or Standard Thai, and a more contracted system where vowel length has been lost, as found for example in Proto-Waic, and Modern Mon. This vowel-system contraction seems typical of the Burma-Yunnan linguistic sub-area. But what Palaung-Rumai shows is that areal pressure does not work like a stream-roller: Ta-ang did lose the length contrast, but Rumai, even with two mergers, maintains it systematically and even innovates in this respect with complete disregard for its more forceful neighbours.

Something similar can be said of U: while it did lose vowel-length and acquired tones, thus conforming to its neighbours, it did so in a way which is competely original since the tono-genesis of U is partly due to vowel length.

In the perspective of Proto-Mon-Khmer, we may have to cope with as many upheavals, during that long stretch of history which separates us from these ancient times, as we can see in the relatively short adventure of Palanguic vowels.

REFERENCES

Blagden, C. O.	1910. Quelques notions sur la phonêtique du talain et son évolution historique. *J. Asiatique* (10me sér.) **15**, 477-505.
Diffloth, G.	1974. Austro-asiatic languages. *Encyclopedia Britannica* (15th ed.) **2**, 480-4.

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16. In spite of its conservative phonology, Khmu is not as useful for reconstructing Proto-Palaungic as it might appear at first glance; it is true that the Khmuic branch is closer to Palaungic than to other branches of Mon-Khmer, but the Khmu lexicon has undergone a great many replacements.

Diffloth, G.	1979. Expressive phonology and prosaic phonology in Mon-Khmer. In *Studies in Tai and Mon-Khmer phonetics and phonology in honour of Eugénie J. R. Henderson* (eds.) T. L. Thongkum *et al.* Bangkok: Chulalongkorn Univ. Press. 49-59.
. . . . .	1980. *The Wa languages.* (= *Ling. Tibeto-Burman Area* 5(2), 1-182.)
. . . . .	1982. Registres, dévoisement, timbres vocaliques: leur histoire en Katouique. *Mon-Khmer Stud.* 11, 47-82.
. . . . .	1983. *Parthenogenesis of register in North Bahnaric.* Paper read at the 9th Annual Meeting of the Berkeley Ling. Soc., Berkeley.
. . . . .	1984. *The Dvaravati-Old-Mon language and Nyah-Kur* (Monic Lang. Stud.1). Bangkok: Chulalongkorn Univ. Printing House.
. . . . .	(in press) 'I' big, 'a' small. In *Conference on sound symbolism* (eds.) J. O'Hala & L. A. Hinton. Berkeley: Univ. California Press.
Ferlus, M.	1979. Formation des registres et mutations consonantiques dans les langues mon-khmer. *Mon-Khmer Stud.* 8, 1-76.
Flatz, G.	1970. The Khalo or Mae Rim Lawa, a remnant of the Lawa population of Northern Thailand. *J. Siam Soc.* 58(2), 87-104.
Gage, W. W.	1985. Vietnamese in Mon-Khmer perspective. In *Southeast Asian linguistic studies presented to André-G. Haudricourt* (eds.) Suriya Ratanakul *et al.* Bangkok: Mahidol Univ., 493-524.
Headley, R. K. Jr.	1985. Proto-Pearic and the classification of Pearic. In *Southeast Asian linguistic studies presented to André-G. Haudricourt* (eds.) Suriya Ratanakul *et al.* Bangkok: Mahidol Univ., 428-78.
Huffman, F. H.	1976. The register problem in fifteen Mon-Khmer languages. *Austroasiatic Stud.* 1 (Oceanic Ling. Spec. Publ. 13). (eds.) P. N. Jenner *et al.* Honolulu: Univ. Hawaii Press, 575-89.
. . . . .	1985. The phonology of Chong, a Mon-Khmer language of Thailand. In *Southeast Asian linguistic studies presented to André-G. Haudricourt* (eds.) Suriya Ratanakul *et al.* Bangkok: Mahidol Univ., 355-88.
Liang, Min	1986. On the genealogical classification of the Lai language. *Computational analysis of Asian and African languages* 26: 1-14. [Tokyo.]
Milne, Leslie	1931. *A Dictionary of English–Palaung and Palaung–English.* Rangoon: Govt. Printing and Stationery.
Mitani, V.	1972. A short vocabulary of Lawa (ra-wa-go goi shiryo). *Tōnan Ajia Kenkyū* 10(1), 131-68.
. . . . .	1977. Palaung dialects: a preliminary comparison. *Tōnan Ajia Kenkyū* 15(2) 193-212.
. . . . .	1979. Vowel correspondences between Riang and Palaung. In *Studies in Tai and Mon-Khmer phonetics and phonology in honour of Eugénie J. A. Henderson* (eds.) T. L. Thongkum et al. Bangkok: Chulalongkorn Univ. Press, 142-50.
Radhakrishnan, R.	1981. *The Nancowry word: phonology, affixal morphology and roots of a Nicobarese language* (Current Enquiry into Lang. and Ling. 37). Carbondale Ill.: Linguistic Research Inc.

Shorto, H. L.	1973. Three Mon-Khmer word families. *Bull. Sch. Or. Afr. Stud.* **36**(2), 374-81.
. . . . .	1976. The vocalism of proto-Mon-Khmer. In *Austroasiatic Stud.* **2** (Oceanic Ling. Spec. Publ. **13**). Honolulu: Univ. Hawaii Press, 2. 1041-67.
Smith, K. D.	1972. *A phonological reconstruction of Proto-North-Bahnaric.* Santa Ana: Summer Institute of Linguistics.
Svantesson, J.-O.	1981. *et al.* Mon-Khmer languages in Yunnan. *Asie du Sud-Est et Monde Insulindien* **12**(1-2), 91-100.
Yán Qi-xiāng	1983. Běnglóng-yǔ gài kuàng (A brief description of the Benglong language) *Mínzú Yǔwén* (1983) **5**, 67-80.
Yán Qi xiāng	1981. *et al. Pug lai cix ding yiie si ndong lai vax mai lai hox* (A concise Wa–Chinese dictionary). Kunming: Yúnnán Mínzú Chūbǎnshè.
Zhōu, Z.-Z. & Yán, Q. X.	1983. Bùlǎng-yǔ gài kuàng (A brief description of Bulang language). *Mínzú Yǔwén* (1983) **2**, 71-81.
. . . . .	1984. *Wǎ-yǔ jiǎn zhì* (A concise description of the Wa language). Běijīng: Mínzú Chūbǎnshè.