

DULONG AND PROTO-TIBETO-BURMAN¹

Randy J. LaPolla

University of California, Berkeley

ABSTRACT

This paper compares the Dulong language of northwestern Yunnan Province in China to other Tibeto-Burman languages and to Proto-Tibeto-Burman, with a view toward understanding the historical development of Dulong and toward supporting, revising, and adding to the body of accepted PTB reconstructions.

INTRODUCTION²

The Dulong people live in the north-west corner of China's Yunnan Province, along the banks of the Dulong River in the Gongshan Dulong and Nu Nationality Autonomous County of the Nujiang Lisu Nationality Autonomous Prefecture. Their land is bordered by Tibet to the north, and by Burma to the west and south. Their language is generally considered to be in the Jingpo branch of Tibeto-Burman.³ Though the Dulong people number less than five thousand, the Nujiang dialect of Dulong is also spoken by approximately six thousand of the Nu people. This paper will concentrate on the Dulong River (Dulonghe) dialect of Dulong, but the Nujiang dialect will also be given for reference. There is little difference between the two. Please see Appendix B for a list of the major differences.

Loan words account for some ten percent of the Dulong vocabulary. Of these loans, 80% are Chinese loans, 10% are Tibetan loans, five percent are Yi loans, and there are also a few Burmese loans. I have dealt only with native vocabulary in this paper.

TONES AND VOWEL LENGTH

From a careful comparison of the Dulong forms in Sun (1982) with the tone sets of Jingpo and Burmese in Matisoff (1974), it seems that although Jingpo, Burmese, and Dulong all have three tone categories in open syllables, there is only the vaguest connection between any two of the tone systems of these languages. I could find only 61 words in Dulong that had cognates among the 322 open syllable⁴ Jingpo-Burmese cognates given in Matisoff (1974). Only the two high tones of Dulong are significant in doing comparative work, as the low-falling tone is rarely used word-finally. Because of this, though it is possible to see some regular patterns in the proveniences of proto tone *2, these could be simple coincidence. The number of roots in proto tones *1 and *2 with both Jingpo and Dulong correspondences are given below:

PLB *1, JP 55 (not enough Dulong examples)

PLB *1, JP 31 = DL 55 (6 examples), DL 53 (6 examples)

¹ I would like to thank Sun Hongkai, Mark Hansell, and especially James A. Matisoff for their valuable suggestions during the revision of this paper.

² The information in this introduction and Appendix B is taken from Sun (1982, 1983a).

³ Benedict (1972:5) suggests that Nungish (=Dulong) might belong to the Lolo-Burmese branch of Tibeto-Burman, but on pages six and eight recognizes its closeness to Kachin (=Jingpo) as well. According to Sun Hongkai (1983a:233-243), The Rawang language in Barnard (1934) (cited by Benedict as 'Nung'), and the Trung language in Lo (1942) are basically the same as Dulong. From a comparison of the forms in Benedict (from both Lo and Barnard) with the forms given for the two dialects of Dulong, it seems that Trung = Dulonghe Dulong (in this paper DLa) and Nung = Nujiang Dulong (in this paper DLb). Though Benedict (1972:8) feels that "Rawang and Trung are separate languages in a Nungish group," Sun (1983a:233-247) argues convincingly that these are merely dialects of the same language, Dulong, and that this language belongs to the Jingpo branch of Tibeto-Burman. Sun (1983a:100) includes Jingpo, Dulong, Darang and Geman Deng, and Luoba in this branch. Benedict (1972:5-6) has Geman (Miju) and Darang (Digaro = Taraon) Deng in the Abor-Miri-Dafta branch.

⁴ Dulong stopped tones are almost all high-level, so I did not use them in the comparison.

PLB *1, JP 33 = DL 55 (5 examples), DL 53 (6 examples)

PLB *2, JP 55 = DL 55 (8 examples)

PLB *2, JP 31 = DL 55 (9 examples), DL 53 (3 examples)

PLB *2, JP 33 = DL 53 (11 examples), DL 55 (4 examples)

The vowel length distinctions in Dulong also do not correspond with anything in the proto language or other TB languages except Deng. Because of the above facts, I have not dealt with tones or vowel length in the rest of this paper.⁵

INITIALS

Simple Initials

Dulong is relatively conservative in that it preserves the proto place of articulation fairly well, though, as in Jingpo, the voicing and aspiration of the initial are not always regular vis à vis the proto form. Even so, the main trend in Dulong is to reflect the proto voicing contrast (aspiration is not phonemic in Dulonghe Dulong, so is not marked), and the forms that deviate from this are definitely in the minority. The dental fricative became an alveo-palatal in those forms where it is followed by the high front vowel /i/ in Dulonghe Dulong or the high unrounded vowel /u/ in Nuijiang Dulong. The nasals basically reflect the proto-form, except where there is palatalization or an m → n shift before a high unrounded vowel.

As Dulong often preserves the proto-prefixes as separate syllables, there doesn't seem to have been the kind of pervasive influence on the root initial that you see, for example, in the Yi languages. Exceptions to the above rules are discussed in the section on non-regular reflexes.

I include with the simple initials proto affricates and fricatives followed by *-y-, because as Benedict (1972) says on p. 37, these might better be seen as unit phonemes in a separate palatal series. Certainly the Dulong evidence seems to support this. For example, the /ʃ/ reflex of *s- occurs only when the Dulong initial is followed by /i/. The reflex of *sy- is /ʃ/ even when the Dulong initial is not followed by /i/.

Below is a list showing the various reflexes of Proto-Tibeto-Burman (PTB) in Jingpo (from Benedict 1972) and in Dulong. Only those initials where I had sufficient data to make a generalization, or where the forms are very clearly cognate, are listed.

TB	Jingpo	Dulong
*k	k(h)~g	k(h)~g
*g	g~k(h)	g
*ng	ng	ng
*t	t(h)~d	t(h)
*d	d~t(h)	d
*n	n	n~ɳ/ń
*p	p(h)~b	p
*b	b~p(h)	b
*m	m	m~n
*s	s	s~ʂ̥
*ts	ts~dz	ts~s
*l	l	l
*r	r	r
*w	w	w
*y	y	y

⁵ For a thorough analysis of vowel length in Dulong, please see Dai (1986), and for a discussion of the sources of vowel length in Tibeto-Burman, please see Sun (1983b).

Following are examples of the various correspondences:⁶

*k- → k(h)-⁷

bitter, crow, basket, tiger, steal, pillow, uncle, chin, speech, branch, plant

[1]bitter	DLa ka55; DLb kha53; T kha-ba; B khà; L kha. PTB *ka (8)
[2]crow	DLa tak55 ka55; DLb tang31 kha55; T kha-tha 'crow, raven'; K kha; B khì-kàn (with *-n 'collective' suffix); Rawang thang-kha; Trung tak-ka; LCA kha31 nɔʔ55; LXA ka55 naʔ31. PTB *ka [99-100]
[3]basket	DLa pa155 kɔʔ55; DLb tu31 kɔʔ55; T khug-ma 'pouch'; G khok; Lepcha kóm ba-guk 'purse'. PTB *kuk (393)
[4]steal	DLa kw55; DLb khw53; T rku-ba; K ləgu; B khui; N khü. PTB *r-kw (33)
[5]pillow	DLa u55 kwm55; DLb u53 kwm53; K bung-khum; N ɔgɔ=makhim; Lh ú-ge; B khum; L khum. PTB *m-kum (482)
[6]uncle	DLa a31 kw53; DLb a31 khw53; T ?akhu; B kui; K ku; N əkhö; Ao Naga okhu; Miri əkü. PTB *kuw (255)
[7]chin	DLa mu31 kai55; DLb mu31 kai55; N makhá; K nkha-ningkha; L kha; Thad kha. PTB *m-ka (470)
[8]word,speech	DLa ka55; DLb ka55; T bka-skad; B tsa-ka; K gá~ságá; N kha. PTB *ka (9)
[9]branch	DLa śing55 ang31 kɔʔ55 (śing 'tree'); DLb śwng55 ang31 kɔʔ55; B akhak; Lh ɔ̄-qá, L kaak 'fork of tree'. PLB *?gak [TSR 43] PTB *s-kaak (327) ✕ **s-k(w)aak

Though reconstructed for PTB in STC as *kaak, in TSR #43, Matisoff reconstructs the PLB form for 'branch' as *?gak, based on Lolo forms. There are no examples of Dulong k- < *g-, and the Lushei form is also voiceless, so I am including this form in the *k- → k- set, assuming that either the PTB form is voiceless or that there is a voiced ✕ voiceless doublet.

[10]plant	DLa kaat55; DLb kat55; JP khai55, K gät 'sow,scatter'; Boro gáy; Nocte khet. PTB *kay ✕ *gay [G&C 114]
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The forms for 'plant' show a -t suffix in Dulong and some other languages. In Dulong, this suffix also shows up in an alternate form for 'speech,word': kat55.

*k- → g-⁸

body, nine, dog, yam, roast, star

⁶ In the word lists that follow, a number in parentheses after a proto-form is the number of the set in Benedict 1972 (STC); one in square brackets is the page number from the STC; one in brackets preceded by "G&C" is the number of the set from Matisoff 1985; one in brackets preceded by "Mpi" is the number of the set from Matisoff 1978; one in brackets preceded by "TSR" is the number of the set from Matisoff 1972. Proto-forms marked with two asterisks are my own reconstructions. Where there might be confusion as to which form of a phrase I consider cognate to the others of a set, I have underlined that form. Please see Appendix A for the key to language names, sources and symbols used.

⁷ There doesn't seem to be any clear conditioning factor for determining when the DLb form will be aspirated.

⁸ No conditioning factor is evident from the examples I have for explaining this change in voicing (assuming the transcription is correct).

[11]body ⁹	DLa ang31 gw55; T sku; B kui(y); MC *khiu (𠀤). PTB *(s-)kəw=*(s-)kuw [184]
[12]nine	DLa dw31 gw53; DLb dw31 gw53; T dku; B kui; G sku; N tagō. PTB *d-kuw (13)
[13]dog	DLa dw31 gwi55; DLb dw31 gi55; T khyi; K kui; B khwè; L ui; Jili takwi; N tagi; Digaro nkwi. PTB *kwyi= *kway (159) ✕ **d-k-wiy
[14]yam	DLa gui55; T skyi-ba 'potato'; B kywè; N gi; Digaro gi; JP kui31 mjau33 'mushroom potato'. PTB *kywiy (238)
[15]roast,toast	DLa dw31 gaang55; DLb dw31 gaang55; K kɔ:kang; B kang; L kaang 'burn'; N dəgang. PTB *kaang (330)
[16]star	DLa gur55 met55, DLb gu31 riet55 (+ *s-ngwat 'moon'); T skar-ma; K ḥagan; W. Kuki *s-gar; L ar-ji. PTB *s-kar (49)

*g- → g-

bent, wear, vegetable, saddle, body

[17]bent	DLa dw31 gɔ?55; DLb dw31 gɔ?55; T kug; B kok; JP ma31 ko?31 (ku5 in TSR); Bahing guk; Lh qɔ?; Ahi gu44s; LCA kok55. PLB *gok [TSR 2]
[18]wear	DLa gwa55; DLb gwa53; T bgo-ba; G gan; N gwa~ga; K khon. PTB *gwa-n ✕ *kwa-n (160)
[19]vegetable	DLa dzu31 gwa?55; DLb zu31 gwa?55; Lh ḡɔ:cá; Ahi vu-ɪʃe22-44; Sani Yi o-tʃe11-55; MT tshe55. PLB *igyak [TSR 49] PTB **gwak-**gyak
[20]saddle	DLa ga55; DLb ga55; T sga 'yoke-horses; to yoke'; B ka' 'saddle-frame'; MBb ga; AC *ka (𠀤) PTB *s-ga [Matisoff 1983, set 60]
[21]body ¹⁰	DLb gɔ:ng53; Nungish: Rawang gung, Mutwang dial. gong; B akhaung; Atsi kung; AC *kiōng (𠀤) also possibly JP khum31. PTB *gung [182]

The different forms for 'body' in the two dialects of Dulong possibly stem from an allofamic variation of *-o ✕ *-ng finals (as with 'you' *na ✕ *nang; cf. also the discussion of the Trung -ng suffix in n.74 in STC) that might go all the way back to PST.

*ng- → ng-

I, five, fish, silver, borrow, weep/cry, cattle

[22]I	DLa nga53; DLb gw55; T nga; N nga; B nga; G ang; Dhimal ka; L ka; MW ka. PTB *ka ✕ *nga (406)
[23]five	DLa pu31 nga53; DLb pu31 nga53; T Inga; K mɔ:ŋga; B ngà; G bo'nga; L nga~pɔ:ŋga. PTB *l/b-nga (78)

⁹ See page 7 for DLb form for 'body'.

¹⁰ See page 5 for DLa form for 'body'.

[24]fish	DLa nga55 pla?55 (+ Tai); T nia; K ngo; N nga; B ngà; L hnga; Chepang nga~nia. PTB *ngya (189)
[25]silver	DLa ngul55; DLb nguun55; T dngul; B ngwe; AC *ngien (48). PTB *d-ngul [15,173]
[26]borrow	DLa nga55; DLb nga53; T brnia-ba; B hngà; N nga. PTB *r-nya (190)
[27]weep,cry	DLa ngw53; DLb ngw53; T ngu-ba; B ngui; N ngü. PTB *nguw (79)
[28]cattle	DLb nung55 ngwa53 'huáng niú'; K nga; B nwà; Moshang nga; N ngwa~nga. PTB *ngwa (215)

*t- → t-
roll, span, short, hear, join, big, one, cut, drip, thick, fir/pine

[29]roll	DLa a31 tal53; DLb tan53; Angari Naga rəuu <*rəul 'roll'; N redul 'roll, wrap, enwrap'; West T (Ladakhi) thul-ba 'roll or wind up', T thul-pa 'dress made from the skins of animals (=something rolled or wound up). PTB *r-tul [110]
[30]span	DLa ti55 pu31 ta55; DLb tsı55 pu31 ta55 (ti55, tsı55 'one'); T mtho; B athwa; LCA tho; Lh ᢃ-thu. PTB *twa (165)
[31]short	DLa tui53; DLb thi53; B tui; JP ka31 tun31 (Matisoff 1974 has JP tù); MBb thumi~tumbi; GMD kw31 ti55. PTB **twiy
[32]hear	DLa tɔ55; DLb ta55; T thos-pa; JP ma31 tat31; N tha; Trung thang; Newari ta-l; Miri tat; Lepcha thyo <*s-ta; Luoba taa; MBb than; GMD tat55. PTB *ta-s (415)

The proto final for 'hear' is actually more complicated than it would seem from the given reconstruction because of the possibility of several suffixes and an *s- prefix, though I have not tried to make a formulaic reconstruction incorporating them. Whether the irregularity of the DLa final (*-a usually → DL -a) is due to the effect of a certain proto-suffix, or is due to some proto-medial, I have no way of knowing.

[33]join,tie,knot	DLa sw31 tɔɔt55; DLb sw31 tɔɔt55; T sdud-pa; MB tut; K matut~kotut; N dhatut; G stit <*stut 'tangle'. PTB *du-t ✕ *tu-t (421)
[34]big	DLa tai53; T mthe-bo 'thumb'; N the; Mikir the; B tai 'very'; Abor-Miri ta; AC *t'ái (大). PST *tay (298)
[35]one	DLa tu?55; DLb tsı55; T gtšig; B tats; N thi; MC tsıák (𠂊). PLB *C-ti-k [TSR 31] PST *tyik ✕ *tyak [84,94,169,189]
[36]cut	DLa a31 tup55; T gtub~Hthub; MB tup53; B twap. PLB *?twap ✕ *C-dwap [TSR 69] PTB **-tup ✕ **-i/dwip
[37]drip	DLa a31 tɔ?55; DLb thɔ?55; T thigs ~ Hdzags; K ka31 the?31; B tsak; Lh já?; LCA tsɔk55; MW tsh; Mpi tw?2; MT thik54 pa54 'a drop', thik54 pa54 cɔp12 'drip'.

	AC *ták /cɔk (察), *tiék/tsiák (察). PLB *Ntsak [TSR 82]; {*tik ✕ *dzik} ✕ *ndzak [Mpi 5] PTB **tsak ✕ **ty(w)ak PST **ty(w)ak
[38]thick	DLa tat55; DLb that55; T 'thas-pa 'hard,solid'; N that; K that; L tsa?.
	PTB *r-tas (426)
[39]fir,pine	DLa tang53; DLb tang31 xai53; T thang-sing; B tháng-nu; Vayu thong <*thang; Lh th᷑-c᷑; Tangykul matang thingrong. PTB *tang [69]

*d- → d-
nephew, dig, pit, full, flat, spit/vomit

[40]nephew	DLa pu31 du55; DLb bu31 du53; B tu; N phđu; L tu; Lisu -du; Gyarong temdau. Also possibly cognate with JP tu55 'fourth son'. PLB *du [STC p. 62, n. 196] PTB *tu ✕ *du (259)
[41]dig	DLa du53; K thu; B tu; Vayu du; Gyarong tu; Digaro thu; N du; LCA/LHA tu31. PTB *tu (258) ✕ **du
[42]pit,hole	DLa ang31 dung55; DLb ang31 dung55; T dong; B twāng; N dung-khr; Lisu du 'well'; LCA pun55 tɔng31, LHA tsuUng31 tung31. PTB *dwaang (169)
[43]full	DLa dam55; DLb dam53; T ltam-pa; Vayu dam; Tiddim dim; Bahing dyam. PTB *dyam ¹¹ (226)
[44]flat	DLa dam55 mui31 li53 'plain, flat ground' (mu31 li53 'earth,ground'); Bahing dyam 'to be straight'; T idem-pa 'straight, upright'; B atam 'a straight, long piece'; N adam 'plain (level ground),flat'; Tiddim tam 'to be level'. PTB *dyam (227)

Matisoff (1986) argues persuasively that the roots given for 'full' and 'flat' given above should be considered one root which represents 'full, straight, flat'.

[45]spit,vomit	DLa du?55; DLb du?55; Mikir ington; Maru tauk; Lepcha tyak. PTB *m-tuk ✕ *s-tuuk ✕ s-duuk [58,75,126,132,146]
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Benedict (1972:58) incorrectly associates Rawang du 'vomit' with PTB *m-twa ✕ *s-twa because the final glottal stop (<-k) is not marked in his source.

*n- → n-
bean, ear, brain (DLa), brain (DLb), black, deep, two, sun, day, nose, you,
younger sibling, aunt, shit, year, rest, hair(head), west, smell

[46]bean	DLa a31 nɔ?55; DLb a31 nɔ?55; B nok; JP no?31 kju55; LXA nu?31; Lh n᷑?.
	PLB *s-nok [TSR 140] PTB **nok
[47]ear	DLa a31 na53; DLb a31 na55; B nà; K na; G na-tsíl; Trung na-ba; N ñna.

¹¹ This root is possibly related to Siamese tem, Lungchow Thai tim, reconstructed by F. K. Li (1977) for Proto-Tai as *tlyem.

	PTB *g/r-na (453)
[48]brain(1)	DLa u55 nw?55 (u55 'head'); K nu~ənu; B ù-hnauk.
	PTB *nuk (483)
[49]brain(2)	DLb nung31 kw31 le?55; N əning; G tanəng ¹² ; T sning, Mikir ning 'heart,mind'.
	PTB *s-ning (367)
[50]black	DLa na?55; DLb na?55; T nag-po; B na?; N na?; Lh ná?; MW níq; LXA na51; LHA na31.
	PTB *s-nak [88,102,155]
[51]deep	DLa ru31 na?55; DLb ru31 na?55; Trung na43; Lh ná; LCA nak31. PLB *?nak ✕ *nak [TSR 157] PLB *-nak

'Black' and 'deep' are actually from the same root, and differ only in the prefix.

[52]two	DLa a31 ni55; DLb a31 ni55; T grís; K ni; Kanauri nis; B hnac; Gyarung kénés; G gani; L hni?.
[53]sun	PTB *g-ni-s (4) DLa nam53; DLb nam53 luung55; T gnam 'heaven, sky', nam 'night'; Magari nam-khan-riam-khan 'sun'; Vayu nomo <nama 'sun, sky'; Bahing nam, N nam 'sun'; Mikir arnam 'god' ('wind' in comp.); possibly also Zaiwa tsan51 nam55 'summer' (tsan51 'year'). PTB *nam [148]

The word nam53, glossed here as 'sun', actually has a broader range of meanings (sky, season, weather) when used in combination with other morphemes: nam53 bwung53 'wind', nam53 dza?55 'rain, to rain', nam53 lwm53 nam53 'Spring' (lwm 'warm'), dzwng55 nam53 'winter' (dzwng55 'cold'), nam53 dw55 'cloudy', nam53 gam53 'clear sky/weather' (gam53 'good').

[54]day	DLa ni55; DLb ni55; T ni-ma; B né; K ni; Dimasa -ni. PTB *nìy= *nay (81)
[55]nose	DLa sw31 na55; DLb sw31 na55; T sna; B hna; L hna:r; N əna; LXA na55 kang35. PTB *s-na (101)
[56]you	DLa na53; DLb na53; K nang~na; B nang; G na?a; Dhimal na; L nang; N na. PTB *nang (407) ✕ **na
[57]younger sibling	DLa a31 nw55; DLb ang31 nw55; T nu-bo; K nau; G no; L nau; Lepcha num-nu 'blood rel.'; Luoba nwro. PTB *naaw (271)
[58]aunt	DLa a31 ni53; DLb a31 ni53; T ?ane-nene-mo; K ni; L ni; G ma-ni; Miri əni; Gyarung əni; N əni. PTB *n(y)ik (316)
[59]shit	DLa ni55; DLb ni53; B niats 'dirty'; K ni~ñe 'defecate'; T snigs-ma 'impure sediment'; N ni; Dimasa dzini 'dirt'. PTB *n(y)ik (235)
[60]year	DLa ang31 ning55; DLb ang31 nwng55; T ning; Karen *hneng; Mir ning; K ning~sning; Pyu sni <*sning. PTB *s-ning (368)
[61]rest	DLa ru31 na53; DLb ru31 na53; T gnas-pa 'be, live, dwell, stay'; Bahing na-so 'take rest'; Kanauri na-si; B ná 'cease from motion, alight'; Lh ná 'perch (bird); rest'; LXA na51; LHA na31; GM Deng na55.

¹² I have altered the STC's Garo forms for 'brain', 'two', 'seven' and 'father' as per the corrections in Burling (1981).

	PTB *na (414)
[62]hair(head)	DLa u55 nai55 (head+hair); DLb u53 ne53; Gyarung mi; G khani; Boro kanáy; Dimasa khanai; N ḥni~t̪ni.
	PTB *ney (292) [G&C 51]
[63]west	DLa nam55 nuup55; T nub; K nip 'shade, cast a shadow, be overcast, dim'; N nám nip lam (nam 'sun', lam 'side'); possibly also Kanauri nup 'northwards'.
	PTB *nup ✕ *nip (400)
[64]smell(tr.)	DLa pu31 naam55, pu31 nam55 gam53 'fragrant' ('smell' + 'good'); DLb pu31 nam53; T snam-pa; K nam; B nám; Bahing nam; Vayu nam; N ph̪nam; Trung p̪nam.
	PTB *s-nam ✕ *m-nam (464)

In his discussion of the *m- prefix, Benedict (1972:117) defines it as having a "middle voice" force, often durative, intransitive or reflexive...Note that the unprefixed root may be either transitive or intransitive, whereas the *m- prefixed form is always intransitive." He goes on to give the example *m-nam 'smell, have an odor' (trans: **s-nam), and says that *m- has been replaced by ph̪- (<*b̪-) in Nung. In note 326 (p.117) he says that Trung has p̪nam (<*m-nam) for both the transitive and intransitive, and so is exceptional vis à vis the above generalization.

In the dialects I worked with, pu- has not replaced *m- in all the prefixed forms; some forms have pu, and some have mu-: mu31 kai55 'chin', mu31 si?55 'marrow', but pu31 lai53 'tongue', pu31 sin55 'liver', etc. In the case of 'smell', the pu- prefixed form is only given as the transitive form (the intransitive form is non-cognate), though the word for 'fragrant' is pu31 nam55 gam53 (gam53 'good'), which could be the result of an alternant form for intransitive 'smell'.

I also give the **s-nam reconstruction for transitive 'smell' because of the Tibetan, Lepcha, and Kanauri forms. In Kanauri both the transitive, stám-mig, and the intransitive, stam-shi-mig, have the reflex of *s-, though as Benedict points out on page 105, use of a *s- prefix ("directive, causative, or intensive") on an intransitive verb such as the Kanauri form for intransitive 'smell' (which he gives as stam <*snam) "appears only sporadically". Looking at the fuller Kanauri forms I have given, it seems that Kanauri has developed a different mechanism for expressing transitivity in some verbs: the addition of an auxiliary verb, -shi-. (Cf. skyub-mig 'to carry, to transport, to bear' ~ skyub-shi-mig 'to load, to burden'). Because of this, it is likely the original significance of the *s- prefix was lost.

Another point is that there are other verbs in Dulong that I suspect are PTB *m- verbs that are used transitively, such as mu31 graai55 'take, hold in hand', pu31 daam55 'measure', pu31 tsí53 'light (a lamp)', mu31 duuum55 'return (something)', etc., though I don't have solid reconstructions for them.

*p- → p-
grandmother, father, price/value, spindle, leech, knee

	DLa a31 pi55; T ?a-phiyi-phiyi-mo; Kanauri a-pi; G a(m)bi; L pi; Mikir phi; MBb ?api; Bahing & Vayu pi-pi; B aphè 'great grandfather', aphè-ná 'great grandmother'; Lh a-pi 'grandmother'. PTB *piy (36)
[65]grandmother	DLa a31 pai53; DLb a31 pai53, a31 ba53; GMDeng pai35; L pa; T pha~?apha~?apa; G pa~?pa; LHA a31 pha31; MBb ?apa; MW apa 'grandfather'; B bhá, abhá; K wa~wa; Kadu awa; Bunan awa; Moshang wa. PTB *pwa (24) [23]
[66]father	DLa ang31 pw53; DLb phw53; MW phala, K phu, N ḥphü 'be of value'; K džaphu, N dphü, Lh ñ-phû, B aphui~abhui 'price'. PTB *puw (41)
[67]price	DLa ang31 pw53; DLb phw53; MW phala, K phu, N ḥphü 'be of value'; K džaphu, N dphü, Lh ñ-phû, B aphui~abhui 'price'. PTB *puw (41)
[68]spindle	DLa sap55 pang53, DLb sang31 phwng53 'treadle operated rice husker' (sap55, sang31 'mortar'); T phang~phang;

Thebor phang; K kabang 'hand spindle'; B wáng 'swing around, spin'; wang-rui 'spindle' (rui 'handle').
 MBA pheng53; MBB phenga; Luoba tapong; DRD nia31 bong35.

PTB *pang=*pwang (48)

- [69]leech
 DLa mu31 pat55; DLb rie31 phrat55; T pad-pa (cf. also
 srin-bu pad-ma 'lotus insect'); B krwat <*k-r-wat;
 Lh vè?; L vang-vat; cf. Magari ləwat;
 Lepcha fot <*phat; Angami Naga reva.
 PTB *r-pat (45)

In the DLb form for 'leech' the prefix has metathesized with the initial, as in the DLa and DLb forms for 'dream': DLa mlaang55, DLb mlang55 <*r-mang (see below).

- [70]knee
 DLa bak55 pwt55; DLb paang31 pit55; T pus-mo (West T pis-mo);
 Lepcha tuk-pat; K ləphut; N phang-phit 'knee',
 ur-phut 'elbow', ra-phut 'shoulder'.
 PLB *put (7) (<Maru pat-lau <put)
 PTB *put (7)

The first syllable in each of the DL forms for 'knee', if they are cognate, are somewhat irregular, as this is the only example I have of a DLa b- ~ DLb p- correspondence. The final -k of the DLa form is probably due to assimilation, as *k has become -? in all cases where I can establish a proto TB form, and because we see the same situation in the forms for 'thorn' DLa bak55 xru55, DLb bang31 xru55; and 'crow' DLa tak55 ka55, DLb tang31 kha55.

- *b- → b-
 snake, rot, deaf/mute, thin/shallow, break/broken, give, fly

- [71]insect,snake
 DLa bw55; DLb bw53; T 'bu 'worm,insect'; B pui 'insect'
 Lepcha bù 'reptile,worm'; Bahing bu-sa; K pu~ləpu; N bö;
 Digaro təbo~təbu; Lh pû; G tsipu 'snake'.
 PTB *buw (27)

- [72]rot/rotten
 DLa bwp55; DLb bwp55; B pup; Atsi pup; Maru páp;
 Lh bù?; LCA pup55; LXA pɔp31.
 PLB *Nbup [TSR 75]
 PTB **bup

- [73]mute/deaf
 DLa du31 bang55; DLb dw31 bang55; LXA pju31 pang31;
 JP na31 phang55, MW nəkuwu (<*bang), LXA na55 pang51,
 LHA na31 pang31 Lh nā-pɔ̄ pɔ̄ (na31, nəku,
 na55, na31, nā-pɔ̄ 'ear') 'deaf'.
 PTB **d-bang

- [74]thin
 DLa ba53; DLb ba53; T ba-spu 'a little hair (spu)'; K pha;
 N ba; B pà; G ba; Lh pâ.
 PTB *ba (25)

- [75]break/broken
 DLa be?55; L pe?; LHA pii?55; JP wo?31; B pái; G be;
 Dimasa bai; Kanauri pá-shi-mig 'to break'.
 PTB *be ✕ *pe (254) (*bay ✕ *pay [G&C 74])

- [76]give
 DLa bi55; DLb zi53; T sbyin-pa (suffixed -n); Kiranti *bi; Lh pi;
 Miri bi; Dhimal pi; B pè; Mikir pi; LXA pji53; MW spu;
 Nyi Lolo ve-bi; Trung bing (with suffixed -ng).
 PTB *biy (427)

- [77]fly(v.)
 DLa ber53; DLB zer53; Bahing byer; Abor Miri ber; Trung biel;
 Luoba byar; AC *p'jan/p'jän (428).
 PTB *byer (398)

The correspondence of DLa b- with DLb z- in 'give' and 'fly' also shows up in 'pus' DLa su31 biw53, DLb dw31 zw53; and in 'wound', DLa bin55 ma55, DLb zi31 ma55; the DLb initial possibly

being the result of the influence of the palatal or high front element on the initial.

Benedict (1972:83, n. 249) has another root for 'fly' that he says is separate from the one above: N *ophr* [ɔphɔr] 'shake (as a cloth), khong-phr 'moth'; T 'phur-ba; Central T 'phir-ba; G bil; Dimasa *bir*; PTB *pur ✕ *pir; all related to Chinese *pjwər/pywai (晋), *pjwən/pjuən (晋), and *pjwən/pjuən (晋). MBa phir and MBb phen probably would also go with this root. I am not sure that this should be two roots, and if they are, whether the division of daughter forms has been done correctly. I would prefer to see this as one more inclusive root, as there isn't a tremendous difference phonetically between pir and byer. There is another TB root *pyam, from Lh pò, JP pyen and B pyam that might be the source of the MBb form and the latter two Chinese forms.

*m- → m-

to wear on head/hat, forget, blow, negative, dream, fire, tail, wound, eagle, npe, eye, sky, hair/fur, extinguish, think/remember, medicine

[78]wear on head/hat	DLa mɔ?55; DLb mɔ?55; T mok 'helmet'; Zaiwa mu?31 kjup55 'hat' (kjup55 'to wear (hat)'); B kha-mok 'hat', ɔ-mok/mok- 'crest, comb'; MBb muk'ulum 'hat'; AC *môg/mâu-, alt. reading *mak/mák 'a covering, to cover' (မား) PTB **r-mok ¹³ (မား)
[79]forget	DLb a31 mat55; G mat 'to be spent', gima-at~gimat 'destroy, waste, obliterate', gima-ani 'loss, damage'; Dimasa gama-kama 'lose, disappear, perish'; K ma 'to be exhausted, finished, spent', mat 'to be lost, to have disappeared'; Magari hma~hmat 'to be lost; lose'; possibly also MBa ngat13, MBb ngat 'to forget'. PTB *ma-t (425)
[80]blow	DLa mut55; DLb mit55; B hmut; Lepcha mät, sung-mut 'wind'; Bahing mut-hmut; Gyarung -mut; K (Assam dial.) mut; Miri mut; Maru büt; JP ka31 wut31. PTB *s-mut [75]
[81]negative	DLa mu31; DLb mu31; STC: "almost universal TB distribution" PTB *ma [97]

The normal reflex of *-a is -a, but as the vowel in the negative marker (<*ma) is unstressed, it reduces to -ɯ.

[82]dream	DLa mlaang55; DLb mlang55; T rmang-lam (lam 'road'); Miri im-mang; K mang-yup-mang; N ip-mang; Mikir mang; G dzú-mang; B ip-mak 'dream', hmang-tsa-sang 'walk in sleep'; K (Maran) ?mang; Lh (yí?)-má?; Trung mläng "from *lmäng <*r-mang by metathesis; cf. Trung a-mra 'field', Mutwang (Rawang dial.) rama, id." STC p.31. This explanation holds for the DL forms as well. PTB *r-mang (82)
[83]fire	DLa tu31 mi55; DLb tw31 ni55; T me; B mì; L mei; N thomi; Kanauri me; Gyarung timi; Bahing mi; Mikir me; Lh à-mi <s-mi; K myi-phrap 'lightning' (lit. 'fire-flash'). PTB *mey (290)

Prof. Matisoff has suggested (pers. comm.) that the PTB form for 'fire' might be reconstructed with an *s- prefix because of the Lahu, Dulong and Gyarung evidence, but as Dulong usually preserves *s- intact (except when it is a causative prefix followed by certain initials), I suspect the Dulong and

¹³ There is also Thai hmuak 'hat'.

Gyarung prefix may have a different origin. In Dulong the *tu-* prefix is relatively rare, so I was not able to trace its origin.

[84]tail	DLa mi55 tsɔ?55; DLb ang31 nuw31 tshɔ?55; Gyarung teme; Thebor me-kon; Magari me-me; Bahing me-ri; Aka ḡrim; Digaro b̥mi-ləming; K mai-nmai; B amri; L mei; G kime; Mikir arme; Aimol ramai; AC **miwər/mjwei: (翹舌音) PTB *r-may~*mey (282)
[85]wound	DLa bin55 ma55; DLb zi31 ma55; T rma; K nma-numma; G mat 'to wound'; Dimasa bumai <*bumat; Tiddim ma; TN khama; Lakher hma; Akha má; also K mat-tsamat, N romat, G gilmat, Dimasa germa 'nettle'('=the wounder'), with suffixed *-t. PTB *r-ma ✕ *r-ma-t (446)
[86]eagle	DLa tu31 mu53; DLb tu31 mu53; Mikir vo-mu; N thəmō; L mu; Miri pəmuū; Lakher pəhmo; Khami ḡhomo; Sho ḡhmū; Angami Naga re-mu~mu-vi; LCA ti31 mɔ31. PTB *muw (257)
[87]ripe	DLa min53; DLb nin53; T smin-pa; Vayu min; Bahing ming; Magari min; Lepcha myan; Miri min; B hmyan~hman; K myin; N min 'cooked; to rot'; G min-gipa; L hmin; Dimasa gimin-gumun; Mikir men. PTB *s-min (432)
[88]eye	DLa me?55; DLb ne?55; T mig; Kanauri mik; Lepcha amik; K myi; G mik; L mit; Vayu mek; Magari mik; Bahing mi-tši; Miri ḡmik; Mikir mek; Thulung, Dumi, Rai mik-si; Dhimal mi; but B myak; N me-ne<*myak; Gyarung temňak; Karen *me <*myak; Lh me?; AC *miók/miuk (翹舌音). PTB *mik ✕ myak (402); PLB s-myak PST *mya[a]k [190] ¹⁴

The initial *n-* in the DLb forms for 'fire', 'tail', 'ripe', and 'eye' is the regular reflex after a front vowel (-u is actually an apical vowel after certain initials). This type of development is also seen in Ahi, Nyi, Bahing, Aka (STC p. 29), and MW Qiang (cf. 'person' Taoping Qiang ma33, MW Qiang na). For further discussion of this, please see the section below on non-regular reflexes.

[89]sky	DLa mu?55, ru31 muw55 'cloud'; DLb mu?55, ru31 mit55 'fog'; T rmugs-pa 'dense fog; inertness', smug-po 'dark red, purple-brown'; Lepcha muk 'foggy', muk muk 'darkness, dullness'; B muik 'dark'; L muuk 'dull (color)'; K mu? (high tone) 'thunder, cloudy', lmu? (low tone) 'sky'; Rawang nu?lang 'heaven'. But DLa su31 suwui55 'fog'; T rmu-ba 'fog'; B mu(gh) 'sky, clouds, rain'; LCA, LHA mau31, LXA mau51 'heaven'. PTB *r-muw= *r-mow (488) ✕ *r-muuk (357)
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Evidence from Dulong supports the contention in STC (n.236,p.77) that *r-muuk is an archaic doublet of *r-muw= *r-mow. DLa mu?55 'sky, heaven' <*muk, while su31 suwui55 'fog' <*muw. Cf. B mu(gh) 'sky; clouds, rain' ("the -gh is a product of etymologizing" p.148; possibly an attempt to relate it to Pali/Sanskrit megha 'cloud' (Matisoff pers. comm.), though as in Matisoff (1974:183), the JP variant mu? might mean that this assumption is wrong). Two other reflexes of this word family have a final -t, DLa ru31 muw55 'clouds' and DLb ru31 mit55 'fog', possibly originally due to the influence of the vowel (cf. Lushei mit <*myak 'eye' STC p.14). The same 'sky' ✕ 'cloud' connection occurs in Be vis

¹⁴ Matisoff (pers. comm.) suggests that *s- is probably needed at the PST level because of tonal evidence from the Min dialect of Chinese.

à vis Proto Tai (Mark Hansell, pers. comm.).

- | | |
|--------------------|---|
| [90]hair,fur | DLa ang31 mul55; DLb ang31 mun53; L hmul; K mun~mun;
Mikir angmi <*angmil; B mwè <*mui<*mul; G kimil;
Moshang mul~kmul.
PTB *mul (2) |
| [91]extinguish | DLa a31 mit55; Abor-Miri mit; N səmit; K simit (Assamese
dial.); L timit; Tangkhul khaśimit; Mikir met; G kimit; Lh mè?
'shut; blink'; B hmit 'wink'.
PTB *mit (374) |
| [92]think,remember | DLa mit55; DLb nit55; Zaiwa myit31; MBb mi; JP mjit31;
LXA, LHA myit31 la35 'forget'; GMD ngit35 'know'.
PTB *m-yet ✕ *b-yet [Matisoff 1978a p. 211] ✕ **myit |

Matisoff (1978a) has *m-yet ✕ *b-yet for 'think, remember' based on Lepcha a-byet 'liver', Limbu naribet 'heart', Nung mit ~ nit 'mind, temper', and Tibetan yid 'soul, mind', but Prof. Matisoff (pers. comm.) now gives *m-yit as the proper form. It seems that this must be a case of non-obvious prefix pre-emption, as in the case of 'love' dealt with below.

- | | |
|----------------------------|--|
| [93]medicine ¹⁵ | DLa man55; DLb man55; T sman; MBa man53; MBb man; Luoba men;
PMa hmiɛ55; PMb hmi; DRD ta31 mang55.
PTB **s-man |
|----------------------------|--|

*s- → s-
three, itch, kill, comb, know, garlic, new

- | | |
|----------------|--|
| [94]three | DLa a31 sum53; DLb sum53; T gsum; G gitam; B sùm;
Digaro kasang; K masum <*b-sum; N atsum; L thum.
PTB *g-sum (409) |
| [95]itch,itchy | DLa pu31 sa?55; DLb pu31 sa?55; K məsa?; L thak <*sak;
Lakher poṭha; Ao Naga məsak; Mikir ingthak.
PTB *m-sak (465) |
| [96]kill,hit | DLa saat55; DLb sat55; T gsod-pa; K sat; B sat; G sot; L that;
Mikir that; MW tʃ; LCA,LXA sat55; LHA sa?55.
PTB *g-sat (58) |
| [97]comb | DLa swi55, DLb si53 'to comb', DLa u55 swi55, DLb u53 si53.
MW qasi 'comb' (u55, u53, qa- 'head'); K pasi 'comb',
masit 'to comb'; GMD si55 pin55, Mikir ingthi 'comb';
Ao Naga masa 'to comb'; N asi 'comb,to comb'.
PTB *m-si(y) (466) |
| [98]know | DLa sɔ55; DLb sɔ55; T səs-pa; Vayu ses; B sí; G masi;
Dimasa mathi-mithi; Bodo mithi; K sì 'news'.
PTB *syey (182) |
| [99]garlic | DLa su53 'garlic', su53 dɔŋg55 'green onion'; DLb su53
'garlic', su31 dɔŋg55 'green onion'; B krak-swan;
AC *swán/suân (紗南); Lh sū-qō 'leek',
sū-phu 'onion', sū-phu-nú 'garlic'.
PTB *swa-n [174] [G&C p.10] |
| [100]new | DLa ang31 sar55; DLb ang31 sar53; T gsar-ba; Rawang angsar,
Trung aksal 'fresh'; L thar; Thado atha; Tiddim thak.
PTB *sar [p.147,172,189] |

¹⁵ Sun Hongkai (pers. comm.) has suggested that the DL form for 'medicine' might be a loan from Tibetan. If this is so, it must be an early loan, as the Tibetan dialects closest to Dulong geographically generally have quite different forms than that for Dulong. For example, the Kang dialect, Changdu subdialect, form hme55 is typical.

*s- → / — { i u }

die, fruit, tree, liver, arise/awaken

- [101]die DL_a si53; DL_b si53; T si-ba~t'shi-ba; Kanauri si; N si; G si; K si; B se; Dimasa thi; L thi; Mikir thi; Miri si Limbu si.

PTB *siy=*say (232)

- [102]fruit DL_a ang31 si55; DL_b si53; T se-; K si~asi; B asi; L thei; Mikir the~athe; G the~bithe; N sing si; Dimasa bathai.

PTB *sey (57)

- [103]tree,wood DL_a sing55; DL_b swing55; T sing; Kanauri sing; Vayu sing; Magari sing; Bahing sing; N sing~thing; L thing.

PTB *sing (233)

- [104]liver DL_a pu31 sin55; DL_b pu31 sin53; T mtshin <mśin; B asāñ; Kanauri sin; Miri śin; N phaśin; K sin~masin; Mikir ingthin.

PTB *m-sin (234)

- [105]arise,awaken DL_a sa55 św31; JP su31; L thou; Dimasa masau; Lakher p̥theu; Ao Naga meso.

PTB *m-sow (295)

We can now confirm the reconstruction for 'awaken' in STC because of the Dulong and Jingpo evidence.

*z- → DL_b z-

- [106]leopard DL_b zw?; T gzig; B sats <*sik; N khang-zi; MBa zik13; MBb zik; MW ss; TP si55.

PTB *zik (61) [TSR 122]

*ts- → ts-

count, repay, person, clean, chop, pointed/thorn

- [107]count DL_a tsi55; T rtsi-ba; K thi; B re; AC *śrju/sju ~~tsi~~; MBa tsi53 ja13; MW sasa.

PTB *r-tsiy=(r-)tsray (76)

Benedict (1972), in footnote 95, proposes the initial cluster *tsr- to explain the Burmese forms for 'water' (see 'spittle' below) and 'count', and also to explain the Kachin th- forms for 'count' and 'mortar', but Matisoff (1978:31) feels that this is a case of "proto-form stuffing", and suggests the alternation *ts- ↔ *t- for these roots. I agree with this viewpoint (though it means the Burmese forms are possibly not cognate), and have given the proto forms of 'count', 'mortar', and 'spittle' accordingly.

- [108]repay DL_a tsap55; DL_b tsap55; T tshab-pa; B tshap; LCA tshap55; LXA tshap55; Zaiwa tshap.

PTB *tsap (63)

- [109]person DL_a a31 tsang53; DL_b a31 tshang53; Lh chɔ <PLB Tone *1 'person'; chɔ <PLB Tone *2 'friend'; GMD tsong35; LXA a31 tshang35 'other people'; LHA ṣang 'him'; PMa tsä55 'him'.

PTB **tsang

- [110]clean DL_a tsang55 ma55; DL_b tsang55 ma55; T 'tsang-ba~sang-ba 'make clear, cleanse'; B tsang 'clear, pure'; L thiang, Thado ṣeng 'clear, clean'; Meithei ṣeng-ba; Zaiwa san31 seng51; MBa tsang55 ma53; MBb tsangma; MW śutiu <*syang; GMD kui31 song35 'clear', kau55 sang35 'clear (water)'; JP san31 seng55; PMa ṣo55 ne55; PMb ṣa55 hn̥e53 m̥53.

PTB *(t)syang=*syang [37,52,53]

Though Benedict (p.37,53) says that 'clean' should now be reconstructed as *syang, I feel that based on the Dulong, Tibetan, Burmese, and Menba forms we should recognize a doublet here: *syang ✕ **tsang. Because of this, I put this root in this set.

[111]chop	DLa a31 tsep55; MBa tsap53; MBb tsap; JP 3ep31; Zaiwa tʃap31; PMa na13 tsi13; LXA tsap31; T gtsab, Lhasa T tsap53. PTB **tsap
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The form for 'chop' is possibly a doublet with DLa a31 tup55, MBa tup53 'chop (trees)' T gtub~thub 'cut to pieces, mince', B twap 'cut, chip, as precious stone' (see above; PLB *?twap ✕ *C-dwap TSR #69), but as the forms are distinct in the daughter languages, they are treated separately here.

[112]pointed	DLa a31 tsw55; DLb a31 tsu55; Kanauri tso, Lepcha džu, K džu, B tshù 'thorn', tsù 'prick; piercer, awl'; G and Dimasa su 'pierce', busi 'thorn'; Meithei and Thado sou, Lakher seu 'panji' (Kuki *sow<*tsow); Mikar su 'thorn, panji, sting'; Tangkhul kasui, MW tshap 'thorn' (-p <pa 'flower'), tsa 'pointed'; LCA tso31, LXA tsu51, LHA tso31, PMa tsu55, Zaiwa tsu31 'thorn'; poss. also MBa tse53 'pointed'. PTB *tsow (276)
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Even though no other TB language (except for MW and MBa, if those forms are cognate) has this meaning, I give the Dulong form for 'pointed' as cognate with PTB *tsow 'thorn' because of the similarity in meaning and form. There is the problem of 'fat' DL su55 from PTB *tsow and 'boil' DL a31 su53 from PTB *tsyow (see below), so this correspondence is tentative. Benedict (n.200) says that "T mtshon 'any pointed or cutting instrument; forefinger' has perhaps developed from this root." I mention this because there is a form for 'pointed' in several TB languages that seems to be related to this: LXA tshun35, LHA tshuen55, JP ma31 sen31, Zaiwa tʃhun51. Because of the differences of initials and finals between these forms and the forms for 'thorn' in these languages, it is hard to say whether or not they are allofamic.

*ts- → s-
red, earth/dirt, boil, fat

[113]red	DLa pu31 sai55; DLb pu31 sai53; L tai, ſen; Thado asén; Tiddim san, tſan; Laizo ſén/ſěn; B ta~tya; Lakher sai; MBb tsalo; GMD kau31 ſal35. PTB *t(y)a-n ✕ *t(s)ay [G&C 150]
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DRD si53 and the first syllable in MW sizi 'red' are possibly denasalized reflexes of PTB *r-ni (cf. MW si 'day' <*nøy), so are not included in the set above.

[114]earth,dirt	DLa a31 sa55; DLb a31 sa53; T sa; LHA ſe31; MBa ſa53; MBb ſa; PMa tʃa55; PMb tſa53; Zaiwa mji31 ſe31 (tense vowel); AC *ſa/ſa (z̥a) 'sand'. PTB **(t)sá
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Benedict (1972:188) has only the Tibetan and Chinese forms for 'sand' on page 188, and does not give a reconstruction except to say that the proto final should be *-a.

[115]boil	DLa a31 su53; DLb ſu53; T 'tshod-pa~'tsho-ba 'cook in boiling water,bake'; K džu 'burn, bake, roast, broil'; G ſo, Dimasa ſau 'burn'; N ſu 'boil'; B tshu 'boil, bubble'; Meithei ſau 'heat'; L ſou, Lakher ſaeu, TP tſhu33, Zaiwa tsu51, LCA ſu55, LXA tsu 35 'boil'. PTB *tsyow (275)
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- [116]fat (adj.) DLa su53 ša55 'fat meat' (ša55 'meat'); T tsho-ba;
 B tshu; Zaiwa tshu51; LCA tšho55; MW tshú.
 PTB *tsow (277)

It might seem better to put the Dulong form for 'fat' with PTB *saaw (STC #272 — based on K sau 'oil, fat, grease', L thaw 'fat, grease, to be fat', G tho, Dimasa thaw 'oil', and Bodo thaw 'oil'), because of the initial correspondence and lack of same with PTB *tsow, but I put it here on the strength of the final and the semantic correspondences. The parallel with 'boil' is further confirmation of the correctness of this choice.

- *ts(y)- → ts-
 urine, spittle, child, small, goat, stretch put

- [117]urine DLa tsi55; T gtsid-pa-gtši-ba 'urinate', gtšin 'urine';
 K dzit-tsyi-dzit-dži 'urinate', dzit 'urine'; N tsi 'urine', tsi-tsi
 'urinate'; B tshi 'urine (polite form)'; Lh ji, Dimasa si-di (di 'water')
 'urine, urinate', all from *ts(y)i. Also PLB *ziy > B sè, Lisu rzi.
 PTB *ts(y)i ✕ *ziy (77)

- [118]spittle DLa cui55; DLb tšun55; T mtšil-ma; L tšil; N thil 'spittle',
 thil thil 'to spit'; GMD džal35; MW tsasar (tsa 'water');
 Luoba tatšur, Zaiwa tji31 (tense vowel); possibly also
 LCA tšho31, LHA tšu31, JP ma31 tho55 'to spit'.
 PTB *m-ts(y)il (231) ✕ *m-thil [cf. discussion of 'count']

- [120]¹⁶child,son DLa ang31 tšal53, DLb ang31 tšan53 pe53 'son' (pe53 'male');
 Dhimal tšan 'son'; Lepcha (a-)zon 'grandchild'; K ša; Magari za;
 Tsangla za-ža; Digaro sa; B sà; G bisa; L fa; Dimasa sa-basa;
 N za-mi 'daughter'; MBb waktsa 'child', za 'son'; LCA tsɔ̃31 lo31;
 LHA tsa31 lo31; MW záj, Zaiwa tso31 'grandchild'; Lh yá 'son'
 ✕ sá 'niece/nephew' ✕ cā- 'prefix in male names'.
 PTB *tsa ✕ *za (59)

The forms for 'child' in Lepcha and Dhimal (and ostensibly Dulong) are said (STC n.86,284) to have an -n suffix. The Dulong ~ Nujiang -l ~ -n pattern usually reflects a proto *-l final (Cf. 'spittle', 'silver', etc.), so the cognacy of the Dulong forms might be questionable. This form is also used as the hypocoristic suffix, as can be seen in its use in 'small', and in the following forms: a31 tšit55 'mountain goat' ~ a31 tšit55 tšal53 'small mountain goat', lang53 ta?55 'cooking pot' ~ lang53 ta?55 tšal53 'small cooking pot'.

- [121]small(1) DLa tsi55 tšal53 (tšal53 'son'); West T zi, K zi, B sè;
 Lh i <*yi<*zi; MW bartsi 'fine'.
 PLB *?ziy <*a-ziy [STC p.27, n.87 by JAM]
 PTB *ziy (60) ✕ **tsiy

For 'small; fine' I suggest the alternation *ts- ✕ *z-, as in the form for 'child', to account for the Dulong and Qiang forms.

- [122](mt.)goat DLa a31 tšit55; DLb tshit55; B tshit; Lh achè?; Lisu atši?;
 Nyi tshi; Lolopho atšö?; MW tsha; PMa tshu55;
 Deng kw31 tši53; Trung a-tšit.
 PLB *tsit [88] ✕ *V-cit [TSR 27]
 PTB **tsit

- [123]stretch out DLa tšan53; DLb tšan53; B tsan (adj.) <*dzan3, tshan (v.)
 <?dzan3; Lh che <*san3, qhe (more intense than che);
 possibly also LXA tsat55.

¹⁶ [119] has been skipped.

PLB *ʔ-dzan3 ✕ *tsan3 [G&C 11]

The root for 'mountain goat' in the STC and the root for 'stretch out' in Matisoff (1985) were set up for Lolo-Burmesed only (the Trung form listed above is from Matisoff (1972a) (TSR)). With the other TB evidence presented here we can set up these roots for TB as a whole.

*dz- → dz/z-
clf. for trees, food

[124]clf. for trees DL_A ti55 dzung55; DL_B ts'i55 zuung55 (ti55, ts'i55 'one');
Mpi tw6; Lh cè; LCA tseng55.

PLB *dzing1 [Mpi 37]

PTB **dzing¹⁷

[125]food DL_A ang31 dza55; DL_B ang31 za55; T za-ba~bza-ba; B atsà;
Bahing džá, Nagari džýa, K šá, Lh cã, G tšá 'eat';
PTB *dza (66) ✕ *dža [Mpi 47]

In Matisoff (1978) the PLB form for 'eat' is given as *ja (=dža), and in a footnote it is explained that this should be the correct form for PTB, or at least the alternation *dz ✕ j should be posited because of the mixed evidence. I have opted for the latter because of the Dulong evidence.

*sy- → s-
iron, meat, east

[126]iron DL_A šam53; DL_B šam53; Gyarung šom; N šam; Trung šyam;
B sam; LCA šam55; LXA sam55; LHA.sang55; TP si55;
Zaiwa ſam51 to?55 (to?55 poss. rel. to T tsaks).

PTB *syam (228)

[127]meat,flesh DL_A ša55; DL_B ša53; Tšá; Kanauri šá; Magari mi-sia;
Bahing sye; Sangpang sya; K šán; N šá; B sà-asà;
L šá; MBa ša53; MBB šá; LCA sua31; LXA sa55; LHA ſa31;
possibly also GMD ſin53 (cf. K šán).

PTB *sya (181)

[128]east DL_A šar55; DL_B ſe31 ſe?55; T šar; Kanauri sar-si 'rise'
(reflexive form); N nam sarr kha; PMa ſe55; PMb ſo53.
PTB *syar [28]

*l- → l-

easy, buffalo, god, neck, grandchild, armpit, tongue, leaf, lick, cover/bury, stone,
cotton, flea, round, warm, heavy, moon, maggot, fathom, plain

[129]easy DL_A la55; DL_B la55; GMD pu31 la55; MBa lelamu;
MT le?13 la53 po53; T las ſla po; Loloish *šá.
PTB *lway (302)
PTB **s-la or possibly **s-l(w)a-y

In proposing the proto form *s-la for 'easy', it is not my intention to replace the form established in the STC (which is based on Bunau lo-i, K loi-lwe, and B lwai), and can in fact support it with Zaiwa lui51. These two separate forms may be ultimately related as an *a- ✕ *ay doublet, but the medial *-w- is still a problem, so for now I list them as separate roots. The *s-l- > Loloish *ſ- given for this root is paralleled by Lahu ſú '3rd person pronoun' a-ſú 'who' <*s-lu (cf. Burmese lu 'person') (J.A.Matisoff pers.comm).

¹⁷ As pointed out by Mark Hansell (pers. comm.), this root may ultimately be related to PTB *sing 'tree,wood'.

| | |
|-----------------|--|
| [130]buffalo | DLa ngw31 lɔ̃i53; DLb ngw31 lɔ̃i53; K ngaloi; B kywai <klwai; L loi; Siyin loi.
PTB *Iwaay (208) |
| [131]god | DLa nam55 la55 (nam53 'sun; heavenly affairs' with tone assimilation); DLb la55; T hla; PLB *s-la 'soul'; K min-la-num-la 'ghost,spirit'; N phəla <*b-la 'demon, soul'; L thla <*khla 'spirit'; Tangkhul mang-la.
PTB *(m)-hla (>*sla 'in all but Tibetan' STC p.132) (475) |
| [132]neck | DLa ling55 gwi53; DLb lang55 gi53; Lepcha tuk-ling-tung-ling; Miri alting; N ling; B lañ <*ling; L ring; T 'dzing-pa-mdzing-pa <*a-lying-*m-lying (STC n.106); MC ljang (戛) 'neck, collar'.
PTB *ling (96) |
| [133]grandchild | DLa pu31 li55; DLb pu31 li55; N phəli; B mrè (mliy in inscriptions); G (ang-)ri <*li; Lolo li; K mali, Mikir phili-po, Chang (Konyak) li 'nephew'.
PTB *b-liy (448) |
| [134]armpit | DLa ra55 li55; N ra-kyi tsip <*ra-kli (ra 'shoulder'); B lak-kali (lak 'arm'); Lakher ba-kali; Lh pē-li-kā.
PTB *g-li (265) (possibly an old AT loan - STC n. 199) |
| [135]tongue | DLa pu31 lai53; DLb pu31 lai53; T ltse <*s-le; Kanauri le; Lepcha ali; Vayu li; Limbu le-sot; N phəle; K lai; G sre; Dimasa salai; L lei; Mikir de.
PTB *s-lay (281) |
| [136]leaf | DLa sing55 lap55 (sing55 'tree'); DLb ūng55 pu31 laap55; West T lob-ma; Kanauri lab; Takpa blap; K lap; N sālap 'leaves for packing food'.
PTB *lap (321) |
| [137]lick | DLa laa?55; DLb laa?55; Lepcha lyak 'taste, try'; B lyak; G srak; N la~le; Miri yak; L liak; Mikir inglek; Tangkhul khəmalek.
PTB *m-lyak ✕ *s-lyak (211) |
| [138]bury | DLa lup55, possibly also DLa, DLb klup55 'to cheat, deceive'; T klub-pa 'cover'; K grup 'wrap, cover'; Boro dzokhlop; Dimasa phunkhlub 'wrap around', sukhlub 'drown, immerse'; JP lup31 'bury'. Also Old Mon *grop 'to cover, obscure, conceal'.
PTB *klup (479) ✕ **k-lup |

Benedict (STC p.80) suggests that Lepcha lap 'bury' possibly goes with PTB *lip 'sink; dive', but it seems from the Dulong and Jingpo evidence that *klup 'cover,wrap' is an even greater possibility. The Kachin form that Benedict gives glossed as 'wrap, cover' is glossed as 'to circle around' in Xu et al. (1983). There seems to be a semantic field including 'wrap, cover, cheat, circle around' with several related forms¹⁸. To those given above add the forms for 'bury' given in STC #376: T byib-pa 'cover, wrap up; hide, conceal'; Bodo phop-fop 'bury'; Dimasa bib-bub 'conceal oneself, hide', phip-phup 'bury'; Mikir pip 'bury'. Also consider Zaiwa njup55 'bury', lom55 'surround', lom53 (tense vowel) 'hide oneself'; LCA hmzop55, LXA mɔp55 'bury'; MBb lom 'wrap up'; Kanauri lub-mig ~ lum-mig 'to cover, conceal'. The Kanauri forms show the relationship between the -p/b and -m forms. The *lip 'sink; dive' forms (STC #375) might also fit in here, especially as some of the forms show an -i- ~ -u-alternation, as in Dimasa lip-lup 'dive', glib-gulub 'drown'. These last two forms might be the key to the lack of a reflex for the *k of the proposed *kl- cluster. Also consider LCA nɔp55, LXA lɔʔ31, Zaiwa nop31 'sink' for the connection between 'west' (set #63) and 'sink'. The formulaic summary of the forms in this semantic field would look something like *g-pl(y) { i u } p.

¹⁸ Thanks to Mark Hansell for reminding me that the same semantic link between 'to cover' and 'to cheat' also exists in Taiwanese Mandarin gai (盖) 'cover' when used in 'Wo bu gai ni!' ('I'm not fooling/lying to you!').

| | |
|-------------|---|
| [139]stone | DLa luung55; DLb luung55; Bahing lung; Lepcha lang~lung;
Miri üling; K lung~nlung; B kyauk <*k-lauk; G rong;
Dimasa long; L lung; Mikir arlong; MW RRlu <*C-lung.
PTB *r-lung (88) |
| [140]cotton | DLa sa55 la53; Mikir phelo; Lakher pala; N. Khami phalo;
S. Khami məħla; L la; Lh ŋa-lā.
PTB *b-la [111] |
| [141]flea | DLa su31 li53; DLb su31 li53; T ldzi-ba~'dži-ba <*sli;
Miri i-po; N sali; K khəlbwi-khəlai <*khwəli (by
metathesis); B khwè-klè; L ui-hli; Mikir tsikli.
PTB *s-liy (440) |
| [142]round | DLa ang31 kw31 lwm55; DLb dw31 lwm55; T zlum-pa; K lum;
B lùm; L hlum 'ball'; LCA lum31, but Zaiwa ling55.
PTB *s-lum=*zlum (n.136) (143) |

Benedict (1972:42, n. 136) changes his original reconstruction for 'round' to a proto consonant cluster initial to explain L hl- and B l-, as "(TB *sl- should yield B *hl-)". Based on the Dulong evidence, it seems this should not be a cluster, and B l- developed from a plain initial.

| | |
|--------------------|--|
| [143]warm | DLa lwm53; DLb lwm53; K lum; N lim; B lum;
Dimasa lim-lum 'hot, have fever'; Bodo lum-dong 'fever';
MW štšala; LCA lum55; Luoba agulumlum 'warm (water)'.
PTB *lum (381) |
| [144]heavy | DLa a31 li53; DLb a31 li53; T ltši-ba~ldži-ba <*s-li; K li;
Kanauri li-k; Vayu li-s; Lepcha li-(m); N əli; B lè;
G džrim; Dimasa risi; L nt; Bodo illit-gillit; LCA 1131.
PTB *s-liy (95) |
| [145]moon | DLa su31 la55; DLb su31 la55; T zla-ba; Bahing la; B lá;
Vayu tšolo <*tšala; Digaro hala-hlo; N səla; K šəta;
Kadu sada; Mikir tšklo; Magari gya(-hot); L thla <*khla.
PTB *s-la ✕ *g-la=*=s-gla (STC n.137) (144) |
| [146]maggot | DLb tshi31 lɔŋ53; L lung; B lok; Maru lòk; Zaiwa luʔ31;
PMb lò53 <*long; LCA nuʔ55, LHA lu31; possibly also
MW bulu 'insect' <*lu/ong, qħəbulu 'maggot'.
PLB *k-lung ✕ *k-luk [TSR 186]
PTB **lo/ung ✕ **lo/uk |
| [147]fathom | DLa ti55 lam53; DLb tsi55 lam53; K blam; B alam; L hlam;
Tiddim laam; LCA lam55; Zaiwa lám51.
PTB *la[al]m [71] |
| [148]plain (earth) | DLa dam55 mw31 li53 (dam55 'flat'); DLb mw31 li53 dang53;
Mikir mili-meli 'sand-bank,bare ground'; N dialect moli
'country;mountain'; Manyak (Hsi-fan group) məli~mli; B mre;
Tavoyan dial. mle; Phön (Samong dial.) təmli-təmyi 'earth';
MC ¹⁹ **mli (9).
PTB *mliy (152); PST **mliy |

The form for 'plain (flat ground)' in Dulong is curious because the form for 'earth, dry field' is a31 mra55, similar to the Burmese form mre given for 'earth'. Even so, I feel the mw31 li53 form is the correct cognate, as I have no cases of *l- > r- shift and no cases of *-iy > -a. The other part of the phrase for 'plain', dam55 'flat' <*dyam (STC #227), is also clearly cognate, so the phrase is transparent. I treat this form as a prefix plus initial, rather than a cluster because of the Dulong form, as Dulong makes a distinction between these two types of combination.

¹⁹ The reconstruction of the MC form is based on Sagart (1985).

***r-** → **r-**

we/us, fear, string, ant, bone, otter, dawn/morning, weave, fireplace, pine,
stand, saw

| | |
|---------------------|---|
| [149]we (inclusive) | DLa rang55; DLb rung55; T rang 'self', nga rang tsho 'we (inclusive)'; MBa rang13; possibly DRD nion35 xang31 and B s-rang 'nearness, presence', s-hrang 'owner, master, lord'.
PTB **rang |
| [150]fear | DLa pu31 re?55; DLb pu31 re?55; T bred-pa (with suffixed -d); Digaro re; Aka rie; N phare 'to fear, be afraid', Mikir phere 'fear, doubt, dread'; DRD rai55 'to be afraid, ma31 xrai53 'to frighten'.
PTB *b-ray (450) |
| [151]string,thread | DLa tsw31 ri55; DLb tsu31 ri53; Magari ri 'cane', K ri 'rattan,cane,cord,string,thread', ginni 'fine thread'; N thari 'cane', sari 'thread', ban-ri 'rope, string'; G re, Dimasa rai 'rattan, cane'; MW suz; TP sia33 li55;
PTB *rey (478) |
| [152]ant | DLa sw31 rɔ?55; DLb bang31 sw31 rɔ?55; T grog-ma; N sərɔ; Gyarung korok; Lohorong and Lambichong (Kiranti) khorok; Miri turuk; Dafla torub; B parwak; Lh pú-ğɔ̄i.
PTB *rwak (199) |
| [153]bone | DLa ang31 ru55; DLb ang31 ru53; T rus-pa; K nrut; L ru?; Zaiwa ŋo31 vui31; LCA a31 zau31; LXA a31 žau31; LHA a31 žau35; MBa rɔɔ13 pha53; DRD ru31 bong35; B rūi; Lh -ğɔ̄ <*rwu2; MW rapaṣ (pats 'round').
PTB *rus (6) |
| [154]otter | DLa sw31 ram53; DLb sw31 ram53; T sram; Miri si-ram; Lepcha saryom <*sasram; L sa-hram; N səram; K səram; PLB *sram (based on Maru Xren, Phunoi sam); G matram; Dimasa matham; Mikir serim; Zaiwa xam51; LCA sam55; LXA žam35; MW ydzi (zi <*ram); MBa tṣam53; MBb sam; Luoba səram; GMD ram35.
PTB *s-ram (438)=*srām [107.n.302] |
| [155]morning | DLa sw31 raang55; DLb sw31 reeng55; Mikir prang 'dawn'; G phring, Dimasa phorong 'morning'; Trung srang; Lh sɔ̄-pɔ̄ 'tomorrow' (sɔ̄ 'morning').
PTB *prang (332)=*b-rung ✕ *s-rang [72.n.224] |
| [156]weave | DLA raa?55; DLb raa?55; B rak; LCA zua?31; LXA ža?31; LHA ža31; Zaiwa vo?31 (<*rak); Tangkhul Naga khər.k; T 'thag-pa; Magari dak; K da?; G dak; L ta?; Mikir thak; Maru yɔ?; Lh yà?.
PLB *rak ✕ *tak/*dak ✕ *k-rak [TSR 192]
PTB *tak (17)=*trak <AT loan [19.n.68]; *d-rak [TSR 192] |
| [157]fireplace | DLA muw31 rap55; DLb muw31 rap55; K rap; N mərap; L rap; Mikir rap; B mi-rap-paung 'wooden fireplace'.
PTB *rap (84)=*trap/drap <AT loan [19.n.69] |
| [158]pine,fir | DLa sw31 ru55 sing55; DLb sw31 ru55 sung55 (sing55) |

Benedict (STC n.69) suggests that the root *rap 'fireplace shelf' is related to STC #18 *tap 'fireplace', both from an original AT loan *trap/drap. The lack of clear semantic distinction could support this claim, but there is no evidence to support a proto initial cluster. Perhaps *rap ✕ *tap is a clearer way to express this relationship, as was done in the treatment of 'weave' in TSR 192, which Benedict (STC n.68) would like to trace back to a single AT loan *trak.

'tree'); K mərau; N sərū thing; B thàng-rù;
 Luoba taru; possibly also MW RRdzusi, GMD rung53 sang35.
 PTB *row (320)

- [159]stand DLA pu31 rep55; Lepcha hryam <*hryap 'stand on tip of toe';
 Kiranti: rap (Bahing), rep~reb (Khaling et al.), yeb
 (Balali et al.) and rip (Sangpang); Vayu yep-ip; N rip;
 B rap; Old Meithei tsarep; Dhimal szap; K tsap;
 Moshang tsap; Mikir ardžap; Empeo sap; Zaiwa yap31;
 TP zi55; LCA zap55; LXA liap31, Luoba rop.
 PTB *g-ryap (246)

I would like to propose a very tentative new reconstruction: **rey ✕ **ley 'saw; plane'. Unfortunately, as except for the copula (DLa and DLb e53 <*way) the few examples I have of a DLa -e ~ DLb -e correspondence are all either obvious loans or highly probable loans (e.g.: dži55 Fe55, DLb ŋi31 gre55 'book', DLa and DLb ma55 dže53 'sugar cane') it would seem that the DL forms here are loans, too, either from Tibetan sog le or possibly even Thai lyaj. The first syllable, sog, is possibly from T sog-ma 'blade or stalk of straw'.

- [160]saw(n.) DLA sɔ55 re55, bu55 le55 'plane(wood)';
 DLb sɔ55 re55 'saw(n.)', bɔp55 le55 'plane(wood)';
 MBA sɔɔ55 li53 'saw(n.)', pe13 len55 'plane(wood)';
 MBb soli 'saw(n.)', buli 'plane(wood)';
 Luoba sɔlu 'saw(n.)', bulen 'plane(wood)';
 DENG so55li55, PMb so55 yi55, Tangkul horay, T sog le,
 LCA lik31 la31, Lh li-la, TP kie33 zi55 'saw(n.)';
 WB hli 'cut with a sliding motion'; JP ma31 li33 'scrape, shave'.
 PTB **rey ✕ **ley

*p/bw- → w-
 flower, axe, pig, uncle

- [161]flower DLA ſing55 wat55 'flower', ſing55 wat55 wat55 'bloom';
 DLb ſung55 wat55 wat55 'bloom'; Gyarung tapat;
 PLB *wat; Nungish ſing-wat 'bud' (Rawang), flower (Trung).
 PTB *bwat [24]

- [162]axe DLA war53; DLb war53; Gyarung ſarpye <*-r-pa; G rua;
 K nwa-ningwa; Dimasa roa; Chang Naga (Konyak group)
 wo <*wa.
 PTB *r-wa (441)=*r-pwa [24]

It seems the final in DL 'axe' is irregular, but this could be another example of prefix metathesis, as in DLa mlaang <r-mang 'dream'. As there is no wr- cluster, the r- goes to syllable-final position.

- [163]pig DLA waʔ55; DLb waʔ55; T phag; Mikir phak; K waʔ; B wak;
 G wak; L vok; Zaiwa vaʔ31; MW pi <*pak; LCA oʔ55 <*-ak;
 LXA waʔ31; LHA wa31; MBA phaʔ53; MBb phakpa.
 PLB *wak [TSR 168]
 PTB *pwak [23-24]

- [164]uncle DLA a31 wang53; DLb a31 wang53; T ?a-bang-bang-po 'father's
 or mother's sister's husband'; Chepang pang; N awang; Limbu
 am-pang-a; Vayu pong-pong <*pang; Lashi vang-mo 'father's
 older sister's husband, husband's father; Lisu a-wɔ <*-wang; G a-wang.
 PTB *pwang [23]

*y- → 0/y-

- [165]sleep DL_a ip55; DL_b yump55; T yib-pa 'hide one's self'; K ip~yip 'cover, conceal (information)', ?yup 'sleep'; N ip; B ip; Ao Naga yip; Tsangla ip~yip; Bunan ib; Bahing ip; Miri yup (Abor ip); Zaiwa yup55; MB_b yip; Luoba yup.
PTB *ip=*yip (114)

Consonant clusters²⁰

Though the data on consonant clusters is not abundant, some general patterns can be seen: A proto stop can be reflected by a fricative in Dulong when it is followed by /t/, though there are several examples of *kr- or *dr- being reflected in a k(h)r- cluster in Dulong; a proto velar stop initial, if followed by a /y/, is reflected as a voiceless alveo-palatal affricate in some cases, especially where the glide has not influenced the main vowel. Aside from this, a few types of clusters are discussed in the section on non-regular reflexes.

Following is a list of examples:

- *kr- ~ *gr- ~ *dr- → xr-
gall bladder, horn, foot, cut open, scrape/shave, meet

- [166]gall bladder DL_b tsi31 xri55; DL_b tshi31 khri53; T mkhris-pa <*mkhrids 'bile'; N sahi <*sakhri 'gall-bladder'; B sān-khre 'gall' (sān 'liver'); Dimasa bikhlū <*bikhilit; G kha-khit 'bile' (kha 'bitter'='liver'); Lepcha kri 'bitter'; K khni 'acid, sour'; Moshang ahi <*akhri 'acid'; Dimasa khiri 'sour'; Lh ᢃ-kᢃ PTB *kriy (412-413)

Benedict (p.98) separates *(m-)kri-t 'gall' from *kri(y) 'acid, sour, bitter', and has Nung sahi 'gall-bladder' under the former. The distinction seems to be artificial, so I have included the reflexes of both sets (#412,413) under the Dulong forms for 'gall-bladder'.

- [167]horn DL_a tsi31 xu55; DL_b ang31 tu31 xu55; B khtui-khyui; Lisu tshu; Ahi tshö; Nyi hka; N (Melam dial.) tukru; Lh ᢃ-khᢃ.
PTB *knuw (37)
- [168]foot DL_a xrai55; DL_b xre55; T khri 'seat, chair, frame'; N hi; B khre; Lisu tshi; Ahi khi; Nyi tsha; Lh kh.
PTB *kriy (38)
- [169]cut,chop DL_a a31 xraat55; DL_b a31 xrat55; B phrat 'cut in two', hrā 'wound by a slight cut'; G ra ~ rat; Dimasa ra; T dra-ba 'cut, clip, lop, dress, prune'; Lepcha hrā; Lh phēʔ 'cut open'; JP kran33; MB_b tsat; MW xtsi; N rat; PM nə13 tshi55.
PLB *?-brat ✕ *C-prat
PTB *ra (458) **d-ra-t

I have put STC (#458) *ra 'cut' and G&C (#27) *?-brat ✕ *C-prat 'cut open' together in one set because they seem to me to be one and the same root (cf. Garo). The Dulong initial possibly first became kr-, as in 'six' and 'sew' (see below), then went to xr-. The difference between this reflex and those for 'six' and 'sew' might be the difference between a proto cluster and a proto prefix + initial. For this reason I have included this root with these other cluster forms. If this criterion is valid, then STC *krang (#322) 'mosquito' might also be considered a prefix plus initial because of DL ku31 rang53 'firefly' and possibly Geman Deng ko55 run55 'mosquito' (see below).

²⁰ Please see Sun (1984) for a very detailed treatment of consonant clusters in Tibeto-Burman.

[170]scrape, shave

DLa *xrɔt55*; DLb *xrɔʔ55*; B *khrac* 'mark with the nails, scrape'; Jg *khrèt* 'rasp, grate'; Nasu *tshi32*; Lh *gɛ?* 'rasp, scrape'; Aka *jeh HS* 'scrape, rake, shave away' (the last two from pre-nasalized proto forms); Kanauri *krá-chok-shi-mig* 'to shave'.
 PLB *(N)kret [TSR 97]
 PTB **kr(w)et

There is another PLB form, TSR #96 *(N)krak 'scratch,rake', reflected by B *khrak*, Maru *kyak*, Aka *ka HS*, Lh *gá?*, that could be related to the Nujiang form (as DL -? <*-k, though the final should be *-wak to give DLb -ɔ?). There is also Zaiwa *vuʔ31* <**rok* 'shave' that might fit here.

Though I think the rule mentioned above that makes a distinction between the reflexes of clusters and those of prefix plus initial is valid, because of the Menba form I had no choice but to posit a *k-prefix in reconstructing the root for 'meet':

[171]meet

DLb *tu31 xrwm53*; JP *khrum55*; B *krum~krim* 'meet with, find'; MBb *num*.
 PTB **k-rum ✕ **k-rim

*gr/l- ~ *kr/l- → kr/l- ~ gr/l-
 firefly, village, fear, bark, boil

[172]firefly

DLa *kui31 rang53*; DLb *ku31 rang53*; K *dzyi-grong* (*dzyi* 'winged insect'); B *khrang*; Mikir *tim-krang* (*tim* 'gnat, midge') 'mosquito'; Rawang *mägang* <**m-grang* 'mosquito'; Trung *krang* 'firefly'; Zaiwa *kyang51* 'mosquito'; possibly also GMD *klaung* 'insect' or *ko55 run55* 'mosquito'.
 PTB *krang (322)

Based on the supposition that Dulong makes a distinction between clusters and prefix-plus-initial combinations, this root should probably be reconstructed as **k-rang. Probably also related to this is the root reconstructed in the STC as *yang=*(s-)brang 'fly,bee' (492), based on T *sbrang* 'fly, bee', West Tibetan *bu-yang* 'bumble bee', Kanauri *yang* 'fly, bee', B *yang* 'fly, insect', and Lepcha *sumbryong* 'fly'. Other examples of *r ✕ *y alternation are PTB *śrak* ✕ *g-yak 'ashamed', PTB *yaap ✕ *k-rap 'fan, winnow' (set 194 below) and PTB *mra ✕ *mya 'many, much'.

[173]village

DLa *krdɔŋ55*; DLb *khrdɔŋ53*; Tankhul Naga *khu*; L *khüa*; B *rwa*; T *grong*; Bisu (Loloish) *khéng-ba*; MW *gzu* <**grang*; PMb *tsā35 ba35*.
 PTB *grwa-ng [Matisoff 1972b, set 28]

[174]fear,frighten

DLa *a31 kraʔ55*; T *skrag-pa* 'to be terrified, afraid'; B *krauk* 'to fear' <**grok*; Lh *kɔ?*; Zaiwa *kjuʔ31*.
 PTB *grák ✕ *krák (473)

[175]scream,bark

DLa *gru53*, DLb *gru53* 'bark', DLa *gui53*, DLb *guʔ55* 'crow (rooster)', DLa *gui?*, DLb *grung55* 'speak;talk'; K *goi* 'crow, as a cock; squeak, as some kinds of snakes; laugh loudly', *magroi* 'howl, scream', JP *kɔut31* (=grut) 'call (of a panther)', *kɔong55-khong55* 'call (of a barking deer)'; B *krwè-kywè* 'call out, halloo, shout; screech and scream in large numbers, as birds', *kro* 'shout, call out'; Kanauri *gre-nan-mig* 'to roar', *grán-mig* 'to neigh', *ku-chi-mig* 'to call out, exclaim'; LCA *kzai55*, LHA *kai55* 'speak, talk', LCA *kzɔ55*, LXA *ku31*, LHA *ku55* 'to yell, call out'.
 PTB *groy (310)

The reconstructed form for 'scream, bark' in STC is based on the Kachin and the first two Burmese forms. Both of these languages have two forms, one with medial -r-, one without. I have added three JP forms and one Burmese form, all within a single semantic field, varying only slightly in phonological form. When the three types of Dulong reflex (I'm assuming that *gu?* and *guung* simply reflect a *k~*ng alternation) and the Kanauri forms are added to this set, it seems there is one large related set. The *u ~ *oy final alternation is a problem, though this alternation exists in three of the languages given here, and Dulong *guuui* (with a long vowel) is actually one of the inflected forms of *grung* 'speak' used in emphatic and mutual action patterns (cf. Dai 1986). The best I can do for now is to assume there are two roots: **g(r)u-n^g and **g(r)o^y.

- [176]cook,boil DL_a du31 gluu?55; B kyak 'to be cooked', khyak 'cook';
 K khya 'prepare glutinous rice'; Lh cá 'to boil';
 Mikir arklak ~ arklok 'boil over'; L tlak 'boil or
 cook without salt'; MBa kó?53 'boil'.
 PTB *klak ~ *glak (124)

*dr- → k(h)r-
 six, sew

- [177]six DL_a kru?55; DL_b khru?55; T drug; Kanauri tǔg; G dok;
 Lepcha tarak; Digaro thərɔ; Mikir therok; MBa kro?53;
 Zaiwa khju?55; JP kru?55; LCA xzo?55; Trung khlu;
 B khrauk; Poeron körük; K kru; Lh khɔ?5.
 PTB *d-ruk (411) ~ *d-k-rok (Matisoff pers. comm.)
[178]sew DL_a kruwp55; DL_b khruwp55; T 'drub-pa; Lepcha hráp;
 Gyarung tup; Magari rup; B khyup; Trung krap; Lh tɔ:
 LCA xzop55; LXA tshɔ:p55; Zaiwa khjup55.
 PTB *d-rup (456)=*drup [n.320]

This *d- → k- change is seen also in the Poeron, Kachin, Menba, Zaiwa, and Burmese forms for 'six', and the Burmese and Zaiwa forms for 'sew'.

*br- → br-
 name, smallpox, write

- [179]name DL_a ang31 brung53; DL_b ang31 brung55; Lepcha sbrang;
 Trung ang-prang; N bing <*bring.
 PTB *s-brang ~ *bring [31]

STC footnote 99 mentions that Prof. Matisoff suggests a connection with PTB *brang 'to give birth' (#135); T 'brang-ba 'bear, give birth', L piang 'to be born'. I don't know why Benedict says N bing <*bring.

- [180]smallpox DL_a brum55; DL_b brumi31 khar55; T Ita 'brum'; MW bur;
 PMa bzɔ13.
 PTB **brum
[181]write DL_a bn53; DL_b bri53; T 'bri-ba 'draw, write', ris 'figure,
 form, design'; K mari? 'to mark, line, rule'; N raga drit 'boundry'
 (rāga 'country'); B rē 'write, paint, delineate; G a-ri, Dimasa ha-ri
 'boundary' (a~-ha- 'earth'); L ri 'boundary', riin 'draw a line,
 scratch'; MBa pri13; MBb brú; Luoba pii.
 PTB *riy (429) ~ **b-riy (with possible suffixes -t, -k, -n)

*ky- ~ *gy- → (t)ś-
house, eight, hundred, jump

| | |
|--------------|--|
| [182]house | DLa śwm53; DLb tśum53; T khyim; Bahing khyim-khim;
Vayu kim~kem; Lepcha khyum; Miri śkum; Mru kim;
Mikir hem <*khem; N kyim~śim~tśum; B im; Lahu yɛ;
Trung tśiam; MW tśi; TP tsi33; Zaiwa jum51.
PTB *kyim ~ *kyum (53) [n.82] |
| [183]eight | DLa śat55; DLb śat55; T brgyad; Kanauri rae; Bahing ya;
Thulung yet; K mətsat; N aśat; B hrats; G tśhet; L riat;
Dimasa dzai <*dżat; MW khar; Zaiwa jit55; LCA śet55.
PTB *b-r-gyat (163) |
| [184]hundred | DLa tū55 śa55; DLb tsi55 śa55; T brgya; K latsa; N ya; B ara;
G ritśa; Dimasa radža; L za <yā; MW khir; Zaiwa ūo51.
PTB *r-gya (164) |
| [185]jump | DLa a31 tśat55; DLb tśhat55; Aka [PL] ceh ^h , [ILH] tjéq; Lisu
hchye2; Sani ce44; Bodo khat; G kat; Mikir kát; JP ka31 kat31.
PTB *k(y)at 'sudden lateral action' [G&C 39; TSR 18] |

FINALS

As in the case of the initials, Dulong is relatively conservative phonologically vis à vis the finals, in that it preserves many of the consonantal endings. Final *-p and *-t, and all of the nasal finals, are unchanged, but final *-k is preserved only as a glottal stop, as in Jingpo. Final *-l had different reflexes in the two dialects. In DLa the *-l was preserved, but in DLb it became a final /-n/, also as is the case in Jingpo. Final *-s is a bit more complex. It seems there are two reflexes, -o and -t, as in the pairs listed below:

*-s → -o
bone, two

| | |
|-----------|--|
| [153]bone | DLa ang31 ru55; DLb ang31 ru53; PTB *rus (6) |
| [52]two | DLa a31 ni55; DLb a31 ūi55; PTB *g-ni-s (4) |

*-s → -t
thick, seven

| | |
|------------|---|
| [38]thick | DLa tat55; DLb that55; PTB *r-tas (426) |
| [186]seven | DLa su31 nit55; DLb su31 nít55; K sənit; G səni;
Gyarung kēsn̄s; Kanauri stis. |
| | PTB *s-nis (5) |

This is similar to Jingpo, except that Jingpo 'bone' /nṛut/ has final -t where Dulong has an open syllable. Even if we discount 'two' as an *-s final root by saying that the *-s was an old suffix, as is suggested in note 61 of the STC, there is still the unexplainable final of 'bone'.

Another interesting, though not entirely regular development is the effect of proto-medials on Dulong vowels in closed-syllable finals. For some roots with palatal medials, the glide had the effect of fronting the main vowel, as can be seen in the examples below:

*-yap → -ep
snot, stand

| | |
|-----------|--|
| [187]snot | DLa nep; DLb n̄ep; T snabs; B hnap; L hnap; Zaiwa nap55;
LCA hn̄ap55; LXA nap55; LHA hn̄ak55; PMa hn̄a13.
PTB *s-nap (102); **s-nyap ²¹ |
|-----------|--|

| | |
|--------------------------------------|--|
| [159]stand | DLa pu31 rep55; PTB *g-ryap (246) |
| *-yat → -et
joke/laugh, star/moon | |
| [188]joke,laugh | DLb yet55; T g  -ba 'to sport, joke, play', b  ad-pa~g  ad-pa 'laugh, smile'; Thebor rot; Bunan sred; Magari ret; N it; Bahing rit-ris; Digaro m  ra; B rai 'laugh'.
PTB *rya-t (202) |
| [189]star(-moon) | DLa gur55 met55; DLb gu31 nyet55; Angami Naga th  mva; Lh m  ?(k  ); MBb karmi; AC *sngyw  t (A) 'moon'.
PLB *mwat [G&C 35]
PTB and PST *s-ngywat [G&C 35] |
| *-yak → -e? | |
| [88]eye | DLa me?55; DLb ne?55; PTB *myak (402);
If the medial is a labial-velar glide, then the effect is one of raising, rounding ²² and backing: |
| *-waay → -oi | |
| [130]buffalo | DLa ngw31 l  i53; DLb ngw31 l  i53; PTB *Iwaay (208) |
| *-waang → ung | |
| [42]pit,hole | DLa ang31 dung55; DLb ang31 dung55; PTB *dwaang (169) |
| *-wang → -?ng | |
| [173]village | DLa kr  ong55; DLb kh  ong53; PTB *grwa-ng [Matisoff 1972b, set 28]
The above two sets are the only two where there might be evidence of the proto-vowel length distinction in the Dulong reflexes. |
| *-wap → -wp | |
| [36]cut | DLa a31 twp55; PLB *?twap ✕ *C-dwap [TSR 69]
PTB **-tup ✕ **-t/dwap |
| *-wak → -?k | |
| [152]ant | DLa sw31 r  ?55; DLb bang31 sw31 r  ?55; PTB *rwak (199)
There are a few exceptions to this rule. Dulong forms that don't reflect a proto medial are listed with those words that descend from roots without medials. In 'vegetable' the velar medial is preserved without affecting the vowel: |
| *-wak → -wa? | |
| [19]vegetable | DLa dzw31 gwa?55; DLb zw31 gwa?55; PLB *?gyak [TSR 49]
PTB **gwak ✕ **gyak |

²¹ Please see the discussion of this root and 'star,moon' in the section on non-regular reflexes.

²² Thanks to Mark Hansell for pointing out that though *-wap → -wp does not have any rounding, this could be due to dissimilation of rounding because of the labiality of the final, as occurred in Chinese.

I am assuming that the Dulong forms descended from a proto-form with a labial-velar glide rather than the palatal glide reconstructed for PLB in TSR.

The form wang55 'uncle' also does not show any influence of the glide on the vowel, possibly because it is the initial:

[164]uncle DL_a a31 wang53; DL_b a31 wang53; PTB *pwang [23]

The situation for open syllables is generally different, as with the *-wa rhyme, which is reflected faithfully in Dulong in four out of the following six forms:

[162]axe DL_a war53; DL_b war53; PTB *r-wa (441)=*r-pwa [24]

[28]cattle DL_b nung55 ngwa53 'huáng niú'; PTB *ngwa (215)

[18]wear DL_a gwa55; DL_a gwa53; PTB *gwa-n ✕ *kwa-n (160)

[30]span DL_a ti55 pu31 ta55; DL_b tsí55 pu31 ta55; PTB *twa (165); **t(w)a

The form for 'span' does not reflect the labial-velar medial at all (just as DL nga53 < *ngya 'fish' does not reflect the palatal medial), though I feel it is cognate.

[99]garlic DL_a su53; DL_b su53; B Krak-swan; AC *swán/suán (紹南); Lh sū-qō
'leek', sū-phu 'onion', sū-phu-nù 'garlic'.

PTB *swa-n [174] [G&C p.10]

The original PTB reconstruction of *swan was revised to *swa-n in Matisoff (1985:10) with the suggestion that the *-n was the 'collective' *-n suffix discussed in n.284 in the STC. The DL forms for 'garlic' are similar to Lahu /su/. In Lahu the proto-medial has the same type of effect on the final as in Dulong, but it is a bit more regular. In the case of 'garlic' in Lahu, the *-w- has had the effect of raising and rounding the vowel. I can only assume that something similar happened in Dulong. Other forms that might belong here are JP la31 son33, LHA la?31 suan35, LXA la31 suan55, LCA ka31 sun55, and either Zaiwa phe55 3o55 or the first syllable of Zaiwa xu31 khjong55 'onion'. I did not include them above because they either looked too much like loans or because I was not sure of the cognacy of the forms.

Even with the exceptions just mentioned, the rule of medial effect is solid enough to be useful in confirming or revising PTB roots. Several of these cases are discussed below in the section on non-regular reflexes. Two more cases where there might be a need for a slight revision of an established form are 'branch' and 'drip':

[9]branch DL_a sing55 ang31 kɔʔ555 (sing 'tree'); DL_b sprung55 ang31
kɔʔ555; PLB *ʔgak [TSR 43]; PTB *s-kaak (327) ✕ **s-k(w)aak

[37]drip DL_a a31 tɔʔ555; DL_b thɔʔ555;

PLB *Ntsak [TSR 82]; (*tik ✕ *dzik) ✕ *ndzak [Mpi 5];

PTB **tsak ✕ **tywak; PST **ty(w)ak

Based on the Dulong reflexes it seems the proto-forms had -w- medials, i.e.: **s-kwak; **ntswak, though the initial correspondence in 'drip' is not entirely regular either.

Below are listed examples of the regular correspondences. In general I would require at least three examples to call a correspondence 'regular', but in some cases, as for '*-ip', there aren't many roots with that final, and the Dulong form is obviously cognate, so I have included it as a solid possibility.

*-a → -a

bitter, crow, saddle, I, ear, nose, you, rest, five, thin, wound,
god, earth/dirt, food, flesh/meat, moon, speech, cotton

[1]bitter DL_a ka55; DL_b kha53; PTB *ka (8)

[2]crow DL_a tak55 ka55; DL_b tang31 kha55; PTB *ka [99-100]

[20]saddle DL_a ga55; DL_b ga55; PTB *s-ga [Matisoff 1983, set 60]

[22]I DL_a nga53; DL_b gu55; PTB *ka ✕ *nga (406)

| | |
|-----------------|--|
| [47]ear | DLa a31 na53; DLb a31 na55; Trung na-ba; N ñna; PTB *g/r-na (453) |
| [55]nose | DLa sw31 na55; DLb sw31 na55; N sña; PTB *s-na (101) |
| [56]you | DLa na53; DLb na53; N na; PTB *nang (407) ✕ **na |
| [61]rest | DLa ru31 na53; DLb ru31 na53; PTB *na (414) |
| [23]live | DLa pu31 nga53; DLb pu31 nga53; PTB *l/b-nga (78) |
| [74]thin | DLa ba53; DLb ba53; N ba; PTB *ba (25) |
| [85]wound(n.) | DLa bin55 ma55; DLb zi31 ma55; N ramat 'nettle'('=the wounder'), with suffixed *-t; PTB *r-ma ✕ *r-ma-t (446) |
| [131]god | DLa nam55 la55 (nam53 'sun; heavenly affairs' with tone assimilation); DLb la55; PLB *s-la 'soul'; N phala <*b-la 'demon, soul'; PTB *(m-)hla (>*sla 'in all but Tibetan' STC p.132) (475) |
| [114]earth,dirt | DLa a31 sa55; DLb a31 sa53; PTB *tsa [188]; **sa |
| [125]food | DLa ang31 dza55; DLb ang31 za55; PTB *dza (66) ✕ *dža [Mpi 47] |
| [127]meat,flesh | DLa ša55; DLb ša53; N ša; PTB *sya (181) |
| [145]moon | DLa su31 la55; DLb su31 la55; N sala; PTB *s-la ✕ *g-la=*s-gla (STC n.137) (144) |
| [8]word,speech | DLa ka55, kat55; DLb ka55, kat55; N kha; PTB *ka (9) |
| [140]cotton | DLa sa55 la53; PTB *b-la [111] |

*-ya → -a

hundred, fish, borrow

| | |
|--------------|---|
| [184]hundred | DLa ti55 ša55; DLb tsi55 ša55; N ya; PTB *r-gya (164) |
| [24]fish | DLa nga55 pla?55 (+ Tai); N nga; PTB *ngya (189) |
| [26]borrow | DLa nga55; DLb nga53; N nga; PTB *r-nya (190) |

Of the Dulong forms in the above set, only the initial in 'hundred' shows any trace of the proto palatal medial.

The words in the following two correspondences are probably all examples of PTB *-a ✕ *-ay doublets (as discussed in Matisoff (1985:27)), with Dulong reflecting the diphthong in the first two words and monothong in the last four:

*-a → -ai
father, chin

| | |
|------------|--|
| [66]father | DLa a31 pai53; DLb a31 pai53, a31 ba53; PTB *pa (24)=*pwa [23] |
| [7]chin | DLa mu31 kai55; DLb mu31 kai55; N m̥kha; PTB *m̥-ka (470) |

*-ay → -a
paddy, bee, plant, easy

| | |
|-----------------|--|
| [190]rice/paddy | DLa ts̥w31 ma55; DLb ts̥w31 ma55; Garo mi~me-; Dimasa mai 'rice, paddy'; Pwo and Sgaw (Karen) me 'boiled rice'; AC *mi:r/mie (✚); Tangkhul ma 'paddy'; Luoba am̥ 'rice'. PTB *may ✕ *mey [65,128,149,192-3] [G&C 57] |
| [191]bee | DLb khwa31 me53; B kwai 'dammer-bee'; L khuai-kho; Thado khoi-khui-va (va 'bird') Tangkhul khui; Lakher m̥kha 'bee'; N kha 'bee (domesticated)'. PTB *kwaay (157) |
| [110]plant | DLa kaat55; DLb kat55 (both with suffixed -t, Cf. 'speech'); PTB *kay ✕ *gay [G&C 114] |
| [129]easy | DLa la55; DLb la55; PTB *lway (302); PTB **s-la or **s-l(w)a-y |

In the following sets, the Dulong forms faithfully reflect the proto diphthong:

*-ay → ai

big, tongue, red

| | |
|-------------|--|
| [34]big | DLa tai53; N the; PST *tay (298) |
| [135]tongue | DLa pu31 lai53; DLb pu31 lai53; N phale; PTB *s-lay (281) |
| [113]red | DLa pu31 sai55; DLb pu31 sai53; PTB *t(y)a-n ✕ *t(s)ay [G&C 150] |

I'm assuming Dulong form for 'red' reflects the same PTB root as the Lakher form, given as *t(s)ay, though I am not altogether happy with the initial in this reconstruction.

Please consider the forms for 'change', 'hair' and 'foot':

| | |
|----------------|--|
| [192]change | DLa klai55; DLb kle53; JP gelai; N thale 'alter,(ex)change'; B lai '(ex)change'; G sre; Dimasa salai; L lei 'buy, barter'; Tiddim lay. PTB *s-lay (293) [G&C 69] |
| [62]hair(head) | DLa u55 nai55 (head+hair); DLb u53 ne53; N ani-tani; PTB *nay (292) [G&C 51] |
| [168]foot | DLa xrai55; DLb xre55; N hi; PTB *kriy (38) |

Based solely on the DLa form and the semantic similarity, it would seem that *s-lay is the correct provenience for 'change', but comparing this with the forms for 'hair', it seems that the *r-ley ✕ *b-rey proto form might be the correct one. There is another correspondence, *-ey → -i (see below), that seems to be the more regular one for *-ey. The DLa -ai/DLb -e forms then are not part of the *-ay → DLa -ai/DLb -ai set, nor are they part of the *-ey → DLa -i/DLb -i set, nor are they part of the *-ay → DLa -e?/DLb -e? set (see section on non-regular reflexes). They are probably reflexes of *-ey, but I don't know what the conditioning factor was that caused them to form this separate set. The forms for 'foot' make it even more confusing, as *-iy usually is reflected as DL -i.

Related to this is the problem of the DL reflexes of PTB *tsa 'hot, spicy, illness' (T tsha 'hot, illness', tsha-ba 'hot; heat; spice; condiment'; B atsha 'hunger; something faulty or hurtful (but Lolo *tsha 'hot'); G sa 'ache, sick', sagipa 'pepper'; Dimasa sa 'ache, pain', sa-ba 'hot (spicy)'; L sya-syat 'hot'; Mikir so 'hot, to be ill, sore'; possibly also the first syllable in MW tsatsi 'spicy'). There are two possibilities: DLa dza53, DLb za53 'illness'; and DLa sai55, DLb se53 'spicy'. In the former the final is regular, but I have no other examples of *ts- → dz-; for the latter there are at least four other examples of *ts- → s-, but no examples of *-a → -ai/e, unless this is another example of a *-a ✕ *-ay alternation, and the DL forms descended from *-ay. I prefer the latter explanation, but the ai/e set is still too problematic to say anything definite.

*-am → -am

full, flat, smell, sun, iron, fathom, otter

| | |
|----------------|--|
| [43]full | DLa dam55; DLb dam53; PTB *dyam (226) |
| [44]flat | DLa dam55 muw31 li53 'plain, flat ground' (muw31 li53 'earth,ground'); N adam 'plain (level ground),flat'; PTB *dyam (227) |
| [64]smell(tr.) | DLa pu31 naam55, puw31 nam55 gam53 'fragrant' ('smell' + 'good'); DLb pu31 nam53; N phonam; Trung ponam; PTB *s-nam ✕ *m-nam (464) |
| [53]sun | DLa nam53; DLb nam53 luung55; T gnam 'heaven, sky', nam 'night'; N nami 'sun'; PTB *nam [148] |
| [126]iron | DLa sam53; DLb sam53; N sam; Trung syam; PTB *syam (228) |
| [147]fathom | DLa ti55 lam53; DLb tsi55 lam53; PTB *la[a]m [71] |
| [154]otter | DLa sw31 ram53; DLb sw31 ram53; N sram; PLB *sram; PTB *s-ram (438)=*sram [107,n.302] |

*-an → -an

stretch out, medicine

| | |
|---|---|
| [123]stretch out | DLa tsün53; DLb tsün53; PLB *ʔ-dzan3 ✕ *tsan3 [G&C 11];
PST *tyik ✕ *tyak [84,94,169,189] |
| [93]medicine | DLa man55; DLb man55; PTB **s-man |
| *-ang → -ang
we/us, firefly, roast, fir, spindle, deaf/mute, dream, person, dawn/morning, clean | |
| [149]we (inclusive) | DLa rang55; DLb rüng55; PTB **rang |
| [172]firefly | DLa kw31 rang53; DLb kw31 rang53; Rawang mágang
<*m-grang 'mosquito'; Trung krang 'firefly'; PTB *krang (322) |
| [15]roast,toast | DLa du31 gaang55; DLb du31 gaang55; N døgång; PTB *kaang (330) |
| [39]fir,pine | DLa tang53; DLb tang31 xai53; PTB *tang [69] |
| [68]spindle | DLa śap55 pang53, DLb śang31 phung53 'treadle operated
rice husker' (śap55, śang31 'mortar'); PTB *pang=**pwang (48) |
| [73]mute/deaf | DLa du31 bang55; DLb du31 bang55; PTB **d-bang |
| [82]dream | DLa mlaang55; DLb mlang55; N ip-mang; Trung mlóng
"from *lamong <*r-mang by metathesis; cf. Trung a-mra
'field', Mutwang (Rawang dial.) rama, id." STC p.31.
This holds for the DL forms as well. PTB *r-mang (82) |
| [109]person | DLa a31 tsang53; DLb a31 tshang53; PTB **tsang |
| [155]morning | DLa su31 raang55; DLb su31 reeng55; Trung srang;
PTB *prang (332)=*b-rang ✕ *s-rang [72,n.224] |
| [110]clean | DLa tsang55 ma55; DLb tsang55 ma55; PTB *(t)syang=**syang [37,52,53] |

***-ap → -ap**
repay, leaf, needle, fan/winnow, munch, fireplace

| | |
|-----------------|---|
| [108]repay | DLa tsaa55; DLb tsaa55; PTB *tsap (63) |
| [136]leaf | DLa sing55 lap55 (sing55 'tree'); DLb śung55 pu31 laap55;
N śolap 'leaves for packing food'; PTB *lap (321) |
| [193]needle | DLa wap55; DLb wap55; T khab; B ?ap <*(t-)ghap; Kanauri keb;
Gyarung tekyep; Lepcha ryum; MW Xe; Zaiwa ap55; LCA,
LXA ap55; Trung uop; Lh gół.
PTB *kap=**káp (52) [n.82] |
| [194]fan,winnow | DLa raap55; DLb raap55; T'khrab-pa 'strike, beat; winnow;
fan'; Chepang krap 'winnow'; Nungish (Rawang) rap <*k(h)rap
'winnow, thresh, paddle, row' (cf. Rawang rip 'flying ant' <TB *krep).
PTB *krap [141] [n.382] |

Based on the Dulong form and the probability that the above forms for 'fan, winnow' are related to PTB *yaap (92) 'fan, winnow' (reconstructed on the basis of T yab-mo ~ g-yab-mo 'the act of fanning or waving; fan', Miri mayap, B yap, Mikir hi-dzáp 'fan', L zaap 'fan, winnow, flap, flutter', Tang-khul koyap 'to fan', and K kotsap 'winnow'), the *k- should be seen as a prefix.

| | |
|----------------|--|
| [195]munch | DLa ngap55 ('yao3'); DLb rep55 ('ken3'); B kwap, kyap, krap 'clamp,
make fast, firm, secure'; Lh gi? 'hold firmly in mouth';
Bisu kò 'bite into' (from *Ngwap etc.).
TN khøngkup 'bite and see whether the paddy is well dried
or not'; Lh khò? 'munch, bite noisily'; Aka kaw 'to bite
as a dog bites a person'. Possibly related to B hap
'bite at, as a fish or dog'; PTB *hap 'mouthful'.
PLB {*Ngwap ✕ *Ngrap ✕ *Ngyap} ✕ {*C-kwap ✕ *C-krap} (TSR 90) |
| [157]fireplace | DLa muw31 rap55; DLb muw31 rap55; N mrap;
PTB *rap (84)=*trap/drap <AT loan [19,n.69] |

*-at → -at

forget, leech, kill, flower, cut, braid, eight, jump, slippery

| | |
|---------------|---|
| [79]forget | DLb a31 mat55; PTB *ma-t (425) |
| [69]leech | DLa mu31 pat55; DLb nye31 phrat55; PTB *r-pat (45) |
| [96]kill,hit | DLa saat55; DLb sat55; PTB *g-sat (58) |
| [161]flower | DLa sing55 wat55 'flower', sing55 wat55 wat55 'bloom';
DLb sung55 wat55 wat55 'bloom'; PLB *wat; Nungish sing-wat
'bud' (Rawang), flower (Trung); PTB *bwat [24] |
| [169]cut,chop | DLa a31 xraat55; DLb a31 xrat55; N rat; PLB *?-brat ✕ *C-prat;
PTB *ra (458) **d-ra-t |
| [196]braid | DLa blaat55; DLb blaat55; Zaiwa tsham51 pan31 (tsham51 'hair');
LXA tsham35 pyen35 (Chinese?); Lh phê; Mpi phe?1;
possibly also B phan 'shuffle cards'.
PLB *C-prat ✕ *pan1/2 (G+C 37)
PLB *bat ('wind around')
PTB **b(l)at/n |
| [183]eight | DLa sat55; DLb sat55; N aṣat; PTB *b-r-gyat (163) |
| [185]jump | DLa a31 tṣat55; DLb tṣhat55;
PTB *k(y)at '(sudden) lateral action' [G&C 39; TSR 18] |
| [197]slippery | DLa tu31 klat55; DLb du31 laat55; T hlod-pa 'loose,
relaxed'; K lot 'escape, be free, unrestrained'; B lwat
'to be free', kywat <klwat 'loosed, freed'.
PTB *g-lwat ✕ *s-lwat (209) |

*-ak → -a?

deep, black, itch, weave, fear, chicken, lick, pig

| | |
|--------------------|---|
| [51]deep | DLa rw31 na?55; DLb ru31 na?55; Trung na43;
PLB *?nak ✕ *nak [TSR 157]; PTB *s-nak |
| [50]black | DLa na?55; DLb na?55; N na?; PTB *s-nak [88,102,155] |
| [95]itch,itchy | DLa pu31 sa?55; DLb pu31 sa?55; PTB *m-sak (465) |
| [156]weave | DLa raa?55; DLb raa?55; PTB *tak (17)=*trak <AT loan [19,n.68] |
| [174]fear,frighten | DLa a31 kra?55; PTB *grák ✕ *krák (473) |
| [198]chicken | DLa ka?55; DLb kha?55; B krak 'fowl'; Maru ↗<*rak; Lh گا? ;
L va-rak 'duck'; Zaiwa vo? <*rak; LCA kzua?55; LXA kja?31.
PTB *k-rak |
| [137]lick | DLa laa?55; DLb laa?55; N la-łe; PTB *m-lyak ✕ *s-lyak (211) |
| [163]pig | DLa wa?55; DLb wa?55; PLB *wak [TSR 168]; PTB *pwak [23-24] |

*-ar → -ar

new, east

| | |
|-----------|---|
| [100]new | DLa ang31 sar55; DLb ang31 sar53; Rawang angsar; Trung aksal 'fresh';
PTB *sar [p.147,172,189] |
| [128]east | DLa sar55; DLb śe31 sɔ?55; N nam sarr kha; PTB *syar [28] |

*-u → -u

nephew, dig, head

| | |
|------------|--|
| [40]nephew | DLa pu31 du55; DLb bu31 du53; N phədu; PLB *du;
PTB *tu ✕ *du (259) |
| [41]dig | DLa du53; N du; PTB *tu ✕ **du (258) |
| [199]head | DLa u55; DLb u53; T dbu; B ú; Anong (Nungish) u; Lh ú; |

LHA u31 nung31; LXA u55 nɔng55.

PLB *fu2 [Mpi p.15]

PTB **-u

Benedict (1972:117) does not give a proto form for 'head', but suggests that a *d- prefix might be reconstructed for this root, based solely on the Tibetan form. I don't know if he would include the initial b- from the Tibetan form as well. I have not included either because it is only Tibetan that shows any evidence of them.

*-ul → DL_a -ul / DL_b -un
silver, hair/fur, spittle,

| | |
|--------------|---|
| [25]silver | DL _a ngul55; DL _b nguun55; PTB *d-ngul [15,173] |
| [90]hair,fur | DL _a ang31 mul55; DL _b ang31 mun53; PTB *mul (2) |
| [118]spittle | DL _a cul55; DL _b t̪sun55; N thil 'spittle';
PTB *m-ts(y)il (231) ✕ *m-thil [cf. discussion of 'count'] |

-uw=-w → -w
steal, uncle, body, nine, cry, price, insect/snake, eagle, horn

| | |
|------------------|---|
| [4]steal | DL _a kw55; DL _b khw53; N khü; PTB *r-kuw (33) |
| [6]uncle | DL _a a31 kw53; DL _b a31 khw53; N ḷkhö; PTB *kuw (255) |
| [11]body | DL _a ang31 gw55; PTB *(s-)kaw=*(s-)kuw [184] |
| [12]nine | DL _a dw31 gw53; DL _b dw31 gw53; N tagö; PTB *d-kuw (13) |
| [27]weep,cry | DL _a ngw53; DL _b ngw53; N ngü; PTB *nguw (79) |
| [67]price | DL _a ang31 pw53; DL _b phw53; N aphü 'be of value'; PTB *puw (41) |
| [71]insect,snake | DL _a bw55; DL _b bw53; N bö; PTB *buw (27) |
| [86]eagle | DL _a tw31 mw53; DL _b tw31 mw53; N thəmö; PTB *muw (257) |
| [167]horn | DL _a ts̪i31_xrw55; DL _b ang31 tw31 xrw55;
N (Melam dial.) t̪akru; PTB *kruw (37) |

*-um → -wm
pillow, three, warm, house, round, smallpox, meet

| | |
|---------------|---|
| [5]pillow | DL _a u55 kwm55; DL _b u53 kwm53; N ogɔ nɔkhim; PTB *m-kum (482) |
| [94]three | DL _a a31 swm53; DL _b swm53; N atsum; PTB *g-sum (409) |
| [143]warm | DL _a lwm53; DL _b lwm53; N lim; PTB *lum (381) |
| [182]house | DL _a śum53; DL _b t̪sum53; N kyim~t̪sim~t̪sum; Trung t̪iəm;
PTB *kyim ✕ *kyum (53) [n.82] |
| [142]round | DL _a ang31 kw31 lwm55; DL _b dw31 lwm55;
PTB *s-lum= *z̪lum (n.136) (143) |
| [180]smallpox | DL _a brwm55; DL _b brum31 khar55; PTB **brum |
| [171]meet | DL _b tw31 xrw53; PTB **k-num ✕ **k-nm |

*-ung → DL_a -uung

| | |
|------------|--|
| [139]stone | DL _a luung55; DL _b luung55; PTB *r-lung (88) |
|------------|--|

*-ung → DL_b -ɔŋg
maggot, body

| | |
|-------------|---|
| [146]maggot | DL _b t̪shi31 l̪ɔŋg53; PLB *k-lung ✕ *k-luk [STR 186] |
| [21]body | DL _b gɔŋg53; Nungish: Rawang gung, Mutwang dial. gong; |

PTB *gung [182]

*-up → -w(w)p

rotten/to rot, cover(bury), sew

[72]rot/rotten

[138]bury

[178]sew

DLa bwup55; DLb bwup55; PLB *Nbup [TSR 75]; PTB **bup
 DLa lwp55, possibly also DLa, DLb klwp55 'to cheat, deceive';
 PTB *klup (479)
 DLa kruwp55; DLb khruwp55; Trung krap;
 PTB *d-rup (456)=*drup [n.320]

*-uup → -uup

[63]west

DLa nam55 nuup55; N nam nip lam (nam 'sun', lam 'side');
 PTB *nuup ✕ *ni[i]p (400)

*-ut → -wt/-it

knee, blow

[70]knee

DLa bak55 puit55; DLb paang31 pit55; N phang-phit 'knee',
 ur-phut 'elbow', ra-phut 'shoulder'.

PLB *put (7) (<Maru pat-lau <put); PTB *put (7)

[80]blow(v.)

DLa mut55; DLb mit55; PTB *s-mut [75]

*-uut → -tɔtl

[33]join,tie,knot

DLa sw31 tɔtl55; DLb sw31 tɔtl55; N dəthut:
 PTB *duut ✕ *tuut (421)

*-uk → -ɔ? (after velars only?)

basket, bent

[3]basket

[17]bent

DLa pai55 kɔ?55; DLb tw31 kɔ?55; PTB *kuk (393)
 DLa dw31 gɔ?55; DLb dw31 gɔ?55; PLB *gok [TSR 2];
 PTB *guk ✕ *kuk [125]; **gok

*-uk → -w?

[48]brain(1)

DLa u55 nw?55 (u55 'head'); N əning; PTB *nuk (483)

*-u(u)k → -u?

vomit, sky, six

[45]spit,vomit

[89]sky

DLa du?55; DLb du?55; PTB *m-nuk ✕ *s-tuuk ✕ s-duuk [58,75,126,132,146]
 DLa mu?55, ru31 muut55 'cloud'; DLb mu?55, ru31 mit55 'fog';
 Rawang mu?lang 'heaven'; DLa suw31 muwwi55 'fog';

PTB *r-muw= *r-maw (488) ✕ *r-muuk (357)

[177]six

DLa kru?55; DLb khru?55; PTB *d-ruk (411)

-iy==ay → -i

sun/day, aunt, grandmother, give, die, count, urine, small, grandchild, armpit,
 flea, heavy, plain, gall bladder, write, four, who

[54]day

DLa ni55; DLb nyi55; PTB *niy= *nay (81)

| | |
|--------------------|--|
| [58]aunt | DLa a31 ni53; DLb a31 nyi53; N ani; PTB *ni(y) (316) |
| [65]grandmother | DLa a31 pi55; PTB *piy (36) |
| [76]give | DLa bi55; DLb zi53; Trung bing (with suffixed -ng); PTB *biy (427) |
| [101]die | DLa si53; DLb si53; PTB *siy=*say (232) |
| [107]count | DLa tsi55; PTB *r-tsiy=(r-)tsay (76) |
| [117]urine | DLa tsi55; N ts'i 'urine', tsi-tsi 'urinate';
PTB *ts(y)i ✕ *ziy (77) |
| [121]small(1) | DLa tsi55 ts'al53 (ts'al53 'son');
PLB *?ziy <*a-ziy [STC p.27, n.87 by JAM]
PTB *ziy (60) ✕ **tsiy |
| [133]grandchild | DLa pu31 li55; DLb pu31 li55; N ph'li; PTB *b-liy (448) |
| [134]armpit | DLa ra55 li55; N ra-kyi t'sip <*ra-kli (ra 'shoulder');
PTB *g-li (265) (possibly old AT loan - STC n. 199) |
| [141]flea | DLa su31 li53; DLb su31 li53; N sali; PTB *s-liy (440) |
| [144]heavy | DLa a31 li53; DLb a31 li53; N li; PTB *s-liy (95) |
| [148]plain (earth) | DLa dam55 muw31 li53 (dam55 'flat'); DLb muw31 li53 dang53;
N dialect mali 'country; mountain'; PTB *mliy (152) |
| [166]gall bladder | DLb tsi31 xri55; DLb tshi31 khri53; N s̥hi <*s̥khri 'gall-bladder';
PTB *kriy (412-413) |
| [181]write | DLa bri53; DLb bri53; N raga darit 'boundry'
(r̥aga 'country'); PTB *riy (429) ✕ **briy |
| [200]four | DLa a31 bli53; DLb bli53; T b̥zi <*bli; Thulung bli; B lè;
Kanauri pō <*pli; Magari buli; Digaro k̥aprei; Miri pi;
N ab̥yi (dial. ab̥li); K mali <b-li; Mikir phli; Lh ð; MBa pli;
MBb phi; Luoba apii; DRD ka31 prai35; LCA mi31; Zaiwa myi.
PTB *b-liy (410) |

-wiy=-way → -ui/-i
dog, yam, blood, comb

| | |
|------------|---|
| [13]dog | DLa du31 gu155; DLb du31 gi55; N t̥ogi; PTB *d-k-wiy (159) |
| [14]yam | DLa gu155; N gi; PTB *kyiw (238) |
| [201]blood | DLa syui55; DLb syi55; Kanauri syu; Bunan syu; Vayu vi;
Chepang wi-wei; K sai; N syo̥; B sw̥e; G antsyi;
Dimasa thi; L thi. |
| [97]comb | PTB *s-hwiy (222)=*s-hway [n.169]
DLa swui55, DLb si53 'to comb', DLA u55 swi55, DLb u53 si53,
N asi 'comb,to comb'; PTB *m-si(y) (466) |

I have included 'comb' in this set because it seems the DLa form developed from a proto form with a labial-velar medial: **m-s(w)iy.

The following reconstruction is very tentative because I don't have enough solid cognates:

| | |
|-----------|----------------------------------|
| [31]short | DLa twi53; DLb thi53; PTB **twiy |
|-----------|----------------------------------|

*-im → DLb -um

| | |
|-----------------|--|
| [202]raw,unripe | DLb a31 zywm53; N .zim; B tsim 'green; unripe';
Zaiwa a31 tʃum31, JP ka31 tsing33, LCA tsin31,
LHA a31 tsing35, T dzin-pa 'raw(meat)'.
PTB *dzim [81] |
|-----------------|--|

I assume here that the vowel in the DLa form would be -i- if I had a cognate, based on the similar situation with the *-ing and *-ip finals below.

*-in → -in

ripe, liver

- [87]ripe DLa min53; DLb nin53; N min 'cooked; to rot'; PTB *s-min (432)
 [104]liver DLa pu31 sin55; DLb pu31 sin53; N phasín;
 PTB *m-sin (234)

*-ing → DLa -ing/ DLb $\left\{ \begin{smallmatrix} u \\ w \end{smallmatrix} \right\}$ ng

year, tree, clif. for trees, neck, name

- [60]year DLa ang31 ning55; DLb ang31 níwng55; PTB *s-ning (368) ✕ *s-nik
 [103]tree,wood DLa sing55; DLb s̄ung55; N sing-thing; PTB *sing (233) ✕ PLB *sik
 [124]clif. for trees DLa ti55 dzwung55; DLb tsi55 zung55 (ti55, tsi55 'one');
 PLB *dzding1 [Mpi 37]; PTB **dzding
 [132]neck DLa ling55 guí53; DLb lang55 gi53; N ling; PTB *ling (96)
 [179]name DLa ang31 brung53; DLb ang31 brung55; Trung ang-prang;
 N bing <*bring; PTB *s-brang ✕ *bring [31]

The DLb form for 'name' seems to have both lost the initial consonant of the cluster and to have developed from the *-k alternative of a proto *-k ✕ *-ng alternation.

*-ip → -ip/-wp

- [165]sleep DLa ip55; DLb ywp55; PTB *ip= *yip (114)

*-it → -it
 extinguish, think, goat

- [91]extinguish DLa a31 mit55; N s̄omit; PTB *mit (374)
 [92]think,remember DLa mit55; DLb nyit55; PTB **myit
 [122]goat(mt.) DLa a31 tsit55; DLb tshit55; PLB *tsit [88]; PTB **tsit

*-ik → -i?/-w?
 one, louse, twist, leopard

- [35]one DLa ti?55; DLb tsí55; N thi; PLB *C-ti-k [TSR 31]
 [203]louse DLa si?55; DLb su?55; T sig; K tsí?; Mikir rek; G tik; N sí;
 L hrik; Kanauri rik; Bunan s̄rig; LCA pha31 tshek35.
 PTB *s-rik= *śrik [108]
 [204]twist DLa tsí?55; DLb tshw?55; B rac 'wind around, encircle';
 Lh sí; Aka yeu LS (all but DL from PLB form).
 T 'khyig-pa 'bind'; B kyats 'twist hard and tight';
 Kuki *d-khik 'bind' (from PTB *kik).
 PLB *r-sik ✕ *s-yik [TSR 130]
 PTB *kik (484) 'twist,bind'
 [106]leopard DLa zu?; N khang-zi; PTB *zik (61)

*-ey → -i
 fire, tail, fruit, string/rope, younger brother

- [83]fire DLa tw31 mi55; DLb tw31 ni55; N thəmi; PTB *mey (290)
 [84]tail DLa mi55 t̄sɔ?55; DLb ang31 nu31 t̄shɔ?55;
 PTB *r-may ✕ *mey (282)
 [102]fruit DLa ang31 s̄i55; DLb s̄i53; N sing s̄i; PTB *sey (57)
 [151]string.thread DLa tsw31 ri55; DLb tsw31 ri53; N thəri 'cane',

- [205]younger brother sari 'thread', ban-ri 'rope, string'; PTB *rey (478)
 DLa ang31 nik55 ra31; DLb ang31 nyi55 nam; Lh ð-ni-pā;
 Akha à-nyí; B nyi; Boro bøyñay 'wife's younger
 brother, younger sister's husband'; Luoba nuro;
 LCA a31 nyi55; LXA zya55 ni?31.
 PTB *ney [G&C 146]

It seems to me that the -k final of the DLa form for 'younger brother' is just a suffix, as *-k went to -? in all other cases, though the LXA form confuses things a bit.

*-ey → -e

- [160]saw(n.) DLa sɔ55 re55, bu55 le55 'plane(wood)';
 DLb sɔ55 re55 'saw(n.)', bɔp55 le55 'plane(wood)';
 PTB **rey ≈ **ley 'saw;plane'

*-ok → -ɔ?

bean, wear on head/hat

- [46]bean DLa a31 nɔ?55; DLb a31 nɔ?55; PLB *s-nok [TSR 140];
 PTB **nok
 [78]wear on head/hat DLa mɔ?55; DLb mɔ?55; PTB **r-mok

*-ow → - { w u }

arise/awake, pointed, boil, fat, pine/fir

- [105]arise,awake DLa sa55 św31; PTB *m-sow (295)
 [112]pointed DLa a31 tsw55; DLb a31 tsw55; PTB *tsow (276)
 [115]boil DLa a31 su53; DLb su53; Nasu 'boil'; PTB *tsyow (275)
 [116]fat (adj.) DLa su53 sa55 'fat meat' (sa55 'meat'); PTB *tsow (277)
 [158]pine,fir DLa sw31 ru55 sing55; DLb sw31 ru55 śwng55 (sing55
 'tree'); Nasu thing; PTB *row (320)

NON-REGULAR REFLEXES

Initials

The two types of non-regular reflexes for nasals were a palatal nasal and palatalized nasal instead of a dental or velar nasal in DLa and DLb respectively for 'snot', seven and 'love', and a dental nasal instead of a labial nasal in the DLb reflexes for 'ripe', 'tail', 'fire' and 'eye':

*n- → n-/ń

- [187]snot DLa n̥ep; DLb n̥ep; PTB *s-nap (102); **s-nyap
 [186]seven DLa su31 n̥it55; DLb su31 n̥it55; PTB *s-nis (5)

*ng- → n-/ń

- [206]love DLa n̥i55 si31; DLb n̥i55 si31; JP n̥wái; Tiddim -nga:i;
 L uai 'hang on to; make love', ngai 'long for, miss,
 feel earnest desire for; copulate'; Tangkhul sa-nga:i kachu
 'that which one likes to do', khongay 'desire'.
 PTB *ng-(w)ay [G&C 126]

*m- → n-(NJ)

| | |
|----------|---|
| [87]ripe | DLa min53; DLb nin53; N min 'cooked; to rot'; PTB *s-min (432) |
| [84]tail | DLa mi55 tšɔ?55; DLb aŋ31 nu31 tshɔ?55;
PTB *r-may ✕ *mey (282) |
| [83]fire | DLa tu31 mi55; DLb tu31 ni55; N thami; PTB *mey (290) |
| [88]eye | DLa me?55; DLb ne?55; N me-ne<*myak;
PTB *mik ✕ myak (402); PST *mya[a]k [190] |

It seems in 'snot' that there are two types of evidence for a palatal glide in the proto-form: the nasal is palatal(ized), and the vowel is fronted. A palatalized nasal is the normal reflex of a dental nasal in DLb only when it is followed by a high front segment (usually /i/ and not /e/). Though the regular reflex of *-a- is -a- in both dialects, when preceded by a palatal glide a vowel may be fronted, as in 'stand' *g-ryap > DLa pu31 rep55. It may be that in this case the palatal glide in evidence is a reflex of the *s- prefix, as is often the case in Lepcha, and this looks plausible given the lack of any other evidence of a proto-prefix in DL, but this is not regular, as can be seen in the reflexes for *s-la and *s-ram: PTB *s-la > DL su31 la55 'moon'; PTB *s-ram > DL su31 ram53 'otter'. Therefore, there must have been some variation in the proto-form, as the immediate provenience of the DL forms for 'snot' must have been **nyap.

The case for 'love' would be very similar. It seems again that there are two types of evidence for a palatal as opposed to labial-velar glide: the nasal is fronted to a palatal(ized) one, and the final is irregular. The normal reflex for *-ay is -ai in both dialects (see section on regular final reflexes), but in this case the reflex is /-i/.

The evidence from other TB languages (including closely-related Jingpo) points to a labial-velar glide in 'love' (Matisoff 1985 p.43), but in the case of Dulong, the proto-form seems to have been something like *ngyai.

A third source for DL n/ň seems to be a case of prefix pre-emption: followed by phonetic changes as in 'love'²³ and 'snot' above.

| | |
|-----------------|---|
| [207]fingernail | DLa n̥w155; DLb ŋiun53; K ləmyin <*lak-myin; B asān;
N ŋiin <*myin; Digaro mši; Miju msen 'claw'; T senmo;
MBb tshing-nang; Zaiwa lo?31 sing31; LXA la?31 sɔŋ35;
Lh ᬁ-šE-qu. |
| | PTB *m-(t)sin=*=m-tsyen (74) |

The change from *m- to n- seems to have occurred where the proto-form (and not the daughter form, as evidenced by DLb mit55 'blow' < *s-mut) had any type of front segment following the initial. The DLb form for 'tail' is irregular in its vowel also (as it is in Lahu), as can be seen if it is compared with that for 'fire' and 'tongue' (pu31 lai53 < *s-lay), regular reflexes of *-ey and *-ay respectively, though I still feel that this is a cognate form.

Related to the above two types of irregularities is the latter half of the form for 'star', which comes from the TB root for 'moon':

| | |
|-----------------|---|
| [189]star-moon) | DLa gur55 met55; DLb gu31 riɛt55; PLB *mwat [G&C 35]
PTB and PST *s-ŋ(y)wat [G&C 35] |
|-----------------|---|

Again we seem to have a case of Dulong evidence of palatalization where the reconstructed PTB form has a labial-velar glide. The DLa form seems to have developed from *mwat, but as the vowel is fronted, a proto-palatal glide seems more likely. The DLb form seems to have developed from *s-ŋwat, but here we have both the fronting of the vowel and the palatalization of the initial. There is again the possibility of the *s- prefix having had some effect, or there might have been some regularity to interplay between labial-velar and palatal glides in proto-Dulong. At this point I don't have enough evidence

²³ The Dulong form for 'love' might also be a case of prefix pre-emption, but as the proto form reconstructed is in essence a zero initial, there was nothing to pre-empt.

to say for sure.

The Dulong forms for 'middle' are the only examples I have of a *t- → d- development, though the Trung form given in the STC has a voiceless initial:

| | |
|-------------|---|
| [208]middle | DLa a31 duung55; DLb a31 duung55; L tsyhung 'the inside (of anything)'; Tiddim sung; Bodo sing; Dimasa bising; Trung atung; Rawang adung 'in, middle'; AC *tjōng/tjung (†).
PTB *tuung (390) |
|-------------|---|

CONSONANT CLUSTERS As mentioned earlier, proto-prefixes are usually reflected as syllabic units in Dulong, but there are a few exceptions:

| | |
|---------------|--|
| [192]change | DLa klai55; DLb kle53; N thale 'alter,(ex)change';
PTB *s-lay (293) [G&C 69]; PTB *r-ley ✕ b-rey [G&C 54] 'buy, barter' |
| [197]slippery | DLa tu31 klat55; DLb dw31 laat55; PTB *g-lwat ✕ *s-lwat (209) |
| [200]four | DLa a31 bli53; DLb bli53; N abyi (dial. abali);
PTB *b-liy (410) |

I have never heard any of these words spoken, so I must rely on the veracity of the data when a prefix + initial is written as a cluster and not as two syllables. I must assume there is some real phonetic difference. Why there were these two types of development, I don't know, but it is clear that the forms here were the result of prefix-initial fusion. In the case of 'change', the proto-form has an *s- prefix, but the /k/- initial must have come from a velar prefix, as can be seen in the Jingpo form. (See also the discussion of the final of this form above.)

Fusion also seems to have taken place in 'louse' and possibly 'twist', if the affricate initial of 'twist' was formed by the fusion of the *s- and the initial *y-. The other possibility is that 'twist' is the result of the palatalization of the PTB *k- initial. Benedict (1972:108) changes the *s-r- of 'louse' to the cluster *śr-, and includes a form for 'green' in Nung: mäsing. I have not included this set ('alive;green' (STC #404)) because I feel Dulong puw31 sing55 sing53 'green' is simply another form of DL siing55 'tree', and not a separate root.

| | |
|------------|--|
| [203]louse | DLa s̥i?55; DLB św?55; N śi; PTB *s-rík=*śrik [108] |
| [204]twist | DLa ts̥i?55; DLB tshw?55; PLB *r-sík ✕ *s-yik [TSR 130]
PTB *kik (484) 'twist.bind' |

The opposite development can be seen in the case of 'uncle', 'pig', 'flower' and 'axe', where a cluster is not preserved, though this is not unique to Dulong. (For a discussion of this see STC pp.23-24):²⁴

| | |
|-------------|---|
| [163]pig | DLa wa?55; DLB wa?55; PLB *wak [TSR 168]; PTB *pwak [23-24] |
| [164]uncle | DLa a31 wang53; DLb a31 wang53; N awang; PTB *pwang [23] |
| [161]flower | DLa sing55 wat55 'flower', sing55 wat55 'bloom';
DLB sungh55 wat55 wat55 'bloom'; Nungish sing-wat
'bud' (Rawang), flower (Trung); PLB *wat; PTB *bwat [24] |
| [162]axe | DLa war53; DLB war53; PTB *r-wa (441)=*r-pwa [24] |

It seems either the initial *p- has been lost from a proto-cluster, or the Dulong forms come from proto forms closer to that of PLB. The parallel development of 'joke/laugh', with a palatal glide, would seem to give evidence to the former:

²⁴ I have serious doubts about Benedict's reconstruction of a *pw cluster, especially as he seems to be doing it on the basis of the Chinese evidence. He seems to claim that the archaic Chinese forms (which do not have the *-w-) developed out of forms that did have the *-w-. No evidence is given, though there may be some. It seems to me that his original explanation, that initial *p- sometimes went to w-, or simply to posit a *p- prefix, would be better, but I'm not really comfortable with any of these explanations, so I have let his analysis stand as is.

[188]joke,laugh DLb jet55; PTB *rya-t (202)

In the case of 'needle', the STC has *kap in set (52), but in note 82 the reconstruction is changed to *kap:

[193]needle DLa wap55; DLb wap55; Trung uop; PTB *kap=*kap (52) [n.82]

This would be the only cognate form from a proto -> vowel, so I don't know what the regular reflex is, but it seems that the Dulong forms probably did not develop directly from *kap anyway. If the initial was a stop + w cluster of some type, as in the forms discussed above, then the w- initial would fit the pattern discussed in the preceding section. (This would be consistent with the discussion of this root on pp. 25-26 of the STC, where the initial + glide form /ryam/ in Lepcha is said to be cognate.) Otherwise it would be very difficult to explain how a w- developed out of a *k- in only this one word.

Two other difficult cases in this regard are 'fan/winnow' and 'munch':

[194]fan,winnow DLa raap55; DLb raap55; Nungish (Rawang) rap <*k(h)rap
'winnow, thresh, paddle, row' (cf. Rawang rip 'flying ant' <TB *krep).

PTB *khrap [141] [n.382]

[195]munch DLa ngap55 ('yao3'); DLb rep55 ('ken3');
PLB {*Ngwap ✕ *Ngrap ✕ *Ngyap} ✕ {*C-kwap ✕ *C-krap} (TSR 90)

Benedict has the Dulong forms for 'fan/winnow' descending from *k(h)rap, but I don't know what his evidence is except for the parallel with 'flying ant'. In most cases a *kr- initial is reflected as /xr-/ in Dulong. It may be, though, that the stop could be lost not only before glides, but before any sonorant, but I don't have enough evidence to prove it.

For 'munch' there are several closely related proto-forms and two forms in Dulong. The DLa form seems to have developed from the *ngwap form, but lost the glide and any evidence of it. The DLb form is a bit more complex, as it reflects a loss of the initial consonant and pre-nasalization, and a fronting of the vowel reflecting the palatal glide. The loss of the initial consonant is different from the cases discussed above because the initial is pre-nasalized rather than being a simple stop. There is also the possibility that the DLb form is related to the alternate forms *C-kwap ✕ *C-krap given in the same set, though there is no evidence for the voiced prefix in Dulong, and there is evidence for a palatal glide. If they are related, then this root could be established for PTB as a whole.

A totally different problem is presented by the Dulong forms for 'braid', where it seems there has developed an epenthetic /l/:

[196]braid DLa blaat55; DLb blat55; PLB *C-pat ✕ *pan1/2 (G+C 37)
PLB *bat ('wind around')

I feel these Dulong forms are definitely cognate with the PLB forms, yet no other language form thought to be cognate has this /l/ (see Matisoff 1985, p.16; STC p.46). No prefix is in evidence except for the fact that Mpi /phe?/ in tone 1 reflects a voiced prefix. If this prefix was an *l-, and was also the provenience to the Dulong forms, then there might have been metathesis to form an acceptable cluster, as happened with the word for 'dream', DL mlaang55 < PTB *r-mang, but it would be stretching things a bit to posit this seriously without more evidence of the prefix.

Aside from other problems with prefixes and clusters, there are four other forms that seem to be cases of prefix pre-emption:

[209]arrow DLa tu31 ma55; DLb tu31 ma55; N thama; Vayu blo <*bla;
Bahing bla; Newari bala; Magari mya; K pala; B hmra;
G bra; Dimasa bala; Tangkhul mala
PTB *b-la ✕ *m-la (449)

[198]chicken DLa ka755; DLb kha755; PTB *k-rak
[206]fingermail DLa nui55; DLb riun53; N nin <*myin; PTB *m-(t)sin=+m-tsyen (74)
[210]monkey DLa a31 gdi53; K woi~we; Jili taw; Kadu kwe <*k-we; N awe;
Moshang vi-sil; Shangge yok-vi; Trung a-koi.
PTB *woy (314)=*(b)woy [n.213]; **k-woy

Benedict adds the *(b)- to the form for 'monkey' because he wants to add Mikir ki-pi and Miri si-be to this set. I don't feel these two forms should be included, so I have set up the proto form with only the *k- animal prefix.

Finals

Referring again to the problem of the variation of medials and the effect it has on the main vowel, I would like to try to explain the aberrant form for 'to know':

[98]know DLa sɔ55; DLb sɔ55; PTB *syey (182)

Normally, the reflex of *-ey is /-i/, as seen above, but in this form we have instead a back rounded vowel. If the medial in the proto-form was not a palatal glide, as reconstructed, but was a labial-velar glide, then the backing and rounding could be explained. It seems that this variation between medials is an important part of Dulong's historical development.

One unexplainable development is a glottal stop in Dulong where the proto-form is the open syllable *-ay:

*-ay → -e?

small, chaff, break/broken, fear

[211]small(2) DLa ka31 ne?55; JP ſa31 ngai31 'bear children'; B ngai 'small, little, inferior', ngai cany tong kyê 'since childhood'; Boro mangáy 'small'; LCA nyi55, LXA n̥gi31, LHA nge55 'small'. PTB *ngay [G&C 111]

[212]chaff DLa ang31 pe?55; B phwái 'husks, chaff'; L phuai 'shavings'; Thado wai; Tiddim -vaai; Methei way; JP poi33 'to float through the air'; Lakher pai 'be scattered, disperse; emigrate, migrate'; Tangkhul khəngpuy 'fly in a group (bees), swarm, be scattered everywhere'; Mikir phe-ke; Mpi ko?2 phui2; Lh və?̥-ph̥i; LCA o?55 phoi31; LXA wa?31 phui35; LHA wa31 phu55 'chaff' (Lh və?, LCA o?55, LXA wa?31, LHA wa31 'pig'); Zaiwa phui31; possibly also MW pa, TP pə31. PTB *pwaay (170) [G&C 77]

[75]break/broken DLa be?55; PTB *be ✕ *pe (*bay ✕ *pay) (254)

[150]fear DLa pu31 re?55; DLb pu31 re?55; N phre 'to fear, be afraid'; PTB *b-ray (450)

Without the glottal stop the finals would present no problem. Again we are captive of the veracity of our materials, and can only assume that these forms are correct, especially given the regularity with which it develops from *-ay. It is interesting that it seems to happen only with this final, but I have no way to explain this fact. This is unlike the case of 'younger brother', where we could possibly assume a suffixation has taken place, as in 'speech':

[205]younger brother DLa ang31 nik55 ra31; DLb ang31 nyi55 nam; PTB *nyey [G&C 146]

[8]word,speech DLa ka55, kat55; DLb ka55, kat55; N kha; PTB *ka (9)

The opposite case holds for 'shit', where Dulong seems to have lost a final consonant, as *-it should give DL -it:

[59]shit DLa ni55; DLb n̥i53; N ni; PTB *n(y)iik (235)

Benedict gives the open syllable Nung, Dimasa and Jingpo forms, but does not comment on them in reconstructing a closed syllable based on the Written Tibetan, Burmese, and Garo forms.

In at least five forms there seems to have been an -a- ✕ -u- or -a- ✕ -i- alternation:

[149]self DLa rang55; DLb r̥ang55; PTB **rang

| | |
|----------------|---|
| [132]neck | DLb lang55 gi53; N ling; PTB *ling (96) |
| [176]cook,boil | DLa du31 gluu755; PTB *klak ✕ *glak (124) |
| [213]face | DLa mar55; DLb mar55; T mur 'gills', mur-gong 'temples', mur-gram 'jaw'; L hmuur 'point, tip, prow'; Thado mu <*mur 'beak'; N mr [mr] 'face, mouthful'; Tangkhul khəmor 'mouth'; possibly MBa ngor55, GMD a31 ngal35. |
| | PTB *muur (366) |
| [29]roll | DLa a31 tal53; DLb tan53; N redul 'roll, wrap, enwrap'; PTB *r-tul [110] |

The same type of -ā- ✕ -u- alternation occurs in Lepcha (please see Benedict 1972:75, n. 231 for a fuller discussion).

In 'sister' it seems that *-r → -l, but the Meithei forms show the same reflexes. Based on the Dulong, Jingpo, Meithei and Kadu forms, the proto final seems to have been *-l, not *-r.

| | |
|------------|--|
| 214 sister | DLa mu31 dzyal53; K dzyan; L far-nu; Tangkhul əzär-vā 'sister (man talking); Meithei itsyal-itsyan; Kadu san 'younger sister'.
PTB *dzar (68) |
|------------|--|

FINAL REMARKS

It may be that the greatest contribution I made in writing this paper was putting together all of this data in one place, but I feel that based on the information presented here, it is clear that Dulong can be a very useful language for doing Tibeto-Burman reconstructive work. This is especially true because Dulong is so conservative in terms of phonological change, and generally preserves distinctions such as that between cluster and prefix-plus-initial groupings. In this paper I have attempted to show what the historical development has been in Dulong, and, based on the knowledge gleaned from that effort, I have supported or revised over 200 of the reconstructions given in the STC, and added a few of my own.

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APPENDIX A: Symbols used in this paper

Languages and Sources:

| | |
|-------|--|
| AC | = Ancient Chinese/Middle Chinese, from Karlgren 1957. |
| B | = Written Burmese, from Benedict 1972 or 1976. |
| DLa | = Dulonghe Dulong, from Sun 1982. |
| DLb | = Nujiang Dulong, from Sun 1982. |
| DRD | = Darang Deng, from Sun et al. 1980. |
| G | = Garo, from Benedict 1972. |
| GMD | = Geman Deng, from Sun et al. 1980. |
| JP | = Enkun Jingpo, from Liu 1984 or Xu et al. 1983. |
| K | = Kachin (Jingpo) from Benedict 1972. |
| L | = Lushei, from Benedict 1972. |
| LCA | = Longchuan Achang, from Dai and Cui 1985. |
| LXA | = Luxi Achang, from Dai and Cui 1985. |
| LHA | = Lianghe Achang, from Dai and Cui 1985. |
| MBa | = Cuona Menba, from Sun et al. 1980. |
| MBb | = Motuo Menba, from Sun et al. 1980. |
| MC | = Middle Chinese, from Karlgren 1957. |
| MT | = Modern Tibetan, from Jin 1983. |
| MW | = Mawo Qiang, from Sun 1981. |
| N | = Nung, from Benedict 1972. |
| PLB | = Proto-Lolo (Yi)-Burmese, from Matisoff (all) or Benedict 1972. |
| PMa | = Qinghua Pumi, from Lu 1983. |
| PMb | = Taoba Pumi, from Lu 1983. |
| PTB | = Proto-Tibeto-Burman, from Matisoff (all) or Benedict 1972. |
| T | = Written Tibetan, from Benedict 1972 or (rarely) Jin 1983. |
| TP | = Taoping Qiang, from Sun 1981. |
| Zaiwa | = Zaiwa, from Xu et al. 1984. |

Key to symbols used in this paper:

| | |
|------------|--------------------------------|
| ə | = schwa |
| û | = mid-back unrounded vowel |
| ε | = epsilon |
| α | = upsidedown a |
| ω | = upsidedown m |
| ɔ | = open o |
| ι | = apical vowel |
| RR | = upsidedown R |
| ʂ | = retroflex s |
| ʐ | = retroflex z |
| ɳ | = retroflex n |
| ʃ | = palato-alveolar fric. |
| ʒ | = voiced palato-alveolar fric. |
| ʂ̥ | = alveo-palatal fric. |
| ʐ̥ | = voiced alveo-palatal fric. |
| ɲ | = palatal n |
| X | = voiceless uvular fric. |
| γ | = gamma |
| ŋ | = velar nasal |
| h(segment) | = voiceless segment |

? = glottal stop
 H = voiced h
 F = upsidedown f

APPENDIX B: Comparison of the two Dulong Dialects

Below I will simply list the correspondences.²⁵ As they are not of great importance to this paper, I will not give examples for each. These correspondences are quite regular, and several examples for each are given in Sun (1982).

| Nujiang | Dulonghe |
|-----------|------------------|
| aspirated | non-aspirated |
| tʂ | ʂ |
| dʐ,g,j | F (upsidedown f) |
| ʂ | c cedila |
| ń | ɳ |
| z | dʐ |
| ʐ | b |
| ʐ | dʐ |
| retroflex | non-retroflex |

²⁵ The correspondences are given in with the Nujiang form first, because DLb aspirated always corresponds with DLa non-aspirated, but not the other way around.