THE TONES OF JINGHPAW AND LOLO-BURMESE: COMMON ORIGIN VS. INDEPENDENT DEVELOPMENT

by

JAMES A. MATISOFF
University of California, Berkeley

1.0. *Introduction.*

It is hard to imagine a question of more interest to Tibeto-Burman (TB) studies than that of the possible interrelationship of the tonal systems of Jinghpaw (Jg.) and Lolo-Burmese (LB).[1] Jinghpaw occupies a key position in TB, for many reasons. First of all, thanks to Hanson 1906, it is one of the best documented languages of the family from a lexical point of view. Secondly, it is highly conservative phonologically (especially when compared to the "degenerate" LB group), preserving a rich array of prefixes, initial consonant-clusters, final stops and nasals, glottalized resonants, and other goodies. Finally, from the genetic standpoint, Jinghpaw stands at a unique crossroads. As its geographical position in northern Burma, the heartland of the TB speech area, might lead one to suspect, Jinghpaw seems to show special affinities with all major subgroups of TB simultaneously: Kuki-Naga, Garo-Bodo, Bodish or Himalayan, Nungish, and Lolo-Burmese.[2] Of all these interlocking relationships, however, the Jg./LB one has most impressed students of the problem, largely because the number of reliable cognates these languages share is so great.[3]

---

1 This paper was originally presented to the Fifth International Conference on Sino-Tibetan Language and Linguistic Studies, Ann Arbor, Michigan, October 20–21, 1972. I would here like to express my deep gratitude to Professor LaRaw Maran, with whom I first studied Jinghpaw in 1963, and without whom this paper could never have been written. Over a period of several weeks he generously took the time to answer a number of lengthy questionnaires, providing me with the tones of hundreds of Jg. lexical items.

I am also indebted to Dr. Paul K. Benedict for carefully going over the first version of this paper, and offering many invaluable comments and criticisms.

2 For an interesting discussion of Jinghpaw's crucial genetic position, see Burling 1971. Benedict 1972 b, pp. 4–10, gives a clear statement of the issues involved in TB subgrouping.

3 See especially the two unpublished volumes of Jg./LB cognates collected in Benedict 1940. Maran, a native speaker of both Jg. and Burmese, emphasizes (1971) the closeness of

If it could be demonstrated that the tonal distinctions of Jinghpaw are systematically related to those we must set up for Proto-Lolo-Burmese (PLB), this would be striking evidence that Jg. and LB do indeed constitute a tight genetic unit within TB. To this hypothetical subgroup we might give the name "Jiburish".[4] The establishment of such a special relationship would have far-reaching repercussions for the theory of the development of tones in Sino-Tibetan as a whole.[5]

If things were neat and simple in this world, there would be only three logically possible answers to our question. Either (a) the tones of Jg. correspond so regularly to those of PLB that there can be no doubt that the systems are genetically related (i.e., descendants of a single ancestor system at the proto-Jiburish [PJBL] stage); or (b) the Jg./LB tonal correspondences are so random that one can only assume that Jg. and LB tone-systems evolved independently through the operation of phonological processes internal to each; or (c) the tone-systems of Jg. and LB are *suspiciously* similar — i.e., more similar than their whole lexical-phonological relationship would seem to warrant — so that we might conclude that the tones of one language were borrowed from (or diffused into) the other language. Unfortunately, the present paper can provide no clear-cut choice among these possibilities, since in real life they are not mutually exclusive. On the basis of the present evidence, it looks as if the Jg. and LB tone-systems were once genetically related somehow; but this relationship has since been obscured by internal developments peculiar to Jinghpaw, so that only dim vestiges remain. One surprising new fact has come to light: the two-way tonal split in Loloish *stopped* syllables[6] (a split which did not occur in Burmese) shows unmistakable correlations with a similar split in Jg. stopped syllables, though many details remain unclear.

1.1. *Consonantal difficulties.*

Our problem is complicated by the fact that there are still serious gaps in our knowledge concerning Jg./LB *consonantal* correspondences, both in syllable-initial and syllable-final position:

the Jg./LB relationship, to the point where he calls them "dialects of the same language" in some abstract historico-phonological sense. His arguments rest on a combination of phonological and morphological considerations. See my forthcoming Review of Maran 1971 (Matisoff 1973b).

4 The word "Jiburish" is derived through apocope and aphaeresis from Ji-(nghpaw), -bur-(mish), and (Lolo)-ish. With the present study I am redeeming a pledge made in Benedict 1972b, p. 86 (note 253) and p. 195 (note 494), and in Matisoff 1972 (Preface).

5 For the most far-reaching attempt to date to reconstruct tones for the PST level, see Benedict 1972a.

6 See Matisoff 1971, 1972a.

(1) *Secondary voicing.* It is clear that the basic TB manner-opposition for obstruents was a two-way contrast of *voiceless vs. *voiced.[7] Daughter languages with a three-way opposition (e.g., voiceless unaspirated vs. voiceless aspirated vs. voiced) are assumed to have developed their third series secondarily, typically through the influence of certain prefixes. This is obviously the case in Written Burmese (WB) and Lahu (Lh.), our key Burmish and Loloish languages, respectively, whose voiceless unaspirated series descend from the PTB *voiced series, and whose voiceless aspirates descend from the PTB *voiceless series. The voiced obstruents of these languages are lexically much less frequent than either of the other two series. In the case of Lahu, it has been demonstrated[8] that they arose primarily through the influence of a *nasal* prefix. A similar explanation (along with the operation of intersyllabic sandhic voicing) will probably work for WB as well.

Jinghpaw also has three series of obstruents, but the status of its voiced series is quite different. In the first place, they are not particularly infrequent at all, being roughly as common as the two voiceless series. We cannot very well invoke a nasal prefix to explain this voicing, since modern Jg. still boasts not one but two nasal prefixes, *mə-* and syllabic *n̩-*, which occur before all three series of root-initials, and which descend at least in part from the original TB nasal prefix. Nevertheless there is something funny about the Jg. voiced obstruents — they correspond with equal frequency both to PLB *voiceless and *voiced.[9] We thus find abundant examples of all four of the following types of correspondences:

(a)	Jg. vless unasp	/ WB, Lh. vless unasp	[< PJBL *voiced]
(b)	Jg. vless asp	/ WB, Lh. vless asp	[< PJBL *voiceless]
(c)	Jg. voiced	/ WB, Lh. vless unasp	
(d)	Jg. voiced	/ WB, Lh. vless asp	

For the moment, therefore, all we can do is reconstruct (c)- and (d)-type correspondences as PJBL *voiced and *voiceless, respectively, with the lame addendum that Jg. "shows secondary voicing" in such cases. We shall see below in our discussion of Jg. correspondences to PLB Tone *1 that Jg. etyma with voiced obstruent initials seem to behave randomly with respect to their membership in the two main Jg. tonal classes (mid and

7 Benedict 1972b, p. 20 *et passim.*

8 Matisoff 1969, 1971, 1972a.

9 It was this fact which led Benedict (1940, p. 263) to state, "Voicing or unvoicing of the [Jg.] initial is of distinctly secondary importance, the primary demarcation being that between aspirated and unaspirated initials."

low). This indicates that the "secondary voicing" had a disruptive effect on the tone of the syllable — but more than this we cannot yet say.

(2) *Disagreement in voicing.* Another, quite distinct class of anomalous cases are those where Jg. and PLB *disagree in voicing.* A Jg./PLB cognate set is said to show disagreement in voicing if the Jg. form has a voiceless unaspirated initial[10] while its LB cognates have aspirated ones, or conversely if the Jg. form has an aspirated initial while its LB cognates have plain ones. In cases like these, we assume a proto-variation in voicing, i.e. we assume that the daughter forms are descendants of morphological alternants within the same word-family. This is an entirely legitimate assumption, in view of the fact that the individual daughter languages are rife with such variation at the present time.[11]

Since it is precisely variation in voicing which is the crucial factor in the development of tonal contrasts, it would be very dangerous to admit into evidence those sets of cognates which show both *voiceless and *voiced members (either as *between* Jg. and LB, or *within* either Jg. or LB), since it is usually impossible to determine what the "basic" manner of articulation may have been.[12]

Note that an etymon with a *voiced* Jg. initial (that does not vary with a voiceless one within Jg.) can never be said to "disagree" in voicing with its LB cognates, since it may descend equally well from a *voiced or *voiceless prototype (preceding section).[13]

(3) *Spirantal instability.* We are on no firmer ground with the spirants than with the obstruents. There is a bewilderingly large number of different correspondences between the Jg. spirants and affricates and those of LB, such that we must suppose that a great deal of variation went on in this

10 Let us henceforth refer to "voiceless unaspirated" by the simpler term *plain.* Similarly, from now on we shall simply say *aspirated* when we mean "voiceless aspirated."

11 We may call this "intra-language disagreement in voicing." Sometimes this variation is of morphological significance, reflecting regular affixational processes at earlier stages, like the plain ~ aspirated variation in Burmese simplex/causative verb-pairs. Often, however, no consistent semantic relationship is signalled by the variation. This is not surprising in view of the elusive meaning of most TB prefixes even in the earliest attested language, Written Tibetan (WT). See Wolfenden 1929.

12 It is of course entirely possible that some of the sets I do regard as criterial contain disagreeing variants of which I am not aware. Please help me find them!

13 An analogy with distinctive-feature theory is appropriate here. Jg. voiced syllables are *neutral* or *indeterminate* with respect to the proto-contrast *vd/*vless. To "disagree" (in feature-terms, "be distinct") in voicing, two forms must rather be in a +/− or −/+ relationship with respect to the feature [voiced].

area in the proto-language.[14] We have well-attested alternations between PJBL spirants and affricates (e.g. *s ~ *ts),[15] voiced and voiceless affricates (e.g. *ts ~ *dz), dental and palatal affricates (e.g. *ts ~ *tš), and even palatalized velars and palatal spirants (e.g. *ky ~ *š). Jg. ts sometimes corresponds to LB voiceless or glottalized resonants; in these cases we must often set up complex proto-clusters like *ʔry.[16]

(4) *Jg. glottalized resonants.* Hanson recognizes only ordinary (i.e. voiced) resonants, /w y r l/. Yet Maran, the best Jg. speaker in the Western hemisphere, vigorously maintains that Jg. has a full set of glottalized resonants as well, /ʔw ʔy ʔr ʔl/.[17] It has been pointed out repeatedly, ever since Burling 1967, that glottalization can have a profound effect on the tone of a syllable.[18]

(5) *Jg. final -ʔ vs. -k.* The usual reflex of TB *-k is glottal stop in Jg. (Again Hanson never records this phoneme, and we must rely on Maran). Yet there is a good number of cases where Jg. does have a final -k. Many of these are obvious loanwords (*nàmmùkdərā* 'ocean', etc.), but some seem to be genuine Jg. descendants of excellent TB roots, like *túk* 'poison'. The conditioning factors for the split into Jg. -ʔ and -k are still unknown.

1.2. *Evaluating the tonal evidence.*

Hanson does not record tonal distinctions at all, which is easily the greatest defect in his otherwise priceless dictionary.[19] For all our tonal information we have Maran to thank.[20]

14 Modern standard Jg. has the voiceless spirants / s š /, the plain affricates / ts tš /, and the voiced affricates / dz ~ z, dž /, but no aspirated affricates or voiced spirants.

WB has no distinction between dental and palatal affricates, so that the letters / စ ဆ ဇ / may be transcribed indifferently as "ts tsh dz" or "c ch j" [we adopt the latter course from force of habit]. The voiced affricate is rare and obviously of secondary origin, occurring mostly in loanwords. WB also does not distinguish between *s* and *š*, but we transcribe the letter သ as "s". There is no voiced spirant in WB.

Lahu also does not distinguish between dental and palatal spirants and affricates (though such closely related languages as Lisu and Akha do). The Lh. palatal affricates / c ch j / are allophonically dental before only one vowel, / i /. The Lahu spirants are / š y /, which also appear phonetically as [s z] before / i /. See Matisoff 1968, 1973a for more details.

15 This is independent of the fact that certain *regular* Jg. reflexes of PJBL affricates may be simple spirants. Thus *dz seems regularly to give Jg. š, as in 'eat', PLB *dza / Jg. šá.

16 See for example 'eight' (Set 370 below), where Jg. mətsát corresponds to WT brgyad.

17 Personal communications, 1963 to the present. Maran also believes there is a contrast between plain and glottalized dental affricates, / ts / vs / ʔts /.

18 See especially Matisoff 1970.

19 As he delightfully puts it in his Preface (p. iv), "The tones are more important than

(1) *Tonal variation within a word-family.* Jg. abounds in tonal variations among morphologically related alternants of the same root-morpheme. Sometimes the alternants stand in a clear semantic relationship to each other, e.g. simplex to causative: myīŋ 'be named', šəmyìŋ 'give a name to'; lūm 'be warm', šəlúm 'heat something'; phún 'put on and wear', džəphūn 'clothe someone', etc. As these few examples show, there is no simple way of predicting what the tonal variation (if any) will be in any particular simplex/causative pair. Sometimes the variation obtains between a verb and a noun formed from the same root: thòi 'to light', nīŋthói 'a day'. Very often the semantic relationship between the alternants is less precise and more unstructured (kúŋ 'be bent', khùŋ 'overhang something'). Frequently, as in this last example, the alternants show consonantal variation along with the difference in tone.

In the most interesting cases, the tonal and/or consonantal variation within Jg. is directly paralleled in cognate word-families in LB. Thus, Jg. nā 'ear' / nà 'to hear' is analogous to WB nâ 'ear' / na 'listen' and Lh. nā 'ear' / na 'listen'; WB prûn 'be worn away' / phrûn 'wear something away' corresponds to Jg. brūn 'be destroyed' / phrùn 'demolish something'. A thorough study of these variational patterns is badly needed, and may indeed be the key to many current problems — but unfortunately is beyond the scope of the present paper.

For the purposes of this study, we steer clear of these tonally variable families as far as possible. Crucially important as they are, they raise too many problems for us to cope with in the present state of our knowledge.[21]

(2) *Primary vs. secondary tones.* Students of historical phonology are acutely aware that the sound-system of any language is never in complete equilibrium at a given moment in time. New elements are constantly creeping into the system on the one hand, while formerly distinctively opposed elements are losing their contrastive function on the other hand. The system is in flux. This means that the members of the inventory of contrastive elements in a language at a particular time are not all of equal time depth. Some contrasts have been around a lot longer than others. This is as true for tones as it is for vowels and consonants.

generally admitted by Kachin students, but they can be mastered only with the help of a native teacher, and it would be useless to burden these pages with tonal marks in regard to which no two Europeans would ever agree."

20 Tones are recorded in Nishida 1960, and in the 1959 anonymous Chinese study, but I have preferred not to rely on these for a variety of reasons, mainly because I could not be sure the dialects were the same as Maran's standard.

21 Maran and I are planning to collaborate soon on a large-scale study of morphologically significant tonal variation in Jg.

Differences in the historical status of tonal contrasts are observable synchronically in a variety of ways. Perhaps the two most suggestive indices are *differential lexical frequency* and *involvement in morphological alternations.* If a given tone is lexically much less frequent than its fellows, it is likely either to be a newcomer to the system (on the way in) or a lonesome remnant of an older tonal class that lost some of its members through later developments (on the way out). Similarly, if a tone is associated with a more-or-less productive type of morphological alternation (especially if it is otherwise of low lexical frequency), it is likely to have arisen relatively recently as a phonological device that the language exploits to reinforce a grammatical distinction that had been endangered through the decay of a segmental contrast.

Tones which have a large functional load in the lexicon of a language, and which do not owe an unduly large fraction of their occurrences to their participation in morphological alternations, we may call *primary tones.* Other tones are *secondary.*[22] Familiar examples of secondary tones in Sino-Tibetan include the Lahu high-rising tone,[23] the Burmese creaky tone,[24] and Ancient Chinese departing tone.[25]

In modern standard Jinghpaw, there are two primary tones in non-stopped syllables, mid-tone (¯) and low-tone (ˋ). The high-tone (ˊ) is much less frequent lexically.[26] Furthermore, it is involved in a crucially important type of noun-verb tonal alternation in word-families that have cognates under PLB Tone *2 (below 4.3). Even "more secondary" is the Jg. falling tone (ˆ). Compared to the other three tones, /ˆ/ occurs on only a tiny fraction of the lexicon in its own right (i.e. in word-families where it is not in variation with other forms of the same root under different tones): e.g. džəkhû 'nine', ləkhôŋ 'two'.[27] Most cases of /ˆ/ involve alternations with the low-tone, including (a) *vocatives* [kəwà 'father', wâ 'O father!']; (b) *negatives* [lù 'have', ń-lû 'not have'];[28] *deverbal nouns* [thòi 'be light',

22 Needless to say, this is a matter of degree. Some "secondary" tones are more "primary" than others by these criteria. Furthermore, the status of a tonal contrast can radically change through time. To rank tones on a primary/secondary scale only makes sense for a particular stage in a language's history.

23 See Matisoff 1970 *passim*; 1973a, Ch. I.

24 See below, 9.6. For a lucid account of morphological alternations involving the creaky tone in modern Burmese, see Okell 1969, pp. 18–21. Written Burmese has two primary tones, "1" and "2", deriving from PLB "Tone *1" and "Tone *2"; see below 2.0.

25 See Haudricourt 1954; Downer 1959; Pulleyblank 1972.

26 Despite its relative rarity, however, Jg. /ˊ/ occurs with some of the best general TB etyma, especially in words which have LB cognates under Tone *2. See below 4.3.

27 Most of these cases are words with prefixes of the shape Cə-, which undoubtedly triggered the tonal aberration – though why this should have happened in certain words and not others is still a mystery.

28 It is not hard to figure out how this happened in the case of negatives. The negative

ʔəthôi 'illumination']; and *adverbial derivatives* [nì 'be near', ʔənî-nì šà 'nearby'; tèm 'be closely shut', n̄-tēm 'sober, grave', ʔətêm šà 'soberly']. We henceforth ignore /ˆ/ completely, since it is obviously such a johnny-come-lately. (This is not to say that someday it may not achieve enormous importance in the system!).

Prefixial Jg. syllables whose vowel is unstressed shwa are deemed to have no tone at all for our purposes, though Maran claims[29] that there is a high-low contrast even here.

The two-way tonal contrast in Jg. *stopped* syllables is undoubtedly secondary from the point of view of Sino-Tibetan as a whole,[30] though there is good evidence that it is of considerable antiquity, since it seems to correlate directly with the similar Loloish two-way split, as we shall see below 9.0–9.5.

1.3. *Plan of this study.*

We shall first consider PLB etyma under Tone *1 that correspond to Jg. words under the mid- or low-tone, confining ourselves to sets where neither PLB nor Jg. shows tonal variation. After that we shall do the same for PLB Tone *2. We shall then be in a position to judge whether there is any correlation between one of the primary PLB tones and either of the primary Jg. ones.

We will then proceed to compare the "less primary" Jg. high-tone with both PLB *1 and *2.[31]

The paper will conclude with a comparison of the Jg. and Loloish tonal splits in stopped syllables.[32]

2.0. *The primary non-stopped tones of PLB compared with Jg. cognate syllables.*

The basic correspondences between the two primary tones of Written Burmese and the tones of Loloish have been worked out by Benedict,[33] Burling (1967) and Matisoff. It is convenient to refer to the two primary non-stopped WB tones by number: "1" and "2". WB Tone 1 has developed into Modern Burmese "low tone", and corresponds either to Lahu mid

prefix ń- is under intrinsic high tone (having itself been derived from something "more primary", probably *mə-). The speaker thus has to lower the pitch of his voice rapidly to pronounce a following verb on the low-tone. This abrupt lowering of the larynx is heard as a continuous drop from high to low, i.e. a "falling" tone.

29 Personal communications.

30 See Benedict 1972a.

31 A more complete study of non-stopped syllables would include a discussion of cases where Jg. and/or PLB shows tonal variation, as well as cases where WB has creaky tone.

32 A fuller treatment of stopped syllables would include cases where there is variation between stopped and non-stopped finals.

33 Benedict 1972b, pp. 86–91.

tone (after *aspirated or *glottalized initials) or Lahu low-falling tone (otherwise).[34] The correspondence of WB Tone 1 to Lahu mid or low-falling tone reflects PLB Tone *1.

2.1. *Jg. mid versus low correspondences to PLB Tone *1.*

We shall begin by presenting lists of cognate sets divided according to the type of initial consonant-correspondence in the syllable, giving first the words where Jg. has mid-tone, then those where Jg. has low-tone. In section 2.2 we attempt to account for the double Jg. correspondence.

2.11. *Stop or affricate initials.*

A. *Jg. plain / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [15 exs. + 1 ?].[35]

1. 'bustling, opulent'. Jg. tšīŋ 'close, closely woven; opulent' / WB cañ 'abound; be thronged, bustling'.
2. 'dissolve'. Jg. tūn (v.i.), šətūn (v.t.) / WB tun-tun 'too dilute'.
3. 'dry (sun, fire), fry'. Jg. krāu 'dry up, be overdry', kərāu ~ gərāu 'dry over a fire' / WB krau ~ kyau 'fry'.[36]
4. 'effaced'. Jg. prāi 'be effaced, settled and forgotten (feud), healed (old sore)', šəprāi (v.t.) / WB prai 'be wasted; become weak, less vivid'.
5. 'fly (v.)'. Jg. pyēn / WB pyam / Lh. pò.
6. *'moon, month'. Jg. tā, šətā / WB nwai-ta '12th month', ta'-pôŋ 'name of 12th month'.[37]
7. 'paint, daub'. Jg. tšā 'paint, daub, dye', gīn-tšā 'be smeared' / WB ca 'writing; a paper, document'.
8. 'pith'. Jg. krī, ʔəkrī 'heartwood' / Lh. ò-kɛ 'pith'.
9. 'plain (n.)'. Jg. prāŋ 'plain, moor' / WB praŋ 'the outside', ʔəpraŋ 'open vacant surface'.

34 WB tone 1 and Lahu mid-tone are left unmarked in our transcription. Lahu low-falling tone is marked by a grave accent.

35 The figures in square brackets refer to the number of available examples to illustrate the correspondence in question. Examples which are dubious in some way are counted separately, with their total followed by a question-mark. Thus "15 exs. + 1 ?" means "15 good examples plus one dubious example". The dubious examples are marked with an asterisk next to their gloss. Many of them are commented on in footnotes.

36 This set could equally well be included in the category "Fusionally prefixed resonants", Class N below.

37 This set shows a WB alternation between Tone 1 and creaky tone (symbolized by an apostrophe after the vowel). At any rate, the Jg. form is probably rather to be connected with WB la' (also creaky tone) and Lh. ha-pa 'moon'. See Benedict 1972b, p. 42. From now on we refer to "Benedict 1972b" by the initials "STC" (*Sino-Tibetan: a Conspectus*).

10. 'press against'. Jg. məkān 'press against, strain (as at stool), be in labor (woman)' / WB kan 'push a boat from land; recoil, as a gun'.
11. 'roast'. Jg. kəkāŋ / WB kaŋ / Lh. qɔ.[38]
12. 'smoothed out'. Jg. prī 'be smoothed over, leveled', šəprī 'to smooth, polish' / WB pre 'be loosed, untied; smoothed over, appeased, settled', phre (v.t.) / Lh. phɨ 'untie'.[39]
13. 'sparrow'. Jg. ʔù-tsā / WB ca.
14. 'spleen'. Jg. sìn-pāi ~ kān-pāi ~ kūm-pāi ~ khūm-pāi / Lh. ò-pe.
15. 'stiff, aching'. Jg. kyīn 'stiff, aching', kyīŋ 'be in trouble' / WB kyañ 'feeling of numbness'.[40]
16. 'suppurate'. Jg. twī 'suppurate, as a boil' / WB twe 'flow moderately and incessantly'.

(2) where Jg. has *low-tone* [1 ex. + 2 ?].

17. *'true'. Jg. tèŋ, šətèŋ 'verify', ʔətêŋ 'truly' / Lh. ò-tɛ̀ 'truth, something real'.
18. *'respect'. Jg. kò, ʔəkô / WB kaw-raw.[41]
19. 'short'. Jg. tù / WB tui.

AA. *Jg. plain ~ voiced / WB plain.*

(1) where Jg. has *mid-tone* [2 exs.].

20. 'ant'. Jg. ūkyīn 'ants (generic)', kəkyīn ~ kəgyīn 'common black ant' / WB kyañ 'large sp. of ant'.
21. 'happy, enjoy$_1$'. Jg. pyō ~ prō (Hkauri[42]) ~ byō, šəpyō ~ šəbyō 'amuse, entertain' / WB pyaw 'be happy', phyaw 'make happy'.

(2) where Jg. has *low-tone* [1 ex.].

22. 'adhere$_1$'. Jg. tšùŋ 'stick, adhere to', džùŋ 'id.' (LM) / WB cuiŋ 'cohere', ʔəcuiŋ 'a lump'.

38 The mid-tone in the Lh. form points to a prototype with glottalized initial (2.0 above), which perhaps is to be related to the velar prefix in the Jg. form.

39 The WB forms are a simplex/causative pair. The Lh. form descends from a variant with aspirated initial, rather than from the causative member of the pair, since the PLB causative marker was *glottalization*, which yields Lh. *plain* initials (but WB aspirated ones). See Matisoff 1969, 1970.

40 LaRaw Maran (henceforth LM) also cites krīŋ 'stiff'. Jg. kāŋ 'stretched, tense, taut' probably goes with WB kraŋ' ~ kyaŋ' 'tense, tight'.

41 Note the Jg. alternation between /ˆ/ and secondary falling tone /ˆ/, in this set and the preceding one. 'Respect' may be a loan from Tai (cf. Siamese khawróp).

42 Hkauri is a Jg. dialect that displays both conservative and innovative features. On the conservative side is the retention of etymological final nasals in certain words where standard Jg. has lost them (e.g. gùmràŋ 'horse' vs. standard gùmrà; cf. WB mrâŋ); on the innovating side is the affrication of ph- to pf- (similar to the Lh. affrication of labials before /u/).

B. *Jg. aspirated / WB, Lh. aspirated.*

(1) where Jg. has *mid-tone* [5 exs. + 1 ?].

23. 'behind, retarded'. Jg. phāŋ 'be behind' / WB phaŋ 'procrastinate, delay'.
24. 'hunt, chase'. Jg. khwī / WB khwe 'check (in chess)' [also perhaps khwe' ~ hwe' 'push with the head, butt' with creaky tone].
25. 'perpendicular, superior'. Jg. thōŋ 'excel, be taller than others,' dìŋ-thōŋ 'stand as a column', thōŋ-lōŋ 'perpendicular' / WB thoŋ 'place upright; be proud, stubborn'.
26. *'prison'. Jg. thōŋ / WB thoŋ [prob. a loan into Jg. < Bs.].
27. 'surround$_1$'. Jg. khōi 'surround, as an altar with ornaments' / WB khrwe-ram 'surround, attend'.
28. 'time'. Jg. khyīŋ / WB ʔəkhyin / Lh. khɨ[43].

(2) where Jg. has *low-tone* [9 exs. + 2?].

29. 'bear, endure'. Jg. khàm / WB kham.
30. 'sneeze$_1$, blow nose'. Jg. khyì 'blow nose' / WB khye 'sneeze'.
31. 'coiled, curved'. Jg. khòŋ 'be coiled', ʔəkhòŋ 'a coil' / WB khwaŋ 'be bent, curved'.[44]
32. *'dilute, fade$_1$'. Jg. phòi 'vanish, disappear' / WB phyo 'dilute, make thin, dissolve' [also phyo' 'pale, faded; look sickly'].[45]
33. 'exhausted'. Jg. khì, khì-bá / WB khe 'weak, inefficient (contempt.)'.
34. *'lion$_1$'. Jg. khàŋ̄-khyì / WB khraŋ-se' ~ khyaŋ-se' [loan into Jg. < Bs.].
35. 'mortar'. Jg. thùm / WB chum / Lh. chɛ-má-qō.
36. 'spirit$_1$'. Jg. tsù, ʔətsù 'disembodied spirit' / WB ʔəchu 'num. aux. applied to deities, pagodas, etc.'.[46]
37. 'sterile, malfunctioning'. Jg. ù-thùm 'sterile bovine', myìt thùm 'exhausted in mind, discouraged' / WB thum 'numb, stupefied'.
38. 'white$_1$, silver'. Jg. gùm-phrò / WB phru / Lh. phu [see Set 100, below].

43 The Lahu front velar reflects a variant with medial -r-. Note the -n/-ŋ final alternation in Jg. and WB.

44 There are related WB forms with plain initials under Tone 2: kwâŋ 'bend into a ring, be circuitous', ʔəkwâŋ 'a circle, ring, loop'. We could therefore have omitted this set on the grounds of tonal variation.

45 The vowel correspondence is irregular.

46 We include this set here since Jg. has no contrast between plain and aspirated affricates. In our discussion of Tone *2 (below 3.11) we classify correspondences between Jg. /ts tš/ and Lolo-Burmese aspirated affricates as a separate subclass, BB.

39. 'wind around$_1$'. Jg. khàŋ 'to wind, bandage; tie up, be entangled' / WB ʔəkhaŋ 'a hank, something wound around'.

C. *Jg. voiced / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [9 exs. + 2 ?].

40. 'accurate, exact'. Jg. brī, šəbrī 'even out' (LM) / WB pri.[47]
41. 'blanket'. Jg. phàʔ-džōŋ / WB coŋ [first syll. of Jg. < Shan].
42. 'cubit$_1$'. Jg. dōŋ / WB toŋ 'measure in cubits', ʔətoŋ 'a cubit'.
43. 'do, make'. Jg. dī / WB te 'do repeatedly and constantly' / Lh. te 'do'.[48]
44. 'hammer'. Jg. sùm-dū / WB sam-tu.[49]
45. 'like, desire'. Jg. dōŋ / WB toŋ 'burn with lust', toŋ'-ta' 'long for'.
46. *'measure (n.)'. Jg. byē 'a measure of capacity' / WB prañ, ʔəprañ.[50]
47. 'protect, shield'. Jg. məgā / WB ka.
48. 'related (by birth or marriage)'. Jg. dō / WB taw.
49. *'star'. Jg. šəgān / WB krai / Lh. màʔ-kə [This set presents several irregularities].[51]
50. 'sufficient$_1$'. Jg. gūm, gūm-gūm / WB kum 'have plenty' [also perhaps Lh. qhɛ 'verb particle indicating frequent or excessive action', from an aspirated prototype].

(2) where Jg. has *low-tone* [9 exs. + 1 ?].

51. 'angry, rebellious'. Jg. bùn 'angry, violent with rage', sùpbùn ~ səbùn ~ sùbùn 'fury' / WB pun 'to rebel (obs.)', su-pun 'a rebel'.[52]
52. 'body$_1$'. Jg. gùm-gù / WB kui(y).
53. 'body$_2$, corpse$_1$'. Jg. gòŋ 'physical body', ṅ-gòŋ 'corpse' / WB ʔəkoŋ 'animal body; dead body'.
54. 'buttocks'. Jg. dàŋ, mài-dàŋ, dàŋ-kāŋ / WB taŋ.
55. 'father-in-law, respected male relative'. Jg. kəgù 'f-i-l', gû, ʔəgû 'f-i-l, brother-in-law', kû (Hkauri) 'id.' / WB kui 'brother, esp. elder'.[53]
56. *'filth$_1$'. Jg. ʔəgàŋ / WB kyaŋ [Jg. lacks the medial -y-].

47 See "smoothed out", No. 12 above.
48 There is a related stopped Jg. form, díʔ 'auxiliary forming transitives.'
49 These words belong to a large word-family ('to pound') which exhibits tonal variation.
50 The rhyme-correspondence is irregular. Loanword?
51 The Jg. -n is from PTB *-r (WT skar-ma). For a discussion of this set, see Matisoff 1972b, p. 279.
52 There is a Jg. variant with final stop: bùʔ 'have fever, be hot with rage', šəbùʔ 'enrage, incite, provoke'. See No. 378 below.
53 The Jg. forms under the falling tone probably arose through vocative intonation. See above 1.2(2).

57. 'lay stone, pave'. Jg. dèn 'lay, as brick or stone', mədèn 'widen, expand' / WB tañ 'place in a position, build'.
58. 'noisy$_1$'. Jg. ṅ-dàu 'loud, noisy' / WB taw 'loud rumbling noise'.
59. 'parrot'. Jg. k(y)ék-*dàu* / WB krak-*tu*-rwê ~ kyak-*tu*-rwê.[54]
60. 'pimple, wart'. Jg. tšīŋ-džòn / WB cwan.

CC. *Jg. voiced / WB, Lh. aspirated.*

(1) where Jg. has *mid-tone* [3 exs. + 1 ?].

61. 'clear, disencumber'. kəbrāŋ 'to separate, as contending parties', šəbrāŋ 'clear, as a road' / WB phyaŋ 'disentangle, separate parties in a quarrel'.
62. *'fixed, firm, in control'. Jg. džūŋ 'be fixed (post), firmly rooted (tree)' / WB chuiŋ 'have jurisdiction, have a right to'.[55]
63. 'sit'. Jg. dūŋ / WB thuiŋ.
64. 'thick'. Jg. dāu / WB thu / Lh. thu [There also exist WB derivatives under creaky tone: thu', ʔəthu' 'thickness', du' 'thickness, multitude'].

(2) where Jg. has *low-tone* [6 exs. + 1 ?].

65. 'bile, gall'. Jg. šəgrì ~ səgrì / WB sâñ-khre / Lh. ò-ki.[56]
66. 'burn$_1$, boil$_1$'. Jg. džù 'burn, as wood; roast, broil' / WB chu 'boil, bubble'.
67. 'cover$_1$, envelop'. Jg. kìŋ-grùm, thìŋ-grùm, dəgrùm / WB khrum ~ khyum.[57]
68. 'mosquito'. Jg. džìʔ-gròŋ / WB khraŋ.[58]
69. 'strong'. Jg. nìŋ-gòn ~ ṅ-gòn 'all, whole; great, strong', ṅ-gùn 'strength' / WB khwan-â, â-khwan 'strength'.
70. 'summon, call to come'. Jg. gàu / WB khaw / Lh. qho.
71. *'sweet$_1$'. Jg. dùi / WB khyui / Lh. chɔ[59].

54 The first syllable of the WB forms means "fowl", and was probably borrowed into Jg. The second syllables seem genuinely cognate.
55 Related is No. 22 above, 'adhere'. Cf. also Jg. džún 'fix a post'. Maybe WB chuiŋ is rather to be related to Jg. sēŋ 'appertain to'; see No. 82 below.
56 The first syllable of the WB form means 'liver', which is probably reflected in reduced form by the Jg. prefix as well. The correspondence between WB aspirated and Lh. plain stops points to a *glottalized initial at the PLB stage. See also 'sour', No. 95 below.
57 There is a TB variant with homorganic final stop: WT klub, Jg. grùp.
58 The Lh. word for 'mosquito' is pí-cá-qɔ̂. The second syllable descends from *ʔgyak (< PLB *ʟow-stopped), and the third from *kâŋ (< PLB Tone *2). Either of these could be related to the Jg. and WB forms.
59 Benedict 1972b considers the Jg. and LB to descend from separate roots [*twi(y) vs. *kyuw or *khyəw], yet they seem certainly to be related. Cf. the Tangkhul Naga alternation between t ~ c in 'sugar-cane': tɯ-həy ~ cɯ-həy (Bhat 1969). For a similar example of Jg. dental corresponding to LB palatals see 'mortar', No. 35 above.

CCC. *Jg. voiced / WB, Lh. plain ~ aspirated.*

(1) where Jg. has *mid-tone* [1 ex. ?].

72. *'foot; marrow'. WT rkaŋ-pa 'foot; marrow-bone' / Jg. ləgō ~ ləgōŋ 'foot' / WB khraŋ-chi 'marrow' / Lh. ò-chɔ-pwɛ (Burling 1967) ~ ò-cɔ-pɔ (Matisoff).[60]

(2) where Jg. has *low-tone* [2 exs.][61].

73. 'destroy$_1$'. Jg. brù (v.t.), byù (v.i. and v.t.), dùm-brù 'scatter, disperse' [cf. also brūn 'be destroyed, abort (fetus)'] / WB prui (v.i.), phrui (v.t.).
74. 'fall apart, pulverize'. Jg. gyì 'cave in (as a river-bank), break off (as limb from tree)' / WB kre 'reduced to particles, digested; bruised', khre ~ khye (v.t.) [The Jg. form gyí? 'have a bruise' reflects a variant with stopped final].

D. *Jg. aspirated (or w-, or plain) / WB voiced, voiced ~ aspirated.*

(1) where Jg. has *mid-tone* [4 exs. + 2 ?].

75. *'all'. Jg. kōm-dòm 'all, everything' / WB gywam 'all together, good and bad without distinction'.[62]
76. 'barking deer'. Jg. khyī / WB khye ~ gyi / Lh. chi.
77. 'go around'. Jg. phyīn 'go around', kəwīn 'turn' (Hkauri), kəyīn 'rotate' / WB bhin 'wheel'.
78. 'raft, float (n.)'. Jg. phōŋ / WB phoŋ ~ bhoŋ. [Loanword?].
79. *'sweet$_2$, suitable'. Jg. wōi, ?ōi 'feel sweet to the taste' [< Shan 'sugar-cane'? Cf. Lh. nà?-wē-šī 'candy'.] / WB phwai ~ bhwai 'fit, proper, desirable', ?əphwai (n.).
80. 'what'. Jg. phā / WB ba.

(2) where Jg. has *low-tone* [1 ex. ?].

81. *'cowlick'. Jg. bòi 'have flexure or cowlick' (Hkauri)[63] / WB bwe 'circular flexure in hair of animals'.

60 Two roots are really involved here (STC: note 128, p. 39; note 218, p. 70).

61 In both of these cases the WB forms constitute simplex/causative pairs.

62 Jg. shows no trace of the medial -y-, though the medial -w- is regularly reflected by the -o- vocalism.

63 LM confesses he is not sure of the tone of this word. Benedict now feels (personal communication) that all correspondences of Jg. -oi to WB -we are invalid, though I feel this is too harshly conservative a position.

E. *Jg. spirant / WB, Lh. aspirated affricate.*

(1) where Jg. has *mid-tone* [3 exs. + 2 ?].

82. *'concern, relate to'. Jg. sēŋ 'concern, relate, appertain' / WB chuiŋ 'have a right to; concern' [see note 55].
83. *'semen; fat$_1$'. Jg. zū 'semen' / WB chu 'fat' / Lh. chu 'fat', nī-chu 'semen' (dial.; nī 'penis').[64]
84. 'speak'. Jg. sū 'speak; convey news of a tragedy, call to a funeral' / WB chui 'speak'.
85. 'ten'. Jg. šī (ší in comp.) / WB chay / Lh. chi.
86. 'weigh'. Jg. šīn ~ šēn / WB khyin / Lh. chi.

(2) where Jg. has *low-tone* [one ex.].

87. 'person'. Jg. məšà ~ məšàŋ (Hkauri) / Lh. chɔ [The Lh. form corresponds to the Jg. nasal variant].

EE. *Jg. spirant / WB plain affricate.*

(2) where Jg. has *low-tone* [one ex.].

88. 'enjoy$_2$'. Jg. šàm 'do for pleasure; be ready, as for an undertaking; be ripe, as a boil' / WB cam 'enjoy'.

F. *Jg. plain / WB, Lh. aspirated.*

(1) where Jg. has *mid-tone* [2 exs.].

89. 'crowded'. Jg. prāŋ 'to swarm, as insects after a rain', 'be crowded' (Hkauri) / WB phyaŋ 'much, abundant', phraŋ 'many' (Tin).
90. 'hill, ridge'. WT sgaŋ 'spur, projecting hill' / Jg. ləkāŋ 'ridge connecting two hills; froenum of tongue' / WB khaŋ 'knoll, rising ground', hlya-khaŋ 'uvula, palate' / Lh. qhɔ 'hill, mountain'.

(2) where Jg. has *low-tone* [one ex.].

91. 'patch, mend'. Jg. pà 'be mended', kəpà 'mend, patch' / WB pha 'mend, patch', ?əpha (n.).

G. *Jg. aspirated / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [four exs.].

92. 'full, fill'. Jg. phrīŋ 'be full', džəphrīŋ 'to fill' / WB prañ 'be full',

64 The standard Black Lahu form is nī-g̃ɨ 'penis-liquid'. Alternatively, the Jg. form could be related to WB sui 'penis', sûi 'testicles', sut 'semen'. (Cognate to WB sûi is Lh. -šɔ̃ 'intact male animal', as in ɨ-mû-šɔ̃ 'stallion', nû-šɔ̃ 'bull', etc.). We would then be free to identify WB and Lh. chu with Jg. sáu 'oil, grease'. See below, No. 271.

phrañ 'to fill' [also perhaps Lh. pɛ 'be plenty'; Lh. bî 'full' reflects a PLB Tone *2 variant with pre-nasalized initial].

93. 'handle$_1$'. Jg. nìŋ-khū 'hilt', nìŋ-khūŋ 'handle' / WB kuiŋ 'lay hold of', ʔəkuiŋ 'handle'.
94. 'shell'. Jg. khōi 'mollusc' / WB krwe 'sp. of shellfish; cowrie' / Lh. jù 'bead, shell', jù-šī 'cowrie' [note the Lh. voicing].
95. 'sour'. Jg. khrī 'sour, acid', məkhrī 'pickled, soured bamboo sprouts' / Lh. ci ~ ce 'sour'.[65]

(2) where Jg. has *low-tone* [3 exs. + 2 ?].

96. 'burn$_2$, boil$_2$'. Jg. khrù 'be burned', thìŋ-khrù 'a fire' / WB krui ~ kyui 'boil to a pulp, melt' [see No. 66].
97. *'flint, anvil'. Jg. phài 'flint' / WB pe 'anvil' / Lh. pì-tɛ 'id.' [connection doubtful].
98. *'oblique, slanting$_1$'. Jg. khyè, ǹ-khyè / WB kai [There are also a number of related forms with Jg. final nasal: khyèŋ 'to tip (as scales)', gyèŋ 'lean', kyēŋ 'incline'].
99. 'ruined, crippled'. Jg. thèn 'broken, ruined', myìt thèn 'discouraged', myìʔ thèn 'blind', džəthèn 'to injure (v.t.)' / WB tañ 'elephant born with only one tusk'.
100. 'white$_2$'. Jg. phròŋ / WB proŋ 'shining' [cf. No. 38 above].

2.12. *Spirantal initials.*

H. *Jg. s / WB s / Lh. š.*

(1) Jg. has *mid-tone* [2 exs.].

101. 'die$_1$'. Jg. sī / WB se / Lh. ši.
102. 'give food'. Jg. sāŋ 'give, replace, substitute (as an equivalent)' / WB saŋ-put 'give offering of food'.

HH. *Jg. š / WB s.*

(2) Jg. has *low-tone* [3 exs.].

103. 'gather, store'. Jg. šù / WB sui.
104. 'only'. Jg. šà / WB sa.
105. 'this'. Jg. šìŋ 'thus; this' / WB sañ 'this' [There is also a WB creaky-tone variant, sañ'].

65 For a related set see 'bile, gall', above No. 65. The Lahu form here reflects a PLB *ʔky- initial. Also involved is the WB kyañ 'sour', but this is not directly cognate to either of the Lh. variants (WB -añ corresponds rather to Lh. -ɛ̀).

2.13. *Nasal initials.*

I. *Jg. nasal / WB, Lh. plain nasal.*

(1) where Jg. has *mid-tone* [2 exs. + 1 ?].

106. 'awed'. Jg. ʔənā 'be deterred by feelings of respect' / WB â-na 'id.'.
107. *'I, me'. Jg. ŋāi / WB ŋa / Lh. ŋà.[66]
108. 'you'. Jg. nāŋ / WB naŋ / Lh. nɔ̀.

(2) where Jg. has *low-tone* [one ex.].

109. 'wound, scar'. Jg. ǹ-mà / WB ʔəma-rwat.[67]

J. *Jg. nasal / LB voiceless nasal or plain ~ voiceless nasal.*

(1) where Jg. has *mid-tone* [3 exs. + 1 ?].

110. *'downward'. Jg. nām, khàʔ-nām 'downstream' / WB nwam 'sink; sediment', hnwam 'to humble (v.t.)'.[68]
111. 'dream'. Jg. māŋ / WB hmaŋ 'somnambulize' [The usual LB words for 'dream' have the stop final -k. See Matisoff 1972a, set 144].
112. 'mushroom'. Jg. kəmū / WB hmui / Lh. mù [The Lh. form reflects a *plain nasal].
113. 'odor of frying'. Jg. sə̀ŋāu 'smell of something boiling, frying, or singeing' / WB hñaw 'smell offensively when subjected to action of fire', ʔəhñaw (n.).

(2) where Jg. has *low-tone* [2 exs.].

114. 'illness'. Jg. ʔənà / WB ʔəna / Lh. nà 'be sick', na 'be cured'.[69]
115. 'enough$_1$, sufficient$_2$'. Jg. ŋàm 'to remain over, as leavings after a meal' / WB ŋam 'be enough, sufficient' / Lh. ŋɔ 'enough', ŋɔ-ŋɔ 'almost enough'.[70]

66 Two separate related roots are involved here, PTB *ŋa and *ŋay. See STC, sets 406 and 285.

67 Note the interplay between the *nasal* prefix in Jg. and the *glottal* prefix in LB. See Matisoff 1972a, p. 48, note 28.

68 Jg. shows no trace of a medial -w-.

69 The second Lh. form reflects a *glottalized prototype. This root is probably related to the word for 'spirit', with suffixed -n ~ -t. See below, No. 366; also STC, p. 159 and Matisoff 1972a, p. 58.

70 The Lh. mid-tone points to a *glottalized prototype. The usual Lh. reflex of *-am is -o (see No. 116 below), but neither the syllables *ŋo* nor *ŋu* occurs in the language, so that -ɔ is the regular Lh. reflex of *-am after the velar nasal.

2.14. *Resonantal initials.*

K. *Jg. simple or prefixed resonants / WB, Lh. voiced resonants.*

(1) where Jg. has *mid-tone* [5 exs.].

116. 'fathom, cubit$_2$'. Jg. lām, ləlām / WB lam / Lh. lò.
117. 'forfeit, pay damages'. Jg. yō / WB lyau.
118. 'itch$_1$'. Jg. yām / WB yâ-yam.
119. 'leak'. Jg. yūn, kəyūn / WB yui.
120. 'tree, kind of'. Jg. məlēm 'kind of tree', məlēm-tūm 'its seed, used as a weight', lēm 'a weight, about one ounce' / WB lim '*Terminalia bialata*'.

(2) where Jg. has *low-tone* [5 exs.].

121. 'easy'. Jg. lòi 'easy; of early growth', ʔəlôi 'easily', ñ-lôi 'of early growth', səlòi 'an early bean' / WB lwai 'easy'.
122. 'flash, flutter'. Jg. làm 'to flash, as bright steel', gəlàm 'flutter', kəlàm 'gleam', pəlâmlá? 'butterfly' / WB phəlam 'moth' / Lh. pù-lú-qā 'butterfly'.[71] In Matisoff 1972a, I related the Lh. form to a different root, PLB *k-luk ~ *k-luŋ 'maggot' (WB lok).
123. 'long$_1$'. Jg. gəlù 'long' / WB lu 'be disproportionately tall'.
124. 'pierce$_1$'. Jg. gəlùn 'thrust, pierce' / WB lwan 'a gimlet; bore with a gimlet'.
125. 'place$_1$, subject, matter'. Jg. rà 'a place', šərà 'place; occasion, subject matter' / WB ra 'verb formative denoting object of an action, or place of being or action', ʔəra 'thing, subject, matter; place, situation' / Lh. kà 'classifier for places'. [PTB *k-ra; see No. 267].

L. *Jg. ʔ- plus vowel or vocalic ingress / WB ʔ- plus vowel.*

(1) where Jg. has *mid-tone* [4 or 5 exs.].

126. 'bulge'. Jg. ʔūm 'puckered', mū-ūm 'to bud', nèʔ-ūm 'prepuce' / WB ʔum, ʔəʔum 'bulge, protuberance' mum 'to bud' (< *mu-ʔum?) [Also perhaps related is the WB Tone 2 word ʔûm 'pillow'].
127. 'conquer, overcome'. Jg. ʔōŋ / WB ʔoŋ.
128. 'hold in mouth; enclose'. Jg. məʔūm 'hold in the mouth' / WB ʔum 'plaster over, cover over' [This root is prob. related to No. 126].[72]
129. 'murmur'. Jg. wū 'murmur, mumble, mutter' / WB ʔu 'make noise; howl' / Lh. nàʔ-ú 'conversation, chat'.[73]

71 The first elements in the words for 'butterfly, moth' are from the TB root *buw 'insect'.
72 See STC, set 108 (p. 36); set 364 and note 239 (p. 78); and note 479 (p. 181).
73 This root has TB *-r, as shown by the WT cognate ḥur 'noise, din, clashing, cracking, roar; a low, humming noise; talk, babbling, chitchat.' See Matisoff 1970, set 69.

130. 'standing water'. Jg. ʔūŋ 'fill, as a lake', ʔīŋ 'stand, as water', šəʔīŋ 'to flood, deluge' / WB ʔuiŋ 'stagnant; a pond' [WB also has a Tone 2 variant: ʔûiŋ 'collection of humors'].

(2) where Jg. has *low-tone* [2 exs.].

131. 'nauseated'. Jg. ʔòn-òn, gō-òn, wòn 'feel squeamish' / WB ʔan 'retch, vomit'.
132. 'strength, maturity'. Jg. ʔàn 'be in full strength', ŋā-ʔàn 'a young bull' / WB ʔan, ʔaŋ 'strength'.

M. *Jg. resonant or ts- / LB voiceless resonant.*

(1) where Jg. has *mid-tone* [5 exs.].

133. 'boat'. Jg. lī / WB hle / Lh. hɔ.
134. 'hundred'. Jg. lətsā / WB ra / Lh. ha [WT brgya].
135. 'religious offering'. lū 'to give', ʔəlū 'religious offering' / WB hlu 'make religious offering', ʔəhlu (n.).
136. 'slanting$_2$'. Jg. rəwī 'gently sloping' / WB hrwe 'be oblique'.
137. 'spirit$_2$, image'. WT hla 'god; image of a god' / Jg. mīn-lā, nūm-lā 'ghost', sùm-lā 'picture' / Lh. ò-ha 'spirit; image'.

(2) where Jg. has *low-tone* [4 exs.].

138. 'if, when'. Jg. yàŋ / WB hlyaŋ.
139. 'long$_2$'. Jg. rèn 'be too long; protracted', šərèn 'lengthen, let out' / WB hrañ / Lh. yɨ 'long', šɨ 'length'.
140. 'small$_1$, few'. Jg. ʔlòi 'few', ʔəʔlòi (adv.) / WB hlwa 'very thin', ʔəhlwa 'thin layer' [Note the pre-glottalization in Jg.].
141. 'sting'. Jg. məlèn 'sting', pəlèn 'sting, as of bee; point of serpent's tongue' / WB hlam 'spear'.[74]

N. *Fusionally prefixed resonants.*[75]

(1) Jg. has *mid-tone* [2 exs. + 2 ?].

142. *'horn'. Jg. ǹ-rūŋ / WB khrui / Lh. khɔ.[76]

74 The correspondence between Jg. -en and WB -am is usually associated with a medial -y- (see 'fly', No. 5 above). But Jg. lacks an ly- cluster. What about the WB form? Benedict has shown ("Secondary infixation in Lepcha", Studies in Linguistics 1, no. 19, 1943) that aspiration of an initial consonant can be reflected at a later stage by a medial -y-. Perhaps the aspiration in hlam reflects a development in the opposite direction: *lyam > hlam!
75 "Fusional" resonant clusters are those where a prefix (usually a reduced form of a once fully-meaningful syllable) becomes absorbed into a root beginning with a resonant

143. 'otter'. WT sram / Jg. šərām / WB phyam / Lh. ǧì-*ʃo*-lo.
144. *'rattan'. Jg. rī, rīm / WB krim.[77]
145. 'tiger; cat'. Jg. šərō 'tiger', šərōŋ 'id.' (Hkauri) / WB kroŋ 'cat' / Lh. ǧò 'wildcat'.

2.2. *Analysis of the mid vs. low Jg. correspondences to PLB Tone *1.*

As a first gross attempt at analyzing the above data, we might total up the over-all number of cases of Jg. mid as opposed to low tone, without regard to the type of root-initial consonant in the syllable. As one might expect, this does not tell us much. There are 70–85 cases of mid-tone, and 52–60 cases of low-tone, or 57–59 % versus 43–41 %, respectively, out of our total of 122 to 145 sets.[78] In other words, the mid-tone predominates, but not overwhelmingly by any means. We are still well within the range of random deviation — too close to a 50–50 % split to be sure that any conclusions can be drawn at all.

The only hope of getting anywhere is to try correlating the ratio of mid/low occurrences with particular types of root-initial consonants. The 19 classes and subclasses of initials we have recognized are not all equally criterial in this regard. If we look back over the examples in section 2.1, we see that the initial-classes are of four kinds:

(a) *Classes containing too few examples.* It is not worth considering classes that only contain two or three examples under each Jg. tone, especially if the class is suspect on other grounds. Thus we can dismiss Class F (Jg. plain / WB, Lh. aspirated) and Subclass CCC (Jg. voiced / WB, Lh. plain ~ aspirated), both because of their small size and because of the "disagreement in voicing" which they show [above 1.1(2)]. On the other hand, it would be rash to throw out Classes H and HH, even though they contain only 2 and 3 examples respectively, since between them they constitute our entire corpus of sets with *spirantal initials, and they show a 100 % correlation between the Jg. initial (s- vs. š-) and the tone (mid vs. low). Similarly, the subclass EE (Jg. spirant / WB plain affricate) contains only one example, but we cannot disregard it since it is germane to our evaluation of Class E (Jg. spirant / WB, Lh. aspirated affricate). Finally, Class I (Jg. nasal / WB, Lh. plain nasal) has only 3–4 members, but it achieves added importance if we lump it with Class J (5–6 members), where LB shows variation between plain and aspirated nasals.

So for the moment, all we are getting rid of on "example paucity" grounds is classes F and CCC.

(b) *Classes with lots of examples but a random distribution of Jg. mid vs. low.* Into this category falls the numerous Class C (Jg. voiced / WB, Lh. plain), with 9–11 mid and 9–10 low members. Class CC (Jg. voiced / WB, Lh. aspirated) is a little different, with 3–4 mid and 6–7 low (i.e. showing a fairly marked correlation with the low tone), and perhaps should be combined with Class B (see below).

We may throw out Class G (Jg. asp / WB, Lh. plain), both because of the disagreement in voicing and because of the random nature of the tonal split (4 mid, 3–5 low).

Finally, and with a touch of regret, we are forced to disregard the important resonantal classes K and M, where Jg. resonants correspond to LB plain and aspirated resonants, respectively. Class K has five mid and five low, while Class M has 5 mid and 4 low. (On the other hand, the quasi-resonantal classes L and N show a strong correlation with the mid-tone). If there is any patterning here, we have yet to find it.

(c) *Classes where the mid-tone predominates significantly.* In this category falls our pride and joy, Class A (Jg. plain / WB, Lh. plain), where the mid-tone predominates 15–16 to 1–3 (84–94 %). [If we add in Subclass AA, where Jg. shows plain ~ voiced variation, we get 17–18 to 2–3 (82–89 %).] This seems well outside the realm of chance or randomness, and points to a definite correlation between PJBL *voiced stops and Jg. mid-tone, in words corresponding to Lolo-Burmese Tone *1.

Interestingly enough, in sets where WB shows secondary voicing (Class D), the Jg. mid-tone predominates by a score of 4–6 to 0–1 (86–100 %). It is possible that this fact will eventually shed light on the conditions which led to this secondary voicing in WB.

Classes E and EE should be considered in conjunction with H and HH.

/w y l r/ to form units that may superficially look like "intrinsic" consonant clusters. A fusional cluster is posited when one language has a word beginning with a simple resonant, while another has a cognate with a consonant before the resonant (or alternatively, when two cognates have different prefixial cognates before the same resonant). For discussion, see Matisoff 1969, pp. 184–199 and Matisoff 1972a, pp. 25–26, 68–70.

In this category we could also have included 'dry (sun, fire)'. See note 36.

76 We posit a root *k-ru-ŋ, where *k- is the "animal-matter prefix." This is somewhat dubious, however, since there is not much evidence for a -ŋ suffix in TB. It would be nice to find a Jg. dialect variant without a final nasal!

77 Other TB languages point to a medial -w- in this root: Lushai hrwi, Digaro tərui ~ təroi, Abor tərü 'cane' (PTB *rwi[y]). See STC, No. 201, (p. 47).

78 I may have been somewhat arbitrary in deciding which sets were "certainly directly cognate" as opposed to those which were "doubtful." This is perhaps inevitable. At any rate, I have not juggled the data in order to fit any preconceived scheme I had in mind. All I can hope is that any errors of judgment have been *random*, so that they will more or less cancel each other out.

In E and EE, Jg. spirants correspond to LB aspirated or plain affricates, respectively; while in H and HH, Jg. spirants correspond to LB spirants. Although it would be nice to have more examples, it looks as if there is a correlation here between the Jg. mid-tone and PJBL **voiceless* spirants (and *voiceless affricates which spirantized in Jg.), and conversely between Jg. low-tone and PJBL *voiced spirants and affricates. Although much remains unclear about these spirantal correspondences [above 1.1(3)], it is safe to say that Jg. s descends from older *s, while Jg. š derives sometimes from *š and sometimes from *z. In classes EE and HH, where Jg. has low-tone, the only Jg. spirant we find is š (presumably < *z).

Note that the situation for spirants is the opposite of that which we noted for the stops. For stops the Jg. mid-tone is associated with *voicing, while for proto-initials which developed into Jg. spirants the mid-tone is associated with *voicelessness. This is not at all implausible, in view of what is known about the very different tonal effects of stop vs. spirantal initials.[79]

Another fact should be mentioned here. The total number of our cognate sets involving Jg. and PLB Tone 1 words that reconstruct with *spirantal initials is very small (5), when compared to the number we find where LB has Tone 2 (15). This points to a wholesale tonal shift in syllables with spirantal initials from a hypothetical PJBL Tone *1 to Tone *2, paralleling developments elsewhere in Sino-Tibetan.[80]

In nasal-initialled syllables (classes I and J taken together), Jg. mid-tone predominates slightly to the tune of 5–7 to 3. Apparently it made no difference whether the nasal was prefixed or not, since there is no correlation between the Jg. tone and the voicing or voicelessness of the nasal in the LB cognates.

Finally, Jg. mid-tone predominates in two classes which are harder to pigeonhole: Class L (Jg. ʔ- + vowel / WB ʔ- + vowel)[81] and class N ("fusionally prefixed resonants"), with scores of 4–5 to 2, and 2–4 to 0, respectively.

(d) *Classes where the low-tone predominates significantly.* The most important class in this category is B (Jg. asp / WB, Lh. asp), where the low-tone

79 See e.g. Burling 1967, esp. in connection with PLB Tone *2.

80 Benedict 1972a (pp. 28, 33) postulates a shift from Sino-Tibetan "Tone *B" to Chinese Tone A in roots with spirantal initials. At a much more shallow time-depth, I have pointed out a similar shift from PLB *1 > *2 in syllables with š- in Telford's dialect of Lahu (Matisoff 1973a, Ch. I).

81 Strangely enough, we have *no* examples of Jg. ʔ- / WB ʔ- correspondences in words where WB has Tone 2! Here there has perhaps occurred a shift from *2 > *1 — opposite in direction from that which we hypothesized above for the spirants.

predominates by a score of 9–11 to 5–6. While this is not so lopsided a percentage as we found on the other side of the ledger for Class A, it is still about 2 to 1, or approximately 67 % low, a figure which seems significantly non-random. We are now in a position to say with some confidence that, in words corresponding to PLB Tone *1, Jg. mid-tone is associated with *voiced stop initials, while Jg. low-tone shows a fairly strong correlation with *voiceless stop initials.[82]

In syllables whose initials became Jg. spirants (E and EE, H and HH), the situation seems to be reversed, as we saw in the preceding section. Here it is *voicelessness that is associated with the mid-tone, and *voicing with the low-tone.

The Jg. low-tone has no special affinity for sonorant initials (nasals or resonants).

* * *

We cannot yet decide whether the above facts support the hypothesis of a systematic relationship between the primary tones of Jg. and those of LB. First we have to look at the Jg. correspondences to PLB Tone *2 words. If we find that the Jg. mid and low tones are conditioned differently according to whether they correspond to PLB *1 vs. *2, that would be convincing grounds for deducing that the two tonal categories were separate already at the PJBL period. If on the other hand we find that the developments into Jg. mid vs. low were conditioned *on the same basis* regardless of the tone of the LB cognate, that would be grounds for concluding that the Jg. tones arose independently, through the operation of phonetic processes internal to Jg. itself.

3.1. *Jg. mid vs. low correspondences to PLB Tone *2.*

As we did for the sets involving PLB Tone *1 words, we shall first list the available cognates according to the initial-class of their syllables, giving first the words where Jg. has mid-tone, then those where Jg. has low-tone.

3.11. *Stop or affricate initials.*

A. *Jg. plain / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [7 exs. + 3 ?].

146. *'bean$_1$, pea'. Jg. prēŋ, šəprē, šəprēŋ (Hkauri) / WB pâi.[83]

82 If we lump class CC (Jg. *voiced* / WB, Lh. asp) with B, we get a somewhat lower percentage (58 %) of low-tone items. But we should probably refrain from including these sets, since we threw out the other classes where Jg. had voiced stop initials (C and CCC).

83 WB Tone 2 is symbolized by a circumflex. The regular Lahu tonal reflex of PLB Tone *2

147. 'elephant grass'. Jg. kūŋ-džī, kūŋ-nāŋ / WB kûiŋ.
148. *'flat$_1$'. Jg. pā / WB prâ / Lh. pâ.[84]
149. *'flower'. Jg. nàm-pān 'flower', bān 'plant, as in a nursery' / WB pân 'flower'.[85]
150. 'grow'. Jg. tū 'grow (plant, body)', tšətū 'a growth', ʔətū 'interest (money)' / WB tûi 'advance; be augmented', ʔətûi 'interest'.
151. 'terra firma'. Jg. krīŋ 'firm, stable', krīŋ-mùŋ 'hill' / WB krâñ 'dry land, ground'.
152. 'lobe (of ear); hood (of cobra)'. Jg. ləpyēn 'lobe (of ear); vent (of gun)', pū-pyēn 'cobra' / WB ʔəpyâñ 'any flabby, pendulous substance', pâ-pyâñ 'cheek-fold, jowl; gill (of fish)'.
153. 'put together'. Jg. tōi 'put together; lead or tow (as with rope)' / WB twâi 'put together, connect (as with rope)', ʔətwâi 'two or more things tied together'.
154. 'single; one'. Jg. tāi 'single', ʔətāi 'one, as of a pair', gùn-tāi 'single', šìŋ-tāi 'only' / Lh. tê 'one'.[86]
155. 'snake; vermin'. Jg. pū, ləpū 'snake' / WB pûi 'bug; invertebrate' / Lh. pû 'bug'.

(2) where Jg. has *low-tone* [3 exs.].

156. 'depend, rely upon'. Jg. tšù, mətšù / Lh. cû.
157. 'move'. Jg. pyòŋ 'move, float, sail (Bhamo dial.)' / WB prôŋ 'change place, remove'.
158. 'reverence'. Jg. kù 'show reverence; be cautious', ʔəkù 'carefully' / WB kûi 'trust, rely; receive as teacher'.

AA. *Jg. plain ~ voiced / WB plain.*

(2) Jg. has *low-tone* [1 ex.].

159. 'tube$_1$'. Jg. pròŋ 'opium pipe' (Hkauri), pyòŋ 'tube, pipe', bròŋ 'tube', byòŋ 'stove-pipe, funnel' / WB prôŋ 'blowpipe'. [Some of the Jg. forms may be borrowed < Shan < Burmese].

B. *Jg. aspirated stop / WB aspirated stop.*

(1) where Jg. has *mid-tone* [2–3 exs.].[87]

160. *'punch, thrust'. Jg. thwī 'box, give a blow with the fist' / WB thûi 'thrust, stab, strike' [Loan into Jg.?].
161. 'snow, ice, frost'. Jg. khyēn, gyēn / WB khyâm 'cool, cold' [Note the voiced Jg. alternant].

(2) where Jg. has *low-tone* [2 exs. + 1 ?].

162. *'lion$_2$'. Jg. khàŋ-*khyì* 'lion' / WB khyê-sac 'leopard cat'.[88]
163. 'neglected'. Jg. phyì 'be neglected and thus destroyed' / WB phê 'be broken down in strength or ability, by hard labor or severe punishment'.
164. 'sneeze$_2$'. Jg. kəthì / Lh. há-thî ~ hé-thî.

BB. *Jg. plain affricate / WB, Lh. aspirated affricate.*

(1) where Jg. has *mid-tone* [2 exs.].

165. 'pus; decay'. Jg. mətsəwī 'pus' / WB chwê 'be decayed, crumbling'.
166. 'still, peaceful'. Jg. tsīn 'still, quiet', ʔətsīn 'id.', ʔəsīn 'calm' / WB châñ- 'soothing, pleasant, quiet'.

(2) where Jg. has *low-tone* [3 exs.].

167. 'instruct; authority'. Jg. tšùm 'authority, legal or rightful power; a legal or divine command' / WB chûm-ma' 'to instruct, discipline'.
168. 'medicine'. Jg. tsì / WB chê / Lh. nâʔ-chî.
169. 'soaked'. Jg. tšàm 'be soaked; pervade, overrun', ʔətšàm 'strength, pervasive mastery over all things [LM]' / WB châm 'scatter or sprinkle'.

C. *Jg. voiced / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [3 exs. + 2 ?].

170. 'brass, copper'. Jg. məgrī / WB krê / Lh. kî.

is the high-falling tone (circumflex), except after PLB *voiceless spirants or *glottalized initials, where the regular reflex is the very-low tone (macron). See Burling 1967. The Jg. form for 'bean, pea' may represent a dissyllabic prototype like *pai-reng (Benedict, personal communication); at any rate this word has been identified as an early loan into TB from Mon-Khmer. (Cf. Harry L. Shorto, "Mon-Khmer contact words in Sino-Tibetan", MS, 1973).

84 See Matisoff 1972a (No. 111) for stop-finalled PLB variants of this root. To the forms given there add Lh. pêʔ-nêʔ 'shallow' < *ʔpyak. The lack of a medial glide in the Jg. form is unexplained.

85 This root could have been saved for category AA below, since Jg. shows plain ~ voiced variation. However, it is the plain variant that is clearly the direct cognate to the WB form. This word may be a loan into Jg. (Benedict, personal communication).

86 A stop-finalled variant of this root is attested by WB tac 'one', Lh. tí 'only'. See Matisoff 1972a, sets 31 and 48.

87 The set 'door; be open' really belongs in this class, though we have included it under Class DDD below (No. 193), because of the secondary voicing in Mod. Bs. [təgâ]. Yet it is written with kh-, /tam-khâ/.

88 The Jg. form may be a loanword. For an assignment of the first syllable, see 'lion$_1$', No. 34 above.

171. 'cross over'. Jg. gāu 'cross something precarious, as a stream on a log' / WB kû 'cross over; transfer'.
172. *'early'. Jg. džāu / WB câw, ʔəcâw.[89]
173. *'leap, dance'. Jg. gān, kəgān, khān 'leap, bound, gallop, canter' / WB ka' 'dance' / Lh. qā 'dance'.[90]
174. 'worth; classified as to value'. Jg. dān 'be worth (a certain amount)' / WB tân 'extend from one point to another; begin to be capable of bearing young', tân-tu 'be equal, on a par', ʔətân 'line, row, class'.

(2) where Jg. has *low-tone* [2 exs. + 1 ?].

175. *'headman'. Jg. ʔəgyì 'headman', səgyì 'chief of caravan' / WB krî, ʔəkrî 'great, large', su-krî 'thugyi; subcollector' [Cf. Siamese phûu-jàj-bâan 'headman' ("great person of the village")].[91]
176. 'rest, repose; tired$_1$'. Jg. bàn 'be at rest', ləbân 'repose' / WB pân 'tired'.[92]
177. 'utterly; as much as possible'. Jg. dàŋ 'fully; over and above', dàŋ-thā 'all, the whole', dàŋ 'the amount of rice one man can carry' (n.), dàŋ 'be capable of lifting' (v.) / WB tâŋ 'measure of capacity'.

CC. *Jg. voiced stop or affricate / WB, Lh. aspirated stop or affricate.*

(1) where Jg. has *mid-tone* [4 exs. + 1 ?].

178. 'goad; plowshare'. Jg. nūm-džōn, mədžōn, ñ-džōn, šiŋ-džōn 'a goad', nà-džōn 'plowshare' / WB khrwân ~ khywân 'elephant-goad'.
179. 'impudent; fierce'. Jg. džū 'brazen, impudent', ñ-džū 'fierce' / WB chûi 'vicious, injurious, wicked'.
180. 'knot'. Jg. gìn-dūm, kìn-dūm 'to knot; a knot' / WB thûm 'tie in knot', ʔəthûm 'a knot'.[93]
181. *'sun; shine'. Jg. džān 'sun' / WB thwân 'shine, emit light; be distinguished'.[94]
182. 'swelling; knob'. Jg. dùʔ-bōŋ 'goiter'; ʔùm-bōŋ 'ornamental knob on sword'; ū-bō(ŋ) 'head'; šəbōŋ, džìt-bōŋ 'urinary bladder' / WB phôŋ 'rise (blister, bubble, bread); a knob, cornice, facing; bladder'.

(2) where Jg. has *low-tone* [1 ex. + 1 ?].

183. 'dog'. Jg. gùi / WB khwê / Lh. phî.
184. *'mark$_1$ (v.)'. Jg. dèm 'to mark, blot, spot; stamp, print' / WB thîm-hmat 'designate; set up memorial', ʔəthîm-ʔəhmat 'token, memorial; sign, signal' [Cf. Chin 點].[95]

CCC. *Jg. voiced / LB plain ~ aspirated.*

(2) Jg. has *low-tone* [2 exs.].

185. 'bank (river); precipice'. Jg. nìŋ-gàm 'riverbank', ǹ-gàm 'precipice' / WB kâm, khâm (obs.), hmut-khâm 'a lip; brim or upper edge of vessel' [also perhaps Lh. qō 'hollow thing', lò-qá-qō 'dry river-bed, gully'].
186. 'narrow'. Jg. gyèŋ / WB kyâñ 'narrow', khyâñ 'make narrow' / Lh. cē 'narrow'.

D. *Jg. plain / WB, Lh. voiced.*

(1) Jg. has *mid-tone* [1 ex. + 1 ?].

187. 'peacock'. Jg. ʔù-tōŋ / WB ʔu'-dôŋ.
188. *'visit; do for pleasure'. Jg. tšāi / Lh. gî [in both languages the word often occurs as an auxiliary verb: "V for pleasure"].

DD. *Jg. voiced / WB voiced.*

(1) where Jg. has *mid-tone* [one ex.?].

189. *'trap, ambush'. Jg. gyām 'lie in wait for; hunt, as game', khám 'to trap', məkhám 'trap' / WB gyâm 'a trap'.[96]

(2) where Jg. has *low-tone* [2 exs.].

190. 'flour'. Jg. dùŋ, šədûŋ 'flour' / WB dûiŋ 'flour sieve'.
191. 'startled, turbulent'. Jg. bròŋ 'be startled', kəbròŋ 'unruly, turbulent' / WB brôŋ-chan ~ byôŋ-chan 'tumultuously'.

89 The Jg. and WB forms are all probably loans from Tai *jaw (cf. Siamese cháaw), with Jg. retaining the voicing of the donor language. Note that the loan could not have been via Shan, which has *saw*. (Benedict, personal communication.)

90 This root is set up as *ga·r for TB (see STC, p. 18). The final *-r is reflected by Jg. -n, and also perhaps by the WB creaky tone.

91 Probably a loan from Bs. > Jg.

92 These forms belong in the same word-family as Set 297, below. The PTB form is reconstructed with final -l. See STC, No. 29 (p. 20).

93 Related is the stop-finalled variant 'wrap up' (Jg. thùp), below No. 347.

94 The initial correspondence is peculiar. This set is reconstructed with a palatal affricate for PTB, *tsyar or *car (STC, No. 187 [p. 47]).

95 The Jg. and WB forms may be loans from Tai *teem 'note, write, paint' ~ *tim (Ahom, Khamti), with the Jg. form showing secondary voicing. (Benedict, personal communication.)

96 We would expect the first Jg. form to be *gyen* (see note 74).

DDD. *Jg. aspirated or w- / WB, Lh. voiced ~ asp* or *voiced ~ plain.*

(1) where Jg. has *mid-tone* [3–4 exs.].

192. 'cost, value'. Jg. phū 'be of value, be worth', džəphū 'price' / WB ʔəphûi, ʔəbhûi 'price' / Lh. ò-phû 'id.'.
193. 'door; be open'. Jg. khā 'be open', məkhā 'be open, as the mouth', tšīŋ-khā 'door' / WB təgâ (< tam-khâ) 'door'.[97]
194. 'dove, pigeon'. Jg. khrū / WB khrûi [pronounced with voiced initial in Mod. Bs. /džôu/] / Lh. gû.
195. 'grandmother'. Jg. wōi, kəwōi, ʔəwōi / WB phwâ, bhwâ, ʔəphwâ, ʔəbhwâ.

(2) where Jg. has *low-tone* [2 exs.].

196. 'dig'. Jg. thù / WB tû 'dig', thû 'a natural hole or cavity in the earth' / Lh. dû 'dig', tū 'bury'.
197. 'wild$_1$, uncouth'. Jg. phràŋ, ǹ-phràŋ 'wild' / WB prâŋ 'violent, virulent' / Lh. bî 'tangled, matted, bushy', bî-šâʔ-á-nâʔ 'barbarian' [If we throw out the Lh. form as unrelated, this set belongs in Class G, below].

E. *Jg. spirant / WB aspirated affricate.*

(1) Jg. has *mid-tone* [one ex.].

198. 'cold (weather)'. Jg. kəšūŋ 'be or feel cold', ǹ-šūŋ tā 'winter' / WB chôŋ 'cold season'.

F. *Jg. plain / WB aspirated.*

(1) where Jg. has *mid-tone* [one ex.].

199. 'basket'. Jg. sìŋ-krā, sìŋ-krāŋ (Hkauri) / WB khrâŋ.

(2) where Jg. has *low-tone* [one ex.].

200. 'dried up$_1$'. Jg. kàn / WB khân.

G. *Jg. aspirated / WB, Lh. plain.*

(1) where Jg. has *mid-tone* [2 exs.].

201. 'betel'. Jg. bù-khōm / WB kwâm.
202. 'well, pit'. Jg. khàʔ-thūŋ / WB re-twâŋ / Lh. g̈ì-tû 'a spring', g̈ì-tɔ̄ 'river-bed'.

(2) where Jg. has *low-tone* [4 exs.].

203. 'awake, alert; dawn'. Jg. phràŋ 'awake', myìt phràŋ 'clear-headed', džəphràŋ 'arouse' / Lh. šɔ́-pɔ̄ 'morrow' [Cf. WT spyaŋ 'skillful, clever', but the medial is wrong].
204. 'mount; take advantage of'. Jg. khràu 'mount, bestride' / WB krâu 'take advantage of another; overreach'.
205. 'thicket, wooded tract'. Jg. džəthùŋ / WB tûiŋ.
206. 'thin'. Jg. phà, ʔəphà; džəphà 'make thin' / WB pâ / Lh. pâ.

3.12. *Spirantal initials.*

H. *Jg. s / WB s / Lh.* š [< PJBL *s].

(1) where Jg. has *mid-tone* [2 exs. + 1 ?].

207. 'lizard'. Jg. ñ-sāŋ sòn, kəsāŋ sòn 'jungle lizard' / WB sâŋ-kyô 'large brown earth lizard; skink'.
208. *'scent'. Jg. sūŋ ~ sīŋ 'a smell' / WB sâŋ 'emit pleasant odor' [The vowel correspondence is off].
209. 'three'. Jg. məsūm / WB sûm / Lh. šɛ̂ʔ ~ šɛ̄.

(2) where Jg. has *low-tone* [4 exs.].

210. 'blood'. Jg. sài / WB swê / Lh. ši.
211. 'fruit'. Jg. sì / WB sî / Lh. šī.
212. 'liver'. Jg. məsìn / WB ʔəsâñ / Lh. ò-šɛ̄.
213. 'old'. Jg. sà / Lh. ò-šā 'something old', hɛ-šā 'an old field'.

HH. *Jg. š, š ~ dž / WB s / Lh. y* [< PJBL *z].

(1) where Jg. has *mid-tone* [1 ex.].

214. 'hold, grip; use'. Jg. šūm ~ džūm 'hold onto', ləšūm 'handhold', gìn-šūm 'embrace' / WB sûm 'use' / Lh. yɛ̂ 'id.' [cf. WT zum 'take hold of, seize'].

(2) where Jg. has *low-tone* [1 ex.].

215. 'child, son'. Jg. šà / WB sâ / Lh. yâ.[98]

HHH. *Jg. ś / WB s / Lh. ś* [< PJBL *š].[99]

(2) Jg. has *low-tone* [4 exs.].

216. 'flesh, meat, animal'. Jg. šàn / WB sâ / Lh. šā [Note the suffix in Jg.].
217. 'know; news'. Jg. ši 'news' / Lh. šī 'know' [WB has a variant with

97 The WB and Lh. forms descend from PLB *za (Tone *2). Another variant *dza (Tone *1) also exists in LB, reflected by Lh. cà- 'prefix in men's names'. It is hard to say which variant is the direct cognate of the Jg. form.

98 In the absence of a Lh. cognate, we cannot be sure whether Jg. š / WB s reflects older *š or *z.

creaky-tone, si' 'know'. See also Jg. tšē 'know' and WT śes, with final -s].[99]

218. 'noisy$_2$'. Jg. šài 'noisy', ʔəšài 'excited, stirred up', gəšài 'be known widely (LM)', gəšái 'to confuse' / WB sâi 'noisy'.
219. 'roar'. Jg. šò, kəšò, gəšò 'roar, as a cataract' / WB sâw-sâw 'loudly and noisily'.

HHHH. *Jg. ts / WB s.*

(2) Jg. has *low-tone* [one ex.].

220. 'stale'. Jg. tsù / WB sûi.

HHHHH. *Jg. z / WB s / Lh. š.*

(2) Jg. has *low-tone* [0–1 ex.].

221. *'sand'. Jg. zài-brù / WB sâi / Lh. šê-šī.[100]

3.13. *Nasal initials.*

I. *Jg. nasal / LB plain nasal.*

(1) where Jg. has *mid-tone* [7 exs.].

222. 'assistant'. Jg. khrīŋ-māŋ 'chief's assistant' / WB mâŋ 'ruler, governor, controller, official'.
223. 'curse'. Jg. səŋām 'a curse' / WB ŋâm-ŋok 'use loud, violent language' [cf. WT rŋam 'to rage'].
224. 'cattle'. Jg. ŋā / WB nwâ / Lh. nû.[101]
225. 'encounter; copulate'. Jg. nyā 'meet; frolic; screw' / WB ŋrâ 'meet with, find; copulate'.
226. 'five'. Jg. məŋā / WB ŋâ / Lh. ŋâ.
227. 'reprove'. Jg. nyēŋ 'reprove' / WB ŋrâŋ 'contradict, deny; refuse to do'.
228. 'white-headed bungarus'. Jg. ŋān 'w.-h. b.' / WB ŋân 'goose'.

(2) where Jg. has *low-tone* [5 exs.].

229. 'horse'. Jg. gùm-rà, gùm-ràŋ (also khə̀m-ràŋ [Hkauri—LM]) / WB mrâŋ / Lh. í-mû [Note the metanalysis in Jg.].

99 It is possible that Lh. šī must be assigned to a PLB *creaky prototype (just like the WB form), instead of to PLB *2. Perhaps Lh. very-low tone is the "regular" reflex of PLB *creaky tone after spirantal initials. But we have no other examples.

100 This word is definitely a loan into TB from Tai *draay > *zaay. Note the retention of voicing in Jg., as in 'early', No. 172 above. The Lh. form looks like a loanword from Bs. Native Tone *2 words regularly have Lahu very-low tone after sibilant initials, *not* high-falling tone.

101 Benedict 1974 has identified this word as an early loan into TB < Austro-Thai.

230. 'near'. Jg. nì 'near', šənì 'bring near', ʔənî 'nearness' / WB nî, ʔənî / Lh. nê.
231. 'scattered; pulverized'. Jg. màŋ 'be scattered, as dust', kəmàŋ 'to shatter, scatter, spatter' / WB mâŋ-lwaŋ 'dust raised by gentle wind'.
232. 'sky'. Jg. ləmù / WB mûi [written mûigh] / Lh. mû.[102]
233. 'tail'. Jg. ǹ-mài / WB ʔəmrî / Lh. mɛ̄-tu.

J. *Jg. nasal / LB aspirated or plain ~ aspirated nasal.*

(1) where Jg. has *mid-tone* [2 exs.].

234. 'defraud, coerce'. Jg. nyēn 'defraud', šənyēn 'coerce' / WB ñâñ 'sigh, moan', hñâñ 'oppress, bully'.
235. 'drawers'. Jg. nī 'menstrual drawers', ʔənī, bənī 'menstruation cloth' / WB hnî 'spread out, for purpose of receiving and supporting', ʔəhnî 'something spread out for child to lie on; diaper'.

(2) where Jg. has *low-tone* [2 exs.].

236. 'faded'. Jg. nyùi 'faded, wilted, withered' / WB hñûi 'dull, faded, wilted' [see also ñui ~ ŋrui 'dark in color' (Tone *1)].
237. 'rosemallow'.[103] Jg. džàŋ-*nyàŋ* 'sp. of rosemallow' / WB hnâŋ 'tuberose, land-lily'.

K. *Jg. resonant / LB plain resonant.*

(1) where Jg. has *mid-tone* [8 exs. + 1 ?].

238. 'eagle, vulture'. Jg. kəlāŋ / WB lâŋ-ta'.[104]
239. 'handle$_2$; stalk'. Jg. ū-lāŋ 'axe-handle', gìn-lāŋ 'stem, stalk, handle' / WB lâŋ-pak 'kind of net', lâŋ-yañ 'sail; mast', lâŋ-lê 'a bow'.
240. 'hero; bold'. Jg. yē 'daring', šərē 'hero, leader, captain' / WB râi 'bold, courageous' [cf. perhaps Thai ráay 'fierce'].[105]
241. 'man'. Jg. wā / Yellow Lahu và [YL low-tone (`) corresponds to standard Black Lahu high-falling tone].
242. 'mix'. Jg. yāu 'be mixed', kəyāu 'intermix, be in confusion' / WB râw 'mix, mingle'.

102 There is a Jg. variant with stopped final, mù? reflecting an old TB doublet *r-mu·k (STC, note 236 [p. 77]). Maybe there is more to the final -gh in the WB form than meets the eye! (The usual explanation is that it is a learned false-etymology concocted by grammarians influenced by Pali/Sanskrit *megha* 'cloud'.)

103 A swamp plant with an edible stem and a nice flower (LM). The WB aspiration may possibly have something to do with the medial -y- in the Jg. form. See note 74, above.

104 This root is probably an Austroasiatic loan into TB. See STC, note 225 (p. 72).

105 Lh. yè (Tone *1) 'steadfast, brave' is probably a loan < Bs.

243. 'pine, fir'. Jg. mərāu 'pine or fir' / WB thâŋ-rû 'id.'.
244. 'road, way'. Jg. lām / WB lâm [Probably related is the Tone *1 Lh. morpheme lo 'directional noun-particle'].
245. *'salt'. WT rgyam / Jg. yām 'sp. of fruit-salt' / WB yâm 'gunpowder, saltpetre' [Connection doubtful].
246. 'surround$_2$; enclosure'. Jg. wāŋ 'surround; a circle', kəwāŋ 'go in circular waves', šəwāŋ 'inclose, shut in' / WB wâŋ 'enclosing fence' [see No. 248].

(2) where Jg. has *low-tone* [6 exs. + 1 ?].

247. 'belly'. Jg. wàm-pūm 'stomach complaint' / WB wâm 'belly', wâm-pu 'swelled abdomen' / Lh. ğô- 'belly'.
248. 'circle, ring'. Jg. wàn 'be in a circle, be coiled', kəwàn 'encircle' / WB wân 'round; to surround', ʔəwân 'circumference' [see No. 246].
249. 'male'. Jg. là, ʔəlà 'male' / WB ʔəlâ 'not castrated'.
250. 'mark$_2$, line; boundary'. Jg. mərì 'to mark, line, rule' / WB rê 'write, delineate, paint'.
251. 'pull down, raze'. Jg. rùn 'pull down, demolish', šərùn 'id.' / WB rûn 'pull with difficulty; struggle; warp'.
252. 'round'. Jg. lùm / WB lûm [cf. WT zlum, Atsi lʔùm].
253. *'violent, wild$_2$'. Jg. rùŋ 'become violent, as a disease' / WB rûiŋ 'wild, as an animal; coarse, vulgar' [Relationship uncertain].

L. *Jg. ʔ- + vowel / WB ʔ- + vowel.*

There are no examples of this initial-correspondence in sets with WB words from Tone *2.

M. *Jg. resonant / LB aspirated resonant.*

(1) Jg. has *mid-tone* [8 exs.].

254. 'flea'. Jg. khələwī ~ khəlī / WB khwê-hlê [The first element is the word for 'dog', reduced in the case of Jg. to a prefix].
255. 'four'. Jg. məlī / WB lê / Lh. ɔ̂.
256. 'heart'. Jg. səlūm / WB hnəlûm < hnac-lûm.[106]
257. 'hurry; quickly'. Jg. làwān 'hurry, be swift', áləwān 'in haste' / WB hwân 'strong, violent; burst up'.
258. 'heavy'. Jg. lī / WB lê / Lh. hɔ̂.

106 This set belongs to the same word-family as 'round' (No. 252 above). The heart is a 'round' organ. The hnac in the WB form is the numeral 'two', because of the two-lobed appearance of the organ.

259. 'long and narrow'. Jg. lōi, dìŋ-lōi 'be long and narrow, as an underground passage' / WB hlwâ 'a shield, oblong and convex'.
260. 'penis'. Jg. mənē / WB lî / Lh. nī [cf. WT mdže].
261. 'young man; grandchild'. Jg. məlī 'young man; father-in-law', ʔəlī 'chief's male child', ù-lī 'stud bull', wəlī 'male human being' / WB mrê [< mliy Insc.] 'grandchild' / Lh. hɔ̄, hwē 'id.'.

N. *Fusionally prefixed resonants*

(a) where Jg. has *mid-tone* [2–3 exs.].

262. 'buffalo'. Jg. ʔū-lōi, ŋā-lōi / WB kywai [< *k-lwai] [Prob. a loan into TB; cf. Siamese khwaay < PTai *grwaay].
263a. 'go'. Jg. sā / WB swâ [For an alternative Jg. cognate to the WB form, see No. 263b].
264. 'tooth'. Jg. wā / WB swâ.

(b) where Jg. has *low-tone* [0–1 ex.].

263b. 'go'. Jg. wà / WB swâ.

3.2. *Analysis of the mid vs. low Jg. correspondences to PLB Tone *2.*

We shall first romp through the data in Section 3.1, and then proceed in 3.3 to a comparison of the Jg. mid/low distribution in cognates to PLB Tone *1 words vs. Tone *2 words.

We have listed a total of 119 sets containing Jg. cognates to PLB Tone *2 words. Of these, perhaps 15 are of doubtful validity, giving us a data base of 104–119. Of this number, 55–66 sets show Jg. mid-tone (53–55 %), while 49–53 sets have Jg. low-tone (45–47 %).

(a) *Sets with obstruental initials.* We may dismiss from consideration classes F and G, where Jg. and LB "disagree in voicing".

Class A (Jg. plain / LB plain) shows a fairly strong correlation with Jg. mid-tone, 7–10 to 3 (or 7–10 to 4, if we include Subclass AA), for a score of 64–71 % mid. This is an appreciably (18 %) lower percentage than what we found in sets with similar initials where LB has Tone *1 (82–89 % mid), yet the mid-tone is still clearly predominant.

Class B (Jg. aspirated stops / LB aspirated stops) is notable both for its small number of examples and for the random distribution of the Jg. tone: mid 2–3, low 2–3. At the same time, there is a relatively large number of examples where Jg. affricates ts, tš correspond to LB aspirated affricates

(Subclass BB),[107] but these also are split randomly as regards their tone (2 mid, 3 low), for a total (B plus BB) of 4–5 mid vs. 5–6 low.

The sets where Jg. or LB show secondary voicing display a random distribution of the Jg. tones. In Classes C, CC, CCC, where it is Jg. that has the voicing, the figures are 7–10 mid vs. 5–7 low. In Classes D, DD, DDD, where LB has the voicing, the score is 4–7 mid vs. 4 low.

At this point, we might try to compensate for the small size of our sample of Tone *2 *voiceless obstruents by adding in all the sets with secondary Jg. or LB voicing where aspirates predominate otherwise: i.e. Class CC (Jg. voiced / LB aspirates), with 4–5 mid and 1–2 low; and those members of Class DDD where Jg. aspirates or w correspond to LB voiced ~ aspirates (3–4 mid, one low). For good measure let us toss in Class E (Jg. spirant / LB aspirated affricate), containing one member in the mid-tone. We are thus adding to our previous total (B plus BB), 9–10 mid-tone words and 3 low-tone words:

	mid	*low*
Classes B, BB	4– 5	5–6
Classes CC, DDD, E	8–10	2–3
	12–15	7–9

Whether or not we are justified in including these latter classes, the mid-low distribution in sets reflecting *voiceless Tone *2 obstruents is quite different from what we found in Tone *1 words, where the low-tone predominated. For further juggling with these figures, see the next section, (3.3).

(b) *Sets with spirantal initials.* Here two facts are noteworthy. The total number of examples (13–15) is very large compared to what we found for Tone *1 (5 exs.), and the Jg. low-tone predominates overwhelmingly: 3–4 mid vs. 10–11 low. This preponderance is independent of the voicing or voicelessness of the proto-spirant.

(c) *Sets with nasal initials.* The data here are inconclusive. Overall the mid-tone predominates, 9 to 7, but this is well within the random range. In Class I (Jg. nasal / LB plain nasal), even though the mid-tone is numerically superior (7 to 5), the words with low-tone are the better cognates, including such items of core vocabulary as 'horse', 'near', 'sky', and 'tail'.

107 In sets containing LB cognates under Tone *1, there was only one case ('spirit', No. 36) of a Jg. affricate corresponding to an LB aspirated affricate, so we did not set up a separate subclass for it.

To be sure, the mid-tone words in this class include such basic words as 'cattle' and 'five', but the former is suspected of being a loanword [see note 101], and numerals tend to be tonally peculiar anyway.

(d) *Sets with resonantal initials.* The large class K (Jg. resonant / LB plain resonant) behaves randomly with respect to the Jg. tone, 8–9 mid vs. 6–7 low. In Class M, however, where LB points to an aspirated resonantal initial, the distribution is truly striking: 8 mid vs. 0 low. Here at least we seem to have a solid fact.

Sets with fusional resonantal clusters also favor the mid-tone (2–3 to 0–1), but the sample is not very large.

3.3. *Comparison of the mid/low dynamics in Tone *1 and Tone *2.*

We said above (p. 175) that if the distribution of Jg. mid vs. low tone appeared to be conditioned *on the same basis* regardless of the tone of the LB cognate, we would have to conclude that the Jg. tonal distinction arose independently through the operation of phonetic processes internal to itself. Having examined all the data thus far, it is still impossible to give an all-or-nothing explanation of the facts.

In syllables reflecting *voiced obstruental initials (Jg. plain / WB, Lh. plain), the Jg. mid/low split can clearly be seen to be an independent development. No matter how we slice it, the mid-tone predominates, regardless of the LB tone, to the tune of 64–89 %, with the mid-tone 18 % more preponderant in Tone *1 than in Tone *2.

In syllables reflecting *voiceless obstruental initials, the situation is much less clear. In Tone *1 words, the *low-tone* predominated by about 67 %. *For Tone *2 words, however, the examples were very few and the tone-distribution random.* [When we added in the Tone *2 words showing aspirates associated with secondary voicing, the total showed the *mid-tone* in the lead, 12–15 to 7–9. So far it *does* look as if there is a significant difference in the Jg. tonal fate of *voiceless obstruental syllables according to the tonal class of the LB cognates. If we now try the experiment of returning to the Tone *1 sets, adding in the ones showing aspirates associated with secondary voicing, i.e. Classes CC and D, we still get a total of 12–16 mid vs. 15–19 low. In other words, the basic correlation between Tone *1 *voiceless obstruents and the low-tone remains unchanged.] Some pieces are still missing from the puzzle, however — and to fit them in will involve a consideration of another Jg. tone we have barely mentioned so far: the high-tone /ˊ/. See Section 4.

With spirantal syllables there is a huge difference between Tone *1 and

Tone *2, as we have already noted. The Tone *1 examples are few (2 mid, 3 low), and seem to be split on the basis of the particular proto-spirant involved. The Tone *2 examples are three times as numerous, and show a striking affinity for the Jg. low-tone regardless of the particular proto-spirant.

Nasal syllables show the most random behavior of any major initial-class. In Tone *1 words the mid-tone predominates slightly, and this is also true for Tone *2. But given the greater number of mid-tone words *overall* in both *1 and *2, regardless of initial-type, this is not particularly impressive.

Resonantal syllables present a confused picture, but at least we can say that there are some significant differences in mid/low patterning with respect to the tone of the LB cognates. In Tone *1 words the mid/low split is random, whether the LB initial was a plain or a voiceless resonant. In Tone *2 words, on the other hand, the patterning is random only in the case of sets where LB has plain resonants. In those with LB voiceless resonants, there is a 100 % correlation with Jg. mid-tone (8–0).

Syllables where Jg. and WB both have initial glottal stop plus vowel all belong to Tone *1 (7 exs., split 4–5 mid, 2 low).

* * *

To sum up:

The Jg. mid/low split seems independent of the PLB tonal class in syllables with *voiced obstruents, *nasals, and *plain resonants.

The Jg. mid/low split shows significant correlations with the PLB tonal class in syllables with *voiceless obstruents, *spirants, *voiceless resonants, and *glottal stop.

4.0. *Sets where Jg. has the high-tone /ˊ/.*

The Jg. high-tone is probably the key to the whole problem, since it shows the most asymmetrical behavior with respect to the two primary tones of Lolo-Burmese.

First, as far as the number of total occurrences in reliable cognate sets is concerned, there are *twice as many* cases where Jg. high-tone corresponds to PLB *2, as there are where Jg. high-tone corresponds to PLB *1. This in itself is remarkable, since the persentage of *mid-* and *low*-tone correspondences is, overall, almost exactly the same regardless of the PLB proto-tone. (It will be remembered that for Tone *1 sets, Jg. mid-tone syllables are 57–59 % of the total, and low-tone syllables are 41–43 %; for Tone *2 sets, the figures are 53–55 % mid and 45–47 % low).

Furthermore, the less numerous high-tone/Tone *1 correspondences are scattered with respect to the type of initial consonant in the syllable. The only initial-class to have more than one or two members is spirantal. In sharp contrast, in high-tone/Tone *2 words there is a bunching of examples: fully 12–14 of the 35–40 examples are syllables where LB has *aspirated obstruental* initials.

We shall first list all our examples, and then discuss them.

4.1. *Where Jg. high-tone corresponds to PLB Tone *1* [17 exs. + 2 ?].

Jg. plain / Lh. plain:

265. 'dwarf; lop off'. Jg. krúm 'trim, lop, prune' / Lh. chɔ-*kɛ*-nɛ 'dwarf', qhɔ-*kɛ*-nɛ 'barren, treeless mountain'.

Jg. aspirated / WB aspirated:

266. 'create'. Jg. phán / WB phan.

Jg. voiced / Lh. plain:

267. *'earth; place$_2$'. Jg. gá 'earth' / Lh. kà 'classifier for places' [< *r-ka; cf. Nung rəga 'land'].[108]

Jg. voiced affricate ~ s- / WB plain:

268. 'be on lookout'. Jg. džói 'be on the lookout, alert', sói 'gaze at, catch a glimpse, glance', ʔəsói 'id.' [there is also a mid-tone variant, ʔədžõi] / WB cwe 'squint, peer from one eye'.

Jg. aspirated / WB voiced:

269. 'chief'. Jg. ń-thúŋ 'head (as of bed); top, excellence; supreme' / WB duiŋ 'petty chief, as of gambling house; an official'.

Jg. aspirated / WB plain:

270. 'meet$_1$'. Jg. khrúm / WB krum ~ krim 'meet with, find'.

Jg. s / WB, Lh. aspirated affricate:

271. *'oil, fat$_2$'. Jg. sáu 'luscious; oily', ʔəsáu 'oil, grease' / WB chu 'fat' / Lh. chu 'id.' [For an alternative identification of the LB forms with Jg. zū 'semen', see above No. 83.][109]

108 We are hypothesizing a metathesis of the prefix with the root-initial in the proto-language to account for the two Jg. forms ra 'place' [see No. 125 above] and gá 'earth'. See also STC, set 97.

109 The identification with 'semen' is actually far preferable. Benedict puts Jg. sáu (Lushai thau, Dimasa, Bodo thau) into a separate TB root (*sa·w) from the Lolo-Burmese forms, which he derives from TB *tsow. See STC, sets 272 and 277.

272. 'similar'. Jg. sám 'appear, seem; habit, disposition', ǹ-sám 'appearance, mien; character' / WB cham 'share the character or nature of'.

Jg. s, š / WB s:

273. 'die$_2$'. Jg. són 'die', ʔəsón 'spirit of woman dead in childbirth' / WB swan 'non-viable (eggs, roots)'.
274. 'file, razor'. Jg. rét-sáŋ, tèn-sáŋ 'file' / WB saŋ-tûn 'razor'.
275. 'small$_2$'. Jg. šói 'small, weak, paltry' / WB swai 'slender and tapering', ʔəswai (n.).
276. 'sound, voice'. Jg. ǹ-sén / WB ʔəsam 'sound, report, rumor'.

Jg. nasal / WB nasal:

277. 'corpse$_2$'. Jg. mói 'corpse' / WB mwe 'relics of the body of a Buddh', ʔəmwe 'inheritance'.
278. 'work'. Jg. ʔəmú / WB ʔəmu 'deed, action'.

Jg. resonant / WB plain resonant:

279. 'chew'. Jg. məyá 'chew' / WB ya 'make a quid of betel', ʔəya 'a betel quid'.

Jg. resonant / LB voiceless resonant:

280. 'breeze, wind'. Jg. bùŋ-lí / WB le / Lh. mû-hɔ.

Fusionally clustered resonants:

281. 'hint'. Jg. réŋ 'vital part (Hkauri)', kréŋ 'vital part', lərêŋ 'id.; to hit, hint, insinuate' / WB rañ 'aim at, have reference to'.
282. 'right (side)'. Jg. khrá / WB ya / Lh. ša [The Jg. velar is to be explained by metanalysis with *lak- 'hand'].

4.2. *Where Jg. high-tone corresponds to PLB Tone *2* [35 exs. + 5 ?].

Jg. plain / LB plain:

No Examples

Jg. voiced / WB, Lh. plain:

283. 'dirt, filth$_2$'. Jg. khəgrəwí / WB krê, ʔəkrê / Lh. kî 'to rot'.

Jg. plain or plain ~ voiced / WB, Lh. voiced:

284. 'tube$_2$, bottle'. Jg. ǹ-túm, ǹ-dúm 'bottle; bamboo tube' / WB dûm 'tube filled with gunpowder' / Lh. ɔ̀-dɛ̃ 'bamboo tube'.
285. 'bird sp.'. Jg. ʔù-tsəwí 'kind of bird' / WB jwê 'kind of bird'.

Jg. aspirated / WB, Lh. aspirated:

286. 'bitter'. Jg. khá / WB khâ / Lh. qhâ.
287. 'embrace; cover$_2$'. Jg. phúm 'embrace, hug; roost, as a hen' [possibly related is Jg. phùm 'lie, as an animal'] / WB phûm 'cover'.
288. 'smoke'. Jg. khú 'be smoky' [ʔwàn-khùt 'smoke'[110]] / WB khûi / Lh. mû-qhɔ̂.
289. *'push; hit'. Jg. thú 'push, shove' [also ʔəthù 'hit, strike', with low-tone] / WB tûi 'push, butt, shove against', thûi 'thrust at, stab, strike' [also perhaps Lh. thû 'be in a state of sexual desire'].[111]
290. 'shit'. Jg. khyí / WB khyê [Lh. qhɛ̃ is irregular (we would expect *chî); perhaps it is a loan from Shan (cf. Thai khîi)].[112]
291. 'spit'. Jg. màthwí / WB thwê (v.), tam-twê (n.).

Jg. voiced / WB, Lh. aspirated:

292. 'excess'. Jg. džán 'be in excess', mədžán 'very' [also perhaps džàn 'a verandah', i.e. 'the part of the house that sticks out'] / WB chân 'exceed others, be extraordinary'.
293. 'oily; corpulent'. Jg. byú 'oily (Hkauri)' / WB phrûi ~ phyûi 'be full in flesh, fat, corpulent; swell up'.
294. 'put, place'. Jg. dá [dàt (Hkauri)[110]] / WB thâ / Lh. tā.[113]
295. 'steal'. Jg. ləgú [ləgùt 'thief'][110] / WB khûi / Lh. qhɔ̂ [WT rku].
296. 'thorn'. Jg. džú 'thorn' [džùt 'be pierced'[110]] / WB chû 'thorn', cû 'to prick, pierce' / Lh. í-chû 'thorn', jûʔ 'pierce'.
297. *'tired$_2$'. Jg. bá 'be tired', šəbá 'tire someone out' / WB phâ [see No. 176 and note 92, above].
298. 'urine'. Jg. dží ~ tší 'urinate' [džìt 'urine'][110] / WB chî 'urine (medical)', sê 'piss (vulgar)' / Lh. jî.

110 For a discussion of this crucially important alternation between Jg. high-tone and the low-stopped tone, see below 4.3.

111 This set shows LB alternation between *voiced and *voiceless stops, and variation between Jg. high- and low-tones, so we are not really justified in including it here.

112 *qhi* is an impossible syllable in Lahu, so perhaps the vowel was lowered to accommodate the borrowed word while preserving the velarity of the initial. On the other hand, Benedict (personal communication) informs me that in Tai there exist archaic doublets of this root with the rhymes -ay and -ee; conceivably such a variant was the source of the loan into Lahu.

113 The correspondence between WB th and Lh. t, as well as the Lh. very-low tone, point to a glottalized *ʔt- for PLB. The source of this glottal element was *s-, as shown by the WT forms *sta* 'preparation, arrangement', *stad* 'put on, lay on.' These latter forms show the same alternation between open-syllable and final dental stop as the Jg. pair. See below.

299. 'youngest sibling'. Jg. šədói 'last-born child', wá-dói 'father's younger brother', nú-dói 'mother's younger sister' / WB thwê 'be youngest', mi'-thwê 'mother's younger sister'.

Jg. aspirated / Lh. voiced:

300. 'pillow'. Jg. bùŋ-khúm [also perhaps pūŋ-khùm 'stool'] / Lh. ú-gê.

Jg. aspirated / WB plain:

301. 'plug up; deaf'. Jg. pháŋ, nà-pháŋ, ləpháŋ 'deaf' / WB pâŋ 'obstruct', nâ-pâŋ 'deaf' / Lh. pô 'deaf'.
302. 'tree'. Jg. phún / WB pûn- 'morpheme in tree names'.

Jg. plain / WB aspirated:

303. 'dried up$_2$ (as a stream)'. Jg. kán / WB khân [LM also cites an 'adverbial' Jg. form with low-tone, khàn].

Jg. spirant / WB, Lh. plain affricate:

304. 'eat'. Jg. šá [šàt 'food, rice'[110]] / WB câ / Lh. câ 'eat', cā 'feed'[114]

Jg. spirant or affricate / WB spirant:

305. 'abound; myriad'. Jg. sóŋ 'be abundant' / WB ʔəsôŋ 'ten thousand', sôŋ- 'quintillion', sôŋ-sôŋ 'in large numbers'.
306. 'rub$_1$, shave'. Jg. làsəwí 'whittle off', ùsəwì 'id. (Hkauri)', gəsəwí 'rub up against, as an affectionate cat' / WB swê 'whet, rub to sharpen, polish'.
307. 'store up'. Jg. sím 'store up, put away' / WB sîm 'gather in; take possession of; put a stop to'.
308. 'very; to a painful extent'. Jg. tšíŋ 'very; painfully intense' / WB sâñ 'very ill'.

Jg. nasal / WB, Lh. nasal:

309. 'arrow'. Jg. məlá, pəlá / WB hmrâ.
310. 'fish'. Jg. ŋá / WB ŋâ / Lh. ŋâ.
311. 'from, in; be located on, perch'. Jg. ná 'ablative or locative particle', kóʔ-ǹ-ná 'from' / WB nâ 'alight, perch' / Lh. nâ 'perch, as a bird' [Cf. WT na 'locative particle', gnas 'a place, spot'; see STC, set 414].
312. 'kind, sort'. Jg. ʔəmyú / WB ʔəmyûi.

114 The Jg. form šàn 'meat, flesh' is < TB *ša-n, and not to be directly connected with the 'eat' root (TB *dza).

Jg. resonant / WB, Lh. plain resonant:

313. 'bamboo'. Jg. kəwá / WB wâ / Lh. vâ.
314. *'barley'. Jg. múk-yó / WB mu'-yâw [Undoubtedly a loan into Jg. < Burmese].
315. 'bet, wager'. Jg. lóŋ / WB lôŋ.
316. 'bite'. Jg. kəwá, gəwá 'bite' / WB wâ 'chew'.
317. 'itch$_2$'. Jg. kəyá / WB yâ [WT g-ya].

Jg. resonant or spirant / LB aspirated resonant:

318. *'lose, be defeated'. Jg. súm / WB hrûm [Peculiar initial correspondence].
319. 'slice, shave'. Jg. məlí 'to smooth, scrape, shave' / WB hlî 'cut with a sliding motion; cut a slice'.
320. 'squirrel (flying)'. Jg. səló 'flying squirrel', rùʔ 'animal resembling squirrel living in trees and feeding on fruit'[115] / WB hrû 'flying squirrel' / Lh. fâʔ-šū 'great flying squirrel'.
321. 'wither, fade$_2$'. Jg. wái / Lh. hwē.

Fusional resonant clusters:

322. *'separate'. Jg. rán, šərán, mərán, kərán, lərán / perhaps Lh. gî / WT ḥbral, ḥp'ral.

4.3. *Ruminations on the historical status of Jg. high-tone.*

As we have seen (4.0–4.2), the occurrences of Jg. high-tone are gratifyingly asymmetrical with respect to the two primary tones of PLB. It is quite clear that /′/ has special affinity for PLB *2, and that this affinity is most marked after certain types of initials.

Let us start with a negative fact. There is an almost total antipathy between /′/ and *voiced obstruental initials, whatever the tone of the LB cognates. Thus, there is only one etymon under Tone *1 with Jg. /′/ where the initial correspondence is Jg. plain / LB plain (No. 265), and under Tone *2 there are none at all.

The situation is totally different for syllables with *voiceless initials, at least as far as Tone *2 is concerned.[116] There are no fewer than 5–6 cases

115 The final -ʔ in the second Jg. form is irregular. Benedict suggests (personal communication) that rùʔ may be a loan < Tai; cf. proto-Tai *(kə)rook 'squirrel'.

116 There are relatively so few examples of /′/ corresponding to PLB *1, and these are scattered so randomly with respect to the type of initial in the syllables, that we shall have no more to say about them. Thus there is only one example of a Tone *1 word with Jg. asp / WB asp. initial under Jg. /′/ ('create', No. 266) — and even this may be a loanword into Jg.

of /′/ in words with Jg. asp / LB asp initials, including that archetypically important etymon 'bitter'. To these we may add 7–8 more examples where Jg. has secondary voicing (Jg. voiced / LB aspirated), including such excellent etyma as 'steal', 'thorn', and 'urine'. For good measure, we may throw in 'pillow' (No. 300), where an old nasal prefix (cf. Nung məkhim) has caused secondary voicing in Lahu, but where Jg. retains an aspirated initial. Finally, No. 285 ('kind of bird') has a Jg. affricate corresponding to a WB voiced affricate — since Jg. has no aspirated affricates, and since we know the WB voicing is secondary, this word may also descend from a prototype with *voiceless initial. This gives us a total of 14–16 examples, a huge number when one considers the lexical infrequency of /′/ compared to Jg. mid- and low-tones. See the following charts:

PLB *1	Jg. *mid*	Jg. *low*	Jg. *high*
B Jg. asp / LB asp	5–6	9–11	1
CC Jg. vd / LB asp	3–4	6– 7	0

PLB *2	Jg. *mid*	Jg. *low*	Jg. *high*
B, BB[117] Jg. asp / LB asp	4–5	5–6	5–6
CC Jg. vd / LB asp	4–5	1–2	7–8

The correlation between voicelessness and Jg. /′/ is not confined to obstruental initials. There are 5 examples (Nos. 304–308) of Tone *2 words under Jg. /′/ where the Jg. initial is a voiceless *spirant*, including the important etymon 'eat'.

Finally, of the seven good cognate sets with *resonantal* initials (Nos. 313, 315–317, 319–321), *six* have a voiceless element in the initial cluster. In Nos. 318–321, the WB and/or Lh. forms reflect PLB *voiceless resonants, while in 313, 316, and 317 the Jg. root-initial consonant is preceded by the voiceless prefix kə-.

Incidentally, this correlation between Jg. /′/ and voicelessness is just what we would expect on universal phonetic grounds: high tones are typically associated with voicelessness, and low tones with voicing.[118]

We come now to a very curious set of facts. If we look back over the Tone *2 words where Jg. has /′/, we find that six of the very best examples are word-families where Jg. shows alternation between an open syllable

117 If we leave out Class BB, whose members are affricates, the preponderance of /′/ is even more striking:

	mid	*low*	*high*
B Jg. asp / LB asp	2–3	2–3	6

118 See Matisoff 1970, 1972a.

under /′/ and a variant with suffixed dental (-t) under the low-stopped tone. For all of these six sets there are good WT cognates which display the same open-syllable/dental-suffix alternation. The WT forms mostly have voiced initials; 4 of the 6 Jg. pairs of forms show secondary voicing of the initial; but 5 of the 6 Lolo-Burmese cognates have aspirated (< *voiceless) initials. Obviously we are dealing with roots that were both prefixable and suffixable in the proto-language, though several different prefixes were apparently involved. Here are the sets:

(288) 'smoke'. Jg. khú 'be smoky', ʔwàn-khùt 'smoke'
WT du 'smoke', dud 'smoke'[119]
WB mî-khûi / Lh. mû-qhô.

---

(294) 'put, place'. Jg. dá 'put, place', dàt 'put, place, fasten (Hkauri)'
WT sta-gon 'preparation, arrangement', stad 'to put on, lay on'
WB thâ / Lh. tā [< PLB *ʔta].

(295) 'steal'. Jg. ləgú 'steal', ləgùt 'thief'
WT rku 'steal', rkun-ma 'thief'
WB khûi / Lh. qhô 'steal'.

(296) 'thorn'. Jg. džú 'thorn', džùt 'be pierced', šədžút 'cause to be pierced'[120]
WT ḥdzu 'enter', ḥdzud 'put, lay'
WB ċhû 'thorn', cû 'to prick, pierce' / Lh. í-chû 'thorn'.[121]

(298) 'urine'. Jg. dží ~ tší 'urinate', džìt 'urine'
WT gči 'urinate', gčid 'id.', gčin 'urine'
WB chî, sê 'urine' / Lh. jî 'id.'.

---

119 The WT d- looks prefixial to me. Cf. 'six' WT drug / Jg. krú? (<*d-ruk). In my view, Tibetan first lost the velar initial [cf. the Nung form for 'smoke' (məö)], and then re-prefixed a d- to the root. See STC, pp. 114–117. Benedict [personal arguments] steadfastly refuses to accept the validity of this comparison, however, and considers the WT forms to be quite independent of the Jg. and LB ones.

120 Note the tonal alternation between the Jg. simplex and causative forms.

121 There is a related TB word-family with final velar stop: WT ḥdzugs, zug, ḥdžug 'prick, pierce; put into, put down into', Jg. tšók 'to pierce; be pierced', Lh. jû? 'pierce'. See below, No. 353, and Matisoff 1972a, No. 107.

(304) 'eat'. Jg. šá 'eat', šàt 'deer; rice; food'
WT za 'eat', zan 'food'
WB câ 'eat' / Lh. câ 'eat', cā 'feed'.

These sets show evidence for every TB prefix in the book. In (288) we have *d-; in (294) we find *s- (> PLB *ʔ-); in (295) we have *r- (> Jg. lə-); in (296) we find *ḥ- (i.e., PTB *ʔ-); and in (298) we have both *g- and *N- (the latter underlying the Lh. form with voiced initial). Only in 'eat' (304) does the root never appear prefixed — and this is the only one of the six not to have LB aspirates.

What does all this mean? Why have we found no examples of this sort of Jg. tonal- and final-alternation in Tone *1 sets? Was it the dental suffixes[122] which somehow caused all these words to assume the same tone? If so, why are the tones still all the same in the unsuffixed variants of the families? How do we explain the disagreement in voicing between LB on the one hand and WT on the other? Is the Jg. voicing in 4 of the 6 sets actually "primary" instead of "secondary"?

These are questions we cannot yet answer, and which we have perhaps not even posed in the right way. But maybe the following hypothesis is not too far off the track. Suppose that at an early stage after the separation of Jg. from the Proto-Jiburish stock the *regular* reflex of PJBL Tone *2 was a high tone much like the present-day /ˊ/. At some later date a far-reaching tonal convulsion arose in Jg. which obliterated many of the traces of the earlier proto-system, and which led to a largely random distribution of the new Jg. mid- and low-tones both in words which had belonged to PJBL Tone *1 and PJBL Tone *2. The earlier high-tone gave ground to the newer mid- and low-tones, except after Tone *2 voiceless initials, where it made a last-ditch stand. Perhaps its survival here was due to the natural compatibility of highness of pitch and voicelessness of initial; having survived, it could then be exploited in morphological doublets, where it could be distinctively contrasted with variants under the low-tone, thus making for a maximal pitch-difference between the alternants.

Note that under this interpretation, the Jg. high-tone is not secondary at all in the sense of 1.2(2) above. In the historical sense it might be primary. Only from the point of view of the present-day language, where it is lexically less frequent than the mid- and low-tones, could we call it "secondary".

If the above reasoning is correct, we could then say that the extent of

122 For discussions of these suffixes see Wolfenden 1929 (pp. 56 ff.), 1936, 1937; also STC (pp. 98–103).

the survival of /ˊ/ was somewhat different according to the particular type of *voiceless initial involved: obstruents, spirants, or resonants:

(a) PJBL Tone *2 syllables beginning with **voiceless stops* regularly developed Jg. /ˊ/, with only a smattering of cases showing a development into Jg. mid- or low-tone.
(b) PJBL Tone *2 syllables beginning with **affricates* developed into Jg. mid- or low-tones, under conditions which are not yet understood.
(c) PJBL Tone *2 syllables beginning with **spirants* (or with *voiced affricates which developed into Jg. spirants — see 'eat' No. 304) assumed either Jg. /ˊ/ or Jg. low-tone, and only very rarely Jg. mid-tone. The basis for the split into /ˊ/ and /ˋ/ is not yet understood.
(d) PJBL Tone *2 syllables beginning with **nasals* show a triple development into Jg. mid-, low-, and high-tone, the basis for which remains totally unclear.
(e) PJBL Tone *2 syllables beginning with **plain resonants* developed either Jg. mid- or low-tone — but almost never acquired Jg. high-tone.
(f) PJBL Tone *2 syllables beginning with **voiceless resonants* developed either into Jg. /ˊ/ or Jg. mid-tone, and never into Jg. low-tone. The basis for the split into /ˊ/ and /¯/ is not yet understood.

To sum up: there is an enormous amount which remains unclear about the Jg. correspondences to PLB Tone *1 and *2 — but at least the problems are different in each case — that is, the Tone *1 mysteries are different from the Tone *2 mysteries. This is perhaps enough to justify our view that the tonal systems of Jg. and PLB had a common origin, which later developments internal to Jg. have largely obscured.

* * *

5.0 *Sets where PLB shows variation between *1 and *2.*
5.1 PLB *1 ~ *2 / Jg. mid-tone
5.2 PLB *1 ~ *2 / Jg. low-tone
5.3 PLB *1 ~ *2 / Jg. high-tone

6.0 *Sets where the PLB tone is unvarying but where Jg. shows tonal variation.*
6.1 PLB *1 / Jg. mid ~ low
6.2 PLB *1 / Jg. mid ~ high
6.3 PLB *1 / Jg. high ~ low
6.4 PLB *1 / Jg. mid ~ low ~ high
6.5 PLB *2 / Jg. mid ~ low
6.6 PLB *2 / Jg. mid ~ high
6.7 PLB *2 / Jg. high ~ low
6.8 PLB *2 / Jg. mid ~ low ~ high

7.0 *Sets where both Jg. and PLB show tonal variation.*

PLB *1 ~ *2 / Jg. mid ~ high *or* mid ~ low *or* high ~ low *or* mid ~ high ~ low.

8.0 *Sets where WB has the creaky tone.*

8.1 WB creaky / Jg. mid
8.2 WB creaky / Jg. low
8.3 WB creaky / Jg. high
8.4 WB creaky / Jg. tonal variation
8.5 WB creaky ~ *1 / Jg. mid *or* low *or* high *or* variation
8.6 WB creaky ~ *2 / Jg. mid *or* low *or* high *or* variation
8.7 *WB creaky / Jg. stopped syllable.*[123]

* * *

9.0. *Jg. / PLB tonal relationships in stopped syllables.*

It is a pity that we are running out of time and space, because it is precisely in the realm of stopped syllables that the relationship between the Jg. and PLB tonal systems is the clearest!

I have already discussed the two-way tonal contrast in Loloish stopped syllables at considerable length.[124] As is well-known, WB has no tonal contrasts at all in stopped syllables, standing in sharp opposition to the Loloish languages. In Matisoff 1972a I more-or-less tacitly assumed that the Loloish "tonal split" was an innovation, and that the original PLB stopped syllables were all under a single tone. I am now forced to abandon that view, since there is a striking agreement between the two-way Jg. contrast and that of Loloish. It now appears that it was Burmese which innovated by losing the two-way contrast which went back to the PJBL stage, and Loloish which was conservative.[125]

We refer to the two Loloish stopped tones as "HIGH" and "LOW". Loloish HIGH syllables show a very strong correlation with the Jg. *low-stopped* tone (20–25 examples). There are only about 7 cases of HIGH syllables corresponding to Jg. high-stopped words, and these examples are all weak. The situation is somewhat less open-and-shut with regard to the Jg. correspondences to Loloish Low syllables — but even here we can say that the regular correspondence is Loloish Low / Jg. high-stopped. The considerable number of cases where we find Loloish Low / Jg. low-stopped can be explained quite convincingly as having arisen through the influence of various prefixes, in particular the nasal prefix (and in the case of roots with resonantal initials, a voiceless k- prefix).

123 Cases of WB creaky / Jg. stopped are briefly listed below, 9.6. Otherwise sections 5 through 8 remain to be written. For now let us merely note that a fuller treatment of Jg. / PLB tonal relationships will have to include a discussion of these matters.

124 Matisoff 1971, 1972a.

125 Despite this reinterpretation, most of what was said in Matisoff 1972a about the phonetic *causes* of the split remains valid — i.e., even if the split dated from PJBL times, it still reflects an *even earlier* stage where there was no tonal contrast in stopped syllables. The contrast arose in a complex way through the influence of the voicedness or voicelessness of the pre-JBL initial consonant cluster of the syllable, as outlined in "TSR".

Let us quickly look at the evidence:

9.1. *Jg. low-stopped tone corresponding to Loloish* HIGH. [20–25 exs.].

323. 'bean$_2$'. Jg. nòʔ / Lh. nôʔ [TSR 140].[126]
324. 'blow'. Jg. kəwùt / Lh. mə̂ʔ [TSR 143].
325. 'clench, crumple'. Jg. tšùp, šùp / Lh. chîʔ, Akha tsu^ [TSR 66]. [This root shows -u- ~ -i- alternation].
326. 'climb, rise'. Jg. thàʔ / Lh. tâʔ [TSR 98].
327. *'cover$_3$; top'. Jg. gàp, məgàp 'cover' / Lh. qhôʔ 'top' [Relationship uncertain].
328. 'deer'. Jg. šàt / Akha tseh^ [The Jg. form may be derived from the root 'eat'. See No. 304 above].
329. 'eye'. Jg. myìʔ / Lh. mêʔ [TSR 145].
330. *'flat$_2$, shallow'. Jg. byèp 'low, squat' / Lh. pêʔ-nêʔ 'shallow' [Relationship uncertain; see note 84].
331. *'fold; embrace; one of a pair; side'. Jg. bàʔ 'be folded' / WB phak, bhak 'embrace; one of a pair' / Lh. ò-pá 'side' (Low), Akha pa^ 'side' (HIGH) [TSR 72].
[This set is not criterial, since there is tonal variation within Loloish itself].
332. 'free; loosen'. Jg. lòt 'be free', šəlòt 'set free' / WB lwat, kywat 'be free, loose', hlwat, khywat 'set free, loosen' / Lh. lêʔ 'slippery, smooth', Akha leh^ 'take off clothes'.
333. 'grind'. Jg. krìt / Lh. gə̂ʔ [TSR 94].
334. *'key; lock'. Jg. zòʔ / Ahi and Sani dzu 44 [TSR 79].[127]
335. 'layer, fold; add, repeat'. Jg. kəthàp / Lh. thôʔ [Related to 'pack into', TSR 85].
336. 'loose, unsteady, shifting'. Jg. šàp / Lh. šôʔ 'fall down'.

126 These references are to Matisoff 1972a, "The Loloish *T*onal *S*plit *R*evisited."

127 This word looks like a loan < Ch. so/suâʔ 鎖, with secondary voicing [Benedict, personal communication].

337. 'moisten, soak'. Jg. mədī 'be moist', mədìt 'moisten' / Lh. tî? [TSR 109].
338. 'peck at'. Jg. thòk, kəthòk 'strike lightly' / Lh. thô? 'peck; strike with curved instrument' [TSR 15; but why does Jg. have -k?].
339. 'pinch, squeeze'. Jg. nyàp / Lh. nô? ~ nû? [TSR 147].
340. 'run'. Jg. gàt, kəgàt / Akha ceh^ (< PLB *kyat) [TSR 18].
341. 'scale (of fish)'. Jg. ŋá-sèp / Lh. ò-šê?.
342. 'scratch'. Jg. məkhrèt / Lh. gê? [TSR 97].
343. *'split lengthwise'. Jg. šìt / Lh. jî? (but Akha ceu^) [TSR 88].
[This example is not criterial, since Loloish itself shows tonal variation].
344. 'squirt, gush'. Jg. phrùp 'squirt' / Lh. pû? 'classifier for rain-showers'.
345. 'stroke, rub$_2$'. Jg. məsòp / Lh. šô? [TSR 116].
346. 'wind around$_2$, encircle'. Jg. bàt / Lh. pê? 'classifier for pieces of land', Akha beh^ 'the rafter that goes lengthwise on the posts at the side of a house' (cf. Jg. dīŋ-bàt 'crossbar, stringer, beam; an arch, a space, as between two posts and a top-bar').
347. 'wrap up'. Jg. thùp / Akha taw^ [TSR 23].
[There is a related root with a front vowel. See below, No. 352].

9.2. *Jg. high-stopped tone corresponding to Loloish* HIGH [7 dubious exs.].

348. 'abate; shadow'. Jg. kríp 'die down, abate' / WB rip 'throw a shadow' / Lh. ò-ğô? 'shadow' [TSR 189].
[We reconstruct this root as *k-rip for PLB, though the k- does not overtly appear, and makes its presence felt only by its perturbation of the tone.]
349. *'cut by a blow; hack'. Jg. tók / Lh. tô?, Akha deu^ [TSR 101].
[Relationship doubtful. Why does the Jg. form preserve the final -k ?]
350. *'destroy$_2$'. Jg. pyák, phyák, byák / Akha pya^ 'tear down' [TSR 64].
[Maran reports a Jg. low-stopped variant with "adjectival" meaning. Why does Jg. have -k ?].
351. *'gun'. Jg. sənát / Lh. nâ? [This is an obvious loanword into Jg. from Burmese se-nat (θəná? in mod. pronunciation).]
352. 'to package, squeeze, fasten tightly'. Jg. mətép / Lh. thî?, Akha toe^
[This set seems to be related to No. 347 above, where Jg. has low-stopped tone.]
353. 'pierce$_2$'. Jg. tšók / Lh. jû? [TSR 21, 107].
[These forms belong to a ramified word-family that includes open-syllabled variants as well as forms with final -k. See No. 296 above].

354. 'wipe'. Jg. kətsút / WB sut / Lh. šî? [TSR 120].
[This set shows -u- ~ -i- alternation within LB].

9.3. *Jg. high-stopped tone corresponding to Loloish* Low [19 exs. + 4 ?].

(a) STOP INITIALS[128]

355. 'bedbug; lac insect; pitch-pine; cochineal'. Jg. šəkrép 'bedbug' / WB khrip 'lac' / Lh. a-kí 'pitch-pine'[129] [TSR 46].
356. *'scoop up; draw water'. Jg. khyóp 'grab up, scoop up' / Ak. k'aw^ 'draw water' / WB khap 'id.' [These are not perfect cognates, since the LB forms show no trace of medial -y-. Lh. qho is from a nasal-finalled variant, *kam.][130]
357. 'goat; deer'. Jg. tšít-sà 'deer' / Lh. á-chè? 'goat' [TSR 27].
358. 'poison'. Jg. túk / Lh. ò-tò? [TSR 113].
359. 'six'. Jg. krú? / Lh. khò? [TSR 35].
360. *'speckled, spotted'. Jg. prú? / Lh. bù? [TSR 89].
[This set is not criterial, since there exist Loloish HIGH forms as well.]
361. 'stick, adhere$_2$, join a group'. Jg. káp, šəkáp 'adhere', tšáp 'be intimate with' / WB kap 'join, unite; adhere' / Ak. gaw^ 'join a group'.
362. 'stop up, obstruct'. Jg. tsút, mətsút / Lh. chì?.
[This root shows -u- ~ -i- alternation.]

(b) SPIRANTAL INITIALS

363. *'descend'. Jg. ʔyú? / WB sak / Lh. yà? [< PLB *zak] [TSR 121].
[This root shows an unusual -u- ~ -a- alternation.]

(c) NASAL INITIALS

364. 'brains'. Jg. nú? / Lh. ú-nò? [TSR 156].
365. 'son in law'. Jg. dà-má? / Lh. ò-má [TSR 153].
366. 'spirit$_3$'. Jg. nát / Ak. neh^ [TSR 136].
367. *'squeeze'. Jg. mənát / Lh. ní, Ak. nyeh^ [< PLB *ʔnyit]
[This root shows an unusual -a- ~ -i- alternation.][131]

128 To the sets in this group may be added one old loanword, 'device, machine': Jg. džák, WB cak 'wheel', Lh. cà?, ò-cà? 'machine', ult. < Pali cakka < Skt. cakra.

129 Lh. high-rising tone /ˊ/ is a regular reflex of PLB Low after certain types of initials. See Matisoff 1970, 1971, 1972a.

130 Another root showing variation between the presence or absence of medial -y- is 'run' (No. 340 above). In the case of 'run', however, it is Jg. which lacks the medial while Loloish has it.

131 A better Jg. cognate of these Loloish forms is probably nìp 'to shade, as a tree; be overcast, as the sky.' Cf. WB nip 'be kept down', hnip 'keep down, oppress.' See TSR, No. 159.

(d) Resonantal Initials

368. 'below, lower side'. Jg. ləwú? / Lh. hɔ́ [TSR 173].
369. 'day of 24 hours'. Jg. yá? / Lh. há 'night; spend the night' [TSR 174].
370. 'eight'. Jg. mətsát / Lh. hí [TSR 171].
371. 'enough$_2$; many'. Jg. ló? 'many', ló?-sá? 'enough' / Lh. lò? 'enough' [TSR 164].
372. 'lick'. Jg. mətá? / WB lyak / Lh. lɛ̀?, lé (cf. WT ldag) [TSR 179].
373. 'now; present time'. Jg. yá? / Lh. yà?-ni 'today', yà?-pí 'tonight', yà?-šɛ̃ 'just now' [cf. WB ya'-khu 'present time', with creaky tone. See below 9.6.]
374. 'pig'. Jg. wá? / Lh. và? [TSR 168].
375. 'reap'. Jg. rét 'be sawed, saw' / Lh. ğə̀? 'reap' [TSR 169].
376. 'sleep'. Jg. ?yúp / Lh. yì? [TSR 180].
[This root shows -u- ~ -i- alternation.]
377. 'stand'. Jg. tsáp / Lh. hú [TSR 175].

9.4. *Jg. low-stopped tone corresponding to Loloish* Low [15 exs. + 1 ?].

(a) Stop Initials

378. 'angry'. Jg. bù? 'have fever; be hot with rage' / Lh. bə̀? 'be angry'.
379. 'bent, crooked'. Jg. məgò? / Lh. qò? [TSR 2].
[This root shows *voiced ~ *voiceless alternation in Tibeto-Burman. See Benedict 1972b, p. 125.]
380. 'boil$_3$'. Jg. prùt, šəprùt / Ak. pu˖.
[Lh. bì reflects an open-syllabled variant with pre-nasalized initial.]
381. 'dried up$_3$, brittle; rustling'. Jg. krò̀p 'rustle, as dry leaves; be dry, hoarse' / Lh. gô 'be dried up', gò? 'dried-up thing' / WB khrwap 'rustlingly'.
382. 'swollen; protuberant'. Jg. bò̀p 'calf of leg', khūm-bò̀p 'foam, bubble' / Lh. phò? 'swollen' [TSR 92].
383. *'tea; leaf'. Jg. phà? 'tea-plant' / Lh. phà? 'leaf' [TSR 29].
384. 'vomit'. Jg. ǹ-phàt / Lh. phè? [TSR 38].

(b) Spirantal Initials

385. 'breath; air'. Jg. sà? 'breathe', ǹ-sà? 'breath' / Lh. šá [TSR 123].
386. 'kill'. Jg. sàt / Ak. seh˖ [TSR 124].

(c) Nasal Initials

387. 'early morning'. Jg. mənàp / WB mənak / Lh. tê nà?.
[This root shows alternation between -p and -k.]

388. 'seven'. Jg. sənìt / Lh. ši, Ak. shi˖ [TSR 128].
389. 'snot'. Jg. ?ənèp 'snot', nyèp 'be soft; mucus', ?ənyàp 'soft, sticky, viscous' / Lh. nú [TSR 152].
390. 'swallow'. Jg. məyù? / Ak. myo˖ [TSR 137, 169a].

(d) Resonantal Initials

391. 'ashamed'. Jg. kəyà? / Lh. yà?-tɔ [TSR 182].
392. 'fireplace rack; wall'. Jg. ràp, kəràp / Lh. ğò?-pa 'wall' (Low, < *rap), Ak. g'o^-ba˗ (High, < *k-rap).
393. 'leech'. Jg. wò̀t / WB krwat / Lh. vè? [TSR 167].

9.5. *Conditioning factors for the double Jg. correspondence to PLB* Low.

(a) *Stop initials.* Where Jg. has high-stopped tone, the Jg. initial is plain voiceless unaspirated (except for No. 356, which is an imperfect set). Where Jg. has low-stopped, either the Jg. initial is voiced (Nos. 378, 379, 382), or the Lh. initial is voiced, pointing to earlier pre-nasalization (Nos. 380, 381). In 384, it is Jg. that shows the pre-nasalization. In 378, both the Jg. and the Lh. forms have voiced initials. No. 383 has an unprefixed Jg. aspirate — but this set is of doubtful validity anyway.

(b) *Spirantal initials.* There are too few examples to say for sure, but one of the two cases where Jg. has low-stopped tone has the nasal prefix.

(c) *Nasal initials.* As usual with the nasals, no pattern of conditioning is discernible.

(d) *Resonantal initials.* Here the conditioning is quite clear. Jg. high-stopped words outnumber the low-stopped ones by a score of 10 to 3. In the three low-stopped cases, the resonant is preceded by a k- prefix in Jg. and/or LB.

* * *

If the above analysis is correct, we see that Jg. tones in stopped syllables stand in a "flip-flop" relationship to those of Lolo-Burmese: Jg. high-stopped tone almost always corresponds to LB Low, while Jg. low-stopped tone often corresponds to LB High. The cases where Jg. low-stopped tone corresponds to LB Low are harder to evaluate, but seem to be secondary developments due to the influence of various prefixes. Jg. is probably to be considered the innovator in its phonetic reversal of the high- and low-tone-classes, given the fact that the Loloish split in stopped syllables was explained in TSR in conformity with the general principle that voicing

leads to lower tones and voicelessness to higher ones. Jg. may thus be grouped with the two aberrant Loloish languages, Nasu and Lü-ch'uan Lolo, which also underwent a phonetic reversal of the two stopped tonal classes [TSR, pp. 5, 8].

* * *

9.6. *Appendix: cases where Jg. stopped tones correspond to WB creaky tone.*

It has long been suspected that the WB creaky tone arose through the influence of some final consonant. (Cf. for example 'know' WT śes, WB si'). Jg. evidence for this view has been hard to come by, since Hanson did not indicate final glottal stop. In hopes, therefore, of contributing to creaky-tone studies, we have assembled a number of cases where WB creaky tone seems to correspond to a Jg. stopped syllable. Of the 13 cases so far discovered, however, no more than 3 or 4 seem to be genuine cognates. The rest are either loans from Bs. into Jg.; or mere "look-alikes" (i.e. not cognate at all); or else due to secondary developments within Bs., whereby an originally stopped syllable lost its full glottal closure through destressing, leaving only a glottal "creak" instead of a real glottal stop.

Those remaining cases which do look like true cognates all have Jg. *low-stopped* tone. Perhaps this has some deep significance!

9.61. *Apparent loans from Burmese into Jinghpaw.*

394. 'fermented rice'. Jg. tsáʔ-páʔ 'fermented and intoxicating rice' / WB ca'-pâ 'paddy; plant of grass genus'.
395. 'show, exhibit'. Jg. pyáʔ / WB pra'.
396. 'coax, urge'. Jg. khyòʔ / WB khyau'.
397. 'draw out; diminish'. Jg. šòʔ 'take, pull, or draw out; deduct, as from a price; redeem, as a pawned article; seduce',ròʔ 'untie, unbind, loose' / WB hlyau' 'loosen, make lax; lessen, diminish, reduce'.

9.62. *Sets where the Bs. creaky tone is clearly secondary.*

398. 'not; nothing'. Jg. máʔ 'nothing, for nothing (only used in comp.)' / WB ma' 'not'.
[But Loloish points to Tone *2 as the intrinsic tone of this etymon: Lh. mâ. In Mod. Bs. the morpheme is pronounced simply with unstressed shwa, mə-].
399. 'shoulder'. Jg. phàʔ, kəphàʔ, ləphàʔ / WB pa'-khûm.
373. [see above] 'now; present time'.
362. [see above] 'stop up, obstruct'.

9.63. *A "look-alike" for 'night'.*

400. 'night'. Jg. šənàʔ, lənàʔ / WB nya'.
[There is a general TB root for 'night' with initial y-, *ya (STC, No. 417). The WB form is to be analyzed as a fusion of this root with a preceding morpheme 'day' (WB ne') or 'sun' (ne). See STC, note 285. Benedict considers the Jg. forms to descend from a quite separate root with initial nasal].

9.64. *Possibly genuine cognates.*

401. 'assist, support'. Jg. màʔ / WB ma'.
402. 'close, cause to adjoin'. Jg. ǹ-dìʔ / WB te'.
403. 'gleet'. Jg. rìʔ, ʔərìʔ 'gleet, gonorrhoea, or the like', ǹ-yì 'purulent discharge' / WB ri', yi', ʔəri' 'gleet, run, as pus from a sore (applied to any slimy, filthy discharge)'.
404. 'converge, meet$_2$'. Jg. zùʔ, džùʔ / WB cu' 'collect, gather'.

Summary:

This paper investigates the relationship between the tonal system of Jinghpaw (Jg.) and that of the Lolo-Burmese (LB) group of the Tibeto-Burman (TB) family of languages. Are there systematic correspondences between these tone-systems? If so, do they reflect a common genetic heritage from an earlier stage of TB, or are they merely the result of convergent, parallel, independent development?

More than 400 Jg./LB cognate sets are presented and classified according to their tonal correspondences, with particular attention paid to the influence of the syllable-initial consonants on the tonal developments. Certain non-random patterns of correspondence emerge, notably (a) in non-stopped syllables where Jg. has high-tone and LB has "Tone *2"; and (b) in syllables ending in original */ -p -t -k/, where the two-way Jg. high-low contrast correlates strikingly with a similar tonal split in Loloish.

Many questions of detail remain to be solved, but even as it stands the discussion is relevant to several larger issues: the proper subgrouping of the TB family; the dubious utility of tone-correspondences in establishing fine degrees of genetic relationship; the question of whether the remote Sino-Tibetan proto-language already had contrastive tone; and the process of tonogenesis (tone-birth) in general.

INDEX VERBORUM

abate 348 = shadow
abound 305 = myriad
accurate; exact 40
add; repeat 335 = layer; fold
adhere$_1$ 22 (cf. stick; adhere$_2$ 361)
all 75
angry$_1$ 51 = rebellious
angry$_2$ 378
animal 216 = flesh; meat
ant 20
anvil 97 = flint
appearance; character 272 = similar
around (go) 77 = turn
arrow 309
ashamed 391
assist; support 401
assistant 222 = official; ruler
authority; power 167 = instruct; discipline
awake; alert 203 = dawn; morrow
awed 106

bamboo 313
bank (river); brim 185 = precipice
barley 314
basket 199
bean$_1$; pea 146
bean$_2$ 323
bear; endure 29
bedbug; lac insect 355 = pitch-pine; cochineal
behind; retarded 23 = procrastinate; delay
belly 247
below; lower side 368
bent; crooked 379
bet; wager 315
betel 201
bile; gall 65
bird (kind of) 285
bite 316
bitter 286
bladder 182 = swelling; knob
blanket 41
blood 210
blow 324
blow (nose) 30 = sneeze$_1$
boat 133
body$_1$ 52
body$_2$ 53 = corpse
boil$_1$ 66 = burn$_1$
boil$_2$ 96 = burn$_2$
boil$_3$ 380
bold; daring 240 = hero
bottle 284 = tube$_2$
boundary 250 = mark$_2$; line
brains 364
brass 170 = copper
breath; air 385
buffalo 262
bulge; bud 126
burn$_1$ 66 = boil$_1$
burn$_2$ 96 = boil$_2$
bustling 1 = opulent
butterfly; moth 122 = flash; flutter
buttocks 54

call 70 = summon
capacity (measure of) 177 = utterly; as much as possible
cat 145 = tiger
cattle 224
check (chess) 24 = hunt; chase
chew 279
chief 269
child 215 = son
circle; ring 248 (cf. surround; enclose 246)
clear (v.) 61 = disentangle; separate
clench; crumple 325
climb; rise 326
close; cause to adjoin 402
coax; urge 396
coerce; bully 234 = defraud
cold 198
collect; gather 404 = converge; meet
concern 82 = relate to
connect; put together 153
conquer 127
contradict; deny 227 = reprove
converge; meet$_2$ 404 = collect; gather
copper 170 = brass
copulate 225 = encounter
corpse$_1$ 53 = body$_2$
corpse$_2$ 277
cost; price; value 192
cover$_1$; envelop 67
cover$_2$ 287 = embrace
cover$_3$; top 327
cowlick 81
create 266
crippled 99 = ruined

cross over 171
crowded; swarming 89
cubit$_1$ 42
cubit$_2$ 116 = fathom
curse 223
curved; coiled 31

dance 173 = leap
dawn; morrow 203 = awake; alert
day (of 24 hours) 369
deaf 301
decay 165 = pus
deer 328
deer (barking) 76
defraud 234 = coerce; bully
descend 363
desire 45 = like
destroy$_1$ 73 = disperse
destroy$_2$ 350
disperse 73 = destroy$_1$
die$_1$ 101
die$_2$ 273
dig 196
dilute 32 = fade
diminish; loosen 397 = draw out
dirt; filth$_2$ 283
discouraged; stupefied 37 = sterile; malfunctioning
disentangle; separate (v.) 61 = clear (v.)
dissolve 2
do; make 43
dog 183
door 193 = open
dove; pigeon 194
downward 110 = sink; humble
draw out 397 = diminish; lessen
draw water 356 = scoop up
drawers; diaper 235
dream 111
dried up$_1$ 200
dried up$_2$ 303
dried up$_3$; brittle 381 = rustling
dry 3 = fry
dwarf 265 = lop off

eagle; vulture 238
early 172
early morning 387
earth 267 = place
easy 121
eat 304
effaced 4
eight 370
elder male relative 55 = father-in-law
embrace 287 = cover$_2$
enclose; cover over 128 = mouth (hold in the)
encounter 225 = copulate
endure 29 = bear
enjoy$_1$ 21 = happy
enjoy$_2$; do for pleasure$_1$ 88 = ready; ripe (cf. visit; do for pleasure$_2$ 188)
enough$_1$; extra 115 = sufficient$_2$
enough$_2$; many 371
entitled to; in control 62 = fixed; firm
equal; on a par 174 = worth; up to the mark
exceed 292
exhausted 33
eye 329

fade$_1$ 32 = dilute (cf. wither, fade$_2$ 321)
faded; dull 236
fall apart 74 = pulverize
fat$_1$ 83 = semen
father-in-law 55 = elder male relative
fathom 116 = cubit$_2$
fermented rice 394
few 140 = small$_1$; thin
fierce; wicked 179 = impudent
file; razor 274
filth$_1$ 56
fireplace rack; wall 392
firm; stable 151 = terra firma (cf. fixed; firm 62)
fish 310
five 226
fixed; firm 62 = entitled to; in control (cf. firm; stable 151)
flash; flutter 122 = butterfly; moth
flat$_1$ 148
flat$_2$; shallow 330
flea 254
flesh; meat 216 = animal
flint 97 = anvil
flour 190
flower 149
fly (v.) 5
fold; embrace 331 = side; one of a pair
food offering 102 = replace; substitute
foot 72 = marrow
forfeit; pay damages 117
four 255

free; loosen 332
frost 161 = snow; ice
fruit 211
fry 3 = dry
frying odor 113
full; fill 92

gather; store 103
gaze; squint 268 = lookout (be on the); alert
gleet 403
go 263 a, 263 b
goad; plowshare 178
goat; deer 357 (cf. deer 328; barking deer 76)
god 137 = spirit$_2$; image
goose; bungarus 228
grandchild 261 = young man
grandmother 195
grass (elephant) 147
grind 333
grow 150
gun 351

hack; cut by a blow 349
hammer 44
handle$_1$ 93
handle$_2$ 239 = stalk; mast
happy 21 = enjoy$_1$
headman (of village) 175
heart 256
heavy 258
hero 240 = bold, daring
hill 90 = ridge; froenum
hint; aim at 281 = vital part
hold; grip 214 = use
horn 142
horse 229
humble 110 = downward; sink
hundred 134
hunt; chase 24 = check (chess)
hurry; quickly 257

I; me 107
if; when 138
illness 114
impudent 179 = fierce; wicked
instruct; discipline 167 = authority; power
itch$_1$ 118
itch$_2$ 317

join a group 361 = stick; adhere
jowl 152 = lobe

key; lock 334
kill 386
kind; sort 312
knot 180
know 217 = news

lay in position 57 = pave
layer; fold 335 = add; repeat
leaf 383 = tea
leak 119
leap 173 = dance
leech 393
lick 372
like 45 = desire
lion$_1$ 34
lion$_2$ 162
liver 212
lizard 207
lobe 152 = jowl
locative 311 = perch on
long$_1$ 123
long$_2$ 139
long and narrow 259 = oblong
lookout (be on the); alert 268 = gaze; squint
loose; unsteady 336
lop off 265 = dwarf
lose; be defeated 318

male 249
man 241
mark$_1$ 184 = spot; sign
mark$_2$; line 250 = boundary
marrow 72 = foot
measure (n.) 46
medicine 168
meet$_1$ 270 (cf. converge; meet$_2$ 404)
mend 91 = patch
mix 242
moisten; soak 337
moon; month 6
mouth (hold in the) 128 = enclose; cover over
mortar 35
mosquito 68
mount 204 = overreach; take advantage of
move 157
murmur 129
mushroom 112
myriad 305 = abound

narrow 186
nauseated 131

near 230
neglected; broken down 163
news 217 = know
night 400
noisy$_1$ 58
noisy$_2$ 218 (cf. roar 219)
not; nothing 398
now; present time 373

oblique 98 = slanting$_1$
oblong 259 = long and narrow
official; ruler 222 = assistant
oil; fat$_2$ 271 (cf. semen; fat$_1$ 83)
oily; corpulent 293
old 213
one; single 154
only 104
open 193 = door
opulent 1 = bustling
otter 143
overreach; take advantage of 204 = mount

package; squeeze tight 352
paint; daub; smear 7 = writing; document
parrot 59
patch 91 = mend
pave 57 = lay in position
peaceful 166 = still; calm
peacock 187
peck at 338
penis 260
perch on 311 = locative
perpendicular 25 = superior; proud
person 87
pervasive mastery 169 = soaked; pervaded
pierce$_1$; bore 124
pierce$_2$ 353 (cf. thorn 296)
pig 374
pillow 300
pimple; wart 60
pinch; squeeze 339
pine; fir 243
pitch-pine; cochineal 355 = bedbug; lac insect
pith 8
place$_1$ 125 = subject; matter
place$_2$ 267 = earth
plain; moor 9
pleasure (do for)$_1$ 88 = enjoy$_2$
pleasure (do for)$_2$ 188 = visit

poison 358
precipice 185 = bank (river); brim
press against 10
prison 26
procrastinate; delay 23 = behind; retarded
protect; shield 47
pull down; raze 251
pulverize 74 = fall apart
pulverized 231 = scattered
punch 160 = thrust
pus 165 = decay
push; shove 289
put; place 294

raft, float (n.) 78
rattan 144
ready; ripe 88 = enjoy$_2$; do for pleasure$_1$
reap 375
rebellious 51 = angry
relate to 82 = concern
related 48
religious offering 135
rely; depend 156
replace; substitute 102 = food offering
reprove 227 = contradict; deny
respect 18
rest 176 = tired$_1$
reverence 158
ridge; froenum 90 = hill
right (side) 282
road; way 244
roar 219 (cf. noisy$_2$ 218)
roast 11
rosemallow 237
round 252
rub$_1$; shave 306
ruined 99 = crippled
run 340
rustling 381 = dried up$_3$; brittle

salt 245
sand 221
scale (fish) 341
scar 109 = wound
scattered 231 = pulverized
scent; smell 208
scoop up 356 = draw water
scratch 342
semen 83 = fat$_1$
separate 322
seven 388
shadow 348 = abate

shell 94
shine 181 = sun
shit 290
short 19
shoulder 399
show; exhibit 395
side; one of a pair 331 = fold; embrace
silver 38 = white$_1$
similar 272 = appearance; character
sink 110 = downward; humble
sit 63
six 359
sky 232
slanting$_1$ 98 = oblique
slanting$_2$ 136
sleep 376
slice; shave 319 (cf. rub; shave 306)
small$_1$; thin 140 = few
small$_2$; slender 275
smoke 288
smoothed out 12 = untied; loosened
snake; vermin 155
sneeze$_1$ 30 = blow (nose)
sneeze$_2$ 164
snot 389
snow; ice 161 = frost
soaked; pervaded 169 = pervasive mastery
son 215 = child
son-in-law 365
sound; voice 276
sour 95
sparrow 13
speak 84
speckled; spotted 360
spirit$_1$ 36
spirit$_2$; image 137 = god
spirit$_3$ 366
spittle 291
spleen 14
split lengthwise 343
spot; sign 184 = mark$_1$
squeeze 367
squirrel (flying) 320
squirt; gush 344
stale 220
stalk, mast 239 = handle$_2$
stand 377
star 49
startled 191 = turbulent; tumultuous
steal 295
sterile; malfunctioning 37 = discouraged; stupefied
stick; adhere$_2$ 361 = join a group
stiff; aching 15
still; calm 166 = peaceful
sting 141
stop up; obstruct 362
store up 307
strength; maturity 132
stroke; rub$_2$ 345 (cf. rub$_1$; shave 306)
strong 69
subject; matter 125 = place$_1$
sufficient$_1$; plenty 50
sufficient$_2$ 115 = enough$_1$; extra
suitable 79 = sweet$_2$
summon 70 = call
sun 181 = shine
superior; proud 25 = perpendicular
suppurate; flow steadily 16
surround$_1$ 27
surround$_2$; enclose 246 (cf. circle; ring 248)
swallow (v.) 390
sweet$_1$ 71
sweet$_2$ 79 = suitable
swelling; knob 182 = bladder
swollen; protuberant 382

tail 233
tea 383 = leaf
ten 85
terra firma 151 = firm; stable
thick 64
thicket 205
thin 206
this 105
thorn 296 (cf. pierce$_2$ 353)
three 209
thrust 160 = punch
tiger 145 = cat
time 28
tired$_1$ 176 = rest
tired$_2$ 297
tooth 264
trap; ambush 189
tree 302
tree (kind of) 120
true 17
tube$_1$; pipe 159
tube$_2$ 284 = bottle
turbulent; tumultuous 191 = startled
turn 77 = around (go)

untied; loosened 12 = smoothed out
urine 298
use 214 = hold; grip

utterly; as much as possible 177 = capacity (measure of)

very; to a painful extent 308
violent; wild$_2$ 253
visit 188 = pleasure (do for)$_2$
vital part 281 = hint; aim at
vomit 384

wall 392 = fireplace rack
water (standing); pond 130
weigh 86
well; pit 202
what 80
white$_1$ 38 = silver
white$_2$ 100
wild$_1$; uncouth 197
wind; breeze 280
wind around$_1$ 39
wind around$_2$; encircle 346
wipe 354
wither; fade$_2$ 321 (cf. fade$_1$; dilute 32)
work 278
worth; up to the mark 174 = equal; on a par
wound 109 = scar
wrap up 347
writing; document 7 = paint; daub; smear

you 108
young man 261 = grandchild
youngest sibling 299

REFERENCES

Anonymous. c. 1941. *Rhyming Dictionary of Written Burmese.* Compiled under the direction of Paul K. Benedict, Berkeley, California.

Anonymous. 1959. 景頗語語法綱要. An Outline of Jinghpaw Grammar. Publication of the Minority Language Research Bureau of the Chinese Academy of Sciences, Peking.

Benedict, Paul K. 1940. *Sino-Tibetan Linguistics*, Vol. 13, Parts I and II: "Kachinish." Unpublished typescript produced on a Work Projects Administration project, Berkeley, California.

Benedict, Paul K. 1972a. "The Sino-Tibetan tonal system." In *Langues et techniques, nature et société*, Vol. I: Éditions Klincksieck, Paris.

Benedict, Paul K. 1972b. *Sino-Tibetan: a Conspectus.* Contributing editor, J. Matisoff. Cambridge University Press, Cambridge, U.K.

Benedict, Paul K. 1974. *Austro-Thai.* Forthcoming.

Bhat, D. N. Shankara. 1969. *Tankhur Naga Vocabulary.* Deccan College Postgraduate and Research Institute, Poona. (Reviewed by J. Matisoff, Language 48.2, 1972).

Burling, Robbins. 1967. *Proto-Lolo-Burmese.* IJAL, Vol. 33, No. 2, Part II. Reprinted as Publication 43 of the Indiana University Publications in Anthropology and Linguistics, Mouton and Co., The Hague.

Burling, Robbins. 1971. "The historical place of Jinghpaw in Tibeto-Burman." OPWSTBL, Vol. II. 54 pages. Urbana, Illinois.

Downer, Gordon. 1959. "Derivation by tone-change in classical Chinese." BSOAS 22, pp. 258–290.

Hanson, Ola. 1906. *A Dictionary of the Kachin Language.* Rangoon. Reprinted by the Baptist Board of Publications, Rangoon 1954.

Haudricourt, André. 1954. "Comment reconstruire le chinois archaïque." Word 10, pp. 351–364.

Jäschke, H. A. 1881. *A Tibetan-English Dictionary*. London. Reprinted by Routledge and Kegan Paul, Ltd., London 1958.

Judson, Adoniram. 1893. *Burmese-English Dictionary*. Reprinted as *Judson's Burmese-English Dictionary* by the Baptist Board of Publications, Rangoon 1966.

Maran, LaRaw. 1971. *Burmese and Jinghpo: a study of tonal linguistic processes*. OPWSTBL, Vol. IV. Urbana, Illinois.

Maran, LaRaw. (in preparation). *Kachin-English Dictionary*.

Matisoff, James A. 1968. Review of R. Burling, *Proto-Lolo-Burmese*. Language 44.4, pp. 879–897.

Matisoff, James A. 1969. "Lahu and Proto-Lolo-Burmese." OPWSTBL, Vol. I, pp. 117–221. Ann Arbor, Michigan.

Matisoff, James A. 1970. "Glottal dissimilation and the Lahu high-rising tone: a tonogenetic case-study." JAOS 90.1, pp. 13–44.

Matisoff, James A. 1971. "The tonal split in Loloish checked syllables." OPWSTBL, Vol. II. 44 pages. Urbana, Illinois.

Matisoff, James A. 1972a. *The Loloish Tonal Split Revisited*. Research monograph No. 7, Center for South and Southeast Asia Studies, University of California, Berkeley. 88 pages.

Matisoff James A. 1972b. "Tangkhul Naga and comparative Tibeto-Burman". *Tōnan Azia Kenkyū* 10.2, 271–283.

Matisoff, James A. 1973a. *The Grammar of Lahu*. Publication # 75, University of California Publications in Linguistics. U.C. Press, Berkeley and Los Angeles.

Matisoff, James A. 1973b. Review of Maran 1971. JAS 32.4, pp. 741–743.

Matisoff, James A. 1973c. "Tonogenesis in Southeast Asia". In Larry M. Hyman, ed., *Consonant Types and Tone*. Southern California Occasional Papers in Linguistics, No. 1, Los Angeles.

Nishida Tatsuo. 1960. カチン語の研究 ― バモ方言の記述ならびに比較 言語学的考察 /A study of the Kachin language: a descriptive and comparative consideration of the Bhamo dialect/. *Gengo Kenkyū* 38, pp. 1–32.

Okell, John. 1969. *A Reference Grammar of Colloquial Burmese*, 2 vols. Oxford University Press, London.

Pulleyblank, Edwin G. 1972. "Some further evidence regarding Old Chinese -s and its time of disappearance." Mimeographed for the Fifth Sino-Tibetan Conference, Ann Arbor.

Telford, J. H. 1938. *Handbook of the Lahu (Muhso) Language and English-Lahu Dictionary*. Rangoon.

Wolfenden, Stuart N. 1929. *Outlines of Tibeto-Burman Linguistic Morphology*. Royal Asiatic Society, London.

Wolfenden, Stuart N. 1936. "On certain alternations between dental finals in Tibetan and Chinese." JRAS, pp. 401–416.

Wolfenden, Stuart N. 1937. "Concerning the variation of final consonants in the word families of Tibetan, Kachin, and Chinese." JRAS, pp. 625–655.