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

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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
Jinghpay (Jg.) and Lolo-Burmese (LB).\(^1\) Jinghpay 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 com-
pared 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, Jinghpay stands at a
unique crossroads. As its geographical position in northern Burma, the
heartland of the TB speech area, might lead one to suspect, Jinghpay
seems to show special affinities with all major subgroups of TB simulta-
neously: 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.\(^3\)

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\(^1\) 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 Jinghpay 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 Jinghpay’s crucial genetic position, see Burling 1971.
Benedict 1972b, 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\(^3\) See especially the two unpublished volumes of Jg./LB cognates collected in Benedict 1940.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:

\[ \text{the Jg./LB relationship, to the point where he calls them “dialects of the same language” in some abstract historic-phonological sense. His arguments rest on a combination of phonological and morphological considerations. See my forthcoming Review of Maran 1971 (Matisoff 1973b).} \]

\(^4\) The word “Jiburish” is derived through apocope and aphaeresis from Ji-(nghpaw), -bur-(mish), and (Lolo)-iäh. With the present study I am rebuking 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.

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\(1\) 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 sandhi 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, \textit{m}- and syllabic \textit{n}-, 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 unaspr / WB, Lh. vless unaspr [< PJBL *voiced]

\(b\) Jg. vless aspr / WB, Lh. vless aspr [< PJBL *voiceless]

\(c\) Jg. voiced / WB, Lh. vless unaspr

\(d\) Jg. voiced / WB, Lh. vless aspr

For the moment, therefore, all we can do is reconstruct (c)- and (d)-type correspondences as PJBL *voiced and *voiceless, respectively, with the same addendum that Jg. *shows secondary voicing* in such cases. We shall see below in our discussion of Jg. correspondences to PLB Tone * 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

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\(^7\) Benedict 1972b, p. 20 et passim.


\(^9\) It was this fact which led Benedict (1940, p. 263) to state, "Voicing or unvoicing of the [Jg.] initials is of distinctly secondary importance, the primary demarcation being that between aspirated and unaspirated initials."
(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 19 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 contrast, 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). 15

(3) *Spontaneous 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 area in the proto-language. 14 We have well-attested alternations between PJBL spirants and affricates (e.g. *s ~ *t REPLACE), voiced and voiceless affricates (e.g. *ts ~ *dz), dental and palatal affricates (e.g. *ts ~ *tj), and even palatalized velars and palatal spirants (e.g. *kj ~ *g). Jg. ts sometimes corresponds to LB voiceless or glottalized resonants; in these cases we must often set up complex proto-clusters like *ty. 16

(4) *Jg. glottalized resonants.* Hanson recognizes only ordinary (i.e. voiced) resonants, 17 but 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 -? 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 (nîmmûddrâ ‘ocean’, etc.), but some seem to be genuine Jg. descendants of excellent TB roots, like tâk ‘poison’. The conditioning factors for the split into Jg. -? 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 our tonal information we have Maran to thank. 20

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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 affinitional 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, Witten Tibetan (WT). See Wolithen 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. voiceless syllables are neutral or indeterminate with respect to the proto-contrast *w*/*w*less. To “disagree” (in feature-terms, “be distinct”) in voicing, two forms must rather be in a +/- or -/+ relationship with respect to the feature [voiced].

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

15 WB has no distinction between dental and palatal affricates, so that the letters /t s l/ may be transcribed indifferently as “ts th 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 t, but we transcribe the letter /k/ as “s”. There is no voiced spirant in WB.

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

17 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. dz, as in “eat”, PLB /dz/ /dz/.

18 See for example “eight” (Set 579 below), where Jg. must correspond to WT bygdza.

19 Personal communications, 1983 to the present. Maran also believes there is a contrast between plain and glottalized dental affricates, / z/ / z/.

20 See especially Matsiiff 1970.
(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: myin 'be named', samyin 'give a name to'; lam 'be warm', solam 'heat something'; phin 'put on and wear', đaphun '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: thi 'to light', nįtho 'a day'. Very often the semantic relationship between the alternants is less precise and more unstructured (kid 'be bent', khįn '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' / nā 'to hear' is analogous to WB nā 'ear' / na 'listen' and Lh. nā 'ear' / na 'listen'; WB prun 'be worn away' / phrun 'wear something away' corresponds to Jg. brún 'be destroyed' / prhrun '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.

(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.

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; 1975a, Ch. 1.

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.


26 Despite its relative rarity, however, Jg. / / 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 C5-, 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
tone (after *aspirated or *glottalized initials) or Lahu low-falling tone (otherwise). 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.

2.1.1. Stop or affricate initials.
A. Jg. plain / WB, Lh. plain.

(1) where Jg. has mid-tone [15 exs. + 1?].
1. 'bustling, opulent'. Jg. tŚg close, closely woven; opulent / WB cañ 'abound; be thronged, bustling'.
2. 'dissolve'. Jg. tŚn (v.i.), sŚtūn (v.t.) / WB tun-tun 'too dilute'.
3. 'dry (sun, fire), fry'. Jg. krŚu dry up, be overdry, karŚu ~ garŚu 'dry over a fire' / WB krañ ~ kyañ 'fry'.
4. 'effaced'. Jg. prŚi 'be effaced, settled and forgotten (feud), healed (old sore)', šaprŚi (v.t.) / WB prañi 'be wasted; become weak, less vivid'.
5. 'fly (v.)'. Jg. pyēn / WB pyam / Lh. pō.
6. *mōn, month'. Jg. tŚa, sŚa / WB nwai-ta '12th month', ta'-pōn 'name of 12th month'.
7. 'paint, daub'. Jg. tŚa 'paint, daub, dye', gūn-tŚa 'be smeared' / WB ca 'writing; a paper, document'.
8. 'pith'. Jg. krŚ, trŚ 'heartwood' / Lh. dŚ-Ś 'pith'.
9. 'plain (a.)'. Jg. prañ 'plain, mour' / WB prañ 'the outside', ṣprarañ 'open vacant surface'.

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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, Burling (1967) and Matișoff. 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 ṣ is under intrinsic high tone (having itself been derived from something "more primary", probably tān-). 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 show 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.
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 footnote.
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 băr (also creaky tone) and Lh. ba-pa 'moon'. See Benedict 1972b, p. 42. From now on we refer to "Benedict 1972b" by the initials "STC" (Sino-Tibetan: a Conjecture).
10. 'press against'. Jg. mokān 'press against, strain (as at stool), be in labor (woman)' / WB kan 'push a boat from land; recoil, as a gun'.

11. 'roast'. Jg. kakāj / WB kaŋ / Lh. qa.38

12. 'smoothed out'. Jg. pri 'be smoothed over, leveled', špr 'to smooth, polish' / WB pre 'be loosened, untied; smoothed over, appeased, settled', phre (v.t.) / Lh. phi 'untie'.39

13. 'sparrow'. Jg. ḍu-trā / WB ca.

14. 'spleen'. Jg. sin-pāi ~ kān-pāi ~ kūm-pāi ~ khūm-pāi / Lh. ḍ-po.

15. 'stiff, aching'. Jg. kyin 'stiff, aching', kyin 'be in trouble' / WB kyaŋ 'feeling of numbness'.40

16. 'suppurate'. Jg. twi 'suppurate, as a boil' / WB tue 'flow moderately and incessantly'.

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

17. *true'. Jg. tēŋ, štēŋ 'verify', ṭōtēŋ 'truly' / Lh. ḍ-tē 'truth, something real'.

18. *respect'. Jg. kō, ṭōkō / WB kaw-raw.41

19. 'short'. Jg. tū / WB tui.

AA. Jg. plain ~ voiced / WB plain.

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

20. 'ant'. Jg. ṭākō 'ants (generic)', ṭākōi 'common black ant' / WB kyaŋ 'large sp. of ant'.

21. 'happy, enjoy'. Jg. pyō ~ prō (Hkauri42) ~ byō, ṭōpyō ~ ṭōbyō 'amuse, entertain' / WB pyaw 'be happy', phyaw 'make happy'.

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

22. 'adhere', Jg. tōn 'stick, adhere to', dōng 'id.' (LM) / WB cuŋ 'cohere', ṭōcuŋ '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 kriŋ 'stiff'. Jg. kāŋ 'stretched, tense, taut' probably goes with WB kwaŋ ~ kyan 'tense, tight'.

41 Note the Jg. alternation between /t/ and secondary falling tone '/', in this set and the preceding one. 'Respect' may be a loan from Tai (cf. Siamese khawbō).

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. gūmrāŋ 'horse' vs. standard gūmrā; cf. WB mrāŋ).

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

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

23. 'behind, retarded'. Jg. phān 'be behind' / WB phaŋ 'procrastinate, delay'.

24. 'hunt, chase'. Jg. khwet / 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, din-thōŋ 'stand as a column', thōŋ-lōŋ 'perpendicular' / WB thōŋ 'place upright; be proud, stubborn'.

26. *prison'. Jg. thōŋ / WB thōŋ [prob. a loan into Jg. < Bs.].

27. 'surround'. Jg. kōhí 'surround, as an altar with ornaments' / WB khwe-ram 'surround, attend'.

28. 'time'. Jg. khīy / WB ṭōkhīy / Lh. kī.43

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

29. 'bear, endure'. Jg. khām / WB kham.

30. 'sneeze, blow nose'. Jg. khīy 'blow nose' / WB khwe 'sneeze'.

31. 'coiled, curved'. Jg. khōŋ 'be coiled', ṭōkhōŋ 'a coil' / WB khwāŋ 'be bent, curved'.44

32. *dilute, fade'. Jg. phōi 'vanish, disappear' / WB phyo 'dilute, make thin, dissolve' [also phyo 'pale, faded; look sickly'].45

33. 'exhausted'. Jg. khī, khī-bā / WB khe 'weak, inefficient (contempt.)'.

34. *liŋ'. Jg. khān-khīy / WB khraŋ-se ~ khyan-se' [loan into Jg. < Bs.].

35. 'mortal'. Jg. thūm / WB chum / Lh. cb-má-qō.

36. 'spirit'. Jg. tsū, ṭsū 'disembodied spirit' / WB ṭsōu 'num. aux. applied to deities, pagodas, etc.'.46

37. 'sterile, malfunctioning'. Jg. ŭ-thum 'sterile bovine', myt ŭm 'excavated in mind, discouraged' / WB thum 'numb, stupefied'.

38. 'white, silver'. Jg. gūm-phrō / 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; kwāŋ 'bend into a ring, be circuitous', ṭkwāŋ '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/ and Lolo-Burmese aspirated affricates as a separate subclass, BB.
39. ‘wind around’. Jg. khán ‘to wind, bandage; tie up, be entangled’ / WB ʔəkən ‘a hank, something wound around’.

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

(1) where Jg. has *mid-tone* [9 exs. + 2?]
40. ‘accurate, exact’. Jg. ʔɾəi, ᵒkəi ‘even out’ (LM) / WB pri.47
41. ‘blanket’. Jg. phəʔ-dəŋ / WB con [first syll. of Jg. < Shan].
42. ‘cubit’, Jg. dəŋ / WB toŋ ‘measure in cubits’, ʔətəŋ ‘a cubit’.
43. ‘do, make’. Jg. də / WB te ‘do repeatedly and constantly’ / Lh. te ‘do’.48
44. ‘hammer’. Jg. šum-dəŋ / WB sam-tu.49
45. ‘like, desire’. Jg. dəŋ / WB toŋ ‘burn with lust’, toŋ-ta ‘long for’.
46. *‘measure (n.)’. Jg. byŁ ‘a measure of capacity’ / WB praŋ, ʔəpraŋ.50
47. ‘protect, shield’. Jg. mogŁ / WB ka.
48. ‘related (by birth or marriage)’. Jg. də / WB taw.
49. *‘star’. Jg. šəgən / WB krai / Lh. məʔ-ka [This set presents several irregularities].
50. *‘sufficient’. Jg. gəm, gəm-gəm / WB kum ‘have plenty’ [also perhaps Lh. qše ‘verb particle indicating frequent or excessive action’, from an aspirated prototype].

(2) where Jg. has *low-tone* [9 exs. + 1?]
51. ‘angry, rebellious’. Jg. bən ‘angry, violent with rage’, səbən ~ səbən ‘səbən ‘fury’ / WB pun ‘to rebel (obs.)’, supun ‘a rebel’.51
52. *‘body’. Jg. gəm-gəm / WB kui(y).
53. *‘body’, corpse’. Jg. gəŋ ‘physical body’, nə-gən ‘corpse’ / WB ʔəkoŋ ‘animal body; dead body’.
54. *‘buttocks’. Jg. dəŋ, mə-dəŋ, dəŋ-kəŋ / WB taŋ.
56. *‘filth’. Jg. ʔəɡə / WB kyaŋ [Jg. lacks the medial -y-].

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57. ‘lay stone, pave’. Jg. dən ‘lay, as brick or stone’, mədən ‘widen, expand’ / WB taŋ ‘place in a position, build’.
59. *‘parrot’. Jg. k(ə)ʔə-dəŋ / WB krək-tə-rəŋ ~ kəyək-tə-rəŋ.54
60. ‘pimple, wart’. Jg. ᵒ-təŋ-dəŋ / WB cwan.

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

(1) where Jg. has *mid-tone* [3 exs. + 1?]
61. ‘clear, discernable’. kəbrəŋ ‘to separate, as contending parties’, əbrəŋ ‘clear, as a road’ / WB phyaŋ ‘disentangle, separate parties in a quarrel’.
62. *‘fixed, firm, in control’. Jg. ʔəsən ‘be fixed (post), firmly rooted (tree)’ / WB chuŋ ‘have jurisdiction, have a right to’.54
63. *‘six’. Jg. dəŋ / WB chuŋ.
64. *‘thick’. Jg. dəŋ / WB thu / Lh. thu [There also exist WB derivatives under creaky tone: thu, ʔəthu ‘thickness’, duʔ ‘thickness, multitude’].

(2) where Jg. has *low-tone* [6 exs. + 1?]
65. *‘bile, gall’. Jg. šəgən ~ ʔəsən / WB səh-khər / Lh. ʔə-kə.54
66. *‘burn’, boil’. Jg. dəŋ ‘burn, as wood; roast, broil’ / WB chu ‘boil, bubble’.
67. *‘cover, envelop’. Jg. kəŋ-ən, ᵒŋ-ən, dəŋ-ən / WB khrān ~ khyum.47
68. *‘mosquito’. Jg. dəŋ-ən / WB khrān.58
69. *‘strong’. Jg. nə-gən ~ nə-gən ‘all, whole; great, strong’, nə-gən ‘strength’ / WB kwaŋ-ə, ʔə-kwaŋ ‘strength’.
70. *‘summon, call to come’. Jg. gən / WB kəw / Lh. kəo.
71. *‘sweet’. Jg. dəŋ / WB kyu / Lh. ʔəkə.59

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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. ʔəsən ‘fix a post’. Maybe WB chuŋ is rather to be related to Jg. səŋ ‘pertain 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. grəp.
58 The Lh. word for ‘mosquito’ is pə-cə-qə. The second syllable descends from *ʔəqək (< PLB *low-stopped), and the third from *kək (< 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 (*twiŋ y) vs. *kəw or *kəw, yet they seem certainly to be related. Cf. the Tangkhu Naga alternation between t ~ c in ‘sugar-cane’: tu-hay ~ cu-hay (Bhat 1969). For a similar example of Jg. dental correspondence to LB palatals see ‘mortar’, No. 35 above.

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See “smoothed out”, No. 12 above.
40 There is a related stop: Jg. form, di? ‘auxiliary forming transitive.’
41 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 RTB *r (WT skar-nya). For a discussion of this set, see Matisoff 1972b, p. 279.
52 There is a Jg. variant with final stop: bən ‘have fever, be hot with rage’, səbən ‘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).
E. Jg. spirant / WB, Lh. aspirated affricate.

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

82. *concern, relate to'. Jg. sēn 'concern, relate, appertain' / WB chuñ 'have a right to; concern' [see note 55].

83. *'samen; f [']. Jg. sū 'samen' / WB chu 'fat' / Lh. chu 'fat', ni-čhu 'samen' (dial.; ni 'penis').

84. 'speak'. Jg. sū 'speak; convey news of a tragedy, call to a funeral' / WB chu 'speak'.

85. 'ten'. Jg. śi (ši in comp.) / WB chay / Lh. chi.

86. 'weigh'. Jg. śin ~ šén / WB khyin / Lh. chi.

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

87. 'person'. Jg. māsā ~ mášan (Hkauri) / Lh. cho [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'. Jg. šam '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 phyāŋ 'much, abundant', phyāŋ 'many' (Tin).

90. 'hill, ridge'. WT sāŋ 'spur, projecting hill' / Jg. sōŋ 'ridge connecting two hills; frond of tongue' / WB khan 'knoll, rising ground', hlya-khan 'uvula, palate' / Lh. qho 'hill, mountain'.

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

91. 'patch, mend'. Jg. pā 'be mended', kapā 'mend, patch' / WB pha 'mend, patch', pha (n.).

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

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

92. 'full, fill'. Jg. phrīŋ 'be full', džāphrīŋ 'to fill' / WB prāŋ 'be full',

64 The standard Lahu form is nū-ŋ 'penis-liquid'. Alternatively, the Jg. form could be related to WB su 'penis', sū 'testicles', sū 'samen'. (Cognate to WB sū is Lh. sū 'intact male animal', as in sū-mā 'stallion', nū-sū 'bull', etc.). We would then be free to identify WB and Lh. chu with Jg. sū 'oil, grease'. See below, No. 271.

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. in the form -i to WB -we are invalid, though I feel this is too harshly conservative a position.
phraŋ ‘to fill’ [also perhaps Lh. pe ‘be plenty’; Lh. bi ‘full’ reflects a PLB Tone *2 variant with pre-nasalized initial].


94. ‘shell’. Jg. khôi ‘mollusc’ / WB krwe ‘sp. of shellfish; cowrie’ / Lh. jû ‘bead, shell’, jû-sî ‘cowrie’ [note the Lh. voicing].

95. ‘sour’. Jg. xhrî ‘sour, acid’, makhrî ‘pickled, soured bamboo sprouts’ / Lh. ci ~ ce ‘sour’.\(^{65}\)


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

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

106. ‘awed’. Jg. ?oná ‘be deterred by feelings of respect’ / WB â-na ‘id.’.

107. *I, me’. Jg. náh / WB na / Lh. ná.\(^{66}\)

108. ‘you’. Jg. nahŋ / WB naŋ / Lh. ná.

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

109. ‘wound, scar’. Jg. n-má / WB ?oma-rwat.\(^{67}\)

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

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

110. *‘downward’. Jg. nám, khà-nám ‘downstream’ / WB nwam ‘sink; sediment’, nwam ‘to humble (v.t.)’.\(^{68}\)

111. ‘dream’. Jg. māŋ / WB hmaŋ ‘sonombulize’ [The usual LB words for ‘dream’ have the stop final -k. See Matisoff 1972a, set 144].

112. ‘mushroom’. Jg. kômŋ / WB hmuî / Lh. má [The Lh. form reflects a *plain nasal].

113. ‘odor of frying’. Jg. sāŋnàu ‘smell of something boiling, frying, or singing’ / WB hñaw ‘smell offensively when subjected to action of fire’, ?añhñaw (n.).

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

114. ‘illness’. Jg. ?oná / WB ?âna / Lh. nâ ‘be sick’, nâ ‘be cured’.\(^{49}\)

115. ‘enough’, sufficiënt’. Jg. nám ‘to remain over, as leavings after a meal’ / WB ǹ̄a ‘be enough, sufficient’ / Lh. ǹ ‘enough’, ǹ-ǹ ‘almost enough’.\(^{70}\)

\(^{65}\) For a related set see ‘hile, gall’, above No. 65. The Lahu form here reflects a PLB *?k- initial. Also involved is the WB kyaŋ ‘sour’, but this is not directly cognate to either of the Lh. variants (WB -aŋ corresponds rather to Lh. -â).

\(^{66}\) 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 ~ -ñ. See below, No. 386; 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 ǹ nor ǹ occurs in the language, so that -o is the regular Lh. reflex of *-am after the velar nasal.

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

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

116. ‘fathom, cubit’. Jg. lâm, lalám / WB lam / Lh. lô.

117. ‘forfeit, pay damages’. Jg. yô / WB lyau.

118. ‘itch’. Jg. yân / WB yâ-yam.

119. ‘eak’. Jg. yûn, koyûn / WB yui.

120. ‘tree, kind of’. Jg. mâlêm ‘kind of tree’, mâlêm-tâm ‘its seed, used as a weight’, lêm ‘a weight, about one ounce’ / WB lîm ‘Terminalia bidalata’.

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


71 In Matîssof 1972a, I related the Lh. form to a different root, PLB *k-luk ~ *k-lu ‘maggot’ (WB lok).

123. ‘long’. Jg. golâ ‘long’ / WB lu ‘be disproportionately tall’.

124. ‘pierce’. Jg. golûn ‘thrust, pierce’ / WB lûn ‘a gimlet; bore with a gimlet’.

125. ‘place, subject, matter’. Jg. râ ‘a place’, ûrâ ‘place; occasion, subject matter’ / WB ra ‘verb formative denoting object of an action, or place of being or action’, ûrâ ‘thing, subject, matter; place, situation’ / Lh. kà ‘classifier for places’. [PTB *k-ra; see No. 267].

L. Jg. û- plus vowel or vocalic ingress / WB ë- plus vowel.

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


[Also perhaps related is the WB Tone 2 word ?ûm ‘pillow’].

127. ‘conquer, overcome’. Jg. ðûn / WB ?ûn.

128. ‘hold in mouth; enclose’. Jg. mûmûm ‘hold in the mouth’ / WB ?ûm ‘plaster over, cover over’ [This root is prob. related to No. 126].

129. ‘murmur’. Jg. wû ‘murmur, mumble, chatter’ / WB ?û ‘make noise; howl’ / Lh. nû-û ‘conversation, chat’.

72 The first elements in the words for ‘butterfly, moth’ are from the TB root *duw ‘insect’.

73 See STC, set 108 (p. 36); set 264 and note 238 (p. 78); and note 479 (p. 181).

74 This root has TB *r, as shown by the WT cognate bur ‘noise, din, clashing, cracking, roar; a low, humming noise; talk, babbling, chitchat.’ See Matîssof 1970, set 69.


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


M. Jg. resonant or tr- / LB voiceless resonant.

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

133. ‘boat’. Jg. li / WB lî / Lh. ho.

134. ‘hundred’. Jg. lûsû / WB ra / Lh. ha [WB brûy].

135. ‘religious offering’, lû ‘to give’, sêlû ‘religious offering’ / WB hû ‘make religious offering’, ?ôhu (n.).

136. ‘slanting’. Jg. râwî ‘gently sloping’ / WB hrîw ‘be oblique’.

137. ‘spirit, image’. WT hla ‘god, image of a god’ / Jg. mân-là, nûn-là ‘ghost’, sâm-là ‘picture’ / Lh. hâ-â ‘spirit; image’.

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

138. ‘if, when’. Jg. yàn / WB hlûy.

139. ‘long’, Jg. rên ‘be too long; protracted’, sârên ‘lengthen, let out’ / WB hrân / Lh. yi ‘long’, sî ‘length’.

140. ‘small, few’. Jg. plû ‘few’, ?ûlû (adv.) / WB hlû ‘very thin’, ?ôhlû ‘thin layer’ [Note the pre-glottalization in Jg.].

141. ‘sting’. Jg. mâlêm ‘sting’, palêm ‘sting, as of bee; point of serpent’s tongue’ / WB hlâm ‘spear’.

75 The correspondence between Jg. -en and WB -am is usually associated with a medial -v (see ‘ûvû’, No. 5 above). But Jg. lacks an ly- cluster. What about the WB form? Benedict has shown (“Secondary Infixation in Lepcha”), Studier in Linguistics 1, no. 19, 1943) that aspiration of an initial consonant can be reflected at a later stage by a medial -v-. Perhaps the aspiration in hlâm reflects a development in the opposite direction: *lyâm > hlâm.

76 “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
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. In other words, the mid-tone predominates, but not overwhelmingly by any means. We are still 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 crucial 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 (ə vs. ə) 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 an “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 resonant initial 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-resonant 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 PJB *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 (86-160 %). It seems 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.
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 PJBTL  *voiceless spirants (and *voiceless affricates which spirantized in Jg.), and conversely between Jg. low-tone and PJBTL *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. $s$ derives sometimes from *s and sometimes from *z. In classes EE and HH, where Jg. has low-tone, the only Jg. spirant we find is $s$ (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 PJBTL Tone *1 to Tone *2, paralleling developments elsewhere in Sino-Tibetan.80

In nasal-initial 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. $-$ vowel / WB $-$ vowel)81 and class N (“fusionaly 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 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 PJBTL 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, pea’. Jg. prën, ściër, ściën (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 (G and CCC).

83 WB Tone 2 is symbolized by a circumflex. The regular Lahu tonal reflex of PLB Tone *2
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'tube', byǒn 'stove-pipe, funnel' / WB próŋ '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.].
160. *‘punch, thrust’. Jg. thwì 'box, give a blow with the fist' / WB thuí 'thrust, stab, strike' [Loan into Jg.?].
161. 'snow, ice, frost'. Jg. khyèn, gyên / WB khyàm 'cool, cold' [Note the voiced Jg. alternant].

(2) where Jg. has low-tone [2 exs. + 1 ?].
162. *‘lion’. Jg. khàm-khyà 'lion' / WB khỳ-sæc 'leopard cat'.
163. 'neglected'. Jg. phyì 'be neglected and thus destroyed' / WB phè 'be broken down in strength or ability, by hard labor or severe punishment'.
164. 'sneeze'. Jg. kóthi / Lh. hà-thì ~ hì-thì.

BB. Jg. plain affricate / WB, Lh. aspirated affricate.
 (1) where Jg. has mid-tone [2 exs.].
165. 'pus; decay'. Jg. matsái 'pus' / WB chwè 'be decayed, crumbling'.
166. 'still, peaceful'. Jg. tśni 'still, quiet', ?atsìn 'id.', ?tsìn 'calm' / WB châŋ- 'soothing, pleasant, quiet'.

(2) where Jg. has low-tone [3 exs.].
167. 'instruct; authority'. Jg. tsùm 'authority, legal or rightful power; a legal or divine command' / WB chúm-mà 'to instruct, discipline'.
168. 'medicine'. Jg. tì / WB chë / Lh. nàï-chì.
169. 'soaked'. Jg. tsàm 'be soaked; pervade, overrun', ?tsàm 'strength, pervasive mastery over all things [LM]' / WB chàm 'scatter or sprinkle'.

C. Jg. voiced / WB, Lh. plain.
 (1) where Jg. has mid-tone [3 exs. + 2 ?].
170. 'brass, copper'. Jg. nàgrì / WB krè / Lh. klì.

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. [tngà]. Yet it is written with kh-/xam-khà].
88 The Jg. form may be a loanword. For an assignment of the first syllable, see 'lion', No. 34 above.
171. 'cross over'. Jg. gāu 'cross something precarious, as a stream on a log' / WB kū 'cross over; transfer'.
172. 'carly'. Jg. dāu / WB cāw, ṭācāw.99
173. 'leap, dance'. Jg. gān, kāgn, khān 'leap, bound, gallop, canter' / WB kā 'dance' / Lh. qā 'dance'.
174. 'worth; classified as to value'. Jg. dān 'be worth (a certain amount)' / WB tān 'extend from one point to another; begin to be capable of bearing young', tān-tu 'be equal, on a par', ṭātān 'line, row, class'.

(2) where Jg. has low-tone [2 exs. + 1?].
175. 'headman'. Jg. ṭagyī 'headman', sāgyī 'chief of caravan' / WB kri, ṭakri 'great, large', su-kri 'thugyi; subcollector' [Cf. Siamese phù-thā-jāi-bāan 'headman' ("great person of the village").]
176. 'rest, repose; tired'. Jg. bān 'be at rest', lobān 'repose' / WB pān 'tired'.
177. 'utterly; as much as possible'. Jg. dān 'fully; over and above', dān-thā 'all the whole', dān 'the amount of rice one man can carry' (n.), dān 'be capable of lifting' (v.) / WB tān '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-dān, madān, nā-dān, sīg-dān 'a goad', nā-dān 'plowshare' / WB khrwān ~ khwān 'elephant-goad'.
179. 'impudent; fierce'. Jg. gān 'brazen, impudent', nā-dān 'fierce' / WB chū 'vicious, injurious, wicked'.
180. 'knot'. Jg. gin-dūm, kīn-dūm 'to knot; a knot' / WB thūm 'tie in knot', ṭāthūm 'a knot'.
181. 'sun; shine'. Jg. dān 'sun' / WB thwān 'shine, emit light; be distinguished'.
182. 'swelling; knob'. Jg. dū-n-bōn 'goiter', ṭām-bōn 'ornamental knob on

98 The Jg. and WB forms are all probably loans from Tai *jaw (cf. Siamese chiaw), 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.)
99 This root is set up as *gar for TB (see STC, p. 18). The final *-r is reflected by Jg. -n, and also perhaps by the WB creaky tone.
100 Probably a loan from Bā. > Jg.
101 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).
102 Related is the stop-finalised variant 'wrap up' (Jg. thūp), below No. 347.
103 The initial correspondence is peculiar. This set is reconstructed with a palatal affricate for PTB, *tsyar or *car (STC, No. 187 [p. 47]).

D. Jg. plain / WB, Lh. voiced.
(1) Jg. has mid-tone [1 ex. + 1?].
187. 'peacock'. Jg. ṭū-tōng / WB ṭů-dōng.
188. 'visit; do for pleasure'. Jg. tāi / Lh. gi [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. gām 'lie in wait for; hunt, as game', khām 'to trap', makhām 'trap' / WB gām 'a trap'.

(2) where Jg. has low-tone [2 exs.].
190. 'flour'. Jg. dūn, šādūn 'flour' / WB dūn 'flour sieve'.
191. 'started, turbulent'. Jg. brōn 'be started', kšbrōn 'unruly, turbulent' / WB brōn-chan ~ byōn-chan 'tumultuously'.

95 The Jg. and WB forms may be loans from Tai *teem 'note, write, paint' ~ *tim (Ahom, Khambis), with the Jg. form showing secondary voicing. (Benedict, personal communication.)
96 We would expect the first Jg. form to be gyn (see note 74).
192. 'cost, value'. Jg. phû 'be of value, be worth', dzáphû 'price' / WB ?aphû, ?abphû 'price' / Lh. ʔaphû 'id.'.
193. 'door; be open'. Jg. khâ 'be open', makhà 'be open, as the mouth', thû-khâ 'door' / WB tagâ (IPA: tam-khâ) 'door'.
194. 'dove, pigeon'. Jg. khrû / WB khrû [pronounced with voiced initial in Mod. Bs. /dzôu/] / Lh. ĝû.
195. 'grandmother'. Jg. wõi, kõwõi, õwõi / WB phwâ, bhwâ, ?aphwâ, ?abhwâ.

(2) where Jg. has low-tone [2 exs.].
196. 'dig'. Jg. thù / WB tû 'dig', thù 'a natural hole or cavity in the earth' / Lh. dû 'dig', tû 'bury'.
197. 'wild, uncouth'. Jg. phrû, h-phrû 'wild' / WB prû 'violent, virulent' / Lh. bî 'tangled, matted, bushy', bî-sâ?-â-sà 'barbarian' [If we throw out the Lh. form as unrelated, this set belongs in Class G, below].

E. Jg. spirant / WB aspirated affricate.
(1) where Jg. has mid-tone [one ex.].
198. 'cold (weather)'. Jg. kõsû 'be or feel cold', õ-sû tû 'winter' / WB chûn 'cold season'.

F. Jg. plain / WB aspirated.
(1) where Jg. has mid-tone [one ex.].
199. 'basket'. Jg. sîn-krà, sîn-krà (Hkauri) / WB khrûn.

(2) where Jg. has low-tone [one ex.].
200. 'dried up'. Jg. kân / WB khân.

G. Jg. aspirated / WB, Lh. plain.
(1) where Jg. has mid-tone [2 exs.].
201. 'betel'. Jg. bû-khâm / WB kwâm.
202. 'well, pit'. Jg. khâ?-thûn, WB re-twàn / Lh. gi-tû 'a spring', gi-tû 'river-bed'.

(2) where Jg. has low-tone [4 exs.].
203. 'awake, alive; dawn'. Jg. phrû 'awake', myît phrû 'clear-headed', dzáphûn 'arouse' / Lh. ss-pû 'morrow' [cf. WT spîn 'skillful, clever', but the medial is wrong].
204. 'mount; take advantage of'. Jg. khràu 'mount, bestride' / WB krû 'take advantage of another; overreach'.
205. 'thicket, wooded tract'. Jg. dzàthûn / WB tàng.
206. 'thin'. Jg. pha, ?apha; dzáphû 'make thin' / WB pà / Lh. pà.

H. Jg. s / WB s / Lh. ñ [< PBL *s].
(1) where Jg. has mid-tone [2 exs. + 1 ?].
207. 'lizard'. Jg. n-sûn sôn, ksuôn sôn 'jungle lizard' / WB sîn-kûy 'large brown earth lizard; skin'.
208. *'scent'. Jg. sûn ~ sûn 'a smell' / WB sîn 'emit pleasant odor' [The vowel correspondence is off].
209. 'three'. Jg. mûn / WB sûm / Lh. ñû? ~ ñû.

(2) where Jg. has low-tone [4 exs.].
210. 'blood'. Jg. sà / WB swê / Lh. ñî.
211. 'fruit'. Jg. sî / WB sî / Lh. sî.
212. 'liver'. Jg. masûn / WB ñûû / Lh. ñûû.
213. 'old'. Jg. sà / Lh. ñû-û 'something old', ñû-û 'an old field'.

HH. Jg. s, s ~ dû / WB s / Lh. y [< PBL *g].
(1) where Jg. has mid-tone [1 ex.].
214. 'hold, grip; use'. Jg. sôm ~ dûm 'hold onto', lûûm 'handhold', gîn-ûûm 'embrace' / WB sûm 'use' / Lh. yû 'id.' [cf. WT zum 'take hold of, seize'].

(2) where Jg. has low-tone [1 ex.].
215. 'child, son'. Jg. sà / WB sà / Lh. yâ.97

HHH. Jg. s / WB s / Lh. s [< PBL *s].98
(2) Jg. has low-tone [4 exs.]
216. 'flesh, meat, animal'. Jg. sôn / WB sà / Lh. sà [Note the suffix in Jg.].
217. 'know; news'. Jg. sî 'news' / Lh. sî 'know' [WB has a variant with

97 The WB and Lh. forms descend from PLB *sa ( Tone *2). Another variant *dû ( Tone *1) also exists in Lh., reflected by Lh. cû - prefix in man'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. s / WB s reflects older *s or *s.

HHHH. Jg. ts / WB s. 
(2) Jg. has low-tone [one ex.].

220. ‘stale’. Jg. tû / WB sû.

HHHHH. Jg. z / WB s / Lh. š. 
(2) Jg. has low-tone [0–1 ex.].

221. ‘sand’. Jg. zāi-brû / WB sâi / Lh. šē-šî.100


I. Jg. nasal / LB plain nasal.

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


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

229. ‘horse’. Jg. gûm-râ / gum-râŋ (also khâm-râŋ [Khaurai–LM]) / WB mûŋ / Lh. l-mû [Note the metanalysis in Jg.].


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

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


235. ‘drawers’. Jg. ni ‘menstrual drawers’, ṭânî, bâñi ‘menstruation cloth’ / WB nhû ‘spread out, for purpose of receiving and supporting’, ṭânî ‘something spread out for child to lie on; diaper’. 

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

236. ‘faded’. Jg. nyû ‘faded, wilted, withered’ / WB hû ‘dull, faded, wilted’ [see also ūnî ~ ūnî ‘dark in color’ (Tone #)].

237. ‘rosemallow’.103 Jg. dzîn-ngâ Ngh ‘sp. of rosemallow’ / WB hû ‘tuberose, land-lily’.

K. Jg. resonant / LB plain resonant.

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

238. ‘eagle, vulture’. Jg. kâlân / WB lân-ta.104


240. ‘hero; bold’. Jg. yê ‘daring’, šârb ‘hero, leader, captain’ / WB râ ‘bold, courageous’ [cf. perhaps Thai rây ‘fierce’].105

241. ‘man’. Jg. wâ / Yellow Lahu và [YL low-tone (‘)] corresponds to standard Black Lahu high-falling tone.

242. ‘mix’. Jg. yû ‘be mixed’, kâyû ‘intermix, be in confusion’ / WB ńâw ‘mix, mingle’.

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99 It is possible that Lh. šî will be assigned to a PLB *creaky* prototype (just like the WB form), instead of to PLB *s*. 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 > *saaay. 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.

102 There is a Jg. variant with stopped final, mû? reflecting an old TB doublet *m-ruk* (STC, note 236 [p. 77]). Maybe there is more to the final -g 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. yê (Tone *1) ‘steadfast, brave’ is probably a loan < Bs.
243. ‘pine, fir’. Jg. marāu ‘pine or fir’ / WB ṭhān-ū ‘id.’.
244. ‘road, way’. Jg. lām / WB lām [Probably related is the Tone *1 Lh. morpheme lo ‘directional noun-particle’].
245. *‘salt’. WT rgyam / Jg. yām ‘sp. of fruit-salt’ / WB yām ‘gunpowder, saltpetre’ [Connection doubtful].
246. *‘surrounds; enclosure’. Jg. wān ‘surround; a circle’, kawān ‘go in circular waves’, sāwān ‘inclose, shut in’ / WB wān ‘enclosing fence’ [see No. 248].

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

248. *‘circle, ring’. Jg. wān ‘be in a circle, be coiled’, kawān ‘encircle’ / WB wān ‘round; to surround’, sāwān ‘circumference’ [see No. 246].
249. ‘male’. Jg. là, ṭālā ‘male’ / WB ṭālā ‘not castrated’.
250. ‘mark, line; boundary’. Jg. mār ‘to mark, line, rule’ / WB rē ‘write, delineate, paint’.
251. ‘pull down, raze’. Jg. rūn ‘pull down, demolish’, sōrūn ‘id.’ / WB rūn ‘pull with difficulty; struggle; warp’.
252. *‘round’. Jg. lām / WB lām [cf. WT lām, Atsi lām].
253. *‘violent, wild’. Jg. rūn ‘become violent, as a disease’ / WB rūn ‘wild, as an animal; coarse, vulgar’ [Relationship uncertain].

L. Jg. ? + vowel / WB ? + 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. khoḷawāi ~ khaḷi / WB khwē-hēlē [The first element is the word for ‘dog’, reduced in the case of Jg. to a prefix].
255. *‘four’. Jg. maḷi / WB lē / Lh. 5.
256. ‘heart’. Jg. sólūm / WB hnālūm < hnac-lūm.106
257. *‘hurry; quickly’. Jg. lbāwān ‘hurry, be swift’, əlawān ‘in haste’ / WB hwān ‘strong, violent; burst up’.
258. ‘heavy’. Jg. lī / WB lē / Lh. hō.

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

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259. ‘long and narrow’. Jg. lōi, dīg-lōi ‘be long and narrow, as an underground passage’ / WB hlāw ‘a shield, oblong and convex’.
260. ‘penis’. Jg. manē / WB lē / Lh. ni [cf. WT mēž].

N. Fusionally prefixed resonants

(a) where Jg. has mid-tone [2–3 exs.]

262. *‘buffalo’. Jg. ṭū-lōi, ṭā-lōi / WB kywai [cf. k-lwai] [Prob. a loan into TB; cf. Siamese khwāay < P Tai *gwaay].
263a. ‘go’. Jg. sā / WB swā [For an alternative Jg. cognate to the WB form, see No. 263b].
264. ‘tooth’. Jg. wā / WB swā.

(b) where Jg. has low-tone [0–1 ex.]

263b. ‘go’. Jg. wā / WB swā.

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 obstruent 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 ʦ, ʧ correspond to LB aspirated affricates
(Subclass BB), 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:

<table>
<thead>
<tr>
<th></th>
<th>mid</th>
<th>low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes B, BB</td>
<td>4–5</td>
<td>5–6</td>
</tr>
<tr>
<td>Classes CC, DDD, E</td>
<td>8–10</td>
<td>2–3</td>
</tr>
<tr>
<td></td>
<td>12–15</td>
<td>7–9</td>
</tr>
</tbody>
</table>

Whether or not we are justified in including these latter classes, the mid-low distribution in sets reflecting *voiceless 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’.

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 ‘/’.

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 [’]

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 percentage 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. krûm ‘trim, lop, prune’ / Lh. cho-ka-ne ‘dwarf’, qho-ka-ne ‘baren, treeless mountain’.

Jg. aspirated / WB aspirated:

266. ‘create’. Jg. phûn / WB phûn.

Jg. voiced / Lh. plain:

267. *ear; place’. Jg. gâ ‘earth’ / Lh. kà ‘classifier for places’ (< *r-ka; cf. Nung raga ‘land’).108

Jg. voiced affricate ~ s / WB plain:

268. ‘be on lookout’. Jg. dûzô ‘be on the lookout, alert’, sôi ‘gaze at, catch a glimpse, glance’, ?aôi ‘id.’ [there is also a mid-tone variant, ?adzo] / WB cve ‘squint, peer from one eye’.

Jg. aspirated / WB voiced:

269. ‘chief’. Jg. nh-thûn ‘head (as of bed); top, excellence; supreme’ / WB duîn ‘petty chief, as of gambling house; an official’.

Jg. aspirated / WB plain:

270. ‘meet’. Jg. krûm / WB krum ~ krûm ‘meet with, find’.

Jg. s / WB, Lh. aspirated affricate:

271. *oil, fats’. Jg. sâu ‘luscious; oily’, ?asôu ‘oil, grease’ / WB chu ‘fat’ / Lh. chu ‘id.’ [For an alternative identification of the LB forms with Jg. zû ‘semen’, see above No. 83.]109

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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 gâ ‘earth’. See also STC, set 97.

109 The identification with ‘semen’ is actually far preferable. Benedict puts Jg. sâu (Lushai thu, Dimasa, Bodo thu) 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’, ñ-sám ‘appearance, mien; character’ / WB cham ‘share the character or nature of’.

Jg. s, s / WB s:
273. ‘die’. Jg. són ‘die’, ñsón ‘spirit of woman dead in childbirth’ / WB swan ‘non-viable (eggs, roots)’.
275. ‘small’. Jg. sói ‘small, weak, paltry’ / WB swái ‘slender and tapering’, wswái (n.).
276. ‘sound, voice’. Jg. n-sén / WB ñsam ‘sound, report, rumor’.

Jg. nasal / WB nasal:
277. ‘corpse’. Jg. mói ‘corpse’ / WB mwe ‘relics of the body of a Buddh, ñmwe ‘inheritance’.
278. ‘work’. Jg. ñam / WB ñamu ‘deed, action’.

Jg. resonant / WB plain resonant:
279. ‘chew’. Jg. mayá ‘chew’ / WB ya ‘make a quid of betel’, ñya ‘a betel quid’.

Jg. resonant / LB voiceless resonant:
280. ‘breeze, wind’. Jg. bùn-l / WB le / Lh. mű-ha.

Fusionally clustered resonants:
281. ‘hint’. Jg. réñ ‘vital part (Hkauri)’, kréñ ‘vital part’, lerñ ‘id.; to hit, hint, insinuate’ / WB rán ‘aim at, have reference to’.
282. ‘right (side)’. Jg. khrá / WB ya / Lh. ña [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’. Jg. khagrowi / WB kré, ñkré / Lh. kí ‘to rot’.

Jg. plain or plain ~ voiced / WB, Lh. voiced:
284. ‘tube, bottle’. Jg. n-tum, n-dum ‘bottle; bamboo tube’ / WB düm ‘tube filled with gunpowder’ / Lh. d-dí ‘bamboo tube’.
285. ‘bird sp.’. Jg. ñ-tsówí ‘kind of bird’ / WB jvé ‘kind of bird’.

Jg. aspirate / WB, Lh. aspirated:
286. ‘bitter’. Jg. khá / WB khá / Lh. qhá.
287. ‘embrace; cover’. Jg. phùm ‘embrace, hug; roost, as a hen’ [possibly related is Jg. phùm ‘lie, as an animal’] / WB phùm ‘cover’.
288. ‘smoke’. Jg. khu ‘be smoky’ [ñwán-ñhút ‘smoke’] / WB khúi / Lh. mû-qhó.
289. ‘push; hit’. Jg. thú ‘push, shove’ [also ñthú ‘hit, strike’, with low-tone] / WB tû ‘push, butt, shove against’, thút ‘thrust at, stab, strike’ [also perhaps Lh. thú ‘be in a state of sexual desire’].
290. ‘shit’. Jg. khyí / WB khyè [Lh. qhè is irregular (we would expect *ch); perhaps it is a loan from Shan (cf. Thai khî)].
291. ‘spit’. Jg. máthwi / WB thwé (v.), tam-twé (n.).

Jg. voiced / WB, Lh. aspirated:
292. ‘excess’. Jg. džán ‘be in excess’, madžán ‘very’ [also perhaps džán ‘a verandah’; i.e. ‘the part of the house that sticks out’] / WB chán ‘exceed others, be extraordinary’.
293. ‘oily; corpulent’. Jg. byá ‘oily (Hkauri)’ / WB phúi ~ phúi ‘be full in flesh, fat, corpulent; swell up’.
294. ‘put, place’. Jg. dá [dáth (Hkauri)] / WB thá / Lh. tâ.
295. ‘steal’. Jg. jógú [lagút ‘thief’] / WB khúi / Lh. qhó [WT rku].
297. ‘tired’. Jg. bá ‘be tired’, ñbá ‘tire someone out’ / WB phá [see No. 176 and note 92, above].
298. ‘urine’. Jg. dží ~ dží ‘urinate’ [dzét ‘urine’] / WB chú ‘urine (medical)’, sè ‘piss (vulgar)’ / Lh. jì.

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 qhí is an impossible syllable in Lahu, so perhaps the vowel was lowered to accommodate the borrowed word while preserving the velar of the initial. On the other hand, Benedict (personal communication) informs me that in Tai there exist archaic doubles of this root with the thymes -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 *?- for PLB. The source of this glottalized element was *s, as shown by the WT forms sta ‘preparation, arrangement’, štad ‘put on, lay on’. These latter forms show the same alternation between open-syllable and final deval stop at the Jg. pair. See below.

Jg. aspirated / Lh. voiced:
300. ‘pillow’. Jg. būn-khūm [also perhaps pūn-khūm ‘stool’] / Lh. ŋ-gā.

Jg. aspirated / WB plain:
301. ‘plug up; deaf’. Jg. phān, nā-phān, lāphān ‘deaf’ / WB pān ‘obstruct’, nā-pān ‘deaf’ / Lh. pā ‘deaf’.
302. ‘tree’. Jg. phūn / WB pūn- ‘morpheme in tree names’.

Jg. plain / WB aspirated:
303. ‘dried up (as a stream)’. Jg. kān / WB khān [LM also cites an ‘adverbial’ Jg. form with low-tone, kān].

Jg. spirant / WB, Lh. plain affricate:

Jg. spirant or affricate / WB spirant:
305. ‘abound; myriad’. Jg. sōŋ ‘be abundant’ / WB ṣōn ‘ten thousand’, sōn ‘quintillion’, sōn-sōn ‘in large numbers’.
306. ‘rub, shave’. Jg. āsawā ‘whittle off’, āsawī ‘id. (Hkauri)’, gasawī ‘rub up against, as an affectionate cat’ / WB swē ‘whet, rub to sharpen, polish’.
307. ‘store up’. Jg. sām ‘store up, put away’ / WB sām ‘gather in; take possession of; put a stop to’.
308. ‘very; to a painful extent’. Jg. tī tī ‘very; painfully intense’ / WB sān ‘very ill’.

Jg. nasā / WB, Lh. nasal:
309. ‘arrow’. Jg. malā, palā / WB hmārā.
310. ‘fish’. Jg. ṇā / WB pā / Lh. ṇā.
311. ‘from, in; be located on, perch’. Jg. nā ‘ablative or locative particle’, kō-nā ‘from’ / WB nā ‘alight, perch’ / Lh. nā ‘perch, as a bird’ [Cf. WT na ‘locative particle’, gnas ‘a place, spot’; see STC, set 414].
312. ‘kind, sort’. Jg. ṭūn/y / WB ṭūn/y

114 The Jg. form tān ‘meat, flesh’ is < TB *tān, and not to be directly connected with the ‘eat’ root (TB *dzā).

Jg. resonant / WB, Lh. plain resonant:
313. ‘bamboo’. Jg. kawā / WB wā / Lh. wā.
315. ‘bet, wager’. Jg. lōn / WB lōn.
316. ‘bite’. Jg. kawā, gasaw ‘bite’ / WB wā ‘chew’.
317. ‘itch’. Jg. koyā / WB yā [WT g-yā].

Jg. resonant or spirant / LB aspirated resonant:
318. *lose, be defeated’. Jg. sām / WBhrūm [Peculiar initial correspondence].
319. ‘slice, shave’. Jg. má ‘to smooth, scrape, shave’ / WB hī ‘cut with a sliding motion; cut a slice’.
320. ‘squirrel (flying)’. Jg. sālō ‘flying squirrel’, rūt ‘animal resembling squirrel living in trees and feeding on fruit112 / WB hrū ‘flying squirrel’ / Lh. ṭū-tū ‘great flying squirrel’.
321. ‘wither, fade’. Jg. wāi / Lh. ḫwē.

Fusional resonant clusters:
322. *separate’. Jg. rān, ṣrān, mārān, kārān, lārān / perhaps Lh. ġī / WT hbrāl, ḫp’rāl.

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 affinities 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* obstruents 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

114 The Jg. form tān ‘meat, flesh’ is < TB *tān, and not to be directly connected with the ‘eat’ root (TB *dzā).
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 etynæ as ‘steal’, ‘thorn’, and ‘urine’. For good measure, we may throw in ‘pillow’ (No. 300), where an old nasal prefix (cf. Nung makhkim) 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:

<table>
<thead>
<tr>
<th>PLB *1</th>
<th>Jg.</th>
<th>Jg.</th>
<th>Jg.</th>
<th>PLB *2</th>
<th>Jg.</th>
<th>Jg.</th>
<th>Jg.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mid</td>
<td>low</td>
<td>high</td>
<td></td>
<td>mid</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>B</td>
<td>Jg. asp / LB asp 5–6</td>
<td>9–11</td>
<td>1</td>
<td>B, BB117 Jg. asp / LB asp 4–5</td>
<td>5–6</td>
<td>5–6</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>Jg. vd / LB asp 3–4</td>
<td>6–7</td>
<td>0</td>
<td>CC Jg. vd / LB asp 4–5</td>
<td>1–2</td>
<td>7–8</td>
<td></td>
</tr>
</tbody>
</table>

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 *sfrant, 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 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:

WT du ‘smoke’, dûd ‘smoke’
WB mî-khûi / Lh. mû-qhô.

(294) ‘put, place’. Jg. dá ‘put, place’, dât ‘put, place, fasten (Hkauri)’
WT sta-gon ‘preparation, arrangement’, stad ‘to put on, lay on’
WB thâ / Lh. tâ [< PLB *tə].

(295) ‘steal’. Jg. lagû ‘steal’, lagût ‘thief’
WT rku ‘steal’, rku-rna ‘thief’
WB khûi / Lh. qhô ‘steal’.

(296) ‘thorn’. Jg. džû ‘thorn’, džût ‘be pierced’, šodžût ‘cause to be pierced’
WT hðzu ‘enter’, hðzud ‘put, lay’
WB čhû ‘thorn’, ču ‘to prick, pierce’ / Lh. i-chû ‘thorn’.

(298) ‘urine’. Jg. džî ‘urinate’, džît ‘urine’
WT gë ‘urinate’, gëd ‘id.’, gëq ‘urine’
WB čhû, së ‘urine’ / Lh. jû ‘id.’.

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>mid</th>
<th>low</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Jg. asp / LB asp</td>
<td>2–3</td>
<td>2–3</td>
<td>6</td>
</tr>
</tbody>
</table>


119 The WT d- looks prefixal to me. Cf. ‘six’ WT drug / Jg. krû? (<*d-ruk). In my view, Tibetan first lost the velar initial [cf. the Nung form for ‘smoke’ (moô)] and then re-precoded 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 hûzûs, zug, hûzûs ‘prick, pierce; put into, put down into’, Jg. tûk ‘to pierce; be pierced’, Lh. jû ‘pierce’. See below, No. 353, and Matisoff 1972a, No. 107.
(304) 'eat'. Jg. śá ‘eat’, šát ‘deer; rice; food’
WT za ‘eat’, zan ‘food’
WB cā ‘eat’ / Lh. cā ‘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 *?-); in (295) we have *r- (> Jg. la-); in (296) we find *h- (i.e., PTB *?-); 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 suffixes122 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 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-Jibirish stock the regular reflex of PJBL Tone *2 was a high tone much like the present-day ‘/’. 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 Wofenden 1929 (pp. 56 ff.), 1936, 1937; also STC (pp. 98–103).
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.

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. As is well-known, WB has no tonal contrasts at all in stopped syllables, standing in sharp opposition to the Loloish languages. In Matioff 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 PBTL stage, and Loloish which was conservative.

We refer to the two Loloish stopped tones as “H'ion” and “Low”. Loloish H'ion syllables show a very strong correlation with the Jg. low-stopped tone (20–25 examples). There are only about 7 cases of H'ion syl-

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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.


125 Despite this reinterpretation, most of what was said in Matioff 1972a about the phonetic causes of the split remains valid; i.e., even if the split dated from PBTL 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 voiced-ness or voicelessness of the pre-JBL initial consonant cluster of the syllable, as outlined in “TSR”.

126 These references are to Matioff 1972a, “The Loloish Tonal Split Revisited.”

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

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Let us quickly look at the evidence:

9.1. Jg. low-stopped tone corresponding to Loloish H'ion. [20–25 exs.]

9.1.1. ‘bean’ Jg. nō? / Lh. nā? [TSR 140].

9.1.2. ‘blow’. Jg. kawūt / Lh. mō? [TSR 143].

9.1.3. ‘clench, crumple’. Jg. tū̄r, tú̄r / Lh. ch'ē?, Aksa tsu* [TSR 66].

9.1.4. [This root shows -u~ -i- alternation].

9.1.5. ‘climb, rise’. Jg. thā? / Lh. tā? [TSR 98].

9.1.6. [*cover; top]. Jg. gāp, magāp ‘cover’ / Lh. qhō? ‘top’ [Relationship uncertain].

9.1.7. ‘decr’. Jg. ōt / Akha tsch* [The Jg. form may be derived from the root ‘eat’. See No. 304 above].

9.1.8. ‘eye’. Jg. my?l / Lh. mō? [TSR 145].

9.1.9. [*flat, shallow]. Jg. byēp ‘low, squat’ / Lh. pē?-nā? ‘shallow’ [Relationship uncertain; see note 84].

9.1.10. [*fold; embrace; one of a pair; side’. Jg. bā? ‘be folded‘ / WB phak, bhāk ‘embrace; one of a pair’ / Lh. ê-pā ‘side’ (Low), Akha pa ‘side’ (H'ion) [TSR 72].

[This set is not critical, since there is tonal variation within Loloish itself].

9.1.11. ‘free; loosen’. Jg. lōt ‘be free’, sēlōt ‘set free’ / WB lwat, kywāt ‘be free, loose’, hwāt, khywāt ‘set free, loosen’ / Lh. lēp ‘slippery, smooth’, Akha leh ‘take off clothes’.

9.1.12. ‘grind’. Jg. krit / Lh. gō? [TSR 94].

9.1.13. [*key; lock). Jg. zō? / Ahi and Sani dzu 44 [TSR 79].

9.1.14. ‘layer, fold; add, repeat’. Jg. kathāp / Lh. thō? [Related to ‘pack into’; TSR 85].

9.1.15. ‘loose, unsteady, shifting’. Jg. sāp / Lh. sō? ‘fall down’.

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337. ‘moisten, soak’. Jg. madít ‘be moist’, madít ‘moisten’ / Lh. ti [TSR 109].
338. ‘peck at’. Jg. thōk, kathōk ‘strike lightly’ / Lh. thōu? ‘peck; strike with carved instrument’ [TSR 15; but why does Jg. have -k?].
339. ‘pinch, squeeze’. Jg. nyâp / Lh. nōi ~ nō? [TSR 147].
340. ‘run’. Jg. gāt, kōgāt / Akha ceh* (< PLB *kyat) [TSR 18].
341. ‘scale (of fish)’. Jg. nāsēp / Lh. sāsē?.
342. ‘scratch’. Jg. makhāt / Lh. gē? [TSR 97].
343. ‘split lengthwise’. Jg. ší / Lh. ji? (but Akha ceeu.) [TSR 88]. [This example is not criterial, since Loloish itself shows tonal variation.]
344. ‘squirt, gush’. Jg. phrûp ‘squirt’ / Lh. pō? ‘classifier for rain-showers’.
345. ‘stroke, rub’. Jg. mōsōp / Lh. šō? [TSR 116].
346. ‘wind around, encircle’. Jg. bāt / Lh. pē ‘classifier for pieces of land’, Akha beh ‘the rafter that goes lengthwise on the posts at the side of a house’ (cf. Jg. din-bāt ‘crossbar, stringer, beam; an arch, a space, as between two posts and a top-bar’).
347. ‘wrap up’. Jg. thûp / 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. kriup ‘die down, abate’ / WB rip ‘throw a shadow’ / Lh. dōg? ‘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. tōk / Lh. tō? Akha deu* [TSR 101]. [Relationship doubtful. Why does the Jg. form preserve the final -k?]
350. ‘destroy’. Jg. pyōk, phyōk, byōk / Akha pya* ‘tear down’ [TSR 64]. [Maran reports a Jg. low-stopped variant with “adjectival” meaning. Why does Jg. have -k?]
351. ‘gun’. Jg. sonāt / Lh. nā? [This is an obvious loanword into Jg. from Burmese se-nat (sonāt in mod. pronunciation).]
352. ‘to package, squeeze, fasten tightly’. Jg. matēp / Lh. thi?, Akha toe* [This set seems to be related to No. 347 above, where Jg. has low-stopped tone.]
353. ‘pierce’. Jg. tōk / Lh. ji? [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. katsūt / WB sut / Lh. sī? [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
355. ‘bedbug; lac insect; pitch-pine; cochineal’. Jg. šakrép ‘bedbug’ / WB khrip ‘lac’ / Lh. a-kí ‘pitch-pine’ [TSR 46].
356. ‘scoop up; draw water’. Jg. khýāp ‘grab up, scoop up’ / Ak. kaw. ‘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.]
357. ‘goat; deer’. Jg. ōt-sa ‘deer’ / Lh. ò-chë ‘goat’ [TSR 27].
358. ‘poison’. Jg. tük / Lh. dō? [TSR 113].
359. ‘six’. Jg. krū? / Lh. khō? [TSR 35].
360. ‘speckled, spotted’. Jg. prü? / Lh. bō? [TSR 89]. [This set is not criterial, since there exist Loloish High forms as well.]
361. ‘stick, adhere; join a group’. Jg. kāp, škāp ‘adhere’, teáp ‘be intimate with’ / WB kap ‘join, unite; adhere’ / Ak. gaw ‘join a group’.
362. ‘stop up, obstruct’. Jg. tsōt, matsūt / Lh. chā?. [This root shows -u- ~ i- alternation.]

(b) Spirantal Initials
363. ‘descend’. Jg. ṭhū? / WB sak / Lh. yā? [PLB *zak] [TSR 121]. [This root shows an unusual -u- ~ a- alternation.]

(c) Nasal Initials
364. ‘brains’. Jg. nū? / Lh. ū-nō? [TSR 156].
365. ‘son in law’. Jg. dā-mā? / Lh. dō-mā [TSR 153].
366. ‘spirit’. Jg. nā? / Ak. neh. [TSR 156].
367. ‘squeeze’. Jg. monāt / Lh. ni?, Ak. nyeh. [PLB *nyit] [This root shows an unusual -a- ~ i- alternation.]

128 To the sets in this group may be added one old loanword, ‘device, machine’. Jg. dēk, WB cak ‘wheel’, Lh. cē? ‘machine’, ult. < Pali cakka < Skt. castra.
129 Lh. high-rising tone / i/ is a regular reflex of PLB Low after certain types of initials, see Matsoff 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 those Loloish forms is probably nip ‘to shake, as a tree; be overcast, as the sky’. Cf. WB rip ‘be kept down’, nip ‘keep down, oppress’. See TSR, No. 159.
(d) Resonantal initials

388. 'seven'. Jg. sanít / Lh. šì, Ak. shí [TSR 128].
389. 'not'. Jg. ?anép 'not', nyép 'be soft; mucus', ?anýáp 'soft, sticky, viscous' / Lh. ná [TSR 152].
390. 'swallow'. Jg. myút / Ak. myôo. [TSR 137, 169a].

(d) Resonantal initials

391. 'ashamed'. Jg. kayá? / Lh. yá-to [TSR 182].
392. 'fireplace rack; wall'. Jg. ráp, karáp / Lh. gò-pa 'wall' (Low, < *rap), Ak. g'o'-ba (Hío, < *k-rap).
393. 'leech'. Jg. wót / WB krwát / Lh. vé? [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 unprefix Jg. aspirate — but this set is of doubtful validity anyway.

(b) Spirantial 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 Hío. 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, 6].

* * *

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 ̣es, 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 “ceak” 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!

9.6.1. Apparent loans from Burmese into Jinh Paw.
394. ‘fermented rice’. Jg. tuã-pà ‘fermented and intoxicating rice’ / WB ca’-pà ‘paddy; plant of grass genus’.
395. ‘show, exhibit’. Jg. pyá’ / WB pra’.
396. ‘coax, urge’. Jg. khyó’ / WB khyau’.
397. ‘draw out; diminish’. Jg. sò’ ‘take, pull, or draw out; deduct, as from a price; redeem, as a pawned article; seduce’, rò’ ‘untie, unbind, loose’ / WB hlyau’ ‘loosen, make lax; lessen, diminish, reduce’.

9.6.2. Sets where the Bs. creaky tone is clearly secondary.
398. ‘not; nothing’. Jg. mà’ ‘nothing, for nothing (only used in comp.)’ / WB ma’ ‘not’.
[But Loloish points to Tone *2 as the intrinsic tone of this etymon: Lh. mà. In Mod. Bs. the morpheme is pronounced simply with unstressed shwa, ma-].
373. [see above] ‘now; present time’.
362. [see above] ‘stop up, obstruct’.

400. ‘night’. Jg. šonà’, lonà’ / 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. mà? / WB ma’.
402. ‘close, cause to adjoin’. Jg. ñ-dì? / WB te’.
403. ‘gleet’. Jg. ri?, ?ari? ‘gleet, gonorrhoea, or the like’, ñ-yi ‘purulent discharge’ / WB ri’, yi’, ?ari ‘gleet, run, as pus from a sore (applied to any slimy, filthy discharge)’.

Summary:
This paper investigates the relationship between the tonal system of Jinh Paw (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 onogenesis (tone-birth) in general.
abate 348 = shadow
abound 305 = myriad
accurate; exact 40
add; repeat 335 = layer; fold
adhere 22 (cf. stick; adhere 361)
all 75
angry, 51 = rebellious
angry 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
aved 106
barb 313
bank (river); brim 185 = precipice
barley 314
basket 199
bean 146
bear 323
bear; endure 29
bedbug; lac insect 355 = pitch-pine;
cochineal
behind; retarded 23 = procrastinate;
delay
belly 247
bellow; lower side 368
best; cooked 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
boat 133
body 52
body 53 = corpse
boil 66 = burn
boil 380
bold; daring 240 = hero
bottle 264 = tube
boundary 250 = mark; line
brains 364
brawn 170 = copper
breath; air 385
buffalo 262
bulge; bud 126
burn 56 = boil
burn 56 = boil
burst 1 = opulent
butterfly; moth 122 = flash; flutter
button 54
call 70 = summon
capacity (measure of) 177 = utterly;
as much as possible
cat 145 = tiger
cattle 224
check (cheese) 24 = hunt; chase
chek 279
chief 269
child 215 = son
circle; ring 248 (cf. surround;
enclose 246)
clear (v.) 61 = dissentangle; separate
clench; crumple 325
climb; raise 326
close; cause to adjourn 402
coax; urge 306
coerce; bully 294 = defraud
cold 198
collect; gather 404 = converge; meet
concern 82 = relate to
connect; put together 153
conquer 127
contradict; deny 227 = reprove
convert; meet 404 = collect; gather
copper 170 = brass
copulate 225 = encounter
corpse 53 = body
copulate 277
cost; price; value 192
cover; envelop 62
cover; envelop 287 = embrace
cover 327
cowlick 81
create 266
crippled 99 = ruined
cross over 171
crowded; swarming 89
cubitt 42
curse 223
curved; coiled 31
dance 173 = leap
dawn; morrow 203 = awake; alert
day (of 24 hours) 369
def 301
decay 165 = pus
dene 328
desc (banking) 76
defraud 234 = coerce; bully
descend 363
desire 45 = like
destroy 73 = disperse
destroy 350
disperse 73 = destroy
die 101
die 273
dig 196
dilute 32 = fade
diminish; loosen 397 = draw out
dirt; filth 283
disabled; surprised 37 = sterile;
malfunctioning
disentangle; separate (v.) 61 = clear
(v.)
dissolve 2
do; make 43
dog 183
doors 193 = open
door pigeon 194
downward 110 = sink; humble
draw out 397 = diminish; lessen
drawn water 356 = scoop up
drawers; diapers 235
dream 111
dried up 200
dry 3 = fry
dwarf 265 = lip off
eagle; vulture 238
early 172
early morning 387
earth 267 = place
easy 121
eat 304
efface 4
elder male relative 55 = father-in-law
embrace 287 = cover
encompass; cover over 128 = mouth
(end in the)
encounter 225 = copulate
endure 29 = bear
enjoy 21 = happy
enjoy; do for pleasure 88 = ready;
ripe (cf. visit; do for pleasure 188)
enough 115 = sufficient
enough; 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
façade 32 = dilute (cf. wither; façade
321)
falled; dull 236
fall apart 74 = pulverize
fat 83 = semen
father-in-law 55 = elder male relative
father 116 = cubit
fermented rice 394
few 140 = small; thin
fierce; wicked 179 = impudent
file; razor 274
film 56
fireplace arch; wall 392
firm; stable 151 = terra firma
(fixed; firm 62)
fish 310
five 226
fixed; firm 62 = entitled to; in
control (cf. firm; stable 151)
flash; flutter 122 = butterfly; moth
flat 148
flat 330
flea 254
flesh; meat 215 = 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 = narrow
forfeit; pay damages 117
four 255
free; loosen 332
frost 161 = snow; ice
fruit 211
fry 3 = dry
flying odor 119
full; fill 92
gather; store 103
gaze; squint 268 = lookout
(brain on the); alert
gleet 403
go 263 a, 263 b
goat; plowshare 178
goat; deer 357 (cf. deer 328;
barking deer 76)
god 187 = spirit; image
goose; henguars 228
grandchild 261 = young man
grandmother 195
grass (elephant) 147
grind 333
grow 150
gun 351
hack; cut by a blow 349
hammer 44
handle3 393
handle3 289 = stalk; mast
happy 21 = enjoy;
headman (of village) 175
heart 256
heave 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
impatient 179 = fierce; wicked
instruct; discipline 167 = authority;
power
itch 118
itch 317
join a group 261 = stick; adhere
jowl 152 = lobe
key; lock 334
kill 386
kind; sort 312
knob 180
know 217 = news
lay in position 57 = pave
layer; fold 335 = add; repeat
leaf 283 = tea
leak 119
leap 173 = dance
leech 393
lick 372
like 45 = desire
lion3 34
lion1 162
liver 212
lizard 207
lobe 152 = jowl
locative 311 = perch on
long, 123
long 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
mark1 184 = spot; sign
mark2 line 250 = boundary
narrow 72 = foot
measure (n.) 45
medicine 166
meet, 270 (cf. converge; meet2 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
noisy1 58
noisy2 218 (cf. roar 219)
not; nothing 398
now; present-time 373
oblique 98 = slanting
oblong 259 = long; narrow
official; ruler 222 = assistant
oil; fat1 271 (cf. semen; fat2 83)
oily; corpulent 293
old 213
one; single 154
only 104
open 193 = door
opulent 1 = bustling
other 143
overreach; take advantage of 204
= mount
package; squeeze tight 352
paint; daub; smear 7 = writing;
document
parrot 50
patch 91 = mend
pave 57 = lay in position
peaceful 166 = still; calm
peace 187
peck at 338
penis 260
perch on 311 = locative
perpendicular 25 = superior; proud
person 87
pervasive mastery 169 = soaked;
pervaded
pierce3 bore 124
pierce4 333 (cf. thorn 296)
plag 374
pillow 300
pimples; wart 60
pincch; squeeze 339
pine; fir 243
pitch-pine; cochineal 355 = bedbug;
lac insect
pith 8
place1 125 = subject; matter
place2 267 = earth
plain; moor 9
pleasure (do for) 88 = enjoy2
pleasure (do for) 188 = visit
poison 358
precipice 185 = bank (river); brink
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
puls 165 = decay
push; shove 289
put; place 294
raft; float (n.) 78
ratian 144
ready; ripe 88 = enjoy2; do for
pleasure
reason 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 = tired1
reverence 158
ridge; froenum 90 = hill
right (side) 282
road; way 244
roar 219 (cf. noisy 2 218)
roast 11
rosenmallow 237
round 252
rub; shave 306
ruined 99 = crippled
run 340
rusting 381 = dried up; brittle
salt 245
sand 221
scale (fish) 341
scar 109 = wound
scattered 231 = pulverized
scent; smell 206
scoop up 356 = draw water
scratch 342
semen 83 = fat1
separate 322
seven 388
shadow 348 = abate
stick; adhere; 361 - join a group

stick; ache; 15
stiff; calm; 166 - peaceful
sting 141
stop up; obstruct; 362
store up; 307
strength; maturity 132
stroke; rub; 345 (cf. rub; shave)
strong; 69
subject; matter 125 - place
sufficient; plenty 50
sufficient; 115 - enough; extra
suitable 79 - suitable
summon 70 - call
sun 181 - shine
superior; proud; 25 - perpendicular
suppurate; flow steadily 16
surround; 27
surround; enclose 246 (cf. circle; ring
swallow; 390
sweet; 71
suitable 79 - suitable
swelling; knob; 182 - bladder
swollen; protuberant; 382
tall 233
tea 383 - leaf
ten 85
terra firma 151 - firm; stable
thick 64
thick; 205
thin; 206
this; 105
thorn 296 (cf. pierce; 353)
three; 209
thrust 160 - punch
tiger 145 - cat
time; 28
tired; 176 - rest
tired; 297
tooth 264
trap; ambush 189
tree 302
tree (kind of) 120
true 17
tube; pipe 159
tubers 284 - bottle
turbulent; tumultuous 191 - startled
turn 77 - around (go)
untied; loosened 12 - smoothed out
urine 298
use 214 - hold; grip

Shinel; 181 - sun
shit; 290
short; 19
shoulder; 399
show; exhibit 395
side; one of a pair 331 - fold
embrace; 36
silver 38 - white
similar 272 - appearance; character
sink; 63
six 359
sky 222
slanting; 96 - oblique
slanting 136
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slice; shave 319 (cf. rub; shave)
small; thin 140 - few
small; slender 275
smoke 288
smooth; 306
smoothed out 12 - untied; loosened
snake; vermin 155
sneeze; 30 - blow (nose)
sneeze; 164
snot; 389
snow; 161 - frost
soaked; pervaded 169 - pervasive
mastery
son 215 - child
son-in-law 365
sound; voice 276
sour; 93
sparrow 13
spare 84
speckled; spotted 360
spirit; 36
spirit; image 137 - god
spirit; 366
spittle 291
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split; lengthwise 343
split; 184 - mark
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squirrel; flying 320
squirt; gush 344
stale 220
stalk, mast 239 - handle
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started; 191 - turbulent; tumultuous
steal 295
sterile; malfunctioning 37 - discouraged; stupefied

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utterly; as much as possible 177
capacity (measure of) 177
very; to a painful extent 308
violent; wild; 253
visit; 188 - pleasure (do for)
visit; part 281 - hint; aim at
vomit; 384
wall 392 - fireplace rack
water (standing); pond 190
weigh; 86
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white; silver 38 - 100
white; 197
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References


