

*Raising of PMP *a in Bukar-Sadong Land Dayak and Rejang*

RICHARD MCGINN

1 Introduction

This paper is a report on field work in progress on two Austronesian language groups: the Rejang, spoken in Bengkulu and South Sumatra Provinces of Indonesia; and the Bukar-Sadong dialects of Land Dayak (called Bidayüh /bidayəh/ [bidayih]) spoken in the Serian District, Sarawak, Malaysia.¹ Of particular interest is a change raising PMP *-aC > -/ʌC/ in Bukar-Sadong, but not before a final velar: e.g. *bulan > /burʌn/ 'moon' but *anak > /anak/ 'child' in Tibakang, Měntu [mʌntu] (cf. Court 1967), and neighbouring dialects. This change is typologically interesting because a comparable change occurred in the Rejang language of Sumatra (Blust 1984; McGinn 1997). Other factors inviting comparison include: 30% shared vocabulary in the Swadesh 200-list; some unusual lexical and grammatical items; nasality features (pre-ploded final nasals, contrast between simple and 'barred' nasals prevocally); and a few possibly shared phonological innovations such as the following.

- (1) CV:CV(C) > CVCV:(C) (both Sadong and Rejang are 'oxytone' languages)
- (2) Loss of PMP *qa- in trisyllables (ubiquitous in Borneo (Blust 1990:240))
- (3) Neutralisation of PMP prepenultimate *a (cf. Sad. prefixes /bi-, ti-/ = Rej. /bə-, tə-/)
- (4) Shared retention of PMP *uy and comparable changes affecting the other diphthongs

¹ Abbreviations used are: PAN = Proto Austronesian, PBS = Proto Bukar-Sadong, PMP = Proto Malayo-Polynesian, PR = Proto Rejang. I am grateful for assistance from Mr Saudi Haji Narani of Serian District, Sarawak, Malaysia; and from Dr Zainubi Arbi and Mr Sabidin Ishak of Kabupaten Rejang-Lebong, Sumatra, Indonesia. Language assistants for Bidayüh-Sadong dialects were as follows. Tibakang dialect: Tuan Peter, Tuan Steward, and Puan Patsi; Tapū-Mentu dialect: Tuan Leon, Puan Puni, Tuan Kehing, and Hilda; Mawang-Mentu: Puan Chalom and Tuan Buñ; Rancang dialect: Tuan Jerom and Tuan Tapoh; Mujat dialect: Tuan Angěw and Tuan Jataw; Bědup dialect: Tuan Arip. For the Rejang dialects the language assistants were: Pak Ismael (Kebanagung); Ibu Baima (Lebong); and Mo. Hj. Daud, Pak Ibrahim, Ibu Kartila, Alamasyah, and Mariam (Rawas).

- (5) Last-syllable (stressed) schwas reflecting PMP **e* except before **-q*: **p-inzem* > /minjəm/ 'borrow' in both languages; **taneq* > **tanaq* 'earth' in both languages.
- (6) PMP **-a* > **-ə*, e.g. **mata* > Sadong /batəh/, Rejang /matəy/ 'eye'.
- (7) PMP **-aC* > Sadong *-/ʌC/*, Rejang *-/əC/* except before velars;² for example **taŋan* > Sadong /tʌŋʌn/, Rejang /taŋən/ 'hand'; but **anak* > Sadong, Rejang /anak/ 'child'.

The question is whether such comparisons, especially (6) and (7), are due to chance, borrowing, or inheritance from a lower-order protolanguage (subgroup). My paper will argue against chance ('drift') to explain most or all of these comparisons, and argue for a mixed tree- and wave-theoretical account based on some early shared innovations followed chronologically by a few conspicuous borrowings. If accepted, the hypothesis places the pre-Rejangs in Borneo until around 1200 BP, when they migrated to their present location in Sumatra. On the basis of other changes not shown above (e.g. PMP **l* > *r* in Sadong but not Rejang — and not all Bidayuh languages, either (see §5.2 below)) — I argue (a) that change (1) above occurred later than (2)–(7) and spread by borrowing; and (b) that (7) cannot reflect a shared innovation. The unusual nature of the conditioning in (7) suggests borrowing.

The paper is in three parts. Section 2 reviews relevant aspects of Rejang historical phonology based on Blust (1984) and McGinn (1997). Section 3 presents some previously proposed subgrouping hypotheses for Rejang and shows them to be untenable. Section 4 introduces new evidence that Rejang's closest linguistic relationship might be the Land Dayak group in Western Borneo, and this is evaluated in §5. Phonological, lexical, and grammatical evidence is presented that is consistent with a mixed tree- and wave-theoretical subgrouping hypothesis locating the Rejangs in Borneo prior to migrating to Sumatra around 1200 BP.

2 Aspects of Rejang historical phonology

2.1 Vocalic change

Robert A. Blust (1984) has demonstrated that Rejang exhibits more changes in the vowels than any other known Austronesian language. The following chart illustrates 27 splits and 21 mergers of the original four PMP vowels reflected in the Musi dialect.

Table 1: Rejang-Musi outcomes for PMP vowels:
mergers = 27 (horizontal); splits = 21 (vertical) (Blust 1984)

*a (9)	∅	a	ə	e	o	i	u	əa	əy			
*e (7)	∅	a	ə	e	o			əa		oa		
*i (5)			ə	e		i			əy		ea	
*u (6)	∅		ə		o		u			oa		əw

² I assume, following Blust (1990:223), that **q* was a back velar. Thus the environment 'before velars' includes 'before **q*'.

2.2 Fate of PMP *a in Proto Rejang: ten changes

Of the seven comparisons listed in the Introduction, the most important ones for subgrouping purposes involve PMP *a. As Table 1 shows, this etymon underwent nine mergers in the history of Rejang. However, the number of changes is even greater, since some of the mergers (e.g. PMP *a > /ə/) occurred in more than one environment (see §2.3). Eleven outcomes which affected PMP *a directly are illustrated below.

Outcome 1: Prepenultimate neutralisation: *a > *ə

PMP	Proto Rejang	
*balaja	*balaŋi	'pot'
*salambaw	*sələmbəw	'trap'
*maŋ-	*məŋ-	(verbal affix)
*maR-	*bə-	(verbal affix)

Outcomes 2–5: PMP Penult *a > *o, *ä, *u, *i (root harmony)

	PMP	Proto Rejang	Kebanagung	
2.	*manuk	*monok	monok	'chicken'
3.	*laŋit	*läŋät	leŋet	'sky'
4.	*sapu	*supu	supəw	'broom'
5.	*tali	*tili	tiləy	'rope'

Outcomes 6–9: PMP ultimate *-a > *ə, *i, *o

	PMP	Proto Rejang	Kebanagung	
6.	*kita	*kitə	itə	'we (incl.)'
	*ni?e	*nə	nə	'he/she'
7.	*duha	*dui	dui	'two'
	*tua	*tui	tui	'old'
8.	*mata	*mati	matəy	'eye'
	*naŋa	*naŋi	naŋəy	'fork of river'
9.	*depa	*dəpo	dəpo	'fathom'
	*teka	*təko	təko	'come'

Outcome 10: PMP *a neutralised in 'diphthongs': *aw, *ay > *əw, *əy

PMP	Proto Rejang and Rejang		
*Danaw	danəw	(Lebong)	'lake'
*punay	punəy	(Lebong)	'dove'

compare

*qatey	atəy	(Lebong)	'liver'
*hapuy	apuy	(Rawas)	'fire'
*kahiw	kiwi	(Rawas)	'wood'

Outcome 11: **-aC > *-əC* except before velars

PMP	Proto Rejang	Kebanagung	
<i>*bulan</i>	<i>*bulən</i>	<i>bulən</i>	'moon'
<i>*quzan</i>	<i>*ujən</i>	<i>ujən</i>	'rain'
<i>*tawaD</i>	<i>*tawəh</i>	<i>tawəh</i>	'haggle'
<i>*anak</i>	<i>*anak</i>	<i>anak</i>	'child'
<i>*hisarj</i>	<i>*isarj</i>	<i>isarj</i>	'gills'
<i>*hasaq</i>	<i>*asaq</i>	<i>asah</i>	'sharpen'

Outcome 12: PMP **a* reflected as /a/ in monosyllables and in etyma with schwa in the penult

PMP	Proto Rejang	Kebanagung	
<i>*ba</i>	<i>*ba</i>	<i>ba</i>	(particle)
<i>*hekan</i>	<i>*kan</i>	<i>kan</i>	'fish'
<i>*tebas</i>	<i>*təbas</i>	<i>təbas</i>	'clear-cut'

2.3 Pre-Rejang word stress

In McGinn (1997, 1999) it was demonstrated that, given an appropriate (internal) reconstruction of certain pre-Rejang prosodic features, all changes that directly affected PMP **a* occurred in unstressed syllables. 'Appropriate' in this context means that pre-Rejang's stress system was virtually identical to that of contemporary Malay: stress was final when the penult was **e*, otherwise penultimate. Consider in this light the naturalness of Outcomes 1 and 6 in pre-Proto Rejang, whereby **a* neutralised in unstressed syllables (twice).

**bala:ŋa* > **bəla:ŋə* > ... 'cooking pot'
**ma:ta* > **ma:tə* > ... 'eye'

Nowadays, however, in all contemporary Rejang dialects the stress falls uniformly upon the final syllable of the word. To account for the contemporary data, McGinn (1997) assumed that by the time of Proto Rejang the stress had shifted, so that diphthongisation and other changes affected (newly) stressed schwas from PMP **a*, whereas 'root harmonisation' affected (newly) destressed reflexes of **a*. These assumptions are illustrated below.

PMP	pre-Rejang	Proto Rejang	Kebanagung	
<i>*mata</i>	<i>*ma:tə</i> > <i>*matə:</i>	<i>*mati:</i>	<i>matəy</i>	'eye'
<i>*talih</i>	<i>*ta:li</i> > <i>*tali:</i>	<i>*tili:</i>	<i>tiləy</i>	'rope'

The complete derivation of the word for 'eye' illustrates a series of changes whose ordering is reconstructible from internal evidence, including conspicuous 'archaic residues' in the language which, according to McGinn (1997), are actually systematic and not true exceptions. Consider the following data.

Table 2: Sample derivation: Kebanagung əy from **-a* in word for ‘eye’

Outcome	PMP	pre-Rejang	Proto Rejang	Kebanagung	
6	<i>*kita</i>	<i>*kitə</i>	<i>*itə</i>	<i>itə</i>	‘we (incl.)’
	<i>*niʔa</i>	<i>*niʔə</i>	<i>*nə</i>	<i>nə</i>	‘he/she/it’
7	<i>*duha</i>	<i>*du:ə</i>	<i>*dui:</i>	<i>dui:</i>	‘two’
	<i>*tua</i>	<i>*du:ə</i>	<i>*tui:</i>	<i>tui:</i>	‘old’
8	<i>*mata</i>	<i>*ma:tə</i>	<i>*mati:</i>	<i>matə:y</i>	‘eye’
9	<i>*naŋa</i>	<i>*na:ŋə</i>	<i>*naŋi:</i>	<i>naŋə:y</i>	‘fork of river’
	<i>*depa</i>	<i>*dəpa:</i>	<i>*dəpo:</i>	<i>dəpo:</i>	‘fathom’
	<i>*teka</i>	<i>*təka:</i>	<i>*təko:</i>	<i>təko:</i>	‘come’
12a	<i>*ba</i>	<i>*ba</i>	<i>*ba</i>	<i>ba</i>	(particle)
	—	<i>*bi</i>	<i>*bi</i>	<i>bi</i>	(particle)
12b	<i>*hekan</i>	<i>*kan</i>	<i>*kan</i>	<i>kan</i>	‘fish’
	<i>*daqan</i>	<i>*dan</i>	<i>*dan</i>	<i>dan</i>	‘branch’

As Table 2 illustrates, pronouns were affected by Outcome 6; content words with **u* in the penult were affected by Outcome 7 (two changes, including Outcome 6); the ‘elsewhere’ set underwent Outcome 8, which is the most complex, subsuming Outcomes 6, 7, and 8. Finally, none of these outcomes is reflected in two other classes of etyma: (a) when the penult was PMP **e* (presumed to be schwa), **-a* resisted neutralisation and eventually changed to /o/ (Outcome 9); and finally (b) in monosyllables **-a* was unaffected (reflected as *-a/*).

McGinn (1997) explained all of these outcomes by first reconstructing aspects of pre-Rejang metrical structure, and then deriving the attested vowels in an array of stressed and unstressed syllables. In particular, neutralisation of **-a* (Outcome 6) affected unstressed syllables, and all other changes affected stressed syllables. Finally, monosyllables by definition are ‘unfooted’, and hence lack metrical structure. As Outcome 12 indicates, the unfootedness of monosyllables seems to have played a role not only in the history of PMP **-a*, but also of **-aC* in Rejang.

2.4 Rejang and Bukar-Sadong-Bidayuh

The above examples provide sufficient background to commence the comparative part of this paper. Clearly, any language outside the Rejang area that exhibits some or all of the richness and subtlety of the above system of rules merits further examination as a possible subgrouping partner with Rejang. To begin with, consider the following formula summarising the conditions under which PMP **a* underwent neutralisation in pre-Rejang. (Readers interested mainly in the comparative analysis are urged to skip the next section and turn directly to §4.)

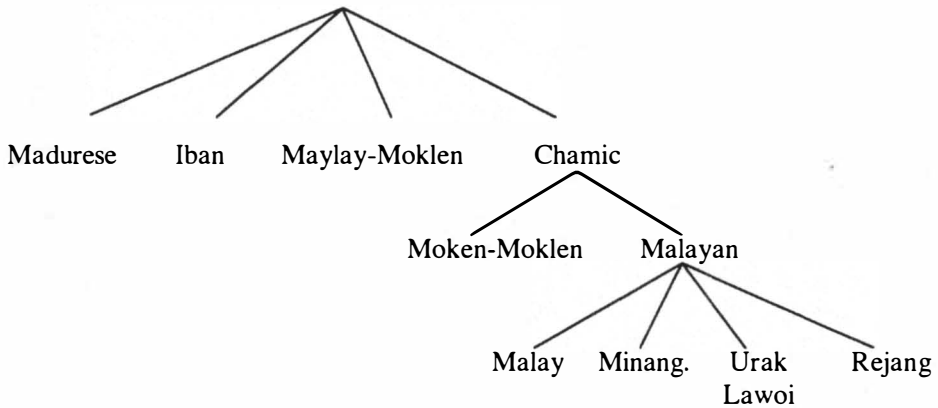
**a* > **ə* / V:C__(C[-velar])#

pre-Rejang		Kebanagung	
<i>*ma:ta</i>	>	<i>*ma:tə ...</i>	<i>matə:y</i> ‘eye’
<i>*da:naw</i>	>	<i>*da:nəw</i>	<i>danə:e</i> ‘lake’
<i>*tawaD</i>	>	<i>*ta:wəh</i>	<i>tawə:h</i> ‘haggle’
<i>*anak</i>	>	<i>*a:nak</i>	<i>ana:k</i> ‘child’

3 Rejang historical phonology: in search of an interpretation

There are at least two 'uses' for historical phonology: to provide data for the study of sound change, and to contribute to language classification. In the previous section we outlined a few of the more interesting sound changes in Rejang. In this section, all previously proposed subgrouping hypotheses for Rejang (none of them satisfactory) are reviewed.

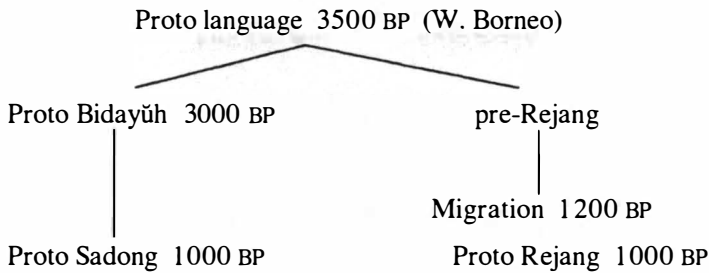
Blust (1981) attempted to classify Rejang together with Malay, Sundanese, and Maloh on the basis of shared exceptional vocabulary, in particular, the numerals 'seven', 'eight', and 'nine', which are clearly uninherited (borrowed) in all four languages; moreover, all correspond closely with Malay *tujuh, delapan, sembilan*, e.g. Rejang-Musi /tojoa?/ 'seven', /lapən/ 'eight', /səmilən/ 'nine'. Merritt Ruhlen (1987) used the same evidence to include Rejang under Chamic and Malayan, and coordinate with Malay, Minangkabau, and Urak Lawoi.



More recently, however, Adelaar (1991) and Blust (1992) argued against any close relationship between Rejang and Malay. In fact, Rejang shares none of the diagnostics (apart from numerals 7, 8 and 9) with Malay, Acehnese, and the Chamic languages. For example, in Rejang, word-initial PMP *w- exhibits not weakening to zero (sometimes /h/) as in Malay (*h*)*ari* 'day', *air* 'water', but rather strengthening to /b/-, as in Rejang-Musi /biləy/ 'day', /bioa/ 'water'. Blust concluded that Rejang's numerals 7, 8 and 9 must be borrowings from Malay, thus leaving Rejang unclassified, with no known close relatives. McGinn (1999) attempted to account for a number of morphophonological comparisons involving Rejang, Malay, and Mukah Melanau. However, subsequent field work in Sarawak failed to support a subgrouping hypothesis. As matters now stand, therefore, the position of Rejang is unknown, apart from the fact that it belongs in the PMP subgroup of the Austronesian family.

4 In search of the homeland of the Rejangs

In the remainder of this paper, I introduce evidence suggesting that early Rejang evolved in Borneo and might possibly be grouped as a coordinate member of a subgroup that includes the Land Dayak languages. The following is a general outline of the hypothesis.



The major piece of evidence for this idea, and what drew me to study the Bidayüh, involves the fate of PMP **a* in final syllables in Bukar-Sadong dialects. The Bukar-Sadong dialects are spoken in numerous villages along the Sadong river in the First District, Sarawak, Malaysia, in and to the north of the city of Serian.

4.1 Data and analysis

Recently I spent seven weeks in Sarawak and three weeks in Sumatra collecting data based on two lists. The first was a finderlist consisting of 300 PMP etyma and 107 additional terms, all presented with Malay equivalents (useful for eliciting from bilingual speakers); the second consisted of 200 sentences developed by Amran Halim from the Swadesh 200-word list, presented in the form of full sentences (in Malay for elicitation purposes). For example, the meaning ALL (English *all*) was elicited by asking for a translation of the Malay sentence *Semua manok kami mati* ('All our chickens have died'). The 407-word finderlist and the 200-sentence list were recorded for the Tibakang, Tapū, Bedūp, Mujat and Ranchan dialects of Sadong and the Lebong, Kebanagung and Rawas dialects of Rejang. I had previously collected data based on the same lists for two other Rejang dialects, namely Lebong and Pasisir. The Appendix displays over 200 reconstructed Proto Rejang forms (based on five dialects) alongside a similar number of Proto Bukar-Sadong forms. All comparisons shown in the remainder of this paper are based on the reconstructed protolanguages; attested forms represent contemporary dialects.

4.2 Summary of PMP last-syllable **a* Raising in pre-Rejang

Before beginning the comparative part of the paper, consider again the following formula, which represents three of the earliest changes affecting the historical phonology of pre-Rejang.

PMP > pre-Rejang
**a* > **ə* / V:C__(C[-velar])#

4.3 PMP last-syllable **a* Raising in pre-Bukar-Sadong

What is interesting in the context of this paper is that the set of pre-Rejang changes shown by the formula in §4.2 *almost* works for reconstructed pre-Bukar-Sadong as well. Consider the following set of changes, to be described in full in this section.

- PMP > pre-Bukar-Sadong
- *a > *ə / V:C __ #
 - *a > *ʌ / V:C __ (C[-velar]) #
 - *-aw > *əw ... > u
*-ay > *əy ... > i

The next display illustrates the range of changes represented above, which will be described in detail below.

PMP	pre-Bukar-Sadong	Tibakang		Section discussed
a. *duha	*du:ə	duə:h	'two'	4.3.1
b. *Danaw	*da:nəw	danu:	'lake'	4.3.2
	*punay	puni:	'dove'	
c. *təŋan	*ta:ŋan	təŋa:n	'hand'	4.3.3
	*hepat	umpa:t	'four'	

To help explain all of these changes, I assume that pre-Bukar-Sadong (like pre-Rejang) had a Malay-type stress system: i.e. *the accent fell on the ultimate when the penult was schwa; otherwise on the penult*. Another assumption is that all contemporary Bukar-Sadong dialects have ultimate stress, again like Rejang; certainly, all those which have been investigated show this pattern.

4.3.1 Neutralisation of PMP word-final *a in open final syllables

Both languages show evidence of early neutralisation of PMP *a in open final syllables.

PMP	Pre-Rejang	Pre-Sadong	Tibakang	
*duha	*du:ə	*du:ə	duə:h	'two'
*mata	*ma:tə	*ma:tə	batə:h	'stone'
*naŋa	*na:ŋə	*na:ŋə	naŋə:h	'fork of river'
*lima	*li:mə	*li:mə	limə:h	'five'
*ni?a	*ni:ʔə	*ni:ʔə	niʔə:h	'he/she'

4.3.2 Neutralisation of PMP word-final *-a in pre-Bukar-Sadong diphthongs

Both languages show evidence that *a raised to *ə in PMP *aw and *ay.

PMP	Pre-Bukar-Sadong	Proto Rejang and Rejang	Proto Bukar-Sadong and Tibakang	
*Danaw	*danəw	danəw (Lebong)	danu	'lake'
*punay	*punəy	punəy (Lebong)	puni	'dove'
*qatey	*atəy	atəy (Lebong)	ati	'liver'
*hapuy	*apuy	apuy (Rawas)	apuy	'fire'
*kahiw	*kaiw	kiwi (Rawas)	kayu	'wood'

4.3.3 Raising of PMP *a in closed final syllables 'except before velars'

The data in this section is what first drew my attention to the comparison of Rejang and Bidayuh.

PMP	Rejang (Kebanagung)	Bukar-Sadong (Tibakang)	
*bulan	bulə:n	burə:tn	'moon'
*quzan	ujə:n	ujə:tn	'rain'
*tawaD	tawə:h	tawə:r	'haggle'
*anak	ana:k	ana:k	'child'
*hisarj	isa:ŋ	insa:kŋ	'gills'
*hasaq	asah	ŋ-asa?	'sharpen'

This comparison offers the strongest evidence of a greater-than-chance relationship between Rejang and Bukar-Sadong (see §5.2.2).

4.4 More phonological evidence

In addition to the above evidence for relating Rejang and Bukar-Sadong dialects, consider the following phonological comparisons. Many of these types of changes are common elsewhere in the Austronesian family, and therefore may seem to have little subgrouping value, as would certainly be the case if each were evaluated individually. In the aggregate, however, they seem to add up, if not to a fully verified subgroup, at least to an indication that the Rejangs originated in Borneo (rather than, say, Taiwan, the Philippines, Sulawesi, Sumatra, or the Malay peninsula), for almost all of the resultant features are particularly widespread in Borneo.

Rejang and Bukar-Sadong	Widespread in Borneo	Shared by Malay
*qa- > Ø in trisyllables	YES	NO
*Ca- > *Cə- in trisyllables	YES	YES
*-q > *-ʔ	YES	NO
*z > *j (except Rejang d- in 'road' and 'needle')	YES	YES
*-mb-, -nd- > -m ^b -, -n ^d - ('barred nasals')	YES	NO
*-m, *-n > - ^b m, - ^d n (pre-stopped nasals)	YES	NO
stress shifted to final syllable	YES	NO

4.5 Grammatical comparisons

In addition to the phonological evidence just reviewed, there are a few grammatical comparisons that point in the same direction. Owing to the paucity of inflections in either language, the grammatical comparisons involve grammatical function words. (Rejang has only two inflections, the infixes -/ən/, -/əm/-, both inherited from PAn/PMP; Bukar-Sadong has only -/in/- corresponding to Rejang -/ən/- in both form and meaning.) Possibly shared changes include the following three:

- (1) Suffixes are unknown in both Rejang and Bukar-Sadong.
- (2) Case distinctions in the pronouns are virtually non-existent (shared with Malay).
- (3) Similarities among the following grammatical function words may be significant. (Note: the symbol ~Rawas means 'all Rejang dialects except Rawas'.)

Bukar-Sadong-Tibakang	Rejang dialects	Malay	
<i>aŋ</i>	<i>taŋ</i> Rawas	<i>di</i>	'at'
<i>kai?</i>	<i>coa</i> ~Rawas	<i>tidak</i>	'not'
<i>api</i>	<i>ipə</i> ~Rawas	<i>mana</i>	'where?'
<i>kudu</i>	<i>kədəw</i> all	<i>berapa</i>	'how many?'
<i>mbəh</i>	<i>bi</i> all	<i>sudah</i>	'already'
<i>kelek</i>	<i>kəlak</i> all	<i>mau, hendak</i>	'want'
<i>boh, mah</i>	<i>ba</i> all	<i>-lah</i>	'imperative particle'

Two caveats are in order with respect to the list of function words, however. First, apart from PMP **ba* (imperative particle), the PMP etyma for these words have not been reconstructed, so it is not really known at present whether the data represent shared innovations or simple retentions. Second, it must also be acknowledged that the similarities are merely impressionistic. Whether these comparisons will eventually prove valid must await the results of future research.

4.6 Lexical comparisons

Finally, a few apparently shared irregularities turned up during the search for shared cognates. Consider the following data.

	Bukar-Sadong Tibakang	Rejang Rawas	Malay	
PMP <i>*bali</i>	<i>jaji</i>	<i>ji jəy</i> < PR <i>*jaji</i>	<i>jadi</i>	'become'
<i>*kutu</i>	<i>gutu</i>	<i>gutəw</i>	<i>kutu</i>	'head louse'
<i>*tuqelan</i>	<i>tʌrʌtn</i> 'Adam's apple'	<i>təlan</i>	<i>tulaŋ</i>	'bone'
<i>*tisuk</i>	(Mujat <i>-ujak</i>)	<i>tujah</i>	<i>tikam</i>	'to stab'
(7-8-9)	(borrowed)	(borrowed)	(borrowed)	'7, 8, 9'
<i>*pitu</i>	<i>iju?</i>	<i>tojoh</i>	<i>tujuh</i>	'seven'
<i>*walu</i>	<i>mahi</i>	<i>lapən</i>	<i>dəlapən</i>	'eight'
<i>*siwa</i>	<i>piri?i</i>	<i>səmilən</i>	<i>səmbilan</i>	'nine'

Shared forms from unknown sources are potentially significant as evidence of early shared borrowings. Thus Tibakang /*jaji*/ corresponds well with Rawas /*ji jəy*/ < PR **jaji* in form and meaning; so also /*gutu*/ = /*gutəw*/ from PMP **kutu* (although **k-* > /*g-*/ is widespread in Western Austronesia). The third form, Bukar-Sadong-Mujat /*tʌrʌtn*/ 'Adam's apple' corresponds with Rejang /*təlan*/ 'bone', but, if these are cognates, the Tibakang form has undergone a semantic shift. The words for 'stab' and 'seven' are obviously borrowed in both languages, with a strong resemblance in form and meaning. Finally, the numerals 'seven', 'eight' and 'nine' are obviously

borrowed in both languages: ‘seven’ probably from Malay; ‘eight’ and ‘nine’ from different sources; yet in both languages it is striking that just these three numerals are borrowings.

5 Lexicostatistics and glottochronology

Although the case for a Rejang-Bidayūh subgroup is far from proven, it is nonetheless helpful to consider some of the consequences that would follow from the assumption that the hypothesis is true. It is in this spirit that I propose to explore some further evidence based on lexicostatistics and glottochronology. Although discredited if taken as exact sciences, these two methods nevertheless constitute useful tools for the extraction of two kinds of information from a body of data: the one to quantify relative linguistic ‘distance’ between two or more languages; the other to assign tentative dates to language splits. Among the standard caveats, it is perhaps also necessary to point out that the two methods are interdependent in the sense that the relative distance between, say, languages A, B, and C remains constant no matter what dates are assigned. For example, the relative distance between languages A, B, C is the same no matter whether $t = 1000$ years or 10,000 years. Thus there is no contradiction in adjusting the value of t in order to conform to other lines of evidence, such as archaeological evidence, and even cultural evidence — whether the speakers tend more to linguistic conservatism or the reverse, leading to widespread rapid borrowing.

5.1 Rejang and Bukar-Sadong

Given this much as introduction to the use of statistical methods in historical phonology, consider the following table:

Table 3: Cognate percentages with tentative dates

	% shared homosemantic cognates	($r = 84\%$)
Rejang dialects:	70–94%	= 1000 years
Sadong dialects:	70–88%	= 1000 years
	(Topping 1990)	
Bidayūh dialects incl. Lara’:	33–36%	= 3000 years
	(Kroeger 1998)	
Tibakang and Kabanagung: (Sadong)	30% (Rejang)	= 3500 years (my field work)

There are three observations to be made about Table 3. First, the maximum spread within Rejang dialects and within Bukar-Sadong dialects is about the same — around 70% shared basic vocabulary (McGinn field work conducted in 2000 and 2001; cf. Topping 1990). Second, the maximum separation within the entire Bidayūh group, which includes the Lara’ language of west Kalimantan, is 33–36% (Kroeger 1998). Third, Rejang’s nearest cousin is unknown, unless indeed this turns out to be the Bidayūh group itself.

Next, for concreteness, it has been useful to assign relative dates to these figures (with the usual caveats). When r (assumed rate of replacement of basic vocabulary per thousand years) = 84%, then 70% shared basic vocabulary = 1000 years and 30% shared basic vocabulary = 3500 years. Therefore, both Proto Rejang and Proto Bukar-Sadong began their dialect splits 1000 years ago, and Proto Bidayüh began splitting into different languages around 3500 years ago. The lowest-order protolanguage containing both pre-Bidayüh and pre-Rejang began separating earlier than 3500 years ago.

5.2 Problems

The statistical evidence introduced above is consistent with a subgrouping hypothesis for Rejang and Bidayüh, but problems remain. Here I will mention what I consider to be the two most serious objections to the hypothesis. First, the change $*l > /r/$ affected Bukar-Sadong dialects but not Rejang. Second, the Bukar-Sadong version of PMP $*a$ Raising ($*a > \text{ʌ} / *_C\#$ except before velars) — which so temptingly resembles the Rejang version — is (apparently) not found in any other Bidayüh dialects. Taken together, these two facts undermine any supposed subgroup at the level of Proto Rejang and Proto Bidayüh. The case would be permanently closed if $*l > /r/$ were assumed to be diagnostic for membership in the Bidayüh language group, but as we shall see in the next section, any such conclusion would be incorrect. Nevertheless, it is probable that $*l > /r/$ preceded PMP $*a$ Raising in Bukar-Sadong, and if so, the Rejang version of PMP $*a$ Raising cannot be a shared innovation with Bukar-Sadong. These two objections notwithstanding, there still exists one more possible scenario open for uniting these two languages at some level lower than PMP.

5.2.1 How widespread was PMP $*l > /r/$ in Bidayüh?

As mentioned, $/r/$ from PMP $*l$ is reflected in Bukar-Sadong and many other Bidayüh languages, but not in Rejang. The crucial point, however, is that this change is likewise not attested in some other Bidayüh languages, a number of which regularly show PMP $*l$ as $/l/$ (e.g. Grogó, Sau, Milikin). Consider the Grogó forms below taken from Ray (1913).

PMP	Proto Bidayüh 3000 BP	Bidayüh-Grogó (Ray 1913)	Proto Bukar-Sadong 1000 BP	
$*lanjít$	$*lanjít$	<i>lanjít</i>	$*ranjít$	‘sky’
$*laud$	$*laud$	<i>laud</i>	$*laut$ (irregular $l-$)	‘sea’
$*silun$	$*silun$	<i>silun</i>	$*siruh$ (irregular $-h$)	‘fingernail’
$*tuqelaN$	$*tulanj$	<i>tulanj</i>	$*turanj$	‘bone’
$*talih$	$*talih$	<i>tolí</i>	$*taríh$	‘rope’
$*bulan$	$*bulan$	<i>bulan</i>	$*bur\text{ʌ}n$	‘moon’

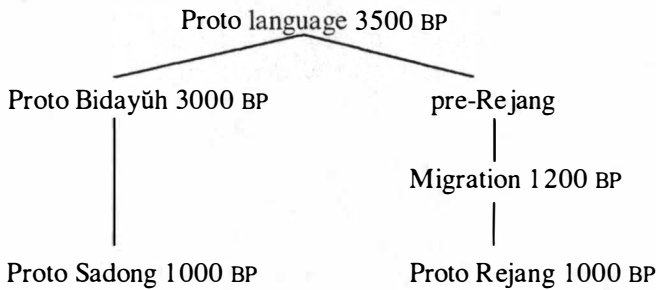
On this the evidence, $*l > /r/$ cannot be assigned to Proto Bidayüh.

5.2.2 PMP *a raising in Bukar-Sadong and Rejang (revisited)

Let us again consider the comparative data of PMP *-aC Raising shown in §4.3.3 above. As far as I know, the Bukar-Sadong version of PMP *-aC Raising is not found in other Bidayūh dialects, in contrast to *l > /r/ which is fairly widespread. It follows that *l > /r/ must have preceded *a Raising in Bukar-Sadong; and therefore no version of *a Raising can possibly be assigned to any subgroup containing Proto Rejang and Proto Bukar-Sadong as members. Our most interesting comparison, therefore, must be due to borrowing (language contact) or chance (phonetic drift). But the likelihood of chance must be considered extremely low given the unusual nature of the conditioning (*-aC underwent raising 'except before velars') in exactly these two languages. Therefore, I shall argue for borrowing as the more likely explanation.

5.2.3 'Saving the hypothesis'

If the hypothesis is to stand up against the two objections mentioned in §5.2.1 and §5.2.2, then the only way to save the hypothesis is to introduce a 'mixed' theory based on an orderly application of tree-theory and wave-theory assumptions. The following display outlines the temporal and geographical requirements of the revised hypothesis.



The final display below indicates in more detail the set of assumptions consistent with the hypothesis.

A plausible sequence of events	
before 3500 BP	Shared innovations defining pre-Rejang and pre-Bidayūh subgroup (e.g. *-a > *-ə)
3500 BP	Language split into pre-Rejang and Proto Bidayūh
<u>3500–1200 BP</u>	<u>Pre-Rejang in contact with pre-Sadong in Sarawak</u>
1500–1200 BP	<ol style="list-style-type: none"> 1. *-V:CaC[-velar] > *-V:CaC spread by borrowing 2. Final syllable stress spread by borrowing 3. *l > /r/ in Sadong (did not spread to Rejang)
<u>1200 BP</u>	<u>Proto Rejang migration</u>
Rejang:	<u>*ʌ from *a merged with /ə/</u>
Sadong:	<u>*ʌ from *a became new (7th) vowel</u>
1000 BP	Rejang dialect split Bukar-Sadong dialect split

6 Epilogue: a role for 'shared retentions' in language classification

It is widely assumed that only shared innovations are relevant for subgrouping, and that shared retentions have no subgrouping value. This assumption has served as a guiding principle in this paper up to this point. A moment's reflection, however, should be enough to convince anyone that this principle has no real theoretical status. At best it is a caveat advising students of language not to waste their time looking for subgrouping hypotheses in unlikely places. But consider the matter theoretically. Assume the case of a subgrouping hypothesis that is well established on the basis of a reasonable number of shared innovations, e.g. Maanyan and Malagasy (Dahl 1951). It almost goes without saying that any Maanyan and Malagasy cognates that are assumed to be inherited from the protolanguage 'directly' (without change) would be expected to be just as regular in their vacuous development as are the shared innovations in their altered development. And indeed, in practice such retentions are always regarded as backgrounded information in relation to the set of innovations, and for this reason their status is easily overlooked. What these retentions actually do theoretically (which is not usually noted) is: first, to bear witness against alternative hypotheses; and second, to add positive weight to (the preponderance of) the standard evidence in favour of the hypothesis. This holds true despite the fact that, in the simplest cases, no alternative hypotheses are under consideration, and the added weight is not needed.

But what about the more difficult cases, where such additional evidence might actually perform useful work? Such cases can and do arise, I suggest, in attempts to establish subgrouping hypotheses for isolated language groups like the Rejang. In such cases, there may be a legitimate use of evidence from shared retentions. When such evidence is examined, and considered alongside other evidence, it can help to refute a false hypothesis; and by the same token, it can add weight in support of a hypothesis.

Consider the following three classes of retentions that are found scattered among many Austronesian languages, including Proto Rejang and Proto Bidayūh.

- (a) PMP diphthong **uy* inherited as /uy/ in all known Rejang and Bidayūh dialects.
- (b) PMP infix **-in-* 'past tense' inherited as *-/in/-* (Bidayūh) and *-/ən-* (Rejang) — reanalysed as the passive morpheme.
- (c) PMP **-eC* inherited as **-əC* except before **-q*, where **-eq* > **-aq*: e.g. PMP **asəp* 'smoke' > PR, PBS **asəp* 'smoke' alongside PMP **taneq* > PR **tanaq* (not ***tanəq*), PBS **tanah* (not ***tanəh*) 'earth'. (This retention is also found in Jakarta Malay.)

The question to be asked is: can retention facts such as these, admittedly a distraction during the *initial* stages of research, nonetheless be useful at some point in the later stages of research, i.e. to *support* or *refute* an as yet unproven subgrouping hypothesis? I suggest that such facts can and should be brought to bear in cases like the hypothesis of this paper, which does have other facts to recommend it — facts that may be insufficient in number and quality to establish the hypothesis once and for all.

Consider a possible alternative hypothesis that situates Proto Rejang within some other reasonably established subgroup, such as Proto Malayic (Adelaar 1992). Clearly, two of the three retention facts mentioned above, namely that Rejang retains PMP **uy* (as /uy/) and the infix **-in-* (as *-/ən/-*), do not favour any close Rejang–Malayic link; rather, Rejang and Malay

must have split well before the Malayic group underwent certain changes in the relevant etyma. Then what about the retention of *-eC as /əC/ except before *-q, where *e > /a/? This retention is shared not only by Rejang and Bidayūh, but also by at least one Malay dialect: Jakarta Malay. But since we already know that Malay does not belong in a lower-order subgroup close with Rejang, this particular comparison can be safely ignored. But the conclusion does not apply with the same force in the comparison of Rejang and Bidayūh. It may not be totally vacuous to consider positively, in relation to the hypothesis of this paper, that Rejang and Bidayūh have preserved all three of these features of PAN/PMP (mostly) unchanged for at least 5000 years, against the hundreds (or perhaps thousands) of changes that affected neighbouring subgroups, and indeed, against all of the possible changes that could have occurred, but did not.

Appendix: Proto Rejang and Proto Bukar-Sadong reconstructions

The reconstructed forms presented below are based on five Rejang dialects and five Bukar-Sadong dialects; data were collected by the author using Malay equivalents for elicitation purposes. For example, bilingual speakers were presented with a Malay form (e.g. *tangan* 'hand') and asked to produce the Rejang or Bukar-Sadong equivalent, which was duly taped and transcribed by the author. Rejang data were obtained in April 2001 for Rawas, Lebong, and Kebanagung; Musi and Pasisir data are from McGinn (1997). Bukar-Sadong data were obtained in December 2000 and April 2001. Unfortunately, space limitations do not permit displaying the data of all ten dialects surveyed. Included are the reconstructed protolanguages with one example from a contemporary dialect. Unless marked otherwise, the Rejang data are from the Rawas dialect, and the Bukar-Sadong data are from Tibakang. PMP forms are taken without modification from Robert A. Blust's online *Austronesian comparative dictionary* (n.d.), an invaluable resource which is hereby gratefully acknowledged.

Phonetic notes: 1. Rejang Rawas /ä/ = low fronted vowel contrasting with low back /a/. 2. In all contemporary dialects below (both languages), nasal phonemes represented orthographically as /mb/, /nd/, /nj/, and /ŋg/ are distinguished acoustically from plain nasals /m/, /n/, etc., in that whereas the latter are followed by nasalised vowels, the former are followed by oral vowels. See Scott (1964) for a description of Sadong nasal phonemes; see Coady and McGinn (1983) for the corresponding Rejang nasal phonemes.

PMP	1. *anay	2. *aŋin	3. *anak
PR	*anəy	*aŋin	*anak
PBS	*ani dbl. *riŋga	*mahu	*anak
Rawas	makak (Keb. anəe-anəe)	aŋin	anak
Tibakang	ani ani	aŋin (Mujat mahu)	anak
GLOSS	TERMITE	WIND	CHILD
PMP	4. *ajeŋ	5. *arep	6. *hasaq
PR	*ahaŋ (irreg. *e > a)	*ahəp	*asaq
PBS	*buhə	*ar[ə, ʌ]p	*ŋ-asa?, *[n, ŋ]-ulik
Rawas	aʔaŋ	ndak (Keb. ahəp)	asah
Tibakang	bahan apuy (Mujat buhə)	arəp	midan (Mujat ŋasa?)
GLOSS	CHARCOAL	HOPE	SHARPEN

PMP	7. *asep	8. *qatep	9. *qatey
PR	*asəp	*atəp	*atəy
PBS	*asəp	*iraw	*ati
Rawas	asəp	atəp	atuy
Tibakang	asəp	iraw	ati
GLOSS	SMOKE	ROOF	LIVER
PMP	10. *hawak, *tubuq	11. *bahu	12. *bales
PR	*awak	*bau	*baləs
PBS	*tibu?	*sikəh	*baləs
Rawas	kəw	baəw	baləs
Tibakang	tibu?	səkəh	maləs
GLOSS	BODY	ODOUR	REPLY
PMP	13. *uRat 'vein; root'	14. *bapa-q	15. *bataŋ
PR	*balət	*bapak	*bataŋ
PBS	*uhət	*amaŋ	*bataŋ
Rawas	bania/akəa (Keb. balət)	bapak	bataŋ
Tibakang	uhət	amaŋ	təŋən kayuh (Mujat bətaŋ)
GLOSS	ROOT	FATHER	TREE TRUNK
PMP	16. *bibiR	17. *baniŋ	18. *babaq
PR	*bibiR; MOUTH	*beneŋ	*baq
	*mus dbl. *ŋus		
PBS	*bibih	*kura?	*sagu?
Rawas	ŋus, bibia	labəy ~ ku?a w	pi-bah
Kebanagung	bebea 'lower lip'	beneŋ	bah
Tibakang	bibih	kura?	sagə?
GLOSS	LIPS	TORTOISE	BELOW
PMP	19. *balik	20. *baqeRu	21. *binehiq
PR	*bäläk	*bəlu	*biniq
PBS	*mari[ŋ, ?] 'pulang'	*ba[?, 0]uh	*bini?
Rawas	bäläk	bələw	bənäh
Tibakang	balik, mari?	bauh	bene?
GLOSS	RETURN	NEW	SEED
PMP	22. *bener	23. *benaqi	24. *beReqat
PR	*bənəh	*bənəy	*bənəg dbl. bəhət
PBS	*mənə [?, 0]	non cognate	*bahat
Rawas	bənəa	bənuy	bənəg
Tibakang	mənə	kirasik	bahat
GLOSS	CORRECT	SAND	HEAVY
PMP	25. *beRuk	26. *bitiqis	27. *betul
PR	*bəhuk	*bətis dbl. kəkäl	*bətul dbl. bənəh
PBS	*baruk dbl. *luk	*bites	*bätul
Rawas	bə?uk	kəkäl (Keb. bətis)	bənəa
Tibakang	kara? (Mujat luk)	betes	mənə
GLOSS	MONKEY, APE	CALF OF LEG	TRUE, CORRECT

PMP	28. *bahi	29. *qale jaw, *waRi	30. *biluk	
PR	*bey	*bili	*(b)ilok	
PBS	*sue?	*andu		
Rawas	ana? səlawəy	biləy	belok	
Tibakang	sue? icək	andu	nyimpaŋ	
GLOSS	CHILD	DAY	TURN	
PMP	31. *baRani	32. *wahiR	33. *bituqin	
PR	*bini	*biol	*bitaŋ	
PBS	*paŋan	*umon	*binta?	
Rawas	binəy	biol	bitaŋ	
Tibakang	paŋan	omon	binta?	
GLOSS	BRAVE	WATER	STAR	
PMP	34. *buaq	35. *bunuq	36. *buqaya	
PR	*buaq	*unuq	*buəy	
PBS	*bua?	*kabəs	*bu[θ, ?]əy	
Rawas	buah-buah	onoh	mouy	
Tibakang	bua?	kinabəs	buəy	
GLOSS	FRUIT	KILL	CROCODILE	
PMP	37. *bukid	38. *bulan	39. *bulat	40. *bulu
PR	*tebə dbl. *bukit	*bulən	*bulət	*bulaw
PBS	*d[a, ʌ]rəd	*buran	*burüŋ	*buruh
Rawas	təbaw	bulən	bulət	buləw
Tibakang	ka juh 'hill'	buran	bərəŋ	buruh
GLOSS	HILL	MOON	ROUND	FEATHER
PMP	41. *buŋa	41. *buhek	42. *buRuk	
PR	*buŋi	*buk	*buhuk, dbl. *kidek	
PBS	*buŋa[θ, ?] irreg.	*buruh	*madam.	
Rawas	buŋəy	buk	kedek 'bad person'	
Tibakang	buŋa	buruh	madam	
GLOSS	FLOWER	HEAD HAIR	UGLY; WORN OUT	
PMP	43. *batu	44. *(d)aRaq	45. *lalej	
PR	*butu	*dalaq	*daləj	
PBS	*batuh	*d[a, ʌ]ya?	*narəd	
Rawas	butəw	daləh	dalət	
Tibakang	batuh	dəya?	tura? (Mujat narəd)	
GLOSS	STONE	BLOOD	HOUSEFLY	
PMP	46. *zalan	47. *daqan	48. *Danaw	
PR	*dalən	*dan	*danew	
PBS	*jaŋan	*da?an	*danu	
Rawas	dalən	dan	daniw	
Tibakang	jaŋan	da?an	danu	
GLOSS	PATH, ROAD	BRANCH	LAKE	

PMP	49. *dahun	50. *dilaq	51. *debu
PR	*daun	*dilaq	*dəbu
PBS	*daʔun	*jile[h, ʔ]	*dɔbu
Rawas	daun	lidah	dəbəw
Tibakang	dawəʔ	jelah	dɔbu
GLOSS	LEAF	TONGUE	DUST
PMP	52. *zaRum	53. *dapuR	54. *Duha
PR	*dolom	*dopol	*dui
PBS	*jarum		*duəh
Rawas	dolom	dopol	duəy (Keb. dui)
Tibakang	jarum	abuh	duəh
GLOSS	NEEDLE	KITCHEN	TWO
PMP	55. *dukut, *udu	56.	57.
PR	*dukut	*das	*dahət
PBS	*uduh	sɔmbu	*dayəh
Rawas	dukut	das	dəʔət
Tibakang	uduh	sɔmbu	dayəh
GLOSS	GRASS	(ON) TOP	INLAND
PMP	58. *deRes	59. *hiket	60. *Rakit
PR	*dəhəs	*äkät	*häkäät
PBS	*dərəs	*kabət	*lantij
Rawas	dəʔəs	äkät	äkät (Keb. heket)
Tibakang	dərəs	kabət	lantij
GLOSS	SWIFT CURRENT	TO TIE	RAFT
PMP	61. *qiliR	62. *ipen	63. *isep
PR	*iliR	*äpän	*äsäp
PBS	*sabaʔ dbl. *mamɔn	*jipəh/jip[u, ə]n	*sihəp
Rawas	pilot	äpän	(ŋ)äsäp
Tibakang	mamɔn 'flow'	jipəh	nyəhəp
GLOSS	DOWNSTREAM	TOOTH	SUCK
PMP	64. *embun	65. *enem	66. *gatel
PR	*əmbun; awan	*num	*gatal (irreg. *e > a)
PBS	*ambun/*ramanʔ	*ənəm	*gatal
Rawas	mbun/awən	num	gatal
Tibakang	ramanʔ	ənəm	gatəl
GLOSS	CLOUD	SIX	ITCH
PMP	67. *gilap	68. *genep	69. *quDip
PR	*gələp (spor. *i > ə)	*gənəp	*idup
PBS		*gənəp	*m-udidip
Rawas	no data	gənəp	idup
Tibakang	klap-klip (borr.)	gənəp	mudidip
GLOSS	FLASH	COMPLETE	ALIVE

PMP	70. *ikuR	71.	72.
PR	*ikoR	*quq	*rimbə
PBS	*uŋkuy	*joho?	*tu[ʔ, ʈ]an
Rawas	iku? (borr. Palembang)	jaoh (Keb. hoah)	imbaw
Tibakang	uŋkuy	joho?	nuan
GLOSS	TAIL	FAR	FOREST
PMP	73.	74. *hisaj	75. *isi
PR	*indok	*isaj	*isi
PBS	*[a, i]ndə	*su?op dbl. *sa?ap	*isih dbl. *abih
Rawas	indok	isaj	isəy
Tibakang	andə	so?op (Mujat sa?ap)	isih (Mujat abih)
GLOSS	MOTHER	GILLS	CONTENTS
PMP	76. *kita	77. *qituj	78.re.jaj (name)
PR	*(k)itə	*ituj	*tun həjaj 'Rejangs'
PBS	*kita?	*itəj dbl. *iyəp	mərəjaj 'migrate'
Rawas	kita?	rikin (borr. English)	(sunj) rɔjaj 'Rejang river'
Tibakang	kita?	niəp	REJANG
GLOSS	1PL.INCL	COUNT	
PMP	79. *zari	80. *kabut	81. *kaka-q
PR	*jihi	*kabut	*kakak
PBS	*bua? tɔŋɔn		*umbu?
Rawas	ji?əy	kabut	kakak
Tibakang	bua? tɔŋɔn	kabus	umbu?
GLOSS	FINGER	FOG	ELD. SIBLING
PMP	82. *hikan	83. *ka-wanan	84. *kasaw
PR	*kan	*kanən	*kasəw
PBS	*eke?, *lauk	*[ʈ, n]ta?uh	*kasu
Rawas	kan	kanən	kasiw
Tibakang	eke?	ta?uh	kasu
GLOSS	FISH	RIGHTSIDE	RAFTER
PMP	85. *kami	86. *kawil	87. *kawit
PR	*kami	*kawil	*kait
PBS	*ami[ʔ, ʈ]	*minti?	*ka?it
Rawas	kämäy	paciŋ (Keb. keweə)	kait
Tibakang	ami	minti?	ka?it
GLOSS	1PL.EXCL	TO FISH	HOOK
PMP	88. *kutkut	89. *kempu	90. *keRiŋ
PR	*gahut	*kəpu	*kəhiŋ
PBS	*g[a, ʌ]yas	*suŋkuh	*b[a, ʌ, ə]də?
Rawas	kaut	kəpəw	ki?iŋ
Tibakang	gʌyas	suŋkuh	badə?
GLOSS	SCRATCH	GRANDCHILD	DRY

PMP	91. *esak/*tanek	92. *tawa	93. *kilat
PR	*k-əsak	*tawi	*kilət
PBS	*n-anək	*nɪɬɬɐw	*kilɪɬ
Rawas	k-esak	tawəy	kilət
Tibakang	əsak	nɪɬɬɐw	kilat
GLOSS	COOK	LAUGH	LIGHTNING
PMP	94. *kahiw	95. *kahu	96. *kamu
PR	*kiiw	*kau	*kumu
PBS	*kayuh	*amu{?}	*amu?
Rawas	kiiw	kabən (Keb. ko)	kuməw
Tibakang	kayuh	amu?	amu?
GLOSS	WOOD	2SG	2SG/2PL
PMP	97. *kena	98. *kutu	99. *asu
PR	*kəno	*gutu	*kuyuk
PBS	*udog	*gutu	*kasuŋ
Rawas	kənaw (Keb. kəno)	gutəw	kucak (Keb. kuyuk)
Tibakang	odog	gutu	kasuŋ
GLOSS	STRIKE	LOUSE	DOG
PMP	100. *laŋaw	101. *lahud	102. *lawaq
PR	*laŋəw	*laut	*la[w, b]aq
PBS	*raŋu	*laʔut	*kakaʔ
Rawas	laŋiw	laut	ləlabah
Tibakang	turaʔ dɒbiru	laut	apək
GLOSS	HORSEFLY	SEA	SPIDER
PMP	103. *laŋit	104. *lain	105. *lebiq
PR	*ləŋät	*leyn	*ləbiq
PBS	*raŋit	*bukən	*lɒbih
Rawas	ləŋät	lain ~ landuman	ləbäh
Tibakang	raŋit	bəkən	lɒbih
GLOSS	SKY	OTHER	EXCESS
PMP	106. *lem	107. *lima	108. *lesuŋ
PR	*(pi)lem	*lemo	*ləsuŋ
PBS	*u[θ, ʔ]ah	*riməh	*risoŋ
Rawas	piləm ~ oləm	ləməw	ləsuŋ
Tibakang	təɾəp	riməh	risoŋ
GLOSS	INSIDE	FIVE	MORTAR
PMP	109. *libeR	110. *laRiw > *laRi	111. *beRey
PR	*libəh	*lili	*ləy
PBS	*libər	*buhu[ʔ, θ]	*jug[o, ɿ]n
Rawas	libəa	liley	luy
Tibakang	kahi (Mujat lambar)	buhu	nyogon
GLOSS	WIDE	RUN	GIVE

PMP	112. *basəq (*ləcəq)	113. *qali-metaq	114.
PR	*ləcaq	*litaq	*luaq
PBS	*bisa? dbl. *laca?	*mata? dbl. *mutək	*[b, m]ada? dbl.
Rawas	ləcah	litah	*ŋancak
Tibakang	ra?us (Mujat bisa?)	mɔta?	titah
GLOSS	SOAKED	LEECH	ŋancak COMMAND
PMP	115. *lurus	116. *mama-q	117. *mata
PR	*luhus	*mamak	*mati
PBS	*bujog	*ambah	*matəh
Rawas	lu?us	wak (Keb. mamak)	mati
Tibakang	bojog	biradik kawan	batəh (Mujat mətəh)
GLOSS	STRAIGHT	MO.BRO.	EYE
PMP	118. *matey	119. *embun	120. *um-inem
PR	*matəy	*-mbəm	*mānəm/*mbuk biol
PBS	*kabəs	*salak dbl. *sahu	*nyihəp
Rawas	matuy	nəmbəm	mbuk biol
Tibakang	kabəs	nyalak	nyəhəp
GLOSS	DIE	BURN	DRINK
PMP	121. *ma-iRaq	122. *mi-hepi	123. *emis
PR	*milaq, *abaŋ (borr.)	*mipi	*mis
PBS	*calak	*pi[a,ʌ]məh	*sidi?
Rawas	abaŋ	mipəy	mis
Tibakang	cɔlak	piaməh	sidi?
GLOSS	RED	DREAM	SWEET
PMP	124. *manuk	125. *ma-anyud	126. *um-utaq
PR	*monok	*monot	*mutaq
PBS	*siok	*mamɔn	*ŋ-ute? (/e/ irreg.)
Rawas	monok	anyut (Keb. monot)	mutah
Tibakang	siok	mamɔn	ŋute?
GLOSS	CHICKEN	DRIFT	VOMIT
PMP	127.	128. *nahik	129. *ni-a
PR	*nak, *taŋ, *lə	*nək	*nə
PBS	*aŋ dbl. *dɔ	*nyumak, dbl.	*ni?əh ~ *nəh
Rawas	taŋ ~ lə	*[g, ŋ]jatuh	nə
Tibakang	dɔ	kə-nək	nəh
GLOSS	AT	nyumak	3SG.POSS
		CLIMB	
PMP	130. *niuR	131. *nipis	132. *ni-hu
PR	*nioR	*mipis	*nu
PBS	*buntɔn	*lide?	*amu?
Rawas	nioa	məlipis	kabən
Tibakang	buntɔn	lede?	amu
GLOSS	COCONUT	THIN	2SG.POSS

PMP	133. *nawa	134. *namuk	135. *huluR
PR	*nyabi (irreg. -b-)	*nyomok	*uluh
PBS	*asəŋ, *nyawa	*piruŋgət	*pi-tuhun
Rawas	nyabəy	nyomok	ulua
Tibakang	nyaway	piruŋgət	nulur
GLOSS	SOUL	MOSQUITO	TO LOWER; EXTEND ST.
PMP	136. *qulej	137. *qapuR	138. *hapuy
PR	*uləj	*kapuh	*upuy
PBS	*urəd	*binyuh	*apuy
Rawas	ulət (Keb. olog)	upua	upuy
Tibakang	ərəd	binyuh	apuy
GLOSS	CATERPILLAR	CHALK, LIME	FIRE
PMP	139. *qutek	140. *Ratus	141.
PR	*u:tək > *utək > utək	*hotos	*p-adaq
PBS	*[i,ə]ntək	*ratus	*s-ʌnda?
Rawas	utək	otos	p-adah
Tibakang	əntək	ratus	sanda?
GLOSS	BRAIN	HUNDRED	SAY
PMP	142. *pajey	143. *panas 'hot'	144. *panaw
PR	*paəy	*hapejes 'spicy'	*panəw
PBS	*pɔdi	*panəs	*panu
Rawas	paɣ	*pɔɣɔs	paniw
Tibakang	pɔdi	panəs	panu
GLOSS	RICEPLANT	HOT (HEAT)	WALK
PMP	145. *panzan	146. *hepat	147. *pataq
PR	*panjaŋ	*pat	*patiɣ
PBS	*ambuh	*umpɔt	*p[a,ʌ]ta?
Rawas	panjaŋ	pat	patäh ~ paŋəa
Tibakang	ambuh	umpɔt	pata?
GLOSS	LONG	FOUR	BREAK
PMP	148. *pahak	149. *piliq	150. *paqit
PR	*pahək	*(p)iliɣ	*pät
PBS	*sindək	*milih	*pa?it
Rawas	kədət (M pa?a?)	päläh/mutia	pät
Tibakang	sindək	milih	pa?it
GLOSS	NEAR	CHOOSE	BITTER
PMP	151. *qapeju	152. *pegeŋ	153. *palaqepaq
PR	*pəgu, *ahəy-ahəy	*goŋ	*pələpaq
PBS	*puduh	*[t,m]agəh	*kilapa[?,h,θ]
Rawas	pəgəw	goŋ	pələpah
Tibakang	puduh	magəh	kilapa buntɔn
GLOSS	GALL	HOLD	PALMFROND

PMP	154. *penuq	155. *peRes	156. *p-inzem
PR	*pənuq	*pehes	*in jəm (contrast *ipen)
PBS	*puno?	*pəras	*m-inj[ə, ʌ]m
Rawas	pənoh	nəcit	in jəm
Tibakang	pono?	pəras	min jəm
GLOSS	FULL	SQUEEZE	BORROW
PMP	157. *pisaw	158. *puluq	159. *punay
PR	*pisəw	*puluq	*punəy
PBS	*piso[0,?]	*puru?	*puni
Rawas	pisiw	pəloh	punuy
Tibakang	piso	siməhəŋ	puni
GLOSS	KNIFE	duəh puru? 'twenty'	DOVE
PMP	160. *pandak	161. *pusej	162. *puket
PR	*pəndak ~ pədak	*pusej	*pukət
PBS	*kidəg	*pasid	*puk[ə, ʌ]t
Rawas	pədak	pusət	pokot
Tibakang	kədəg	pasid	jariŋ
GLOSS	SHORT	NAVEL	DRAGNET
PMP	163. *pulut	164. *puqun	165. *putiq
PR	*jala, *pulut	*pun, *bataŋ	*budaq 'foam'
PBS	*purut db. putək	*pu?un	*putiq
Rawas	pulut	bataŋ	*buda? dbl. *mupo?
Tibakang	purut	pu?un kayuh	putäh
GLOSS	BIRDLIME	TREE	buda?
PMP	166.	167. *kizep	168. *silun
PR	*sahəp	*kijəp	*səlon
PBS	*ur[ə, ʌ]s	*kisəp dbl. *buləp	*siruh
Rawas	sa?ep	goa ~ kədip	kukəw
Tibakang	urəs	kisəp	siruh
GLOSS	TO LITTER	BLINK	FINGERNAIL
PMP	169. *ma-Ruqanay	170. *sempit/*kepit	171. *silu
PR	*manəy	*səpit	*silu
PBS	*dari[0,?]	*səmpit	
Rawas	sə-manuy	səpit	siləw
Tibakang	dari-dari	səmpit	sasəh
GLOSS	MALE	NARROW	RHEUMATIC PAIN
PMP	172. *qasiRa	173. *sintak	174. *sabuŋ
PR	*sili	*sitak	*sobonŋ
PBS	*gulo?		*sabuŋ, *taŋko?
Rawas	ga?em (borr. Malay)	sita?	sobonŋ, nyobonŋ
Tibakang	golo?	nyintak	nyabuŋ siok
GLOSS	SALT	JERK	COCKFIGHT

PMP	175. *surat	176. *sapu	177. *susu
PR	*suhət	*supu	*susu
PBS	*surat	*sapu, *-adus	*sisonj
Rawas	su?ət	supew	kajut 'milk'
Tibakang	surat	nyapu	puan 'nipple'
GLOSS	WRITE	BROOM	sisonj
			MILK/BREAST
PMP	178. *tazem	179. *tales	180. *taneq
PR	*tajəm	*taləs	*tanaq
PBS	*rʌja?	*tana?	*tanaq
Rawas	tajəm	keladəy (borr.)	tanah
Tibakang	rʌja?	–	tana?
GLOSS	SHARP	TARO	EARTH
PMP	181. *tanem	182. *tanjan	183. *taqun
PR	*tanəm	*taŋən	*taun
PBS	*puruh	*tʌŋʌn	*sʌwa?
Rawas	tanəm	taŋən	ton
Tibakang	puruh	tʌŋʌn	sʌwa
GLOSS	TO PLANT	HAND	YEAR
PMP	184. *tawad	185. *teka	186. *tuqelaN
PR	*tawəh (K)	*təko	*təlan
PBS	*tawʌr	*mʌndəg	*turaŋ
Rawas	tawəa cf. libəa	təkaw	təlan
Tibakang	tawʌr	mʌndəg	turaŋ
GLOSS	HAGGLE	COME	tʌrʌn 'adam's apple'
			BONE
PMP	187. *telu	188. *tinaqi 'stomach'	189. *qateluR
PR	*təlu	*tənəy	*tənoł
PBS	*taruh	*na?ih dbl. *putuŋ	*[0, n]tulo?
Rawas	tələw	tənuy	tənoa ~ tənol
Tibakang	taruh	na?ih cf. *tʌni	tolo?
GLOSS	THREE	'intestines'	EGG
		STOMACH	
PMP	190. *deŋeR	191. *tanda	192. *takebas
PR	*təŋəa, *tihuK (see EAR)	*tandə	*təbas
PBS	*diŋəh	*tanda dbl. *indih	*tʌbʌs dbl. *nʌhu?
Rawas	ti?uk	tandə	təbas
Tibakang	kidiŋəh	tanda	nʌhu?/tʌbʌs
GLOSS	HEAR	MARK. SIGN	CLEAR-CUT
PMP	193. *tebanj	194. *tektek	195. *tiDuR
PR	*təbanj	*tətək	*tiduR (K tiduh)
PBS	*tabəŋ	*kapəg	*bu? əs
Rawas	təbanj	tətək	tidua
Tibakang	tabəŋ	kapəg	bə?əs
GLOSS	FELL (TREE)	CHOP, HACK	SLEEP

PMP	196. *taqi	197. *tikam	198.
PR	*təy	*tikəm dbl. *tujaq	*tihak
PBS	*t[a,ʌ]ki?		*kapiŋ
Rawas	tuy	tujuh	tiʔuk
Tibakang	takiʔ	naŋkat/nabək	
Mujat	kapiŋ	ŋ-ujak	
GLOSS	FAECES	TO STAB	EAR
PMP	199. *tirus	200. *talih	201. *timba
PR	*tihus	*tili	*timbo
PBS		*tarih	*timb[a,ʌw]
Rawas	ciŋ	tiləy	timbaw
Tibakang	tiruk	tarih	timba ~ timbaw
GLOSS	TAPERING	ROPE	WELL-PAIL
PMP	202. *timeRaq	203. *timbak	204. *tupelak
PR	*timaq	*timbak	*tulak
PBS	*timah (borr. Ml.)	*timbak	
Rawas	timah	nimbak	tulak
Tibakang	timah	nimbak	numbuk
GLOSS	TIN	TO SHOOT	REJECT
PMP	205. *hiup	206. *tuzuq	207. *tuŋked
PR	*t-iup	*tujuq	*tokot
PBS		*ijuʔ (cog.)	*tuŋkət, *siŋkuhud
Rawas	tiup	to joh	tokot
Tibakang	ŋompo	ijuʔ	tuŋkət
GLOSS	BLOW	SEVEN	CANE, STAFF
PMP	208. *tupul	209. *tuqah	210. *tutup
PR	*tupul	*tui	*tutup,*təkəp
PBS	*ta jə	*tuʔuh	*tutu[θ, p]
Rawas	topol	tuəy (Keb. tui)	tutup
Tibakang	ta jə	tuʔuh	tutu
GLOSS	DULL, BLUNT	OLD	TO CLOSE
PMP	211. *TukTuk	212. *qubi	213. *quDaŋ
PR	*tutuk	*ubi	*udaŋ
PBS	*ŋumpah	*banduŋ	*andaŋ
Rawas	tutuk	ubəy	udaŋ
Tibakang	ŋəmpəh	banduŋ	andaŋ
GLOSS	POUND RICE	YAM	SHRIMP
PMP	214. *quzan	215. *aku	216. *qulu
PR	*u jən	*uku	*ulu
PBS	*ujən	*akuʔ	*baʔak 'head'
Rawas	u jən	kəw	uləw
Tibakang	ujən	aku	baʔak
GLOSS	RAIN	IS PRONOUN	HEAD

PMP	217. *Rumaq	218. *busuk	219. *qayam
PR	*humaq	*(b)usuk	*yam(-yam)
PBS	*ramin	*sikəh	*rubi
Rawas	umah	busuk	mainan
Tibakang	ramin	səkəh	birubi
GLOSS	HOUSE	ROTTEN	TOY
PMP	220. *walu	221. *siwa	222.
PR	*dəlapən	*səmilən	*cua, *laŋ
PBS	*mahī	*pīriʔi	*kaiʔ dbl. kadəʔ
Rawas	lapən	səmilən	laŋ
Tibakang	mahī	pīriʔi	kaiʔ
GLOSS	EIGHT	NINE	NOT
PMP	223.	224. *ati	225. *-
PR	*iso, *bukən	*ati	*daŋ, jibaq
PBS	*bukən	*bayuh	*abaʔ
Rawas	bukən 'chicken paunch'	əlum	jibah
Tibakang	bəkən	bayuh	abaʔ
GLOSS	NOT A	NOT YET	DON'T
PMP	226. *-	227. *-	228. *-
PR	*may	*nak	*di
PBS	*ndəg	*dʌ dbl. *aŋ	*aʔih
Rawas	may	taŋ ~ lə	dəy
Tibakang	ndəg	dʌ	aʔih
GLOSS	TO	AT	THERE
PMP	229. *-	230. *ŋajan	231. *tahiŋ/zaqit
PR	*(p)iyə	*gän	*mə-ndät
PBS	*atiʔ	*gʌnʌn	*jiʔit
Rawas	iyə	gän	mə-ndät
Tibakang	atiʔ	gʌnʌn	nyiʔit
GLOSS	HERE	NAME	SEW
PMP	232. *buka'	233. *nipay dbl. hulaR	234. *ma-Raya
PR	*bukaʔ	*nipi	*li
PBS	*bukaʔ	*nipəh dbl. *ulʌr	*rayəh dbl. bahas
Rawas	bukak [bukaʔ]	ulʌr /r/ voiceless	ləy
Tibakang	bukaʔ	nyipəh	rayəh
GLOSS	TO OPEN	SNAKE	BIG
PMP	235. *ma-kapal	236. *si-ia	237. *si-ida
PR	*kʌpa[0, ʔ]	*si	*si, *tobo ʔə
PBS		*inya siʔen	*balainya
Rawas	kəbəl	səy	si ~ tobo ʔə
Tibakang	kʌpa	inya seʔe	inya seʔen
GLOSS	THICK	HE/SHE	THEY

PMP	238. *apa/anu	239. *i-sai	240. *kua/kuja
PR	*jano dbl. *igän	*api dbl. *sapo (?)	
PBS	*anih	*asih	*muŋ anih
Rawas	igän	(s)apaw ~ apəy (hon.)	ci inan ca?əy nə ~ cinan ca?əy nə (Leb. awəy ipə)
Tibakang	anih	asih	muŋ anih
GLOSS	WHAT?	WHO?	HOW?
PMP	241. *esa/isa	242. *balanak	243. *balaŋa
PR	*do	*bəlanak	*bəlaŋi
PBS	*indi?	*bi[r, Ø]anak	*b[a, i]laŋa?(-l- irreg.)
Rawas	daw (M do)	bəlanak	bəlaŋəy
Tibakang	indi?	baranak	baləŋa?
GLOSS	ONE	MULLETFISH	CLAYPOT

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