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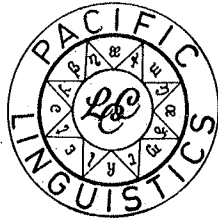
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PROCEEDINGS

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FASCICLE 1
WESTERN AUSTRONESIAN

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eds



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PROTO-PHILIPPINE WORD ACCENT:
INNOVATION OR PROTO-HESPERONESIAN RETENTION?

R. DAVID ZORC

1. INTRODUCTION

1.1. BACKGROUND¹

In a preliminary attempt to account historically for current and Proto-Tagalic word accent² Zorc concluded:

What is needed by this time is finally raising our comparative studies from the segmental/phonological level and considering suprasegmentals as well. (1972:53)

The Second International Conference on Austronesian Linguistics - with its international forum of Austronesian scholars - has offered an opportunity to encourage such studies, to compare data, and to arrive at a new assumption about PAN word accent.

Dempwolff felt that the suprasegmental features of length, stress, and pitch did not play essential roles in that they did not contribute to any noted sound changes in the languages he treated [§61,c,5 (1937:9)]. Due to regularity of accent on the penult in most languages treated, he assumed this must have been the case for Proto-Indonesian [§25 (1934:36)].

However, accent is contrastive in at least two languages used (Tagalog and Toba Batak). Laves' review of Dempwolff was particularly critical in this regard:

The summary exclusion of all discussion of tone, stress, and quantity has already been mentioned; at least one of these, to judge from Bloomfield's and Renward Brandstetter's accounts, is certain to be phonemically significant. (1935:266)

Bloomfield, in an earlier work (1927) excused Dempwolff: "A result of this scarcity of [good reliable] material is, for instance, that Dempwolff is forced to ignore accent" (p.199), and later defended him

against Laves (1936). Still later, he is critical of another author because he "fails to mark the phonemic secondary accent or vowel lengthening ... but employs several useless diacritics" (1941:129). But there is a good deal of early Spanish material on Philippine languages that gives generally accurate information on word accent,³ which both Bloomfield and Dempwolff apparently ignored.

Dyen (1971:45) discusses the significance of the agreement of long and short penult vowels before a single consonant between Ilokano and Tagalog.

Furthermore, this length or its absence plays a role in the morphology.... Such an arrangement in a paradigm does not fit well with a hypothesis that the length was directly due to the loss of a phoneme and thus would suggest that the correspondence might continue a Proto-Austronesian distinction.

However there is little or no evidence known or easily available outside of the Philippines that fits with the Tagalog-Ilokano penult length correspondence. Thus this agreement may be no more than an innovation of some Philippine languages. There is little question that the matter deserves thorough investigation, but there is no reason yet to assign the feature of penult length distinction to Proto-Austronesian.

Dyen and McFarland (1970) give a number of PAN etyma with indications of accent, but since the list was devised for fieldwork, the indication of accent was a reflection of where it fell regularly in a number of Philippine languages and was not attributed to PAN [personal communication].

Thus, while some scholars have expressed interest in the Austronesian accent problem, or considered it important, most have gone on the assumption that PAN accent was noncontrastive, and, if anything, fell regularly on the penult. Latta, for example, has acted on this assumption in speaking on the nature of a PAN nasal infix:

[W]hile stress has not been reconstructed for PAN, Austronesian languages show a strong tendency for penultimate stress. Indeed, some scholars (e.g. Brandstetter, 1916) have suggested that PAN had penultimate stress. If this was the case, V₁ ... would have been the stressed vowel. Stressed vowels do not generally syncopate.

It is only Charles (to my knowledge) who has made a contrary assumption:⁴

It seems generally agreed that phonemic accent is the retention of a feature in Proto-Austronesian and is not an innovation in those Philippine languages which possess it. Van der Tuuk (1864...) discusses contrastive stress in Toba Batak. (1974, footnote 5:488).

1.2. 'ACCENT' IN AUSTRONESIAN LANGUAGES

The term contrastive has been chosen to describe certain features of word accent discussed in this paper.⁵ Broadly speaking, accent in Austronesian has two domains - at the level of the word (word accent) and the accent group (intonation).⁶ Word accent is contrastive in many Philippine languages, in Toba Batak, and in at least some non-Hesperonesian languages (Motu and Lenakel.)⁷ Intonation is important in all Austronesian languages in that it gives information on the number of words (or larger grammatical units) uttered, and on the type of utterance (statement, question, command, etc.).

Thus, accent is contrastive even if it is predictable at the word level. In a paroxytone language, the name of the conference (SICAL) may have two readings, and, hence, meanings: [s'ikal] would be a word, perhaps a borrowing of English 'sickle'; while [sikál] would be a phrase, the PAN name marker *si plus a name, Carl, Cal, or Kal. In an oxytone language, the previous examples would have the same reading. But an utterance such as *[banaba] could have two readings: [banabá] would be a word, such as in Hiligaynon, referring to a tree (*Lagerstroemia speciosa*); while [banába] would be a phrase, such as bana 'husband' (attested in Bisayan) and the PAN interrogative particle *ba, meaning 'Is (he) (your) husband?'.

Both word accent and intonation have phonetic details involving length, pitch, and amplitude. As Bolinger (1958, 1972a) has pointed out, amplitude or loudness is the least important feature; it is generally a variation in pitch (pitch accent) that one most easily hears and distinguishes. The most convincing example is that of a singer's being only slightly off-key as opposed to slightly too loud or soft. One readily notices (and criticises) the former while the latter is readily ignored. Features of word accent may be overridden by intonation (see examples in §2.1.), and this - along with substratum or superstratum influence (end of §3.1.) - may have played some role in the loss of contrastive word accent in many Philippine and other Austronesian languages.

1.3. PURPOSE AND PLAN

It is the purpose of this paper to investigate the complex and cognate word accent situation among Philippine languages that leads to the reconstruction of Proto-Philippine (PPH) accent [§2], to examine how accent can be lost or developed [§3], and to see how this fits into the reconstruction of Proto-Hesperonesian (PHN), and, ultimately, of Proto-Austronesian (PAN) [§4]. For the present, our attention must be

limited to only the penultimate and ultimate syllables of full words. The rich area of accent on pre-penultimate syllables and on phrase or accent groups must, unfortunately, await further study, since they get only cursory mention here. However, all Austronesianists, whether working from a synchronic or diachronic base, would do well to bear in mind the work of Bolinger et al.: "The work is far from finished, but enough is known so that no textbook on language can claim to be up to date if it fails at least to call attention to intonation (1972a: 20).

There has been a long-standing assumption that PAN and PHN accent fell regularly on the penult. The corollary is that contrastive accent in the Philippines (vowel length) and in Toba Batak (stress) were independent, unrelated innovations. The assumption was based on the belief that accent falls regularly on the penult in most modern Austronesian languages.⁸ As more reliable descriptions of the phonetic details of other Austronesian languages are now becoming available, it is evident that there are a considerable number of oxytone (ultima-stressing) languages, e.g. Javanese, Acehnese, Kerinci, Sobel (Sterner 1975), Yogad, Kuyonon, Tausug, etc. It is not the position of this paper to propose that such oxytonality was the original PHN or PAN situation. It can be shown on the basis of entirely different evidence that PHN accent did not always fall on the penult, and that it was contrastive in at least some circumstances.

The following conclusions can be made about the placement of accent in PHN (and presumably PAN):

1. **PHONETIC:** If the penult vowel was PHN *e, accent fell on the ultima.
2. **MORPHOLOGICAL:** Certain pairs of words were separated by differences in accent, whereby the stem had penult accent, and the stative or attributive counterpart had ultima accent.
3. **VOCATIVES:** A form used vocatively was accented on the final syllable.
4. **FUNCTORS:** Certain function words were un-accented or de-accented.⁹
5. **GEMINATION:** Consonant gemination, if not the result of assimilation, appeared only after a short vowel.
6. **IRREGULARITIES:** Some cases of assimilation and syncope can be explained if a short penult vowel is hypothesised. Time does not allow a discussion herein, but cases such as Malay ternak < *ter-ānak 'local breed, native to', or Manobo diyuq < *dāyuq 'far', kiyu < *kāyu 'you (pl.)', or even Tongan ?ohu < PAN *qāsu 'smoke' are relevant to ongoing research for PAN accent.

2. THE RECONSTRUCTION OF PROTO-PHILIPPINE WORD ACCENT

2.1. ACCENT IN PHILIPPINE LANGUAGES¹⁰

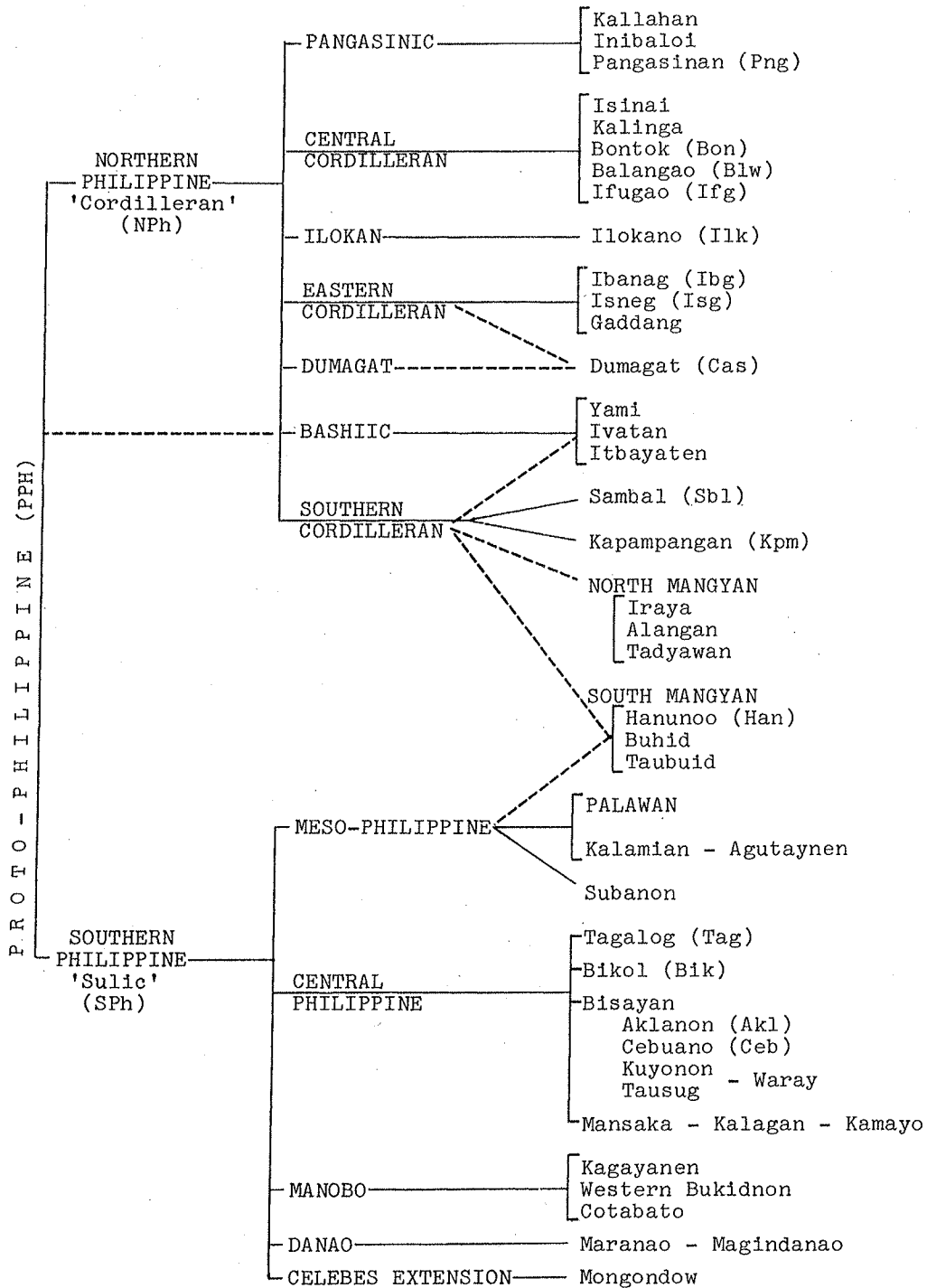
The accent systems of most Philippine languages have phonetic details involving both vowel length and pitch accent (stress). [See Table 1.]

TABLE 1
Accent as Realised in some Philippine Languages¹⁰

Group A	
Akl	pú:nŭq 'tree trunk' / pŭnúq 'full'
Bik	bá:gǎ 'embers' / bǎgá 'truly' (emphatic)
Blw	má:tǎq 'leech' / mǎtǎq 'my eye'
Bon	qá:bŭt 'strength' / qǎbút 'hole'
Ceb	tú:bŭ 'pipe, tube' / tŭbú 'sugarcane'
Han	bá:gǎq 'lungs' / bǎgáq 'swelling, lump'
Ifg	qá:kŭp 'scoop with hands' / qǎkúp 'stone wall'
Ilk	lú:nŭd 'sink' / lŭnúd 'to curse'
Isg	má:tǎ 'raw, green' / mǎtǎ 'eye'
Kpm	qá:pŭq 'lime' / qǎpŭq 'fire'
Sbl	pú:hǎq 'cat' / pŭháq 'broken'
Tag	qá:sŏ 'dog' / qǎsŏ 'smoke'
Group B	
Cas	sí:dǎ 'broken' / sŭdá 'viand, food with rice'
Ibg	qá:yǎm 'play' / qǎyám 'animal'
Png	bá:sǎ 'read' / bǎsá 'wet'
Group C	
Ceb	dǎ 'also' / da: 'to bring, carry' (< pre-Ceb *dǎlá)
Tsg	sŭn (object marker) / si:n 'money' (Mandarin chien)
Kamayo	qǎbú 'ashes' / qǎbú: 'smoke' (< pre-Kam *qǎbŏl)
Butuanon	kǎwáq 'take, get' / kǎwá: 'left(side)' (< *ka-wǎlá)
Group D	
Kuyonon	kǎpún 'castrate' / ka:pún 'yesterday' (< *ka-ha:pun)
Tausug	qŭpún 'tooth' / qi:pún 'slave' (< * qǎlŭ:pun)
Group E	
Mansaka	lǎnut 'rice water' / lanut 'abaca'
Kalagan	lanut 'rice water' / la:nut 'abaca'

Among the languages in Table 1, vowel length (or shortness) is clearly the most predominant feature at the word level. Stress is usually predictable (depending on the length or shortness of the penult vowel), or has a very low functional load [see below].

TREE DIAGRAM



- (9) Akl, Bik, Ceb, Han, Kpm, Tag, Sbl di:laq, Ifg, Ilk, Isg di:la
'tongue' < PPH *di:laq.
- (10) Akl, Bik, Ceb, Han, Tag ha:saŋ, Ilk, Isg, Kpm qa:saŋ, Sbl qa:haŋ
'gills' < PPH *ha:saŋ.
- (11) Akl, Ceb, Bik ka:huy, Tag ka:hoy, Blw qa:way, Bon ka:qew, Ifg
ka:yiw, Ilk, Isg, Kpm, Sbl, Han ka:yu 'tree, wood' < PPH *ka:yuh (with
metathesis in a number of languages; note Itbayaten kayuh as witness
of shape and final -h).
- (12) Akl, Ceb ki:taq, Tag ki:ta (but pa-kita:q-an 'let look'), Ilk,
Isg ki:ta, Kpm qa:kit (metathesis?), Gaddang qi:ta 'to see' < PPH
*ki:ta[?].
- (13) Akl, Ceb ku:tuh-, Bik, Han, Isg, Ilk, Kpm, Sbl ku:tu, Tag ku:to
'(head)louse' < PPH *ku:tu[h].
- (14) Ceb, Kpm, Sbl, Tag la:la, Bik ra:ra, Ifg, Ilk, Isg la:ga 'to
weave, braid (mats)' < PPH *la:ja.
- (15) Bik, Ceb, Han, Ilk, Sbl, Tag la:na, Kpm lánya 'coconut oil' <
PPH *la:ña.
- (16) Bik, Han ŋa:ran, Ceb, Sbl, Tag ŋa:lan, Blw ŋa:dən, Bon, Ifg ŋa:dan,
Isg ŋa:gan, Ilk na:gan (dissimilation) 'name' < PPH *ŋa:jan.
- (17) Akl, Ceb, Bik, Han ŋi:pun, Tag ŋi:pin, Isg ŋi:pan, Ilk, Sbl ŋi:pən
'tooth' < PPH *ŋi:pən.
- (18) Akl pa:ɬay, Tag pa:lay, Kpm pa:le, Sbl pa:li, Bon pa:gəy, Ifg
pa:guy, Ilk pa:gay 'unhusked rice' < PPH *pa:jay.
- (19) Akl, Bik, Ceb, Han, Kpm, Sbl, Tag pi:liq, Bon, Ifg, Ilk, Isg pi:li;
Kalamian pilik 'choose, select' < PPH *pi:liq.
- (20) Akl, Bik, Ceb, Han pu:sud, Tag pu:sod, Ilk pu:səg, Isg pu:sag,
Kpm pu:sad, Sbl pu:həl 'navel' < PPH *pu:səj.
- (21) Akl, Bik, Bon, Ceb, Han, Kpm, Ilk, Isg si:ku, Tag si:ko, Ifg hi:qu,
Blw he:qo, Sbl hi:ku 'elbow' < PPH *si:ku.
- (22) Akl, Bon, Ceb, Han, Ilk, Kpm su:su, Tag su:so, Blw so:so, Ifg,
Sbl hu:hu 'breast' < PPH *su:su.
- (23) Akl, Han, Ilk, Isg, Sbl, Kalagan ta:kaw, Ceb ka:wat (metathesis);
Kpm na:ko, Tag -na:kaw (analogy on *naN- prefix); Blw qa:kaw, Bon
qa:kəw, Ifg maŋ-a:kaw (reshaped with loss of *t-) < PPH *ta:kaw 'steal'.
- (24) Akl, Bik, Ceb, Han, Kpm, Sbl tu:buq, Tag tu:boq, Blw, Bon, Ifg,
Ilk, Isg tu:bu; Kalamian tubuk 'grow' < PPH *tu:buq.

(25) Akl, Bik, Blw, Bon, Ceb, Han, Ifg, Ilk, Isg, Kpm, Sbl, Tag qu:bi; Kalamian kubi 'yam' *Dioscorea alata* < PPH *qu:bi.

(26) Akl, Ceb, Kpm, Sbl, Tag qu:liŋ, Blw qu:heŋ, Ilk, Isg qu:giŋ, Bik, Han qu:riŋ; Kalamian kuriŋ 'charcoal' < PPH *qu:jiŋ.

(27) Akl qu:tu, Blw, Bon, Ceb, Han, Ifg, Ilk, Isg, Sbl qu:lu, Tag qu:lo, Kalamian kulu 'head' < PPH *qu:lu.

(28) Bik hu:tuk; Itbayaten hutək; Akl, Ceb, Han qu:tuk, Blw, Kpm qu:tak, Bon, Ilk qu:tək, Ifg qu:tok, Sbl qə:tək, qu:tuk (assimilation) 'brain' < PPH *[h?]u:tək.

(29) Akl, Blw, Bon, Ceb, Han, Ifg, Ilk wa:say, Isg wa:tay 'axe' < PPH *wa:say.

2.3. FORMS RECONSTRUCTABLE WITH PENULT VOWEL SHORTNESS¹³

(30) Bon, Ceb, Han, Ilk, Kpm, Sbl, Tag qǎnak, Blw, Isg qǎnaq 'child, offspring' < PPH *[?]ǎnak.

(31) Akl, Ceb qǎpuh-, Tag qǎpo, Bon, Isg qǎpu, Sbl qǎpuq 'grandchild' < PPH *[?]ǎpu[h?].

(32) Akl, Bik, Bon, Ceb, Han, Ilk, Isg, Kpm, Tag qǎsin, Blw, Ifg, Sbl qǎhin; Kalamian kasin 'salt' < PPH *qǎsin.

(33) Akl, Han, Mansaka, Tag bǎgaq, Ilk bǎra, Kpm, Sbl bǎyaq 'abscess, swelling' < PPH *bǎRaq.

(34) Akl, Bik, Ceb, Kpm, Tag bǎsaq, Bon, Ilk, Isg bǎsa, Sbl bǎhaq 'wet' < PPH *bǎsaq.

(35) Akl, Bon, Ceb, Han, Ifg, Ilk, Isg, Kpm, Sbl bǎtu, Blw bǎto, Tag bǎto 'stone' < PPH *bǎtu.

(36) Akl, Ceb, Han bǎgas, Tag bǎgas, Blw bǎgas, Bik, Ilk bǎgas, Ifg bǎgah, Sbl bǎyah 'husked rice' < PPH *bǎRas.

(37) Akl dǎgaq 'clay', Bik, Han dǎgaq, Tadyawan dǎyaq, Ilk, Isg dǎga 'earth, soil' < PPH *dǎRa[q?].

(38) Akl, Bik, Ceb, Han dǎkup, Ilk, Sbl dǎkəp, Tag dǎkip, Kpm dǎkap 'catch, capture', Isg dǎkap 'catch (fish in net)' < PPH *dǎkəp 'catch'.

(39) Bon, Han, Ilk, Isg, Kpm dǎnum, Blw dǎnum, Sbl lǎnum 'water' < PPH *dǎnum.

(40) Akl ma-ǎyuq, Ceb lǎyuq, Bkl ha-rǎyuq, Blw qa-dəwwǎy, Ifg qa-dawwǎ, Han qa-rǎyuq, Ilk qa-dǎyu, Isg qa-dayyú, Sbl ma-rǎyuq 'far' < PPH *-dǎyuq.

- (41) Akl, Bik, Ceb, Han, Isg gǎmut, Blw, Bon, Ifg lǎmut, Ilk rǎmut, Kpm, Sbl yǎmut 'root' < PPH *Rǎmut.
- (42) Akl, Bik, Ceb, Han gǎtus, Sbl gǎtu(h); Blw gǎsot, Bon, Ilk gǎsut, Ifg gǎhut, Isg gǎtut (metathesis); Sangil rásuq, Bilaan m-latuh 'hundred' < PPH *[Rg]ǎtus.
- (43) Bik hǎduk, Ceb hǎluk, Tag hǎlik, Han qǎruk, Ilk qǎgek, Sbl qǎlek 'to kiss' < PPH *hǎjek.
- (44) Akl, Bik, Blw, Bon, Ceb, Han, Ifg, Ilk, Isg, Tag qǎnum, Kpm, Sbl m-ǎnum 'to drink' < PPH *[?]ǎnum.
- (45) Bik, Han, Ilk, Isg, Tag kǎgat, Ifg kǎlat, Sbl kǎyat 'bite' < PPH *kǎRat.
- (46) Bon, Ilk, Isg da-kǎyu, Kpm qi-kǎyu, Tag kǎyo; West. Bukidnon Manobo si-kǎyu 'you (pl.)' < PPH *kǎyu.
- (47) Akl, Bik, Ceb, Han kǎta, Bon da-qǎta, Kpm qi-kǎta (assimilation?); Yogad si-kita, Kalamian qita 'we (incl.)' < PPH *kǎta.
- (48) Akl ǎǎguy, Bik, Ceb, Han, Ilk, Isg ǎǎguy, Tag ǎǎgoy 'swim' < PPH *ǎǎguy.
- (49) Akl, Ceb kǎkuh-, Bik, Bon, Han, Ilk, Isg, Kpm, Sbl kǎku, Tag kǎko 'fingernail' < PPH *kǎku[h].
- (50) Akl -mǎta, Bik, Han -mǎra, Bon, Ifg, Ilk, Isg -mǎga 'dry' < PPH *mǎja.
- (51) Akl, Bik, Bon, Ceb, Han, Ilk, Kpm, Sbl mǎnuk, Tag mǎnok, Blw mǎnoq, Ifg mǎnuq 'chicken' < PPH *mǎnuk.
- (52) Akl, Bik, Blw, Bon, Ceb, Han, Ifg, Ilk, Isg, Kpm, Sbl, Tag mǎta 'eye' < PPH *mǎta.
- (53) Akl, Ceb, Ilk, Isg, Tag pǎtay, Blw, Bon pǎtøy, Ifg pǎtoy, Kpm pǎte, Sbl pǎti 'kill' < PPH *pǎtay.
- (54) Akl, Ceb pǎlah-, Bik, Han pǎra, Ilk, Isg pǎga, Kpm pǎla-n 'how many?' < PPH *pǎja[h].
- (55) Akl, Bon, Ceb, Han, Ilk, Kpm, Tag sǎkit, Ifg, Sbl hǎkit, Isg tǎkit 'pain(ful), sick' < PPH *sǎkit.
- (56) Akl, Ceb sǎḡah-, Bik, Han, Ilk, Isg, Kpm, Tag sǎḡa, Sbl hǎḡa 'branch' < PPH *sǎḡa[h].
- (57) Bik, Han, Kpm, Sbl, Tag tǎbaq, Blw tǎbə, Bon, Ifg, Ilk, Isg tǎba 'fat' [noun] < PPH *tǎba[q?].

(58) Akl tǎtǎm, Bik, Han tǎrum, Blw tǎdǎm, Bon, Ilk tǎdǎm, Ifg tǎdom, Isg tǎdam, Kpm tǎram, Sbl tǎrǎm, Tag tǎlim 'sharp' < PPH *tǎdǎm.

(59) Akl qǔtan, Bik, Han, Kpm, Sbl qǔran, Ceb, Tag qǔlan, Blw qǔden, Bon, Ifg, Isg qǔdan; Kalamian kuran 'rain' < PPH *qǔdan.

(60) Akl, Bik, Ceb, Isg, Tag qǔgat, Blw, Bon, Ifg qǔlat, Ilk qǔrat, Kpm, Sbl qǔyat; Kalamian qulat 'vein' < PPH *qǔRat.

(61) Akl, Ceb qǔnud 'meat, content'; Bon qǔnǎg 'core'; Ilk qǔnǎg, Isg qǔnǎg 'inside, to enter' < PPH *[q]ǔnǎj 'inside(s)'.
 (62) Akl, Ceb qǎsuh-, Bik qǎsu, Tag qǎso; Agutaynen katu 'smoke' < PSP *qǎsu[h]. Blw qǎsok, Bon, Ilk, Kpm qǎsuk, Ifg qǎhuq, Isg qǎtuq, Sbl qǎhuk 'smoke' < PNP *[q]ǎsuk.

2.4. GENERAL AGREEMENT AMONG PHILIPPINE ACCENT-PRESERVING LANGUAGES

There are relatively few exceptions to the general agreement found among Philippine languages with regard to penult length, exemplified by:

(63a) Akl pǔtuq, Ceb, Hiligaynon pǔluq, Bik, Han, Kamayo, Waray pǔruq, Tag pǔloq; Kpm pǔluq, Isg (Vanoverbergh) pug-pǔxo 'island'; but

(63b) Ilk, Itneg, Isinai pu:ru, Isg (McFarland) pu:hu, Itawis fu:hu, Kalinga pu:gu, Sbl pu:luq 'island'.

(64a) Akl, Ceb, Kamayo, Kalagan, Han, Tag, Waray ba:gaq; Sbl (Reid) ba:gaq, Itneg ba:la 'lungs'; but

(64b) Bon, Ifg, Kankanay bǎla, Ilk bǎra, Isg (Reid) bǎga, Isg (McFarland), Itawis bǎha, Kpm bǎgaq, Sbl bǎyaq; Bik, Hiligaynon, Kinaray-a (Bisayan) bǎgaq 'lungs'.

In general, the differences correspond to a split between the Northern and Southern Philippine languages, yielding a PSP *pǔjuq, but PNP *pu:juq 'island', and, conversely, a PSP *ba:Raq, but PNP *bǎRaq 'lungs'. Only the Kpm and Isg forms for 'island' differ from the other NPh languages, and these may be under influence from Tag pǔloq and Ibg fǔgu respectively (although Ibg may have lost the length independently, see below). Note that McFarland (1977:401) gives an Isg pu:hu, with length corresponding to the other NPh languages. No Southern Philippine language offers any counterevidence to the reconstructed short penult.

However, Itneg ba:la and Bik, Hiligaynon, and Kinaray-a bǎgaq 'lungs' indicate that the reconstruction of a PPH doublet is necessary since the reflexes are right, and no explanation of dialect mixture or analogy is readily available. While Sbl ba:gaq may be taken as a borrowing

from Tag since the reflexes are wrong (for Sbl *ba:yaq, which does occur in another Sbl dialect), Kpm bǎgaq, with accent agreeing with that of other NPh languages, has the wrong reflexes (for Kpm *bǎyaq or *bǎyaq) and may indicate a replacement of y by g (due to Tag influence), yet a retention of the PNP short penult vowel.

Nevertheless, the overall agreement of the test languages allows us to reconstruct a large corpus of basic vocabulary for PPH with long or short penult vowels, such as #1-62. Disagreements are the result of individual language developments and can be explained (see §3.2. and 3.4.).

3. SECONDARY DEVELOPMENTS

Not all Philippine languages retain or reflect this penult length distinction. Some have lost it altogether (§3.1.), while others reflect loss on some lexical items due to specific innovations (§3.2.); a large number of languages show a strong tendency for oxytonality (§3.3.). Some languages show a secondarily-developed phenomenon of penult length (§3.4.), and this may shed some light on how length developed early in the history of PHN or PAN, and how it might have developed in some daughter languages that do not otherwise agree with the length placement of Philippine languages.

3.1. TOTAL LOSS OF PPH PENULT LENGTH IN SOME LANGUAGES

Zorc (1978) discusses in some detail the loss and subsequent re-development of contrastive accent in Pangasinan. The same phenomenon is here postulated for Casiguran Dumagat, and possibly for Ibanag.

Table 2 lists 27 of the forms discussed thus far that are reconstructed with penult length for PPH. Of 26 cognates, none shows penult length in Png; of 26, 25 do not have penult length in Cas; of 23, 11 do not have penult length in Ibg. The forms presented are from the basic vocabulary of Philippine languages, and have a high retention rate (see Dyen et al. 1967, and Zorc 1974). In addition to the forms cited, many more (over 100 for Png and Cas, over 40 for Ibg) have thus far been found with short penult vowels, where the etyma reconstructable for PPH clearly have long penult vowels. The following are some examples.

(65) PPH *qall:ma[h] 'hand' > Akl, Ceb qall:mah-, Blw li:ma, Ilk, Isg qi:ma (metanalysed as if the original form had an affix, viz: *q<al>i:ma), Ibg, Png lŷma, (Cas NC), Kalamian kalimaq.

(66) PPH *[ʔ]a:ñud 'drift away, flow' > Kpm qányud, Tag qa:nod, Sbl qa:nul, Cas qǎnod, Png qǎnur, (Ibg NC).

TABLE 2
Loss of PPH Penult Length in some Philippine Languages

Proto-Philippine	Pangasinan	Casiguran	Ibanag	Gloss
*qasa:wa	qasăwa	qasăwa	qata:wa	'spouse'
*[?]a:su	qăsu	qăso	(NC)	'dog'
*ba:lu	bălu	bŷlo	ba:lu	'widow'
*bi:laŋ	bŷlaŋ	bŷlaŋ	bŷlaŋ	'count'
*bu:lan	bŷlan	bŷlan	vŷlan	'moon'
*da:Raŋ	dăla	dŷge	da:ga	'blood'
*da:lan	dălan	dŷlan	da:lan	'path'
*di:laŋ	dŷla	dŷla	zŷla	'tongue'
*ha:səŋ	qăsaŋ	qăhaŋ	qa:taŋ	'gills'
*ka:yuh	kŷqəw	kăyo	ka:yu	'tree, wood'
*ki:ta[?]	(NC)	(NC)	qi:ta	'see'
*ku:tuh	kŷtu	kŷto	kŷtu	'louse'
*la:ja	lăga	lăde	(NC)	'weave, braid'
*ŋa:jan	ŋăran	ŋăhen	ŋa:gen	'name'
*ŋi:pən	ŋŷpən	ŋŷpən	ŋŷfən	'tooth'
*pa:jay	păgey	păhay	(NC)	'unhusked-rice'
*pi:liŋ	pŷli	pŷle	pi:li	'choose'
*pu:səj	pŷsəŋ	pŷsəd	fu:təŋ	'navel'
*si:ku	sŷku	sŷko	sŷku	'elbow'
*su:su	sŷsu	sŷso	su:su	'breast'
*ta:kaw	tăkəw	tăko	(NC)	'steal'
*tu:buŋ	tŷbu	tu:bu	tŷvu	'grow'
*qu:bi	qŷbi	qŷbi	qŷvi	'yam'
*qu:jiŋ	qŷriŋ	qŷgiŋ	qŷkiŋ	'charcoal'
*qu:lu	qŷlu	qŷlo	qŷlu	'head'
*[h?]u:tək	qŷtək	qŷtək	qŷtoŋ	'brain'
*wa:say	wăsay	wăsay	wa:tay	'axe'

NC = not cognate

- (67) PPH *ba:ləs 'repay, revenge' > Ilk ba:ləs, Ceb ba:lus, Png bāləs 'repay', Tag ba:līs 'recover losses', Cas bāləs 'repay labour', Ibg ba:lot 'gratitude'.
- (68) PPH *bu:ki[j] 'mountain' > Akl, Ceb, Bik, Itawis bu:ki, Ibg vūki, Cas bŭked 'mountain', Png bŭki 'eastern part of town or province [towards or in the mountains]'.
- (69) PPH *bu:ŋa[h] 'fruit' > Akl, Ceb bu:ŋah-, Ilk, Isg, Kpm, Tag bu:ŋa, Cas, Png bŭŋa, Ibg vŭŋa.
- (70) PPH *-da:ləm 'deep' > Akl ma-da:lum, Blw da:l+m, Kla qa-da:lom, Ilk qa-da:ləm, Png qa-rāləm, Ibg qa-lārəm (metathesis), (Cas NC).
- (71) PNP *da:ŋan 'span (8 inches)' > Blw, Bon, Ifg, Ilk, Isg, Sbl da:ŋan, Png da:ŋan (borrowing?), Ibg dāŋan, (Cas NC).
- (72) PNP *-di:gat 'difficult' > Bon na-li:gat, Ilk, Kankanay na-ri:gat, Yogad ma-dīgat, Ibg na-rīgaq, (Cas, Png NC).
- (73) PPH *Ru:suk 'rib' > Akl, Ceb, Bik gu:suk 'rib', Ibg gu:tuk- 'chest', Ilk ru:suk, Cas gŭsok 'epigastrium', Png lŭsuk 'abdomen'; note Malay rusok 'rib' for original meaning.
- (74) PPH *hadi:ri 'pillar' > Akl, Ceb, Tag hali:gi, Bik hari:gi, Ilk qadi:gi, Isg qadi:xi, Kalamian qariliq, Cas qadīgi, Ibg qarīgi, (Png NC).
- (75) PPH *ha:ŋəs 'breathe' > Bon, Ilk qa:ŋəs, Isg qa:ŋat, Ibg q<in>a:ŋoq, Cas, Png qāŋəs 'breathe', Akl, Ceb ha:ŋus 'gasp, breathe heavily'.
- (76) PPH *hi:lut 'massage' > Akl, Ceb, Bik, Han hi:lut, Tag hi:lot, Bon, Ilk, Isg, Kpm, Sbl qi:lut, Cas hi:lut (borrowing), Png qīlut, Ibg qīlut-.
- (77a) PPH *[?]i:kuR 'tail' > Akl, Ceb, Bik, Han qi:kug, Sbl qi:kuy, Kankanay qi:ko, Png qīkul.
- (77b) PNP *[?q]i:pus 'tail' > Blw qi:pos, Bon, Ilk qi:pus, Isg qi:put, Cas qīpos, Ibg qīfuq.
- (78) PPH *ka:puy 'tired, weak' > Ifg, Ilk, Isg, Ceb ka:puy, Sbl ka:pøy, Png ka:puy, Cas kǎpuy, Ibg kǎfi.
- (79) PPH *kawa:yan [spiny bamboo] > Akl, Ceb, Bik, Bon, Han, Ilk, Isg, Tag, Sbl, Ibg kawa:yan, Cas, Png kawāyan.
- (80) PPH *ki:day 'eyebrow' > Akl, Ceb, Tag ki:lay, Bik ki:ray, Bon gi:dəy, Ifg ki:de, Ilk ki:day, Kpm ki:le, Sbl ki:ləy, Cas kīhay, Ibg kīray, (Png NC).

- (81) PPH *la-la:ki 'male, man' > Akl ʔa:ki, Bik, Bon, Ilk, Isg, Kpm, Han, Tag, Sbl lala:ki, Ibg lala:ki, Cas ləlǎke, Png lǎki.
- (82) PPH *lu:bid 'string, twine' > Akl ʔu:bid, Bik, Bon, Blw, Ilk, Isg, Han, Kpm, Tag lu:bid, Cas lǔbid, Ibg lǔvig, Png lǔbir.
- (83) PPH *lu:jan 'ride (vehicle, canoe)' > Ilk lu:gan, Isg lu:xan, Sbl lu:lan, Bik lu:nad (metathesis), Png lǔgan, (Cas, Ibg NC); Tag lu:lan 'to load cargo'.
- (84) PPH *lu:haq 'tear' > Akl ʔu:haq, Bik, Ceb, Tag lu:haq, Han, Sbl lu:waq, Ifg, Kalinga, Itneg lu:wa, Cas lǔwa, Ibg lǔwa, Png lǔa.
- (85) PPH *lu:mut 'moss' > Akl ʔu:mut, Bik, Ceb, Han, Ilk, Isg, Kpm, Sbl lu:mut, Tag lu:mot, Cas lǔmot, Ibg lǔmuq, (Png NC, although Fernandez Cosgaya lists a Png lu:mut, which must have been a borrowing).
- (86) PPH *mu:la 'to plant' > Blw mu:lə, Bon, Ilk, Isg, Sbl mu:la, Ata Manobo pa-mula, Siocon Subanon mo-mula, Cas mu:la, Ibg mǔla, (Png NC).
- (87) PNP *-ŋi:na 'expensive' > Ifg, Ilk na-ŋi:na, Gaddang ŋi:na, Ibg na-ŋina, (Cas, Png NC).
- (88) PNP *-ŋi:sit 'black, dark' > Bon ŋi:tit, Ifg ŋe:tet, Ilk, Isg na-ŋi:sit, Gaddang ŋi:sit, Cas ŋɣtet, Ibg ŋɣsiq, (Png NC).
- (89) PPH *pu:liŋ 'blinded by dirt in eye' > Akl, Ceb, Bik, Ilk, Isg, Kpm, Sbl pu:liŋ, Ibg qa-fǔliŋ, (Cas, Png NC).
- (90) PPH *pu:nas 'wipe' > Bik, Bon, Ilk, Isg, Tag pu:nas, Blw, Sbl po:nah, Cas, Png pǔnas, Ibg fǔnat-.
- (91) PPH *pu:suq 'heart' > Akl, Bik, Han, Kpm, Sbl pu:suq, Bon, Ilk, Isg pu:su, Kalamian pusuk, Cas pǔso, Ibg fǔtu, Png pu:su 'human or animal heart', pǔsu 'fruit heart'.
- (92) PPH *ta:qi 'excrement' > Akl, Ceb, Bon, Kankanay, Tag ta:qi, Kalamian takiq, Cas qǔtay, Ibg qettáy, Png tǎqi.
- (93) PPH *tali:ŋa 'ear' > Bik, Isg tali:ŋa, Ifg, Kankanay qi:ŋa (met-analysis as if *tal- was a prefix), Cas, Ibg talɣŋa, (Png NC).
- (94) PPH *tu:duq 'drip' > Ceb, Kpm, Sbl tu:luq, Tag tu:loq, Isinai tu:ru, Isg tu:du, Ibg tǔru, (Cas, Png NC).
- (95) PPH *tu:duR 'sleep' > Bik, Han, Ilk tu:rug, Isg tu:dug, Ceb tu:lug, Tag tu:log, Sbl tu:luy, Cas tɣdug, Ibg ka-tǔrug, (Png NC).
- (96) PPH *tu:lak 'push' > Ilk, Kpm, Sbl, Tag, Kankanay tu:lak, Cas, Png tǔlak, (Ibg NC).
- (97) PPH *qu:ban 'grey hair' > Akl, Ceb, Bik, Bon, Han, Ilk, Kpm, Sbl, Tag qu:ban; Kalamian kuban, Ibg, Png qǔban, (Cas NC).

(98) PPH *qu:ləj 'snake; worm' > Ibg, Gaddang, Ilk qu:ləg, Ifg qu:ləg, Png qǔləg, Cas qǔləg 'snake'; Bik, Ceb qu:lud, Kpm qu:lud, Sbl qu:wəl 'worm'; Kalamian dukul (metathesis) 'snake'.

(99) PNP *[?]uli:la 'orphan' > Gaddang, Ilk, Isg, Kankanay, Kpm, Sbl quli:la, Cas, Ibg, Png qulɿla.

(100) PPH *[?]u:taq 'vomit' > Bon, Blw, Ifg, Ilk, Isg, Kalinga qu:ta, Cas qo:ta, Ibg, Png qǔta.

(101) PPH *qu:tin 'penis' > Blw qu:ten, Ceb, Han, Ifg, Itneg, Kalinga, Tag qu:tin, Isg qu:sin, Ibg qǔsin, Png qǔtin, (Cas NC); Kalamian kutin.

TABLE 3

Number and Percentage of Forms in Cas, Ibg, Png that Reflect Loss of PPH Penult Length

From Table 2 (27 forms)	Cognates	Length	Length Loss	Percent/Loss
Cas	26	1	25	96.1
Ibg	23	12	11	47.8
Png	26	0	26	100.0
Data #65-101 (37 forms)				
Cas	27	3	24	88.8
Ibg	34	6	28	82.3
Png	26	3	23	88.4
TOTALS:				
Cas	53	4	49	92.4
Ibg	57	18	39	68.4
Png	52	3	49	94.2

While the citation of forms is restricted to those above, the selection is sufficiently large and varied enough to make it difficult to believe that all these instances of loss of penult length could have been produced by analogical change. Thus, PPH penult length was lost in pre-Png and pre-Cas.

However, the Ibanag situation is more difficult to evaluate. The loss of length in a number of forms from the basic vocabulary leads one to suspect the loss of length historically. But almost a third of the forms have penult length corresponding exactly to PPH length. The data presented are from the northern or Pamplona dialect of Ibg, which had been fairly well isolated on the coast before mass immigration of many other groups into the fertile Cagayan valley over the last few centuries.

The southern Ibg dialect at Tuguegarao, which is surrounded by length-preserving languages (e.g. Isg, Itawis, Kalinga), shows even more forms with length: ki:ray 'eyebrow' (#80), qu:sin 'penis' (#101), qu:bi 'yam' (#25), quli:la 'orphan' (#99), lu:muq 'moss' (#85), ku:tu 'louse' (#13), na-ka:fi 'weak' (#78), qa-ra:ləm 'deep' (#70).

Nevertheless, the agreement between the two Ibg dialects on the loss of length from core vocabulary items (bɿlaŋ 5, vŷlan 6, zɿla 9, ŋɿfən 17, sɿku 21, tŷvu 24, qŷkiŋ 26, qŷlu 27, qŷtoq 28, lɿma 65, vŷkiŋ 68, vŷŋa 69, etc.), appears to indicate a stage of loss, either complete or arrested historically, with length re-introduced on a large number of lexical items through extensive borrowing. The situation of Ibg does not fit well with the traditional tenets of comparative linguistics, and may offer some evidence for the lexical diffusion hypothesis, whereby a change (the loss of length) spreads across the lexicon gradually, rather than affects the entire lexicon at any given stage (Chen and Wang 1975).

The loss of length in some dialects of Kuyonon and Tausug has been discussed by Zorc (1977), and exemplifies how this phenomenon can happen independently in a close-knit family. Tausug and Kuyonon are clearly in the Bisayan family: Tausug is an independent member, in a subgroup with Butuanon (which is accent-preserving), and Kuyonon is a dialect in the West Bisayan chain, very close to Semirara (which is also accent-preserving).

One of the chief factors in the loss of accent is bilingualism and substratum influence from other languages. Samal does not have contrastive word accent, so that Samals who learn Tausug do not learn or distinguish the accentual patterns. Over the centuries this contact of Tausug with Samal has apparently resulted in the loss of such contrastive accent in Tausug on Jolo, while Tausug on Palawan still maintains the historical accent patterns. Kuyonon may have undergone similar influence from the native languages on or around Palawan. (1977:217-18)

Outside of the Bisayan group an example can be found in Mansakan. Kamayo generally preserves the [PPH] accent patterns, while Mansaka and Kalagan only have relics of proto accent Influence from other languages probably enters the picture: Kamayo borders on South Bisayan dialects (which preserve accent), while Mansaka and Kalagan border on Manobo languages (which have lost contrastive accent).
(p.298, footnote 70)

3.2. PARTIAL LOSS OF PENULT LENGTH

The loss of penult length also appears to be the result of language-specific innovations. For example, McFarland (personal communication) has made a study of phonotactic developments in Tagalog (see Table 4),

TABLE 4
Phonotactics in Tagalog

Forms with sequences in the left boxes have changed to patterns indicated in the right boxes. The most preferred pattern is that of the bottom right box.

*u:qi *i:qu	↘ ↘	ǔqí Yqú
*u:wi *i:yu	→	ǔwí Yyú

In some Tag dialects:
Tag -q- < PPH *-q-, *-ʔ-; or *-l- between like vowels.

PPH *-l- > Tag homorganic semivowel between unlike vowels.

Note, however, that the pronoun qi:yo 'yours' has not been affected, probably because it is a functor of high frequency and paradigmatic importance.

which have influenced the accent of some forms. Thus, PPH *bu:lan 'moon' (#6) > Tag búwan, PPH *da:lan 'road' (#8) > Tag dáqan, PPH *pu:liŋ 'blinded by dirt in eye' (#89) > Tag pǔwiŋ, and PPH *qu:ləj 'snake; worm' (#98) > Tag qǔqod 'worm, grub'. (See Dyen 1953, footnote 93.) There are also:

(102) PPH *li:qəR 'neck' > Akl, Bik, Ceb li:qug, Sbl lə:qəy, li:qəy; but Tag lǔqig.

(103) PPH *bitu:qən 'star' > Akl, Bik, Ceb bitu:qun, Sbl bitu:qən, Itneg bitu:wən; but Tag bitǔwin.¹⁴

Similarly, forms in Ilk that appear to be irregular in reflecting penult length involve the laryngeals *q or *h. Thus, PPH *lu:haq 'tear' (#84) > Ilk lǔwa, PPH *baqRu[h] 'new' (#107) > Ilk bǎru, PPH *bitu:qən 'star' (#103) > Ilk bitǔwən. There are also:

(104) PPH *ba:haw 'to cool down (said of food)' > Akl, Bik, Ceb, Han, Tag ba:haw, Bon ba:qəw, Itneg ba:qaw; but Ilk bǎqaw.

(105) PPH *qu:haw 'thirst(y)' > Akl, Tag qu:haw, Kankanay na-qə:wəw, Gaddang ma-qu:waw, Kalamian kuaw; but Ilk qǔwaw.

(106) PPH *tuqlaŋ 'bone' > Akl tú+qan (assimilation and metathesis), Bik tuqláŋ, Itneg tulqáŋ, Ivatan tuqhaŋ; but Ilk tǔlaŋ.

These forms are somewhat problematic in that they appear to be dialect innovations that do not affect all similar vocabulary items, so that there is Tag (dial) ba:qo 'widow' < PPH *ba:lu (#4), or Ilk (dial) ba:gu 'new' (#107). Nevertheless, there is enough patterning in these irregularities to indicate a language- or dialect-specific

innovation that does not serve as counter-evidence for reconstructing penult length on forms #6, 8, 89, 98, 102, 103, 104, 105, etc.

3.3. 'RETENTION' OF THE PPH SHORT PENULT: TENDENCY TOWARDS OXYTONALITY

Cas, Ibg, and Png forms that are cognate with those reconstructed with a short penult for PPH agree in having a short penult vowel. Table 5 lists the 32 forms discussed thus far. Ibg offers no exceptions (although consonant gemination occurs in two forms, see §4.1. below). Png has only one form with a long penult (qasə:wək, which is a language-specific innovation related to PNP *[q]ǎsuk, #62). Cas has only two forms with a long penult (qa-de:yo is a regular secondary development, see §3.4.; da:tus is clearly an isolated irregularity, with d- instead of g- < *Rǎtus).

If Austronesian languages were basically paraoxytone, Cas and Png clearly passed through a stage of oxytonality, and Ibg either tended towards or is tending to this pattern. Length has been re-introduced secondarily (3.4.); and, later, borrowing increased the frequency of forms with long penult vowels.

Languages such as Kuyonon and Tausug - which are now oxytonal, having stress on the ultima even if there is a long penult vowel - also indicate a strong tendency for oxytonality among Philippine languages. Using the Swadesh 200-meaning list as a basis for comparison, Zorc found that 84% of the forms with a single consonant after the penult vowel had a short penult for Png (1978), and 57% for languages such as Akl and Tag (1972).

3.4. DEVELOPMENT OF PENULT LENGTH

Penult length is observed to be the result of the loss of the first member of consonant clusters, viz. *VCCV > V:CV.

(107) PPH *baqRu[h] 'new' > Akl, Ceb baqquh- (metathesis), Bik baqgu, Ilk bǎru, Isg bǎgu, Ifg bǎlu, Ivatan vaqyuq, Kalamian bakluq; Tag ba:go, Ilk (dial) ba:gu, Sbl ba:yu, Png ba:lu. [Cas bǎgu, Ibg bǎgu.]

(108) PPH *haqlu 'pestle' > Akl ha+qu (metathesis), Ilk qalqu, Bik haqlu, Tag ha:lo, Png qa:lu. [Cas qa:lo, Ibg qǎlu, qəllú.]

(109) PPH *laqqaq 'to blanch, boil in water' > Ceb laqqaq, Bik gaqqaq (assimilation), Kalamian lakgak; Tag la:gaq, Png la:ga. [Cas lǎga.]

(110) PPH *qaljaw 'day' > Akl, Ceb qadlaw (metathesis), Ifg qalgo, Bik, Ilk qaldaw, Isg qalgaw, Kalamian kaldaw; Tag qa:raw; Png qa:gəw (compare Kayapa qagg+w, Kéley-1 qaggəw).

TABLE 5
Retention of PPH Short Penult in some Philippine Languages

Proto-Philippine	Pangasinan	Casiguran	Ibanag	Gloss
*ānak	qānak	qānak	qānaq	'child'
*āpu[h]	qāpu	qāpo	qāfu	'grandchild'
*qāsın	qāsın	qāsen	qāsın	'salt'
*[q?]āsuk (PNP)	[qasə:wək]	qāsok	qātuq	'smoke'
*bāRaq	(NC)	(NC)	bāga	'abscess'
*bāRaq (PNP)	bāla	(NC)	bāga	'lungs'
*bāsaq	bāsa	bısa	na-vāsa	'wet'
*bātu	bātu	bıto	bātu	'stone'
*bōRas	bōlas	bōges	[bəggáq]	'husked rice'
*dākəp	(dākəp)	dıkep	(NC)	'catch'
*dānum	dānum	dınom	dānum	'water'
*dāyuy	qa-rāwi	[qa-de:yo]	[qa-rayyú]	'far'
*Rāmut	lāmut	gımot	gāmuq	'root'
*Rātus	lāsus	[da:tus]	ma-gātuq	'hundred'
*ınum	qınum	qınom	qınum	'drink'
*kāRat	kālat	kāget	kāgaq	'bite'
*kāyu	kāyu	(NC)	(NC)	'ye'
*kıta	(qıta)	kıta	(qıttá)	'we (incl.)'
*kūku[h]	kūku	kūko	kūku	'fingernail'
*lāŋuy	lāŋuy	nāŋoy	(NC)	'swim'
*māja	qa-māga	māde	-māga	'dry'
*mānuk	mānuk	mānok	mānuq	'chicken'
*māta	māta	māta	māta	'eye'
*pātay	pātəy	(NC)	pātay-	'kill'
*pıja[h]	pıga	(NC)	pıga	'how much?'
*sākit	sākit	sāket	tākiq	'pain, sick'
*sāŋa[h]	sāŋa	sāŋa	(NC)	'branch'
*tābaq	tāba	tābi	tāva	'fat'
*tādəm	tādəm	tādəm	na-tādəm	'sharp'
*qūdan	qūran	qūden	qūran	'rain'
*[?]ūRat	qūlat	(NC)	qūgaq	'vein'
*[?q]ūnəj	(NC)	qūnəg	qūnəg	'inside; core'

In #107-9, Tag and Png each show compensatory lengthening for the loss of a pre-consonantal *q. [Zorc (1972:46) gives further Tag examples.] In #110, Tag shows similar length as the result of the loss of pre-consonantal *l; other examples include Tag qa:sim < PPH *qalsəm 'sour' (Akl, Ceb qaslum, Bik qalsum, Ilk qalsəm, Kalamian kakləm), Tag tu:sok < PSP *tulsuk 'pierce' (Akl, Ceb tusluk, Bik tulsuk), Tag tu:roq 'point, teach' < PSP *tulduq 'finger' (Akl, Ceb tudluq, Bik tulduq, Kalamian tulduk), Tag qu:nan 'pillow' < PSP *qul(u:)nan (Ceb qunlan, Bik qulu:nan, Kalamian ku-kulunan), and

(111) PPH *ba:liw > 'change' > Ilk ba:liw 'opposite bank', Akl bayluh-, Ceb balyu- 'exchange', Tag qi-ba:yo 'other side' (< pre-Tag *balyu).

However, in 110 Png shows compensatory lengthening as the result of the loss of the first member of a geminate cluster. The evidence of other Pangasinan languages indicates that assimilation changed a PNP *qalgaw to a pre-Png *qaggaw. It appears that a number of forms in Png with penult length can be explained similarly.

The phonotactics of Png and Cas prohibit geminate clusters within a morpheme, but permit other kinds of clusters. Among NPh languages, pluralisation of nouns referring to people, kin, or relationships is accomplished by consonant gemination, sometimes with the addition of CV- or CVC- reduplication. Thus, there is Ilk qūbīŋ 'child' and qubbīŋ or qub-qubbīŋ 'children', qāpu 'grandparent' and qappú or qap-qappú 'grandparents', qa:di 'younger sibling' and qaddí 'younger siblings'; Ifg qūŋa 'child' and quŋ-quŋá 'children'. In Png analogous plurals are formed with the addition of penult length: Png qānak 'child' and qa:nak 'children', qāgi 'younger sibling' and qaga:gi 'younger siblings'. The same appears to be true for Cas qānak 'child' and qa:nak 'children'; however, more data are necessary to see how productive this is. These forms can be explained as the result of the loss of the first member of geminate clusters with subsequent compensatory lengthening, i.e. from PNP *qannák 'children', PNP *qag-qaggi 'siblings', etc.

The Png active nonpast prefix man- requires penult length on inflected forms, e.g. tānem 'plant', man-ta:nəm 'will plant'. The length can also be explained as compensation for the reduction of a geminate cluster in pre-Png; note Kayapa man-tann+m 'will plant' (tan+m), mam-bayyad 'will pay' (bayad), man-qabbuŋ 'will dwell' (qabuŋ), etc.

Similarly, certain adjectives of measure in Cas have length where genetically related languages show gemination of a following consonant: Cas qa:du, Agta qaddu, Gaddang qoddu 'many'; Cas qa-de:ne, Atta qa-ranni, Isg qa-danní 'near'; Cas qa-de:yo, Atta qa-rayyu, Isg qa-dayyú 'far'; Cas ba:ba, Atta qa-babba 'short, low'.

With length thus introduced secondarily, forms from other speech varieties could be borrowed without undergoing assimilation in accent, e.g. Png, Cas ba:sa 'to read', which could have been borrowed from any one of a number of languages with words of the same form (cf. Bik, Ilk, Kpm, Tag ba:sa), ultimately borrowed from Malay báca. Clearcut borrowings include Png da:yat 'sea' < PPH *da:Rat, with the wrong reflexes for expected Png *dǎlat; or Cas hi:lut 'to massage the belly' < PPH *hi:lut, with the wrong reflexes for expected Cas *qǎlot (Cas loses PPH *h). Further instances of borrowings and doublets with penult length in Png are discussed in Zorc 1978.

A third method of introducing penult length is innovation. While Zorc (1978) explains Png bitə:wən 'star' as the result of metathesis of *q < PPH *bitəwən,¹⁴ and Png dəre:wəg 'carabaos' as the result of association with the plural class (discussed above), it is possible that these two forms as well as Png qasə:wək 'smoke' received their length as the result of a language-specific phonological innovation, i.e. pre-Png *-əwə- > Png -ə:wə-. Similarly, Cas da:tus 'hundred' is isolated to one language alone.

4. EVIDENCE FOR PROTO-HESPERONESIAN ACCENT

While it is clear that PPH had contrastive word accent, many of the forms have an historical antecedent, evidenced by phenomena in other Hesperonesian languages.

4.1. PHONETIC EVIDENCE: PHN, PAN *ə IN PENULT

While PPH *a, *i, and *u could be either long or short vowels, *ə could neither be long nor stressed. Note PPH *bǎRas (#36), or the following.

(112) PPH *bǎRay 'give' > Tag bǎgay, Akl bǎgay (dowry), Sbl qǎ-bi, Kpm qǎ-byé.

(113) PPH *bǎkən 'not (so)' > Akl bǎkun, Bik (Daraga) bǎkən, Ifg bǎqon, Blw bǎqən, Itneg bǎkən.

(114) PPH *bǎsay 'waterfall' > Akl, Ceb, Bik bǎsay, Sbl bǎhay, bǎhay, Siocon Subanon bosoy.

(115) PPH *bǎsuR 'full, sated' > Akl, Ceb, Han bǎsug, Bik bǎsug, Ibg bǎttúg, Ifg bǎhug, Sbl bǎhuy.

(116) PPH *dǎket 'stick to' > Akl, Ceb, Bik dǎkut, Tag dǎkit, Ibg dǎkkóq, Ilk dǎkkét, Isg dakkát.

- (117) PPH *dǝŋəR 'hear' > Bik dǝŋug, Ceb dǝŋug, Bon dǝŋəl, Ifg dǝŋol, Ilk dǝŋǝg, Sbl lǝŋəq.
- (118) PPH *dǝpa 'fathom' > Akl, Bik, Ceb, Han, Sbl dǝpa, Isg, Ilk dǝppá, Tag dǝpa.
- (119) PPH *[?]ǝnəm 'six' > Bik qǝnum, Ceb qǝnum, Ibg, Isg qǝnnəm, Bon qǝnəm, Ifg qǝnom.
- (120) PPH *[?]ǝpa 'rice husk' > Akl, Han qǝpa, Kpm, Sbl qǝpa, Tag qǝpa.
- (121) PPH *[?]ǝpat 'four' > Bik qǝpat, Ceb qǝpat, Ibg qǝppáq, Bon qǝpat, Ifg qǝpat, Isg qǝppát.
- (122) PPH *[?]ǝsa 'one' > Blw qǝhə, Bon qǝsa, Ceb qǝsa, Ifg qǝha, Tag qǝsa.
- (123) PPH *qǝtut 'fart' > Akl, Bon, Ceb, Ifg, Han qǝtut, Ibg qǝttúq, Isg qǝttút, Ilk quttút; Kalamian kutut.
- (124) PPH *Rǝbaq 'collapse' > Akl, Ceb gǝbaq, Bik gǝbaq, Ilk rǝbbá, Sbl yǝbaq, Tag gǝbaq.
- (125) PPH *hǝdam 'borrow' > Akl hǝtam, Ceb hǝlam, Cas qǝdem, Han qǝdam, Tag hǝram, Sbl qǝram.
- (126) PPH *hǝmay 'rice' > Akl hǝmay (cooked), Ceb hǝmay (general term), Bik (Pandán) hǝmay (cooked), Ibg, Isg qǝmmáy (rice plant).
- (127) PPH *lǝbən 'bury' > Ceb, Bik, Han lǝbuŋ, Tag lǝbiŋ, Itneg, Bon lǝbən (burial ceremony), Cas lǝbən, Kalinga lǝbon.
- (128) PPH *lǝməs 'drown' > Ceb lǝmus, Bik lǝmus, Ilk lǝmmós, Sbl lǝməh.
- (129) PPH *lǝŋa 'sesame' > Bik, Ceb lǝŋa, Tag lǝŋa, Ibg, Ilk lǝŋǝá, Isg lǝŋǝá, Itneg, Kankanay, Sbl lǝŋa.
- (130) PPH *lǝpad 'to fly' > Akl lǝpad, Ceb lǝpad, Tag lǝpad, Sbl lǝpad, lǝpar.
- (131) PPH *lǝsuŋ 'mortar' > Ceb, Han lǝsuŋ, Bon lǝsuŋ, Blw lǝhoŋ, Cas lǝsoŋ, Ifg lǝhuŋ.
- (132) PPH *lǝtaw 'float' > Bik lǝtaw, Ceb, Sbl lǝtaw, Ilk lǝttáw, Png lǝtaw.
- (133) PPH *lǝǝhaq 'nit, louse egg' > Bik, Ceb lǝǝsaq, Tag lǝǝsaq, Isg lǝǝsa, Ibg lǝǝta, Kpm lǝǝqas, Png lǝǝqəs; Ilk lǝǝqá, W. Bukidnon Manobo lǝǝhaq, Itbayaten lǝǝhaq, Kalamian lǝǝs.
- (134) PNP *kǝna 'hit, strike (target)' > Png kǝna, Itawis kǝnná, Ibg kǝnná-n; Ilk kǝnná 'ensnare', Isg kǝnná 'to, into'.

(135) PPH *pěnuq 'full' > Akl, Ceb, Han, Sbl pũnuq, Ilk punnú, Ibg fənnú, Bik pǎnuq, Isg pannú, Png pǎnu, Kalamian punuk.

(136) PPH *tǎlu 'three' > Bik, Bon, Ceb, Ifg; Sbl tũlu, Ibg, Isg təllú, Ilk tallú, Cas qə-tǎlo, Png tǎlu.

Note that even after secondary changes took place (such as sound change or assimilation) yielding a reflex of a, i, or u for *ə, the vowel still retains the historical shortness. Thus, Tag pũnoq, Sbl pũnuq < PPH *pěnuq (#135) reflect assimilation, Akl, Han qũpa, Kpm qǎpa, Tag qĩpa < PPH *[ʔ]ǎpa (#120) reflect sound change, and Bik, Ceb lĩsaq, Tag lĩsaq, Kpm lĩqas < PPH *lisěhaq reflect syncope; all retain the short penult vowel.

DuBois (1976) reports for Sarangani Manobo that except on a few functors stress regularly falls on the penult, unless the penult vowel is ə and the last vowel is other than ə. Thus, Sarangani bəgás (#32), bəgáy (#112), qəpát (#121), ləsúq (#131); but qénəm (#119), lébən (#127), dékət (#116). Vowel length only occurs on a penult vowel other than ə immediately before a pause: wədad dɪni so nəsa:yo [no gloss]. If there is an ə in the penult and in the last syllable, the consonant following the penult ə is lengthened: ibəg dɪn loməm:ləm [no gloss given] and nəsayo sə wədad inənəŋ:ən [no gloss]. If the penult vowel is ə and the last vowel is other than ə, no lengthening occurs. For Sarangani Manobo, then, length is a feature of intonation, affecting penult vowels other than ə, or consonants if the penult vowel is ə. The phenomenon of consonant length will be discussed in §4.5.

Malay gives evidence that the Philippine situation with regard to a penult *ə is inherited from at least PHN. Malay regularly has stress on the penult unless the penult vowel is ə: Malay bərás 'husked rice' (#32), bərí 'give' (#112), rəbáh 'fall down' (#124), ləmás 'stifled, drowned' (#128), ləsón 'mortar' (#131), kəná 'hit, strike' (#134), pənúh 'full' (#135).

It is therefore necessary to revise the assumption about PHN accent: if accent or stress fell regularly on the penult, it could only do so if the vowel was other than PAN *ə; if it was PAN, PHN *ə, accent or stress fell on the ultima.¹⁵

4.2. MORPHOLOGICAL USE OF ACCENT

Among Philippine languages accent is contrastive in both inflection and derivation. Affixes must be marked for the kind of influence they have on accent in forming new words. This is discussed in some detail for Bikol in Stevens 1969:175-82, and for Bisayan in Zorc 1977: 64-9, and can only be summarised briefly here. Toba Batak has a

morphological use of accent parallel and cognate in a number of regards, so that contrastive morphological accent must be posited for Proto-Hesperonesian.

4.2.1. Same-Accent Affix

With affixes of this type, the derivation has the same penult accent (long or short) as the stem. Ilk, Tag, Han bi:laŋ 'to count', Ilk bila:ŋ-ən, Tag bila:ŋ-in, Han bila:ŋ-un 'to be counted'; Ilk, Tag, Han qāsın 'salt', Ilk, Tag, Han qasın-an 'to be salted'. Such affixes may be marked PPH *-ən(∅) 'direct passive' and PPH *-an(∅) 'local passive'.

4.2.2. Penult-Length Affix

With affixes of this type, the derivation always has penult length, regardless of the accent pattern of the stem. Akl, Ceb sākay 'ride' + ka(+)- *mutual action* → ka-sa:kay 'fellow passenger'; stems with long penult vowels would then yield derivatives with long penult vowels, e.g. Akl, Ceb kla:si 'class' + ka(+)- → ka-kla:si 'classmate'. Bik ma--un (+) 'very' (intensive) + li:put 'cold' → ma-lipu:t-un 'very cold', + kūsug 'strong' → ma-kusu:g-un 'very strong'. It is precisely this kind of affix that explains the seemingly irregular forms Tag ma-la:yoq, Kpm ma-ra:yuq 'far' (#40); ma(+)- is a special prefix added to some adjectives of measure, e.g. Tag lāyoq 'go far away' / ma-la:yoq 'far', mag-lāpit 'get close to one another' / ma-la:pit 'near, close', bīlog 'round' / ma-bi:log 'round, circular'.¹⁶

4.2.3. Penult-Shortness Affix

With affixes of this type, the derivation always has penult shortness, regardless of the accent pattern of the stem. Akl ta:pus 'finish' + manug(+)- *immediate future* → manug-tāpus 'about to finish'; Ceb ka:qun 'eat' + nag(+)- *imperfective* → nag-kāqun 'is eating'; stems with short penult vowels would then yield derivatives with short penult vowels, e.g. Akl qīnum 'drink' + manug(+)- → manug-qīnum 'about to drink', Ceb qīnum 'drink' + nag(+)- → nag-qīnum 'is drinking'. Bik na:pa(+)- *causative past* + hu:lug 'fall' → na:pa-hūlug 'was dropped', + lūwas 'go out' → na:pa-lūwas 'made to go out'.

4.2.4. Reverse Affix

Some affixes introduce a reverse effect on the length or shortness of the derivation: if the stem has penult length, the derivative will have penult length. Bik para(++)- *professional agent* + lu:tuq 'cook' → para-lūtuq 'a cook', + qūma 'farm' → para-qu:ma 'farmer'; Akl

pa+ɑ(+→)-, Ceb pala(+→)- *habitually doing* [X] + ka:qun 'eat' → Akl pa+ɑ-kǎqun, Ceb pala-kǎqun 'always eating', + qǎnum 'drink' → pa+ɑ-qi:num, Ceb pala-qi:num 'always drinking, a drunkard'. Tag uses this accent type to differentiate nouns from their verbal counterparts, e.g. Tag ba:sa 'read' / ba:-basa:h-in 'will be read' / bǎ-basǎh-in 'reading matter', qǎnum 'drink' / qinǔm-an 'to be drunk at' / qinu:m-an 'place for drinking'; note that the verb follows the stem accent, while the noun shows the reverse affix.

4.2.5. Zero Accent Suffix as a Stative Morpheme

Certain forms are identical except for accent among Central Philippine languages (Akl, Ceb, Bik, Tag). In these cases, the shortness of the penult can be considered the result of a zero suffix of the penult-shortness type (4.2.3.), i.e. *-(→)#. It is stative in meaning: Akl, Bik, Ceb, Tag ba:yad 'to pay', bǎyad 'paid'; Akl, Ceb ta:pus, Tag ta:pos 'to finish', Akl, Ceb tǎpus, Tag tǎpos 'finished'. Stems with short penult vowels can also be considered as having this zero suffix: Akl, Ceb, Tag pǎtay 'to kill', Akl, Ceb, Tag pǎtay 'dead'; Akl, Ceb dǎkup 'to catch', Akl, Ceb dǎkup 'caught'.

I am not aware of such an affix among Northern Philippine languages, but it may be in evidence on certain forms that appear to disagree on the placement of accent, e.g. Ilk, Kalinga qa:min, Atta, Ibg, Isg ŋ-a:min 'all' but Blw, Ifg, Png qǎmin 'all', when compared with Akl qa:min 'to use everything up', qǎmin 'all used up'.

Toba Batak offers evidence that this was a feature of Proto-Hesperonesian accent, although the phenomenon involves shift in stress rather than vowel length: pǐttu 'door' or mamǐttu 'to close', but pittú 'closed', tánom 'to bury', but tanóm 'buried'.

Toba Batak also appears to have forms cognate with the Tag and Kpm examples cited above (§4.2.2. and #40): daú 'to be far', but ma-dáu 'far'.

Thus, cognate affix types in Toba Batak and among Philippine languages require the establishment of morphological accent for PHN:

- 4.2.1. SAME-ACCENT: húndul + -an(∅) → hundúl-an [no gloss]
- 4.2.2. PENULT-ACCENT: daú 'far' + ma(+)- → ma-dáu 'far'
- 4.2.3. ULTIMA-ACCENT: dénggan 'beautiful' + -an(→) → denggan-án 'more beautiful'
- 4.2.5. ZERO STATIVE SUFFIX: tánom 'bury', tanóm 'buried'.

4.3. VOCATIVES

Many of the kinship terms are reconstructed for PPH with a short penult vowel, e.g. PPH *[?]ǎnak 'child' (#30) or PPH *[?]ǎpu[h?] 'grand-child' (#31). There are further:

(137) PPH *[?]ǎma[h?] 'father' > Akl qǎmah, Ceb qamǎh-an; Bik, Sbl qǎmaq; Bon, Ifg, Ilk, Isg, Tag qǎma.

(138) PPH *[?]ina[h?] 'mother' > Akl qǎnah, Ceb qinǎh-an; Bik qǎnaq; Bon, Ifg, Ilk, Isg, Tag qǎna.

There is considerable evidence that the accent on these forms is the result of association with a vocative intonation, still active in many Philippine and Hesperonesian languages. Note Hanunoo qa:ma 'father' (reference), but qǎmaq 'father' (address), qi:na 'mother' (reference), qǎnaq 'mother' (address); Ifugao qǎma 'father' (address), but qa:ma 'father' (reference). When the Ilk kin terms with short penult vowels are inflected, they receive penult length: qǎma 'father', but ni qa:ma 'Father's'; qǎpu 'grandparent', but da qa:pu 'the grandparents'; qǎna 'mother', but kǎni qi:na 'to Mother'; etc. In Akl and Ceb there are alternate forms (to #137-8): ta:tay 'father' and na:nay 'mother'; in address they are spoken tǎtay and nǎnay.

In Toba Batak the vocatives of some kinship terms undergo change in stress (to the ultima) and have an added -ŋ: áma 'father' becomes amǎŋ, ína 'mother' becomes inǎŋ, háha 'brother' becomes hahǎŋ, etc. Note that the Hanunoo and Toba Batak forms for 'father' and 'mother' are cognate in every regard. The only Toba Batak pronoun that does not have penult stress is hamú 'you (pl.)'. Van der Tuuk (1971:219) feels that it is due to association with the suffix -mu; however, since it is the one pronoun used with or in place of vocatives (1971:150), it probably received the accent accorded all vocatives.

Macdonald and Soenjono (1967:31-2) report that in Indonesian or Malay stress regularly falls on the last syllable of vocatives, especially on personal names.

It must therefore be posited that PHN marked vocatives in two ways: by (1) accent on the final syllable, and/or (2) addition of PHN *-ŋ, *-ʔ, *-h, or *-y, e.g. PHN *áma 'father' > Han, Toba amǎŋ, Hiligaynon qamáy, Akl qamáh, Sbl, Bik qamáq. Madurese, for example, shows final glottal stop on most kin terms: əpaʔ 'father', əmaʔ 'mother', kakaʔ 'older brother', aliʔ 'younger sibling', bhibbiʔ 'aunt'. This second marking feature accounts for the discrepancies in reconstructing the final consonant of several kin terms (#30, 31, 137, 138).

4.4. SYNTACTIC EVIDENCE: FORM CLASSES AND FUNCTORS

Certain accent patterns appear to be based on analogies within form classes, where groups of words are part of a grammatical or semantic paradigm, and therefore received the same suprasegmental markers. Most of these forms appear in sentence-initial or clause-emphatic position, and most can be uttered independently. Historically they must have had the same order of occurrence, and intonation contours such as a change in pitch must have made them oxytone, as they are today in a large number of languages, even in those without contrastive accent. In addition, many functors are monosyllables (such as noun or aspect markers) that are un-accented or de-accented, and as such have undergone sporadic or otherwise irregular sound changes. Thus, functors that are composite, i.e. a string of unaccented monosyllables, would still be unaccented, although they may have developed language-specific secondary accent patterns (see Schütz 1977 for Fijian).

4.4.1. Nominative/Topic Pronouns

(139) PPH *[?]ǎku 'I' > Akl, Bik, Ceb, Han, Kpm qǎku, Tag qǎko, Ilk sǎk.

(140) PPH *[?]ǎkaw 'thou' > Akl, Ceb, Isg, Tag qǎkaw, Ibg s-ǎkaw; doublet PPH *[?]ǎka 'thou' > Bik qǎka, Sbl h-ǎka, Ilk s-ǎka.

(141) PPH *sǎya 'he/she' > Bik, Bon, Ceb, Han, Knk, Tag sǎya, Ifg, Sbl hǎya.

(142) PPH *kǎmi 'we (excl.)' > Akl, Bik, Ceb, Han kǎmi, Bon, Ifg, Ilk, Isg da-kǎmi, Kpm qi-kǎmi. [See PPH *kǎta 'we (incl.)' (#47).]

(143) PPH *kǎmu 'you (pl.)' > Akl, Bik, Ceb, Han kǎmu, Ibg si-kǎmu, Sbl (Santa Cruz) hi-kǎmu. [See PPH *kǎyu 'you (pl.)' (#46).]

(144) PPH *sǎda 'they' > Ceb, Tag sǎla, Sbl hǎla, Yogad sǎra, Cas sǎde.

4.4.2. Deictics

Many deictics are morphologically complex, yet generally oxytone. Thus, Ilk dǎtuy 'here', dǎta 'there', didǎy 'yonder'; Ifg hǎtu 'here', hǎna 'there', hǎdi 'yonder'; Kpm qǎni 'this', qǎyan 'that', qǎta 'yon'; Akl qǎya 'here', qǎnaq 'there', rǎtu 'yonder'; Han sǎtay 'here', sǎyun 'there'; Sbl qǎti 'here', qǎsun 'there', qǎtaw 'yonder'; etc. Only a few can be reconstructed for PPH:

(145) PPH *[?]ǎni 'this' > Bik, Kpm qǎni, Ceb k-ǎni; Manobo *ini 'here'.

(146) PPH * $[?]$ ŷdi 'this' > Isg qŷdi, Tag qŷri, Ceb k-ŷri.

(147) PPH * $[?]$ ŷ[y]an 'that' > Bik, Kpm, Tag qŷyan, Gaddang, Isg yan.

4.4.3. Interrogative and Negative Particles

(148) PPH * $[?]$ ǎnu 'what?' > Bik, Itneg, Manao, Akl qǎnu, Tag qǎno.

Most interrogatives are based on PPH * $[?]$ ǎnu, although a number of morphophonemic changes have occurred, e.g. Tag si:no < PPH *si- $[?]$ ǎnu 'who?' (syncope and compensatory lengthening after loss of *ʔC, §3.4.), Akl sinqu Id. (with syncope, then metathesis of resultant *ʔn cluster); note Itneg, Luba siqǎnu which reflect the full form reconstructed for PPH. [See PPH *pŷja[h] 'how many?' (#54).]

(149) PPH *hǎdi $[?]$ 'not, do not!' > Ibg qǎri, Bon, Blw, Ifg qǎdi, Bik (archaic) hǎri, dǎqi (metathesis), Kpm qǎliq, Tag hindíq (assimilation of *ǎ to i, with nasal accretion); Binukid Manobo hadiq. [See PPH *bǎken 'not so' (#113).]

4.4.4. Numbers

The numbers from 'one' through 'nine' [as well as 'hundred' (#42)] are reconstructed for PPH with short penult vowels: PPH * $[?]$ ŷsa, * $[?]$ ǎsa 'one', *dǎha 'two', *tǎlu 'three', * $[?]$ ǎpat 'four', *lŷma 'five', * $[?]$ ǎnem 'six', *pŷtu 'seven', *wǎlu 'eight', *sŷyam 'nine'. Cognates are found throughout the archipelago and need not be listed here. The short penult in four of the forms is due to the *ǎ (§4.1.); analogy with these may have influenced the others, although it is possible that they received this pattern through a counting intonation (such as that described for Akl in §2.1.).

4.4.5. Particles

Zorc (1977:191, 248) describes an unprecedented change of PPH *s > Waray, Tausug, Butuan h on some markers. Ilokano has a noun marker qŷti, more commonly ti, while Aklanon, Palawano, and Aborlan have an oblique noun marker qit; all of these could have been derived from a deictic * $[?]$ ŷtŷ, which lost either its initial or final vowel when it became a functor devoid of spatial referentiality. Zorc (1977:60) shows how *n, *q, *h, and vowels drop in Bisayan rapid speech among function words, e.g. ru qi:mu ŋa 'your [nominative X]' → r-i-ŋ in Aklanon, didtu sa 'there at' → didtu-s in Cebuano, etc. The Oceanic marker o is ambiguously derived from a PAN * $[?]$ ǎ, * $[?]$ ǎ, or (unlikely) * $[?]$ ǎ. All of these changes are plausibly derived from un-accented or

de-accented markers in phrase-early position,⁹ thereby indicating that accent or intonation did play some role in PAN, PHN, PPH sound change.

4.5. FURTHER EVIDENCE FOR HESPERONESIAN OXYTONALITY: GEMINATION

Dempwolff (1937:§61.c.5) dismissed accent as a factor in influencing sound changes, although he was aware of consonant gemination after PAN *ə (1924-25:§51,59,66). However, the inherent shortness of any vowel - not just PAN *ə - has resulted in consonant gemination in a number of languages. Note Ilokano, Ibanag, and Isneg examples after PPH *ə (#116, 117, 119, 121, 123, 124, 126, 128, 129, 132, 134, 135, and 136).

This phenomenon can also be found in the Manobo group of Southern Philippine languages, none of which preserve contrastive accent: Kagayanen, Obo ləbbəŋ 'bury' (#127), Kagayanen pannuq 'full' (#135), Obo bəggəy, Tagabawa bəgge 'give' (#112), Kagayanen lassuŋ 'mortar' (#131). Although most instances of such consonant length occur after PPH *ə, the remaining instances occur after an historically reconstructable short vowel, e.g. Tagabawa qəmma 'father' < PPH *[?]āma (#137), qinna 'mother' < PPH *[?]īna (#138), Obo kappal 'thick' < PPH *kāpal (Tag, Kpm kāpal).

Madurese shows double consonants after PAN *ə, as in ləsson 'mortar' (#131), which Nothofer (1975:47-9) attributes to the immediate proto-language, Proto-Malayo-Javanic (PMJ). However, Stevens (1966:155-6) lists several forms in Madurese with unexplained geminate clusters; Nothofer (1975:184-8) also attributes these to PMJ. Following what has been said regarding gemination among Philippine languages, some of the instances of gemination in Madurese may be the result of a PHN unaccented or short penult vowel.

Madurese	Other Evidence
ləŋŋoy 'swim'	PPH *lāŋuy (#48) 'swim'
bukka? 'open'	Akl būkaq 'open', Ilk būka 'untie, undo'
assin, accin 'salt'	PPH *qāsīn (#32) 'salt'
bassa, bacca 'wet'	PPH *bāsāq (#34) 'wet'
pittu 'seven'	Akl, Han, Kpm, Ilk pītu 'seven'
ballu 'eight'	Ceb, Bik, Han, Kpm, Ilk wālu 'eight'
alle 'move'	Tag hāle, hāliq 'move'
attas 'above'	Akl, Tag tāqas 'high, above'
tuzzhu 'aim for'	Akl tūruq, Ilk tūdu 'indicate, point out'
labbhu 'throw oneself down into water'	Akl tābuq 'to hack (knife) downwards'
issi 'fill, contents'	Toba Batak isī-s 'contents'

Some of the Madurese forms are functors, e.g. azzha? 'don't', ðimma 'where at?', kamma 'where to?', ðissa 'there', and would therefore have been oxytone or unaccented (§4.4.). A number of forms are not cognate with those found in Philippine languages, but may have originally been oxytone due to association with a specific form class (§4.4.) or morphological use of accent (§4.2.):

Madurese	Philippine Counterparts
kabbhi 'all'	Akl tǎnan; Tag lǎhat; Ifg qǎmin 'all'
bussu? 'rotten'	Akl tǎnut; Tag bǔlok; Ilk na-rǔkup 'rotten'
luppa 'forget'	Akl lǎpat; Bik lǎgaw 'forget'
massa? 'ripe'	Akl hǎnug; Ilk lǔqum 'ripe'

Some, of course, can be explained by assimilation, e.g. matta 'raw' < PHN *ma-[?]a(n)ta, bukka? 'open' < PHN *bu(ŋ)ka?, attas 'above' < PHN *[?]a(n)tas, issi 'fill, contents' < PHN *[?]əsi; but there still is a residue where accent may be postulated as the conditioning factor.

Thus far, three Madurese forms have been found which serve as counter-evidence:

(150) Akl tǎ:ŋit, Bik, Ceb, Han, Ilk, Isg, Sbl, Tag la:ŋit 'sky, heaven' < PPH *la:ŋit; but Madurese laŋŋe? 'sky'.

(151) Akl ka:lih 'dig (into rice pot)', Ceb ka:lih- 'dig up (root crop)', Han, Ilk ka:li 'to dig, excavate', Tag ka:li 'ditch' < PPH *ka:li[h] 'dig'; but Madurese kalli 'dig'. [Note Bikol kǎli 'ditch'.]

(152) Tag ha:saq, Han qa:saq, Sbl qa:haq, Ilk qa:sa 'to whet', Bon qasa:q-an 'whetstone' < PPH *ha:saq 'whet, sharpen'; but Madurese assah 'whet, grind down'. [Note Tag hǎsaq 'sharpened, whetted'.]

Although recourse might be made to morphological accent for #151-2, all three forms are certainly problematic. No theory based on accent, analogy, continuation of an original distinction, borrowing, or the like can explain all of the Madurese forms. Nonetheless, the hypothesis that at least some of the Madurese data with unexplained geminates are due to a preceding short penult vowel (analogous to gemination after *ə) is reasonably sound.¹⁷

Perhaps some light may be thrown on the issue by studying gemination after an antepenult vowel, as in:

(153) Makassarese paññiki, Ilk panni:ki, Ifg pannǎqf-n-domdom; Bik, Isg pani:ki, Mongondow poniki '(fruit) bat' < PHN, PPH *paññi:ki (?).

Clearly the role of consonant gemination in PHN and PAN requires detailed study and analysis.

5. CONCLUSIONS AND DIRECTIONS

Contrastive word accent is reconstructed for the parent language of several genetically-diverse Philippine languages, herein called 'Proto-Philippine'. Although Philippine accent primarily involves vowel length or shortness in the penultimate syllable, several phenomena of stress accent are found outside of the Philippines which are ultimately cognate (e.g. accent on the ultima when the penult vowel is PHN *e, word-final accent on vocatives, morphological accent, unaccented function words, and consonant gemination after an original short vowel). Contrastive word accent must then be posited for Proto-Hesperonesian, possibly for PAN as well.

It has been shown that some languages, e.g. Pangasinan and Casiguran, developed vowel length secondarily. However, the wide variety of forms reconstructed with penult vowel length for PPH cannot be explained as the result of any known analogy, sound change, the reduction of clusters, or the like. Similarly, the reconstruction of PPH forms with a short penult vowel is evidence for the oxytonality of at least some forms in PHN.

In the original draft, I concluded:

It is probable that the phenomenon of vowel length and shortness is a particular Philippine innovation which developed from PHN contrastive stress: if stress fell on a penult vowel before a single consonant, that vowel was lengthened; if stress fell on the ultima, the penult vowel was phonetically short.

Dahl (personal communication, 10 March 1978) has commented:

I have always wondered if the Philippine accents should not reveal some reality in the proto-language, because it is difficult to imagine how different accentuation could develop from an old non contrastive accent on the penult. In your conclusion you consider stress as PAN and quantity secondarily developed from it. That is quite possible. But in many IE languages quantity has disappeared and stress remains. Therefore quantity could be original and stress developed secondarily. The different stress systems of today could even be more comprehensible if stress was not original What is important is that PAN had supra-segmental contrastive features. The paroxytone stress in so many modern languages must then be due to a drift working when the original opposition was lost. In surroundings with consequent paroxytone stress, Malay has maintained the stress on the last syllable when the penult had e. And you have shown that penult e could not be accentuated because it could not be long. This also could indicate that quantity was the original contrast.

The search for PAN accent has just begun. I encourage and elicit the help and assessments of fellow Austronesianists in turning our attention to suprasegmentals.

N O T E S

1. I am indebted to the Staff Development and Research Advisory Committee of Darwin Community College for their financial assistance, and to my colleagues in the School of Australian Linguistics (Kevin Ford, Barry Alpher, Karen Courtenay, Gnani Perinpanayagam, and Neil Chadwick) for their support of my work. This revised draft owes much to SICAL participants such as Blust, Dahl, Dyen, Flora, Haslev, Li, Lynch, Nothofer, Pawley, Prentice, Reid, Schütz, Sneddon, and Steinhauer, whose comments made me aware of data and deficiencies relevant to the paper presented in January 1978. Mathew Charles and Curtis McFarland each deserve a special vote of thanks for their helpful and informative comments, which have been incorporated throughout this draft.

2. Zorc (1972) took stress to be the contrastive feature, with length as a secondarily developed phenomenon. This paper views length as the primary contrastive feature at the word level, with stress generally predictable from the placement of length (or shortness).

3. Some of the earliest Spanish documents indicated accent by certain abbreviations after the citation, rather than by actual accent marks. By the late 1800s, some conventions appeared which were later adopted by the Institute of National Language.

Phonetic	Early Spanish Notation	INL
[bá:ga]	baga <i>pp.</i> = <i>penultima producta grave</i>	baga 'embers'
[bá:gaq]	baga <i>ppa.</i> = <i>penultima producta pausal</i>	bagà 'lungs'
[bǎgá]	baga <i>pc.</i> = <i>penultima correpta grave</i>	bagá 'really?'
[bǎgáq]	baga <i>pca.</i> = <i>penultima correpta guttural</i>	bagâ 'abscess'

Note that the glottal stop is treated as an accent. Laktaw introduced a further symbol for a post-consonantal glottal stop, where the current convention is to use a hyphen:

Phonetic	Laktaw	INL
[gabqí]	gabĩ (<i>diaeresis</i>)	gab-í 'night'

Some early sources that follow these conventions include:

San Buena Ventura, Pedro de 1613 *Vocabulario de Lengua Tagala*.
Manila.

Fernandez Cosgaya, Lorenzo 1865 *Diccionario Pangasinan-Español*.
Aumentado, ordenando y reformado por Pedro Villanueva. Manila:
Colegio de Santo Tomás.

Gisbert, Mateo 1892 *Diccionario Bagobo-Español*. Manila: Ramírez.

Serrano Laktaw, Pedro 1914 *Diccionario Tagalog-Hispano*. Manila:
Santos y Bernal.

Noceda, Juan de and Pedro Sanlucar 1860 *Vocabulario de la Lengua*
Tagala. Manila: Ramirez y Giraudier.

4. Charles (personal communication, 16 December 1977), after reading a preliminary draft of this paper, recanted the statement quoted here. It was based on personal communications from Zorc and Wolff, and on a misunderstanding of Dyen and McFarland's use of accent (1970). Nonetheless, I believe Charles was the first to sense a 'new atmosphere' among Austronesianists, and I wish to give him credit for this insight.

5. Hockett felt very strongly on this point:

The fact that an accent (or the like) falls predictably on a certain syllable of the word does not render the accent nonphonemic. A feature of articulation is phonemic - distinctive, relevant, patterned - if its occurrences help tell the hearer what the speaker is saying. Suppose that (as in Czech) the first syllable of each word is stressed. Then the occurrences of stress tell the hearer something very important: they tell him how many words the speaker utters and where each one begins. Czech stress is thus phonemic. (Charles F. Hockett, personal communication, 17 January 1974)

Bolinger (1972a) employs the term contrastive to signal the importance of accent.

6. Bolinger (1972b:644) uses different terms: "This is one more reason why I insist on the distinction between accent and stress. Stress belongs to the lexicon. Accent belongs to the utterance." I do not mean to confuse the issue by differing with his terminology; rather I am using terms more familiar to Philippine scholars, while fully accepting the distinction he insists upon. The danger in employing the term stress at the lexical level for Philippine languages is that it reinforces the fallacy that pitch accent (also called stress) is the primary feature, while it is clearly length that matters. [See §2.1. and footnote 2.]

7. At the conference, John Lynch presented me with some data on these languages. Motu apparently has what I would call morphological accent: hahíne 'woman' / háhine 'women'; kekéni 'girl' / kékeni 'girls'. Lenakel apparently has contrastive word accent: néva-k 'my thigh' / netá-k 'my blood'; ásis 'fall down (as of a house)' / asís 'swollen, full'; kápwas 'it is not wanted' / kápás 'axe'; ámmum 'drown (intr.)' / amnúmw 'drink'; álmən 'imitate, copy' / almél 'be mad'.

8. Dahl (personal communication, 10 March 1978) points out that accent in Malagasy falls on what was historically the penult, but has since become contrastive: Mlg tánana 'hand' < PAN *taŋan, tanána 'village' < PAN *tanaq-an. Since Malagasy separated from other Hesperonesian languages quite early, it would appear that the regularity of penult accent was a phenomenon (shared innovation?) of some Hesperonesian languages at least two millennia ago. This need not serve as counter-evidence to the hypothesis presented herein, since it could be an indication of an early loss of contrastive accent that has been happening independently since prehistoric times. [Note the situation of Kuyonon and Tausug discussed in §3.1.] Similarly, it was believed that Palau lost all but accented vowels; since it is the penult vowel that is retained, this seemed to be good evidence that accent fell regularly on the penult. However, Flora (personal communication, 10 March 1978) has shown that final vowels are retained morphophonemically: [báɛ] 'stone' / [bɛú-ɪ] 'his stone', [máɛ] 'eye' / [mɛú-ɪ] 'his eye', [ʔím] 'hand' / [ʔímá-ɪ] 'his hand', [ɛíŋ] 'ear' / [ɛíŋá-ɪ] 'his ear', etc., so that the underlying forms are /baɛu/ < PAN *batú 'stone', /maɛa/ < PAN *maCá, /ʔíma/ < PAN *líma 'hand', /ɛíŋa/ < PAN *Caíŋa 'ear'. Two observations can be made: (1) both penult and final vowels are retained in Palau, without prejudice to original accent, and (2) inflected forms in modern Palau are oxytone. Clearly, then, Palau does not offer evidence that accent fell regularly on the penult in PAN.

9. Bolinger (1972) discusses the importance of accented vs de-accented forms, and in an earlier work (1968:61-3) shows how function words reduce or lose their vowels when they are un-accented (see §4.4.).

10. Some symbols and conventions used herein are:

- + = [ɣ], a voiced velar spirant with only some friction (in Akl).
- q = glottal catch [ʔ] in synchronic data, but *q (presumably a post velar stop) in reconstructions.

- ? = reconstructable [ʔ] glottal catch, as opposed to either *q or *∅ zero vowel onset.
- [h] = a tentative reconstruction, e.g. PPH *saŋá[h] is tentatively reconstructed with final -h based on morphophonemic evidence from Bisayan (Zorc 1977:206) which generally corresponds to Formosan evidence for *s.
- [hʔ] = an ambiguous reconstruction, e.g. PPH *[ʔ]ǎpu[hʔ], where evidence points to either *[ʔ]ǎpuh or *[ʔ]ǎpu? 'grandchild'.
- NC = form is not cognate.
- (+) = penult-length affix (§4.2.2.), or one that 'shifts' the accent to the penult.
- (→) = penult-shortness affix (§4.2.3.), or one that 'shifts' the accent from the penult to the final syllable.
- (↔) = reverse affix (§4.2.4.), or one that 'shifts' the accent to the opposite syllable.

11. To date, after approximately 400 hours of research, some 278 etyma have been reconstructed with penult length, and 210 with penult shortness. As research progresses, easily twice this number will come to light. I require evidence from at least two non-contiguous Northern Philippine (Cordilleran) and two Southern Philippine (Sulic) languages. The test languages include:

- Akl Aklanon, Bisayan (SPh)
- Bik Bikol (Naga dialect unless otherwise specified) (SPh)
- Blw Balangao (NPh)
- Bon Bontok (NPh)
- Ceb Cebuano, Bisayan (SPh)
- Han Hanunoo (SPh?)
- Ifg Ifugao (Batad dialect unless otherwise specified) (NPh)
- Ilk Ilokano (NPh)
- Isg Isneg (NPh) [usually from Vanoverbergh 1972]
- Kpm Kapampangan (NPh)
- Sbl Sambal (Botolan dialect unless otherwise specified) (NPh)
- Tag Tagalog (Manila dialect) (SPh)

I do not consider Ibanag (Ibg) a reliable witness for reasons discussed herein, but use an abbreviation due to the frequency of citations, as also for Casiguran Dumagat (Cas) and Pangasinan (Png). Data from Mansaka or Kalagan (SPh) are also cited as reliable witnesses of contrastive vowel shortness or vowel length respectively, but the language

names (as well as those of all other languages used) are spelled in full.

12. The tree diagram is considerably eclectic and impressionistic; it is revised from that presented in Zorc 1978 or Zorc 1977:32-4. I have profited much from discussions with Dyen, Reid, McFarland, Elkins, Allison, Gallman, and Charles; but the views - and the errors - are mine. While there can be much discussion and disagreement about the position of some languages (e.g. Mangyan, Dumagat, and Ivatan), it is clear that the test languages represent two widely and genetically divergent groups, and that the etyma reconstructed can be reliably assigned to a 'Proto-Philippine'. The position of a mesolanguage such as PPH within PHN and PAN has yet to be determined, but need not be debated here.
13. Although redundant, I use the convention of marking a short penult in order to assist in the reading of citations. I personally find it difficult to 'read' a list such as Tagalog, Kuyonon, Kalamian, Malay mata 'eye' when the phonetic realisations are Tag [mátá], Kuy [matáq], Kalamian [mátáq], Malay [máta].
14. An alternate explanation for the accent of Tag bitúwin is that it is a reflex of a doublet, PPH *bitəwəŋ 'star'; note Buhí Bikol bitəwón (with regular metathesis of the *Cq). This explanation also would account for the length in Png bitə:wən. However, most Philippine evidence points to the reconstruction cited at #103; it certainly agrees with McFarland's observations on Tagalog phonotactics, Table 4.
15. Tayal may offer such evidence, since Tayal has the same kind of stress pattern as Malay (it falls on a vowel other than ə in the penult, it falls on the ultima when ə appears in the penult), e.g. Tayal qəbá? 'palm of hand', tətú? 'trap'. [Yamada and Liao (1974:110)] However, I have not been able to locate any cognates in Tayal; most forms seem to have undergone assimilation or vowel change so that cognate forms have penult accent.
16. Tag tǎqas 'tall, high', lǐqit 'small, little' always have a short penult, even in derivations, in accordance with the Tag phonotactic rules described in Table 4 and in §3.2.
17. That Madurese would reflect only sporadic retention of evidence of PHN oxytonality is comparable to the sporadic retention of PPH short

penult vowels in Mansaka. Note Mansaka bǎgaq 'boil, abscess' < PPH *bǎRaq, bǎyaw 'brother-in-law' < PPH *bǎyaw, bǎyag 'satisfied, full' < PPH *bǎhaR, gǎmut 'root' < PPH *Rǎmut, gǎbi 'night' < PPH *Rǎbi:ʔi, bǎta 'blind' < PPH *bǎta; but apparently not Mansaka *mǎta < PPH *mǎta 'eye', *mǎnuk < PPH *mǎnuk 'chicken', etc.

APPENDIX

List of Forms Reconstructed with Penult Length or Shortness

Alphabetical order: *ʔ, *q, *a, *b, *d, *ə, *g, *R, *h, *i, *j, *k, *l, *m, *n, *ñ, *ŋ, *p, *r, *s, *t, *u, *w, *y; long vowels precede short vowels.

Abbreviations: PPH = Proto-Philippine, PNP = Proto-North-Philippine, PSP = Proto-South-Philippine, X = not a reconstruction, possibly an early loan. Numbers refer to the data sets cited in this paper.

PPH *qaba:Rah 'shoulder'	PPH *ʔāmin 'all; used up' [§4.2.5.]
X ʔabāka 'abaca, hemp'	PPH *ʔānak 'child, offspring' [#30]
PPH *qābuh 'ashes'	PPH *ʔa:nay 'termite'
X ʔa:dal 'study'	PPH *ʔani:nu 'shadow'
PNP *ʔādu 'many'	PPH *qani:tu 'spirit'
PNP *ʔa:gas 'medicine'	PPH *ʔānu 'what?' [#148]
PNP *ʔaRa:ma [crab]	PPH *ʔa:ñud 'drift with current' [#66]
PPH *ʔa:Riw 'soot'	PPH *qānup 'to hunt'
PPH *ʔa:Rus 'flow'	PPH *ʔanŭ[w]aŋ 'carabao'
PPH *ʔa:ji 'sibling' [*wǎji]	PPH *ʔapi:tun [lumber tree] <i>Dipterocarpus grandiflorus</i>
PPH *ʔāku 'I'	PPH *ʔa:puR 'lime'
PPH *ʔālat [small basket]	PPH *ʔāpu[h?] 'grandchild'
PPH *qali:mah 'hand' [#65] [PNP *qi:ma]	PPH *ʔāpuy 'fire' [*hǎpuy]
PPH *qalima:ŋu [crab]	X ʔa:rak 'liquor'
PPH *qalima:tək 'leech'	PPH *qasa:wa 'spouse' [#1]
PPH *ʔa:ma[h?] 'father' (reference)	PPH *qāsın 'salt' [#32]
PPH *ʔāma[h?] 'father!' (address) [#137]	PPH *ʔa:su 'dog' [#2]
PPH *qami:han [wind - north]	PSP *qāsuh 'smoke' [#62]
PPH *ʔa:min 'to use all' [PNP *ŋa:min]	PNP *qāsuk 'smoke' [#62]
	PPH *ʔa:taq 'raw'
	PPH *qātay 'liver'

- PPH *qǎtəp 'roof'
 PPH *ʔatu:baŋ 'front'
 PPH *qa:yam 'domestic animal; to play'
 PPH *ba-ba:[ʔ]i } 'woman, female'
 PPH *ba-ba:[h]i }
 PPH *bǎbaʔ 'low, short; below'
 PPH *ba:buy 'pig (domesticated)'
 PSP *ba:Raŋ 'lungs' [#64a]
 PNP *bǎRaŋ 'lungs' [#64b]
 PPH *bǎRaŋ 'abscess, swelling' [#33]
 PPH *ba:Rah 'embers; red-hot' [#3]
 PPH *baRa:ni 'brave; hero'
 PSP *bǎhaŋ 'flood'
 PPH *bǎhaR 'loincloth, g-string'
 PPH *ba:haw 'to cool (food)' [#104]
 PPH *ba:huŋ 'smell, odour'
 PPH *ba:kəs 'monkey'
 PPH *baku:lud 'rocky-ground'
 PPH *bala:nak [fish - mullet]
 PNP *bala:saŋ 'young girl'
 PPH *bala:tuŋ 'mung-bean'
 PPH *bǎlay 'house'
 PPH *ba:ləs 'repay, revenge' [#67]
 PPH *bali:ja 'weaving-stick, shuttle'
 PPH *bǎlik 'to return'
 PPH *bali:tiʔ [tree] *Ficus*
 PPH *ba:liw 'change' [#111]
 PPH *ba:lu 'widow' [#4]
 PPH *balu:laŋ [basket]
 PPH *ba:lun 'provisions'
 PPH *ba:lut 'wrap'
 PPH *banǎba [tree] *Lagerstroemia*
 PNP *ba:ŋaʔ 'earthenware cooking-pot'
 PSP *bǎŋaʔ 'earthenware water-jar'
 PPH *ba:ŋun 'rise, get up'
 X ba:sa[h] 'to read'
 PPH *bǎsaŋ 'wet' [#34]
 PPH *ba:sul 'blame, find fault'
 PPH *bǎtu 'stone' [#35]
 PPH *ba:waŋ 'garlic'
 PPH *bǎwaŋ 'creek, ravine'
 PPH *ba:wi[ʔ] 'regret; take back'
 PPH *ba:yad 'to pay'
 PPH *bǎyad 'paid' [§4.2.5.]
 PNP *bǎyag 'long (time)'
 PPH *bǎyaw 'brother-in-law' [fn.17]
 PPH *ba:yu } 'to pound (rice)'
 PPH *bǎyu }
 PPH *bǎRas 'husked rice' [#36]
 PPH *bǎRay 'to give' [#112]
 PPH *bǎRək 'pig'
 PPH *bǎkən 'not (so)' [#113]
 PPH *bǎsay 'waterfall' [#114]
 PPH *bǎsuR 'full, satisfied' [#115]
 PPH *bǎtak 'crack'
 PPH *bǎtaŋ 'put; leave'
 PPH *bǎbiR 'lips'
 PPH *bi:Raŋ [plant] *Alocasia*
 PPH *bǎ[h]aR 'alive'
 PPH *bǎlaŋ 'dry in sun' [*bǎlaŋ]
 PPH *bi:laŋ 'to count' [#5]
 PPH *bi:lin 'order; leave behind'
 PPH *bǎ[r]as [in-law relation]
 PPH *bǎtil 'hunger, hungry'
 PPH *bitu:qən 'star' [#103]
 PPH *bitu:ka 'intestines'
 PPH *buqa:ya 'crocodile'
 PPH *bǎbun 'water-well'
 PPH *bǎbuŋ } 'ridge of roof'
 PPH *bubǎŋ-an }
 PPH *-bu-bu:yug 'bumblebee'
 PPH *bu:dak 'flower'
 PPH *bǎRah 'exhale; spit out'
 PPH *bu:Raw 'chase away'
 PPH *bǎhek 'hair'
 PPH *bǎjaʔ 'bubble, foam'
 PPH *bǎkaʔ 'to open; opened' [§4.5.]
 PPH *bǎkəl 'seed; lump'

PPH *bu:kij 'mountain' [#68]	PPH *dšpa 'fathom' [#118]
PPH *bu:lan 'moon, month' [#6]	PNP *di:gat 'difficult' [#72]
PPH *bu:liR 'bunch (fruit)'	PPH *di:Rus 'bathe' [*di:Ru?]
PPH *bu:lu? [bamboo]	PPH *di:laq 'tongue' [#9]
PNP *bu:lud 'borrow'	PPH *du:dun 'locust'
PPH *bšluŋ 'leaf; medicine'	PPH *du:Ri 'thorn'
PPH *bšnut 'coconut-husk'	PSP *dšRuq 'blood'
PPH *bu:ŋah 'fruit' [#69]	PPH *dšha 'two' [§4.4.4.]
PPH *bšta 'blind'	PPH *du:laŋ 'small table; tray'
PPH *bu:tuq 'penis'	PPH *dšliŋ 'cross-eyed'
PPH *bš[w]aq 'betel nut; fruit'	PPH *du:lun 'boundary'
PPH *da:ʔan 'old (object)'	PPH *du:luŋ 'bow (of boat)'
PPH *da:qit 'to sew'	PPH *du:lut 'give; serve (food)'
PPH *dšda[hʔ] 'to carry, bring'	PPH *du:ma 'companion; to differ'
PPH *da-da:Ra 'young girl'	PPH *dšnut 'rotten'
PPH *dšdaŋ 'warm by fire'	PPH *du:ŋun [tree] <i>Heritiera</i> <i>litteralis</i>
PPH *da:Raŋ 'blood'	PPH *du:yan 'hammock'
PPH *dšRaŋ 'land, soil' [#37]	PPH *ʔšnem 'six' [#119]
PPH *daRa:mi 'rice-straw'	PPH *ʔšpa 'rice-husk' [#120]
PPH *da:Rat 'sea; sand'	PPH *ʔšpat 'four' [#121]
PPH *da:Rum 'needle'	PPH *ʔšsa 'one' [#122]
PPH *da:hun 'leaf'	PPH *ʔšta 'rice-husk' [*ʔšpa]
PPH *dškəl 'big; many'	PPH *qštut 'fart' [#123]
PPH *dškəp 'catch' [#38]	PPH *ga:ʔud 'oar'
PNP *daku:lap 'palm (of hand)'	PPH *gšmət 'finger, toe' [*kšmet]
PPH *da:lan 'trail, path' [#8]	PPH *ga:pas 'cotton'
PPH *da:ləm 'deep' [#70]	PPH *ga:pus 'tie, bind'
PNP *dšlus 'clean'	PPH *gštəl 'itch' [*kštəl]
PPH *dalu:yun '(big) wave'	PPH *gš[d]ət 'cut, slice'
PPH *da:naw 'lake'	PPH *gi:liŋ 'to grind'
PPH *dšni 'near'	PPH *[gR]u:bat 'woods'
PPH *dšnum 'water' [#39]	PPH *Ršqan 'light(weight)'
PNP *da:ŋan 'span (8 inches)'	PPH *Rabi:ʔih 'night'
PSP *da:ŋaw 'span (8 inches)'	PPH *Ra-hi-na:wa } 'breathe'
PPH *dšpan 'sole (of foot)'	PPH *Rinha:wa
PPH *dšpuR 'hearth, stove'	PPH *Ra:kit 'raft'
PPH *da:taR 'plain'	PPH *Ršmut 'root' [#41]
PPH *dštəŋ 'come, arrive'	PPH *Rštus 'hundred' [#42]
PPH *da:ya 'sky; east; upriver'	PPH *Ršwəj 'betel leaf'
PPH *dšyuq 'far' [#40]	PPH *Ršbaq 'break, collapse' [#124]
PPH *dšket 'to stick to' [#116]	PPH *[R]i:bu 'thousand'
PPH *dšŋəR 'to hear' [#117]	PPH *Ru:suk 'rib' [#73]

PPH *[R]u:yud 'pull, drag'	PPH *ʔi:kuR 'tail' [#77a]
PPH *haba:Rat [wind - south]	PNP *qi:ma 'hand' [#65]
PSP *ha:bəl } 'weave (cloth)'	PPH *ʔi:na[hʔ] 'mother' (reference)
PNP *həbəl }	PPH *ʔYna[hʔ] 'mother' (address)
PPH *hədiʔ 'not (verb)' [#149]	[#138]
PPH *hadi:Ri 'pillar, housepost'	PPH *qYnəp 'to dream'
[#74]	PPH *qi:nit 'sun; hot'
PPH *həjək 'kiss' [#43]	PPH *ʔYnum 'to drink' [#44]
PPH *ha:muR 'dew'	PPH *ʔi:ŋaR 'noise; trouble'
PPH *ha:nap 'seek'	PPH *ʔi:pəs 'cockroach'
PPH *ha:ŋəs 'breathe; gasp' [#75]	PNP *ʔi:pus 'tail' [#77b]
PPH *ha:ŋin 'wind, air'	PPH *ʔYsa 'one' [§4.4.4.]
PPH *ha-pədiq } 'painful'	PPH *ʔi:sip 'think, count'
PPH *ha-pəjəs }	PPH *[ʔh]Ytəd 'give' [*hətəd]
PPH *ha:pin 'cover; layer'	PPH *qYtəm 'black'
PPH *ha:pun 'settle down, roost'	PPH *ka-ʔa:siq 'pity'
PPH *həpuy 'fire' [*ʔəpuy]	PPH *ka:ʔən 'to eat'
PPH *ha:səq 'whet, sharpen'	PPH *kəRat 'to bite' [#45]
[#152]	PPH *kəRi 'to say; word'
PPH *ha:səŋ 'gill(s)' [#10]	PPH *ka:lih 'to dig (out)' [#151]
PPH *hətəd 'escort; give'	PPH *kəmət 'finger, hand'
PPH *ha:wək 'waist; body'	PPH *kəmi 'we (excl.)' [#142]
PPH *ha:yup 'animal'	PPH *kəmu 'you (pl.)' [#143]
PPH *hədam 'to borrow' [#125]	PNP *kənu 'it is said' [*kənu]
PPH *həmay 'rice' [#126]	PPH *ka:pəs 'cotton'
PPH *hi:Rup 'sip (noisily)'	PPH *ka:puy 'tired, weak' [#78]
PPH *hikəm-ən 'mat'	PPH *kətəl 'itch(y)'
PPH *hi:lut 'rub, massage' [#76]	PPH *ka:ti[gR] 'outrigger'
PPH *hi:pa[R] 'sister-in-law'	PPH *kəwa:liʔ 'pot'
PPH *hi:pun 'shrimp'	PPH *kawa:yan 'spiny bamboo'
PPH *hi:waʔ 'cut, slice'	PPH *ka:yuh 'tree, wood' [#11]
PPH *hu:Ras 'wash, rinse'	PPH *kəyu 'you (pl.)' [#46]
PPH *hu:luR 'fall'	PPH *kəna 'hit, strike' [#134]
PPH *hu:naw 'subside, recede'	PPH *ki:day 'eyebrow' [#80]
PPH *hu:ni 'sound, noise'	PPH *kYlat 'lightning'
PPH *həyap 'to count'	PPH *ki:nis 'smooth'
PPH *ʔYbah 'companion; go along'	PPH *ki:taʔ 'to see' [#12]
PNP *ʔi:gat 'eel'	PPH *kYta 'we (incl.)' [#47]
PSP *ʔi:həq 'urine'	PPH *ki:tid 'narrow'
PPH *ʔYjuŋ 'nose'	PPH *ku:dən 'cooking-pot'
PPH *ʔYka 'you (sg.)' [#140]	PSP *ku:haʔ 'take, get'
PPH *ʔYkan 'fish'	PNP *kŭ[h]aʔ 'put'
PPH *ʔYkaw 'you (sg.)' [#140]	

- PPH *kǔkuh 'fingernail' [#49]
 PPH *kǔlēt 'curly (hair)'
 PPH *ku:()lit 'skin'
 PPH *kǔnu 'it is said' (PNP *kǎnu)
 X ku:raŋ 'lacking'
 PPH *ku:tuh 'louse' [#13]
 PPH *kǔ[w]an [filler particle]
 PPH *[k]ǔyǎpəs 'boil, sore'
 PNP *la:bus 'naked'
 X laga:di? 'saw'
 PPH *lǎRiw 'to run (away)'
 PPH *lǎhuk 'to mix (together)'
 PPH *la:ja 'to weave (mat)' [#14]
 PPH *la:ka[d] 'walk'
 PPH *lakǎtan [banana]
 PPH *lǎkaw 'walk'
 PPH *la:ku 'sell'
 PPH *la-la:ki 'man, male' [#81]
 PPH *lǎmuk 'mosquito'
 PPH *la:ña '(vegetable) oil' [#15]
 PPH *la:ŋaw 'housefly'
 PPH *la:ŋit 'sky, heaven' [#150]
 PPH *lǎŋuy 'to swim' [#48]
 PPH *la:pad 'wide'
 PPH *la:waq 'spider'
 PPH *la:was 'node; body'
 PPH *lǎwi 'tail-feather'
 PPH *la:ya[gR] 'sail (boat)'
 PPH *la:yu[g] 'tall, towering'
 PPH *lǎqi:ya } 'ginger'
 PPH *lǎqu:ya }
 PPH *lǎbəŋ 'to bury' [#127]
 PPH *lǎməs 'drown' [#128]
 PPH *lǎŋa 'sesame' [#129]
 PPH *lǎpad 'to fly' [#130]
 PPH *lǎsuŋ 'mortar' [#131]
 PPH *lǎtak 'crack'
 PPH *lǎtaw 'float' [#132]
 PPH *li:qəR 'neck' [#102]
 PPH *lǎkud 'back'
 PPH *lǎma 'five' [§4.4.4.]
- PPH *li:naw 'calm'
 PPH *li:nis 'clean; smooth'
 PPH *li:nuR 'earthquake'
 PPH *lisǎhaq 'nit, louse egg' [#133]
 PPH *li:wan 'outside'
 PPH *lu:bi[d] 'string, rope' [#82]
 PPH *lǎdaq 'spit'
 PPH *lu:gaw 'rice-porridge'
 X lu:gi 'loss (profit)'
 PPH *lu:jan 'ride, transport' [#83]
 PPH *lu:haq 'tear (from crying)' [#84]
 PPH *lu:luj 'knee; shin'
 PPH *lu:mut 'moss' [#85]
 PPH *lu:nud 'sink'
 PPH *lǎŋun 'coffin'
 PPH *lǎsut 'pass through'
 PPH *lu:taq 'earth'
 PPH *lu:tuq 'to cook'
 PPH *mǎja 'dry' [#50]
 PPH *mǎmaq 'chew (betel)'
 PPH *mǎnuk 'chicken' [#51]
 PPH *mǎta 'eye' [#52]
 PPH *mǎtay 'die'
 PNP *mu:Riŋ 'forehead'
 PNP *mu:kud 'heel'
 PNP *mu:la 'to plant' [#86]
 PPH *mu:saŋ 'civet-cat'
 PNP *mu:tit 'small civet-cat'
 PPH *na:naq 'pus'
 PPH *nǎtay 'dead'
 PPH *ni:da 'their'
 PPH *ni:Ru 'winnowing-basket'
 PPH *ni:paq *Nypa fruticans*
 PPH *nǎpis 'thin'
 PPH *ni:waq 'thin, skinny'
 PNP *nu:nut 'think'
 PPH *nǎmuk 'mosquito' [*lǎmuk]
 PPH *ŋa:jan 'name' [#16]
 PPH *ŋǎŋah 'open (mouth)'
 PNP *ŋi:law 'housefly'
 PNP *ŋi:na 'expensive' [#87]

PPH *ŋi:pən 'tooth' [#17]	PPH *pu:luq 'ten'
PPH *ŋi:sit 'black' [#88]	PPH *pu:nas 'to wipe' [#90]
PPH *ŋūdəl 'dull (blade)'	PPH *pu:nay 'wild dove'
PPH *pa:qa 'thigh'	PNP *pŭŋan 'pillow'
PPH *pǎʔən 'bait'	PPH *pu:sa[ʔ] 'cat'
PPH *pǎqit 'bitter, sour'	PPH *pu:səj 'navel' [#20]
PPH *pa-ʔu:liq 'return home' [*ʔŭliq]	PPH *pu:suq 'heart' [#91]
PPH *pa:Raw 'hoarse'	PPH *pŭtiq 'white'
PPH *pa:Ri 'stingray'	PNP *rŭjit 'dirty'
PPH *pa:jay 'rice-plant', 'un- husked-rice' [#18]	X ru:pa 'face'
PPH *pa:lad 'palm (of hand)'	PPH *sǎbaw 'soup, broth'
PPH *p-al-ǎkaʔ 'frog'	X sa:buŋ 'cockfight'
PPH *pa:lij 'blown away'	PNP *sa:buŋ 'flower'
PPH *pama:haw 'breakfast; cold food' [*ba:haw]	PPH *sǎbut 'feather; pubic hair'
PPH *pa:naq 'to hunt (with bow + arrow)	PPH *sǎkay 'to ride'
PPH *pǎnaq 'bow and arrow; arrow'	PPH *sǎkit 'pain; sick' [#55]
PPH *pa:naw 'to walk; depart, leave'	PSP *sǎlaq 'error, sin'
PPH *pǎñi:ki '(fruit) bat' [#153]	PPH *sa:liw 'buy; exchange'
PPH *pasa:yan [shrimp]	PPH *sǎŋah 'branch' [#56]
PPH *pa:suq 'hot; burn(ed)'	PNP *sa:pul 'need'
PPH *pǎtay 'to kill; dead' [#53]	PPH *sǎki 'foot; leg'
PPH *pa:yuŋ 'umbrella'	PPH *sŷʔit 'thorn'
PPH *pǎnuq 'full' [#135]	PPH *sŷda 'they' [#144]
PPH *pǎsaq 'broken'	PPH *sŷda[ʔq] 'viand, food served with rice'
PPH *pŷdək 'eyelash'	PPH *si:duŋ 'space under house'
PPH *pŷjah 'how many?' [#54]	PPH *si:paʔ 'to kick'
PPH *pi:()lat 'scar'	PPH *si:ku 'elbow' [#21]
PPH *pi:liq 'select, choose' [#19]	PPH *sŷya 'he, she' [#141]
PPH *pŷtu 'seven' [§4.4.4.]	PPH *sŷyam 'nine' [§4.4.4.]
PPH *pŷ[y]a 'good, well'	PPH *su:[g]at 'wound'
PPH *pu:qun 'tree-trunk' [*pu:nuq]	PPH *su:Ruq 'command, order'
PPH *pu:Ruq 'quail'	PPH *su:jud 'fine-tooth comb'
PNP *pu:juq 'island' [#63b]	PSP *su:ka 'vomit'
PSP *pŭjuq 'island' [#63a]	PPH *sŭluq 'torch'
PPH *pu:kaw 'awaken'	PSP *su:ŋay 'horn (of animal)'
PPH *pu:ki 'vagina'	X su:rat 'to write' [*su:[g]at]
PPH *pu:liŋ 'blinded by mote in eye' [#89]	PPH *su:su 'breast' [#22]
	PPH *ta:qi 'excrement' [#92]
	PPH *ta:[ʔ]uh 'person'
	PPH *tǎqun 'year'
	PPH *tǎbaq 'fat' [#57]

PPH *ta:bun 'to cover; fill'	PPH *tu:Raŋ [in-law]
PPH *tǎdɛm 'sharp' [#58]	PPH *tu:hud 'knee'
PPH *ta:di 'cockspur; cockfight'	PPH *tu:lad 'to imitate, copy'
PPH *taRa-ʔɪnɛp 'dream'	PPH *tu:lak 'to push' [#96]
PPH *ta:Ruq 'to hide'	PPH *tʉlud 'to push; escort'
PPH *tǎhɛp 'to winnow'	PPH *tu:luŋ 'to help'
PPH *tǎhiq 'to sew'	PPH *tu:ma 'louse; mosquito'
PPH *ta:jip 'out, pare'	PPH *tu:naw 'to melt'
PPH *ta:kaw 'to steal' [#23]	PPH *qu:ban 'grey hair' [#97]
PPH *tǎkɛp 'to cover'	PPH *qu:bi [purple yam] <i>Dioscorea</i> alata [#25]
PPH *ta:kip 'to join (together)'	PPH *ʔu:buj 'coconut heart'
PPH *ta:kut 'afraid'	PPH *ʔu:bus 'to empty'
PPH *talǎba 'oyster'	PPH *qʉdan 'rain' [#59]
PPH *ta:law 'coward(ly)'	PPH *ʔʉdaŋ [shrimp]
PPH *tǎli[] 'string, rope'	PPH *qu:dip 'alive'
PPH *tali:ŋa 'ear' [#93]	PPH *qudi:p-ɛn 'slave'
PPH *ta:lun 'undeveloped land'	PPH *ʔʉRat 'vein' [#60]
PPH *tǎnɛm 'to plant'	PPH *qu:haw 'thirst(y)' [#105]
PPH *ta:ŋis 'to weep, cry'	PPH *qu:jiŋ 'charcoal' [#26]
PPH *ta:pay 'yeast; rice-wine'	PPH *qu:lɛj 'snake; worm' [#98]
PPH *ta:wa 'to laugh'	PPH *qu:lɛs } 'blanket'
PPH *ta:waR 'to call (out)'	PPH *qʉlɛs }
PPH *tǎbuh 'sugarcane'	PPH *ʔu:liq 'to return (something)'
PPH *tǎbus 'to redeem'	PPH *ʔʉliq 'to return (home)'
PPH *tǎRas 'hard (substance)'	PPH *ʔuli:la 'orphan' [#99]
PPH *tǎkɛn '(boating) pole'	PPH *qu:lu 'head' [#27]
PPH *tǎlɛn 'to swallow'	PPH *qʉmah 'swidden, field'
PPH *tǎlu 'three' [#136]	PPH *ʔʉman 'to repeat'
PPH *tǎnuR 'sound'	PNP *ʔʉnas 'sugarcane'
PPH *tǎŋaŋ 'half, middle'	PPH *ʔʉnɛj 'inside(s); meat'
PNP *ti:mid 'chin'	PPH *ʔʉŋaʔ 'child'
PPH *tina:qi 'intestines'	PPH *ʔu:pak 'bark (tree); peel(ing)' [*ʔu:bak]
PPH *tɪŋah 'food stuck in teeth'	PPH *ʔupɪ[y]a 'good' [*pɪ[y]a]
PPH *tu:ba 'fish poison'	PPH *ʔu:siR 'to pursue, chase'
PPH *tʉbaʔ 'palm wine'	PPH *ʔu:taq 'to vomit' [#100]
PPH *tʉbaR 'to answer'	X ʔu:taŋ 'debt'
PPH *tu:buq 'to grow; leaf' [#24]	PPH *[ʔh]u:tɛk 'brain' [#28]
PPH *tu:duq 'to drip' [#94]	PPH *qu:tin 'penis' [#101]
PPH *tʉduq 'to point' [§4.5.]	PNP *ʔu:tut 'rat'
PPH *tu:duR 'sleep' [#95]	PPH *ʔʉwak 'crow'
PPH *tʉgaw } 'to sit'	PPH *ʔʉ[w]ay 'rattan'
PPH *tʉkaw }	

PNP *wa:da? 'there is'
PSP *wāda? 'none, there isn't'
PNP *wǎji 'sibling'
PPH *wǎlu 'eight' [§4.4.4.]

PPH *wǎnan 'right(side)'
PPH *wa:say 'axe' [#29]
PPH *wǎri 'left(side)'

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