

WHERE, O WHERE, HAVE THE LARYNGEALS GONE?  
 AUSTRONESIAN LARYNGEALS RE-EXAMINED

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This paper represents a progress report on a monograph (to appear in *Pacific Linguistics*). It is written in the spirit of an Aklanon phrase (mamu:gun kīta 'let's go gleaning in the fields'). I have gleaned from the works of several scholars, and offer here a positive (not negative) criticism of their methodology or approach. From the outset, I must underscore my indebtedness to all of them, particularly at TICAL or in personal correspondence.

1. A BRIEF LOOK IN THE KITCHEN<sup>1</sup>

Dyen's now classic monograph (1953) was written in the atmosphere of the discovery of Proto-Indo-European laryngeals. The reconciliation of Dempwolff's somewhat chaotic correspondence sets into PMP \*q, \*h, and \*∅ appeared to justify the title "laryngeals", although it was selected lightly as an explanation of the phenomena observed. In fact, Dyen observed "that either one or both of these proto-phonemes [\*q, \*h] was phonetically not of a type to which the term 'laryngeals' would normally be applied" (1953:1). Based on currently available reflexes in major Austronesian subgroups, I have suggested — equally lightly — that a title "Some Proto-Austronesian voiceless fricatives" would now be more appropriate, i.e. PMP \*q < PAN \*[x], PMP \*h < PAN \*[š]. Conant (1915:11) had already unified the correspondence of Palau x, Malay h, and Philippine ʔ, but this was either unknown to or ignored by Dempwolff, although cited by Dyen (1953:fn.2). Furthermore, Costenoble (c.1942) foreshadowed Dyen's assignment of Dempwolff's \*-h- and \*-h as \*ʔ, and Dempwolff's \*-h- and \*-ʔ- as \*h; unfortunately this study was only published in 1979 (owing to the efforts and translation of the late Dr Cecilio Lopez).

Although Dyen (1953:1,43,50) did leave considerable latitude for the phonetic interpretation of his \*q and \*h, it is quite clear that q represents a glottal stop in the citation of data, and that the temporal and geographical separation of Tongan and Tagalog led him to assume this phonetic character for the PMP phoneme. Although Tag and To [ʔ] correspond with Malay [h] < PMP \*q, Dyen noted, but left unexplained, the correspondence Tagalic [ʔ], Ml/In [ʔ], and Tongan [∅] (1953:28) which could have led to the reconstruction of PMP \*ʔ: \*būkaʔ [P136] 'open', \*Da:tuʔ [P137] 'chief, ruler', \*kakaʔ [P138] 'elder sibling'. [Numbers in brackets refer to data sets in this present study.] Later studies by Dyen

Amran Halim, Lois Carrington and S.A. Wurm, eds *Papers from the Third International Conference on Austronesian Linguistics*, vol.2: *Tracking the travellers*, 111-144. *Pacific Linguistics*, C-75, 1982.

(1965a:302f; 1971:36-44) introduced the reconstruction of PAN \*ʔ on the basis of a comparison of Philippine and Formosan evidence, but the Ml/In evidence was never re-investigated.

Neither \*q nor \*S were laryngeals (Dahl 1976:35), but do have laryngeal reflexes in many AN languages. The evidence presented thus far for PAN \*ʔ has not been convincing (Dahl 1976:37). While data leading to the reconstruction of PAN \*H has been limited (1976:130), "it is prudent at our present state of knowledge not to identify all [final \*h's] with PAN \*S, but as long as correspondences are not found in Formosa, to leave open the question whether they represent \*S, some \*h, or Ø". (1976:39)

Dyen and McFarland (1970) indicated \*ʔ on a large number of PAN reconstructions, particularly in initial and final position (where no other consonant was attested), e.g. \*ʔakúʔ 'I', \*ʔarúhuʔ *Casuarina*, \*ʔas;{Lə 'salt', \*bába[ʔh] 'to bring along', etc. Nothofer followed a similar procedure in the reconstruction of Proto-Malayo-Javanic. Since the reconstruction of PAN \*ʔ is at issue here, one must be wary of a large number of AN languages that have a phonotactic rule that inserts [ʔ] word or phrase finally (sometimes initially as well), e.g. Sundanese, Kuyonon, Kalamian, Casiguran Dumagat, Itbayaten, Keley-i' Kallahan, Bunun, Pazeh, Puyuma, Saisiyat, Sediq, Thao, and Atayal.<sup>2</sup> In this study, considerable weight is attached to the phonemic or the morphophonemic (as opposed to the phonetic or phonotactic) occurrences of laryngeals in various AN languages.<sup>3</sup> The importance of morphophonemics cannot be underestimated since inflected forms often preserve phonemes (irregularly) lost in bases. Thus Tsg duwa 'two' (\*h > Ø) but ka/whaʔ/an 'twenty' (\*h preserved), Aty payat 'four' (\*S > Ø) but spat 'eight' (\*S preserved), Pai alu 'eight' (\*w > Ø) but ka/valu/an 'eighth month, August' (\*w preserved).

The choice of 'q' as a symbol for the glottal stop (as opposed to ʔ, ʔ, ʔ) has had unfortunate and confusing consequences for laymen, lexicographers, and linguists, such as the citation of Formosan glottal with ʔ, but Philippine glottal and Malay -k with q within the same article (Dyen 1971:passim).

The confusion of orthographic vs phonemic systems has also led to misinterpretations. Ibans have adopted the Malay orthography even though it does not provide a phonemic fit — it ignores a phonemic final glottal stop and introduces an unnecessary 'o'. A careful and sensitive lexicographer such as Scott (1956) is then forced to give a 'systematic spelling' (i.e. phonemic interpretation) after the traditional spelling. Blust (1970 and articles since) has not cited this final glottal stop, which has herein proven crucial to the reconstruction of PHN and PAN \*-ʔ and \*-h:

The unexpected appearance of a final glottal stop in some Iban words presents special difficulty... Where such a glottal stop is found it is assumed to be of secondary origin, though conditions for its appearance cannot be stated at present. Most of the Philippine languages used extensively in the present comparison also show a final glottal stop in some forms corresponding to a final vowel in Malay, Iban or Javanese. The reconstruction of the 'laryngeals' (\*q, \*S and \*Ø) in all positions is based on a generalization of the criteria presented in Dyen (1953). (1970:110f)

The following sets of data show contrast among four 'laryngeals' in Iban: -Ø (final vowel), -ʔ (final glottal stop), -k (final postvelar unreleased stop), and -h (final voiceless vowel).

mata $\emptyset$	'eye'	tua $\emptyset$	'we-2-inclusive'
mata?	'unripe'	tua?	'guardian-spirit'
matak	'pulling' [< batak]	tuak	'palm toddy'
matah	'sloping (land)'	tuah	'lucky'

An extremely large number of minimal pairs appear in Scott, recently corroborated by my work with an Iban informant.<sup>4</sup> Many of the forms with phonemic glottal stop in final position correspond to cognates among Philippine languages:

Ib aku, Akl ? $\check{a}$ ku 'I' > PHN \* $\check{a}$ ku $\emptyset$  [P200]

Ib aku?, Akl ?a:ku? 'admit, confess' > PHN \*a:ku? [P129]

Iban is therefore a criterion language<sup>5</sup> for the establishment of PHN/PAN \*-?.

Nevertheless, following Dyen's conventions for reconstructing \*q and dismissing Scott's notation of Iban -q, Blust has ignored this Iban evidence. Although Scott (1956:15) lists Iban badi (badiq) 'a dagger', Blust reconstructs:

76. \*badiq 'dagger'. Ceb bariq 'k.o. sickle', Mar badiq 'bolo, machete, knife', Ib badi (\*q >  $\emptyset$  unexplained) 'dagger', Ngadha badi 'dagger, sword'. (1973:39 - emphasis mine, see P132)

The plethora of laryngeal correspondences (\*S<sub>1</sub>, \*S<sub>2</sub>, \*S<sub>3</sub>, \*x, \*X, etc.), certainly never seriously proposed by Dyen as PAN phonemes, has fallen under criticism by several scholars, notably Blust (1978:469f), who raises the point, why has this not been done for PAN \*l (with at least three reflexes in Tagalog) or for the PAN vowels (allophony of [i]:[e], [u]:[o] has led to phonemic contrasts among several AN languages)? Apparently Dyen's reluctance to characterise the phonetic nature of proto-phonemes or to reduce the inventory to that of a 'real language' is based on the lack of information about subgrouping (e.g. 1953: 50 and 1971:passim). However, it seems that Dyen himself made an appropriate working hypothesis in 1956 - although addressing a different, but related, problem:

The essential point in problems of this type is the basic vocabulary. The correspondence system of a language must be that which applies to its basic vocabulary, taken as a whole; the contrary proposition cannot be tolerated in a genetic comparative treatment. (1956:87)

Granting that many of the most irregular correspondences appear in items meaning 'fire, dog, child, thou, four, tree/wood', it would appear that sorting out these problems would be with recourse to the standard reflexes within each given language's (other) basic vocabulary, rather than with recourse to that language's genetic relationships to other AN languages - except where such information could lead to the identification of loanwords and the direction of borrowing.

## 2. PURPOSE AND PLAN

In this study, the reconstruction of the PAN laryngeals is based on a systematic progression from two lower-order proto-languages: Proto-Philippine and Proto-Hesperonesian. The comparison of several genetically-remote Ph languages necessitates the reconstruction of four 'laryngeals': PPH \*h, \*q, \*?, and \* $\emptyset$ . These can be aligned with Proto-Indonesian (or Nothofer's PMJ): \*h, \*?, and \* $\emptyset$ . PHN \*h appears to have been lost early in the history of Indonesian languages, and only sporadic evidence can be found in word initial and final position, so that PMJ \*h is a reflex systematically, if not exclusively, of PHN

\*q. Finally, PAN \*q, \*S, \*Ø, \*ʔ, and \*H can be reconstructed — although only the latter two can be considered to have been laryngeal articulations.

In this shortened draft, each phoneme will be dealt with independently, and reconstructions will be labelled according to the time-depth warranted by the currently available evidence. In the absence of *definitive* subgrouping criteria to date, reconstructions are here assigned to putative proto-languages based on the geographical distribution of the witnesses. Hence, only if cognates are found widely distributed in Formosan (North AN), Oceanic (East AN), and Hesperonesian (West AN) are they assigned to PAN. If they are found only in East and West AN, they are assigned to Proto-Malayo-Polynesian (PMP). And, if they are found only in West and North AN, they are assigned to Proto Hesperonesian-Formosan (PHF).<sup>6</sup> No claim is made that this latter parent language was a reality, as it is possibly equivalent to PAN (based on current subgrouping hypotheses of several scholars).<sup>7</sup> Rather, this principle is adhered to because certain proto-phonemes are necessitated by Formosan evidence *alone* (\*S, \*H, amongst others), and in the absence of such evidence no justification can be made, for example, in rewriting PHN or PMP \*h as either \*S or \*H, because the languages used in reconstructing PMP yield a laryngeal inventory identical to that established for PHN (\*q, \*h, \*ʔ, and \*Ø).

It must be kept in mind that a reconstruction is founded upon three different kinds of witnesses: *test language* (Pai c < \*C, s < \*S), *criterion language* (Akl ʔ < \*q or \*ʔ, Ib -ʔ < \*-ʔ or \*-h, therefore Akl, Ib ʔ < \*ʔ), and *witness language* (helpful in determining the antiquity rather than the phonemic shape of a reconstruction).<sup>5</sup>

### 3. PROTO-AUSTRONESIAN \*q

The reconstruction of PAN \*q is straightforward, having been put forward by Dyen (1953) and defended by Dyen (1965, 1971) and Dahl (1976), among others. Healey (1959) has shown that both Kalamian and Tboli (= Tagabili) establish PPH \*q in all positions. Historically speaking, the Kalamian dialects<sup>8</sup> (Karamianenen, Tagbanwa, and Agutaynen) serve as a test language for PPH \*q in that [k] is the reflex in all positions, and PPH/PAN \*k went to Kl [Ø], although numerous loans from other languages now obscure this phenomenon.<sup>9</sup> Initially and finally the Tbl reflex is [k], but intervocally [-h-]. Most other Ph languages reflect \*q with [ʔ], although members of the Cordilleran group have final -Ø, and Itb has Ø except in clusters. Nothofer (1975) has shown that PMJ/PIN \*h reflects PAN \*q, and is established by OJv, Sd, and Ml [h] in all positions; to this may be added the evidence of Ib [h] in final position. At the PMP and PAN level the test languages and respective reflexes are: early Palau data and Bunun (Isbukun dialect) [x], recent Palau data, Tonga, Paze, and Kanakanabu [ʔ], Paiwan, Takituduh Bunun, Ami, Thao, Sediq, and Atayal [q], and Puyuma [h]. Any witnesses with irregular reflexes, due to inflection, innovation, or borrowing, are put into parentheses, but no attempt is made here to subclassify the reconstructed phonemes on this basis.

Table 1: Standard reflexes of some PAN phonemes involving laryngeals

PAN	*q	*ʔ	*H	*S	*s	*∅	*w	*y
Akl	ʔ	ʔ	h	h	s	- <sup>w</sup> y-∅	w	y
Ceb	ʔ	ʔ	h	h	s	- <sup>w</sup> y-∅	w	y
Bik	ʔ	ʔ	h	h	s	- <sup>w</sup> y-h-	w	y
Tag	ʔ	ʔ	h	h	s	-ʔ-h-	w	y
Itb	∅ ʔC	∅ ʔC	h	h	s	∅	w	y
Kal	k	∅	∅	∅	s t	∅	w	y
Tbl	k-h-k	ʔ	ʔ-ʔ-h	ʔ-ʔ-h	s-h-h	-h-	w	y
WBM	ʔ	ʔ	h	h	s	- <sup>w</sup> y-ʔ-	w	y
PPH	*q	*ʔ	*h	*h	*s	*∅	*w	*y
Ib	∅-∅-h	∅-:-ʔ	∅-:-ʔ	∅-:-ʔ	s	∅	∅-w-w	-y-
OJv	h	∅-:-ʔ†	(h)∅-∅	(h)∅-∅	s	∅	w	y-y-
Md	∅	-ʔ-ʔ†	∅	∅	s	∅-h	b-b-	ʝ-ʝ-
ML	h	-∅-ʔ†	(h)∅-∅	(h)∅-∅	s	∅	∅-w-w	-y-
PIN	*h	(*ʔ)	*(h)∅(h)	*(h)∅(h)	*s	*∅	*w	*y
Pl	x	∅	∅	∅	t	∅	∅-u-∅	-r-
To	ʔ	∅	∅	∅	h	∅	v	∅
PMP	*q	*ʔ	*h	*h	*s	*∅	*w	*y
Aty	q	∅	h†	s	h-h-x	∅-ʔ	w	y
Ami	q	ʔ	h	s	c	∅	w	y
Bun	x	∅	∅	s	s	∅-ʔ	v	ɛ
Tkd	q	ʔ	h	s	s	∅-ʔ	v	ɛ
Kan	ʔ	∅	∅	s	∅	∅	∅	-l-
Pai	q	∅	∅	s	t	∅	v	y
Paz	ʔ	∅	h†	s	z	∅-ʔ	∅	y
Puy	h	∅	∅	∅	s	∅-ʔ	w	y
Sai	ʔ	∅	h†	ʃ	h	∅-ʔ	∅	y
Tha	q	∅	∅	ʃ	t	∅-ʔ	∅	y
Sed	q	∅	x h	s	x	∅-ʔ		y
	[x]	[ʔ]	[h]	[ʃ]	[s]	[∅]	[w]	[y]

† Only in certain environments or on some lexical items.

Where test evidence is not available, criterion languages can assist in establishing certain reconstructions, such as:

- (P01) PHN \*qǎbuk<sup>10</sup> 'dust' > Tg ʔǎbok, Ml (h)abok. (NYZ)<sup>11</sup>  
 (P02) PHN \*qu:taŋ 'debt' > Akl, Ifg, Ilk, Isg, Sbl, Tag ʔu:taŋ, (Tbl ʔutoŋ, Kal utaŋ), Abr, WBM ʔutaŋ, Sd, OJv hutaŋ, Ml (h)utaŋ. (DNYZ)  
 (P03) PHN \*tǎqən 'trap, restrain' > Akl, Ceb tǎʔun, WBM, Moŋ taʔan, Ifg tǎʔon, Sd taħən 'trap, snare', OJv taħən 'resist, restrain', Ml taħən 'restrain, set snares; endure, resist', Ib ta:n 'hard-wearing, able to bear, keep, detain'. (BNZ) (See section 6 and note 26.)  
 (P04) PHN \*tǔquR 'dry' > (Tag tǔyoʔ <), Kpm tǔyuʔ, Abr tuʔug, Sml tohoʔ, Ib tu:r, Ml tohor, Sd tuhur. (CNZ)  
 (P05) PHN \*lintaq 'leech' > Akl lintaʔ, Btk, Mar lintaʔ, (Kal linta, WBM lintak), Ib, Ml lintah. (ADNSYZ)  
 (P06) PHN \*lǔdaq 'spit(tle)' > Tag lǔraʔ, Tbl dulak (M), Ib, Ml ludah. (ABDYZ)  
 (P07) PNH \*pǎRaŋ 'wring out' > Tag pǎgaʔ, Ceb pǎgaʔ, Ib, Ml pǎrah. (DNY)  
 (P08) PMP \*Rapuŋ 'rot(ten), brittle' > Ceb gapuʔ, Ml rapoh, Sd rapuh; Fj ravu 'smash up', Ib rapuh 'pile, heap', WBM gapuʔ 'dead wood'. (BNYZ)

In some instances new evidence corrects previous reconstructions:

- (P09) PMP \*qaDəp 'front' > Tsg ʔalup/an, Ml (h)adap, Bj ma/hadap, Sd harəp, To ʔao 'front', OJv harəp 'what is placed in front', haDəp 'prevented', To ʔalo 'belly'. (BCNYZ) (Tag hǎrap 'front', Itb harap/ən 'to face', Tsg harap 'foreground', Akl harǎp/un 'near-sighted' < Ml/In.)  
 (P10) PMP \*qalima:ŋu [crab] > Kal kalimaŋu, Akl ʔalima:ŋu, Pl xemaŋ, Sm alimaŋo, Penchal kimmŋ. (BYZ)  
 (P11) PAN \*qalsəm 'sour' > Kal kakləm (A/t→k), Akl ʔáslum (M), Itg ʔalsəm, Ib, (Ml asam), Sd, OJv hasəm, Sm m/asa, Puy ǎrsəm. (DNTYZ)  
 (P12) PMP \*qa:lun 'wave' > Kal lakun (M), Bik, Ceb ʔa:lun, Ml (h)alon, Ib, NJv, Tb alun, To, Sm ŋ/alu. (BDYZ)  
 (P13) PAN \*qañud 'flow, drift' > Akl, Ilk ʔa:nud, Kpm ʔanyud, Bj, NgD hañut, Ml (h)añot, (Md añoʔ),<sup>12</sup> To ma/ʔanu, Tkđ maŋ/qanuʔ, Ami ma/qalul 'flow, float', Pai qałud 'lose'. (ADFTYZ)<sup>13</sup>  
 (P14) PMP \*qaŋət 'warm' > Ml (h)añat, OJv haŋət, Sd hanət (A/ŋ→t 'warm', To ʔaŋo/aŋo 'dried-out'). (DNYZ) (Tsg haŋət 'uneasiness due to heat'.)  
 (P15) PHF \*qapejuŋ 'gall' > WBM ʔepəzu,<sup>14</sup> Png ʔapɡú, (Kal apdu, Tbl hədu/n), Ml (h)ampədu, (h)əmpədu, Jv ampəru, Pai qapədu, Pl xoas. (ADFSTYZ)  
 (P16) PAN \*qa:puR 'lime' > Akl ʔa:pug, Ifg ʔa:pul, (Kal apug, Tbl lohoʔ (M), Ml kapor), Pl xaus, Ami qapul 'lime', To n/avu 'put lime'. (BCDSTYZ)  
 (P17) PAN \*qásiN 'salt(y)' > Kal kasin, Tbl kahiʔ, Akl, Bon, Isg, Tag ʔásin, (Ml, OJv asin), Ib m/asin, Kan ma/ʔáini 'salt', Puy ǎsil 'salty', To m/ahi 'sour, astringent'). (ADNSTYZ)  
 (P18) PHN \*qǎlət 'interval' > Tbl kǎlət 'in succession', Akl ʔǎtut 'gap', WBM ʔələt 'object between two objects', OJv a/hələt 'with an interval of', Sd hələt 'interval', Ml (hə)lat 'alternate'. (BDNSZ)  
 (P19) PMP \*qi:lau 'light; reflect' > Kal kilaw 'intense brightness', Tag ʔi:lau 'light', Ml (h)ilaw 'glimmer', Fj ilo/ilo 'anything that reflects: water, glass, mirror'. (BDNYZ)  
 (P20) PHN \*qipil Intsia [tree] > Kal kipil, Akl, Ilk, Tag ʔi:pil, Bik, Ceb, Han ʔǎpil, (Ml ipil). (DYZ)  
 (P21) PHN \*qi(m)pit 'press/squeeze-together' > Kal kipit, Ceb, Ilk, Tag ʔi:pit, Ml (h)impit = (h)əmpit. (BZY) (Note: Akl ʔi<g>pit)  
 (P22) PHN \*qiriS 'cut/slice-up' > WBM ʔigis 'threaten to stab or spear', Jv ires, Ml (h)iris 'slit, slice, rip open'. (DLZ) (Tag hílis < Ml)

- (P23) PHN \*qu:buj 'edible pith' > Kal kuBud, Akl ?u:bud 'palm heart', Ilk ?u:bug 'unspread leaf', (Ml umbut 'palm cabbage'). (BCSYZ)
- (P24) PHF \*pāq̄iC 'bitter' > Kal pakit, (Tbl he?et), Akl, Bon, Ilk pa?it, Bj, OJv, Sd pahit, Ml pa(h)et, Ib pait, Pl mex/waxed 'bitter', Sai pa?is 'spicy', Kan pa?itsi 'sour' (DNSTYZ)
- (P25) PAN \*da:Raḡ 'blood' > Sbl da:ya?, Ilk da:ra, Ifg da:la, Sml laha?, Ib, Ml darah, OJv rāh, Md Dara, Kan cará?ə, Puy darah 'blood', Pai ḡaq, Ami lalaḡ 'menstrual flow', Pl rasax, Fj ndrā. (ADFNSYZ)
- (P26) PHN \*lu:tuḡ 'cook, prepare (food)' > Kal lutuk, Tag lu:to?, Ilk lu:tu, WBM lutu?, NgD luntoh 'cook', Akl ʔu:tu? 'ripe'. (DSZ)

Numerous examples show Ml/In [h] from PAN \*q to have been well retained. Although lost in every other position, it is retained word finally in Iban. Furthermore, although Dyen's original hypothesis regarding PMP \*q came under some attack on the basis of his sources, the historicity of Ml orthographic and dialectal [h] is established by substantial external evidence and is a tribute to Dyen's original insights and to Wilkinson's lexicographic method.

There are comparatively few instances of disagreement. Ml fails to reflect [h] in Pl6, 17, 20, 23, kəntut < \*qə(n)tut 'flatulence', ubi 'yam' < \*qu:bi(h) (but note Ml humbi), and pusu 'abdomen' < \*pu:suḡ 'heart'. In these few instances the external evidence is weighed more heavily than the lack of an (exact) cognate with [h] in Ml. Conversely, evidence from Ml or other In languages is considered definitive on reconstructions where there are no Kal or Tbl cognates (e.g. P01, P03, P04, P07, P08, P09, P13), or where Kal or Tbl evidence contraindicates the reconstruction of PHN \*q (e.g. (P02, P05, P15)). The shift of PAN/PHN \*q to PIN/PMJ \*h is therefore well substantiated. However, the relationship of PIN/PMJ \*h to PHN/PMP \*h (and PAN \*S or \*H) is an entirely different case (see section 6).

#### 4. PROTO-AUSTRONESIAN \*S

The reconstruction of PAN (or PHF) \*S is only justified by various sibilant reflexes among Formosan languages. The most reliable test languages are Paiwan and Amis with [s]. Saisiyat and Thao, with [ʃ] < \*S, also reflect [ʃ] < \*C (but under conditions of assimilation rather than of merger with \*C).<sup>15</sup> Criterion languages include Bunun, Takituduh, Kanakanabu, Pazeh, Atayal, and Sediq, all with [s]. These correspondences are related to [h] reflexes in Bisayan (Akl, Ceb, Oḡ, Kin, Hil, S-L),<sup>16</sup> Itbayaten,<sup>17</sup> Western Bukidnon Manobo,<sup>18</sup> Bikol (Naga dialect), Hanunoo,<sup>19</sup> Tausuḡ,<sup>20</sup> or Tagalog.<sup>21</sup> Irregular correspondences are put into parentheses and will be discussed at the end of this section; no attempt is made to subclassify the reconstructed phoneme. The following are uncontested reconstructions (i.e. in conformity with the reflexes listed in Table 1):

PAN *Sājək 'kiss' (BCTZ) <sup>22</sup>	PAN *SāpaR 'lay mats' (T)
PHF *Sap(V)Sap 'grope' (TZ)	PHF *Səḡaw 'wash up' (CTZ)
PHF *Sə(m)pi 'dream' (ADFSYZ) <sup>22</sup>	PHF *Sə(n)Zam 'borrow' (ATZ)
PHF *Sīḡaw 'wash up' (ATYZ)	PAN *Su(w)ab 'yawn' (BCZ)
PAN *i:Səḡ 'urine' (AFTYZ)	PHF *qami:San 'N wind' (CTZ) <sup>22</sup>
PAN *būSək 'hair' (AFTYZ)	PAN *CāSiḡ 'sew' (AFTYZ) <sup>22</sup>
PHF *ku:Sa(?) 'go (for)' (TZ)	PHF *lu:Səḡ 'tear' (TZ)
PHF *ma-buSuk 'drunk' (BZ)	PHF *tāSəp 'winnow' (ABTZ)
PHF *taSaN(an) 'dwell' (T)	PHF *tu:Sud 'knee(l)' (TZ)
PHF *CiḡaS 'food particles caught between teeth' (TZ)	PHF *RaḡuS 'scoop out' (T)
PAN *təbuS 'sugarcane' (ABTZ) <sup>22</sup>	PAN *tuqaS 'old (of people)' (ATYZ)

