PROTO-SANGIRIC AND THE SANGIRIC LANGUAGES

by

J.N. Sneddon
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Fieldwork for this study was carried out in North Sulawesi, Indonesia from December, 1978 to February, 1979 and from July to October, 1979. Fieldwork was partly supported by a grant from the Australian Research Grants Committee and was sponsored by Pusat Pembinaan dan Pengembangan Bahasa, Jakarta, and Universitas Sam Ratulangi, Manado. I extend my thanks to the A.R.G.C., Dr Amran Halim, Director of P.P.P.B. and Professor W.J. Waworoentoe, Rector of Unsrat.

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All information on Sangil is from Kenneth Maryott, obtained either from publications or in private communications. I gratefully acknowledge his patience and thoroughness in answering many questions on the language.

Finally, I acknowledge the debt this work owes to David Zorc, who thoroughly read earlier drafts and offered many suggestions for improvement, together with valuable information otherwise unavailable to me. In numerous ways, great and small, his experience and insights are reflected throughout this work. But, due partly to obstinacy, I did not always act on his advice, so it can truly be said that although the work owes much to him its shortcomings are all my own responsibility.
### Abbreviations and Symbols

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Adriani (1911)</td>
</tr>
<tr>
<td>Ban</td>
<td>Bantik</td>
</tr>
<tr>
<td>Bug</td>
<td>Buginese</td>
</tr>
<tr>
<td>C</td>
<td>any consonant</td>
</tr>
<tr>
<td>K</td>
<td>Koorders (1898)</td>
</tr>
<tr>
<td>Mak</td>
<td>Makassarese</td>
</tr>
<tr>
<td>Mal</td>
<td>Malay</td>
</tr>
<tr>
<td>MdW</td>
<td>Mongondow</td>
</tr>
<tr>
<td>N</td>
<td>Niemann (1869-70)</td>
</tr>
<tr>
<td>PAN</td>
<td>Proto-Austronesian</td>
</tr>
<tr>
<td>PMin</td>
<td>Proto-Minahasan</td>
</tr>
<tr>
<td>PMP</td>
<td>Proto-Malayo-Polynesian</td>
</tr>
<tr>
<td>PNSan</td>
<td>Proto-North-Sangiric</td>
</tr>
<tr>
<td>Pon</td>
<td>Ponasakan</td>
</tr>
<tr>
<td>PPh</td>
<td>Proto-Philippine</td>
</tr>
<tr>
<td>PSan</td>
<td>Proto-Sangiric</td>
</tr>
<tr>
<td>PSSan</td>
<td>Proto-South-Sangiric</td>
</tr>
<tr>
<td>RM</td>
<td>repeated monosyllable</td>
</tr>
<tr>
<td>Rth</td>
<td>Ratahan</td>
</tr>
<tr>
<td>S</td>
<td>Steller (1913)</td>
</tr>
<tr>
<td>San</td>
<td>Sangir</td>
</tr>
<tr>
<td>Sas</td>
<td>Sasahara</td>
</tr>
<tr>
<td>Snl</td>
<td>Sangil</td>
</tr>
<tr>
<td>Tab</td>
<td>Tabukang</td>
</tr>
<tr>
<td>Tah</td>
<td>Tahulandang</td>
</tr>
<tr>
<td>Tal</td>
<td>Talaud</td>
</tr>
<tr>
<td>Tam</td>
<td>Tamako</td>
</tr>
<tr>
<td>Tar</td>
<td>Taruna</td>
</tr>
<tr>
<td>Tbl</td>
<td>Tombulu</td>
</tr>
<tr>
<td>Tdn</td>
<td>Tondano</td>
</tr>
<tr>
<td>Tse</td>
<td>Tonsea</td>
</tr>
<tr>
<td>Tsw</td>
<td>Tonsawang</td>
</tr>
<tr>
<td>Ttb</td>
<td>Tontemboan</td>
</tr>
<tr>
<td>V</td>
<td>any vowel</td>
</tr>
<tr>
<td>WBM</td>
<td>Western Bukidnon Manobo</td>
</tr>
<tr>
<td>&lt;x&gt;</td>
<td>x is an orthographic device</td>
</tr>
<tr>
<td>x + y</td>
<td>x becomes y (synchronic change)</td>
</tr>
<tr>
<td>x &gt; y</td>
<td>x becomes y (diachronic change)</td>
</tr>
<tr>
<td>x &lt; y</td>
<td>x derives from y (diachronic change)</td>
</tr>
<tr>
<td>[x]</td>
<td>x is a phone</td>
</tr>
<tr>
<td>*x</td>
<td>x is a reconstruction</td>
</tr>
<tr>
<td>**x</td>
<td>x does not occur</td>
</tr>
<tr>
<td>(x)</td>
<td>occurrence of segment x is uncertain</td>
</tr>
<tr>
<td>x/y</td>
<td>a segment occurs but no decision can be made as to whether it is x or y</td>
</tr>
<tr>
<td>x (\sim) y</td>
<td>x and y alternate freely</td>
</tr>
</tbody>
</table>
MAP I
MINAHASA, NORTH SULAWESI
Showing places mentioned in the text and localities of the BANTIK and RATAHAN languages.
MAP II
THE SANGIR, TALAUD
AND SARANGANI ISLANDS

Showing places mentioned in the text and locations of the Sangir, Sangil and Talaud languages.
PART ONE

INTRODUCTION

1.1. AIMS OF THE STUDY

The aim of this study is to carry out a comparative analysis of a small group of Austronesian languages with the intention of reconstructing as much as possible of their exclusively shared parent language and determining their interrelationships. The languages involved in the study are called the Sangiric languages and their reconstructed parent language is called Proto-Sangiric.¹

The study is also intended to provide the material for a later systematic comparison of the Sangiric languages with other groups of Austronesian languages, in order to determine their position within the Austronesian family. The closest relatives of the Sangiric languages appear to be the Minahasan group (see section 1.5.) and the next step should be a detailed study of the relationship between these two groups.

1.2. LANGUAGES INVOLVED IN THE STUDY

1.2.0. There are five languages in the Sangiric group: Sangir, Sangil, Talaud, Bantik and Ratahan. Sangil is spoken in the southern Philippines while the other four occur in the Indonesian province of North Celebes (Sulawesi Utara). Two of the languages, Bantik and Ratahan, are spoken in Minahasa, the eastern-most region of the North Celebes Peninsula. Sangir and Talaud are spoken in the islands to the north of Minahasa. The locations of the languages are shown on maps 1 and 2.

In this section the Sangiric languages are discussed individually. Published sources available for the study are listed for each language. For languages other than Sangir and Sangil these are very limited.

1.2.1. Sangir

Sangir (San) is by far the most important of the Sangiric languages, both in terms of number of speakers and amount of published material.

The language is spoken by well over one hundred and fifty thousand people in the Sangir (or Sangihe) Islands, a chain stretching from close to the Minahasan coast northward towards Mindanao. There are also an estimated eight thousand Sangirese in coastal areas of Mindanao and offshore islands, having migrated this century (Alice Maryott 1963) and a considerable number have settled in coastal areas of Minahasa.²
As can be expected of a language spoken over such a great area, numerous dialects occur. Steller and Aebersold's dictionary reveals noticeable dialect differences on the islands of Siau and Tahulandang at the southern end of the Sangir island chain. The largest island of the group, Sangihe Island, contains three major dialect groups: Manganitu, Taruna and Tabukang.

Manganitu is the most prominent of the dialects, having the largest number of speakers and having long been used, by missionaries and the administration, as a medium for education and literature.

Adriani's grammar (1893) and Steller and Aebersold's dictionary (1959) are both basically descriptions of Manganitu.

Maryott (1961) provides a phonemic statement of Tabukang dialect, Alice Maryott (1963) describes predicate types and Reid (1971) gives a list of 372 words from the Tabukang dialect, together with pronouns and demonstratives. Material for these words was collected from Tabukang-speaking immigrants in the Philippines.

Recently Maryott (1977b) has begun to refer to the language as Sangihé, following the Manganitu and Tabukang name for the language [sâŋîhâʔ], where Maryott's final <e> represents [aʔ].

Although the name Sangihe is often used in Indonesia, and sometimes also Sangi, the name Sangir is more common. Because the language is better known in the literature as Sangir, this name is used in the present study.

Information was obtained from the publications mentioned above and from a Manganitu-speaking informant. Unless otherwise specified statements refer to the Manganitu dialect.

1.2.2. Sangil

This language (SnI) is spoken in coastal areas in the Cotabato and Davao provinces of Mindanao and also in the lower Sarangani Peninsula and on the nearby Sarangani Islands. The number of speakers is estimated at up to ten thousand (Maryott 1977a). Maryott (1978a) states that the Sangil people migrated to the Philippines from the Sangir Archipelago several hundred years ago.

Maryott identifies two dialects: that of the Sarangani Islands (Sarangani) and that spoken on the Mindanao mainland (Mindanao).

Reid (1971) provides a list of SnI pronouns and demonstratives and 372 words. Maryott (1977a) has produced a phonological statement of Sarangani dialect and several other short publications (see bibliography).

Although the language has always been called Sangil in the literature, Maryott has recently employed the name Sangiré, which represents the indigenous name [sâŋîrəʔ]. For the present work the better known, and less confusing, name Sangil is used.3

Information on SnI for this study has come from the sources mentioned above and from personal communication from Maryott.

1.2.3. Talaud

This language (Tal) is spoken in the Talaud Islands by about forty thousand people. The indigenous name is Talodda. In earlier literature the name Talaud
was used but more recently the name Talaud has become general, deriving from the San word [tālaʊdə].

A number of dialects occur but the degree of difference between them is not known. Adriani (1911) and Steller (1913) both briefly discuss dialect differences but only refer to a few aspects of phonology. Adriani recognises six dialects on the basis of reflexes of Proto-Austronesian (PAN) word-final *R.

The informants for this study were from Rainis on the island of Karakelang and Lirung on the island of Salibabu. Only a very few phonological differences were noticed in material collected from them, prominent being reflexes of final *R: k in Salibabu and t in Karakelang.

Jansen (1855) provides a 'Talaur' wordlist which appears to be a list from an unidentified San dialect. Adriani (1911) presents a brief phonological and grammatical statement and Steller (1913) adds to this and comments on errors in Adriani's work (which was based on information from the missionary Talens).

The principal informant for this study was from Salibabu Island and that dialect is described here.

1.2.4. Bantik

Bantik (Ban) is among the smallest of the Sangiric languages and is spoken in about ten villages surrounding Manado, the provincial capital of North Celebes, from Talawaan in the north to Sea in the south. It is also spoken in several transmigration villages in southern Minahasa and in Bolaang Mongondow, the region to the south-west of Minahasa. The total number of Ban speakers is estimated at eleven thousand.

No information is available on dialects. However, in a recent unpublished paper (Bawole 1980) n is given as the reflex of PAN *n word-finally, whereas ñ occurs in the speech of informants. The author of the paper does not mention from which area his data derive.

The only publications on Bantik to date appear to be several short stories by Riedel (1869), Jansen's wordlist (1855), containing 150 items, and a lexicostatistical wordlist (Sneddon 1970). Koorders (1898) provides some information on plant names.

Material for this study was obtained from speakers in the village of Malalayang.

1.2.5. Ratahan

Ratahan (Rth) is spoken in the south of Minahasa, in the town of Ratahan and about a dozen surrounding villages, from Pangu in the north to Molompar in the west and eastward to the coast. There are about twenty thousand speakers.

Ratahan is usually referred to as Bentenan, after the coastal village of that name, in earlier literature, e.g. by Niemann (1869-70), Adriani (1925) and Esser (1938).

The name Pasan is sometimes also used in Minahasa to denote the Ratahan language. This may represent a separate dialect; Jansen (1855) provides separate lists for 'Pasan' and 'Ratahan' which show a few minor differences. However, the two names are usually used interchangeably, although Ratahan is the common name.
Previous study of Rth has been slight. Apart from Jansen's list of 150 words there is the more extensive list of Niemann. Both lists suffer from unreliable spelling and some mistranslations. Koorders (1898) gives some useful information on names of plants and trees. A few comments, along with a lexicostatistics wordlist, are provided by Sneddon (1970).

Most of the material for the present study was obtained from informants in the village of Pangu.

1.3. PREVIOUS COMPARATIVE STUDIES

Very little comparative study has been done on the Sangiric languages.

Adriani (1925) comments on the close relationship between San, Tal, Ban and Rth but provides no evidence to support this. Esser in his linguistic map (1938) shows Ban and Rth (Bentenan) as dialects of San.

Llamzon and Martin in a classification of Philippine languages (1976) claim 88.3% cognates for San and Snl. Walton (1979) finds them to share 90% of their basic vocabulary. Both studies were based on the wordlists in Reid (1971) for which the San list was drawn from the Tabukang dialect as spoken by immigrants in Mindanao.

The only detailed internal comparative study to date is Maryott's (1978a, to appear) reconstruction of part of the phonology of the immediate parent language of San and Snl, which he calls Pre-Sangir, and description of reflexes of proto-phonemes in the two daughter languages.

In his lexicostatistical study Dyen (1965), using a subadequate list, finds San to have its highest percentage, 39.9, with Cebu, a dialect of Cebuan, as well as 34.1% with Sasak and 34% with Malay. In view of Dyen's limited data on San, his findings need not cast doubt on the evidence for a close link between the Sangiric and Minahasan languages (see section 1.5.).

San has been employed in a wider comparative study of Philippine languages by Charles (1974). Charles believes, on lexical evidence, that San and Tontemboan, a Minahasan language, lie outside the Philippine group. If Charles is correct then the Minahasan and Sangiric languages do not descend from Proto-Philippine (PPh). Nevertheless he finds it convenient to treat Tontemboan and San phonemes and words as if they were reflexes of PPh forms. Llamzon and Martin as well as Walton place San and Snl within the Philippine language group but both studies show them to be only distantly related to other Philippine languages. Walton finds San and Snl to be a first-order subgroup of the Southern Philippine group, one of the two first-order branches of the Philippine group.

In the present study the Sangiric languages are assumed to be descendants of PPh.

1.4. THE SANGIRIC GROUP

1.4.0. The five languages involved in the study can be shown to be more closely related to one another than to any other language. They thus exclusively share a common parent language, Proto-Sangiric (PSan). Relationships within the Sangiric group are discussed in section 2.4.
That the Sangiric languages do form a separate sub-group of Austronesian languages is established by the fact that they share a set of innovations in phonology and lexicon which are not known to be shared by other languages. This is not to claim that none of the innovations in PSan occurred in any other languages but that the set of innovations does not occur elsewhere and that identical or similar innovations in other languages must be regarded as separate, parallel developments.

Some of the innovations in the Sangiric group, which set them apart from other descendants of PPh, are described below. This, however, is not a complete statement as a systematic study of PSan reflexes of PPh is beyond the scope of this work. Phonological and lexical innovations are dealt with separately. Supporting evidence from lexicostatistics is also presented. To date grammatical systems have not been studied sufficiently to enable inclusion of much grammatical evidence for subgrouping, although a small amount of grammatical evidence is included with the phonological and lexical evidence.

1.4.1. Phonological innovations

In this section are presented some of the phonological innovations in the Sangiric languages which set them apart from other descendants of PPh. PPh reconstructions are taken from Zorc (1971, 1982b and personal communications) and Charles (1973, 1974). To avoid confusion the mid-central vowel is represented by the symbol <a> rather than the symbol <e> employed by Zorc and Charles, the symbol <e> in this work representing a mid-front vowel. A few other minor changes have been made to Zorc's orthographic conventions (see section 3.1.).

(a) Loss of PPh *h

PPh *h was lost in all positions in PSan:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*hamay</td>
<td>*amay</td>
</tr>
<tr>
<td>*huRas</td>
<td>*uRas</td>
</tr>
<tr>
<td>*bhaR</td>
<td>*biaR</td>
</tr>
<tr>
<td>*tahep</td>
<td>*taap</td>
</tr>
<tr>
<td>*tu:maH</td>
<td>*tuma</td>
</tr>
<tr>
<td>*qu:luh</td>
<td>*ulu</td>
</tr>
</tbody>
</table>

(b) Loss of glottal stop

PPh glottal stop was always lost initially and medially and was usually lost word-finally. Only medial and final examples are shown:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*taqun</td>
<td>*taun</td>
</tr>
<tr>
<td>*puqun</td>
<td>*puan</td>
</tr>
<tr>
<td>*bakaq</td>
<td>*baka</td>
</tr>
<tr>
<td>*tanaq</td>
<td>*tana</td>
</tr>
</tbody>
</table>

PPh final glottal stop remained in some items, although the reason for the variation has not been determined; Pre-PSan dialect influences or lexical diffusion may provide an explanation (i.e. loss of *ʔ may have spread across the lexicon to all but a few items):
(c) Replacement of *a in final syllables

When *a occurred in the final syllable in PPh, preceded by a consonant other than a laryngeal, it was replaced by another vowel in PSan. It was regularly replaced by *u if the final consonant was *m or *p.

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*lu(N)tuq</td>
<td>*luti?</td>
</tr>
<tr>
<td>*kakaq</td>
<td>*kaka?</td>
</tr>
<tr>
<td>*leRe?</td>
<td></td>
</tr>
</tbody>
</table>

When *a occurred in final syllables in PPh, preceded by a laryngeal, it was replaced by another vowel in PSan. If the final consonant was *m or *p, *a was replaced by *u.

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*xanam</td>
<td>*anum</td>
</tr>
<tr>
<td>*qitam</td>
<td>*itum</td>
</tr>
<tr>
<td>*qatap</td>
<td>*atup</td>
</tr>
<tr>
<td>*Dakap</td>
<td>*dakup</td>
</tr>
</tbody>
</table>

In other environments *a was replaced by *a, *e or *i, although the rules for selection of a particular vowel have not been determined:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*balas</td>
<td>*balas</td>
</tr>
<tr>
<td>*takap</td>
<td>*takap</td>
</tr>
<tr>
<td>*Dakel</td>
<td>*dakel</td>
</tr>
<tr>
<td>*benael</td>
<td>*beneel</td>
</tr>
<tr>
<td>*ikat</td>
<td>*ikit</td>
</tr>
<tr>
<td>*qulaj</td>
<td>*ulid</td>
</tr>
</tbody>
</table>

If final syllable *a was preceded by a laryngeal in PPh it sometimes remained unchanged in PSan:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ka?an</td>
<td>*kaan</td>
</tr>
<tr>
<td>*tuqan</td>
<td>*tuan</td>
</tr>
<tr>
<td>*tahap</td>
<td>*taap</td>
</tr>
</tbody>
</table>

In other words the change occurred in this environment also:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tuqad</td>
<td>*tuid</td>
</tr>
<tr>
<td>*bihad</td>
<td>*biad</td>
</tr>
</tbody>
</table>

(d) Lowering of high vowels

Where PPh had final syllables ending in a high vowel followed by glottal stop the high vowel became a mid vowel in PSan in words where glottal stop was lost (see (b) above):

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*uliq</td>
<td>*ule</td>
</tr>
<tr>
<td>*piliq</td>
<td>*pile</td>
</tr>
<tr>
<td>*bunuq</td>
<td>*buno</td>
</tr>
<tr>
<td>*uDuq</td>
<td>*udo</td>
</tr>
</tbody>
</table>

Lowering of the vowel did not occur in cases where glottal stop was not lost:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tapiq</td>
<td>*tapi?</td>
</tr>
<tr>
<td>*lu(N)tuq</td>
<td>*luti?</td>
</tr>
</tbody>
</table>
(e) *a dissimilation

PPh *a became PSan *e in final syllables closed by an alveolar of dental consonant if *a also occurred in the preceding syllable:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*Zalan</td>
<td>*dalen</td>
<td>road</td>
</tr>
<tr>
<td>*habaRat</td>
<td>*baRet</td>
<td>west wind</td>
</tr>
<tr>
<td>*palaj</td>
<td>*paled</td>
<td>palm (of hand)</td>
</tr>
<tr>
<td></td>
<td>*tages</td>
<td>low tide</td>
</tr>
</tbody>
</table>

No PPh etymon has been reconstructed for the last item above but the earlier occurrence of *a in the final syllable is established by Proto-Minahasen *tagas to ebb (of tide).

The dissimilation did not occur where the two *as were separated by a nasal-stop cluster:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*baNtal</td>
<td>*bantal</td>
</tr>
<tr>
<td>*Ra(m)pas</td>
<td>*Rampas</td>
</tr>
</tbody>
</table>

One example has been recorded where the change occurred before final *R:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*salaR</td>
<td>*salerR</td>
</tr>
</tbody>
</table>

No other PSan reflexes of PPh words ending in *R and with *a in each of the last two syllables have been identified. Although one example is not strong evidence it suggests that PSan *R may have been an alveolar consonant (but see the last paragraph of section 2.3.9.).

Cases where *a occurs in the environment described above, instead of e, are very limited in the file of cognate items and point to borrowing. San lagada?, Ban lágada?, Rth lahar boar is one such case. The word occurs in all the Minahasen languages and is reconstructed as *lagad for Proto-Minahasen. The item in the Sangiric languages is for the time being assumed to be a post-PSan borrowing. San balara? to divide, Snl báda? to pay (PPh *bayad pay) are probably borrowings (San having irregular r instead of d), alongside San baeha? to pay, cf. Proto-Minahasen *baer to pay.

The dissimilation did not occur if a consonant other than a dental, alveolar or *R occurred finally:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*alap</td>
<td>*alap</td>
<td>to get, fetch</td>
</tr>
<tr>
<td>*tasak</td>
<td>*tasak</td>
<td>ripe</td>
</tr>
<tr>
<td>*[d]aQaw</td>
<td>*daQaw</td>
<td>span</td>
</tr>
<tr>
<td>*payaQ</td>
<td>*payaQ</td>
<td>thigh</td>
</tr>
</tbody>
</table>

Tal appears at first not to have undergone this change but the presence of a where the other Sangiric languages have e can be shown to be a later Tal innovation (see section 2.3.12.).

(f) Merger of suffixes

PPh verbal suffixes *-an, marking location, and *-an, marking goal, merged in PSan into one morpheme with three variants: *-en occurring after closed syllables containing *a, *-en occurring after final mid and low vowels and *-an occurring elsewhere, e.g.:
*suanen will be planted (*suan to plant)
*babaan will be carried (*baba to carry)
*inuman will be drunk (*inum to drink)

This is a grammatical innovation because it represents a neutralisation in PSan between the two voice affixes *-an and *-ən, which are still distinguished in most present-day Philippine languages. However, the impetus for the change was largely phonological, with the replacement of PPh *ə and *a under conditions outlined in (c) and (e) above.

(g) Changes to PPh repeated monosyllables

PPh repeated monosyllables (RMs) underwent a number of changes in PSan:

(i) If the RM contained a nasal-stop cluster the nasal assimilated to the point of articulation of the following consonant:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dāmdam</td>
<td>*dandum</td>
</tr>
<tr>
<td>*pāpāŋ</td>
<td>*pāpāŋ</td>
</tr>
<tr>
<td>*bunbun</td>
<td>*bunbun</td>
</tr>
</tbody>
</table>

(ii) Where the medial cluster was other than nasal plus stop the first member of the cluster was lost:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dādāp</td>
<td>*dādāp</td>
</tr>
<tr>
<td>*bukbuk</td>
<td>*bukbuk</td>
</tr>
<tr>
<td>*tātād</td>
<td>*tātād</td>
</tr>
</tbody>
</table>

(iii) If the vowel in the RM was other than *ə then it was replaced by *ə in the first syllable in PSan:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*būbul</td>
<td>*būbul</td>
</tr>
<tr>
<td>*bābas</td>
<td>*bābas</td>
</tr>
<tr>
<td>*kākis</td>
<td>*kākis</td>
</tr>
</tbody>
</table>

In the two recorded cases of PSan reflexes of PPh RMs containing *q this change did not occur. In both cases the PPh vowel was *i:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kī(q)kīq</td>
<td>*kīki</td>
</tr>
<tr>
<td>*piqpiq</td>
<td>*pepe</td>
</tr>
</tbody>
</table>

Exceptions also occurred when the RM contained a nasal-stop cluster. In the limited number of such items recorded PPh *u remained unchanged in PSan while *a and *i were replaced by *ə:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bunbun</td>
<td>*bunbun</td>
</tr>
<tr>
<td>*tūtūŋ</td>
<td>*tūtūŋ</td>
</tr>
<tr>
<td>*pāpāŋ</td>
<td>*pāpāŋ</td>
</tr>
<tr>
<td>*dāndīŋ</td>
<td>*dāndīŋ</td>
</tr>
</tbody>
</table>
(h) Centring of vowels after glottal stop

Where a PPh word had identical vowels separated by glottal stop the final vowel became PSan *ə (with loss of glottal stop — see (b) above):

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Raqan</td>
<td>*Raən</td>
<td>light</td>
</tr>
<tr>
<td>*puqun</td>
<td>*puən</td>
<td>trunk</td>
</tr>
<tr>
<td>*pasaqan</td>
<td>*pasaən</td>
<td>to carry on shoulder</td>
</tr>
</tbody>
</table>

(i) Vowel replacement in pronouns

Third person singular genitive/agentive suffix *-na became *-ne in PSan. This change also occurred with fossilised suffixes, e.g. *batune seed (Proto-Minahasan *batuna), cf. *batu stone; *bali other (Proto-Minahasan *balina; *bali accompany). The same change also occurred in all other pronouns ending in *a: *kite we from PPh *kita, *sie he, she, cf. Proto-Minahasan *sia, *side they from PPh *sida.

1.4.2. Lexical innovations

The Sangiric languages share a number of lexical items which are not known to have cognates in other languages. These can therefore be regarded as reflecting innovations in the exclusively shared parent language of the Sangiric languages and are further evidence for their grouping. In addition, some words have undergone semantic and/or phonological changes unique to the group.

Zorc (1982a:313-314) writes:

> Lexical innovations are difficult to evaluate. It is practically impossible to distinguish a common from a spread innovation, and, in the case of conservative phonemes, to isolate a borrowing. Furthermore, any given form may be a retention lost everywhere else or as yet undiscovered in another language. However, certain precautionary measures may be taken to insure both care and quality.

Among such measures he gives:

> Limit(ing) forms to basic vocabulary and avoid(ing) items of trade or culture that could freely pass from one language to another.

Numerous items in the wordlist in section 3.2. exhibit lexical, semantic or phonological innovation and thus constitute evidence for the separate status of the Sangiric group. However, in line with Zorc's suggestion only those innovations occurring in basic vocabulary lists, the lexicostatistics list and the Reid (1971) list, are given here. These are not likely to be borrowings or to have as yet undetected cognates in other languages and are therefore strong evidence that the Sangiric languages share a common parent language and therefore constitute a distinct group of Austronesian languages.

These items are listed below according to the alphabetical order used in section 3.2. In each case the reconstructed PSan form is given, together with an English gloss if possible. If no gloss can be given (for reasons discussed in section 3.1.) the meanings of reflexes in two present-day languages are provided instead. The evidence on which the reconstructions are based is not
presented in this section but is given for each item in the full list of reconstructions. Each item listed is, on the evidence available, a lexical innovation in PSan, unless it is otherwise indicated that the innovation is semantic or phonological.10

*abit to climb (a tree).
*adu to spit.
*ia? I. The formative i occurs with all pronouns in the nominative in the Sangiric languages but appears to have become fossilised with the first person singular pronoun in PSan. Its occurrence with the third person singular and plural pronouns, reconstructed *i sie and *i side, appears to be unique. The form ia? may be related to Buginese ia? I (see comments in the note to *ia? in section 3.2.).
*alo tears. This may reflect PPh *lu:haq via a metathesised form *ha:luq. If so the metathesis is unique to the Sangiric group.
*idun nose. This is from PPh *qijun but with phonological change, final *ŋ being replaced by *n.
*utak hair. This reflects PPh *qutak brain but has undergone semantic change.
*baba law afternoon. Compare PSan *baba below and *ala law day; sun.
*balis rotten.
*ba:nal wide, broad.
*binaba cloud.
*busak banana. This is possibly a reflex of PPh *buswak blossom forth but has undergone semantic change, cf. also Timugon Murut busak flower.
*dandipa: rainbow. This is probably related to PAN *(dD)ipa: cross (river); PPh *i(N)pa: other side, beyond but shows phonological and semantic differences.
*deno to bath.
*dou thirst.
*galid San to give; Rth love.
*Ramu? red.
*Renes rotten.
*Ribu[?] mist, fog.
*Rodaw sharp.
*Royaw San wet; Rth to swim.
*Rusuk ribs; skinny. This reflects PPh *Rusuk rib but the meaning thin, skinny is an innovation.
*ka:Ribu to weave. This may be related to Bikol g:bu to make, do, although the prefix and specialisation of meaning are unique.
*kinas fish.
*lael/id foot.
*ləgay to laugh. This is related to PPh *gəli( ) laugh, tickle but has undergone phonological changes, including metathesis of *g and *l.

*losō hot. This may be related to Proto-Sa'dan *ləssu hot.

*moRoŋ mouth.

*pakel heel. This may be related to PPh *paNkal trunk, root; origin. If so it has undergone semantic change.

*pisi skin, bark. This reflects PPh *pi:sī? rope, bark but application to human and animal skin is unique.

*pundal paddle.

*putuŋ fire. This is related to Malay mutuŋ burnt, lost by fire but has a different meaning.

*su at. This is the locative marker for places or things, e.g. San su bāle, Ban su baley, Rth su baley at/to the house. The corresponding dative marker, for common names, personal names and pronouns, is *si, e.g. San, Ban sī sīe, Rth sī se to him. sī is common in Philippine languages as a marker of personal nouns and sū occurs in some languages as a nominative marker but their occurrence as purely dative and locative markers is unique.

*taRiti rain. This is related to Proto-Minahasan *tariktik, Proto-Bisayan *tarīti light rain, drizzle but has undergone semantic change.

*talak to fly.

*taŋad right, correct.

*tiaŋ to count. This is related to Proto-Minahasan *iap, PPh *hayap count but initial *t is an innovation.

*tolay tail.

1.4.3. Lexicostatistical evidence

Lexicostatistics gives supporting evidence for the grouping of the Sangiric languages. From lexicostatistical comparisons the Sangiric languages show significantly lower scores with other languages than they do among themselves (see section 2.4. for internal lexicostatistical scores).

In the 200-wordlist the lowest internal score is 47%, between Tal and Rth, while the highest external score recorded is 38%, between Ban and the adjacent Minahasan language Tombulu. Scores are somewhat lower between other Sangiric and Minahasan languages; thus San shares 32% with Tontemboan while its lowest score with a Sangiric language is 54% with Rth. San shares 26% cognates with Malay.

1.5. THE SANGIRIC-MINAHASAN GROUP

As mentioned in section 1.1., the Sangiric languages appear to be most closely related to the Minahasan languages, although this has yet to be established by a systematic comparative study. In this section a small amount of evidence is presented, in the form of shared innovations, for the recognition of a larger Sangiric-Minahasan group.
The word Minahasan throughout this work refers to the group of five languages confined entirely to the Minahasan region of North Sulawesi and whose exclusively shared parent language, Proto-Minahasan (PMin), can thus be assumed to have been located in the same area. It excludes languages spoken in Minahasan but which have their closest relatives elsewhere, i.e. Ponosakan (Pon), which is closely related to Mongondow (Mdw), and the Sangiric languages Ban and Rth. The Minahasan languages and their internal relationships are described elsewhere (Sneddon 1978). These languages are Tontemboan (Ttb), Tonsawang (Tsw), Tombulu (Tbl), Tonsea (Tse), Tondano (Tdn).

In each of the following cases PSan and PMin reconstructions are given but no reconstruction is made for Proto-Sangiric-Minahasan. As yet comparative study has not been detailed enough to enable a systematic statement of shared phonological innovations in the two groups. Some of the examples in the list do not occur in the lexicostatistics or Reid lists. Nevertheless, with a few exceptions, they refer to non-cultural items and are unlikely to be borrowings.

<table>
<thead>
<tr>
<th>PMin</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>elap</em> drink</td>
<td><em>elup</em> swallow</td>
</tr>
<tr>
<td><em>balina</em> other</td>
<td></td>
</tr>
<tr>
<td><em>batuna</em> seed (of fruit)</td>
<td><em>batune</em> seed</td>
</tr>
<tr>
<td><em>bany</em> permit, allow</td>
<td></td>
</tr>
<tr>
<td><em>bandu</em> hard work; distress</td>
<td><em>bany</em> (San trouble, difficulty, Rth to sob)</td>
</tr>
<tr>
<td><em>keke</em> to laugh</td>
<td><em>keke</em> (San to call out; laugh, Rth to quarrel)</td>
</tr>
<tr>
<td><em>keteh</em> hard</td>
<td></td>
</tr>
<tr>
<td><em>lehe</em> neck</td>
<td><em>leRe</em> neck</td>
</tr>
<tr>
<td></td>
<td>This reflects PPh *liqəR neck with metathesis of the last two consonants being a shared innovation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PMin</th>
<th>PSan</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>lias</em> to urinate</td>
<td></td>
</tr>
<tr>
<td><em>penad</em> buttocks</td>
<td></td>
</tr>
<tr>
<td><em>pandam</em> to feel</td>
<td></td>
</tr>
<tr>
<td><em>pesut</em> to press, squeeze</td>
<td></td>
</tr>
<tr>
<td><em>rəγis</em> to burn</td>
<td></td>
</tr>
<tr>
<td><em>seŋkot</em> to sail</td>
<td></td>
</tr>
<tr>
<td><em>seŋgot</em> cough</td>
<td></td>
</tr>
<tr>
<td><em>səlet</em> to insert between two things</td>
<td></td>
</tr>
<tr>
<td><em>təkal</em> to sleep</td>
<td></td>
</tr>
<tr>
<td><em>təpiR</em> mat</td>
<td></td>
</tr>
<tr>
<td><em>tumpa</em> to descend, alight</td>
<td></td>
</tr>
</tbody>
</table>

1.6. THE RECONSTRUCTION: PROCEDURE AND PROBLEMS

The principles according to which PSan phonology and lexical items are reconstructed are essentially the same as those followed in the reconstruction of Proto-Minahasan (Sneddon 1978, section 1.6.).

Two major problems faced in the reconstruction of PSan have been those of post-PSan innovations and borrowings from outside the group.
An innovation in one language is unlikely to cause any problems if not subsequently borrowed by other languages within the group. When an innovation is borrowed into other languages within the group it could be attributed to the parent language unless comparative study reveals it to be of more recent origin. There is also a danger of its obscuring the pattern of interrelationships among the languages. Thus San and Tal share the replacement of intervocalic *y by 1, e.g. San kalu, Tal alu wood from earlier *kayu. This on the surface appears to be good evidence for subgrouping. But detailed consideration of all the comparative material shows that San and Tal do not form an exclusive subgroup and the innovation consequently must have developed after the languages separated, originating in one language and spreading to the other.

Ban, San and Tal share a number of phonological innovations which can be shown to have occurred after they split from one another. These innovations must have spread by diffusion from one speech community to another and they bespeak a long period of close contact between the languages after the break-up of PSan. Close social contact still occurs between the speakers of San and Tal, although Ban presumably was for a time geographically closer to the other languages than it is now.

Under such circumstances it is most likely that as well as diffusion of phonological features a certain amount of lexical borrowing occurred among the languages. As is demonstrated below (see section 2.3.2.) San, Snl and Tal form a subgroup and are hereafter called the North Sangiric languages. Therefore any item shared by any two, or all three, of these languages, with no known outside cognates, cannot be proved to be a retention from PSan rather than a more recent innovation. Also, where an item occurs in Ban and one or more of the North Sangiric languages and no outside cognates are known there is no guarantee that the item is not an innovation, spread by borrowing, rather than a retention from PSan.

Ban and Rth form a subbranch of Sangiric languages, hereafter called the South Sangiric group, but the limited number of exclusively shared features suggests that their break-up was only shortly after the original dispersal of PSan (see section 2.4.). The features they exclusively share are likely to be innovations within that period, or retentions lost in the North Sangiric languages, rather than later borrowings between them. Rth has been affected by very few, if any, of the post-PSan phonological changes shared by the other Sangiric languages. This indicates that it became geographically isolated from the other languages, as it is today, early in its separate history. Therefore direct borrowing between Rth and any of the other Sangiric languages is likely to be extremely limited. It is worth noting that Rth shares 4% less than Ban with each of the other three languages on the lexicostatistics wordlist and the higher Ban score can be attributed to continuing closer contact (see section 2.4.).

The Sangiric languages have built up a considerable stock of loan words from other languages. One important source for loans has been Malay (Mal). Its influence in Minahasa and the Sangir-Talaud Archipelago has been strong for several centuries and a separate dialect has long been the first language of Manado, the provincial capital. Manado Malay is today spoken as a first language throughout Minahasa and is the means of communication between any two Minahasans speaking different regional languages. It is also widely known and used in the Sangir-Talaud Islands. 12

Like the Minahasan languages San has borrowings from Sanskrit, Arabic, Portuguese, Spanish and Dutch, with the exception of the last two almost entirely via Mal (see Adriani 1893:16, 19).
Although some Mal borrowings may pass immediate notice, borrowings from the sources mentioned above are unlikely to escape detection. Presenting a greater problem are borrowings from nearby languages. Since contact with such languages has continued over a great length of time considerable borrowing has occurred but many loans could well be hidden by the fact that these nearby languages are among the most closely related to the Sangiric languages and hence a considerable number of shared vocabulary items are in fact true cognates. The problem is in determining which items of the large stock of common vocabulary are cognates and which are borrowings.

There has been long contact between the speakers of North Sangiric languages and groups in southern Philippines, a situation which has resulted in some measure of borrowing. Reid (1971) lists many items which San and Snl share with Philippine languages but which do not occur in Ban and Rth. A few of these items are commented on here:

Snl utuka? brain is related to Samal, Mansaka, Tagbanwa utuk. This is shown to be a borrowing by the retention of final $k$ by the addition of a support vowel, whereas PSan final $^*k$ was regularly replaced by glottal stop (see section 2.3.3.) and the occurrence in Snl of another form, uta? $harr$. This has cognates in the other Sangiric languages from which PSan $^*utak$ $haarr$ can be reconstructed (from PPh $^*qutak$ $braarr$, with change of meaning).

San, Snl uba? monkey is related to Kalagan, Ata Manobo, Cotabato Manobo ubal. Occurrence of medial $b$, instead of regular $h$, points to a borrowing, as does the occurrence of the cognate set San baha, Rth baa monkey, allowing reconstruction of PSan $^*baRa$.

Snl bila$\tilde{a}$ to count is related to Dibabawon, Western Bukidnon Manobo, Mamanwa bila$\tilde{a}$. The other Sangiric languages reflect PSan $^*tiap$ to count, and the Snl form must be treated as a borrowing.

San, Snl ese?, Tal esakka man are related to Kalagan, Mansaka qasag. This is for the time being treated as a possible borrowing as there is another form, Ban mahuaney, Rth muaney man, San mahuane brother reflecting PSan, PAN $^*maRuanay$ man.

San, Snl, Tal muta vomit has cognates in southern Philippine languages but not in Ban and Rth. Discussion of this form is taken up below.

Of particular importance is the contact between the Sangiric and Minahasan languages. These probably link as two branches of a larger grouping (see section 1.5.) and therefore share many cognates. But large-scale borrowing has certainly occurred as a result of longstanding close contact between the two groups. Ban and Rth, spoken by small communities within the Minahasan population have been especially influenced by the larger Minahasan languages.\footnote{Rth is contiguous with Tsw, Ttb and Pon and many shared items appear to be borrowed by Rth from one or other of these sources. The following are a few examples:

Rth rokos skull. No cognates are known in other Sangiric languages and Ttb, Tdn (kakas dialect) ro$\tilde{k}$kos head are the probably source for the Rth word.

Rth $h$ar to pay appears to be a borrowing from Ttb waer.\footnote{San baeha? to pay represents the directly inherited form and is cognate with the Ttb word.} San sa$\tilde{b}$uha? to sow, scatter is probably from Ttb or Pon sawur. San sa$\tilde{b}$uha? represents the inherited form from PSan.
Rth untó? to live; stop has no known Sangiric cognates and is probably from Ttb antó?.

Interestingly Rth shares a considerable number of items with non-contiguous Tdn which do not occur in adjacent languages or other Sangiric languages. The following are a few examples:

Rth, Tdn lunus to shed skin.
Rth, Tdn barebes fat (on body).
Rth, Tdn, Tse sapun prawn.
Rth, Tdn, Tse iran shy.

Ban is contiguous with Tbl and shares a number of words with it including the following:

Ban leóso?, Tbl, Tdn le?ona meat. The word derives from Tbl, Tdn le?os + -na the good (part) and can be accepted as a borrowing into Ban.
Ban kalípópo butterfly has no known cognates in Sangiric languages and Tbl, Tdn kalípo?po? are the probable source for the Ban form.
Ban lampada? wide reflects earlier *lampad and must be a borrowing from Tbl or Tse in which the present-day forms are lampaż and dąmpad respectively.15

Forms which occur in both Ban and Rth and also in the Minahasan group could well be borrowed separately by Ban and Rth from respectively adjacent languages. If cognates are not known to occur in the North Sangiric languages reconstruction of a PSan etymon is not justified. The following are a few items which fall into this category:

Ban, Rth kaya? crab. This item occurs in all the Minahasan languages.
Ban kúlata?, Rth kula? mushroom occurs as kulat in the Minahasan languages. The form of the Ban word, for expected **kula?, points to a borrowing.
Ban bana?, Rth buná? debt may have been borrowed from forms in adjacent Minahasan languages reflecting PMin *bana?, either before or after Ban and Rth replaced *a by other vowels.
Ban patí?, Rth patik to write are most likely borrowed from Minahasan languages, although the languages adjacent to Ban, i.e. Tbl and Tse, have pantik, the other Minahasan languages having patik.16

In reconstructing lexical items a number of precautions have been taken to avoid the inadvertent assigning of borrowings and post-PSan innovations to PSan.

If an item is known to occur only in one or more of the North Sangiric languages it is a possible North Sangiric innovation. If it occurs in one or more North Sangiric languages and in southern Philippine languages but not in Rth it is a possible borrowing.

Of course there must be numerous cases where a PSan item has been preserved in the North Sangiric group while being lost, or as yet unrecorded, in the South Sangiric group. Many such items have PPh etyma or cognates in other languages, where factors such as distance, meaning and phonology give no reason to assume the item has been borrowed into the North Sangiric languages. The best source for locating such words is Steller and Aebersold's comprehensive Sangir dictionary (1959). San can be assumed to have retained about 40% of its basic vocabulary from Proto-Malayo-Polynesian (PMP).17 If anything like this percentage is
retained in its general vocabulary then simply by using the dictionary to identify San reflexes of PAN, PMP or PPh reconstructions several thousand reconstructions could be made for the meso-language, PSan.

However, the aims in compiling the wordlist of reconstructions in section 3.2. must be taken into consideration. It does not serve the purpose of this work to greatly expand the wordlist simply by adding large numbers of items from the San dictionary. The list is intended primarily to show cognates among the Sangiric languages and to provide evidence for their phonological histories and for the reconstruction of PSan phonology based on that evidence. Reconstructions are sometimes made without North Sangiric evidence but this is done largely because information on Ban and Rth is limited and publication here may provide data useful to others. This is unnecessary in the case of Sangir as Steller and Aebersold's dictionary is always available.

For the above reasons reconstructions are not made for PSan unless they are reflected in Ban and/or Rth. The only exceptions to this rule are items with known reflexes only in North Sangiric languages which are used as examples or otherwise cited in the text. All such items have external cognates and are therefore not North Sangiric innovations.

Ban and the North Sangiric languages belong to separate first-order subgroups but because of the long history of close contact between them there is always the possibility that a shared item is a borrowing into or from Ban. However, overcaution in reconstructing PSan etyma would mean that no PSan form could be reconstructed unless a Rth reflex had been recorded (see below). Where an item occurs in Ban and at least one of San, Snl or Tal a PSan etymon is reconstructed if there are no phonological or other reasons to suspect it of being borrowed, either into the Sangiric group from outside or between the North Sangiric subgroup and Ban. For most reconstructions in this category external cognates or PPh etyma have been recorded and hence they are not post-PSan innovations. Thus, for example, the reconstruction of PSan *baar rotten rests on the evidence of San, Ban bahi and PPh *baariw rotten. For the few items in this category for which no outside related forms are known it is felt that the slight risk of ascribing to PSan what was in fact an innovation is far outweighed by the likelihood that the item is inherited from PSan. Also, the inclusion of such items will provide information of possible value to other Austronesianists. For instance, from San dadula?, Ban dudulu? to pull out is reconstructed PSan *dadu. Although no cognates are known the form suggests a possible Pre-PSan etymon *dulu,18 cf. the pattern San babula?, Ban babulu? to pluck (feathers, etc.) from PPh *bulbul pubescent hair (also PMin *bulbul feather, body hair).

Nevertheless, caution is taken in reconstruction and where there is reasonable cause for doubt a PSan etymon is not given. Cultural items, such as San, Ban laku? clothing (cf. PPh *lakuq peddle(r), merchandise), are excluded because of the possibility of borrowing.19 Also, no reconstruction is made if an item is known to occur only in Ban and in one of the southern Sangir dialects, Siau or Tahulandang. These are the San dialects geographically closest to Ban and a number of uniquely shared items have been recorded, e.g. Siau, Ban e?e that, southern San dialects, Ban lota? mud, and these are more likely to result from borrowing than forms in northern San dialects.

Lexical items which appear to be exclusively shared by Ban and Rth are reconstructed for PSan in the present work because it is just as likely that they represent retentions from PSan, lost in the North Sangiric languages, an innovations during the short period of their exclusively shares ancestry (see section 2.4.). Such forms cannot be regarded as 'strong' reconstructions but information
on the two languages to date is very limited and it is felt that some slight risk is warranted when reconstructing such items as their exclusion might deprive Austronesianists of useful information and the chance of detecting possible cognates outside the Sangiric group.

Where Ban and Rth share an item which does not occur in the North Sangiric or Minahasan languages but which has external cognates elsewhere the reconstruction is based on firmer grounds. Given the brief period of their uniquely shared ancestry it is unlikely more than a very few such items could have been borrowed in that period. Because of the subsequent geographical separation of Ban and Rth it is extremely improbable they would have separately borrowed the same items with their regular phonological correspondences while surrounding Minahasan languages and other Sangiric languages did not. In such cases it is safe to assume that the Ban and Rth forms represent retentions, cognates in the North Sangiric languages having been lost. For instance, Ban and Rth share suka to vomit, which does not occur in the North Sangiric or Minahasan languages, but for which cognates occur in Philippine languages and in Mdw and Pon. It is possible Rth borrowed the item from Pon sukaʔ, although loss of final glottal stop would be irregular for a borrowing into Rth. However, there is no close source from which Ban could have borrowed and, in addition, separate borrowing of identical forms, as mentioned above, is highly unlikely. It is far more likely that the form represents a retention of Proto-Southern-Philippine *su:ka. The North Sangiric languages share muta to vomit, for which cognates occur in southern Philippine languages. It is possible that this item was borrowed and then spread through the contiguous North Sangiric communities. Following the precaution stated above a PSan etymon is not reconstructed for this North Sangiric form. The likelihood then is that South Sangiric suka represents a retention from PSan while the cognate item in the North Sangiric languages was displaced by the loan word muta.

Where Ban and Rth alone of the Sangiric languages share a form which also occurs in the Minahasan languages no PSan reconstruction is made unless phonological or other reasons make it likely that borrowing did not occur.

A few recorded Rth items have external cognates or PPh etyma but no known cognates in other Sangiric languages. Where borrowing from Minahasan languages or from Pon or Mdw can be ruled out, a PSan reconstruction is made on the basis of the Rth and external evidence alone.

Items can be most confidently reconstructed for PSan when they have reflexes in both Rth and at least one North Sangiric language because PSan is their most recent shared ancestor and geographical separation makes the chances of borrowing slight. The majority of items in the wordlist fall into this category and are regarded as 'strong' reconstructions. The evidence on which each PSan reconstruction is based is set out in the wordlist in Part Three. Where there is doubt in any way about a reconstruction, other than the slight risk in some cases referred to above, this is discussed in a note. In cases where more than a slight doubt exists as to the nature of the PSan etymon of a cognate set the item has not been placed in the list but will be the object of further investigation.

Throughout this work reference is frequently made to lexical items in non-Sangiric languages. The only source inspected in detail for such forms is Zorc's Proto-Philippine Finder List (1971). This enabled the location of many related forms outside the Sangiric group without the need for detailed inspection of a large number of dictionaries which, for one thing, time did not permit. As indicated in section 1.3., Charles (1974) believes the Sangiric languages lie
outside the Philippine group and if so are not descendants of PPh. However, because of the considerable number of regular sound correspondences and the great use to which Zorc's list has been put for the present study it has been found convenient to refer to PSan forms as reflecting PPh forms rather than merely corresponding to them.

A systematic study of Sangiric correspondences to phonemes in other languages lies outside the scope of this work; in fact it is part of the aim of this work to provide evidence for such comparison to be methodically carried out at a later date. Thus when related forms and PPh or PAN etyma are cited it must be understood that correspondences have not always been clearly established. The short list of PSan innovations in section 1.4.1. goes part-way towards this but it does not represent a comprehensive or systematic statement.

In Part Two the phonologies of the present-day Sangiric languages are first briefly described. The phonology of PSan is reconstructed and the phonological histories of its daughter languages are traced and their interrelationships discussed.

In Part Three the wordlist of reconstructed PSan items is presented. Further discussion on the reconstruction of PSan lexical items is given in section 3.1.
PART TWO

PROTO-SANGIRIC PHONOLOGY AND DIACHRONIC CHANGES

2.0. In Part Two PSan phonology is reconstructed and the interrelationships of the Sangiric languages are discussed.

First, the phonologies of the present-day languages are briefly stated, in section 2.1.

In section 2.2, PSan phonemes and their distribution within the word are given.

The evidence of the reconstructions and the development of PSan phonology into the present-day systems is stated in section 2.3. Phonological changes are also examined in that section for the light they shed on interrelationships among the languages.

In section 2.4, the relationships between the languages within the Sangiric group are further discussed.

2.1. MODERN PHONOLOGIES

2.1.0. The phonological system of the parent language is reconstructed from a comparison of the phonologies of its daughter languages. The phonologies of the five Sangiric languages are briefly discussed in this section. Some phonological phenomena shared by a number of languages are described separately in sections 2.1.6 and 2.1.7, and some points are left until section 2.3 for discussion.

2.1.1. Sangir phonology

2.1.1.1. Segmental phonemes

The phonology described here is that of the Manganitu dialect. Manganitu has the following segmental phonemes:
When occurring after a, nasals and l are lengthened: əlo [əl:o] day, ənunq [ən:unq] six. All other consonants which can occur after a are preglottalised except h: əbuʔ [əbuʔ] to pull out, əsa [əʔsa] one. Since these phenomena are predictable they are not indicated in the phonemic script.

\[ b \text{ and } g \text{ are bilabial and velar fricatives respectively and } r \text{ is an alveolar flap or trill.} \]

\[ l \text{ is a voiced alveolar lateral while } \hat{l} \text{ is a retroflexed lateral flap.} \]

All consonants except b, g, l and ? occur initially; r occurs initially only in a handful of words, mainly in borrowings from other languages or other San dialects in which r corresponds to Manganitu h.

### 2.1.1.2. Stress

Stress is very largely predictable in San, falling on the penultimate syllable except when the final syllable is aʔ, in which case it falls on the third-last syllable, e.g. l'kudaʔ back (see section 2.1.6. for a discussion of final syllable aʔ).

### 2.1.2. Sangil phonology

#### 2.1.2.1. Segmental phonemes

Sangil (Sarangani dialect) has the following segmental phonemes:

<table>
<thead>
<tr>
<th>p</th>
<th>t</th>
<th>k</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
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<td></td>
<td>s</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>r</td>
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<td></td>
<td></td>
<td>l</td>
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<td></td>
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<td>w</td>
<td>y</td>
</tr>
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<td></td>
<td>i</td>
<td>u</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e</td>
<td></td>
<td>a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>o</td>
</tr>
</tbody>
</table>
The phonetic natures of \( l \) and \( l \) are as described for San (see section 2.1.1.1.).

Nasals \( l \) are lengthened after \( e \), as in San, but other consonants are not preglottalised in this position as they are in San.

All consonants except \( h \), \( w \), \( y \) and \( ? \) occur word-initially although \( l \) occurs initially only in a few words.

2.1.2.2. Stress

Stress placement is not predictable in Snl and stress contrasts occur, e.g. kâpu to rub and kapú desirous. However, the number of words in which stress does not follow the regular pattern is very small. Regular stress falls on the penult, except if this contains \( e \) and the final syllable contains some other vowel, in which case stress falls on the final syllable, e.g. bátu stone, kágən dried but təʔ fly, kəŋkún fist.

The final syllable \( a? \) does not take stress and does not influence stress placement, e.g. likuđə back, səkόʔ cough (see section 2.1.6.).

2.1.3. Talaud phonology

2.1.3.1. Segmental phonemes

Tal (Salibabu dialect) has the following segmental phonemes:

\[
\begin{array}{c c c c}
\text{p} & \text{t} & \text{k} & \text{?} \\
\text{b} & \text{d} & \text{g} \\
\text{h} & \text{r} & \text{h} \\
\text{m} & \text{n} & \text{ŋ} \\
\text{s} & \text{z} & \text{l} & \text{l} \\
\text{i} & \text{u} \\
\text{e} & \text{a} & \text{o} \\
\text{a} \\
\end{array}
\]

\( \dddot{z} \) is a voiced retroflexed fricative.\(^{24} \)

\( l \) and \( l \) are as described for San (see section 2.1.1.1.).

Study of Tal has not been detailed enough to allow a reliable phonemic statement. Voiced stops \( b \), \( d \) and \( g \) and their corresponding continuants, \( b \), \( r \) and \( h \) respectively, are in free variation word-initially, at least in some words, e.g. bobone \( \sim \) bobone mountain, donŋa \( \sim \) ronŋa leaf, gati \( \sim \) hati face. However, apparent contrast has been recorded word-initially, e.g. rurukka (is) sailing and durukka sai! Usually only the continuants occur intervocally but the stops occur after some prefixes (see example below). For the present work stops and corresponding continuents are treated as phonemically separate.

In some dialects \( g \) corresponds to Salibabu \( h \).
Most consonants occur both singly and doubled. The choice between single and doubled consonants is, synchronically, very largely unpredictable. Some contrasts have been recorded, e.g. maballas will borrow and mabballasa is borrowing, allana slave and alana to swim.

Adriani (1911) does not refer to gemination except in reference to its occurrence stem-initially following prefix Cu-, e.g. Cu + dalanna to walk + duddalanna is walking. Steller (1913) points out that consonants are doubled following a where this is a reflex of a previous *a. He writes that this a is phonetically different from a elsewhere. However, no phonetic difference was noted in the speech of informants for this study except that a, like other vowels, is shorter in closed syllables than in open syllables.

Steller does not mention other instances of doubling. However, consonants are also often doubled preceding word-final a, e.g. papaidda wing, lanitta sky. This doubling occurs only before a where it is an historical addition (see section 2.1.6.) but not where it reflects PPh *a, e.g. mata eye (PPh *mata).

Doubling of the consonant before final a, as described above, does not always occur and is absent if the preceding consonant is doubled, e.g. alana slave, annuma six, or if a nasal-stop cluster, e.g. sandaka to lean, sengota to sail or is 2, e.g. bažata west, užasa to wash.

Germinate stops are sometimes realised as preglottalised single consonants, in free variation with phonetically long consonants, e.g. pappuso [paʔpuso] ~ [papːuso] heart.

2.1.3.2. Stress

Although only a very brief study of this language was possible it appears to indicate that stress is non-phonemic. Stress usually falls on the penultimate syllable. When the final syllable is the additional vowel a stress often falls on the third-last syllable. However, there appear to be cases which do not conform to the above rules and further study of stress will be necessary. Tal stress is not indicated in this study.

2.1.4. Bantik phonology

2.1.4.1. Segmental phonemes

Ban has the following segmental phonemes:

<table>
<thead>
<tr>
<th>P</th>
<th>T</th>
<th>K</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>d</td>
<td>g</td>
<td></td>
</tr>
<tr>
<td>m</td>
<td>n</td>
<td>η</td>
<td></td>
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<tr>
<td>s</td>
<td>h</td>
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<tr>
<td>w</td>
<td>y</td>
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<td></td>
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<tr>
<td>i</td>
<td>u</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>a</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>
b, d and g are realised as voiced stops in all environments.
{l} is a retroflexed lateral flap [!] in all environments.26

2.1.4.2. Stress

Word stress is unpredictable and therefore phonemic. Stress usually falls on the penultimate syllable: káyu wood, báley house, makápála? thick. In a large number of words it falls on the final syllable, this being synchronically unpredictable: mahémé full, mabahá? heavy, lumamápán to walk. In other words stress falls on the third-last syllable: líkudu? back, dákele? many.

Stress contrast is shown by the following pairs: sáhaŋ tree sp. and sahaŋ ant, mamúku (stem búku) to kneel and mamuku (stem pukú) to bend, pahígi well and pahígí knife.

In the present work stress in Ban is indicated wherever it does not fall on the penultimate syllable of the word.

2.1.5. Ratahan phonology

2.1.5.1. Segmental phonemes

Rth has the following segmental phonemes:

<table>
<thead>
<tr>
<th>Phoneme</th>
<th>m</th>
<th>n</th>
<th>p</th>
<th>r</th>
<th>s</th>
<th>t</th>
<th>u</th>
<th>w</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>n</td>
<td>p</td>
<td>r</td>
<td>s</td>
<td>t</td>
<td>u</td>
<td>w</td>
<td>y</td>
<td></td>
</tr>
</tbody>
</table>

Phoneme b has the following allophones: voiceless bilabial fricative [p] occurs word-finally and before a consonant: kukáh [kuká?] wing, kúkáne [kúkáne] its wing. A voiced bilabial or labiovelar continuant [b ~ v] occurs elsewhere, being to some degree influenced by adjacent vowels. This set of allophones will henceforth be represented by [ɓ]: báley [bále?] house, líbu [líbu] to go around.


The voiced stops d and g do not contrast with their corresponding continuants, r and h respectively. The stops occur only after homorganic nasals, initially and medially, e.g. ndípa rainbow, indak to breathe, ngípu soot, mníga? to decrease. Like h, r (trilled or flapped vibrant [ɬ ~ ɬ]) occurs initially, intervocally and finally, e.g. rúu two, arey chin, lar foot.
The situation with b and ɓ is basically the same, b occurring after m, e.g. mbulu feather, timbòw to float, and ɓ occurring elsewhere, as exemplified above. However, in a few words b and ɓ occur in free variation intervocally, e.g. loben ~ loben big, labah ~ labah to throw. In a few words only b occurs, e.g. masasabunu? to fight.

Although stops and corresponding continuants are in complementary distribution, apart from the few instances of contrast between b and ɓ mentioned above, it has been decided to represent them separately in Rth, at least for the purposes of this comparative study. The main reason for distinguishing between the stops and continuants in this work is for the purpose of comparison with the other Sangiric languages. In San, Snl and Tal voiced stops and continuants, previously in complementary distribution, have become phonemically separate through subsequent sound changes and borrowing (see section 2.3.13.). To represent Rth voiced stops and corresponding continuants also as separate greatly facilitates discussion and description when comparing Rth with these languages.

Vowel-initial words are usually preceded by a non-phonemic glottal stop. Some words, however, never are; in these the initial vowel is either lengthened or has a breathy onset, which is very slight and varies with the following vowel. Preceding velar constriction results in a faint velar fricative quality [X]. Preceding i palatal constriction results in a faint palatal fricative quality [ζ] to the onset of the vowel. These variants are hereafter all represented [h]. These are here recognised as variants of a phoneme represented by a dash over the initial vowel, (¬) in the chart of phonemes above. Thus: āmu? [a·mu? ~ āmu?] root, Ti̍k [i̍·t̍k ~ hít̍k] swell. This phoneme occurs medially only in reduplicated words: Umbit̍i̍t̍k [húmit̍i̍t̍k] is swelling.

One reason for recognising an initial consonant in such words is that they take infixes -um- and -in-, which otherwise occur only after stem-initial consonants (see the last example above). Also, diachronically, it reflects an earlier glottal fricative *h, which still occurs in some other Sangiric languages. It still existed, initially and medially, when Niemann produced his wordlist (see section 2.3.9.).

Following a prefix this consonant is lost: ākir [á·kir ~ hákir] + muakir [muákir] to tie up.

It is felt preferable to use the diacritical device rather than a separate letter to represent this phoneme as it is more appropriate to its phonetic character, that of a breathy onset or slight lengthening of the vowel rather than a separate initial segment. However, the symbol <h> is still used to represent the glottal fricative phoneme h in the discussion of earlier stages of Rth.

2.1.5.2. Stress

Word stress is unpredictable and therefore phonemic. Stress usually falls on the penultimate syllable: kāyu wood, tâley house. In a large number of words stress falls on the final syllable: sukōl cough, tînîk mosquito. Stress contrast is shown by the following pairs: mundúpa to put and mundupâ to measure a span, niu winnowing pan and niu coconut.

One exception to the occurrence of stress on the penultimate syllable is when this syllable contains a high vowel and is immediately followed by another vowel in a closed syllable. In such cases stress usually falls on the final syllable. This is further discussed, with examples, in section 2.3.23. When
stress occurs on a word-final high vowel the addition of a suffix may produce the conditions described above and, if so, stress shifts to the new final syllable, e.g. sumú nasal mucus + -an + sumúan having a runny nose.

Stress on the penultimate syllable is henceforth unmarked; where stress falls on any other syllable it is indicated in the script.

2.1.5.3. Long and short vowels

Phonetically long vowels occur in Rth: [ba:] fire, [tu:n] order. These contrast with short vowels, e.g. [tu:] egg and [tu:] embers, [manú:k] to draw water and [mánuk] fowl.

Phonetically long vowels are interpreted as sequences of two identical short vowels. Where phonetically stress falls on a long vowel it is treated phonemically as falling on the first of the two identical vowels, e.g. [manú:k] manúuk to draw water, [rámi] ráami deserted rice-field. In such cases stress is not further indicated in the phonemic script. However, it is indicated where it falls elsewhere, e.g. [ka:bf] kaabf last night.

A long vowel reduces to a short vowel if another vowel occurs adjacent to it. Thus ka- + kii to grate + -an + kakián grater.

2.1.6. The paragoge

In San, Snl and Ban an extra syllable is added after all final consonants except η and η. This syllable is a? in San and Snl and V? in Ban, where V assimilates to the preceding vowel.

As mentioned in the descriptions of the individual languages above, this syllable does not take or influence stress, the preceding syllable acting as the word-final syllable for the purpose of stress placement. Thus San úhase?, Snl úrasa?, Ban úhase? to wash. Here stress is regular in San and Snl, falling on the 'second-last' syllable; the support syllable is distinctive and stress placement is therefore predictable. But for Ban the support syllable is not distinctive as the sequence V? is often the final syllable of the root morpheme, e.g. kínaka? older sibling. Therefore for Ban the support syllable must be counted when stress placement is calculated and this, in addition to other factors (see section 2.3.1.), results in unpredictable stress placement. Thus úhase?, with stress on the antepenultimate syllable, and kínaka?, with stress on the penultimate.

For ease of description and because of its precise definition the term paragoge will henceforth be used to refer to this support syllable.

In Tal the paragoge is vowel a, usually accompanied by doubling of the preceding consonant, as described in section 2.1.3.1. In Tal the paragoge occurs after all final consonants, including nasals, e.g. užasa to wash, itumma black.

Rth is the only language in which there is no paragoge. Thus uras to wash, itum black.

In all languages the paragoge is lost if there is a suffix beginning with a vowel. Thus, San, Ban uhasen, Snl uraseñ, Tal užasannna will be washed (with the paragoge reappearing after the suffix-final n in Tal). One exception is with San roots of one syllable, which do not lose the paragoge before a vowel-initial
suffix, e.g. haḷa? work + -e + haḷa?e his work. Loss of the paragoge is synchronically unpredictable in Snl when suffix -e his, its occurs, e.g. baga? strength + -e + baga?e its strength but bade? payment + -e + bade its payment.

In a systematic phonemic statement the paragoge would be non-phonemic in San as its occurrence is predictable, e.g. for uhas the only possible pronunciation would be [ūhasaʔ].

In Snl the diachronic loss of *l subsequent to the development of the paragoge (see section 2.3.10.) has resulted in its not being entirely predictable, as can be shown with the word sakoʔa? cough (from earlier *sakoʔaʔ). From the representation sako the surface form sakoʔa? could not be predicted as the paragoge does not normally immediately follow a vowel.30 Further, the irregular retention of the paragoge with suffix -e, as described above, requires it to be given phonemic status.

Because of the discussion it requires (see section 2.3.3.) and to conform with all previous publications on these languages, in this study the paragoge is represented wherever it occurs.

2.1.7. Final nasals

In San, Snl and Ban the only word-final nasal is g. This frequently reflects a previous *m or *n (see section 2.3.5.).

When a suffix is added in Ban, g is replaced by the original nasal, e.g. inuŋ to drink + -an + inuman will be drunk, suan to plant + -eŋ + suanen will be planted.

In San g generally remains when a suffix is added. Thus undaŋ to treat medically (PSan *undam) + -eŋ + undaŋen will be treated, suaŋ to carry on the head (PSan *suan) + -aŋ + suaŋen will be carried on the head.31

In Snl final g is replaced by n before a suffix irrespective of what the nasal was in PSan. Thus inuŋ to drink (PSan *inum) + -aŋ + inuman will be drunk, suan to plant (PSan *suan) + -eŋ + suanen will be planted, tuaŋ to fell (PSan *tubaŋ) + -eŋ + tuaŋen will be felled.

In a systematic phonemic statement of Ban m and n would be represented word-finally in those words where they occur preceding a suffix, their surface replacement by g in final position being predictable. However, for this comparative study g is shown as the final nasal in all cases.

2.2. PROTO-SANGIRIC PHONOLOGY

2.2.1. Segmental phonemes

The following are the segmental phonemes reconstructed for PSan:32
The phonetic nature of *R is not certain (see section 2.3.9.).

Voiced stops *b, *d and *g probably had continuant allophones in some positions in the word (see section 2.3.13.).

The lateral *l had two allophones: alveolar lateral [l] and retroflexed lateral flap [ɿ] (see section 2.3.10.).

In San, Tal, Ban and Rth t is dental and d is alveolar. The same points of articulation are therefore postulated for PSan. 33

2.2.2. Stress

Stress was non-phonemic, falling on the penultimate syllable (see section 2.3.23.).

2.2.3. Distribution of phonemes

From a comparison of the Sangiric languages the distribution of phonemes within the morpheme can be reconstructed as follows:

All vowels occurred in initial position:

*atup  roof  *ikit  to tie
*ebew  saliva  *olay  spadix
*aRab  to sharpen  *ulid  worm

All vowels occurred in medial position:

*tali  rope  *lima  five
*beŋel  deaf  *tolay  tail
*paku  to bend  *kumi  moustache

One restriction was that *e did not occur in either open or closed final syllables. The other five vowels occurred finally:

*lima  five  *buno  to kill
*pile  to choose  *pitu  seven
*tali  rope
Two vowels could occur in sequence. The only clusters reconstructed within the morpheme involving *ə are *aa, *ia and *ua. Sequences of two identical vowels did not occur. Examples of vowel sequences:

- *polaen wrist
- *kaan food
- *taun year
- *sien he
- *Riud to pull
- *sai who
- *tuadi younger sibling
- *luam overcast
- *loaŋ wide
- *tuid stump

Sequences *ee and *oe occurred at morpheme boundaries, i.e. where stem-final mid-vowels were followed by the suffix *-an (see section 2.3.1.).

All consonants except *w, *y and *? occurred initially:

- *pait bitter
- *mata eye
- *maRi rotten
- *niuR coconut
- *tau person
- *ŋuda young
- *dalen road
- *sanu steam
- *kayu wood
- *lagay to laugh
- *gudan old
- *Ramut root

All consonants occurred intervocally except *?:

- *lipan centipede
- *tanak to live
- *saRi froth
- *saru steam
- *batu stone
- *tasiR sea
- *gudan old
- *tulak to fly
- *sakol cough
- *bəRu new
- *tages reef
- *kayu wood
- *lima five
- *awak body

All consonants occurred finally:

- *alup to swallow
- *labiŋ grave
- *sasub steam
- *bitis calf
- *baRat heavy
- *sadeR to lean against
- *likud back
- *kəpal thick
- *manuk bird
- *lagay to laugh
- *bulag blind
- *talaw cowardly
- *inum to drink
- *leRe? neck
- *luan to exchange

The only consonant clusters within the morpheme were sequences of nasal plus homorganic stop or *s:

- *kumpas tree sp.
- *bambulu feather
- *pantas to harvest
- *dandum dark
- *lansik to bounce
- *kɑŋkum fistful
- *tiŋgum riddle

It is probable that other clusters occurred at morpheme boundaries, especially between a root and a following suffix or enclitic, but this cannot yet be established because of the different patterns in the present-day languages.

2.3. DIACHRONIC CHANGES

2.3.0. This section examines the phonological changes which occurred during the development of the five present-day languages from PSan. The changes are also examined for the light they shed on the historical relationships between the languages.
It will be noted that there occurs some apparently conflicting evidence for relatedness among the languages, i.e. where languages A and B share an innovation suggesting a subgroup excluding C while B and C share another innovation suggesting a subgroup excluding A. Many such features must be the result of diffusion. In particular there are a number of common innovations in San and Tal which do not occur in Snl. The very close relationship between San and Snl is shown by their large common lexicon, including a high percentage of shared vocabulary in the lexicostatistics list, and their very similar phonologies. They can rightly be regarded as dialects, or rather as dialect clusters, each with its own sub-dialects, of one language, although for the purposes of the present comparative study they are referred to as separate languages. Therefore, innovations shared by San and Tal, but not Snl, must be regarded as the result of areal spread. The same conclusion applies where Ban shares an innovation with San and Snl not found in Tal, as Tal is demonstrably closer to San and Snl than is Ban. Evidence for this is presented in a number of subsections below.

It is shown (see section 2.3.2.) that San, Snl and Tal form a subgroup, referred to as the North Sangiric languages. Their immediate parent language is called Proto-North-Sangiric (PNSan). Because of the shared history until recently of San and Snl and thus the frequent need to refer to them together in comparison with the other languages the abbreviation San/Snl is often used below. Ban and Rth are called the South Sangiric languages (see section 2.4.) and their immediate parent language is called Proto-South-Sangiric (PSSan).

2.3.1. Reflexes of schwa

The six-vowel system of PSan was reduced in Tal, Ban and Rth through the loss of *ə or its replacement by some other vowel.

PSan *ə has been retained in San in all environments. In all other languages it was lost immediately following another vowel within the same morpheme:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
<th>Tal</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kaən</td>
<td>kaŋ</td>
<td>kaŋ</td>
<td>anna</td>
<td>kaŋ</td>
<td>kan</td>
</tr>
<tr>
<td>*luaŋ</td>
<td>luaŋ</td>
<td>luaŋ</td>
<td>lumma</td>
<td>luaŋ</td>
<td>lum</td>
</tr>
</tbody>
</table>

Between morphemes San retains sequences əə, eə and oə, i.e. when suffix -əŋ follows stems ending in a, e or o. According to Adriani these usually assimilate to long vowels aː, eː and oː respectively. But Steller and Aebersold give forms with ə, rather than lengthening of the preceding vowel. Thus Adriani (1893:157) pandarenəŋ, Steller and Aebersold pandarenəŋ bathing place, from deno to bath.

In the other languages the same reduction occurs between morphemes as occurred diachronically within morphemes; suffix *-əŋ has reduced to -ŋ in Snl and Ban, -n in Rth and -ŋ(na) in Tal. In Snl, Ban and Rth stress shift to the final syllable (where it does not already occur on the final syllable of the stem) attests to the previous occurrence of a vowel sequence, as still reflected in San:

Snl leba to lick, lebəŋ licked, cf. San lebaŋ
Tal tumpa to descend, tatumpanna place of descent
Ban baká to split, bakán will be split
tudo to leak, tudón leaking
Rth büká to split, bükán will be split
turo to leak, turón leaking
Schwa elsewhere remains in Snl except that in the Sarangani dialect it was lost word-initially. In Ban and Rth also *ə was usually lost word-initially. In all three languages its reflex remains after a prefix, having undergone changes in Ban and Rth as described below. In the following examples reflexes of *ə initially and after a prefix are illustrated for Snl, Ban and Rth.

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl (Sarangani)</th>
<th>Snl (Mindanao)</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*əlup</td>
<td>lu?</td>
<td>əlu?</td>
<td>lu?</td>
<td>lup</td>
</tr>
<tr>
<td>*məlup</td>
<td>maŋəlu?</td>
<td>maŋəlu?</td>
<td>maŋulů?</td>
<td>maŋulůp</td>
</tr>
</tbody>
</table>

Since the loss of *ə word-initially did not occur in the Mindanao dialect of Snl, its loss in Sarangani dialect must have been very recent and is therefore a parallel development rather than a shared innovation with Ban and Rth. Loss of initial *ə did not occur in Snl, Ban and Rth if it was followed by a nasal-stop cluster, although it underwent other changes in Ban and Rth. Thus Snl əndaŋ here you are, Ban ampaha? underlayer (PSan əmpaR), Rth uŋgō to call (cf. San əŋgo to make a noise).

Where not lost altogether in Ban and Rth *ə was replaced by some other vowel. In both languages it assimilated to a high vowel in the following syllable. Assimilation is complete in Ban, *ə always assimilating to the following vowel. However, in Rth *ə was replaced by u if the vowel following was other than i:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bəkis</td>
<td>bikisi?</td>
<td>bikís</td>
</tr>
<tr>
<td>*salet</td>
<td>selé?</td>
<td>sulé?</td>
</tr>
<tr>
<td>*baka</td>
<td>baká</td>
<td>buká</td>
</tr>
<tr>
<td>*lano</td>
<td>lonó</td>
<td>lunó</td>
</tr>
<tr>
<td>*bəndu</td>
<td>bundú</td>
<td>bundú</td>
</tr>
</tbody>
</table>

Where non-initial *ə occurred adjacent to *h in Rth it underwent different changes from those described above. Where it preceded *h (reflecting PSan *R) it assimilated to a following a. Subsequent loss of *h (see section 2.3.9.) resulted in long vowels:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Pre-Rth</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*səRam</td>
<td>*saham</td>
<td>saam</td>
</tr>
<tr>
<td>*bəRat</td>
<td>*baha?</td>
<td>baa?</td>
</tr>
</tbody>
</table>

This change must have occurred before *ə was replaced by u elsewhere. If medial *ə has become u before *h irrespective of the following vowel then the last item above, for instance, would have become **buhā?, and finally **bua?. The fact that *ə assimilated to the following vowel before *h was lost is shown by Niemann, medial h still occurring at the time he compiled his wordlist. Thus for the items above Niemann gives <saham> ant and <waha> heavy. It is possible that *ə assimilated to other vowels in this position but no examples have been recorded except with u; in such words replacement of *ə by u can also be accounted for according to the regular rule outlined above, e.g. PSan *dəRup > Rth ruup (Niemann <ruhuP>) face.

If *ə was preceded by the sequence *ah in Rth it assimilated to the preceding *ə. It is possible that *ə assimilated to any vowel in this position but only a has been recorded. This assimilation occurred before the loss of *h, as shown by Niemann in, for instance, his recording <tahandum> for the first example below:
Assimilation to preceding *a through intervening *h took precedence over influence of the following vowel; in the non-prefixed form of the first example above, *Randum became Rth 嬛όm to remember (see *andum in the wordlist). In Ban *ə was not influenced by the preceding vowel as it was in Rth, as shown by the above examples.

There are some similarities in the way Ban and Rth reflect *ə. In initial position *ə was usually lost and elsewhere was replaced by another vowel. However, there are strong reasons for not regarding changes to *ə as reflecting shared innovations. Generally *ə became u in Rth and assimilated to the following vowel in Ban. These changes must have occurred independently with the change in each language being directly from *ə to the present-day sounds. It is not possible that both languages underwent a common change and that after splitting one language then underwent further changes, as this would have involved other vowels as well. For instance, if *ə first became u before all vowels except i and later assimilated in Ban there is no explanation for why other instances of u, not originally from *ə, did not likewise assimilate.

Further, in Rth *ə assimilated to a preceding or following a if the intervening consonant was *h. This change in Rth must have occurred before other changes to *ə, as its replacement by u would have prevented such assimilation. Since Ban does not reflect assimilation of *ə to a preceding vowel through intervening h all changes to *ə medially must have occurred after the separation of Ban and Rth. Thus changes to *ə offer no evidence for a close link between Rth and Ban (although loss of initial *ə might have occurred earlier, as a shared innovation).

In Tal *ə in all environments, except where lost following a vowel (see above), was replaced by a:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*əpat</td>
<td>əpaʔ</td>
<td>appata</td>
</tr>
<tr>
<td>*bali</td>
<td>bali</td>
<td>balli</td>
</tr>
<tr>
<td>*dandum</td>
<td>dandum</td>
<td>danduma</td>
</tr>
</tbody>
</table>

The change undergone by *ə in Tal was independent of changes in other languages. Stress shift in Ban and Rth predated changes to *ə in those languages (see section 2.3.23.) yet stress shift did not affect Tal. On the other hand the development of long consonants predated changes to *ə in Tal (see section 2.3.15.) but is not reflected in Ban and Rth.

### 2.3.2. Assimilation and metathesis of *s and *t

San, Snl and Tal reflect metathesis of word-final *s with a preceding *t. In San and Snl the resulting final *t was later replaced by ? (see section 2.3.3.). In the following illustrations Ban cognates are included for comparison:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
<th>Tal</th>
<th>Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ratis</td>
<td>hasuʔ</td>
<td>rasuʔ</td>
<td>ʔasutta</td>
<td>háitusuʔ</td>
</tr>
<tr>
<td>*bitis</td>
<td>bisiʔ</td>
<td>bisiʔ</td>
<td>bisittha</td>
<td>bitisiʔ</td>
</tr>
</tbody>
</table>
Metathesis was regular where *t was the consonant in the syllable immediately preceding final *s, as in the above examples. The change sometimes also occurred in San, Snl and Tal where *t was separated from final *s by two syllables. Most examples recorded have been of two syllable words, with metathesis of initial *t and final *s.

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
<th>Tal</th>
<th>Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>*täjís</td>
<td>sañí?</td>
<td>sañí?</td>
<td>sanítta</td>
<td>tänísí?</td>
</tr>
<tr>
<td>*tages</td>
<td>sahe?</td>
<td>sahe?</td>
<td>sahatta</td>
<td>tágese?</td>
</tr>
</tbody>
</table>

Metathesis did not always occur in San, Snl and Tal in the environment described above. For example, San, Snl tapí sa? to sieve, San togasa?, Snl tohase?, Tal tohassa strong, hard. Such forms cannot all be discounted as having been borrowed after metathesis had ceased to operate. In the file of cognates there are more items which did not undergo metathesis of initial *t and final *s than items which did, which raises considerable doubt about the possibility of all such items being borrowings. Further, many of them have cognates in Rth and can thus be reconstructed for PSan. The San word togasa? is a borrowing but as cognates occur in the other Sangiric languages it is a very ancient one, clearly predating PSan, for which an etymon, *togas, can be reconstructed. Steller and Aebersold cite San tapísa? as a loan from Mal but cognates occur in Rth and Ban and borrowing need not be assumed.

Metathesis of final *s and preceding *t also occurred where *t was prenasalised:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*pántas</td>
<td>pansa?</td>
<td>pantasa?</td>
<td>puntás</td>
</tr>
</tbody>
</table>

The above example is the only one recorded but it is sufficient to allow items such as San balontasa? tree sp. (cf. Ttb walontas) to be regarded as borrowings.

Although there is only one example available it indicates that metathesis did not occur in reflexes of PPh RMs: San tatasa? to break (of thread); to cut loose (of seam) reflecting PPh *tastas to cut, tear; cut loose. Cognates do not occur in Ban and Rth. PSan *tetas is reconstructed, presumably metathesis being prevented by influence of the initial t.35

Otherwise metathesis of final *s and *t in the immediately preceding syllable was regular and the few recorded items in which it is not reflected are treated as borrowings.36

In San and Snl initial *t assimilated to a later, non-final *s, whether in the following syllable or more distantly separated. No cognates have been recorded for Tal so it is not known if that language also reflects this assimilation:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
<th>Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tasík</td>
<td>sasi?</td>
<td>sasi?</td>
<td>tasi?</td>
</tr>
<tr>
<td>*tasák</td>
<td>sasa?</td>
<td>sasa?</td>
<td>tasa?</td>
</tr>
<tr>
<td>*talísay</td>
<td>sañísay</td>
<td>sañísay</td>
<td>talísey</td>
</tr>
</tbody>
</table>

Since assimilation, and not metathesis, occurred in San/Snl if *s was originally non-final, Tal evidence is necessary to show that it was metathesis, and not assimilation, which occurred when *s was originally in final position, the evidence in San and Snl having been obscured by later reduction of the final consonant to ?.37
Metathesis is one of the strongest pieces of phonological evidence for subgrouping. It shows that San, Snl and Tal shared a parent language not ancestral to Ban and Rth and that consequently they form a subgroup of the Sangiric languages with a common parent language, Proto-North-Sangiric (PNSan). This subgrouping is supported by lexicostatistical evidence (see section 2.4.).

Metathesis occurred before final consonant reduction as Tal split from San/Snl before that change occurred. Metathesis provides the important information that final consonant reduction in Ban, San and Snl did not occur in a shared parent language but was the result of diffusion of the innovation. It also shows that development of the paragoge in these languages was also an areal phenomenon (see section 2.3.3. for a description of final consonant reduction and paragoge development).

Assimilation of *t to a following *s may have occurred at the same time as metathesis but until evidence from Tal is available it cannot be shown that it was not a later development in San/Snl only.

2.3.3. Paragoge and final consonant reduction

In all languages but Rth a process occurred whereby an extra syllable was added word-finally following certain consonants. The nature of this paragoge varies from language to language (see section 2.1.6. for a synchronic statement).

In Tal vowel a occurs after all final consonants, usually with doubling of the preceding consonant (see section 2.1.3.1.), e.g.:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*uRas</td>
<td>užasa</td>
</tr>
<tr>
<td>*inum</td>
<td>inumma</td>
</tr>
<tr>
<td>*laŋit</td>
<td>laŋitta</td>
</tr>
<tr>
<td>*utak</td>
<td>uta?a</td>
</tr>
</tbody>
</table>

The paragoge does not occur in words which earlier had final *ʔ, either because *ʔ resisted the addition of the paragoge or because it had already disappeared (see section 2.3.7.), leaving a final vowel, which blocked paragoge development. Where the paragoge now occurs after glottal stop, as in the last example above, ʔ derives from earlier *k (see section 2.3.8.).

In San and Snl the paragoge is øʔ, i.e. schwa followed by glottal stop:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*uRas</td>
<td>uhasaʔ</td>
<td>urasəʔ</td>
</tr>
<tr>
<td>*likud</td>
<td>likudaʔ</td>
<td>likudaʔ</td>
</tr>
</tbody>
</table>

In Ban the paragoge is Vʔ, where V assimilates to the preceding vowel:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>*uRas</td>
<td>űhasaʔ</td>
</tr>
<tr>
<td>*didIR</td>
<td>dfdihiʔ</td>
</tr>
<tr>
<td>*sakol</td>
<td>sokoloʔ</td>
</tr>
</tbody>
</table>

In Tal the paragoge occurs after all words ending in a consonant. In San, Snl and Ban it does not occur after final nasals (see section 2.3.5. for examples). Elsewhere the paragoge is word-selective in San, Snl and Ban. In words in which it was not added the final consonant was replaced by ?, unless it was a nasal or itself ?. Replacement of final consonants by ? is hereafter called final consonant reduction.38
Although all three languages usually underwent the same changes in the same items this was not always the case. Ban has a number of recorded words with the paragoge while corresponding words in San and Snl underwent final consonant reduction. Thus Ban kïnasä?, San/Snl kina? *fish; Ban âpuhu?, San/Snl apu? lime; Ban bëjko? , San bëjko? bent. Further, Steller and Aebersold’s dictionary gives numerous examples of doublets in San where one has the paragoge and the other does not. For example, salu? river and saluha? drain, channel; disi? and disîma? to stand firm; bahi? and bahisa? line, stripe; lintu? to descend and lintuhä? degree of descent; põngu? and põngu? . There is no reason to suppose either of the forms in each pair is a borrowing. Such doublets may result from dialect mixture. Steller and Aebersold also provide other examples where there is dialect variation. Thus Taruna lebo?, Manganitu leboha? young coconut.

A very few examples have been noted where San and Snl disagree in the occurrence or not of the paragoge: San ma riiriha? , Snl ma-didi? yellow (the Snl form may be irregular — see the note to *didi in the wordlist, section 3.2.); San hunu? fire, Snl lu-runusa? bonfire; San bisu? , Snl bisu? boil.

It has been suggested that San forms with the paragoge may be borrowings, with only final consonant reduction occurring in inherited words (Mills 1974: 18-19). However, there are far too many basic vocabulary items with the paragoge for them all to be regarded as borrowings; most are clearly inherited words.

In the wordlist in section 3.2. there are thirty San items with the paragoge after s but only three, possibly four, reflecting s-reduction (see *Renes, *kemis, *kinas, *nipis) and one case of doublets (see *beRis). No recorded Ban words have s-reduction, the paragoge occurring in all items. Clearly paragoge addition was the usual development where PSan had final *s.

One class of sounds consistently replaced by ? in San, Snl and Ban were the voiceless stops *p, *t and *k. No items of basic vocabulary have paragoge and the few exceptions noted are mostly obvious borrowings. Compare, for instance, San sada? to set (of sun), from PSan *sadap, and sadapa? delicious, from Mal sadap. San (Tabukang) otaka? and Snl utuka? brain are borrowings, occurring beside the inherited word uta? hair, from PSan *utak (see comments in section 1.6.). Ban kúlata? mushroom must also be treated as a borrowing (see section 1.6.).

It is generally true that borrowings added paragoge rather than reducing final consonants in order to conform to the phonological patterns of these languages, e.g. San kapa? , Snl kapa? ship, from Mal kapal; San malasa? lazy, from Mal malas; San harapa?, Snl haarpa? hope, from Mal harap; San poroka? fork, from Dutch work, and many others. Note, however, San, Snl bebe? duck, with unexpected consonant reduction, beside Ban bëbeke?, presumably from Mal bebek; San/Snl uba? monkey, apparently from ubal in a southern Philippine language (see section 1.6.). In both the above cases medial b, instead of regular b, points to borrowing.

Why some words in San, Snl and Ban added paragoge while others reduced the final consonant to glottal stop cannot as yet be conclusively explained. The hypothesis is put forward below that paragoge addition and final consonant reduction were competing processes by which final consonants were eliminated.
As explained in section 2.3.2., metathesis of *t and *s occurred in PNSan after its separation from Ban and Rth. At the time metathesis took place neither paragoge addition nor consonant reduction had yet occurred; the present-day San and Snl forms can only be explained as the product of metathesis operating on words ending in a consonant.

Since Ban had separated from the other languages before metathesis took place it was already a separate language when paragoge addition and final consonant reduction occurred. Therefore the appearance of these in the modern languages reflects, at least in part, their diffusion through separate, though contiguous, speech communities.

Further evidence that Ban had already split from the other languages when final consonant reduction and paragoge development occurred comes from the fact that it undergoes certain different morphophonemic changes. Thus:

(i) In Ban replacive glottal stop remains before a suffix whereas in San and Snl it is replaced by a consonant, usually k or t.\(^42\) In the following examples of reflexes of PSan items both roots and suffixed forms are given:

*boRet > Ban bohe? to write + -aŋ + bohe?aŋ be written
*tiap > Ban tia? to count + -eŋ + tia?eŋ be counted
*boRet > San bohe? to write + -aŋ + bohekaŋ be written
*tiup > San tiu? to blow + -aŋ + tiukaŋ be blown
*seŋgot > Snl seŋgo? to sail + -aŋ + seŋgotaŋ be sailed
*tiup > Snl tiu? to blow + -aŋ + tiukaŋ be blown

(ii) In Ban the paragoge remains before a genitive phrase whereas it is lost in San and Tal:\(^43\)

<table>
<thead>
<tr>
<th>Language</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ban</td>
<td>pálede? nu lima</td>
<td>palm of the hand</td>
</tr>
<tr>
<td>San</td>
<td>paľed u lima</td>
<td>palm of the hand</td>
</tr>
<tr>
<td>Tal</td>
<td>papaidd u manu?a</td>
<td>bird's feathers</td>
</tr>
</tbody>
</table>

Final consonant reduction did not occur in Tal. It therefore split from San/Snl before this change began.

It is possible that the paragoge originated in PNSan. Nevertheless, the fact that it occurs after all consonants in Tal but not in San/Snl shows that the languages split before it spread to the entire lexicon. It is also possible that the paragoge first appeared in Tal after it split with San/Snl and that the innovation was then borrowed by San/Snl, as it was by Ban.

The hypothesis put forward here is that addition of the paragoge and final consonant reduction were two competing methods by which final consonants were dealt with in the Sangiric languages. According to this hypothesis the development of a paragoge probably began in Tal after it had split with San/Snl. The reduction of final consonants to \(?\) began in the San/Snl area, affecting some consonants before others. Thus it affected final voiceless stops, spreading to Ban, which also replaced all final voiceless stops by \(?\). These were undoubtedly the first sounds affected as they all reduced to \(?\), whereas such consistent replacement did not occur with other consonant classes.

However, while consonant reduction was spreading to different classes of final consonants throughout the Ban and San/Snl areas, and at different rates in different areas, paragoge addition spread from Tal and began to affect these languages.
The paragoge became more favoured as a means of dealing with final consonants and began to operate on those words in which final consonants had not yet been replaced by ?. (Since it did not operate on words ending in glottal stop these remained as they were.) Thus, for instance, when the rule of paragoge addition spread it 'found' Pre-San *kina? *fish and thus did not operate on it but 'found' Pre-Ban *kinas, which thus took the paragoge, reflected in modern Ban kínas?, pre-empting the application of the consonant reduction rule in that, and other s-final words, in Pre-Ban. Similar variation in the San dialects, described above, can likewise be accounted for.

The above hypothesis appears the most satisfactory for explaining the present-day situation in Ban, San and Snl. The addition of the paragoge rather than consonant reduction to borrowed words to bring them into line with the phonological patterns of the languages is accounted for in the above hypothesis because paragoge application continued to operate after consonant reduction had ceased, it being the favoured method for 'removing' consonants from final position.

The hypothesis does not rule out the possibility that the paragoge was originally *a? in all languages, as regular sound changes operating in Tal and Ban could explain the present-day forms in terms of developments from *a?. In Tal *a became a in all environments and final *? was lost." In Ban *a regularly assimilated to the following vowel; if the paragoge was originally *a? then in this case the direction of assimilation was reversed, *a here assimilating to the preceding vowel.

While the paragoge was added to words ending in a nasal in Tal, final nasals were affected by neither paragoge addition nor reduction to glottal stop in Ban, San and Snl.

2.3.4. Reduction of final *t in Rth

Consonant t does not occur finally in Rth, having been replaced by ?. Tal cognates are included for comparison:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Rth</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*laŋit</td>
<td>lage?</td>
<td>laŋitta</td>
</tr>
<tr>
<td>*apat</td>
<td>pa?</td>
<td>appata</td>
</tr>
<tr>
<td>*takut</td>
<td>taku?</td>
<td>ta?utta</td>
</tr>
</tbody>
</table>

Since final *t reduced to ? in all languages except Tal it is only Tal evidence which allows its reconstruction for PSan. The reduction in Rth is dealt with separately because of the possibility that it is an entirely independent development from consonant reduction in San, Snl and Ban.

Since Rth does not reflect metathesis of final *s and a preceding *t it had split with the North Sangiric languages before occurrence of metathesis, which preceded final consonant reduction (see section 2.3.2.). This applies to Ban too, which also lost final *t. It is thus possible that reduction of final *t occurred once, in a parent language ancestral to Ban and Rth. If this is so then *t was the first consonant to reduce to ?. Following t-reduction Rth then split from Ban and its speakers moved away from the area in which final consonant reduction was gradually spreading (see section 2.3.3.). Once Rth was isolated from the other Sangiric languages, as it is today, the process of final consonant reduction ceased to operate, leaving all other final consonants intact.
This possibility cannot be proved and it may be that the change in Rth was an independent parallel development. However, there is one piece of evidence that it was a shared innovation in a language ancestral to Ban and Rth. This is the fact that in both Ban and Rth *t reflecting *t remains before a suffix, i.e. *t is not recovered. In the North Sangiric languages, represented by San in the following example, final *t is replaced by another consonant (see note 42 to section 2.3.3.) before the passive suffix:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Ban</th>
<th>Rth</th>
<th>San</th>
</tr>
</thead>
<tbody>
<tr>
<td>*labat</td>
<td>laba',</td>
<td>luba',</td>
<td>laba',</td>
</tr>
<tr>
<td></td>
<td>laba'en</td>
<td>luba'en</td>
<td>labaken</td>
</tr>
</tbody>
</table>

*labat, luba', laba', to cross (river)
laba'en, luba'en, labaken, be crossed

This is weak evidence as there are only two possibilities: retention of *t or its replacement by some other consonant, either the original one or some other, as in San. Nevertheless, the fact that Rth and Ban do behave similarly in this respect, as against the North Sangiric languages, lends weight to the possibility of a shared innovation after they split from the North Sangiric languages and before they split from each other.

2.3.5. Merger of final nasals

Nasals m and n do not occur word-finally in San, Snl and Ban, having been replaced by ŋ. Original nasals remain in Rth and Tal and attest to their occurrence in PSan:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San, Snl, Ban</th>
<th>Tal</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*inum</td>
<td>inumma</td>
<td>inum</td>
<td>to drink</td>
</tr>
<tr>
<td>*suan</td>
<td>suanna</td>
<td>suán</td>
<td>to plant</td>
</tr>
</tbody>
</table>

On the surface the innovation might appear to be good evidence for grouping Ban with San/Snl. However, since the change occurred after Tal split from San/Snl it could not have occurred in a single ancestral language because Ban and San/Snl did not exclusively share a parent language (see section 2.3.3.). Further, the change did not affect Rth and therefore occurred after Rth split from Ban, which post-dated Ban's split from San/Snl (see section 2.4.).

The change therefore must have originated somewhere in the San/Snl-Ban area and spread by diffusion. The fact that it did not affect Tal was probably because that language had already adopted the paragoge after final nasals.

2.3.6. Final diphthongs

The final diphthongs of PSan have been retained by Rth and Ban, although with changes, but have been replaced by single vowels in San and Tal and partially replaced by single vowels in Snl.

In San and Tal *aw was replaced by o and *ay by e. In Snl these changes occurred only if the vowel in the preceding syllable was a; elsewhere ay and aw remained. In Ban *ay and *aw are reflected as ey and ow respectively. In Rth they occur as ey and ow in most words but as ay and aw in some others, usually in free variation with ey and ow:
The synchronic variation in Rth suggests the change is of recent occurrence in that language, having affected some words before others. Where ay and aw still occur, a is raised and fronted before y, e.g. may [məi] rice, and raised and backed before w, e.g. saw [sa'au] (in free variation with sow [so'au]) wet. This suggests that the original replacement of phoneme *a by e and o in Rth and Ban developed by gradual shift in the phonetic nature of the segment in this environment, a change still in progress in Rth, having so far not affected all words. Where free variation occurs in Rth it is possibly a result of dialect mixture.

On the basis of reflexes of PSan diphthongs San and Tal appear to group together as against Snl. However, this is ruled out by evidence presented in sections 2.3.2. and 2.3.3. The change may have been partly completed in PNSan in environments where it is reflected in modern Snl. If so then the languages split before the innovation spread to environments other than after a in the preceding syllable. The reduction was then extended to all environments in San and Tal while no further change occurred in Snl. Since San and Snl form a genetic subgroup the further changes in San and Tal are either the result of diffusion or parallel development.

Words such as PSan *sai who and *dau far are interpreted as containing a sequence of two vowels because final *ai and *au in such words are reflected as a and au in San and Tal and not as e and o, the usual reflexes of diphthongs.

A different interpretation would be to recognise monosyllabic words such as *say and *daw in PSan with the explanation that normal changes to *ay and *aw did not occur in such forms. However, a distinction must be made between final *ai and *ay, *au and *aw as shown by the following examples:

**PSan** *uai mango, with reflexes San, Tal, Ban uai [uái] but *uay rattan, with reflexes San, Tal ue, Ban uey [úey]*

**PSan** *bayau tree sp., with reflexes San balau, Ban bayau [bayáu]*

*balañaw anchor, with reflexes San bañáo, Ban bulañaw [bulañaw]*

Since the distinction between final *ai and *ay, *au and *aw must be made then the etyma of modern sai, dau, etc. are best reconstructed with *ai and *au, rather than *ay and *aw.

Maryott (1977a) states that in Snl there is free variation between final a and ay, au and aw. His convention of writing y and w finally instead of i and u is followed here for Snl.

### 2.3.7. Loss of glottal stop in Tal

Glottal stop occurred only in morpheme-final position in PSan (see section 2.2.3.). It was subsequently lost in Tal. Because PPh final *q or *ʔ was frequently lost in PSan (see section 1.4.1.(b)) the number of PSan items reconstructable with final *ʔ is quite limited and most of the items which can be reconstructed lack known Tal reflexes. Some items lacking known Ban and Rth

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
<th>Tal</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*balay</td>
<td>bale</td>
<td>bale</td>
<td>bale</td>
<td>baley</td>
<td>baley</td>
</tr>
<tr>
<td>*takaw</td>
<td>tako</td>
<td>tako</td>
<td>taʔo</td>
<td>takow</td>
<td>to steal</td>
</tr>
<tr>
<td>*babinay</td>
<td>babine</td>
<td>babine</td>
<td>babiney</td>
<td>babiney</td>
<td>babinay</td>
</tr>
<tr>
<td>*amay</td>
<td>ame</td>
<td>may</td>
<td>amme</td>
<td>mey</td>
<td>may</td>
</tr>
<tr>
<td>*siaw</td>
<td>siaw</td>
<td>siaw</td>
<td>sio</td>
<td>siaw</td>
<td>nine</td>
</tr>
<tr>
<td>*tolay</td>
<td>tole</td>
<td>toay</td>
<td>tole</td>
<td>toley</td>
<td>toley</td>
</tr>
</tbody>
</table>

*house*
cognates are not reconstructable for PSan but can be reconstructed for PNSan; these also attest to loss of final *? in Tal:

<table>
<thead>
<tr>
<th>PSan</th>
<th>PNSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kento?</td>
<td>kento?</td>
<td>ento</td>
<td>lame</td>
</tr>
<tr>
<td>*Ramu?</td>
<td>hamu?</td>
<td>Źamu</td>
<td>red</td>
</tr>
<tr>
<td>*pene?</td>
<td>pene?</td>
<td>pene</td>
<td>full</td>
</tr>
<tr>
<td>*śiňka?</td>
<td>śiňka?</td>
<td>śiňka</td>
<td>to know</td>
</tr>
</tbody>
</table>

In some words final syllable *e? was lost in Tal, with subsequent addition of a paragoge:

<table>
<thead>
<tr>
<th>PSan</th>
<th>PNSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*leRe?</td>
<td>lehe?</td>
<td>ulekka</td>
<td>neck</td>
</tr>
<tr>
<td>*kaņede?</td>
<td>kaņere?</td>
<td>aņera</td>
<td>when</td>
</tr>
<tr>
<td>*Rose?</td>
<td>hose?</td>
<td>&lt;rossa&gt;</td>
<td>to bind</td>
</tr>
</tbody>
</table>

2.3.8. Reflexes of *k in Talaud

PSan *k was lost word-initially in Tal and became ? after a vowel:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kinas</td>
<td>inassa</td>
</tr>
<tr>
<td>*kiki</td>
<td>i?i</td>
</tr>
<tr>
<td>*likud</td>
<td>li?udda</td>
</tr>
<tr>
<td>*manuk</td>
<td>manu?a</td>
</tr>
</tbody>
</table>

Following a nasal k remains:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kaņkum</td>
<td>saņ-kaņkuma</td>
</tr>
<tr>
<td>*beņkol</td>
<td>beņkola</td>
</tr>
</tbody>
</table>

Also initially k remains following the genitive marker N-: baľe ńkami our house, cf. (i)ami we (nominative).

The change PSan *k > Tal ? occurred after the change PSan *? > Tal Ø (otherwise the reflex of *k would be Ø) and it reintroduced ? to the language.

2.3.9. Reflexes of *R

The phonetic nature of *R in PSan is not known and the symbol <R> is chosen to represent it because it is a continuation of the phoneme represented <R> in PAN and PPh. The possible phonetic nature of this sound is further discussed at the end of this section.

*R became h in the Manganitu and Tabukang dialects of San and also in Ban and Rth. It still occurred as h initially and medially in Rth at the time Niemann compiled his wordlist as he represents it <h> in these positions. Initially h later underwent reduction although it is still interpreted as a consonant, represented here by a stroke over the initial vowel (see section 2.1.5.1.). Medially it has since been lost. Niemann does not represent h finally and it was probably already lost in that position when he compiled his list. Below are
examples of Rth reflexes of PSan items containing \( ^*R \), as represented by Niemann and in the present-day language:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Rth (Niemann)</th>
<th>Rth (modern)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Rabun</td>
<td>&lt;hawun&gt;</td>
<td>abun</td>
</tr>
<tr>
<td>*Rusuk</td>
<td>&lt;husuk&gt;</td>
<td>usuk</td>
</tr>
<tr>
<td>*baRat</td>
<td>&lt;waha&gt;</td>
<td>baa?</td>
</tr>
<tr>
<td>*duRi</td>
<td>&lt;ruhi&gt;</td>
<td>rui</td>
</tr>
<tr>
<td>*bibiR</td>
<td>&lt;wiiwi&gt;</td>
<td>bibi</td>
</tr>
<tr>
<td>*namuR</td>
<td>&lt;namu&gt;</td>
<td>namu</td>
</tr>
</tbody>
</table>

\( ^*R \) became \( r \) in Snl and the Taruna dialect of San. Maryott (1961) describes Taruna \( r \) as a retroflexed mid central non-syllabic vocoid. He describes Snl \( r \) as an alveolar flap, usually occurring with simultaneous velar friction: \( [\tilde{f}g] \) (1977). Below are illustrated reflexes in San (Manganitu) and in Snl:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ramut</td>
<td>hamu?</td>
<td>ramu?</td>
</tr>
<tr>
<td>*duRi</td>
<td>duhi</td>
<td>duri</td>
</tr>
<tr>
<td>*bibiR</td>
<td>bibeih?</td>
<td>bibi?</td>
</tr>
</tbody>
</table>

In Tal (Salibabu) \( ^*R \) became \( k \) after \( ^*a \), which later became \( a \) (see section 2.3.1.). Final \( ^*R \) also became \( k \), although whether this occurred before or after development of the paragoge cannot be established. Doubling of \( k \) follows the rules described in section 2.3.15.:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*aRe</td>
<td>akke</td>
</tr>
<tr>
<td>*baRu</td>
<td>bakkku</td>
</tr>
<tr>
<td>*bibiR</td>
<td>bibeikka</td>
</tr>
<tr>
<td>*baŋaR</td>
<td>baŋaka</td>
</tr>
</tbody>
</table>

In the dialect of Haines (Karakenang) \( ^*R \) was replaced by \( t \) before the paragoge, rules for gemination being the same as in Salibabu. Thus for the last two items above Haines has bibeikka lip and baŋaka molar. According to Adriani (1911:4) final \( ^*R \) was replaced by different consonants in other Tal dialects.

The change of \( ^*R \) to \( k \) occurred before \( ^*a \) was replaced by \( a \), otherwise \( ^*R \) would have the same reflex in this environment as it has after other vowels, as described below. The change of \( ^*R \) to \( k \) occurred after the change of \( ^*k \) to \( ? \) (see section 2.3.8.) as \( k \) remains unchanged where it reflects earlier \( ^*R \).

In other environments PSan \( ^*R \) became Tal \( ʒ \):

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Ramut</td>
<td>źamutta</td>
</tr>
<tr>
<td>*daRa</td>
<td>daža</td>
</tr>
</tbody>
</table>

Reflexes of \( ^*R \) offer little evidence for subgrouping, occurring on a geographic rather than a genetic basis; a southern group: Rth, Ban and San (Manganitu and Tabukang), along with the Minahasan languages, sharing \( h \) and a northern group: San (Taruna), Snl and Tal, having \( r \) and phonetically similar \( ʒ \).

In section 1.4.1.(e) it is suggested that \( ^*R \) may have been an alveolar consonant in PSan. However, the widespread occurrence of a reflex \( h \) argues against this as the change from \( a \), presumably voiced, alveolar sound to a voiceless glottal fricative seems unlikely. On the other hand the occurrence of apical reflexes argues against this sound having been \( [h] \). A uvular trill
could have given rise to both types of reflex; the only argument against this
being that PSan *g probably had a velar fricative allophone [g] (see section
2.3.13.) and the system would have been unlikely to have sustained such phonet-
ically similar segments (hence the changes to *R?). Interestingly the Snl reflex
r [*g] shares both apical and dorsal features, which raises the possibility that
such simultaneous articulation may have been a characteristic of PSan *R.

2.3.10. Reflexes of *l

PSan *l had two allophones: alveolar lateral [l] and retroflexed lateral
flap [ɭ].

These merged in alveolar lateral [l] in all positions in Rth and in retro-
flexed lateral flap [ɭ] in all positions in Ban. In a few items *l is reflected
by h or ɬ in Ban and Rth (see section 2.3.20.).

In San, Snl and Tal [l] and [ɭ] are in complementary distribution where they
derive from PSan *l. However, later sound changes have brought them into contrast,
resulting in two separate phonemes. The distributions of the two sounds are
quite similar in San and Tal and these languages can be described together. A
number of differences occur in the distribution of the laterals in Snl and this
language is described separately.

In San and Tal non-retroflexed ɭ occurs word-initially and following front
vowels. It occurs after a in San and after a in Tal where this reflects earlier
*ə (see section 2.3.1.). In both languages ɭ is doubled in this last environment,
the doubling being phonemic in Tal (see section 2.1.3.) but not in San (see
section 2.1.1.):

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*lajit</td>
<td>laji ꞉</td>
<td>lajutta</td>
</tr>
<tr>
<td>*bilat</td>
<td>bila ꞉</td>
<td>bilatta</td>
</tr>
<tr>
<td>*tatalu</td>
<td>tatalu</td>
<td>tattu ꞉</td>
</tr>
</tbody>
</table>

Retroflexed ɭ occurs after back vowels. It also occurs after a in San and
in Tal it occurs after a where it is not from an earlier *ə:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*balay</td>
<td>bale ꞉</td>
<td>bale</td>
</tr>
<tr>
<td>*tulid</td>
<td>tulid ꞉</td>
<td>tulidə</td>
</tr>
<tr>
<td>*boleŋ</td>
<td>boleŋ ꞉</td>
<td>boleŋna</td>
</tr>
</tbody>
</table>

Tal differs from San in that ɭ occurs (i) after prefix-final u: ulekka neck,
lullage to laugh, and (ii) before the paragoge, irrespective of the preceding
vowel:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kəpal</td>
<td>kəpala ꞉</td>
<td>appala</td>
</tr>
<tr>
<td>*timbul</td>
<td>timbul ꞉</td>
<td>timbul</td>
</tr>
</tbody>
</table>

The two sounds came into contrast in San and Tal when *y was replaced by ɭ
word-medially (see section 2.3.11.). Thus San bala to allow (PSan *baya) and
bala valley; Tal bala to allow and aṭappa to take, alu wood (PSan *kayu) and
saḷukka river.

In borrowings ɭ is not necessarily replaced by ɭ in environments where PSan
*l is reflected by ], probably because the change *y > ɭ has made ɭ a possible
choice in such environments, e.g. San malasə? lazy from Mal malas. But following a, u or o and preceding the paragoge, where I does not occur in San, I replaces l in borrowings, e.g. kapalə? ship from Mal kapal.

In Snl I occurs word-initially, after front vowels and after morpheme-initial a. Where word-initial *a has been lost in the Sarangani dialect I occurs initially, as in the last example below:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*lanita</td>
<td>lanita?</td>
</tr>
<tr>
<td>*kilata</td>
<td>kila?</td>
</tr>
<tr>
<td>*paketa</td>
<td>paketa?</td>
</tr>
<tr>
<td>*alap (maŋ)alap</td>
<td>to swallow</td>
</tr>
<tr>
<td>*alaplaw</td>
<td>law</td>
</tr>
</tbody>
</table>

Retroflexed l occurs following a back vowel, a or non-morpheme-initial a and preceding a front vowel:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*balita</td>
<td>balita?</td>
</tr>
<tr>
<td>*paleita</td>
<td>paleita?</td>
</tr>
<tr>
<td>*tulita</td>
<td>tulita?</td>
</tr>
</tbody>
</table>

PSan *l was lost in Snl after a back vowel, a or non-morpheme-initial a and before a back or low vowel:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*talaka</td>
<td>taŋa?</td>
</tr>
<tr>
<td>*daluka</td>
<td>dau?</td>
</tr>
<tr>
<td>*balua</td>
<td>baŋu?</td>
</tr>
<tr>
<td>*tolya</td>
<td>toya?</td>
</tr>
<tr>
<td>*pulo</td>
<td>puo?</td>
</tr>
</tbody>
</table>

Loss of *l occurred after changes to *aw and *ay described in section 2.3.6. Thus PSan *balay house became Snl baile; if *ay still occurred when *l was lost before *a then the Snl form would have become **bay, cf. l-loss where ay remained, as in Snl toay tail, from PSan *tolya.

When *l was lost between identical vowels, vowel reduction resulted:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bulud</td>
<td>budæ?</td>
</tr>
<tr>
<td>*sala</td>
<td>sa</td>
</tr>
<tr>
<td>*dalait</td>
<td>dai?</td>
</tr>
</tbody>
</table>

Sometimes *l was replaced by y, apparently unpredictably, in variation with the reduced form (see Maryott 1978a:122 for further discussion):

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*solo</td>
<td>so y soyo</td>
</tr>
<tr>
<td>*alap y</td>
<td>a? y aya?</td>
</tr>
</tbody>
</table>

PSan word-final *l was lost in Snl after a back or low vowel. In such cases the paragoge occurs in Snl, showing that paragoge addition occurred before l-loss. If *l had been lost first such words would have ended in a vowel and a? would not have been added. When *l was lost in this position the preceding vowel was also lost if unstressed but remained if stressed:
The last item above is from Mal but was borrowed before the separation of San and Snl, cf. San kapala?, with later loss of *l and the preceding vowel in Snl.

Word-initial *l assimilated in Snl to l or r, whether in the following syllable or further separated:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Pre-Snl</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*sakol</td>
<td>*sakóla?</td>
<td>sakoa?</td>
</tr>
<tr>
<td>*kapal</td>
<td>*kapáløa?</td>
<td>kapaa?</td>
</tr>
<tr>
<td>*pundal</td>
<td>*púndala?</td>
<td>punda?</td>
</tr>
<tr>
<td>*kpalal</td>
<td>*k̩palal?</td>
<td>kapa?</td>
</tr>
</tbody>
</table>

Contrast between l and | was brought about in Snl by later changes. For instance, *d became l intervocally (see section 2.3.13.), thus producing contrast with l, e.g. sili (PSan *sidi) to separate grain and sili to defer to. Word-initially l occurs as a result of several morphophonemic processes (discussed by Maryott, 1978a:116), e.g. latu high chieftain (from earlier *da]atu + Ca- (intensive) + datu chieftain), which contrasts with latu ant.

Some unexplained forms occur in the limited material available on Snl. In alula? raft l-loss did not occur. This might be due to influence of the preceding l but the word is probably a borrowing, cf. Samal alul raft. Word-initially l occurs instead of d in law distance and low thirst. These usually occur as adjectives malaw far and malow thirsty (where *d > l intervocally) and initial l may result from analogy with the adjectival forms.

Word-initial l is usually lost in Snl if the addition of a prefix produces the environment in which it was lost historically, e.g. ma- + lukada? to watch, keep guard + maukada? morning (cf. San ma]ukada? morning). The vowel of the prefix is lost if unstressed and followed, after l-loss, by a, as also occurred historically preceding the paragoge (see above), e.g. ma- + ləmbay + məmbay remaining, ka- + lændi? + kəndi? to catch attention.

2.3.11. Reflexes of *y

In San and Tal y does not occur. Final diphthongs reduced to mid vowels in these languages (see section 2.3.6.). Word-medially *y was replaced by l:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*baya</td>
<td>bala</td>
<td>bala</td>
</tr>
<tr>
<td>*kayu</td>
<td>kalu</td>
<td>alu</td>
</tr>
</tbody>
</table>

This change has resulted in contrast between l and | (see section 2.3.10.). The change of *y to l is not reflected in Snl and thus its occurrence in San and Tal must be the result of diffusion after the separation of the languages.

In Snl, Ban and Rth y occurs finally in diphthongs (see section 2.3.6.). It remains medially in the three languages except that in Snl it has been lost irregularly between identical vowels. In a few such words it remains while in others it remains in variation with its loss or is lost altogether. All three
possibilities are exemplified below. Where *y was lost subsequent vowel contraction occurred.

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*payaŋ</td>
<td>payaŋ</td>
</tr>
<tr>
<td>*nayaŋ</td>
<td>nayaŋ</td>
</tr>
<tr>
<td>*daya</td>
<td>daya</td>
</tr>
<tr>
<td>*maRuaya</td>
<td>maruā</td>
</tr>
</tbody>
</table>

Loss of *y in Snl followed changes to diphthongs described in section 2.3.6. Thus PSan *dayaŋ to praise > Snl dayo; with y then bracketed by non-identical vowels the environment in which it was lost no longer occurred.

Word-initially high front non-syllabic vocoid [y] does not occur in San, Tal or Ban. It occurs in Rth as the manifestation before a vowel of the personal noun and pronoun marker i. Thus Rth iá? [yá?] I, cf. San, Ban iá? [iá?], Tal ia?u [iá?u]. The only recorded instance of initial [y] in Rth where it is not the personal marker is in iūr [yuʔ] to pull, from PSan *Riud.

Initial [y] occurs in Snl before vowels. Maryott (1978a:124) recognises it as a phoneme y, reflecting previous *y (which he thus treats as having become i in San). In most of his examples it is the reflex of personal noun and pronoun marker *i: yakaŋ eldest sibling (< i + aŋ), yupaŋ grandparent (< i + upuŋ). His other example is yutaʔ, San iutaʔ innumerable, a borrowing from Sanskrit (via Mal juta million). Word-initially the sound appears to be in complementary distribution with i in Snl, as it is in Rth, and it is here recognised as a non-syllabic allophone of i.48

Since PSan initial *i before a vowel is reflected as [i] in San, Tal and Ban and as [y] in Snl and Rth it is possible that the two phones occurred in free variation in that position in PSan.

2.3.12. PSan *e > Tal *a

PSan *e in final closed syllables assimilated to a preceding a in Tal:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*aden</td>
<td>aranna</td>
</tr>
<tr>
<td>*paled</td>
<td>paladda</td>
</tr>
<tr>
<td>*saleR</td>
<td>saʃakka</td>
</tr>
</tbody>
</table>

In most recorded examples, including those above, PPh etyma have *a in the final syllable. Thus PPh *-ajan name, *palaj palm, *sala[R] nest. It might be argued that Tal did not undergo the innovation whereby PPh *a in this environment became PSan *e, as reflected in the other four languages (see section 1.4.1.1(e)), and that this is thus strong evidence that Tal does not descend from PSan.

The evidence that Tal is a daughter language of PSan and that the change *e > a occurred subsequent to its separation from the other languages is as follows:

It is not only in words where PPh had *a that Tal has a corresponding to e in the other PSan languages. Two examples have been recorded where this is a reflex of PPh *o: PPh *sandoR, PSan *sandeR, Tal sandaka to lean,49 PPh *dakel, PSan *dakel big, many, Tal <da'ala> (from Steller and Aebersold, presumably daʔalla).
It could be argued that these are merely instances of earlier *ə becoming Tal a by the regular rule described in section 2.3.1. and that it offers no evidence for a close relationship between Tal and the other Sangiric languages. However, PPh *ə in the word-final syllable did not always become PSan *e; for instance, it became *u if followed by *m or *p, e.g. PPh *item, PSan *itum black; PPh *atap, PSan *atup roof. It became *i in some other words, e.g. PPh *ikat, PSan *ikit tie (see further discussion in section 1.4.1.(c)).

If Tal were not a daughter language of PSan but instead directly reflected all instances of PPh *ə by a then the examples above would have the expected Tal reflexes **itamma black, **atappa roof, **i?atta to tie. However, where PSan reflects PPh ultimate *ə by a vowel other than *ə then Tal identically reflects the PSan innovation. Thus its reflexes for the abovementioned items are itumma, atuppa, i?itta.

This clearly establishes that Tal is a descendant of PSan. Consequently (discounting later borrowing) Tal sandaka and <da'ala> must be continuations of PSan *sandeR and *dakel respectively and thus they establish that PSan *e in final syllables assimilated to a preceding a in Tal, after its separation from the other Sangiric languages. This assimilation also affected *e in the suffix *-en, as this only occurred in PSan following a closed syllable containing *ə (see section 1.4.1.(f)). Thus PSan *suanen (→ *suan + *-en) > Tal suannanna (+ suanna + -anna) will be planted.

2.3.12. Reflexes of *b, *d and *g

With the exception of Ban all languages have non-plosive reflexes of *b, *d and *g in some environments and it is most likely that continuant allophones also occurred in PSan.

The distribution of stops and continuants is set out in the following chart, where S = stop and C = continuant. Five positions in the word need to be distinguished:

<table>
<thead>
<tr>
<th></th>
<th>initial</th>
<th>post-nasal</th>
<th>post-ə</th>
<th>intervocalic</th>
<th>final</th>
</tr>
</thead>
<tbody>
<tr>
<td>San</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>C</td>
<td>S</td>
</tr>
<tr>
<td>Snl</td>
<td>S,C</td>
<td>S</td>
<td>S</td>
<td>C</td>
<td>S</td>
</tr>
<tr>
<td>Tal</td>
<td>S,C</td>
<td>S</td>
<td>S</td>
<td>S (S)</td>
<td>S</td>
</tr>
<tr>
<td>Ban</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>Rth</td>
<td>C</td>
<td>C</td>
<td>S(S)</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>

The following points should be noted:

(i) The position 'post-ə' includes other vowels which are reflexes of PSan *ə. Thus it includes 'after a where it reflects earlier *ə' in Tal, etc.

(ii) The position 'intervocalic' does not include a preceding ə or any reflex of PSan *ə.

(iii) The position 'final' ignores the presence of a paragoge.

(iv) Parentheses indicate marginal occurrence, which is explained below.

The reflexes of *b, *d and *g are summarised as follows:
(a) *b

In all languages S is realised as [b]. C is a voiced bilabial fricative, in some languages in variation with a labiodental fricative [b̪ ~ v], its exact nature depending on the phonological environment. Word-finally in Rth it is voiceless [p]. Where [p] occurs in the present-day language Niemann writes <w> or <u>, probably representing [b], e.g. <ahaw>, modern aab [aːb] fern sp.; <kanehau>, modern kanæb [kanéːp] yesterday, so the devoicing in this position may be recent.

(b) *d

In all languages S is realised as [d]. C is usually realised as [!] in the Sarangani dialect of Snl and as [?] in the Mindanao dialect and in all other languages.

In Sarangani the development of [?] as the reflex of intervocalic *d post-dates the rule of l-loss in certain environments (see section 2.3.10.) as [?] from *d was not lost in these positions. Thus PSan *salə wrong > San sələ, Snl sa but PSan *mədə dry > San mara, Snl malə.

Sarangani [?] as a reflex of *d was almost certainly via *r and r still occurs if there is also r (reflecting earlier *R) in the preceding syllable:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Snl</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Rodəw</td>
<td>roro sharp</td>
</tr>
<tr>
<td>*Rado</td>
<td>raro tame</td>
</tr>
</tbody>
</table>

(c) *g

S is realised as [g]. In the Manganitu dialect of San C is realised as [g], although other variants occur in other dialects. It is realised as [h] in Snl and in the Salibabu dialect of Tal, although in some Tal dialects it is [g]. In Rth voiceless velar fricative [x] occurs word-finally and [h] elsewhere. Rth probably had [g] medially and initially until quite recently as [h] could only have developed following changes to phoneme h, within the last one hundred years (see section 2.3.9.). Niemann writes <g> or <gh> in these environments, probably representing [g], e.g. <lugəi> laugh and <lugəhi> laughter, for present-day luhay.

The question of whether to recognise allophones or separate phonemes in the present-day languages arises here but this must be decided separately for each language and sometimes for each set of reflexes within a language. The question does not arise in Ban where only stops occur.

In San numerous examples occur of contrast between b and b̪, d and r, g and g intervocalically. It is probable that borrowing is an important factor here. In many cases words with medial voiced stops are borrowings from Mal, e.g. diad̪i to create from Mal jadi, diabataŋ sceptre from Mal jabatan, diaga? to keep guard from Mal jaga. Each of the above examples is identified as a borrowing from Mal because of, among other things, initial di from Mal j, instead of d, which occurs in direct correspondences, e.g. San dalenj, Mal jalan road; San dahami unuued ricefield, Mal jarami rice stalk. Nevertheless, since they are assimilated words they establish contrast between stops and corresponding continuants and hence these must be treated as separate phonemes.

Word-initially in Snl stop reflexes occur for *d and *g but a continuant reflex for *b. Thus dara blood, gali? to give, bale house. Stop b occurs initially in some words. None of these appear to be reflexes of PSan words and many are clearly borrowings, e.g. bila if from Mal. The word baga? lungs
resembles PPh *baRa? but contains two irregularities apart from initial b, i.e. medial g, which is not a correct reflex of *R, and occurrence of final ?, where PPh final ? is usually, although not always, lost in PSan, cf. San lum-baha lungs, which shows correct reflexes of PPh *baRa?.

Contrast between former variants of the same phoneme has also come about medially either through borrowing, as in the case of b and ã, e.g. tubu sugarcane and kubu? grave (from Mal kubur), or through merger with another phoneme; thus the non-stop variant of *d has become l in Sarangani, merging with a consonant already in contrast with d (see section 2.3.10.). Thus stop and non-stop reflexes of PSan *b, *d and *g must be treated as phonemically separate in present-day Snl.

The phonemic status of voiced stops and corresponding non-stops has not been clearly established for Tal but more data would almost certainly show them to be phonemically separate (see section 2.1.3.1.).

In Rth [d] and [r] are in complementary distribution as are [g], [h] and [x]. [b], [b] and [p] are also in complementary distribution except that [b] sometimes occurs intervocally. For the purposes of this comparative study stops and continuants are treated as phonemically separate; thus phonemes b, d, g, [b, p], r and h [h, x] are recognised. (See section 2.1.5.1. for a fuller discussion.)

Because of the variation in the present-day languages it is not possible to state positively the distribution of allophones in PSan. But it appears that *b, *d and *g had continuant allophones intervocally except following *ã and that voiced stops occurred in all other environments. From the evidence of the present-day languages it is possible that some degree of variation, free or conditioned, occurred word-initially in PSan. The continuant allophones were probably [b], [r] and [g].

While each language has undergone some unique changes since separating from the other languages, San, Snl and Tal have basically similar reflexes. Ban and Rth are the most different, Ban having only stops and Rth being the only language to have continuants finally and following the reflexes of *ã, although continuants occur in this last environment also in the Tahulandang dialect of San.

The evidence suggests a grouping of San, Snl and Tal, supporting other stronger evidence (see sections 2.3.2. and 2.4.) but it gives no support for a grouping of Ban and Rth.

2.3.14. Reflexes of *ãg

Medial *ãg is reflected in San, Snl and Tal as ãg and in Ban and Rth as ãk:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tengoR</td>
<td>tengoha?</td>
<td>téŋkoho?</td>
<td>téŋko</td>
</tr>
<tr>
<td>*tingum</td>
<td>tìngung</td>
<td>tiŋkùŋ</td>
<td>tiŋkum</td>
</tr>
<tr>
<td>*sàngap</td>
<td>sànga?</td>
<td>sàŋkà?</td>
<td>suŋkàp-án</td>
</tr>
</tbody>
</table>

Two unexplained occurrences of ãg have been recorded for Rth: ãngóŋ to call out, cf. San ãngo to make a noise to attract attention; ãngóŋguán throat, cf. San tàngólaŋ. The first pair above can be treated as cognates but the second pair cannot despite the partial phonological resemblance. In ãngóŋguán Rth has possibly retained medial ãg under influence of the identical word-initial cluster.
In Ban also ñg occurs in two recorded items: pǖŋgutu? stunted, cf. San pungu? tailless, Rth puŋku? low; Ban säŋgele? to carry on strap, cf. San säŋgehala?, Rth säŋkel. In the first item above Ban has irregular paragoge instead of t-reduction, which indicates a borrowing (see section 2.3.3.). In the second item the preceding ñ may have been an influencing factor.

In Ban and Rth the cluster ñg occurs intervocalically at a morpheme boundary, e.g. Ban maN- + gau + maŋgau to lie, Rth muN- + ha? (from *gaat) + muŋa? to lessen. The cluster ñg also occurs word-initially in Rth (see section 2.3.19.).

The replacement of *ŋg by ŋk within the morpheme is an innovation uniquely shared by Ban and Rth within the Sangiric group but the change also occurred among the Minahasan languages and may be an areal phonomenon (see section 2.4.).

2.3.15. Gemination of consonants

Consonants became doubled in Tal following *ə, which later became a (see sections 2.3.1. and 2.3.9. for examples). They also became doubled preceding the paragoge unless the preceding syllable contained *R (which later became k or ŋ), a doubled consonant or a nasal-stop cluster (see sections 2.1.3.1. and 2.3.9. for examples).

Gemination following PSan *a must have occurred before *ə was replaced by a as it does not occur after a where this is from PSan *a, e.g. PSan *lomis > Tal lammisa to drown but PSan *Ramis > Tal żamissa to knead. It is unlikely that gemination occurred word-finally so it may be assumed that it developed after addition of the paragoge (see also note 44 to section 2.3.3.).

In San single consonants were either doubled or preglottalised after *ə (see section 2.1.1.1.) and in Snl doubling of l and nasals occurred in this environment (see section 2.1.2.1.), in both languages non-phonemically.

It is possible that doubling of consonants began to develop in PNSan.

2.3.16. Reflexes of *w

PSan *w occurred finally in the diphthong *aw. Reflexes of this in the present-day languages are described in section 2.3.6.

It also occurred word-medially. Evidence from Ban is necessary for reconstructing *w in this position. In all other Sangiric languages *w merged with ñ, while in Ban the sequence *wa became o:

<table>
<thead>
<tr>
<th></th>
<th>PSan</th>
<th>San/Snl</th>
<th>Tal</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*awak</td>
<td>aða?</td>
<td>aða?a</td>
<td>ao?</td>
<td>abak</td>
<td>body</td>
</tr>
<tr>
<td>*bulawan</td>
<td>bulabanna</td>
<td>bulaoŋ</td>
<td>gold</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These reconstructions are supported by evidence from PPh: *hawak body, *bulaw-an gold (coloured). For the last item above related forms occur in the other Sangiric languages: San bulasəŋ, Snl buaŋəŋ gold, Rth bulauŋ coloured stones used in rings. However, these show unexplained differences in the final syllable and the PSan form is reconstructed on the basis of the Tal and Ban evidence alone (see *bulawan in the wordlist).

The two examples above are the only items for which Ban evidence has been recorded. Nevertheless this is sufficient to establish that *w occurred
intervocally in PSan and that it was phonetically different from the inter-
vocalic allophone of *b, which is reflected as b in Ban; both sounds being
reflected as b in all other Sangiric languages. Some other items can be recon-
structed for PSan with medial *w even though Ban evidence is lacking, if external
evidence supports the reconstruction. Thus from San, Snl, Tal, Rth safa and PPh
*sawa spouse can be reconstructed PSan *sawa. Where external evidence is lacking,
however, *w cannot be reconstructed unless a Ban item is known. 51

In Ban and Rth the high back non-syllabic vocoid [w] occurs word-initially
preceding a stressed vowel, e.g. Ban [wala], Rth [wala] tusk, cf. Ban [ua] to
disembowel, Rth [uə] to rammage. In initial position [w] is best treated as an
unstressed variant of u; thus Ban, Rth uala tusk.

In Snl also [w] occurs in initial position. Maryott (1977a:265) treats this
as a consonant, which contrasts with b. Thus baw gong and waw eight. In this
work Maryott's Snl phoneme w in initial position is treated as a non-syllabic
variant of u.

In San and Tal [w] does not occur initially, syllabic [u] corresponding to
[w] in the other languages. There is no contrast between [w] and [u] in Ban and
Rth and this may also be the case in Snl.

On the above evidence *w is not reconstructed word-initially for PSan.
Phoneme *u may have had a variant [w] in unstressed initial position, possibly
in free variation with [u].

2.3.17. Vowel reduction

There have been a number of innovations whereby vowel sequences have reduced
to single vowels. Some of these changes are mentioned elsewhere. For instance,
within the morpheme *ə was lost immediately following another vowel except in San
(see section 2.3.1.). Sequences of identical vowels, resulting from loss of *l
or *y, underwent coalescence in Snl (see sections 2.3.10. and 2.3.11.). In some
environments it cannot be determined whether vowel reduction is regular, because
of the limited number of examples recorded. In such cases a comment is made in
a note to each individual item in the wordlist. Some other reductions are the
following:

(a) Sequences of *a followed by another vowel sometimes reduced to single mid
vowels in closed final syllables in Tal. The sequences *ai and *ae reduced to e
and *au reduced to o. No examples of PSan *ao with Tal reflexes have been
recorded:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Tal</th>
</tr>
</thead>
<tbody>
<tr>
<td>*pait</td>
<td>petta</td>
</tr>
<tr>
<td>*laed</td>
<td>ledda</td>
</tr>
<tr>
<td>*daun</td>
<td>donna</td>
</tr>
</tbody>
</table>

This change was not regular and exceptions have been recorded, e.g. papaidda
wing, 52 baekka to pay (PSan *baeR), <laida> (Adriani) full, satiated, cf. San
laeda?.

(b) In Rth the sequence *ua reduced to o preceding final i and y. This change
did not occur where the two vowels were earlier separated by *R, subsequently
lost in Rth (see section 2.3.9.), as in the last example below:
2.3.18. First syllable loss in Rth

Many PSan words with the structure $C_1\alpha(N)C_1...$, i.e. with initial syllable $C\alpha$ followed by a consonant identical to the first consonant, with or without a homorganic nasal, lost the first syllable in Rth:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*suay</td>
<td>soy</td>
</tr>
<tr>
<td>*uay</td>
<td>oy</td>
</tr>
<tr>
<td>*uai</td>
<td>oy</td>
</tr>
<tr>
<td>*puRay</td>
<td>puay</td>
</tr>
</tbody>
</table>

In most cases recorded the PSan forms reflect PPh repeated monosyllables. Thus the first two items above reflect PPh *kamkam and *kuDkuD respectively. Although PPh etyma are not known for the second two items in the list it is very likely that they reflect earlier RMs. They have the same structure as reflexes of RMs and the only other recorded words in which initial syllable loss occurred are three syllable words in which a following nasal-stop cluster occurs, as in the last two items in the list above.

Loss of the first syllable did not occur in all items reflecting PPh RMs:

<table>
<thead>
<tr>
<th>PPh</th>
<th>PSan</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bukbuk</td>
<td>*babuk</td>
<td>bu búk</td>
</tr>
<tr>
<td>*damdam</td>
<td>*dandum</td>
<td>rundúm</td>
</tr>
<tr>
<td>*paŋpaŋ</td>
<td>*pampaŋ</td>
<td>pumpáŋ</td>
</tr>
</tbody>
</table>

2.3.19. Prenasalisation in Rth

Voiced stops word-initially became continuants in Rth (see section 2.3.13.) except that in a small number of words stops were preserved by the addition of a preceding homorganic nasal, as in the first two examples below. Loss of first syllable $C\alpha$ before a nasal-voiced stop cluster (see section 2.3.18.) left the cluster word-initially, as in the last two examples below:

<table>
<thead>
<tr>
<th>PSan</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gipu</td>
<td>ngipu</td>
</tr>
<tr>
<td>*bud/lalak</td>
<td>mbulalalak</td>
</tr>
<tr>
<td>*bambulu</td>
<td>mbulu</td>
</tr>
<tr>
<td>*dandeRŋ</td>
<td>ndeŋ</td>
</tr>
</tbody>
</table>

In some cases where initial syllable $C\alpha$ was lost from PSan reflexes of earlier RMs an initial nasal was added to the remaining monosyllable:
PSan  Rth
*dadap  ndap  tree sp.
*taul  ntul  tree sp.

Many of the words undergoing prenasalisation are the names of plants and trees; the reason for this connection is not known.  

2.3.20. Irregular correspondence of *d and *l

In a number of cases irregular correspondences occur among the languages involving the sounds d (or r) and l. In some items the North Sangiric languages reflect *l while Ban and Rth reflect *d:

<table>
<thead>
<tr>
<th>San</th>
<th>Snl</th>
<th>Tal</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>linuha?</td>
<td>rinura?</td>
<td>linukka</td>
<td>dínihu?</td>
<td>rinu</td>
</tr>
<tr>
<td>logí?</td>
<td>logí?</td>
<td>-</td>
<td>doní?</td>
<td>roní?</td>
</tr>
<tr>
<td>kulilasa?</td>
<td>-</td>
<td>-</td>
<td>kudilas</td>
<td>kurilas</td>
</tr>
</tbody>
</table>

Initial r in the first Snl word above reflects earlier *l with regular assimilation to the following r (see section 2.3.10.).

In a few cases Rth reflects *l while San reflects *d, the reverse of the pattern illustrated above (cognates in other languages have not been recorded):

San     Rth
buraña? mbulalak tree sp.
dułuŋ lulu to roll up
dalajaŋ lalijaŋ tree sp.

In a few recorded items the correspondences show even more irregularity:

San     Snl     Tal     Ban     Rth
dila, lila dila lila dila rila tongue

In all these cases the explanation is probably that there were competing forms in the proto-language. In most of these words the consonant following the consonant in question is l and the forms with d may have arisen through dissimilation. Where PPh etyma occur they have *l, with the exception of PPh *dila tongue.

In a number of cases the competing forms both still occur in San. Thus: dila, lila tongue; linuha?, Siau dinuha?, Tahulandang dinuhi? earthquake.

2.3.21. Development of final glottal stop in San and Snl

In a number of words San and Snl have a final glottal stop where cognates in the other languages end in a vowel:

San     Snl     Ban     Rth
ake? 55  ake? ake ake  water
deno? deno? deno deno  to bath
deso? deso? deso deso  to store
kite? kite? 56 kite kite we
kapuna? 57 - kapuna kapuna dog
Where cognates are known in other languages they do not have final glottal stop. Thus Ternate aki, Galearese ake water; Mal kita, PPh *kita ve. Further, San sometimes adds final ? in borrowings, although no cognates of such items have been recorded for Snl. Thus San diaga? to guard from Mal jaga, kunsi? key from Mal kunci, piso? knife from Mal pisau.

Thus the occurrence of final ? in San/Snl in such items is clearly a case of addition rather than of loss in the other Sangiric languages (Tal does not enter into the discussion as it has no final glottal stop). The addition of ? in such words is irregular, affecting only a small number of words previously ending in a vowel.58

2.3.22. Further changes to *l in Ban and Rth

Where a PSan word had the final sequence *luR, Ban and Rth reflexes have h (later lost in Rth) instead of l. Only one PSan item has been positively reconstructed with final sequence *llR and the change occurred here also.59 The change may have occurred before changes to *R and probably represents assimilation. In a very few items PSan final *l was also replaced by h in Ban, as in the last two examples below. No Rth cognates of such forms have been recorded:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Tal</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*uluR</td>
<td>ujuha?</td>
<td>-</td>
<td>ûuhu?</td>
<td>uu</td>
</tr>
<tr>
<td>*kuluR</td>
<td>kulu?</td>
<td>-</td>
<td>kuuhu?</td>
<td>kuu</td>
</tr>
<tr>
<td>*saliR</td>
<td>ansailiation</td>
<td>-</td>
<td>sâhihi?</td>
<td>sai</td>
</tr>
<tr>
<td>*pankul</td>
<td>paâkuâ?</td>
<td>-</td>
<td>paâkuhu?</td>
<td>-</td>
</tr>
<tr>
<td>*ongol</td>
<td>ongo?</td>
<td>ongola</td>
<td>ângkohu?</td>
<td>-</td>
</tr>
</tbody>
</table>

Only one example has been noted where medial *l was not replaced in Rth, and no examples in Ban:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*silaR</td>
<td>silaha?</td>
<td>sila</td>
</tr>
</tbody>
</table>

This is the only recorded example where original *R was not preceded by a high vowel and consequently no general rules can be drawn.

Where PSan had initial *l and medial or final *R the initial *l was usually lost in Ban, although it remains in a few items. Examples in Rth are very limited but they show that initial *l was retained, replaced by h or lost. All these possibilities are illustrated below:

<table>
<thead>
<tr>
<th>PSan</th>
<th>San</th>
<th>Ban</th>
<th>Rth</th>
</tr>
</thead>
<tbody>
<tr>
<td>*leRe?</td>
<td>lehe?</td>
<td>ehe?</td>
<td>-</td>
</tr>
<tr>
<td>*leneR</td>
<td>leneha?</td>
<td>nehe?</td>
<td>-</td>
</tr>
<tr>
<td>*latuR</td>
<td>lutuha?</td>
<td>lutuhu?</td>
<td>ûtu</td>
</tr>
<tr>
<td>*linuR</td>
<td>lintuha?</td>
<td>lintuhu?</td>
<td>Tntu</td>
</tr>
<tr>
<td>*liRa</td>
<td>liha</td>
<td>-</td>
<td>ia</td>
</tr>
<tr>
<td>*le/ingoR</td>
<td>leŋoha?</td>
<td>-</td>
<td>liga</td>
</tr>
</tbody>
</table>

Although the changes to *l described above appear to be irregular, except where medial *l occurred before final sequence *uR, they nevertheless reflect a common innovation in Ban and Rth and this constitutes evidence for a period of uniquely shared ancestry.
2.3.23. Stress

Word stress is predictable in San, falling on the penult (not counting the paragoge) even if this contains θ (see section 2.1.1.2.). Although stress placement has not been fully determined for Tal it is probably predictable and can occur on a where this reflects a penultimate *θ (see section 2.1.3.2.). Thus in San and Tal there is evidence that PSan stress also fell always on the penult:

\[
\begin{array}{ccc}
\text{PSan} & \text{San} & \text{Tal} \\
*\text{tēlu} & \text{tēlu} & \text{tāllu} \\
\end{array}
\]

*three*

Stress is largely predictable in Snl, although in a small number of words phonological changes have resulted in stress contrast. Thus contrast occurs between kāpu to rub and kapū desire, the latter from earlier *kapūyu, with loss of *y and vowel contraction (see section 2.3.11.). The word pāsāŋ to carry on the shoulder, from PSan *pasaŋ, exemplifies occurrence of final stress resulting from θ-loss.

In Snl, Ban and Rth stress shifted from penultimate schwa to the following syllable. Schwa was later replaced by another vowel in Ban and Rth (see section 2.3.1.) resulting in unpredictable word stress, e.g. Ban būku, Rth būku to kneel, from PSan *buku, and Ban, Rth pūku to bend, from PSan *pāku.

It is possible that in PSan stress did not fall on *θ but later shifted to penultimate schwa in San and Tal. This is, however, most unlikely. The doubling or preglottalising of consonants after schwa in San and Tal was almost certainly a device to retain penultimate stress.60

Stress changes in Snl post-dated its split with San and so are recent. Thus, although the changes are largely identical to those in Ban and Rth, they can only have been parallel, and not shared, developments.

Although changes to *θ must have occurred separately in Ban and Rth (see section 2.3.1.), stress shifts occurred before changes to *θ and could have been a common innovation. That stress shift in Ban and Rth pre-dated changes to *θ is established by evidence such as that given above: if *θ in *pāku to bend had become u before stress shift then no explanation could be given as to why stress did not change in *buku to kneel. Consequently, stress shift must have occurred before *θ was replaced by another vowel.

In Rth stress shifted from a penultimate high vowel to an immediately following vowel in a final closed syllable:

\[
\begin{array}{ccc}
\text{PSan} & \text{Rth} \\
*\text{Ríud} & \text{iúr} & \text{to pull} \\
*\text{tían} & \text{tián} & \text{belly} \\
*\text{súán} & \text{suán} & \text{to plant} \\
*\text{tuír} & \text{tuír} & \text{stump} \\
\end{array}
\]

This stress shift operated before the loss of *h, reflecting PSan *R, in Rth. Subsequent loss of *h resulted in stress contrasts:

\[
\begin{array}{cccc}
\text{PSan} & \text{Pre-Rth} & \text{Rth} \\
*\text{níuR} & *\text{níúh} & \text{niú} & \text{coconut} \\
*\text{níRu} & *\text{níhu} & \text{nìu} & \text{winnowing pan} \\
*\text{búat} & *\text{búáʔ} & \text{búáʔ} & \text{to stand up} \\
*\text{súRat} & *\text{súhaʔ} & \text{súaʔ} & \text{fish poison} \\
\end{array}
\]
2.4. RELATIONSHIPS WITHIN THE SANGIRIC GROUP

The Sangiric languages are not all equally closely related to each other but belong to several subgroups.

An examination of shared innovations shows clearly that San, Snl and Tal form one branch of Sangiric languages; the North Sangiric branch. The strongest evidence for this grouping is metathesis of t and s, discussed in section 2.3.2.

Phonological evidence for the place of Ban and Rth within the Sangiric group is limited. However, from all the evidence available they must form a subgroup, being more closely related to each other than to any of the other Sangiric languages.

Ban and Rth share the change of *g to k after ḋ morpheme-medially (see section 2.3.14.), an innovation not shared by the North Sangiric languages. This may appear to be good evidence for subgrouping. However, the change also occurred in the Minahasan languages:

```
PSan  Ban  Ttb, Tbl
*sengot  senko?  senkot  to sail
*teŋgoR  téŋkoho?  téŋkor  to beat (gong)
```

Thus it is quite likely that the change spread by diffusion to Ban and Rth from adjacent Minahasan languages and if so it does not reflect an innovation in an exclusively shared parent language.

In a small number of items Ban and Rth reflect initial or medial *d while the North Sangiric group reflect *l (see section 2.3.20.). Whatever the origin of the difference the agreement between Ban and Rth points to a period of uniquely shared ancestry.

Ban and Rth share the change of *l to h under some conditions (see section 2.3.22.). While this was mostly sporadic it appears to have been regular in reflexes of PSan words ending in the sequence *luR. This change is not known to have occurred in other nearby languages and it is among the strongest evidence for a grouping of Ban and Rth.

In the wordlist Ban and Rth each have more cognates with San than with each other. This is a reflection of the limited opportunity available for collecting data on Ban and Rth. For any Ban or Rth item recorded related San forms could be sought at any time in Steller and Aehersold's dictionary but time did not permit the seeking of cognates in Rth and Ban for every item recorded in the other language.

Further, because of other priorities in the limited time available for work with informants, there was usually no attempt to find a cognate in the other language for any Ban or Rth item for which there had not already been located a cognate in San or another North Sangiric language.

Thus the limited number of uniquely shared lexical items recorded for Rth and Ban is, at least in part, a result of lack of opportunity during field work and it therefore does not pose such a problem to a Ban-Rth grouping as might at first appear.

Items which are apparently unique to Ban and Rth or which have uniquely shared phonological or semantic features are listed below. Where items have cognates in San but with different meanings and no outside cognates are known it cannot be established whether the semantic change occurred in Ban and Rth or in San. However, clear cases of uniquely shared retention are excluded here. The
list is not exhaustive; for one thing forms which are possibly uniquely shared but about which doubt of any kind exists are omitted. The items below are also given in the wordlist in section 3.2. with further details.

Ban bahudiŋ, Rth bauriŋ tree sp.
Ban bete? , Rth bebe? to carry by rope. These are cognate with San bebe? carry by handle, reflecting PPh *bitbit. Ban and Rth share irregular change of *e to e. Although *e regularly assimilated to the following vowel in Ban the occurrence of stress on the penult in this item shows that the change here occurred prior to stress shift, not after, as occurred regularly (see section 2.3.23.). Since the independent occurrence of such an irregularity in the two languages can be discounted it must have occurred in their shared parent language.

Ban bokâŋ, Rth bokan maize. San bokaŋ cataract of the eye may be related.
Ban bulé, Rth bule to release. San bulé to forget is related but has a different meaning.
Ban dàdehe? to depend, Rth rare to lean. San dareha? fish with diagonal stripes may be related. This item may reflect PPh *zazaR in rows but if so has undergone semantic change.
Ban dahumú, Rth raamú nest.
Ban dhuðu?, Rth ruup face. San dahu? forehead is related but has a different meaning.
Ban hembaŋ, Rth ēmbaŋ flame. San hiambaŋ flame is related but has vowel sequence ia where Ban and Rth have e.
Ban kanehaba?, Rth kaneb yesterday.
Ban kajedëg, Rth kanerën when?. The cognate in the North Sangiric languages has final ? instead of ů.
Ban, Rth kumú you (pl). This reflects *kəmù as do Siau kəmu and Tahulandang kumu. The forms in these southern San dialects may be borrowings from Ban (see section 1.6.).
Ban, Rth kembo? back of the neck.
Ban koyaba?, Rth koyab to yawn. San kiolabë?, Tal <iolaba> are related but have vowel sequence io where Ban and Rth have o.
Ban, Rth lasia nit, louse egg. The languages share irregular replacement of *e by a, cf. San lašia, PMin *laše?a nit.
Ban, Rth maya all. PMin *baya all is related but has a different initial consonant.
Ban, Rth nai? long.
Ban polaeŋ, Rth polán upper arm. San polaeŋ wrist is related but has a different meaning.
Ban timbonaŋ, Rth timbonan head.
Ban tiŋkahiŋ, Rth toŋkayə ear. A parallel to the first syllable occurs in Ban timpunú, Rth tomponú tortoise, which are innovations, cf. PPh *pəŋu tortoise. The words for 'ear' and 'tortoise' cannot be chance similarities and must reflect a shared innovation in each case.
Ban, Rth tondo *to push*. San tondo *to shove off (a boat)* is cognate but has a different meaning.

There is also a limited amount of grammatical evidence available to support the lexical and phonological evidence for a grouping of Ban and Rth. The two differ from the other languages, and agree with each other, in genitive markers. The non-personal marker in Ban and Rth is nu, for some speakers ŋu in Rth, in free variation with a homorganic nasal before stops and s:

Rth lar nu bābi, lar mbābi pig's foot.

In the North Sangiric languages the genitive marker is a nasal after a vowel and ŋ after a consonant:

San apeŋ u rano banks of the lake, tipu nsoso? cigarette smoke.
Snl kaŋ u katoŋ snake's food, bisa ŋkatoŋ snake's poison.
Tal sakaeŋ u ratu chief's boat, bale ndatu chief's house.

The personal genitive marker in Ban and Rth is ni, for some speakers ŋi in Rth:

Ban baley ni jon John's house.
Rth lar ni leksi Lexy's foot.

In San and Tal it is i after a consonant (the paragoge being lost) and a nasal after a vowel:

San ahus i dābid David's son, bale nsimone Simon's house.
Tal arann i tuaŋa name of the Lord, bale njon John's house.

In Ban and Rth the genitive marker with plural pronouns is a prenasal (singular genitive pronouns being enclitic):

Ban niali? nside fetched by them, bale nside their house.
Rth niali?e ŋkami fetched by us, bale ŋkami our house.

In San and Tal the genitive marker with pronouns, as with personal nouns, is i after a consonant and a nasal after a vowel:

San laed i kami our foot, bale ŋkami our house.
Tal nisuann i ami planted by us, bale ŋkami our house.

Lexicostatistics provides supporting evidence for subgrouping the Sangiric languages. A lexicostatistical comparison of the five languages yields the percentages given in the table below. The list used is the same as that presented in Sneddon 1970, drawn from the lists of Swadesh (1955) and Gudschinsky (1956).61

Lists were obtained directly from informants for San, Tal, Ban and Rth. This was not possible for Snl, for which the list in Reid 1971 was used. This omits a number of items on the list used for the other languages. Considering the percentages obtained it is doubtful if a fuller Snl list would have produced other than a negligible difference in the scores.62 The estimated percentages of shared basic vocabulary for the five languages are as follows, percentages having been taken to the nearest whole number:
San and Snl, with 82% cognates, clearly form a subgroup of closely related speech forms. These link with Tal at 66% in the North Sangiric subgroup. The percentages clearly suggest Ban and Rth are excluded from this grouping. But on the surface the figures for these two languages do not suggest they form a subgroup; Ban's score with Rth is not significantly higher than its score with San and Snl. However, the following interpretation is suggested. Just as the geographical proximity of Ban, San, Snl and Tal is reflected in numerous shared phonological characteristics spread by diffusion it must also be assumed that Ban's proximity to San has influenced its vocabulary as well, through borrowing and shared retention. Thus it could be expected that Ban's percentage with the other Sangiric languages would be somewhat inflated. On the other hand, Rth's isolation from the other four languages would have prevented its participation in borrowing and shared retention just as it has excluded Rth from phonological innovations spread by diffusion. Ban's percentage with each of the three North Sangiric languages is four points higher than is Rth's and this could represent inflation resulting from geographical proximity, just as its percentages with Tbl and Tse, with which it shares its borders, are higher than its scores with the other Minahasan languages (see Sneddon 1970). Thus geographical factors could have had a masking effect on the Ban-Rth relationship, which would show up more clearly in the lexicostatistical percentages if Ban had also been isolated from the North Sangiric languages.

In section 1.6. it was suggested Ban and Rth split from each other shortly after the original dispersal of PSan. The exclusion of Rth from probably all of the innovations which Ban shares with the North Sangiric group points to this as do important phonological differences between the two such as differences in their reflexes of voiced stops (see section 2.3.13.). Also, if Rth's lexicostatistical percentages with the other languages are taken as more reliable than Ban's then, although the Ban-Rth percentage of 59, as against 54 with San/Snl, indicates a Ban-Rth grouping, the difference of only five percentage points nevertheless supports the suggestion of only a short period of uniquely shared ancestry.

San, Snl and Tal form the North Sangiric group, as previously discussed. The first split was between San/Snl and Tal. San and Snl link closely, probably representing a string of dialects, stretching from the islands just north of the Minahasan coast to the Sarangani Islands and adjacent Mindanao mainland areas. Rth and Ban form the South Sangiric group, splitting from each other soon after the original dispersal of PSan.

The relationships of the Sangiric languages are represented in the following diagram:

<table>
<thead>
<tr>
<th>Snl</th>
<th>San</th>
<th>Tal</th>
<th>Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rth</td>
<td>54</td>
<td>54</td>
<td>47</td>
</tr>
<tr>
<td>Ban</td>
<td>58</td>
<td>58</td>
<td>51</td>
</tr>
<tr>
<td>Tal</td>
<td>66</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>San</td>
<td>82</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

San and Snl, with 82% cognates, clearly form a subgroup of closely related speech forms. These link with Tal at 66% in the North Sangiric subgroup. The percentages clearly suggest Ban and Rth are excluded from this grouping. But on the surface the figures for these two languages do not suggest they form a subgroup; Ban's score with Rth is not significantly higher than its score with San and Snl. However, the following interpretation is suggested. Just as the geographical proximity of Ban, San, Snl and Tal is reflected in numerous shared phonological characteristics spread by diffusion it must also be assumed that Ban's proximity to San has influenced its vocabulary as well, through borrowing and shared retention. Thus it could be expected that Ban's percentage with the other Sangiric languages would be somewhat inflated. On the other hand, Rth's isolation from the other four languages would have prevented its participation in borrowing and shared retention just as it has excluded Rth from phonological innovations spread by diffusion. Ban's percentage with each of the three North Sangiric languages is four points higher than is Rth's and this could represent inflation resulting from geographical proximity, just as its percentages with Tbl and Tse, with which it shares its borders, are higher than its scores with the other Minahasan languages (see Sneddon 1970). Thus geographical factors could have had a masking effect on the Ban-Rth relationship, which would show up more clearly in the lexicostatistical percentages if Ban had also been isolated from the North Sangiric languages.

In section 1.6. it was suggested Ban and Rth split from each other shortly after the original dispersal of PSan. The exclusion of Rth from probably all of the innovations which Ban shares with the North Sangiric group points to this as do important phonological differences between the two such as differences in their reflexes of voiced stops (see section 2.3.13.). Also, if Rth's lexicostatistical percentages with the other languages are taken as more reliable than Ban's then, although the Ban-Rth percentage of 59, as against 54 with San/Snl, indicates a Ban-Rth grouping, the difference of only five percentage points nevertheless supports the suggestion of only a short period of uniquely shared ancestry.

San, Snl and Tal form the North Sangiric group, as previously discussed. The first split was between San/Snl and Tal. San and Snl link closely, probably representing a string of dialects, stretching from the islands just north of the Minahasan coast to the Sarangani Islands and adjacent Mindanao mainland areas. Rth and Ban form the South Sangiric group, splitting from each other soon after the original dispersal of PSan.

The relationships of the Sangiric languages are represented in the following diagram:

```
PSan
  /   \
PNSan  PSSan
   \   /   \
    Tal  San  Snl  Ban  Rth
```
PART THREE
LEXICAL RECONSTRUCTIONS

3.1. INTRODUCTION

In this part are listed the PSan lexical items which have so far been reconstructed. It is expected that further study of data collected and the recording of more information on some of the languages will allow additional reconstructions to be made; the present list thus cannot be regarded as exhaustive.

Reconstructed items are listed alphabetically in section 3.2. The alphabetical order employed is as follows: a, e, o, i, u, b, d, g, R, k, l, m, n, 0, p, s, t, w, y, ?. Where a decision could not be made between two proto-segments, because of the ambiguity of the available evidence, the symbols for the two segments are both given, separated by a slash. The symbol with the earliest position in the alphabet occurs before the slash and the word is placed according to the alphabetical position of that symbol. If the existence of a proto-segment is uncertain the symbol for the segment is placed in parentheses. Such a symbol is taken into account for the purposes of alphabetisation. Homophonous words are listed consecutively and marked (1) and (2). The symbol N word-finally means no decision can be made on the available evidence between *m, *n and *0 in the reconstruction. A final glottal stop placed in square brackets indicates that no decision can be made between *? and any one of a number of other consonants. N and [?] are further discussed below.

Each reconstruction is starred and, where possible, given an English gloss. Sometimes the available evidence is not sufficient to determine the meaning of a reconstruction with any confidence, in which case the item is not provided with a gloss. This happens, for instance, when the South Sangiric words have a different meaning from the North Sangiric words. If there is no known outside cognate it is not always possible to tell in which group of Sangiric languages a change in meaning occurred. Thus *daRup is reflected in North Sangiric languages by words meaning 'forehead' and in South Sangiric languages by words meaning 'face' and must therefore be left unglossed. Sometimes the gloss for a reconstruction is less precise than the meanings of the reflexes in the present-day languages. This happens, for instance, when the meanings of the words in the present-day languages differ from one another but contain a common semantic element. This element can be assigned to the PSan etymon.

Following the reconstruction and its gloss all known reflexes are given. For many items no Snl or Tal reflexes are known, this resulting from the small amount of information available to the author on those languages. The absence of a Ban or Rth reflex means either that the item was not checked with informants

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or that informants were unable to supply a form, in which case, presumably, no reflexes occur in those languages. It is expected that in the former case further eliciting will fill many gaps. The English meaning or meanings given for a word usually indicate the range of meanings recorded and not necessarily the full range of meanings which the word actually has. In the case of San, however, it has often been found practical to reproduce only some of the meanings given for a word in Steller and Aebersold's dictionary.

Where a word occurs only in a derived form, i.e. the original root is no longer free, the parts are separated by hyphens in order to highlight the historical morpheme under consideration. Thus Rth sa₃solôn lamp is one morpheme in the present-day language but is represented sa-solō-n as it derives historically from three morphemes, *sa-solo-an, of which only the second is relevant to the reconstruction of the PSan form *solo.

However, unless fossilised, affixes are not included even where, as with verbs and many adjectives, roots do not normally occur without some affixation. Thus the gloss for a root does not necessarily mean it occurs free with that meaning. For example, under *dau is given San dau distance; far; in fact the word for far is marau, with obligatory prefix ma-.

Where Tal words were recorded as occurring freely with either a voiced stop or a continuant (see section 2.1.3.1.) the continuant has been chosen for inclusion in the wordlist. Thus donŋa and roŋga leaf were both recorded but only roŋga is included in the list. Where a Tal item is given with an initial voiced stop this indicates that no form with an initial continuant was recorded.

Where a form in a language was taken from an older published source the spelling of the source work has been retained and placed in wedges because such works are not phonemically reliable. This is done where evidence from informants is unavailable or where it provides useful supplementary information. The source is indicated by a letter in parentheses. The sources are N (Niemann 1869-70), K (Koorders 1899), A (Adriani 1911) and S (Steller 1913).

Dialect differences are not known for Rth and Ban. For Snl items cited are from the Sarangani dialect and for Tal from the Salibabu dialect; little information is available on other dialects of these languages. For San forms in the Manganitu dialect are given. Steller and Aebersold often record forms in other dialects, although this is not done consistently. Forms from dialects other than Manganitu are only cited if the item does not occur in Manganitu or if the other dialect appears to provide useful information. Where a form is from a dialect other than Manganitu the dialect is identified.

Following the list of reflexes of a PSan reconstruction one or more related words from external sources are usually given, enclosed in square brackets. If a PAN or PMP reconstruction by Blust is known this is chosen, otherwise a PPh etymon is given. In the absence of such reconstructions or if it is thought for some reason to be more useful a PMin reconstruction is given or cognates in one or more present-day languages. The author of a reconstruction is identified by name but the publication in which the reconstruction appears is not, although all publications from which reconstructions have been drawn are listed in the bibliography. If the source of a PPh reconstruction is not given the form is from Zorc 1971 (see note 20).

If an item occurs in only one branch of the Sangiric languages then external related forms are required to establish that the item was not a post-PSan innovation (although PSan reconstructions are made for items shared only by Ban and Rth without known external cognates, for reasons given in section 1.6.). For
some items external evidence is required to enable a decision between two possible PSan forms. For instance, in the absence of a recorded Tal cognate a final glottal stop in the other Sangiric languages ambiguously reflects PSan \*t and \*?. Thus from San, Snl, Ban, Rth kila? lightning alone it cannot be established that the PSan etymon had final \*t; here the evidence of PPh \*kilat shows that the PSan form was \*kilat and not **kila?. In the case of San ləŋku? dirt, Rth ləŋkú? mildew, no external evidence is known and the PSan etymon (at least for the present) must be reconstructed as \*ləŋkut/?.

Where evidence is available from San, Snl and Ban only of the Sangiric languages final glottal stop ambiguously reflects \*? or any voiceless stop; here, instead of a list of all possible segments, separated by slashes, \? alone is given, placed in square brackets. Thus from San səmpu?, Ban səmpú? attach, is reconstructed PSan \*səmpu[?]. In such cases also external evidence allows disambiguation. Thus from San hia?, Ban hi? to thresh alone the final consonant is PSan cannot be determined but PPh *Riak shows it to be \*k.

Where evidence is available from San, Snl and Ban only \( \eta \) ambiguously reflects \*m, \*n and \*ŋ. In such cases the PSan reconstruction is made with capital N. Thus on the evidence of San, Ban tilaŋ pure is reconstructed PSan \*tilaN. Here also external evidence allows disambiguation. Thus from San lurəŋ, San lərəŋ to load and PPh *lu:jan ride in vehicle, Tagalog lu:lan to load cargo, can be reconstructed PSan *lu'dan.

Where evidence from Ban and external languages is lacking medial b in the other Sangiric languages ambiguously reflects PSan \*b and \*w but because of the rareness of PSan \*w, in this case \*b alone is reconstructed (rather than \*b/w).

For the great majority of PSan items the reconstruction can be confidently made on the evidence of the reflexes in the present-day Sangiric languages alone, according to the regular rules of derivation given in section 2.3. In such cases external evidence is not crucial to the reconstruction and external forms are only given for comparison and are not necessarily directly related. If the external form appears not to be directly related or if it bears only a partial phonological similarity to the PSan reconstruction it is preceded by 'cf.'.

Where it is doubtful if the external form is related at all it is preceded by a question mark. The absence of reference to other languages means that no related forms outside the Sangiric group have so far been noted.

To avoid confusion a few minor changes have been made to the orthographic conventions employed by some source works to bring them into line with those employed for the PSan reconstructions. The most important of these is the replacement of \(<e>\) by \(<a>\) to represent [ə].

If an item in a Sangiric language has an unexplained segment or some other apparent irregularity this is mentioned in a note. However, sporadic correspondences and other apparently unpredictable phonological features which, because of their frequency, are discussed in section 2.3. (such as the occurrence of unetymological final \( ? \) in San and Snl — see section 2.3.21.) are not noted for each individual item in which they occur.

Further discussion of the reconstructions can be found in section 1.5.
3.2. PROTO-SANGIRIC WORDLIST

*abay to tap sugar palm:
San ahe to cut off something hanging up high; to tap sugar palm; Ban abey,
Rth abey to tap sugar palm.  

*abit to climb (tree):
San, Snl, Rth abi?, Tal abitta, Ban abi? to climb (tree).

*abu ashes, dust:
San, Tal abu ashes; Snl, Rth abu ashes, dust; Ban abu kitchen [PPh (Charles)
*qabu ash].

*ada if:
San ara but, however; Tal ara or, if; Ban ada, Rth ara if.

*aday chin:
San, Tal are, Snl ale, Ban adey, Rth arey chin [PPh *azey jaw].

*aden name:
San are?, Snl are, Tal aranna, Ban ade?, Rth aren name [PPh *ajan name].

*adik kiss:
Rth arik kiss [PPh *hajak kiss].

*aRab fern sp.:
San ahabae?, Tal azaba, Rth aab fern sp. [Ttb, Tse araw, Pon ayaw fern sp.]

*aRak:
San aha? to lead, conduct, convey; Ban aha? to teach, instruct; to lead
guide; Rth aak to support or assist someone to walk [PAN (Blust) *aRak walk
in procession].

*aRaw to rob, snatch away:
San aho, Ban ahow to rob, snatch away; Rth (N) *ahuw to rob [cf. PPh *agaw
take/snatch].

*aRi fine ash:
San, Ban ahi, Rth ai fine ash from burned leaves, paper, etc. [PPh *aRiw
soot(y)].

*aRus to replace, change, succeed:
San ahuse?, Rth aus to succeed (a person), change (clothes), replace; Snl
aruse? to succeed (a person).

*aRan eldest sibling:
San aRan the eldest of two siblings; Snl, Rth aRan, Tal aRana eldest sibling
[Proto-Western Malayo-Polynesian (Blust) *ak-a-ŋ eldest sibling of the same
sex (vocative)].

*aRae water:
San, Snl aRae, Tal ua?e, Ban, Rth aRae water; San aRae sap [Ternate aRae,
Galelarese (Morotai) aRae water].
*akel sugar palm (Arenga saccharifera):
San akelo?, Ban ákele?, Rth akel sugar palm (Arenga saccharifera) [PMin *akel sugar palm].

*alap to get, fetch:
San, Ban, Rth ala?, Snl a?, aya?, Tal alappa to get, fetch [PPh *alap take, get, gather].

*alin to move, transfer:
San alin to move, transfer, move house; Rth alin to pour; to transfer rice seedlings to field [PPh *alin move over; transfer].

*aluN space under house; underneath:
San aluN, Snl auN space under house; underneath; Ban aluN underneath [Agta qaddun space under house; under; ?PPh *alum darkness, night].

*amaŋ father:
San, Snl, Rth amaŋ, Tal amaŋa father [PAN (Blust), PMin *amaŋ father]. cf. *ama?.

*ama? father:
San (Siou, Tam), Ban ama? father; Snl ama? father (familiar reference and vocative) [PMin *amaŋ father]. cf. *amaŋ.

*anak child:
San, Ban anak?, Tal anak? a, Rth anak child [PPh *anak child].

*anam to weave:
San, Snl anak, Rth anam to weave (mat, basket) [PPh *anam weave].

*anup to hunt:
San, Snl, Ban anu? to hunt: Rth anup come unexpectedly upon someone [PAN (Blust) *qaNup hunt].

*anin wind:
San, Snl anin, Tal aninna wind [PPh *anin wind; air].

*apa what?:
San, Snl, Tal, Ban, Rth apa what? [PPh *apa what?].

*apuR lime:
San, Snl apu?, Tal (A) <apuka>, Ban apuhu?, Rth apu lime [PPh *apuR lime].

*asang gills:
San, Ban, Rth asang gills [PPh *asang gills].

*asik to dibble; plant rice:
San asi? to plant rice, strictly the first process: to make holes in the ground; Snl asi? to sow, drop seeds (rice, corn) into holes; Tal asi?a to plant rice; Ban asi? to plant rice by broadcasting; Rth asik to dibble, make holes to plant rice seeds in [PAN (Blust) *asak dibble, make a hole to plant seeds].

*asin salt:
San, Ban asin, Rth asin salt [PPh *asin salt].
*atay liver:
San, Snl, Tal atey liver [PPh *qaCey liver].

*atis sour sop (Anona squamosa):
San atisə?, Rth atis sour sop (Anona squamosa) [PPh *atis Anona squamosa].

*atup roof, thatch:
San, Snl, Ban atup?, Tal atuppa, Rth atup roof, thatch [PPh *qatəp roof, thatch].

*awak body:
San, Snl aha?, Tal aha?a, Ban ao?, Rth ahaak body [PPh *hawak body].

*ebere saliva; desire:
San ebeha? to have a good appetite; Rth ebe saliva; to crave, desire [PPh *ibəR desire; like, love; PMin *ebəh desire, crave].

*eget:
San ege? to bind (coconuts) in pairs; Rth ehe? near.

*elot?:
San (Siau), Ban elo? to massage, knead; Rth elo? to feel, handle.

*ebut to pull out:
San abu?, Tal abbuta, Rth ubu? to pull out (hair, plants, etc.) [cf. PPh *Rabut rip loose/out; Mal rəbut snatch, seize].

*edu spittle; to spit:
San aedu, Tal addu spittle, to spit; Snl, Ban du spittle, Snl -edu, Ban -udu to spit.

*eRab to sharpen:
San ahəba?, Snl rabə?, Rth əə to sharpen (a point) [Mdw orob make a sharp point].

*eRe tall grass sp. (Imperata cylinridica):
San øhe, Snl re, Tal akke, Ban he, Rth ø tall grass sp. (Imperata cylinridica).

*eIaw day; sun:
San ølo, Snl law day; Tal allo, Ban, Rth low day; sun [PPh *qaN/Ljaw day; sun].

*eIit/?:
San øli?, Snl li? bottom of the sea; Ban ma-li? dark; Rth ma-li? night; mu-li? dark [? PAN (Blust) *elət intervening space].

*eIu tears:
San ølu?, Snl -elu?, Tal allupa, Ban -ulu?, Rth -ulú to shed tears [? PPh (Zorc) *lu:həq, PMin *lu? tears].

*eIup to swallow:
San ølu?, Snl -elu?, Tal allupa, Ban -ulú?, Rth -ulúp to swallow [PMin *ələp to drink].
*amay rice (in field):  
San ame, Snl may, Tal amme, Ban mey, Rth may rice (in field) [PPh *həməy rice (cooked)].

*ama? mother:  
Ban ma?, Rth umá? mother; Rth ma? mother (vocative) [cf. Mal amak mother].

*amis sweet:  
Tal (A) <amisra>, Ban -mis?, Rth -mis sweet [Binukid, Western Bukidnon Manobo qəmis sweet].

*ampaR underlayer, sheet:  
San la-ampahə?, Ban ampaha?, Rth umpá underlayer, sheet [PPh (Charles) *qəmpar to spread (a mat, etc.)].

*ənum six:  
San ənuŋ, Snl, Ban nuna, Tal annuma, Rth num six [PPh *xənəm six].

*əndum:  
San anduŋ to learn; əndum-əŋ understanding; Rth undum to remember [cf. PPh *ədəm brood]. cf. *taRəndum.

*əngo(ŋ):  
San əngo to make a noise to warn others of one’s presence; Rth aŋgon to call out (to someone) [cf. PPh *aNgəŋ moan, hum].

*əpat four:  
San əpaʔ?, Snl, Ban, Rth paʔ?, Tal appata four [PPh *xəpat four].

*əsa one:  
San əsa, Tal assa, Snl, Ban, Rth sa one [PPh *əsa one].

*əsi meat:  
Rth si meat [PAN (Dahl) *səsi meat].

*ətut to fart:  
San atuʔ?, Tal (A) <atuta>, Ban, Rth -utů? to fart [PPh *ə(N)tut flatulence].

*ia? I:  
San, Snl, Ban, Rth iʔ? I.

*idun nose:  
San irun, Snl ilun, Tal ərunna, Ban idun, Rth irun nose [cf. PPh (Zorc) *qijũŋ nose].

*idup palm fibre:  
San iruʔ? fishing line from fibres of sugar palm; Rth irup fibres of sugar palm (used to make snares) [Ttb irup palm fibre].

*iRik:  
San ιhi? to become less, run out; Rth ιik little; to make little.

*iRup to sip:  
Tal iʔupa to sip; absorb, suck up; Rth iup to sip (hot food or liquid) [PPh *SiRup sip, slurp].
*ikit  to bind, tie up:
San, Snl, Ban, Rth iki?, Tal itta to bind, tie up [PPh *ikat tie].

*inaŋ  mother:
San, Snl inaŋ, Tal inaŋa mother [PAN (Blust), PMin *inaŋ mother]. cf. *inaŋ.

*inaŋ?  mother:

*ino  bead(s):
San ino pearl; bead; Ban ino bead(s) worn on necklace; Rth ino bead necklace [Bare'e enu beads].

*inum  to drink:
San, Snl, Ban inuŋ, Tal inumma, Rth inum to drink; Ban inum-aŋ will be drunk [PPh *inum drink].

*indak:
San indaŋ asthma; Rth indak breath; to breathe.

*ipi  dream:
San, Snl, Rth ipi dream [PPh *Xi(N)pi dream].

*isi  tooth:
San, Snl, Tal, Ban, Rth isi tooth [PAN (Blust) *i(cs)i tooth].

*itum  black:
San, Snl, Ban ituŋ, Tal itumma, Rth itum black [PPh *qitem black].

*oban  grey hair:
San oban, Ban oban, Rth (N) <owan> grey hair [PPh *quban grey hair].

*olay  sugar palm spadix:
San ole, Ban oley, Rth olay spadix of sugar palm, from which toddy is collected.

*onap  fish scales:
San, Snl onaŋ, Tal onappa, Ban ono?, Rth onop scales of fish [PPh *qunap to scale fish].

*onas:
San onasaŋ waste, scraps, peel, etc.; to scrape off: Rth onas to pound rice for the second time.

*o/untap  to operate bellows:
San, Snl ontaŋ, Siau untaŋ, Rth untap to operate bellows; Snl ontap-eŋ cylinder of bellows [PMin *untap operate bellows; PPh *uNtapan bellows].

*ongol  to give:
San ongo?, Tal ongola to give; Snl ongo? to give (a gift); Ban ōŋkoho? to hand over, give by hand.
*ua to disembowel:
San, Ban ua to disembowel, gut (fish, pig, etc.); Rth ua to rummage (e.g. through clothes in search of something) [PMin *ua? to slice open, disembowel; MdW ua? to wound].

*uai mango:
San, Tal, Ban uai, Rth oy mango.

*uala tusk; canine tooth:
San uala, Ban, Rth uala tusk (of pig); canine tooth [PMin *uala, MdW uala tusk; canine tooth].

*ualu eight:
San, Tal ualu, Snl uaw, Ban, Rth ualu eight [PAN (Dahl) *ualu eight].

*uana termite:
San uane, Ban, Rth uaney termite [cf. PPh *'anay termite].

*uay rattan:
San, Tal ue, Snl uay, Ban uey, Rth oy rattan [PPh *qu'ay rattan, reed].

*udaŋ prawn:
San uraŋ, Ban uraŋ prawn [PPh *quDAN shrimp].

*udo charm, magic spell:
San, Rth uro spell, magic charm (used against thieves) [PPh *uDQ medicine; charm].

*udum to dive, swim underwater:
San uruŋ, Tal urumma, Ban uduŋ, Rth urum to dive, swim underwater.

*uRas to wash (hands):
San uhase?, Snl urase?, Tal užasa, Ban úhasa? to wash (hands) [PPh *huRas wash].

*uRat vein:
San íha?, Tah, Ban uha? strength, strong; vein; Snl ira?, Rth ua? (N <uha>) vein [Mal urat, WEM ugat, Samal ugat vein].

*uRup:
Rth uup dip, immerse in water; enter water, (N) <manguhup> overflow [Tdn uræp deep; flood].

*ulan thick rope from palm fibres:
San ulan, Snl uan, Ban, Rth ulan thick rope from palm fibres [MdW ulan rope from palm fibre; Tdn ulan palm fibre; Sa'dan ulan rope; to spin rope].

*uile to return:
San uile, Ban uile to return (to previous condition); Rth ule to return, go home [PPh *uliq return].

*ulid worm:
San ulide?, Tal uljida, Rth ulir worm [PPh *ulŒj worm].
*ulu: Sanulu interior, inland, upstream; Banulu upland, above; water spring [PPh (Zorc) *qu:luh head].

*uluR to lower (by rope): Sanuluha?, Banułuhu?, Rth uu to lower (by rope) [PPh *huluR fall, drop; pay out].

*unaw: Sanuno to dip, plunge in water; Banunow worn away (e.g. of knife blade), used up (e.g. of soap); Rthunow to melt.

*unid core, pith: Sanunida?, Rthuŋir core, pith (of plants); Talunidda to bury underground [PMin *unad middle, centre; Timugon Murut unod kernel].

*undam medicine: San, Snl, Banundan, Talundamma, Rthundam medicine; Banundam-ŋ be treated medically [PPh *Undam medicine].

*uŋket/?: Sanuŋke? young boy, younger brother; Rthuŋke? word used to call young boy, "hey, lad!".

*utak hair: San, Snl, Banuta?, Taluta?a, Rthutak hair [PPh *qutak brain].

*utut/? torch: San, Rthutu? torch.

*baer to pay: Sanbaeha?, Talbaekka, Banbahe? to pay [PMin *baer to pay; cf. PPh *bayaD pay].

*baba (1) to carry on the back: Sanbaba to carry (general term); Tal, Rthbaba to carry on the back [PPh *baba· carry on one's back].

*baba (2) below; downwards: Sanbaba, Banbaba below (lower than); downwards; Rthsenebaba there (in downwards direction) [PPh *babaq below].

*babaw above: Sanbabaw, Talbabaw shallow (where sea bed is elevated); Rthbabow above, on top of [PPh *babaw above].

*babelaw afternoon: Sanbabawo, Snlababelaw, Banbabolaw, Rthbabulaw afternoon. cf. *baba (2) and *alaw.

*babi pig: Sanbabi, Banbabi, Rthbabi pig [PPh *babuy pig].

*babinay woman: Sanbabine, Snlbabinay, Talbabine, Banbabiney, Rthbabiney, babinay woman [PAN (Dempwolff) *babinay woman].
*baduk (1) palm sp.:
San baru?, Rth *baruk palm sp. [PMin *baruk palm sp.]. cf. *baduk (2).

*baduk (2) tinder:
San baru?, Rth *baruk powder from palm fronds used for caulking boats or as tinder [PPh *baduk tinder].

*bara monkey:
San baha, Rth *baa (N <waha>) monkey.

*barani brave:
San bahani, Rth *baani brave [PPh *barani brave, fearless].

*barat west wind:
San bahe?, Snl *bare? west wind; Tal bažata west; Rth *bae? wind [PPh *barat north west wind].

*bari rotten:
San, Ban bahi rotten (of food) [PPh *bari rotten].

*bariga to snore:
San, Ban bahi, Rth *baig to snore.

*barudan tree sp.:
Ban (K) <bahudung> tree, Eugenia sp.; Rth *baudan (K <wahuring>) tree with edible fruit.

*bala:
San bala valley, field; Ban bala bottommost, at the bottom; Rth *bala centre.

*balan anchor:
San balaono, Snl *bano, Ban bulanow anchor [Ttb walanow, Mak balaono anchor].

*balay house:
San, Tal bala, Snl *bale, Ban baley, Rth *baley house [PPh *balay house].

*balibidan tree sp.:
San balibiran tree sp., fruit small, eaten by birds.

*balaka(g) chaff:
San balakâ, Tal bala?, Ban balakâ?, Rth *balukáh chaff.

*balian shaman:
San balian trainee for (pagan) priesthood; Rth (N) <walian> priest [PAN (Blust) *balian shaman].

*baluñ axe:
San balun, Ban balun, Rth *balun axe [PPh *balun axe].

*balik to return, go back:
San, Snl bali?, Tal bali?a, Ban bali? to return, go back [PPh *balik turn around].
*baline* other:
San *baline*, Snl, Tal *baine*, Ban *baline* other [PMin *balina other].

*balu* widow:
San *balu*, Snl *baw*, Ban *balu* widow [PPh *balu· widow].

*baluk* to sell:
San *balu?*, Snl *bau?, Tal balu?a, Ban balu? to sell [Mak balu? to sell, pa?-baluk-an to sell for someone].

*balukin* to carry on the back:
San bakulin, Ban balukin, Rth *balukin* to carry on the back; Ban balukin-an be carried on the back.

*balun* provisions for journey:
San *balun*, Rth *balun* provisions for journey [PMin *balun provisions for journey; ? PPh *balun roll up (together)].

*baluy* to change, alter:
San baluy, Snl *bayy*, Ban baluy, Rth *baluy* to change, alter [PMin *baluy transform, change; cf. PPh *baliw change].

*baneRa* hawk:
San manu? baneha owl sp.; Rth *banea* hawk [PPh (Charles) *baniRa hawk, eagle].

*banua* land; place; village:
San *banua* land; district; Tal *banua* land; place; village; Ban *banua*, Rth *banua* village [PPh *banu·a· land/place, country].

*bantal* bundle:
San banta|a? box, trunk; Rth *bantal* bundle (wrapped in cloth) [PPh *baNtal bundle].

*banto?* childless, infertile:
San, Ban *banto?, Rth *banto?* childless, infertile [PMin *banto? childless, infertile].

*bango/u*:
San *bango* cudgel; to beat against something; Rth *banyak* to bump (one's head).

*batan* log, fallen tree:
San *bataŋ*, Rth *bataŋ* log, fallen tree [PPh *bataŋ* stick; tree trunk; WBM *bataŋ* fallen tree or log].

*batu* stone:
San, Ban *batu*, Snl, Tal, Rth *batu* stone [PPh *batu stone].

*batuk* to follow, pursue:
San batu? to follow; Ban ba-batu?, Rth *batuk* to chase, pursue.

*batune* seed:
San, Ban batune, Rth *batune* seed (of fruit) [PMin *batuna seed]. cf. *batu*. 
*baya to permit, allow:
San, Tal bala, Ban baya, Rth baya to permit, allow [PMin *baya permit, allow; release].

*bayau tree sp.:
San balau forest tree with nuts; Ban bayau candlenut tree and fruit (Aleurites moluccana); Rth bayau castor-oil plant [PPh (Charles) *b(e)yaqu kemiri (Aleurites moluccana)].

*benjel deaf:
San benjela?, Sni benjela?, Tal benjella, Rth benjel deaf [PPh *benjel deaf].

*benkol bent, crooked:
San benko?, Tal benkola, Ban benkolo?, Rth benkol bent, crooked.

*babas to cut off, slash:
San babase?, Tal babasas to cut off, slash (high grass, bushes, etc.) [PPh *babas cut off].

*babat to carry (something hanging down from hand):
San bebe? to carry (basket, bag) by handle; Ban bebe?, Rth bebe? to carry on the end of a rope (held by hand) [PPh *bitbit to carry in hand].

*babuR porridge:
San babuhu? a dish of slightly cooked vegetables in sauce; Siau watery sago porridge; Ban babuhu? to make porridge, b-in-ubuhu? porridge [PPh *buRbuR cook rice; Mal bubur porridge].

*babuk wood borer; dust (of damaged wood):
San babu?, Rth bubuk wood borer; Tal babu?a, Ban bubu? dust, powder (of wood damaged by borer) [PPh *bubuk (insect) wood borer; dust].

*babul to pluck out (hair, feathers):
San babula? to pluck out; to fall out (of hair, feathers); classifier for hair, feathers, etc.; Ban bubulu? to pluck out (hair, feathers) [PPh *bulbul pubescent hair; PMin *bulbul feather, body hair].

*barat heavy:
San bahá?, Sni bëra?, Tal bëkka, Ban bahá?, Rth baa? (N <waha>) heavy [PPh *bæRqat heavy].

*bearis line:
San bëhi?, bëhise? line, stripe; Ban bëhisi? to form a line.

*béru new:
San buhu, Sni bëru, Tal bakku, Ban buhú, Rth buu (N <wuwu>) [PPh *baqëRu, PMin *bërú new].

*bëka to split:
San bëka, Tal ba?a, Ban bëká, Rth bëká to split [PPh *bëkaq split].

*bëke story:
San bëke genealogy; story; Tal (A) <ba'e>, Rth bëké story.
*bəkis to tie together in a bundle:
San bəkisə?, Tal bə'isə, Rth bəkis to tie together in a bundle; Ban bikisi?
to tie tightly, tighten knot [PPh *bəRkəs bundle; (Charles) to tie].

*bəlas (1) to borrow:
Tal ballasa, Ban balasa, Rth bələs to borrow [PPh (Charles) *bəlesai borrow].

*bəlas (2) tree sp.:
San bələsə?, Ban (K) <barasa>, Rth bələs tree sp. [Ttb awəlas Ficus sp.].

*bəli to buy:
San bəli, Snl bəli, Tal balli, Rth bəli to buy [Mal bəli buy; cf. PPh *bili buy, value].

*bəlis rancid, rotten (of food):
San bəlisə?, Snl bəlisə?, Rth bəlis rancid, rotten (of food).

*bəmbaŋ shoulder:
San, Snl bəmbaŋ, Ban bəmbaŋ shoulder [? Mak barambaŋ chest].

*bəmbulu feather, body hair:
San bəmbulu feather; crude word for pubic hair; Snl bəmbu, Tal bəmbulu feather; Ban bəmbulu, Rth mbulu feather, body hair, fur [cf. PPh *bəlu feather, hair].

*bənaR broad, wide:
San bənahe?, Rth bənə broad, wide.

*bənan to sneeze:
San bənan, Tal bannana, Rth bənan to sneeze [cf. PPh *baqahan sneeze].

*bənit/ʔ to peel off:
San bəniʔ, Ban bəniʔ, Rth bəniʔ to peel off (rind, bark).

*bəndu:
San (Sas) bəndu trouble, difficulty; sick from excessive exertion; Ban bundu difficult (of work); Rth bəndu to sob [PMin *bəndu hard work; distress].

*bənaR molar tooth:
San bənəheʔ jaw; isi mbənəheʔ molar tooth; Tal bənaka, Ban bənahaʔ, Rth bənə mołar tooth [cf. PPh *baʔə̃ y molar tooth].

*bənə opening:
San bənə bight, gulf; opening; Rth bənəʔ to open (e.g. mouth) [Ttb wənəʔ crack, opening].

*bəŋkaw spear:
San bəŋko, Snl bəŋkaw, Ban bəŋkəw spear; Rth (N) <wungkou> lance [PPh *bəŋkəw spear/lance].

*biad fish roe:
San biadaʔ, Snl biadəʔ, Tal (A) <biada> fish roe [PPh *bihed, Mdw biod roe, fish eggs].
*biaR alive; to live:  
  San bi̍a̍hə?, Snl bi̍āraʔ, Tal biakka, Ban bfi̍aʔaʔ, Rth ɓia alive; to live [PPh *bi̍aR alive].

*bibiR lip(s):  
  San bi̍i̍i̍həʔ, Snl bi̍i̍irəʔ, Tal bi̍i̍ikka, Ban bíi̍i̍hiʔ, Rth bíi̍i̍ lip(s) [PPh *bibir lip(s)].

*bida white:  
  San bira, Snl ɓila, Tal ɓira, Ban bida white.

*biRas husked rice:  
  San bhikaʔaʔ, Snl bi̍arəʔ, Rth ɓias husked rice [PPh *bəRas husked rice].

*bileR to give:  
  Ban bi̍i̍hey, Rth ɓee̍y to give [PPh *bəRey give].

*biRīŋ slanting, at an angle:  
  San bi̍i̍hiiŋ to turn round, revolve; Ban bi̍i̍ŋ, Rth ɓi̍iŋ slanting, at an angle [cf. Mal miriŋ aslant, at an angle].

*biku:  
  San biku ignorant; Ban biku clumey, awkward [Ttb biku dumb, mute].

*bilat mat; to spread out:  
  San bilaʔ to spread out, unfold; ba-bilaʔ mat, bed; Tal bilatta, Ban ba-bilaʔ, Rth ba-bilaʔ mat [cf. PPh *bəlaj spread out in sunlight].

*biliŋ to turn around or over:  
  San bi̍i̍iŋ, Snl, Rth ɓi̍i̍iŋ to turn over, turn around [PPh *biliŋ wind, turn].

*binaba cloud:  
  San binaba, Snl, Rth ɓinaba, Tal ɓinababa, Ban binaba cloud.  

*bintoiʔ large grass sp.; Rth ɓintoiʔ bamboo sp.

*biŋiR to pour:  
  San biŋi̍həʔ, Ban ɓiŋihiʔ to pour.

*biṣu(R) full, satisfied:  
  Rth ɓisu full, satisfied [PPh *bəsuR full, satisfied].

*biṣul boil:  
  San biṣułəʔ, Snl ɓisuʔ, Ban bisuluʔ, Rth ɓisul boil [Mal bisul boil].

*bitin to hang:  
  San bi̍i̍niŋ to hang on a rope; Snl ɓitiŋ to hang; Tal bitinnna to hang, dangle by arms; Rth (N) <pamamitanan> gallows, <mamitı́n> to hang up [PPh *bitin hang, dangle].

*bitis calf of leg:  
  San bi̍i̍siʔ leg between knee and ankle; Snl ɓisiʔ leg (including foot); Tal bisitta, Ban bitisiʔ, Rth ɓitis calf of leg [PPh *ɓə(N)tí is calf of leg].
*boboŋ  bamboo water container:
   San boboŋ, Rth boboŋ bamboo water container [Ttb wowon drinking vessel].

*bobo?  dumb, mute:
   San (Siau), Ban bobo?, Tal bobo, Rth bobo? dumb, mute [PMin *bobo? dumb, mute].

*boReŋ  charcoal:
   San boheŋ, Snl boereŋ, Tal božeŋa, Rth boen charcoal [PPh *b-ujin charcoal].

*boReʃ  to write:
   San, Ban boheŋ, Tal božeta to write.

*bo/uRintiŋ  speckled, multicoloured:
   San bohinkiŋ, Ban buhinkiŋ, Rth buintiŋ speckled, multicoloured (of fowls).

*bokan  maize:
   Ban bokan, Rth bokan maize.

*boleŋ:
   San boleŋ, Snl boleŋ, Tal boleŋa to pull; Ban boleŋ, Rth boleŋ to carry on a pole between two people [Ttn wulę carry on shoulder].

*boyon-boyon  wasp:
   San bolon-bolon small beetle; Siau wasp; Rth mboyon-boyon large wasp sp. [cf. Mak royon-royon wasp].

*bua  fruit:
   San, Tal, Ban bua, Snl, Rth bua fruit [PPh *bu’aq fruit].

*buat  to stand up; depart:
   San bua? to stand (from a sitting position); lift; depart; Tal buatta to stand up; Rth bua? to get up; to depart [? PPh *buhat do, make, work].

*bubu  fish trap:
   San bubu, Ban bubu, Rth bubu fish trap [PPh *bubu fish trap].

*bubuR  kapok:
   San bubuha?, Snl bubura?, Tal (S) <bumbuka>, Ban bůbuhu? kapok.

*budak  blossom:
   San bura?, Ban buda?, Rth burak blossom (before fruit); Snl bula? flower [PPh *buJak flower].

*bud/lalak  tree sp.:
   San burala?, Rth mbulalak tree sp.

*buduŋ  to whisper:
   San buduŋ, Ban buduŋ, Rth buruŋ whisper [Ttb wuruŋ mumble, mutter].

*buRa  to smear, rub in:
   San, Ban buha, Tal buža to rub oneself down; smear, rub in. [? PPh *buRa spray].
*buRuk  to stink; stinking:
San, Ban buhu?, Rth buuk to stink; stinking [PPh *buRuk spoiled, rotten].

*bukan  drunk:

*bukid  mountain, hill:
San bukide? mountain, hill; Rth bukir mountain [PPh *bukid mountain, hill].

*buku  knee; joint; knot:
San, Ban buku, Snl, Rth buku, Tal bu?u knee; joint; knot [PPh *buku joint, knot].

*bulag:
San bulaga? where the light is out, where one cannot see; Ban bulaga? European; light-skinned person; Rth bulah grey [PAN (Blust) *bulaR cataract of the eye; PPh *bulaR blind; eye disease].

*bulan  moon:
San bulaŋ, Snl buŋaŋ, Tal bulanna, Ban bulana, Rth bulan moon [PPh *bulan moon].

*bula/et/?  cockfight:
San bule?, Ban bula?, Rth bula? cockfight [cf. PPh *bulaŋ cockfight].

*bulawan  gold:
Tal bulabanna, Ban bulaoŋ gold [PPh *bulaw-an gold coloured].

*bule:
San bule to forget; Ban bule, Rth bule to release, set free.

*bulo  bamboo:
San bulo bamboo (generic term); Snl buaw, buo, Ban bulo, Rth bulo thin bamboo sp. [PPh *buloQ bamboo].

*bumbun  heap:
San bumbuŋ heap, stack [PPh *bumbun gather up/together; cover].

*bunal  bruise:
San bunalan bruise, wound; Rth bunal bruised, soft (e.g. of fruit fallen from tree).

*buni  to hide:
San, Tal, Ban buni, Snl, Rth buni to hide [PPh *buni hide].

*buno  to kill; fight:
San ba-buno to fight seriously; kill each other fighting; Snl buno to fight; war; Ban buno, Rth buno to kill [PPh *bunoq kill; fight].

*bunut  coconut husk:
San bunu?, Tal bunutta, Rth bunu? coconut husk [PPh *bunut coconut husk/ fibres].

*bunαŋ  flower:
San, Ban bunαŋ, Rth bunαŋ flower [PMin *bunαŋ flower].
*buŋkele - groin:  
San buŋkele groin; buŋkeleŋ, Rth ṭuŋkelén having pain in groin (from infection); Ban buŋkele pain in groin (from infection) [Ttb wuŋkele? ankle; Mdw buŋkele? lump in the groin].

*bunjut - bent, stooped:  
San buŋju? knot, bump; Ban buŋku?, Rth ṭuŋku? bent, stooped [Mdw buŋkut hump, hunch; bent (with age)].

*busak - banana:  
San, Ban busa?, Snl budsa?, Tal budsa?a, Rth ṭušak banana [Timugon Murut busak flower; PPh *busak blossom forth].

*buta - blind:  
San, Ban buta, Snl, Rth ṭu tu blind [PPh *buta blind].

*butas - behead, cut off head:  
San busa?, Tal buṭasa?, Rth (N) <mawutas> behead; cut off head (of fish, etc.) [PAN (Blust) *bu(ŋ)tas perforate].

*butim - grain, small round thing; bump.

*butiR - knob, outgrowth, outcrop (of stones, etc.); Rth ṭu ti bundle, bunch [PPh *butiR grain, small round thing; bump].

*butu - castrate:  
San butu to make a hole; cut open; castrate; Rth ṭu tu castrate.

*dau - far; distance:  
San, Ban dau, Snl rau, Tal, Rth rau far; distance [PPh *Za( )uq distant, remote].

*dauŋ - leaf:  
San, Snl, Ban daŋ, Tal raŋŋa leaf; Rth rauŋ-e betel [cf. PPh *Dahun leaf].

*dada - bowl from coconut shell:  
San dara, Rth rara coconut shell used as bowl or cup.

*dadaŋ - to warm oneself by fire:  
San daraŋ, Snl daŋ, Tal daraŋga, Ban daraŋ to warm oneself by fire [PPh *da(n)daŋ to warm up; singe].

*dadēR - to be dependent, depend (on other people); Rth rare to lean (against something) [? PPh *dadaR in rows].

*dadio? - child:  
San dario? child (offspring); small, young; Snl dalio child; Ban dadio? young; Rth rario? children.

*dadua - two:  
San, Tal darua, Snl dalua, Ban dadua, Rth rarua two [PAN (Blust) *DaDuSa two].

*dadum - have a cold; Ban daduŋ sick; Rth rarum (feel) cold.
*daRa  blood:
    San, Ban daha, Snl dara, Tal daža blood [PPh *DaRaQ blood].

*daRami  disused rice field:
    San, Ban dahami, Rth raamí disused rice field [PPh (Zorc) *daRa:mih rice stalk].

*daRamu  nest, lair:
    Ban dahumú nest (of bird, pig, etc.); Rth raamú nest on ground (of pig, rat, etc.) .

*daRum:
    San da-rahu, Snl daruŋ needle; Ban dahuŋ, Rth raum to sew; Ban dahum-aŋ will be sewn [PPh *ZaRum needle (sewing)].

*dakel  big; many:
    San dakelá? big; Ban dálke?, Rth rakel many [PPh *Dakel big; many].

*dakit/?  contagious (of disease):
    San daki? to cross to the other side; contagious; Rth raki? contagious (of disease).

*dakup  to hold; catch:
    San, Ban daku?, Rth rakup to hold; catch [PPh *Dakap hold; capture/catch].

*d/lalait/?  bad:

*d/lala/iŋidan  tree sp.:
    San daŋiraŋ, Rth laliriran tree sp.

*dalen  road, path:
    San, Snl daleŋ, Tal daʃanna road, trail; to walk; Ban daleŋ, Rth ralen road, path [PPh *Zalan road, way].

*dalikan  fireplace, hearth:
    San dakilaŋ, southern San dakilaŋ fireplace in birthroom; Ban dalikaŋ, Rth ralikan fireplace, hearth (on which cooking pot is placed) [PPh (Charles) *dalikan portable fireplace].

*dalum  deep:
    San daluŋ inside; deep; Snl dauŋ, Tal raʃamma, Ban daluŋ, Rth ralum deep [PPh *dalaŋ deep, depth; in].

*damay  peace:
    San dame, Snl dami, Rth (N) <ramej> peace [PPh *damay peace].

*danaw  lake:
    San dano lake; pool, puddle; Snl lano lake, dano pool, puddle; Rth ranow lake [PPh *Danaw lake].

*dansilan  anvil:
    San dansilaŋ, Rth ransilan anvil [PPh *(d)aNsilan anvil].
*daŋaw span (of hand):
San, Snl, Tal daŋo, Ban daŋow, Rth raŋow span (of hand) [PPh *(d)añaw
measure: from thumb tip to tip of middle finger].

*daŋen to climb stairs:
San daŋen, Tal daŋanına, Rth raŋen to climb stairs.

*daŋet/* high; height:
San, Snl daŋe?, Rth raŋe? high; height [? PPh *daŋat reach; attain].

*dapo to perch:
Ban dapo to perch; Rth rapo to descend on (e.g. pigs to vegetable gardens,
bees to tuak) [PPh *dapiŋ perch, step].

*dapuRan hearth, kitchen:
San dapuhaŋ kitchen, hearth; Tal (S) <daprana> hearth; Rth rapuan spouse
[PPh *dapiŋ hearth, kitchen].

*datu ruler, chief:
San, Snl, Tal datu ruler, chief; Snl ḋatu high chieftain, king [PPh *Datu
ruler].

*daya inland:
San dala behind, in the direction away from the sea, inland; Tal dala
inland (direction); Ban daya seʔe up there (direction away from the sea);
Rth sene raya there (northerly direction) [PPh *(d)aya inland].

*dayaw to praise:
San, Tal dalо, Snl dayо, Ban dayow, Rth rayow to praise [PPh *(D)ayaw to
praise].

*deRa shoot:
San, Ban deha, Rth rea young shoots (around base of old trunk).

*deno to bath:
San, Snl deno?, Tal, Ban deno, Rth reno to bath.

*des pandanus sp.:
San deseʔ?, Rth res pandanus sp.

*deso to store:
San, Snl desoʔ?, Tal, Ban deso, Rth reso to store.132

*dedak chest:
Ban dadáʔ, Rth rak chest [Ttb raʔndak, Tsw dadah chest].133

*dedap tree sp. (Erythrina indica):
San dadaʔ, Tal raddapa, Ban dadáʔ, Rth ndap tree sp. (Erythrina indica)
[PPh *dapiŋ tree (Erythrina indica)].

*dedul to pluck out, pull out:
San dedulaʔ, Ban duduluʔ to pluck out (feathers, hair, etc.), to pull out
(e.g. stake from the ground) [? Proto-South-Philippine (Zorc) *dulduł
cotton].
*daRup:
  San dahu?, Snl dəru? forehead; Ban duhú?, Rth ruup (N <ruhup>) face.

*dəluk thunder:
  San dalu?, Snl dəu?, Tal ralu?a, Ban dulú?, Rth rulúk thunder [Agta dəlak thunder; cf. PAN (Blust) *daRu roll of thunder].\(^{134}\)

*dəmak to lie face down:
  San dəma? to lie on the ground; lie face down; Ban damá? to lie on the belly; Rth rumák to lie face down; lie flat (e.g. of rice flattened by rain).

*dame to throw away:
  San, Snl dame?, Tal damne, Rth rumé to throw away [cf. Proto-South-East-Mindanao (Gallman) *dami? throw away].

*dəndeRonj tree sp.:
  San dandehonj, Tal (S) <danderonga>, Ban dendehonj, Rth ndeøŋ tree sp.

*dəndiŋ wall:
  Ban dindíŋ, Rth rindíŋ wall [PPh *díndỳŋ wall].

*dəndipə rainbəw:
  San dandipəha?, Snl dəndipərə?, Tal (A) <dandipąka>, Ban nípəha?, Rth ndipə rainbəw [? PAN (Blust) *(dD)i(ŋ)paR ford a river; ? PPh *(N)paR other side, beyond].\(^{135}\)

*dəndum dark:
  San dənduŋ to make dark; Tal danduma dark; Ban dundúŋ dark, shady; Rth rundúm to grow dark; evening [PPh (Charles) *dəmdəm overcast, dark].\(^{136}\)

*dəpa fathom:
  San dəpa, Tal (A) <dapa>, Ban dapá, Rth rupá fathom (armspan) [PPh *Dépa armspan; fathom].

*desun to descend (mountain):
  San dəsəŋ, Ban dusəŋ, Rth rusün to descend (mountain).

*didiR yellow:
  San diriha?, Snl didi?, Tal ririkka, Ban dídihi?, Rth riri yellow [PPh (Charles) *dídiR yellow].\(^{137}\)

*d/liduŋ to shelter, protect:
  San liruŋ, Ban liduŋ, Rth riruŋ to shelter, protect, cover up.\(^{138}\)

*dikit to light:
  Tal dí?i, Rth riki? to light (fire, lamp, etc.) [PPh *dəkət kindle, set on fire; PMin *diket set on fire, light].\(^{139}\)

*d/lila tongue:
  San dila, lila, Snl dila, Tal lila, Ban dila, Rth rila tongue [PPh *dilaq tongue].\(^{140}\)
*d/linuR earthquake:
   San linuhe?, Siau dinuh?, Tah dinuh?, Snl rinu?, Tal (A) <linuka>, Ban
   dinuhu?, Rth rinu earthquake [PPh *linuR earthquake].

*dīnān together; companion:
   San dīnān with; to accompany; companion; Snl dīnān companion; Ban dīnān to
   carry; Rth rīnān (act) together; to carry [PPh *(d)ēnān together; companion].

*dīnīR to hear:
   San dīnīhe?, Snl dīnīre?, Tal da-rīnī, da-rīnīkka, Ban da-dīnīhi?, Rth
   ra-rīnī to hear [PPh *(d)ēnīR hear, listen].

*dīnkalen tree sp.:
   San dīnkalen tree (Calophylum inophyllum); Rth (K) <ringkalen> tree sp.
   [Tagalog dīnkālan Alexandria oil or sweet-scented calophylum].

*dou thirsty; thirst:
   San, Ban dou, Snl loow, Tal, Rth rou thirsty; thirst.123

*dodot/? to alight, perch:

*dokot/? to pick up with both hands:
   San, Ban doko?, Rth roko? to pick up with both hands.

*dondos to fall slowly, slip down; to lower:
   San (Siau) dondosa? to fall; Ban dōndoso?, Rth rondo? to fall slowly, slip
   down; to lower (e.g. on rope) [Ttb karondos? time when ripe fruit falls].

*d/loqit/? gums:
   San, Snl loqi?, Ban donji?, Rth roji? gums.

*dua two:
   San, Snl, Tal, Ban dua, Rth rua two [PAN (Blust) *DuSa two].126

*duRi bone:
   San, Ban duhi, Snl duri, Tal duži, Rth rui (N <ruhi>) bone [PPh *DuRi
   thorn; bone].

*dukut grass:
   San, Ban duku? grass, vegetables [PPh *dukut grass].

*d/lulu n to roll up:
   San duļun, Rth lulun to roll up [PPh *lulun roll together].

*dunuk flood:
   San dunu? violent and continual (or rain), Tah sharp rise in river level
   because of rain; Rth runuk flood [PPh *dunuk flood].

*gaat to separate:
   San gaa?, Snl ga? to separate, part; Rth ha? to lessen (load) [PPh (Charles)
   *ga(qh)(aa)t to separate].
*gau to lie, fib:
San gau, Tal (S) <hau> to fib; Ban gau to lie, deceive [Ttb gau to deceive, cheat; Wolio gau to trick].

*gagudaŋ parents:
San gaguraŋ, Tal haguranga, Ban gagudaŋ, Rth hahuraŋ parents. cf. *gudan.143

*gantoŋ to hang (on gallows):
San gantoŋ, Rth hantoŋ to hang (on gallows) [PPh *ganTuŋ hang].

*geRet/ʔ to tear:
San, Ban geheʔ, Rth (N) <guhe> to tear, tear up; Snl gere a tear.144,145

*gelay to ask:
San gle to demand; ask; Rth hulay to ask, request.

*gelid:
San, Snl gediʔ to give; Ban giliʔ, Rth hilir love, affection; San gelir-aŋ be presented, donated.

*ginto creeper:
San ginto climbing fern sp., used for sewing thatch; Ban ginto creeper, used for sewing thatch; Rth hinto creeper, used for making rope.

*gipu soot in kitchen:
San gipu, Rth ḳgipu soot on walls and ceiling of kitchen.

*goga R:
San gogahaʔ, Ban gogahaʔ to demolish, destroy; Rth hoha to pull apart (meat to eat), clean out (fish), disembowel [Ttb gogar to loosen; break off; cut open].

*gudaŋ old:
San guran, Ban gudan, Rth huran old [PPh *gudaŋ old, aged].

*Raan light (in weight); fast:
San haŋ light; fast; Snl raŋ, Tal źanna, Ban haŋ, Rth an (N <mahan>) light (in weight) [PPh (Zorc) *Raqan light; fast].

*Rabun:
Ban habuŋ soot and dust which drops from dirty ceiling, h-um-abuŋ to rain lightly; Rth źbuŋ cloud, (N) <hawun> fog, mist [PPh *Rabun rain cloud].

*Rado tame:
San haro, Snl raro, Rth -aro (N <maharo>) tame (of animals).

*Raka to topple, fall over:
San, Ban haka, Rth āka (N <nahaka> to topple over, fall over (of tree, house).

*Rakid to tie up, bind:
San hakidaʔ to bind fast, tie up; Ban hākidīʔ to tie up, tether (an animal); bind (e.g. wood) in bundle; Rth ākir to tether (an animal) [PPh *Rakid tie, bundle].
*Rakit raft; to join together:
San hakî? raft; to connect, join together; Ban hakî?, Rth āki? raft [PPh *Rakit raft; tie up together].

*Rakut to tie tightly; tie together:
San hakû?, Rth āku? to tie tightly, tie together; Ban hakû? to grasp tightly to one [PPh *Rakut rope; bind; PAN (Blust) *Raku(Ct) tie, fasten].

*Ramis to knead, massage; mix:
San hamîsa?, Snl ramîsa?, Tal žamîssa to knead, massage; Rth āmis to mix [PPh (Charles) *Ramas to mix, knead].

*Ramut root:
San, Ban hamu?, Snl ramu?, Tal žamutta, Rth āmu? root [PPh *Ramut root].

*Ramu? red:
San hamu?, Snl ramu?, Tal žamu, Rth āmu? (N <mahamu>) red.

*Rampas to rob, plunder:
San hampása?, Rth (N) <hamp> to rob, plunder [PPh *Ra(m)pas to tear, pull loose].

*Ranu dry:
San hanu severe drought; Ban hanu, Rth -anu (J <mahangu>) dry, withered (of dead trees, fallen leaves, etc.) [Ata na-gaño, Dibabawon ganu dry].

*Rapa to guard, keep watch:
San, Ban hapâ to guard, keep watch.

*Rapus to bind, tie up:
San hapusa? to bind, shackle; Ban hápusu? to tie up, bind [PPh *Rapus bind, tie].

*Rata to slaughter:
San, Ban hata, Rth āta? (N <mahata>) to slaughter [Mdw rata? to slaughter].

*Ratus hundred:
San hasu?, Snl rasu?, Tal Žasutta, Ban hátsu? [PPh *Ratus hundred].

*Renes rotten:
San hene?, Snl rene?, Tal ženessa, Rth ēnes rotten.

*Rabi night:
San hâbi, Snl rabi, Tal žabbi, Ban hibî night [PPh *Rabi·i night, evening].

*Rabog to slip into hole or mud:
San hesbo?, Rth ūbôh to slip into hole or mud (of foot).

*Rabu to bark:
San habu, Ban hubû, Rth ūbu (N <huwu>) to bark (of dog).

*Rambut/ to connect, attach:
San hampu?, Rth ūmpû? to connect, attach. cf. *sämpu[?].
*Rānis burnt; to burn:
San hēnīsæ?, Ban hiːnis? burnt; to burn [PMin *rēnis burn].

*Rasam fern sp.:
San hēnā fern sp.; climbing fern sp.; Rth ūsām creeping fern sp., (N) <husām> creeper [PPh (Charles) *aRasam fern; Mal rāsam large ferns, bracken].

*Ratās to cut through:
San hēsæ?, Rth ātās to cut through [PPh *Ratās undo; open; Mal ratas rip, break open].

*Ratik:
San hēti? to sprout; (begin to) crack, burst; Ban hiti? begin to split (of wood); Rth Ttīk to swell.

*Rimbañ flame; to flame, flare up:
San himbān high, bright flame; Ban hembān, Rth ūmbañ (N <hembang>) a flame; to flame, flare up.148

*Riek to thresh (grain):
San hia? , Ban hi? to thresh (grain) [PPh *Riek thresh grain].

*Riud to pull:
San hiuðæ?, Snl riuda?, Ban hiudæ?, Rth iūr to pull [PPh (Charles) *Ruyud to drag].149

*Riba lap; to hold in lap:
San hība lap; hold in lap; Tal zība lap; Ban hība responsibility; to care for, watch over [Mal riba, Bug riwa lap; hold in lap].

*Ribu thousand:
San hību , Snl rībū , Tal žību, Ban hību, Rth ūbu thousand [PPh *ribu thousand].

*Ribu[?] mist, fog:
San hību?, Snl rībū?, Ban hību? mist, fog [? Mal ribut stir, commotion; storm, gale].

*Rimukud soul, spirit:
San himukuda?, Ban himukudæ?, Rth ūmukur soul, spirit [PPh (Charles) *Rimukud soul, spirit].

*Rinduk to hiccup:
San, Ban hindu? , Rth induk (N <hinduk>) to hiccup; Snl ni-rinduk-æŋ affected by hiccupes.

*Rodaw sharp:
San horo, Snl roro, Tal žoro, Ban hodow, Rth ūrow (N <horou>) sharp.150

*Roma sheath:
San, Ban homa, Snl roma, Rth ūma sheath (for knife) [PPh *Rumaq house].

*RompoN:
San la-hompoŋ to squat; Ban hompoŋ to sit.
*Ro̱na  having teeth missing:
San ro̱na having large chips (of knife, plate, etc.); having teeth missing, fallen out; Tal zo̱na, Ban ro̱na toothless; Rth o̱na having teeth missing, fallen out.

*Ropet/? tree (Ficus sp.):
San hope? fig sp. with sharp leaves; Ban hope?, Rth òpe? (K <hope>) Ficus sp., berries eaten by birds.

*Roto to cut through, slice:
San hoto to cut through; Rth òto to slice (e.g. bread), (N) <mu̱oto> to cut.

*Royaw:
San holo to get wet; make wet; Snl oyo to wade; Tal zo̱lo wet; Ban ho̱yaw, Rth oyow to swim.150

*Ru̱nə:  
San huan subsidence of ground; hole, pit, huan-en hold of ship; partition; Ban s u huan inside [PPh *Ru̱nə space, expanse].

*Rumbia sago palm:
San, Ban humbia, Snl rumbia, Rth ūmbia (K <humbia>) sago palm [PPh *ru̱Nbi-a sago palm].

*Rusuk rib; thin (of person):
San hu̱su?, Snl rusu? thin (of person); rib; Tal ûzu?a rib; Ban hu̱su? thin (of person), duhî nu hu̱su? rib(s); Rth úsu (N <hu̱su>) thin (of person) [PPh *Rusuk rib].

*Rutum hunger; hungry:
San, Ban huta, Snl rutua, Rth ûtu h hunger; hungry [PPh (Charles) *Rutam hungry].

*kae/R to scratch; sweep:
San kaeha?, Rth kai to sweep (with broom); Ban kâehe? to scratch (of hen) [PPh (Charles) *kae/R to scratch, sweep].

*kaan to eat; cooked rice, food:
San kaan to eat; food; Tab cooked rice; Snl kan to eat; cooked rice; Tal anna to eat; food; Ban kán to eat; Rth kan to eat; cooked rice, food; Ban kan-en will be eaten [PPh (Zorc) *kaʔan eat].

*Kau you (sg.):
San, Ban, Rth kau, Snl kaw you (sg.) [PPh *kaw, *ikaw you sg.].151

*Kabus:
San kabus? be inadequate, lacking; a spot which remains uncovered, where the covering is inadequate; Rth kabus used up; to use up [PPh *kabus barely; little, short (of); Tdn kawus to finish, use up].

*KadadamaR morning star (Venus):
San kadadamahe?, Tah kararamahi?, Snl kadadämara?, Tal (S) <aradamaka>, Rth kararamá morning star (Venus).152
*kagudaŋ  woods, forest:

*kaRabí  yesterday, last night:
  San kahabi, Snl karabí, Tal ažabbi yesterday; Ban kahibi, Rth kaabí last night [PPh (Charles) *kaRabí0i  last night; PPh (Zorc) *ka-Rabí:?iH yesterday]. cf. *Rabí.

*kaRibu  to weave:
  San kahibu to weave (cloth); sarong, sleeping robe; Snl karibu blanket; karibu-aŋ  to weave (cloth); Rth (N) <mangahiw> to weave.153

*kaRo to scratch:
  San kaho, Snl karo, Rth kao to scratch; Tal ažo to comb [PPh (Zorc) *ka:Raw small biting insect, itchy-mite].

*kaka?  older sibling:
  San, Snl kaka?  older sibling (term of address); Ban k-in-aka?, Rth kaka? older sibling [PPh *kaka (kin) older sister].

*kakanit/? tree sp.:
  San kakani?  tree sp.; Ban, Rth kakiní?  tree sp., bark used for twine.

*kaleak  green parrot:
  San kalea?, Ban kalea?, Rth kaliák  green parrot [Ttb kaleak, Mdw kalea?  green parrot].154

*kalapa:
  San kalapa palm branch (section without leaves); Ban kalapá, Rth kalupá palm frond.

*kali to dig:
  San kaji, Tal aži, Ban kali to dig [PPh *kali bury, dig].

*kalimeŋa  plant sp.:
  San kalimeŋa, Ban kalimeńa, Rth kalumuná  plant sp. like ginger, used medicinally [Ttb karimeŋa plant sp.].155

*kal/numpērēŋ  wasp:
  San kanumpēhēŋ wasp; Ban kalumpehēŋ large wasp sp.; Rth kampeeŋ small wasp sp.156

*kamet to signal with the hand:
  San kame? to touch with fingertips to attract attention; signal with slight movement of the hand; Rth kame? to beckon with the hand [PPh (Charles) *(k,g)amet hand].

*kami we (exclusive):
  San, Ban, Rth kami, Tal ami, ŋ-kami (possessive form) we (exclusive); Snl kami we (exclusive - more than two people) [PPh *kami we (exclusive)].157

*kaneRab  yesterday:
  Ban kanehaba?, Rth kaneab yesterday.158
kanuku (finger) nail, claw:
San, Snl kanuku, Tal anu?u fingernail; Ban, Rth kanuku (finger) nail, claw
[Buol kanuku claw].

kandoŋ to spin rope:
San, Ban kandoŋ, Tal (A) <andonga> to spin rope [Tinombo (Central Sulawesi)
andong to spin rope].

kaŋeden/? when?:
San (Siau) kaŋere?, Snl ñeje?, Tal aŋera, Rth kaneren when?; San kaŋere?,
Ban kaŋedęn when? (in the past); San aŋere?, Ban ñeden when? (in the
future).

kaŋko edible water plant:
San kaŋko?, Rth kaŋko waterplant, leaves eaten [cf. PPh *kaŋkoŋ vegetable].

kapuna dog:
San (Siau) kapuna?, Ban, Rth kapuna dog [Gorontalo apula, Waioli (North
Halmahera) kauna, Kilmuri (Moluccas) kafuna dog].

kaput vine:
San kapu? creeper, liana; Rth kapu? grass [PPh *kaput clinging to; vine; Tdn
kaput to clinging (of a vine, etc.)].

kasaw rafters:
San kasaw, Ban, Rth kasaw rafters [PPh *kasaw rafters].

kasili eel:
San, Snl, Ban, Rth kasili, Tal asili eel [PPh *ka-sili· eel].

kasuan spirit, ghost:
San kasuan corpse; (sometimes also used for) spirit; Ban kasuan, Rth
kasuan ghost.

katil itch; itchy:
San, Snl kati?, Rth katil itch; itchy [PPh *katol itch].

katoan snake:
San katoan, Tah katóŋ, Rth katón python; Snl katoan, Tal atoanna snake.

kayab to fan fire:
San kalaba?, Ban kāyaba?, Rth kayab to fan fire [PPh (Charles) *kayab to
fan fire].

kayu wood; tree:
San kalu, Snl kayu, Tal alu, ñ-kalu (possessive form) wood; tree; Ban, Rth
kayu wood [PPh *kaSiw tree, wood].

kedap to shine, flicker:
San kera? to shine, sparkle; flicker, twinkle; Rth kerap to flicker on and
off [PAN (Blust) *ki(zz)ap sparkle, shine].

keke?:
San keke? to call out; laugh; Rth keke? to quarrel; scold [PMin *keke? to
laugh].
*kele  bamboo water container:
San kele short bamboo water container; Rth kele arm between shoulder and elbow [Ttb, Mdw kele bamboo water container].

*kembot/?  back of neck:
Ban, Rth kembo? back of neck.

*kento?  lame; to limp:
San, Rth kento?, Tal ento lame; to limp [PMin *kento? lame; to limp].

*kepa  empty rice shell; husk:
San, Ban, Rth kepa empty rice shell (in which fruit has not developed); chaff which blows away in winnowing; Snl kepa, Tal epa rice husk. [cf. PPh (Charles) *(q)apa rice chaff].

*kabit  touch to attract attention:
San kabi?, Tal a]abbita, Ban kibi?, Rth kibi? touch (someone) to attract attention [PPh *kabit hook (with fingers)].

*kadut  to pinch:
San kaidu?, Ban kudu?, Rth kuru? to pinch (with fingernails). [PAN (Blust) *ka(zZ)ut; PPh *kadut pinch].

*kakir  to shiver, tremble:
San kakiha?, Ban kikihi? to shiver, tremble [PPh *ka-kar shake, tremble].

*kekud:
Ban kukudu? to scratch; Rth kur to dig [PPh *kuDkuD scrape].

*kelis  wrinkled, shrivelled:
San kelisa? hard, tough; Ban kilisi? wrinkle; wrinkled; Rth kilis to shrink; wrinkled, shrivelled [Ttb, Tsw keloe wrinkled, shrivelled].

*kamis  to squeeze, wring:
Tal ma-kamissa, Ban kimisi?, Rth kims to squeeze, wring [PMin *kamoa wring out, squeeze; PAN (Blust) *kamoa held or squeezed in hollow of hand].

*kamu  you (pl.):
Siau kamu, Tah kumu, Ban, Rth kum’ you (pl.).

*kambal  young edible coconut:
San kambala?, Ban kambala? young edible coconut [Ttb kambal young edible coconut].

*kenig  eyebrows:
Ban, Rth kinig eyebrows [PPh *kenig eyebrows].

*kenkum  to hold in fist; handful:
San, Snl kengkun fist; to hold in closed hand; Tal san-kankuma a handful; Rth  górum to hold in hand [PPh *kemkom hold closed; handful].

*kopal  thick:
San kapala? many; Snl kapao?, Tal appala, Rth kupál thick; Ban kapala thick; many [PPh *kapal thick].
*kəpit:
Rth kip? to carry under the arm; to squeeze; tight [PPh *kə(N)pət press, clamp].

*kətiR hard:
San, Snl kati?, Tal atti, attika hard (of object); San kətih-ən constipated [PMin *kəteh hard].

*kətiai taut; to stretch taut:
San kətiai, Tal attiŋa, Rth kitin taut; to stretch (rope, etc.) taut [Ttb, Tse ketaŋ tīght, taut].

*k(i)yəyab to yawn:
San kiolabə?, Tal (A) <iəlabə>, Ban kōyaba?, Rth koyəb to yawn [cf. PAN (Blust) *Suəb yawn].

*kiday:
Ban kidey, Rth kirey (N <kirai>) forehead [PPh *kiday, PAN (Blust) *kiray eyebrow].

*kiRi to scrape, grate, shave:
San, Ban kiki, Snl kiri, Rth kii to scrape, grate, shave.

*kiRit/? backside, buttocks:
San kiihi?, Rth kii? backside, buttocks; Ban kiihi? female genitals.

*kiki to bite:
San, Snl, Ban, Rth kiki, Tal iʔi to bite [PPh (Charles) *ki(q)kiq bite].

*kilat lightning:
San, Snl, Ban, Rth kilə? lightning [PPh *kilat lightning].

*kima large clam:
San, Ban, Rth kima large clam [PPh *kima giant mussel; Mal kima giant clam].

*kinas fish:
San kina? fish; meat (general term); Snl kina?, Tal inassa, Ban kinasə?,
Rth kinas fish; San, Snl kinas-əŋ be eaten (of meat).

*kite we (inclusive):
San kiteʔ, Tal ite, n-kite (possessive form), Ban, Rth kite we (inclusive);
Snl kiteʔ you (pl.) [PPh *kita we (inclusive)].

*ko/uənen rightside:
San, Snl koanən, Tal uanannə, Ban kuanən, Rth kuanen, koanen rightside [PPh (Zorc) *kawanən, PMP (Blust) *ka-wanən rightside].

*ko/uRi leftside:
San kaihi, Snl kairi, Tal aϊzi, Ban kuihi, Rth koy (N <kohii>) leftside [PMP (Blust) *ka-wiRi leftside].

*koka tree related to breadfruit:
San, Ban, Rth koka tree with edible fruit similar to breadfruit [Ttb koka tree with edible fruit (Artocarpus sp.)].
*kola to fry without oil:
San kola, Ban, Rth kola to fry without using oil.

*kolay taro:
San kolo, Ban koley, Rth koley, kolay taro [PMin *kolay taro].

*kombaŋ stomach:
San, Rth kombaŋ, Tal (A) <ombanga> stomach; Ban kombaŋ greedy, gluttonous [Pon, Md w kombaŋ stomach].

*kotok top:
San, Ban koto?, Rth kotok top (e.g. of tree); Tal (A) oto? u alu top of the tree.\(^{168}\)

*kuRae/it/? phlegm, mucus:
San kuhai?, Rth kuae? phlegm, mucus.

*kuæn say; it is said:
San kuæn, Rth kun say, it is said [PPh *kuæn whatchamacallit].\(^{169}\)

*kubaŋ coconut shell drinking vessel:
San kubaŋ, Tal (A) <uwanga>, Ban kubaŋ coconut shell used as drinking vessel [WBM kuaŋ coconut shell drinking vessel].

*kud/lilas spleen:
San kudilsə?, Ban kudfsa?, Rth kurilas spleen.

*kudin earthen cooking pot:
San kurin, Snl kulin, Tal (A) <urina>, Rth kurin earthen cooking pot [PPh *kudin cooking pot].

*kuduŋ to bow the head; bend over:
San kuruŋ hump, hunch; to stoop, bend over; Rth kuruŋ to bend forward, bow the head [PPh *kuduŋ bow the head; bend].

*kuRûŋ cage, enclosure:
San kuhuŋ pen, cage, animal enclosure; Rth kuuŋ bamboo basket to enclose fowls [PPh *kuuŋ enclose; cage].

*kukuk to crow (of rooster):
San, Ban kuku?, Rth kukuk to crow (of rooster) [PPh *kukuk (sound) cackle/crow].

*kuli hard, tough:
San kuli toughness (e.g. of meat); tough; Rth kuli tough (of meat), hard (of wood).

*kulit bark used for making rope:
San kuli?, Ban kuli? bark used for making rope; Tal ujittta rope made from bark; Rth kuli? rope made from the bark of certain trees; bark; hide [PPh *kulit skin; bark of tree].

*kuluR breadfruit:
San kułu?, Ban Kuhułu?, Rth kuu (K <kuhu>) breadfruit [PPh *kuluR breadfruit].
*kumi  moustache:
San, Ban, Rth kumi moustache [PMin *kumi moustache].

*kumpas  tree sp. with edible fruit:
San kumpas?, Rth kumpas tree with edible fruit (Eugenia sp.).

*kunid  turmeric (Curcuma longa):
San kunid?, Ban kündi?, Rth kunir turmeric (Curcuma longa) [PPh (Charles) *kunij Curcuma].

*kupa  tree sp. with edible fruit:
San, Rth kupa tree sp. with edible fruit (Eugenia sp.) [Ttb kupa tree (Eugenia sp.)].

*kusay  cuscus:
San kuse, Ban, Rth kusey cuscus [PPh (Charles) *kusay Phalanger ursinus].

*kusu  to rub between hands:
San, Rth kusu to rub between hands (as in washing clothes); to remove rice grains from sheaf by rubbing between hands or trampling with feet [PPh *kusu(q) crumble, crush; rub].

*kutu  head louse:
San, Ban, Rth kutu, Snl kutu?, Tal utu head louse [PPh *kuCu louse].95

*lae/ld  foot:
San, Snl laeda?, Tal ledda, Rth lar foot.170

*laud  ocean:
San, Snl lauda?, Ban láodo? ocean; Tal lodda direction seaward, (S) <loda> beach [PPh *la·ud sea].171

*ladaŋ  thorn:
San laraŋ, Snl [la]aŋ, Ban ladaŋ thorn [PPh (Charles) *la(Dj)əŋ thorn].

*lamatik  leech:
San lamati?, Rth lamatik leech [cf. PPh *qalimatək leech].

*lana  oil:
San, Snl, Ban, Rth lana oil [PMin *lana oil].

*lanis:
San lanise? begin to ripen (of corn); begin to grow yellow and ripe (of coconuts); Ban lānisi?, Rth lanis withered, dried out (of leaves).

*lansik  to bounce, jump about:
San lansi? to boast; to romp, be frisky; Rth lansik to bounce, jump about; flap about (of fish out of water) [PPh (Charles) *lansik jump, bounce].

*laŋaw  fly (insect):
San, Snl laŋa, Ban, Rth laŋow fly [PPh *laŋaw fly (insect)].

*laŋit  sky:
San, Snl, Ban laŋi?, Tal laŋitta, Rth laŋe? [PAN (Dempwolff) *laŋit sky].244
*lasok/? penis; to lie:
San laso? with exposed glans; a lie (vulgar term); to expose the glans; to tell a lie; Rth lasok penis (crude term used only with reference to animals) [Pan (Mills) *la(n)suq penis, lie, deceive]. 172

*leba to lick:
San, Rth leba, Ban leba to lick [PAN (Blust) *laɓa lield].

*le/iaw tree with edible fruit:
San leau, North San leo, Rth liaw tree with edible fruit [Ttb leow tree (Nuclea macrophylla)]. 173

*leRe? neck:

*leneR still, calm (of sea, wind):
San leneha?, Ban énehe? still, calm (of sea, wind) [PPh (Charles) *lini(dj) (of sea) to be calm].

*le/iŋoR:
San leŋoha? disobedient; shamming deafness; Rth liŋo insane.

*lepe[?]:
San lepe? double (such as two pieces of fruit growing into each other); Ban lepe? twin.

*ląbak to pound rice:
Ban labá?, Rth lubák to pound rice [PPh *labak pound (rice)].

*ląbat to cross:
San laba? to wade across (river); Ban labá?, Rth lubá? to cross (river, valley) [Tdn lawet cross to the other side].

*ląbin? grave; to bury:
San, Snl ląbin? grave; to bury; Tal (S) <la]abingana>, Rth (N) <liwing> grave; Ban ląbin? to bury [PPh *laɓen? bury]. 175

*lągay to laugh:
San ląge, Snl lągay, Tal lu-llage, Ban legéy, Rth luhráy to laugh [cf. PPh *gali laugh, tickle]. 176

*ląka:
San ləka trees and shrubs floating in the sea after being washed out by floodwaters; Rth lukó to topple over (of a tree).

*ląku to fold:
San ląku, Ban, Rth lukú to fold [Ttb ləku bend, bend over].

*ląkub:
San ləkuba? bent back, bent over; Ban luku? bend down, duck head; Rth lukúō enfold chicks under wings (of hen) [PPh *laƙab close (shutter/door)]. 177
*lalay paralysed:

Rth (N) <lulai> paralysed [Tbl laylay powerless in the joints; Tse laylay paralysed; Ttb laylay weak in the joints, paralysed].

*lalut bamboo cooker; to cook in bamboo:

San lalu?, Tal lalluta, Ban lulu? bamboo cooker; to cook in a bamboo cooker; Rth lulu? bamboo (general term); to cook in bamboo [PPh (Charles) *lutlut to stuff food in bamboo to cook].

*lalumis to drown:

San lamisa?, Tal lammisa, Ban limisi?, Rth limisi to drown [PPh *lames sink; drown].

*lonal smooth:

San, Snl lano, Ban lonó, Rth lunó smooth [Sindangan Subanun lenu?, Siocon Subanon lonu? smooth].

*lendim cold:

San landiñ, Snl dandiñ, Tal (A) <landima>, Ban da-landin cold.

*lana sesame (herb):

San lañama sesame, Rth lunaluná a plant used for medicinal purposes [PPh *lana herb: sesame].

*lankut/?:

San lækku? dirt on body; Rth lünkú? moss, mildew.

*lasia nit, louse egg:

San lasia, Ban, Rth lasia nit, louse egg [PPh *lisahaq nit, louse egg].

*lasiŋ sour:

Ban, Rth lisiŋ sour [cf. Sarangani Manobo malaksiŋ, Kalagan malagsiŋ sour].

*lataw to float; rise to surface:

San lato, Tal latto, Ban lotów to float; rise to surface; Rth lutów rise (of sun, boil), emerge, come to surface [PPh *lataw float; erupt].

*latuR bang, thud, noise of explosion:

San latuha?, Ban lutuhu?, Rth ūtú bang, thud, noise of explosion.

*lia ginger:

San, Snl, Ban, Rth lia ginger [PMin *lia ginger].

*lias urine; to urinate:

San, Snl liasa?, Ban liasa?, Rth liás urine; to urinate [PMin *lias urinate].

*liu:

San liu to cross over; pass by; surpass, transgress; Snl liu across; Tal liu to pass by, go past; Ban liu to turn upside-down; Rth liu window [PPh *liu go around (an obstacle); PAN (Blust) *liu circumvent].
*libua? bathing place:
San *libua?, Rth *libua? deep part of river where one can bathe; bathing place; Ban *libua? small pool [Ttb *liwu? hollows washed out by water at edge of river or sea].

*lidik to bring land under cultivation; gardens:
San (Tar) *liiri? bring land under cultivation, make gardens; Snl *liji? cleared land; Ban *liji?, Rth *lirik (dry) cultivated field, gardens; bring land under cultivation.

*liRa large red tree ant:
San *liRa, Rth *liRa large red ants which live in trees.

*likud back:
San, Snl *likuda?, Tal *likuda?, Ban *likuda?, Rth *likud back [PPh *likud back].

*lima five; hand:
San, Snl, Tal, Ban, Rth *lima five; hand [PPh *lima five; hand].

*limu lemon; citrus:
San, Rth *limu lemon; citrus (general term) [cf. PPh *limaw (fruit) citrus].

*limbuŋ round:
San *limbuŋ piled up (of soil, etc.); Ban, Rth *limbuŋ round [Dampela, Balantak (Central Sulawesi) *limbuŋ round].

*limpudus waterspout; whirlpool:
San *limpudus? waterspout; Rth *limpudus whirlwind; waterspout [cf. PPh (Charles) *pu(Dj)us waterspout, whirlwind].

*linaw clear (of water); pool:
Ban *linow clear, calm (of water); Rth linaw, linow natural pool [PPh (Charles) *linaw clear (water); pool in stream].

*lintuR to descend (stairs):
San *lintu?, Ban *lintu?, Rth *lintu (N <muhintu>) to descend (stairs); San *lintu? degree of descent.

*lipan centipede:
San, Snl *lipaŋ, Rth *lipan centipede [Mal *lipan centipede].

*lisi:
San *lisi to rub off rice husks with fingers; Rth *lisi to strip off bark; come off in strips (e.g. skin if grazed).

*lisan rice mortar:
San, Snl, Ban, Rth *lisan, Tal (A) *lisunga block on which rice is pounded, mortar [PPh *lesun mortar].

*loaŋ wide:
San, Snl *loaŋ, Tal (A) *loanga wide; width; Ban *loaŋ outside; to go outside; Rth *loaŋ loose, too wide [PPh *luang wide].
lobot/soft, tender:
San, Rth lobo, Ban lobo soft, tender [PPh *løNbut weak].

lomay soft, weak:
San lome, Rth lomay weak, feeble; Ban lomey soft (of voice, pillow) [Ttb lomei humble, gentle].
lombo to fish with cast net; to throw:
San, Talombo to fish with a cast net; Slnumbo casting net; Ban lombo to fish with a cast net; to throw; Rthlombo to throw [Tän lobo? to throw; cast a net; Maw lumbu? to throw away].

losohot:
San loso to bum oneself; a burn (on body); Slnosoburned (of skin); Tal, Rth loso hot [cf. Proto-Sa'dan (Mills) *lessu, PAN (Blust) *la(cs)uq hot].

lua to spit out:
San, Ban, Rth lua to spit out (e.g. food which cannot be swallowed) [PPh lua? vomit; expel from mouth].

luan to exchange:
San, Ban luän to buy; Rthsa-luän to exchange [PPh (Charles) *liwan to replace, to pass, to exchange].
luemovercast; shady:
Sanluem overcast, cloudy; Tal lumma shade, shadow; Rth lum to shelter (from sun); overcast; shade [cf. PPh (Charles) *lø:qum within].
ludan load; to load:
Sanluraj cargo, freight; to load; Slnlu:an load [PPh (Zorc) *lu:jan ride/put in vehicle; Tagaloglu:lan to load cargo].
luga to cook:
San lugato cook well; cooked until soft; Rth lua cooked; to cook.
lukad to keep watch; watchman:
Sanlukad? morning; watchman; vigilant; Slnlukad? morning; to watch (for something); Banlukad? guard, watchman; Rthlukarto guard, keep watch; watchman [PMin *lukad watchman; to guard, keep watch].
lulid to roll:
Banulidi?, Rth lulir to roll (of ball, etc.) [cf. PPh *lilid roll up].
lumu soft, weak:
San, Ban, Rth lumu soft, weak [PPh *-lumu easy; soft].
lumutmoss, algae:
Sanlumu? moss; Banlumu? green scum on water surface, algae; mould on fruit [PPh *lumut moss, algae].
lunawgreen:
Rth lunow green [Sindangan Subanun, Kalagan lunaw green].
*lupa  plant sp.:  
San lupa grass sp.; plant sp.; Rth lupa stinging nettle.

*lutam  to shoot:
San, Ban lutan, Rth lutam to shoot [Tdn, Mdw lutam to shoot].

*lutu?  to cook:
San lutu? well cooked; overripe; Rth lutu? to cook [PPh *lu(N)tuq prepare food, cook].

*mada  dry:
San, Tal mara, Snl maja, Ban mada dry [PPh *maja· dry].

*maRi  to come:
San mahi come (imperative); Ban mahi to come; Rth mai come (to a place at the same level) [PPh *mar/Ri· (come) here!].

*maRuanay  man, male:
San mahuane brother; Ban mahuaney, Rth muaney man, male [PAN (Blust) *ma-Ruanay man, husband, male].

*maRuaya  young girl:
San mahuala, Snl maruá, Rth muaya; Ban muaya pretty.

*malansa  blood:
San majansa blood; amniotic fluid; Rth malunsá blood [cf. Ilianen Manobo, WBM laŋasa blood].

*mama  to chew betel:
San, Snl, Ban, Rth mama to chew betel [PPh *mamaq chew]. cf. *mamaen.

*mamaen  areca nut:
San mamaen betel quid; Rth mamán areca nut [PPh *mamaqan areca nut]. cf. *mama.

*manuk  fowl; bird:
San, Snl, Ban manu?, Tal manu?a, Rth manuk fowl; bird [PPh *manuk hen; bird].

*mata  eye:
San, Snl, Tal, Ban, Rth mata eye [PPh *maCa eye].

*maya  all:
Ban, Rth maya all [cf. PMin *baya all].

*moRoró  mouth:
San, Ban mohon, Snl moron, Tal možona, Rth mooŋ (N <mohong> mouth.

*momo  blunt:
San, Snl momo blunt (of knife); Rth momo toothless; blunt.

*munsinó  charcoal:
San, Ban munsinó, Tal munsina charcoal; cold remains of fire [cf. PPh (Charles) *(q)usiní smut, dirt].
*nait/* long:
Ban, Rth nai/* long.

*nabo* to fall:
San, Snl, Tal, Rth nabo, Ban nabo to fall [PPh (Charles) *na:buq fall].

*nadam* tame; accustomed:
San naran custom, habit; accustomed; Snl naran accustomed (to), acquainted (with); Ban man-nadan tame; Rth ma-naram usually [PMin *naram tame; Mak naran tame; accustomed].

*namuR* dew:
San namuh?, Ban namuh?, Rth namu dew.

*nana* pus:
San, Ban, Rth nana pus [PPh *nanaq pus].

*nasu* to cook:
Rth nasu to cook [PMP (Blust) *nasu to cook].

*natig* plant with edible leaves:
San (Tab), Ban, Rth natig plant sp., leaves eaten [PAN (Dahl) *NaCen vegetables].

*nayan* to play:
San nayan, Snl nayan, nay, Tal nallanna, Ban, Rth nayan to play [cf. PPh (Zorc) *qayam, Tdn pa?yan to play].

*niuR* coconut:
San niuha? palm sp. with small fruit; Snl niure? ripe coconut; Tal niukka, Rth niu coconut [PPh *ni:uR coconut].

*niRu* winnowing pan:
San nihun, Tah nihu, Tal niu, Rth niu winnowing pan [PAN (Blust) *niRu winnow, winnowing basket].

*nipis* thin:
San, Snl nipi?, Tal nipi, Ban nipsis?, Rth nipsis thin [PPh *nipis thin].

*nonaR* tree sp. with edible leaves:
San, Rth nonaR tree sp., young leaves eaten.

*nunuk* banyan:
San nunu?, Rth nunuk banyan tree [Proto-Indonesian (Mills) nunuk banyan].

*ŋana* to gape; open the mouth:
San ŋana to gape; Ban, Rth ŋana to open the mouth [PPh *ŋana agape; open (mouth)].

*ŋenen* small bee:
Ban ŋenen, Rth ŋenen small yellow bee [Tdn ŋenen buzzing noise; Ttb ŋenen bush insect named for its noise; cf. PPh *ŋen buzzing].
*juda young: 
San *jura young forest; low scrub; Snl *jula young; Ban jade, Rth *jura young;
unripe [PPh (Charles) *jua(h)a, Karo Batak jade young].

*pai there (at the same level): 
San, Snl, Rth pai there (at the same level); Ban pai there (far off).

*pait bitter: 
San, Snl, Rth pai?, Tal petta bitter [PPh *paQiC acrid, bitter].

*paru drying rack: 
San, Ban paha, Rth paa rack above fire for drying (fish, copra, etc.) [PPh (Charles) *para(para) shelf over hearth].

*paru to hit with object: 
San pahesa?, Rth paes to hit with object (stick, whip, etc.); Tal pažasa
to knock down fruit with pole; Ban pahi to whip.

*parapat mangrove: 
San pahapa? mangrove; Rth paapa? tree sp. (not mangrove) [PPh (Charles) *pa(D)apat mangrove, PPh (Charles) *paratpara tree sp.].

*pari ray (fish): 
San, Ban pahi, Rth pai ray (fish) [PPh *pari(h) ray].

*parigi well: 
San pahigi, Ban pahigi, Rth pahi well [Mal pərigi well].

*parudu bait: 
San pahu, Tal pažuru, Ban pahudu, Rth pahu burial.

*pakela heel: 
San, Snl pakela?, Tal paalla heel; Rth paka to trip, catch toes while
walking [? PPh *paNkal trunk, root, origin].

*paku edible fern: 
San paku (omba) fern sp.; Ban, Rth paku edible fern [PMin *paku edible fern].

*paled palm, sole: 
San, Snl paleda?, Tal pañada, Ban paleda?, Rth paler palm (of hand), sole
(of foot) [PPh *palaj palm (of hand)].

*paluka shoulder: 
San paluka shoulder blade, Tah shoulder; Rth paluka shoulder [PMin *paluka shoulder; Tomini palu?a shoulder blade].

*pajkul to beat: 
San pajkula?, Ban pajkuhu? to beat (with hammer, wood) [Mdw pajkul to beat
e.g. with a piece of wood)].

*pasaan to carry on shoulder: 
San pasaan, Snl, Ban pasan, Tal pasanna, Rth pasan to carry on shoulder
[PPh (Charles) *pasaan carry on shoulder].
*pasik  to insert stick or post in ground:
    San, Ban pasiʔ, Rth pasik to insert stick or post in ground [PMin *pasək,
    WBM pasək put stick or post in ground].

*pasolo  bamboo container:
    San pasolo, Ban, Rth pasolo bamboo container (for holding herbs, paper,
    etc.) [Ttb pasoloʔd bamboo container].

*patay  to die; kill:
    San, Snl, Tal pate to die; dead; to kill; Ban, Rth patey to die; dead
    [PPh *paCəy die, kill].193

*patiukan  bee:
    San katiuʔ an honey bee; Snl patiukaʔ bee; Ban patiukan, Rth patiukan large
    bee sp. [PPh *pa-ti·uk-an bee].194

*payaŋ  thigh:
    San palaŋ, Snl, Ban, Rth payaŋ thigh [PPh (Zorc) *payaŋ thigh].

*peRaʔ  fish roe:
    Ban pehaʔ, Rth peaʔ (N <peha>) fish roe [PPh (Charles) *piRa(q) roe].

*pensol:
    San pensolaʔ piece, fragment; Rth pensol blunt.

*pepe:
    San, Snl pepe urine; to urinate; Rth pepe to wash clothes [PPh *piqpiq
    wash clothes or private parts; Tse piʔpiʔ to wet, wash; Tbl, Ttb piʔpiʔ
    urine; to urinate].

*padis  to sting, smart:
    San padisaʔ hot sunshine; Ban pidisiʔ, Rth piris to sting, smart, be sore
    [PPh *paDes hot, spicy, sting (pain)].

*padu  gall, bile:
    San, Snl padu gall; anger; Tal (A) <padu> gall; Ban puduá bitter; bile,
    gall; Rth puru gall, bile [PPh (Charles) *pojú gall, bile].

*paRa to squeeze; wring out:
    San peha, Ban paʔá to squeeze; wring out [PPh *peRaq wring out].

*paku  to bend:
    San paku, Ban pukú to bend [Ttb paʔá broken, snapped].

*pampaŋ  bank of river:
    San pampaŋ, p-ah-əmpaŋ precipice, abyss; Rth pumpaŋ bank of river [PPh
    *pampaŋ bank].

*panad  buttocks, backside:
    San, Snl panadaʔ, Ban panadaʔ buttocks, backside; Rth puná plug, stopper;
    to plug up [PMin *panad buttocks, backside].

*pandam  to feel:
    San pandanaŋ, Ban pandáŋ, Rth pundám to feel [PMin *pandam to feel, touch].
*pantás to pick rice, harvest:
   San pënsa?, Ban pantasa?, Rth puntás to pick rice, harvest.

*pësok to release, let go:
   Ban posó?, Rth pusok to release, let go (from hand).

*pësut to press out, squeeze out:
   San pësu?, Rth pusu? to press out, squeeze out (e.g. seed from fruit) [PMin
   *pësut press, squeeze, squeeze out].

*pia good:
   San, Snl, Tal, Ban pia good [PPh *pia good, nice, fine].

*pida how many?:
   San, Tal, Rth pira, Snl pila, Ban pida how many?[PPh *pija· how much?,
   how many?].

*pile to choose:
   San, Snl, Ban, Rth pile to choose [PPh *piliq select, choose].

*pipi cheek:
   San, Snl pipi?, Ban, Rth pipi cheek [PPh *pipi cheek].

*pisi skin, bark:
   San, Snl, Tal, Ban, Rth pisi skin, bark [PPh (Zorc) *pi:si? rope; bark].

*pitik:
   San piti? to shoot with bow and arrow, Tab to spear fish; Tal (A) <papiti'a>
   bow; Ban piti? to spear fish with special kind of bow and arrow; Rth pitik
   to flick with finger [PPh *pitik flick, jerk, snap].

*pitu seven:
   San, Snl, Tal, Ban, Rth pitu seven [PPh *pitu· seven].

*po/uikan turtle:
   San, Snl poikäŋ, Ban poikan, Rth poikan turtle [PPh *pAwikan sea turtle].166

*polaen:
   San polaen wrist; Ban polaen, Rth polán upper arm.195

*pona before, earlier, first:
   Ban, Rth pona before, earlier, first [PPh (Charles) *pu(q)na before].

*pondan pandanus:
   San, Ban pondaŋ, Rth pondan pandanus [PPh *pANDan (palm) Pandanus tectorius].

*pondol tip, point, end:
   San pondojo?, Snl pondo?, Ban pondo?, Rth pondol tip, point, end [Ttb
   poondol finger, toe].

*popos areca nut:
   San poposa? areca nut at the stage of development most favoured for eating;
   Ban póposo? areca nut.
*posok having top or end broken off:
San poso? classifier for things (fruit, flowers, rice) plucked off; Ban poso?, Rth posok having top or end broken off (of tree, wood, etc.) [Ttb, Tdn posok with top cut off].

*potot to cut off, chop off:
San, Snl, Rth poto? to cut off, chop off; Tal pototta to cut; Ban poto? to break in two [PPh *putut cut; short].

*puan trunk, tree; origin:
San puən trunk of tree, especially lower part, foot; source, origin; Snl puŋ base (e.g. of tree); Ban puŋ, Rth pun trunk; tree [PPh *puqun basis, trunk, origin].

*puid navel:
San puida? navel; middle; Ban pūidi?, Rth puīr navel.

*pudut to pick up:
San, Rth puru?, Tal purutta, Ban pudo? to pick up [PPh *puDut pick up].

*puRay shell(fish):
San puhe, Snl puray, Ban puhey shell, shellfish (generic term); Rth puay cone shaped shell(fish) [Ttb purey sea shell(fish)].

*pukaw to wake up:
San puko, Rth pukow to wake up [PPh *pukaw awaken].

*puliŋ dust or grit in eye:
San pu-liŋ, Ban, Rth puliŋ dust or grit in eye [PPh (Zorc) *pu:liŋ blinded by dirt in eye].

*pulo ten:
San, Tal puło, Snl puo, Ban, Rth pulo ten [PPh *pu luq ten].

*pulu handle:
San puļu, Ban, Rth pulu handle (of knife, hoe) [Ttb pulu handle (of axe)].

*pulut gum, sticky sap:
San pulu?, Snl pu?, Ban, Rth pulu? gum, sticky sap [PPh *pulut glue, adhesive].

*punay dove:
San punē, Rth punay dove; Ban puney bird sp. (not dove) [PPh *punay (bird) wild dove].

*pundal paddle, to paddle:
San pundalə?, Snl pundə?, Ban pûndala?, Rth pundal paddle, to paddle.

*pungut:
San pungu?, Tal punguta tailless; Rth pûnku? low [Ttb pûnkut to break off a piece].

*pusid navel:
Tal (A) <pusida> navel; Ban pûsidi?, Rth pusir whorl of hair [PPh *pusəD turn around].
*puso  *banana blossom:
San, Tal, Ban, Rth puso *banana blossom [PPh *pusuq heart; blossom].\(^{198}\)

*putuŋ  *fire:
San, Snl, Ban, Rth putuŋ, Tal putuŋa *fire [cf. Mal mutuŋ burnt; lost by fire].\(^{199}\)

*puyu  *mad, insane:
San pulu mad, insane; to want, desire; Snl puyu mad; pu desirous; Tal pulu covetous, desirous; Rth puyu mad, insane.\(^{200}\)

*puyun  *grandchild:
San puluŋ, Snl, Ban puyuŋ, Rth puyun *grandchild.

*sai  *who?:
San, Tal, Ban, Rth sai, Snl say who? [PPh (Charles) *sa0i who?].

*sauđ  *to put on hook:
San saudə? to put bait on hook; Ban sađuŋ to hang on hook.

*sabanaR  *north:
San sabanaŋa? , Tal sabannaka, Rth (N) <sawuna> *north.\(^{201}\)

*sabuR  *to sow, scatter:
San sabuŋa? , Tal (A) <sawuka> *to sow, scatter [PPh *sabuR scatter, strew].\(^{202}\)

*sada  *boundary:
San, Rth sara *boundary; Tal (A) <sasara> *boundary marker; Ban pa-sadáŋ *border, boundary.

*sadeR  *to lean against:
San sarehe? , Ban sádehe?, Rth sare to lean against [PPh *sa(N)DiR lean on]. cf. *sanderR.

*sageŋgel  *to carry on shoulder strap:
San sagenglaŋa? , Tal šahengela, Ban sagengleŋa? , Rth saeŋkel to carry on strap over shoulder.\(^{203}\)

*sagudaŋ:

*saRan:
San sahaŋ *the older leaves on a branch; Ban sahaŋ *kind of leaf used for wrapping things; Rth saaŋ *old dead leaves on tree; nest [PPh *saraŋ nest].

*saRip  *to skim off, shave off:
San sahiŋ to skim off, to cut a small piece off the end; Rth saip to scrape off, shave off [cf. PPh *sagap scoop out; *sagap skim off; scoop up].

*saRup  *to scoop up:
San sahuŋ to fill up, replenish; add to; Ban sahuŋ, Rth saup to scoop up (with ladle) [PPh *saJAp scoop up/out].
*saka  to climb (mountain):
    San, Ban, Rth saka, Tal saka to climb (mountain).

*sakaen  boat:
    San, Snl, Ban sakaen boat [Palawan Batak sakayan, Sindangan Subanun
    sakayan boat; Proto-South-Philippine (Zorc) *sakayán thing to ride on].

*sakay  to ride; mount:
    San, Snl sake, Tal sake to ride; mount [PPh *sakay ride; mount,
    ascend].

*sakel  heel:
    San sakel heel of animal; cockspur; Ban sákele? to kick (with toes)
    [Subanon sakel, Kalagan sa:kil heel].

*sakit  sick:
    San, Rth sakit sick; Ban sakit evil spirit [PPh *sakit sick, pain(ful)].

*sakul:
    San sakulа? to beat sago with a wooden hammer; Ban sákulа? to fight with a
    weapon; Rth sakul to fight with a hand-held lance.

*sala  wrong; mistake:
    San, Tal sala, Snl sa, Ban, Rth sala wrong; mistake [PPh *salaq err(or),
    mistake].

*saleρ  nest:
    San saleö?, Tal salakka [PPh (Charles) *salar nest].

*saliu  to exchange:
    San, Snl saliu to exchange; Rth saliu to overtake [PPh (Charles) *saliw
    exchange].

*saliw  floor:
    San, Snl ansali?, Ban såhihi?, Rth sai floor [PPh *saliw floor].

*saluρ  river:
    San salu?, Tah saluhi?, Snl saurö?, Tal salukka river; San sauhö? drain,
    gutter [PPh *saluR waters].

*samudi  behind:
    San, Rth samuri, Ban samudi behind [cf. PPh *-urig back, rear; PMin *muri
    behind; rear].

*sambe:
    San sambe good acquaintance who lives far off; Rth sambe intimate friend.

*sampiŋ  side whiskers:
    San, Ban, Rth sampiŋ side whiskers [Mal sampiŋ side].

*sana[ ]:
    San sana? low; humble, meek; Snl sana? short (of person); Ban sana? short
    (of length).
*sandeR to lean against:
San sandeha?, Tal sandaka to lean against [PPh *saNdəR lean against]. cf. *sadeR.

*sandig near:
San, Snl sandiga?, Rth sandih near.

*saŋu steam:
San saŋu exhale; give off smell; s-iŋ-aŋu steam, vapour; pa-saŋu medicine whose steam is inhaled; Ban, Rth saŋu steam.

*sawa (1) snake:
Rth sabā snake [PPh *sawa· snake].

*sawa (2) spouse:
San saba lesser wife, concubine; Snl, Tal, Rth saba spouse [PPh *-sawa· spouse].

*sayabu vine with edible tubers:
San salābu, Ban (K) <sayabu>, Rth sayabu vine with edible tubers [Tbl sayawu vine with edible tubers; Mdw siabu tuberous plant].

*sea to deviate; turn off (road):
San sea to deviate, turn off, branch off from road (obsolete); (go) to defecate; Ban sea to turn off (from road) [PMin sea? to deviate, diverge, branch off; PAN (Blust) *siaq step aside, give way].

*seRa shrub (Morinda citrifolia):
San seha, Ban, Rth (K) <seha> shrub or small tree (Morinda citrifolia).

*seReʔ hoarse:
San seheʔ, Rth seeʔ hoarse [cf. Ttb saret hoarse].

*seRoʔ to sip:
San, Ban sehoʔ to sip (e.g. hot liquid); Rth seoʔ to suck, smoke cigarette [? PPh *siRup slurp].

*selay to look see:
Ban seley to look, see; Rth seley look to the side; turn; be aslant [cf. Ttb sere, PPh (Charles) *(qh)ilay look, see].

*sene there:
San, Snl, Rth sene there.

*sengot sail; to sail:
San, Snl sengøʔ, Tal sengota, Ban senkoʔ sail; to sail [PMin *senkot to sail].

*sepa to kick:
San sepa to play with a rattan ball; Snl sepaʔ, Ban sepa to kick [PPh *sipa kick].

*sepet to carry under the arm:
San, Snl, Ban, Rth sepeʔ to carry under the arm [PPh *sipit carry under arm]. cf. *sipit.
*sabaŋ to rise (of sun):
San, Snl sabaŋ to go outside; rise (of sun, moon); Tal (A) <sasabangana> door, way out; Ban sabaŋ, Rth subaŋ to rise (of sun) [PPh (Charles) *sabaŋ (of heavenly body) to rise].

*sabaŋen east:
San, Snl sabaŋen, Ban sabaŋen, Rth sabaŋen east. cf. *sabaŋ.208

*sabat/* to name, mention:
San saba?, Ban sabá?, Rth subá? to name, mention [cf. Mal sæbut to name, mention].

*sabik:
San sabil? time when fish are scarce; have a craving for fish during this period; Rth sibik to want, desire.

*sabu froth, foam; to extinguish fire:
San sabu, Tal (A) <sabu>, Ban subú foam, froth; to extinguish fire with water [PPh *sabu· develop steam; seethe; extinguish/quench].

*sadap to set (of sun):
San sedá? to set (of sun); press down, hold under; Ban sadá?, Rth suráp to set (of sun) [PAN (Blust) *sæ(Ødj)æp set (of sun)].

*sadapen west:
San, Snl sadapen, Rth surapen west. cf. *sadap.209

*sagad to sting (of insect):
San sagadá?, Rth suhar (N <sugar>) to sting (of insect) [PPh *saGad sting(er)].210

*saram ant:
Ban saháŋ, Rth saam (N <saham>) ant [Ttb səróm, Pon soyom ant].

*saki to bind tightly together:
San saki, Ban, Rth sikí to bind tightly together.

*sakol cough; to cough:
San sakolé?, Snl sakoə?, Tal (A) <so?ola>, Ban sokolo?, Rth sukól cough; to cough [Ttb sakol cough].211

*salat space; between:
San salá? space between two things; Ban salá?, Rth sulá? between [PPh *salat space]. cf. *salet.

*salet to insert between two things:
San salé? food which sticks between teeth; to stick between, insert; Tal sallata something to separate two things; Ban selé?, Rth sulé? to insert between two things [PMin *salet insert between two things]. cf. *sælat.212

*saluŋ:
San saluŋ to go under, put under; Ban, Rth sulún to shelter (from sun, rain).

*sumuR nasal mucus:
San səmuŋ, Siau səmuha?, Ban sumuhu?, Rth sumú nasal mucus.213
*ampay to hang over rope:
   Tal sampay to hang over rope; Ban sempay, Rth sumpay to hang over rope or rack
   [PPh (Charles) *s(a,a)mmpay to hang].

*ampu[?] to attach, add:
   San ampum to add a piece; tie on; Ban sumpu to connect, attach.

*andiran side:
   San andihan side (of the body); Ban sindihan, Rth sindian side (of body,
   house, etc.) [PMin *sindih isolated, secluded place; Tse sandii side, edge].

*anin to plug up:
   San anin, Ban, Rth sinsin to plug up [PPh (Charles) *sensen stopper,
   stop up].

*anit to stink:
   San anit? have a sharp smell, smell strongly; Ban sinif foul smell; to
   stink; Rth sinif small animal with a foul smell; bad (of smell) [Ttb sanit to stink;
   cf. PPh *sajid stink].

*angap:
   San anga? some, part, a portion; Ban asign? the others; the rest, remainder;
   Rth sunkap-an group, herd.

*ankul:
   San ankul?, ankula? to rebuke, reprimand; Rth sunkul to dispute, oppose,
   argue.

*apa to chew:
   San apa, Ban sap to chew; Rth supa to chew noisily, munch [PPh *sapaq
   chew thoroughly].

*aput blowpipe; to use a blowpipe:
   San apu?, Rth supu? blowpipe; to use a blowpipe [PMin *aput blowpipe].

*aasa nipa palm (Nipa fruticans):
   San, Snl aasa nipa palm (Nipa fruticans); Ban sasa leaves of the nipa
   palm used for thatch [Ttb sasa, Mansaka sasa nipa palm].

*aasal to forge:
   San asal?, Rth (N) <mansal> to forge, work metal [PPh (Charles) *sasal
   to work iron].

*aasek tight, crowded:
   San asek?, Ban sese?; Rth sesek tight, crowded [PPh *saksak stuff, cram,
   fill in].

*aasub:
   San aasub? to apply medicine to wound; treat a wound by blowing smoke
   from burning rattan onto it; Rth sub smoke; to smoke (out), apply smoke
   [Ttb susu vapour, steam; Tsw susub to dry (e.g. kopr) over fire; treat
   sick person over steam water].
*si to (dative marker):
San, Snl, Tal, Ban, Rth si to (a person - dative marker). [PPh *si topic pronoun formative]. cf. *su. 218

*sia w nine:
San, Tal sio, Snl sia w, Ban siow, Rth sia w nine [PPh (Charles) *siyaw nine].

*sie he, she:
San, Snl, Ban sie, Rth se he, she [PMin *sia third person singular pronoun].219

*side they:
San sire, Snl sile, Ban side they [PPh *siDa· they].

*sidi to separate grain:
San siri to separate husked rice in winnowing pan; Snl sili, Rth siri to separate grain [PPh *siji sieve, sift].

*sidun to shelter:
San sirun large leaf used as rain shelter; to shelter; Rth sirun to shelter [PPh *siD/run dark; shade].

*sikat:
Rth sika? to comb [PPh *sikat brush].220

*siku elbow:
San, Snl, Ban, Rth siku, Tal si?u elbow [PPh *siku elbow].

*silaR palm sp. (Corypha sp.):
San sila? lontar palm (Corypha umbraculifera), leaves used for weaving;
Rth sila palm sp., leaves used for weaving [PPh (Charles) *silaj Corypha spp.].

*sini here:
San, Snl, Rth sini here [Mal sini here].205

*sinda[?] to breathe:
San, Ban sinda? to breathe. cf. *indak.

*sintak to lift:
Ban sinta?, Rth sintak to lift (an object) [? PPh *siNtak jerk, twitch].

*sipit to nip, pinch; nippers:
San sipi? nippers (of a crab); to nip, pinch; Tal sipitta, Ban, Rth sipi? to nip, pinch; Ban, Rth sa-sipi? nippers (e.g. of crab) [PAN (Blust)
*sipit(tC) squeeze, pinch, narrow; PPh *sipit forceps; pinchers (of crab)].221

*sisik search for/catch lice (in hair):
San, Snl sisi?, Rth sisik delouse, search for/catch lice (in hair) with fingertips [PAN (Dempwolff) *sisik hunt lice].

*sogel:
San sogela? to stab or shove horizontally with stick or other implement;
Ban sogel to knock down fruit with pole; Rth sohel to stab.
*soRob:
San sohobês, Ban sohobês to scorch over fire; Rth soob to burn (wood), burn down [Ttb soro'b put wood on fire].

*soRo[?]:
San soho? to move back, retreat; Snl soro? to move backward; Ban soho? to shift, move [cf. PPh *surud withdraw, yield].

*solo lamp
San, Tal solo; Snl so, soyo, Rth sa-solō-n lamp [PPh *suluq torch].

*sosop cigarette; to smoke cigarette:
San, Ban sosô?, Rth sosop cigarette; to smoke cigarette [Ttb sosop smoke stain; with a taste of smoke].

*su at, to (locative marker):
San, Snl, Tal, Ban, Rth su at, to (locative marker) [? Bikol, Maranao su nominative marker].

*suan to plant:
San, Snl, Ban suan, Tal suanna, Rth suan to plant; Ban suan-ęŋ will be planted [Toba Batak suan to plant].

*suapa where?:

*suay finished, used up:
San sue, Ban suey, Rth soy finished, used up [Ttn suai to finish, complete].

*suan to carry on head:
San suan, Snl ęnsuŋ, Ban suŋ, Rth sun to carry on head; Ban sun-aŋ will be carried on head [PPh *suqun carry on head].

*suat to enter:
San suə?, Snl, Ban, Rth su?, Tal sutta to enter [PPh (Zorc) *su?at enter].

*suRat creeper, extract from roots used to stun fish:
San suha? fish poison; Tal sukkata, Ban suha?, Rth suə a creeper, juice from roots used to stun fish [PMin *surat plant whose roots are used to stun fish (Millettia sericea)].

*suRuk to draw, scoop up water:
San, Ban suhu?, Tal suzu?a, Rth suuk (N <suhuk>) to draw or scoop up water (e.g. in bamboo container) [Mdw tayuk to scoop (water, rice)].

*suka to vomit:
Ban, Rth suka to vomit [Proto-South-Philippine (Zorc) *su:ka vomit].

*sukat to measure:
San suka? to measure; sound water; Tal suəata to measure depth of water; Ban, Rth suka? to measure [PPh *sukat to measure].

*suŋay horn (of animal):
San suŋe, Ban suŋey, Rth suŋay horn (of animal) [PPh *suŋay horn].
*susu  breast:
San, Snl, Tal, Ban, Rth susu breast (of woman) [PPh *susu breast].

*taap  to winnow:
San taʔ, Tal tappa, Ban taʔ, Rth tap to winnow [PPh *tahap, PAN (Blust) *tasap winnow].

*tai  faeces:
San, Snl, Tal, Ban, Rth tai faeces [PPh *Caqi faeces].

*tain:
San taiŋ to set up (snare, trap); Snl taiŋ to place under tension (e.g. the trigger mechanism of a snare); Rth (N) <manain> to stretch [PAN (Blust) *(CtT)aqan lay a trap].

*tau  person:
San tau, Snl taw, Rth tou person [PPh *tawu person].

*taumata  person:
San, Snl, Tal taumata, Ban tournata person; Rth tomata the people [PMP (Blust) *tau-mata person, human being]. cf. *tau.

*taun  year:
San, Snl taun, Tal tonna, Ban taon, Rth ton year [PPh *taun year, season].

*tabu  penis:
San, Tal, Rth tabu, Ban tabu penis.

*tada  cockspur:
San tara, Ban tada, Rth ta-tara cockspur.

*tagaloaŋ  open sea, ocean:
San (Sas) tagaloaŋ, Ban tagaloaŋ the open sea, ocean; Tal tahaloaŋga sea.

*tages  reef:
San saŋeʔ, Snl saheʔ, Rth tahis reef; Tal sahatta part of shore exposed at low tide [Ttb tagas low tide; Tse, Tbl tagas dried up (during low tide)].

*taRa  chop wood into planks or beams:
San taha, Rth taa chop wood into planks or beams [PPh *taRağ chop, cut, plane].

*taRanak:
San tahanaʔ to rear, care for (a child); Tal (A) <dua taɾana'a> one person with a child; Ban tahanaʔ, Rth taanak family [Ttb, Tbl taranak family, relatives].

*taRandum  memory; to remember, think of:
San tahanduŋ, Ban tahunduŋ, Rth taandum memory; to remember, think of. cf. *andum.

*taRiti  rain:
San, Ban tahiti, Snl tariti, Rth taiti (N <tahiti>) rain [Proto-Bisayan (Zorc) *tarihtih, PMin *tariktik drizzle, light rain].
*takap* to cover:
San takap? to cover (with a lid); Tal (A) <ta'apa> to cover (with the hand) [PPh *takap cover].

*takaw* to steal:
San, Snl tako, Tal ta?o, Rth takow to steal [PPh *takaw steal].

*takut* fear; afraid:
San, Snl, Ban, Rth taka?, Tal ta?utta fear; afraid [PPh *takut fear].

*talaw* cowardly:
San, Tal ta?o, Ban talow cowardly [PPh *talaw cowardly].

*talatad* notch in tree to aid climbing:
San ta'lattada? notch (especially in coconut tree to aid climbing); Rth talutâr rung, step; notch in tree to aid climbing.

*talatug:*  
San ta'latuga? middle of the back (from neck to waist); Rth talutâh backbone.

*tali* rope:
San, Snl, Tal ta'li, Ban, Rth tali rope [PPh *tali* rope, string].

*talikud* to turn the back; separate:
San talikuda?, Ban talikuda?, Rth talikur to turn the back; separate [PMin *talikud to turn the back; part, separate]. cf. *likud.

*talisay* tree with edible nuts (Terminalia catapa):
San salise shore tree sp. bearing edible nuts (Terminalia catapa); Snl salisay tree sp.; Ban talisey tree with edible nuts [PPh *talisay tree (Terminalis catapa)].

*tamata(?)* raw, uncooked; unripe:
San, Ban tamata?, Rth tamata raw, uncooked; Tal tata raw; unripe [cf. PPh *tataq raw, unripe].

*tambu* to moisten; dampen:
San tambu to moisten, wet; Ban, Rth tambu to sprinkle with water, dampen [Tbl, Tdn tambu? pond].

*tambun* heap; to cover with earth:
San tambun heap (of soil, sand); to cover with earth; Ban tambun, Rth tambun to cover over with earth [PPh *taN bun heap, pile; *ta(N)bun heap over, cover over].

*tana* earth, ground, land:
San, Snl ântana, Ban, Rth tana earth, ground, land [PPh (Charles) *tanaq earth, ground, land].

*tanak* to live, dwell; be still, calm:
San tana? be still, calm; to live, dwell; Snl tana?, Tal tana?a to live, dwell; Rth tanak be still, calm.
*tanaqaw insect which damages rice:
San tanaño small, strong smelling grasshopper which causes damage to rice plants; Ban tanañow, Rth tanañaw, tanañow insect which damages rice [PPh *tanaqaw insect: rice fly].

*tani to isolate oneself, be alone:
San, Rth tani to isolate oneself, be alone [Ttb tane separate, set apart; move out of the parental household].

*tañis to cry, weep:
San, Snl sanji?, Tal sañitta, Rth tañis to cry, weep; Ban tañisi? crybaby [PPh *(t)añis cry, weep].

*tapa to smoke food:
San, Snl, Ban, Rth tapa to smoke food [PPh *tapa to smoke food (cook)].

*tapis to strain, filter:
San tapisa?, Ban tápisí?, Rth tapis to strain, filter; Snl tapisa? to strain through fabric [PPh *tapis strain, filter].

*tapī cloth worn when bathing:
San tapī?, Ban ta-tapī? cloth worn when bathing [PPh *tapīq apron; skirt].

*tasak ripe, cooked:
San, Snl sasā?, Ban tasa?, Rth tasak ripe, cooked [PPh (Charles) *tasak ripe].

*tasik sea; seawater:
San, Snl sa si? sea; seawater; Ban tasi?, Rth tasik sea (PPh *tasik saltwater; (Charles) sea).

*tatalu three:
San tatalu, Snl tatáw, Tal tatallu, Ban tatulu, Rth tatulú three. cf. *telu.\textsuperscript{134,232}

*tedeR:
San tereha? to stroll, saunter; Rth tere to run.

*tengoR to beat, strike:
San tengoha?, Ban tẹnkohọ?, Rth tenko to beat, strike (gong) [PMin *tẹnkor beat (gong, drum)].\textsuperscript{233}

*taban flavourless:
San taban to wash out in fresh water (nets, etc. soaked in salt water); to wash anus; Ban taban lacking in salt, tasteless; Rth tuban tasteless, flavourless [PPh *taban flavourless; fresh water].\textsuperscript{234}

*tabas to chop (down):
Ban tabasa? to hack down (e.g. scrub to make gardens); Rth tubás to chop, hack; fight with sword [PPh *tabas fell, cut; PAN (Blust) (Ct)ébas close the harvest].

*taduk pain; painful:
San tadu? pain, illness; very ill; Rth turúk painful, hurt severely.
*tagap  tree sp.:
San tega?, Ban tagá?, Rth tuháp (K <tugap>) tree sp. with large leaves.

*takin  (walking) stick, staff:
San takín, Rth tikín (walking) stick, staff [PPh *takon pole, stick].

*telak  to fly:

*telu  three:
San telu, Snl taw, Tal tallu, Ban tulu, Rth tulú three [PPh *telu: three].

*telur  egg:
San teluhè, Snl taurè, Tal talluka, Rth tuu (N <tuhu>) egg [PPh *telur egg].

*tanah  working fast and powerfully for evil; Rth tuná to work fast and skillfully (with hands).

*tanik  mosquito:
San, Snl tani?, Ban tiní?, Rth tiník mosquito [PPh (Charles) *t(a)(g)ànak fly, mosquito; Ilongot tannák mosquito].

*tendance  fence:
San, Snl tenda?, Ban tandá? fence [PMin *tandék post, stake].

*t/ntalan  naked:
San t/ntalan, Siau tintolán, Rth tintalan naked.

*tanad  right, correct:
San tana?, Ban tanada?, Rth tug-a-tunár right, correct.

*t/ingar  dry:
San tanga? to become dry (of throat, reef); Rth tinka dry.

*tapir  mat:
San tapihè, Snl tapirè, Rth (N) <tipi> mat [PMin *tèpeh, Mak tappèrè? mat].

*tasik  to spurt, spray out:
San sèsi?, Rth tisík to spurt, spray out.

*tatas  to cut (stitches, thread):
San tatasa? to break (of thread, rope); to cut loose, unstitch (seam) [PPh (Charles) *tastas to cut, tear, open stitches; cut through].

*tatuR  hot coals:
San tatuhè, Ban tutuhu?, Rth tu hot coals.

*tatul  large tree sp.:
San tatulu?, Ban tutulu?, Rth ntul large tree sp.
*tian belly:
San, Snl, Ban tian, Tal tianna, Rth tian belly [PPh *ti’an stomach, belly].

*tiap to count:
San, Ban tiap?, Rth tiap to count [cf. PAN (Blust) *(qSo)iap, PMin *iap to count].

*tiaya mark:
San tiala a mark; to observe, notice; Rth tiaya distinctive mark; to recognise.

*tiup to blow:
San, Snl tiup?, Tal tiuppa, Rth tiup to blow [Mal tiup to blow].

*tiRas hard (of wood):
San tihasa? pure, unadulterated; hard and strong; Rth tias hard wood inside tree [PPh *təRas hard (wood)].

*tikil to sleep:
San, Snl tikil?, Tal tiilla, Ban tiki, Rth tikil to sleep; San, Snl kata-tikil-aŋ sleeping place, bed [PMin *təkəl sleep].

*tilaN clear, pure (of water):
San, Ban tila clear, pure (of water).

*tiuR south:
San timuha?, Tal (A) <timuka>, Ban timuha?, Rth (N) <timu> south [PPh *tiuR rain wind].

*timbaw on top:
San timbo be on top (of something); put on top; Ban timbaw shallow; on top of; Rth timbaw to float, rise to surface; put on top [PPh *ti(N)baw high, height].

*timbalaŋ thin bamboo sp.:
San timbalaŋ, Tal timballaŋ, Ban timbaləŋ, Rth timbuləŋ thin bamboo sp. [PMin *tambalaŋ bamboo sp.].

*timbonan head:
Ban timbonan, Rth timbonan head.

*timbul to rise:
San timbul to appear; rise to the top; Tal timbula smoke [PPh *tiNbul come up, rise].

*tinai intestines:
San, Snl, Tal, Ban tinai, Rth tinei intestines [PPh *tinaqi· intestines].

*tinaw clear:
Rth tinaw clear, pure (of water) [PPh *tin/qaw clear].

*tinada to look upwards:
San, Tal, Rth tinara, Ban tinada to look upwards [PPh *tinəJaq look up(wards)].
*tiŋiR voice, sound:
San tiŋiʔ, Tal (A) <tingika>, Rth tiŋi voice, sound [PPh *tiŋəR voice, sound].

*tiŋi to roll, revolve:
San tiŋi, Rth tiŋki to roll, revolve.

*tiŋgum to tell riddles:
San ta-tingun, Ban tiŋkun, Rth tiŋkum to tell riddles.

*tiŋkait/ bad, wicked:
San, Ban, Rth tiŋkai? bad, wicked.

*ti/ŋkaRia ear:
Ban tiŋkahia, Rth toŋkayá ear.240

*tiŋkod heel:
Ban tiŋkodoʔ, Rth tiŋkor heel [PPh (Charles) *ti(n)kə(jd) heel].241

*tipas palm wine:
San sipaʔ, Ban tìpasaʔ, Rth tipas palm wine.

*tiŋpo to pick (fruit):
San, Ban, Rth tiŋpo to pick (fruit) [PPh *tiŋp(u)q fall down (of fruit)].

*tipu smoke:
San, Snl, Ban tipu smoke.

*togas hard; strong:
San togasaʔ, Snl tohasaʔ, Rth tohas (N <togas>) hard; strong; Tal tohassa,
Ban tôgasə hard.242

*tolay tail:
San, Tal tole, Snl toay, Rth toley tail; Ban toley testicles [? Proto-
Polynesian (Walsh and Biggs) *tole female genitals; Ttb tolai spur of
mountain].

*tondo to push:
San tondo to slither (of snake), creep (of vine), proceed (of work); to
push (boat into water); Snl tondo to slide, glide; Ban, Rth tondo to push.

*tuadí younger sibling:
San, Tal, Rth tuari, Snl tuali, Ban tuadí younger sibling [PPh *tu-aJi
younger sibling].

*tuən to place (pot) on fire:
San tuən to cook; Tal tunna, Ban tuŋ, Rth tun to place (pot) on fire; Ban
tun-aŋ will be placed on fire [PPh (Charles) *tu(0q)ən to place (pot) on
fire].

*tuïd stump (of chopped-down tree):
San, Snl tuideʔ, Rth tuïr stump (of chopped-down tree) [PPh *tuqəD stump].
*tubang to fell tree:  
San, Snl, Rth tubang, Ban tubang to fell, chop down tree [cf. PPh *tøbøg chop/hack off].

*tubo to grow:  
San tubo young, still unfurled palm leaves; to grow; Snl tubaw, tubo, Tal tubo to grow; Rth tubo leaf; to grow [PPh *tu(N)buq grow].

*tubu sugarcane:  
San, Snl, Tal, Rth tubu sugarcane [cf. PPh (Zorc) *tøbuh sugarcane].

*tudo leak; to drip:  
San, Rth turo, Snl tulo, Ban tudo to leak; drip [PPh *tuDuq drip].

*tuRaŋ:  
San tuhøg the oldest, first-born; Snl turaŋ older sibling (term of reference); Tal (A) <turanga> older sibling; Ban tuhøg relative of the same generation [PAN (Blust) *(CtT)uRaŋ in-law].

*tuRut to follow:  
San tuhu?, Tal tužuta to follow; obey; Ban tuhu?, Rth tuu? (N <tuhu>) to follow [PPh *tuRut go with; follow].

*tukad ladder, stairs:  
San, Snl tukado?, Ban tükada?, Rth tukar ladder, stairs [PPh *tu(N)kad go up; ladder].

*tukus to wrap up:  
San tukusa? to wrap oneself up completely; Rth tukus to wrap up.

*tuli:  
San tuli to land; make for a place; Ban, Rth tuli to call on, visit [PPh *tuli stay overnight].

*tulid straight:  
San, Snl tulida?, Tal tuḷidda, Ban tūlidi?, Rth tulir straight [PPh *tul/qid straight].

*tulud to push:  
San tuluda? to push off from a height; Rth tulur to shove, push [PPh *tulu(d) push along].

*tulug to help:  
San tulug, Ban, Rth tulug to help [PPh *tulug help].

*tuma clothes louse:  
San, Rth tuma clothes louse [PPh (Zorc) *tu:mah body louse].

*tumpa to descend, alight:  
San tumpa to jump down, alight (from a boat); Ban, Rth tumpa to get out (of boat), descent (from house, vehicle) [PMin *tumpa descend, alight].

*tunay thorn:  
San tune thorn; splinter (in flesh); Rth tunay thorn [Ttb tutune, Tdn tøtune thorn].
*tunu* to bake, roast:
San tunu to scorch; scald; Tal, Ban, Rth tunu to bake, roast [PPh *tunu burn, roast].

*tuntun*:
San tuntun (onomatopoeic) sound of a type of large drum; to make a thumping noise like such a drum; Rth t-ar-untun noise, sound; noisy [PPh *Tun'Tun* (sound) thud].

*tungaw* mite which causes skin irritation:
San tungo, Ban, Rth tungaw very small bush mite which causes skin irritation [PPh *tungaw* (insect) mite].

*tutub* to cover, close:
San tutubə to cover; Snl tutubə vagina; Tal tutubba to close (of door, etc.); Ban tутубu? to put on lid or cover; Rth tutuə veil; to cover [Ttb tutuw to close, cover over].

*tutun* to burn:
San, Snl, Ban tutun, Tal tutunŋa to burn [PPh *tutun kindle, burn].
NOTES

1. The name chosen for this group is based on the name Sangir. This is felt to be more appropriate than choosing a geographical name, which would be difficult because of the wide distribution of the languages. The name Sangiric readily identifies the group because Sangir is by far the largest and best known of the languages in the group, with several substantial publications devoted to it which have been used as sources for a number of comparative studies.

2. Watuseke (1956) provides a linguistic map of Minahasa showing widespread San settlements in coastal areas of northern Minahasa.

3. Maryott discontinued using the name Sangil, by which the people are designated by surrounding groups, for Sangiré [sängiré], as this is the indigenous name (Maryott, personal communication). However, not only could this name be misleading to comparative linguists but it is also used by some Sangirese to designate their own language, i.e. in dialects such as Taruna where r corresponds to Manganitu and Tabukang h.

4. This of course assumes the existence of Proto-Philippine as a legitimate meso-language, about which doubts have recently been raised (Reid 1982).

5. Metathesis of *R and *ʔ is a shared innovation in the Minahasan and Sangiric languages (see section 1.5.). Thus *ʔ occurred finally prior to PSan and was not subsequently lost.

6. It is assumed here that the laryngeals were lost prior to PSan as no trace occurs in any of the present-day languages. The reason why *ə sometimes remained and sometimes did not is as yet not known (although it belongs outside the scope of this study). It is possible that the following sequence of events occurred in pre-PSan:

   (i) Intervocalic laryngeals were lost in some words (possibly by a process of diffusion affecting only part of the lexicon).

   (ii) The rule occurred whereby PPh *ə was replaced by another vowel in final syllables, this rule not applying where *ə was immediately preceded by another vowel. This supposes that, e.g. *tuqən has become *tuæn and the change was thereby blocked, whereas *q remained in, e.g. *tuqəd, allowing *ə to be replaced following the consonant, the form *tuqid resulting.

   (iii) All remaining intervocalic laryngeals were then lost.
7. One exception is PSan *kiki to bite from PPh *ki(q)kiq. The fact that this is an RM may be a factor but cf. PSan *pepe to urinate from PPh *piqpiq. The difference in the PSan reflexes is unexplained.

8. PSan *dadeR to lean may reflect PPh *zazaR in rows.

9. There is another example, PSan *taRiti rain, for which the related forms Proto-Minahasan *tariktik and Proto-Bisayan *tarihtih light rain occur but for which no PPh etymon has been reconstructed.

10. Because of the impracticability of an exhaustive search for cognates in related languages it is possible that external related forms do occur for some of these words, in addition to those noted.

11. In an earlier classification (Sneddon 1970) the Bantik-Tombulu score was given as 42%. But with more detailed study of Ban a number of borrowings between the two languages have been identified and this has reduced Ban's lexicostatistical score with Tombulu and also with the other Minahasan languages.

12. Adriani (1893:6) comments on the already very great influence of Malay in the Sangir Islands.

13. Ban and Rth in return have been the source of loanwords into the Minahasan languages. Thus Tbl, Tse oyow to swim from Ban hoyow; Tbl, Tse kiki to bite from Ban (or San) kiki; Tsw ahe water from Rth ake; Tsw ucah hair from Rth utak.

14. Loss of e after a would not be irregular in Rth, cf. polán upper arm from PSan *polae, lar foot from PSan *lae/id.

15. The earlier occurrence of *e is indicated by the penultimate stress in Ban. An original **lampad would have been reflected as **lampilada? (see section 2.3.23.). The Tbl and Tse forms both reflect earlier *lampad.

16. Blust (1978:112) points out that the original meaning of this item referred to design or pattern in general and that the meaning 'write' was an innovation in Minahasa. This being so the occurrence of the same meaning in the South Sangiric languages strongly suggests borrowing.

17. Ban has retained 41% of its vocabulary from PMP in the 200 word lexicostatistics list (Blust, personal communication) and the other Sangiric languages can be expected to have retained similar percentages.

18. Zorc (personal communication) suggests Proto-South-Philippine *dul dul cotton may be related: 'One 'pulls out' the cotton from the cotton plant'.

19. Irregular correspondences can also point to borrowing. Thus Ban hote Manila hemp is treated as a borrowing from San hote as the Snl form rotay shows that the regular Ban cognate would be **hotey.

20. Zorc (personal communication) points out that the reconstructions in his Proto-Philippine Finder List derive from a number of independent sources. Where a construction is attributed to Zorc (1971) this is to be taken only as meaning that the form occurs in his wordlist, although the item may actually have been reconstructed by another person. Many of the items in the list actually represent PMP or PAN reconstructions, i.e. they are reconstructed at a higher level than PPh.
21. A far more detailed, though pre-modern, statement can be found in Adriani (1893) and a detailed phonological statement of the Tabukang dialect is given by Maryott (1961). Examples in Steller and Aebersold's dictionary show that the phonology of Tahulandang dialect differs in a number of ways from Manganitu, e.g. in the absence of a. However, as no systematic information is available on that and other dialects they are not described here.

22. This sound is represented by the digraphs <r> (Adriani 1893) and <rl> (Maryott 1961). Both these reflect the r-like nature of this sound. Steller and Aebersold use the symbol <Larry>, which is also used in this work. Maryott (1978) uses <l> to represent [], where the doubling has nothing to do with gemination, while <Larry> represents the alveolar lateral. Steller and Aebersold use <l> for geminate r after a.

23. Maryott (1977) describes Sarangani phonology in some detail and mentions differences in the Mindanao dialect.

24. This sound also occurs in Tombulu (see Sneddon 1978:20) and appears to be phonetically similar to the sound in Western Bukidnon Manobo which Elkins (1968) writes <z> and describes as a retroflexed voiced alveolar fricative.

25. Further study will be necessary to properly determine the situation as regards long vs. short consonants. Some uncertainty results from the recording of apparently conflicting information from informants. In this work doubled and single consonants are recorded wherever they were given by the informant for the Salibabu dialect. This does not always accord with the tentative rules provided here.

26. Early writers, such as Jansen (1855) and Koorders (1898), wrote this sound <r>. See also note 22.

27. Native speakers of Rth are clearly aware of the phonetic differences between d and r, b and ã, g and h, as they occur as separate phonemes in Indonesian. They appear not to be aware of the differences between [p] and [b] or [x] and [h], which they write <w> and <h> respectively.

28. Long vowels result from the diachronic loss of h (see section 2.3.9.), stress having fallen on one or other of the vowels before h-loss.

29. The term is taken from Maryott (1977a). Pei (1966) describes 'paragoge' as: 'The addition of a sound, letter or syllable to the end of a word, without etymological justification, for the sake of pattern conquirity, and without change of meaning in the word'. The term as defined above, and in the Concise Oxford Dictionary and Webster's New World Dictionary, refers to the process of syllable addition and not to the syllable which results from the process; it thus belongs to that set of terms which describes phonological processes, such as syncope, apocope, epenthesis, etc. There appears to be no derivative of the term 'paragoge' which refers to the paragogic syllable itself. Terms used for this syllable in Austronesian languages, such as Adriani's (1893:37) 'unaccented final syllable' ('toonlooze eindlettergreep') and Mills' (1975a:212, 1975b:74) 'echo-vowel + [q] sequence' and (1975b:9) 'supporting vowel' appear too cumbersome for continuous use and, in the case of the terms used by Mills, carry assumptions as to the reasons for the occurrence of such a syllable. The term 'paragoge' is used throughout this work to refer to the additional syllable itself and not to the process of its formation.
30. It could be argued that the underlying form is sakol, from which the surface form sakoa? could be derived by regular rules. But there is no synchronic evidence in Snl for the existence of an underlying l. On a purely synchronic basis the surface form sakoa? is unpredictable except by recognition of final o in the underlying representation.

31. Original nasals are sometimes recovered in San although there is some disagreement in the sources. Steller and Aebersold show a few words recovering the original nasal when a suffix is added, e.g. inuŋ to drink + paŋəninumən drinking vessel. But Adriani (1893:157) gives ŋ here also: paŋəninumən. On the other hand, Adriani and Djajengwasito give ŋumən will be drunk for which the informant for this study gave ŋumə. Adriani points out that before suffix -aŋ stem-final ŋ may dissimilate to n or, if preceded by u, to m. For the latter change he cites iɾunŋ to rest the head + paŋərιumən pillow, although Steller and Aebersold give paŋəriumən, without dissimilation.

32. Maryott (1978:127) reconstructs *r, as well as *d, for Pre-Sangir. However, the available evidence does not offer support for recognising [d] and [r] as separate phonemes in PSan. The correspondence sets San d-, Snl d-, Tal d-, Rth r- and San -r-, Snl -l-, Tal -r-, Ban -d-, Rth -r- are in complementary distribution. Although numerous San words have medial d only one such item, kadadomaha?, has a known Rth cognate, karurumə (see wordlist), and this is insufficient to recognise a San d-, Rth r- correspondence set (which would require recognising contrast between *d and *r intervocally). A great many San items with medial r have cognates in Rth (with medial r) and the lack of known Rth cognates to San items with medial d suggests such words in San are either borrowings or the result of recent developments (see section 2.3.13.).

33. Maryott describes both t and d as alveolar in Snl (1977a:264) and Tabukang San (1961:113). Adriani (1893:12,14) and Djajengwasito (1967:1) describe t as dental and d as alveolar in Manganitu. (See also Sneddon 1978:58, note 1.)

34. Charles (1974:490) regards a in San kəŋə as resulting from 'secondary diphthongisation' of a before a nasal. However, this does not account for the presence of a after other vowels, as in luoŋ, or before non-nasals, as in ŋaŋ to winnow (< PSan *taŋə), and this a can only be regarded as a retention from PSan.

35. It is possible that San səsa? to drop, collapse, fall out; to be cut off reflects PPh *tatas, in which case metathesis occurred also in RMs and San tətasə? is a borrowing. But it is also possible that səsa? reflects PPh *saksak pierce, stab, chop; knock fruit (out of tree).

36. Difficulty occurs with the item San atisə?, Rth atis sour sop (Anona squamosa). Occurrence in Rth and a North Sangiric language is usually good evidence for a PSan reconstruction, and one is provisionally given in the wordlist. But apart from the non-occurrence of metathesis in San, the Rth word has unexplained final stress, both facts casting doubt on the PSan reconstruction.

37. Dyen (1972:98), without the Tal evidence, assumes that assimilation occurred.
38. The development of a paragoge and final consonant loss or reduction have been relatively common in Celebes languages. Gorontalo has added the paragoge after final consonants while Makassarese has added the paragoge after final continuants and reduced final stops to ? . Adriani and Kruijt (1914:178) refer to Petapa, a Tomini language of Central Sulawesi, as undergoing both processes. Thus, besides uli skin, are variants uli and ulisi, besides pulut sap, are variants pulu and puluti.

39. There is another word, sa\(u\)ga? synonym of sa\(u\)? and sa\(u\)ha?, which is a borrowing, having g as an incorrect reflex of PPh *\(R\) (PPh *\(saluR\) waters).

40. Other instances of s-reduction occur in San which are not reconstructed for PSan because of the lack of known South Sangiric cognates. Thus hunu? fire, Snl lu-runusa? bonfire, mentioned in the text, and \(l\)aha? to pound rice again to get it white (PPh *\(DaR\)as). Charles (1974:463) refers to this last item as problematic because the expected form would be **\(l\)ahas? . He is apparently working on the assumption that all items with s-reduction are borrowings. However, there are several objections to this assumption. First, if the paragoge was consistently added to final *\(s\) then previously borrowed words with final s would also have taken the paragoge when this developed. If they were borrowed after paragoge addition had occurred then they would have presumably added the paragoge too; there is no explanation for why they would undergo s-reduction, a process which, the assumption goes, had not otherwise occurred in the language.

Further, all positively identified borrowings with final s added the paragoge, which was the usual process with borrowings ending in other consonants as well. Thus absence of the paragoge cannot itself be help up as evidence for borrowing.

The difficulty with assuming borrowing or irregularity can be seen if we look at some of the items with s-reduction, e.g. San/Snl \(k\)ina?, PSan *\(k\)inas fish. Related forms occur in other Sangiric languages but have not been recorded for languages external to the group. Therefore borrowing from an external source would be difficult to maintain. If the word were borrowed from another Sangiric language, Ban or Tal, then it was borrowed either before the paragoge developed, as *\(k\)inas, in which case why did this item not take the paragoge, or after paragoge development, in which case why would the final s + paragoge reduce to ?? The only explanation is that \(k\)ina?, and the other items in this category, are directly inherited forms which underwent final consonant reduction.

41. The San form is cited by Reid (1971) but is not given by Steller and Aebersold.

42. In San and Snl final ? is replaced before a suffix by t if the preceding consonant is a velar, e.g. taka? to cover + -\(e\)\(\gamma\) + taka\(e\)\(\gamma\) be covered and by k elsewhere, e.g. poto? to cut off + -\(a\)\(\gamma\) + potoka\(\gamma\) be cut off (Maryott, personal communication).

It might appear at first that the original consonant is recovered in some words. However, Maryott (personal communication) explains these forms:

There is a small class of words that may at first appear to have realisations other than the expected k or t. A more careful investigation reveals these forms to be artifacts of an obsolete, non-productive system explainable
on historical rather than descriptive grounds. Some of these forms have counterparts, often with a shift in meaning, in the productive system.

His examples include San, Snl katatikilak sleeping loft, bed (a form reflecting earlier *tikil to sleep with fossilised affixation), besides katatikitan any place on which one sleeps (a derivative of modern tikil?); San, Snl sadapen west, place where the sun sets (*sadap + -en), besides sadaken be put down into something (modern sada? + -en).

43. In Snl dropping of the paragoge in genitive phrases appears to be irregular; it occurs in some cases but not in others and with some words there appears to be free variation, e.g. taurapuika turtle’s egg.

44. It is almost certain that the paragoge in Tal was not originally *a. Since it is most unlikely that geminate consonants occurred word-finally it may be assumed that paragoge development preceded the development of doubled consonants. If the paragoge were originally *a then there is no way to explain why doubling occurred in front of the paragoge, e.g. lañitta sky < PSan *lañit, but not before a where this reflected PSan *a, e.g. mata eye < PSan *mata. Consequently, if consonant doubling occurred after paragoge development, the paragoge must originally have been something other than *a, probably *a(?). Thus lañitta probably reflects an earlier *lañittap(?).

45. Although this item has many cognates in other languages, they usually have o or u in the final syllable, reflecting PPh *panuq. But because e occurs in the final syllable in all North Sangiric languages it is safe to assign the innovation of PNSan.

46. The tal form is given by Steller (1913), where <r> = ?.

47. It is possible that with more data on Snl it might be seen that regular rules cover these items. At the time of writing it had not been possible to fully utilise the information in Maryott (to appear).

48. One exception in Snl is the occurrence of [i] instead of [y] in iá? I, in which the marker i has become fossilised in the Sangiric languages (see *ia? in the wordlist).

49. There is also a PPh reconstruction *sandaR to lean against but this could not be the etymon of PSan *sandep as PPh *a did not dissimilate from a preceding *a in PSan if a nasal-stop cluster intervened (see section 1.4.1.(e)).

50. In Snl d and l, reflecting *d, also came into contrast through complex morphophonemic rules, described by Maryott (to appear).

51. In a few recorded cases PPh *w had already been lost in PSan, having merged with the preceding vowel, thus PPh *kawan > PSan *ko/uanen right(side), PPh *kawiRi > PSan *ko/uiri left(side), PPh *pAwikan > PSan *po/ukan turtle.

52. This may be cognate with San, Snl panida? wing. If so the loss of n may have occurred after the vowel reduction rule had ceased to operate.
53. Strong evidence that PSan *səsub reflects an earlier *subsub comes from Ttb susuw steam, vapour, Tsw susub to steam. The only regular explanation for the correspondence of the Minahasan and Sangiric forms is that they reflect a Proto-Minahasan-Sangiric RM *subsub.

54. The prenasalisation on plant names may originally have been a genitive marker. However, clear contrast occurs between words with and without an initial nasal-stop cluster, e.g. one ndipa there is a rainbow and one res there is a pandanus tree, one mbulalak there is a bulalak tree and one baley there is a house.

55. San also has ake sap.

56. The word means you (pl.) in Snl.

57. This word occurs in the Siau dialect only.

58. This may be compared with the spontaneous development of glottal stop in some Minahasan languages (see Sneddon 1978:71).

59. Ban mǐhihi? (possibly (u)m- + ōhihi?) to flow and San iliha? to move house may be cognates, reflecting PPh *hiliR flow off, downstream, with mediating PSan *iliR. However, the San item may instead reflect PPh *qiliR to move and San eleha?, Tal elekka to flow also present a difficulty. For the present no PSan reconstruction is made.

60. Mills (1975b:401), comparing South Sulawesi languages with other Indonesian languages, writes:

In languages with gemination, penultimate syllables with /ə/ can be stressed (Buginese, Madurese and Sangirese), whereas in non-geminative languages such as Malay and Javanese, if the penult contains schwa then the ultima is stressed.

Elsewhere (1975a:209) he writes:

It is possible, I think, to connect gemination with the development of a fixed penultimate stress in Proto-South-Sulawesi. Thus while the vowels i e a o, when stressed, developed long allophones, some peculiarity in the nature of a prevented this, and the length feature came to be associated with the following consonant instead.

61. Some items were eliminated from the original lists. Reasons for this and a discussion of the methods of scoring are given in Sneddon 1970. Also presented in that work are wordlists for Ban and Rth. Those lists have been revised with more thorough eliciting and checking for the present study. This has resulted in a revised cognate percentage for Ban and Rth, 59% as against 63% in Sneddon 1970, the difference resulting in part from the detection of shared borrowings.

62. In the table Tal, Ban and Rth each show identical scores with both San and Snl (although there were fractional differences). While this might appear unusual the cognate percentages were carefully calculated for each pair of languages separately.
63. The San wordlist used here is from the Manganitu dialect. Higher San-Snl percentages were recorded in the studies mentioned in section 1.3., which used a list representing the Tabukang dialect. It is possible that the higher percentages result from borrowing between Tabukang and Snl in southern Philippines, where the lists were collected. However, the Sangil originally migrated from the Sangir Archipelago (see section 1.2.2.) and it may be that Tabukang, spoken in the north of Sangihe Island, represents an intermediate dialect between Manganitu, spoken in the south of that island, and Sangil.

64. The meaning to cut off may have been original. PMin *kehet tap sugar palm, from PPh *kaRat cut off, has undergone the same semantic change.

65. The word was not known to Rth informants. Niemann's <uw> for expected ow may be an error, errors of this kind being not uncommon in his list.

66. The Tal form was recorded for expected **a?anγa.

67. Initial u in Tal ua?e water and ulekka neck is possibly a fossilised prefix.

68. Development of final glottal stop in San occurred in a limited number of frequently used words (see section 2.3.21.). *ake may have resisted the development in the sense sap because of infrequent use but not in the much more frequent meaning of water.

69. Rth has unexplained final ? for expected p.

70. The Tal form was recorded for expected **amaŋa.

71. Ttb and Snl have ama? as the vocative form of amaŋ father and this may also have been the case in PMin and PSan.

72. The PSan reconstruction is provisional as both the San and Rth forms have unexplained irregularities (see section 2.3.2., note 36). The word does not occur in Snl (Maryott, personal communication).

73. Rth has ebe saliva and makebe to desire, crave. It is assumed that the verbal form derives from earlier *maka-ebe, with coalescence of the vowels.

74. This item does not directly reflect PPh *həRat tight(en), constriction but the occurrence of San and Rth cognates indicates that borrowing was pre-PSan and hence final *t can be reconstructed. The PPh form is directly reflected by San ehe? to put on (shawl), gird on (sword), indicating the occurrence of a PSan form *eRet.

75. San hagi? plant sp. may be a borrowing from a cognate in an unidentified language. If so it would indicate an earlier etymon *həRiq.

76. San allitai split, crack and Tal allita something stuck in split or hole in boat to stop leaks may be related.

77. In Ban initial *ə was lost according to the regular rule given in section 2.3.1. With the person marker the word is ima?. In Rth occurrence of the person marker preserved *ə, reflected correctly in the present-day language by u; the word is normally iuma?. With the absence of i in the vocative initial
*a was lost by regular rule, giving maʔ. If the word is directly related to Mal amak then reduction of *k to ? occurred prior to PSan, as assumed in the reconstruction, or in Ban and Rth after PSan, in which case the correct PSan reconstruction would be *amak. Although k-reduction would be irregular in Rth such an irregularity would be more likely in a very common word than in the general vocabulary (cf. the note to *iaʔ I).

78. The Rth reflects earlier *Randum, where prefix-final *R, see *taRandum, was reanalysed as belonging to the root.

79. Occurrence of ηg for expected ηk in Rth is irregular (see section 2.3.14.).

80. This form is used in counting, e.g. San mapulo asa, Snl mapulo, Tal mapulo asa, Ban, Rth mapulo sa eleven.

81. Mills (1975b) tentatively reconstructs Proto-South-Sulawesi *a(n)si contents, reflected by Mak assi, Sa'dan issi meat.

82. Tal iaʔu reflects earlier *i + aku (PPh *aku I). Initial i is the personal marker, which appears to have become fossilised with this pronoun. In Snl it is manifested as [i] instead of regular [y] before a vowel (see section 2.3.11.). It is possible that *iʔaʔ reflects an earlier base *ak, cf. Agta qiyaʔk, Bug (Mills 1975b) iaq, (Ide Said 1977) iak, Lampung (Walker 1976) qaʔ, (Haaksma 1933) nak I, all, apparently, with a formative i or ni preceding the base. (Haaksma derives Lampung nak from ni- + ak, ultimately from ni- + aku.) If the PSan form reflects an earlier root *ak reduction of *k to ? could have occurred independently in Rth, common words such as pronouns being more susceptible to restructuring and irregular sound changes than the general vocabulary (see note to *amaʔ mother). In this case the PSan form would have been *iaʔ. However, evidence for this, or even for the previous occurrence of a final *k, is not strong enough to allow *k in the reconstruction and the present reconstruction *iaʔ assumes that if *k did occur it reduced to ? prior to PSan.

83. Initial η in Tal is unexplained but note PMin *ηiriŋ novice.

84. Gemination of n in Tal instead of η (expected *iŋnŋa) is unexplained.

85. The Rth word was not known to informants but Niemann's entry attests to its earlier occurrence.

86. Occurrence of o instead of a in the final syllable in Ban and Rth is unexplained. Steller and Aebersold regard the San word as a doublet of onaʔ (see *onasaʔ) but despite the similarity in meaning it is clear that San onaʔ reflects *onap.

87. Charles (1974, note 15) derives the San form from PPh *hiwaq (unglossed).

88. The coalescence of *ua in o in Rth (see section 2.3.17.) has resulted in the reflexes of *uai and *uay becoming homophonous, earlier *i being reinterpreted as y.

89. Snl has ú and some San dialects have ua termite. Loss of final syllable *ne may have resulted from its having been reinterpreted as the third person singular genitive marker in those dialects, an error which Steller and Aebersold make in explaining its loss.
90. Rth urás to wash (clothes, etc.) has irregular r (and irregular stress) and is assumed to be a borrowing although the source is unknown, the Minahasan languages reflecting an earlier ‘h.

91. Initial i in San and Snl is unexplained but may be a result of contamination from another, since lost, word, cf. Ban ma-îha? hot.

92. Although Rth shares many items with Tdn suspected of being borrowed (see section 1.6.) the occurrence of Rth h where Tdn has r, together with the change *ə > u/ _ p#, which is a PSan innovation, suggests this item is not a borrowing.

93. Medial ŋ in Rth is unexplained.

94. The expected Ban form would be **báhe?. Presumably *e was lost after a, following development of the paragoge (whose vowel assimilates to the preceding vowel). Rth ëar, from earlier *baer (Niemann gives <mamajer>), is probably a borrowing from Ttb waer or Tsw baer. Snl ëade?, from earlier *ayade? to pay and San balars? to divide, share are borrowings (see section 1.4.1.(e)).

95. Reid (1971) gives San babi? pig and kutu? louse which occur in the Taruna dialect as spoken by immigrants in Mindanao, Philippines (Maryott, personal communication).

96. Ban bahaney has unexplained final ey and may be influenced by Tbl baraney. Steller and Aebersold cite the San word as a borrowing from Mal bërani but there appears no reason to suppose this as it correctly reflects PPh.

97. The first syllable u in Ban, for expected a, is unexplained.

98. Loss of *l in Snl and Tal is unexplained. In Tal there is also a word ëaline not that. If this is the directly inherited form then ëaline may be a borrowing from Snl.

99. Rth has balu instead of expected **balu and is probably a borrowing.

100. Metathesis of k and l occurred either in San or in PSSan but as no external cognates are known it cannot be established which variant correctly reflects the PSan etymon. Note, however, San daïkaŋ and San southern dialects dakilaŋ hearth, which suggests that metathesis of k and l occurred in San. For this reason the Ban/Rth variant is chosen as the most likely correct reflex. Possible evidence to support this is Snl ëauka? to carry pickaback which is probably related (with regular loss of *l between non-front vowels) although loss of the final syllable is unexplained.

101. Steller and Aebersold derive this from Spanish bandera flag. In both San and Rth the word also means 'flag' but the two meanings may be etymologically distinct, especially since Charles reconstructs a PPh etymon in the sense 'hawk'.

102. For Rth Niemann gives <wawangko> wooden hammer but this was unknown to informants.

103. The irregular form in the South Sangiric languages, for expected Ban **bêbê?, Rth **bubê?, is discussed in section 2.4.

104. Ban has unexplained penultimate, instead of expected ultimate, stress.
105. All modern forms ambiguously reflect *bəRaʔ and *bəRat, except Tal which reflects *bəRaʔ (or *bəRa). However, external evidence strongly points to the PSan form having been *bəRat, with the Tal form being irregular, for expected **bakkata.

106. Ban has unexplained stress placement, for expected **bihfisiʔ.

107. San and Snl have unexplained u in the first syllable, although buhu would be the regular form in the Tahulandang dialect. Stress on the final syllable in Snl points to an earlier *ə in the penult.

108. The Ban form, where Koorders' <r> regularly represents Ban l [], was not known to informants.

109. Tal ɓalle rotten appears to be related but has unexplained replacement of the final syllable.

110. Stress on the penult in Rth, for expected **bía, is unexplained (see the end of section 2.3.23.).

111. The San item has undergone change of meaning, the meaning husked rice occurring in a borrowing boqasəʔ, Tal bohassa. This may represent a pre-PSan borrowing, although no cognates occur in Ban and Rth. It appears to be borrowed from the same source as San toqasəʔ, Rth tohas hard for which a PSan etymon *togas can be reconstructed and they may have been borrowed at the same time.

112. Niemann's form for Rth, <mamehe>, indicates an earlier *behey.

113. The meaning of the San word may result from contamination from ɓiliŋ (see *biliŋ).

114. This is presumably a base *ɓaba with fossilised infix *-in-, the infix occurring within a fossilised prefix ɓa- in Tal. Medial ɓ in Tal, for expected ɓ, is unexplained.

115. Cognates occur in the Minahasen languages, with PMin reconstruction *ɓesuh. However, the Rth form is unlikely to be a borrowing as the expected borrowed form would be **büsú. The change *ə > i in the first syllable is a common PSan innovation, cf. PPh *bəRas > PSan *bIras.

116. The Siaw form may be a borrowing from Ban, having medial ɓ instead of ɓ. However, the phonology of Siaw dialect is not sufficiently well known to enable a definite statement that this is irregular.

117. San bokaŋ cataract of the eye may be related.

118. The nasal in Tal is unexplained.

119. PSan *g does not directly reflect an earlier *R and the item is clearly a pre-PSan borrowing.

120. San bułaeŋ, Snl ɓuəeŋ gold, Rth bułaun coloured stones set in rings have unexplained differences in the final syllable. An interesting parallel occurs in South Sulawesi. Mills (1975b) reconstructs Proto-South-Sulawesi *bulawan gold with irregular Mak bułaeŋ alongside correct Mandar bulawanq, Sa'dan bulawan.
121. Snl buaw *bamboo and tubaw grow have unexplained final aw. They are more frequently used than regular *bu and *tu (Maryott, personal communication).

122. San also has buja *fungue, mould.

123. Although Snl la is regular intervocalically in malaw far and malow thirsty, its occurrence initially (instead of d) is irregular, resulting either from its retention after loss of prefix ma- or from the same morphophonemic process which produced lai? bad (see *d/a?ai?), discussed by Maryott (to appear).

124. San dareha? fish with diagonal stripes may be related.

125. Tal dari? a child must be a borrowing from San (for expected **dario). Loss of final glottal stop in Snl is unexplained.

126. The reduplicated form occurs in simple numbers, e.g. San darua *bale, Rth raruua *baley two houses. The unreduplicated form occurs in derived words, e.g. San, Rth karuane second, and in complex numbers, e.g. San dua mpulo, Rth rua mpulo twenty, San mapulo dua, Rth mapulo rua twelve. cf. *talu and *tatalu.

127. This form is possible a post-PSan innovation. San has *damun pig’s nest, reflecting PPh (Charles) *damun nest, wild animal’s lair, and Tal has rumunna nest of pig, rat, etc., reflecting PPh (Charles) *dumun. cf. PMin *dumun nest, lair.

128. Steller and Aebersold give Tal <da’ala> without a gloss under San dakela? so presumably the meaning is the same.

129. Maryott (to appear) derives the San word from a root lai? ugly but this is not given by Steller and Aebersold. In the same article he discusses the origin of the Snl form lai? (with irregular initial l). Although the correspondence San d-, Rth l- occurs elsewhere (see section 2.3.20.) the Ban word would be expected to agree with Rth in having initial l and it may result from borrowing or contamination from the San word.

130. Final i in Snl, for expected e, in unexplained.

131. The Snl word *ano lake, with irregular initial l, probably derives from *da?ano (Ca- (intensive) + dano pool, puddle) + *la?ano (assimilation of d to following l) + *la?ano (loss of l between identical vowels and vowel contraction) (Maryott, personal communication). *atu high chieftain, from *datu chief, probably had a similar origin.

132. Snl has a derivative deso? be stored, part of its productive morphological system, as well as deso? be stored. The latter is a product of the morphological system of an earlier time, i.e. before development of final ? (see section 2.3.21.), reflecting an earlier *deso + -an (see section 2.3.1.) and is thus convincing evidence that San, Snl deso? reflect an earlier *deso.

133. This form suggests an earlier *dakdak (see section 2.3.18.).

134. Following loss of *l in the environment *olu in Snl (see section 2.3.10.), o was replaced by a in some words. Thus *taluR > taura? egg, *talu > taw three. But a remained unchanged in *daluk > dau? thunder. No other items have been recorded, except lausa? (San dalusa?) to climb down, and on this limited evidence it is not possible to state that either process is irregular.
135. The Ban word has unexplained loss of initial syllable and loss of *d after n.

136. San đanduŋ, daraŋduŋ, Snl dâlânduŋ wall, partition may be from the same root. If so Tal darânduŋa wall must be a borrowing from San. Alternatively they may reflect PPh *zəŋzəŋ stand.

137. The Snl form is irregular, for expected **ma-]i]i?.

138. In all other recorded examples where Rth has r corresponding to San l, Ban has d (see section 2.3.20.). Thus Ban lîduŋ, for expected **dîduŋ may be a borrowing. San has a doublet lînduŋ (PPh *lîNduŋ) defence, shade.

139. Loss of the final consonant in Tal is unexplained. cf. Tal bakka from *bɔRat.

140. The irregularity of correspondences in this item is discussed in section 2.3.20.

141. Reflexes of *diŋiR and *katiri optionally lost the final consonant in Tal, although this appears to be irregular.

142. Prefix Ca- appears to be obligatory in Tal, Ban and Rth.

143. Retention of g after prefix Ca- in Tal, instead of expected h, is unexplained.

144. Vowel u in the first syllable in Rth is unexplained. The word was not known to informants.

145. Loss of *? in Snl is unexplained.

146. For Rth Niemann given <muhamis susu> to milk, suggesting an earlier meaning to squeeze, knead for that language.

147. Final ? in Rth is unexplained.

148. The reconstructions supposes that original *ia coalesced in e in PSSan, although such a change has not otherwise been recorded.

149. Shift of stress from i to following u (leaving i as a non-syllabic glide [y]), appears to be irregular in Ban, although it is regular in Rth (see section 2.3.23.). With i being non-syllabic in Rth it has lost the slight palatal onset reflecting previous *h. This had occurred by the time of Niemann who records <mujur>.

150. PSSan final *aw became Snl o if o occurred in the preceding syllable. This information became available too late for incorporation in section 2.3.6. The only examples known are roro < *Rodaw and oyo < *Royaw. Loss of initial r in the latter item is unexplained, although Reid (1971) gives Snl moro, maoro sharp from a root roro, where the same loss occurs in the prefixed form.

151. Tal has ô. This appears to be irregular, for expected **(i) au. Stress on the person marker, however, suggests that it became identified as part of the root so that previous *k, then occurring morpheme-medially, was replaced by ? rather than zero as it was initially (cf. i am i we, from earlier *i kami, where
stem-initial \( *k \) was completely lost). It is possible then that the absorption of formant \( i \) into the stem produced a two syllable stem, with stress on the penult, under which circumstance original final \( *au \), reinterpreted as \( *aw \), reduced to 0 (see section 2.3.6.). Thus \( *i + kau > *i'kau > *i'?aw > i'?o \). The form io? given by one informant probably results from metathesis.

152. San and Snl have d twice for expected r and i respectively. The word may be based on an original root \( *\text{dama}\text{R} \) (cf. PPh \( *\text{dama}\text{R} \text {resin, torch, light} \) with prefixation. If the prefix ended in ? this would have preserved the immediately following d. Maryott (personal communication) points out that stops are often preglottalised after vowels other than \( \theta \) in Manganitu although this is not indicated by Steller and Aebersold, e.g. kadera [ka?\text{dera}] chair, peda [pe?\text{da}] bush knife. Tahulandang dialect shows regular \( r \) intervocalically and the PSAn form can be reconstructed on the evidence of Tahulandang and Rth alone. The medial d in Tal is also unexplained. It may represent geminate d, which would indicate that the preceding \( a \) reflects earlier \( *\theta \).

153. Bikol gi:bu to make, do may be related (Zorc, personal communication).

154. Comparison with Ttb and Mdw shows that Rth is the language in which vowel change has occurred, rather than San and Ban.

155. The u in the second syllable of the Rth word possibly results from assimilation to the following vowel.

156. The reconstruction assumes that the syllable \( *l/nu \) was lost in Rth and was not a post-PSAn innovation.

157. Snl also has kame \text{we} (inclusive).

158. Penultimate stress preceding the paragoge is irregular in Ban.

159. Rth has kendoŋ which is probably a borrowing from Ttb, Tsw or Pon kendoŋ.

160. Occurrence of medial \( n \) in Rth probably results from assimilation of an earlier \( *\gamma \) to final \( n \). There may have been two original forms: \( *\text{ka}\gamma\text{eden}/? \) and \( *\gamma\text{eden}/? \), indicating past and non-past. Both San forms appear to contain irregularities, medial ? in ka?\text{gere} and initial a in a\text{gere}?

161. The Tahulandang and Rth words have undergone coalescence of the final two vowels, which has resulted in ultimate stress.

162. The Tal word has fossilised infix -\text{al}-'. Blust (1973:47) cites WBM k\text{e}vit touch someone to draw attention, Tiruray k\text{ebit} touch, call attention as apparently reflecting a form \( *\text{kob}\text{i} (\text{Ct}) \), not yet reconstructible for PAN.

163. San kə\text{mi}? silent (with lips closed); close the mouth may be cognate. Tal kk, for expected ?, is unexplained.

164. San kə\text{iŋ} shave off hair around ears and neck may be cognate.

165. Absence of final glottal stop in Ban is unexplained.
It is possible that *o and *u occurred interchangeably in these words in PSan as there is no consistency in the modern languages as to which have o and which have u. Such irregular correspondence is extremely rare apart from these items, all of which reflect PMP or PPh etyma containing intervocalic *w.

The form in the North Sangiric languages results either from unexplained loss of *o/ u or from a different tradition. Niemann gives Rth <kohi> for expected **koih. Loss of h resulted in a potential long vowel which could not occur adjacent to another vowel (see section 2.1.5.3.) and thus reduced to a single vowel, reinterpreted as y for modern Rth.

The paragoge drops preceding a genitive phrase in Tal. The free form thus could well be expected otoʔa.

The San and Rth forms occur with a possessive, e.g. San kuŋku I say, Rth kun tow people say, it is said.

For Rth Niemann gives both <lair> and <la:jir>, which indicate that loss of i is recent. It is on Niemann's evidence that possible *i is reconstructed.

In Ban *u has been replaced by o in reflexes of *lau and *taun.

As well as the PAN reconstruction many Philippine languages have lasuq penis. The expected PSan reflex of final *uq is o and it is probable that San, along with Rth, reflects final *k, this being a PSan innovation. On the semantic connection between 'penis' and 'lie' see Mills (1981, note 109).

The San form leau is unexplained, although expected leo occurs in northern dialects.

Snl has a in the final syllable for expected e. This seems to parallel the process in Tal (see section 2.3.7.) whereby final *eʔ was lost and the paragoge added after final *R.

The Tal form probably has a root labbiŋ to bury, although this was not checked with informants. The item given for Rth by Niemann suggests modern libiŋ but this was unknown to informants, Mal kubur now being used.

The Tal word was only recorded with prefix Cu-, although Adriani gives <lumage> to laugh. Doubling of l after the prefix results in shortening of g after a (from earlier *a), sequences of geminate consonants not occurring. The root is probably lagge.

Ban stress is unexplained, for expected **lukú?

This item was not checked with Rth informants. The Rth word is assumed not to be a borrowing from a Minahasan language as u in the first syllable would be irregular in a borrowing from a form laylay. An earlier RM *lalay would occur in PSan as *la:lay for which the correct Rth reflex would be lulay or luléy. Thus the Rth form is almost certainly a cognate of the forms in the Minahasan languages rather than a borrowing.

Stress in Ban and Rth is unexplained, for expected **lulú?. However, these South Sangiric forms may instead reflect an earlier *lulut, cf. Ttb, Tbl lulut bamboo in which to store rice, sago, etc.
180. Tal has leno smooth for expected **lanno and the form may not be directly related.

181. Snl dândiŋ derives from *da- + ländiŋ, with loss of *l between non-front vowels and subsequent loss of unstressed *a (see the end of section 2.3.10. and Maryott, to appear). Only the prefixed form has been recorded for Ban and the prefix may be fossilised.

182. Ban and Rth share unexplained change of *a to a, for expected **lisia.

183. The word mäsîŋ sour is given for Snl in Reid's list. This may be the prefixed form of a root läsîŋ. If so the expected form would be *mäsîŋ, with regular loss of *l and the preceding, rather than following, vowel (see the end of section 2.3.10.).


185. Loss of initial *l in Ban is unexplained (but see section 2.3.22.).

186. Adriani gives Tal <maloetanga> to shoot, which is a borrowing (for expected **lutamma).

187. Loss of first-syllable *a in Rth probably occurred with loss of *h, thereby preventing a three-vowel sequence, otherwise unrecorded for the language.

188. Final ə in San is unexplained.

189. Tal nipi may be a borrowing from San, with regular loss of final ʔ. The directly inherited form would be **nipissa.

190. With infix -in- root əna becomes Ban əmama, Rth əmana (N <gumaŋa>).

191. Final *n in Rth probably results from dissimilation.

192. San has another word, əuda? young, unripe, which, despite its meaning, is probably a borrowing, having irregular medial d and final ʔ.

193. All languages have nate or natey dead and mate or matey (will) die. Steller and Aebersold list the latter under a root a̱te for San. For Rth the form papaτey spot on body where one can easily be killed has been recorded, otherwise initial p has not been obtained for Ban and Rth. The words for die and dead derive from earlier *pumatay and *puminatay but these probably reduced to *matay and *natay respectively earlier than PSan (cf. Sneddon 1978:80).

194. The San word has undergone metathesis of p and k.

195. Final syllable *e has been lost in Rth, resulting in ultimate stress.

196. In all languages the word occurs with an attributive, e.g. San puŋ ụ kalu, Ban puŋ kayu tree or trunk of tree. It usually occurs with the name of a tree, e.g. Ban puŋ busa? banana tree, Rth pun akel sugar palm.

197. Ban pûŋgutu? stunted has unexplained əŋ and paragoge (for expected **pûŋku?) and is probably a borrowing.
198. San, Snl pəpuso, Tal pəppuso, Ban pompuso heart preserve an earlier meaning although the prefixes (the Ban form is not directly related to that in the North Sangiric languages) may be innovations.

199. The Tal item was recorded for expected **putuŋŋa.

200. Loss of medial y and coalescence of resulting identical vowels occurs irregularly in Snl (see section 2.3.11.). In this case the loss occurred optionally with the two resulting forms each taking one of the meanings of the earlier form.

201. Niemann's form, presumably representing ᵁbuná', was unknown to informants and is assumed to be obsolete. Its meaning is uncertain as Niemann lists it as both south and there (in the north).

202. Rth səbur, with irregular r, is assumed to be a borrowing from Ttb or Pon.

203. San has a instead of expected e in the second syllable, possibly resulting form dissimilation, the following syllable also having e. Ban has ŋg for expected ŋk and might be a borrowing from a North Sangiric language, although assimilation to the preceding g may be the factor. Absence of h in Rth, reflecting PSan *g, is unexplained.

204. The Ban item may be a borrowing (of lexeme or meaning) from a Minahasan language, cf. Tse, Tbl sakit evil spirit which causes sickness.

205. Addition of initial an to *saliR and *tana in San and Snl and to *suən in Snl is unexplained.

206. Although final ? in Rth usually reflects *t or *, forms such as PPh *siRup slurp and PMin *serop slurp, sip point to final *p in PSan, cf. replacement of final *p in PSan *alap by ? in Rth.

207. Cf. San, Snl ini this, ene that.

208. Snl has səbanəŋ place where one goes outside, which results from productive suffix addition to the stem səban to go outside. Replacement of final ə by n preceding a suffix is a present-day morphophonemic process (see section 2.1.7.); that this replacement does not occur in the word for 'east' shows that it does not result from present-day suffixation but from fossilisation of a suffix at an earlier stage (see note 42).

209. This form does not result from the addition of a suffix in the present-day languages but from fossilisation of a suffix at an earlier stage, ancestral both to Rth and the North Sangiric languages, i.e. PSan (see note 42).

210. Penultimate stress in Rth is unexplained (for expected **suhár).

211. The Tal form is given for expected **saʔola.

212. Tal sallata may ambiguously reflect PSan *salet and *səlat, i.e. if the rule whereby *e assimilated to a preceding a in Tal occurred after the rule whereby *ə was replaced by a then it could reflect either word (or a merger of the two). But if the rule order was the reverse then the Tal form would unambiguously reflect *səlat. No other evidence is available to enable the ordering of the two sound changes to be determined.
213. San has unexplained final ə instead of **həʔ.

214. Ban and Rth reflect PPh *sampay. However, Tal sampe is etymologically ambiguous as it could be cognate with San sampe to hang, reflecting PPh *sampay.

215. Occurrence of stress on the fossilised suffix in Rth is unexplained.

216. For Rth Niemann gives <manungkul> to rebuke, reprimand but this meaning was not known to informants.

217. The Rth form was unknown to informants. It represents a prefix and root, with loss of the first syllable of the root (see section 2.3.18.). The root may be sal, with prefix man-, or n̩sal, with prefix ma- (see section 2.3.19.).

218. Further comments on this particle are given under *su in section 1.4.2.

219. Loss of *i in Rth is unexplained.

220. San sikatəʔ brush, with irregular paragoge instead of t-reduction, is a borrowing.

221. San sipiʔ also means thin. This may be etymologically distinct, reflecting PPh *tipis thin.

222. There is also a cognate set San suhudaʔ, Snl surudaʔ, Tal sužuda to push, reflecting PNSan *suRud.

223. San suluʔ torch, firebrand is probably a later borrowing. It reflects PPh word-final *uq by uʔ rather than more common o (see sections 1.4.1.(b) and (d)) and has l between back vowels, rather than regular l (see section 2.3.10.).

224. The Tal (Salibabu) form occurs instead of expected **sužata, although, according to informants, sužata occurs in some dialects other than Salibabu.

225. The Tal form was recorded for expected **suʔatta.

226. San (Tar, Tab) ətaʔ, Snl taʔ, -ətaʔ to winnow are not directly related and may be borrowings, cf. Cotabato Manobo qetap, Sarangani Manobo qatap to winnow.

227. Charles reconstructs PPh *taqan (en)trap. The expected reflex of this would be **taʔan (see section 1.4.1.(h)), whereas PSan *taʔan could reflect an earlier *taqan, cf. PSan *tuʔid stump < PPh *tuqəD.

228. In the reflex of *təu, *a has been replaced by o before u in Rth. The same assimilative process has occurred in the Ban reflex of *taumata. In the Rth reflexes of *taumata and *təu unstressed *au has reduced to o, possibly via *ou.

229. Tal tarau cockfight is probably related.

230. Rth has unexplained i in the final syllable.

231. Tal has unexplained loss of *am. Although final ʔ in San could be a recent development (see section 2.3.21.) this would not be the case in Ban unless the word is borrowed from or influenced by the San form. Loss of PPh final *q was usual in PSan (see section 1.4.1.(b)) and Rth probably correctly reflects that loss.
232. Ban stress is unexplained (for expected **tatulú, **tulú). The reduplicated form occurs in simple numbers, e.g. San tatelu baie, Rth tatulú baie three houses. The simple form occurs in derived words, e.g. San katelu, Rth katulune third, and in complex numbers, e.g. San mapulo telu, Rth mapulo tulú thirteen; San telu mpulo, Rth tulú mpulo thirty.

233. San has a doublet with medial k: teŋkohə? to knock, tap.

234. Ttb, Tbl, Tse tawa tasteless, flavourless may be a borrowing from Sangiric languages as the direct reflex of the PPh form would be **tabaŋ in the Minahasan languages whereas (according to Charles 1974:458) PPh *a before a consonant cluster was replaced by *ə in Sangir (the cluster subsequently being lost).

235. Siaw o in the second syllable is unexplained. On the correspondence San ø, Rth i cf. *tə/iŋaR.

236. On the correspondence San ø, Rth i cf. *tə/intaləŋ. San tŋkahə? to put up (an umbrella) may be cognate with the Rth form but the meaning suggests not.

237. Lack of final glottal stop in Ban is unexplained.

238. As stress falls on e in Rth, a in the other languages, a final vowel sequence is reconstructed for PSan, not a diphthong. This being so the change of *a to e in Rth is unexplained.

239. San tino to warm a sick person (with hot water, sand or ash) may be related.

240. The Ban and Rth forms probably reflect a PSSan innovation (see further comments on this item in section 2.4.). Shift of stress to the final syllable in Rth, following loss of *h, resulted in *i becoming non-syllabic, reinterpreted as y; this prevented the occurrence of a three-vowel sequence, not otherwise recorded for the language.

241. San tŋkoda? piece, bit may be related.

242. The word is not directly inherited from PPh *təRas hard (wood), but because it occurs in all the Sangiric languages it must have been borrowed prior to PSan. A direct reflex of the PPh form exists in San and Rth (see *tIRas).

243. Steller and Aebersold give Tal <manuntunga> under the San word but without a gloss. Tal (informants and Adriani) tuntuna to throw may be related.

244. Rth has unexplained e for expected i.
The following abbreviations are used:

- **BijdrTLV** Bijdragen tot de Taal-, Land- en Volkenkunde
- **IJAL** International Journal of American Linguistics
- **OL** Oceanic Linguistics
- **PL** Pacific Linguistics
- **SPL** Studies in Philippine Linguistics
- **TTLV** Tijdschrift voor Indische Taal-, Land- en Volkenkunde
- **WPLUH** Working Papers in Linguistics, University of Hawaii

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