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PROTO-SANGIRIC AND THE SANGIRIC LANGUAGES

by

J.N. Sneddon



Department of Linguistics

Research School of Pacific Studies

THE AUSTRALIAN NATIONAL UNIVERSITY

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PREFACE

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.

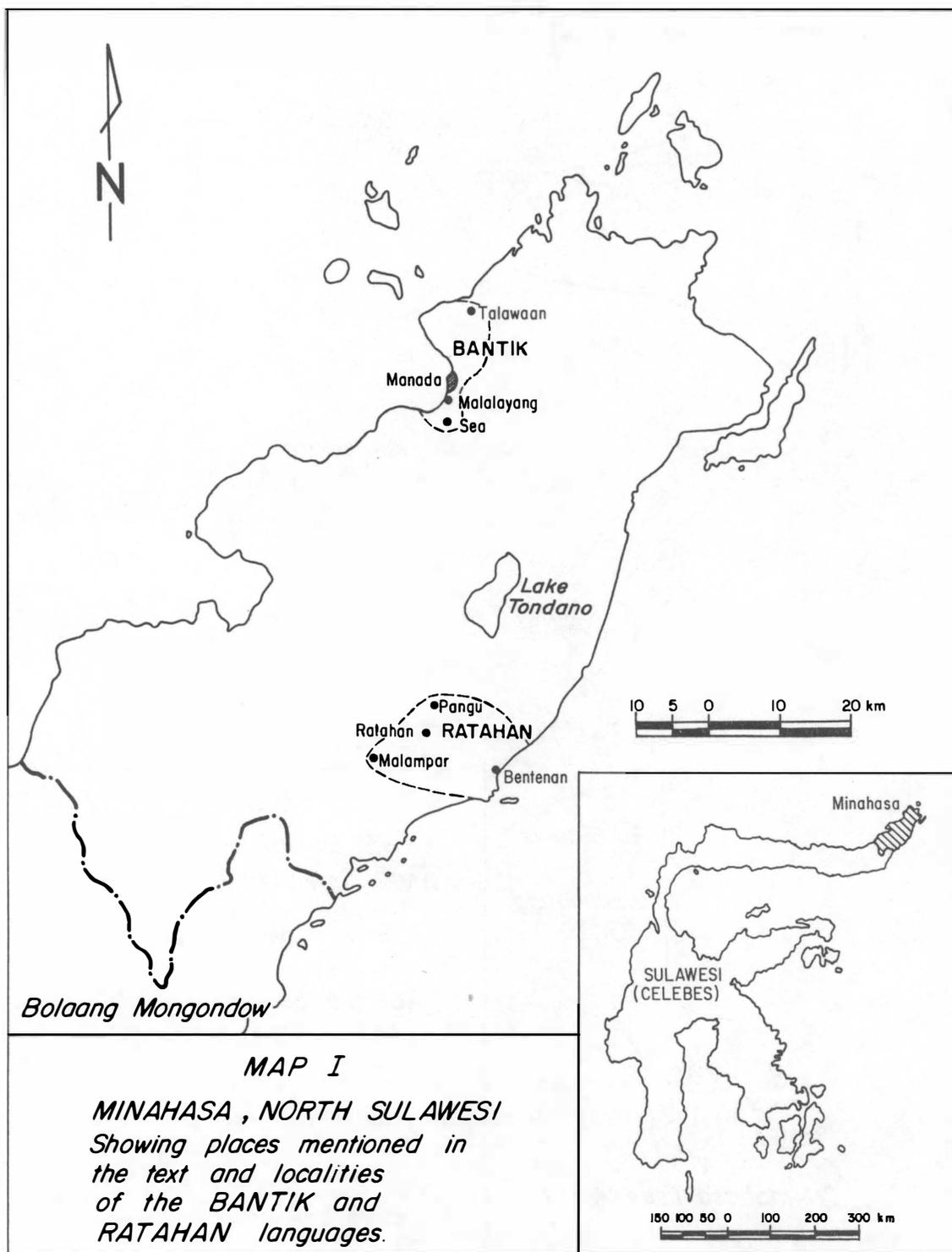
While in North Sulawesi I received generous assistance from many people. Dra Martha Salea-Warouw and Mr John Soucy provided invaluable help in locating informants. Of the many people who contributed information I especially acknowledge Drs Raymond Tingginehe, Drs Lexie Wangke, Mr Jack Gontha, Mr Hendrik Sualang and Mr Yacob Papalapu. I also express my deep appreciation to Capt. Ben Agu, who not only acted as a tireless and enthusiastic informant but who, along with his family, offered hospitality and friendship throughout my stay in Manado.

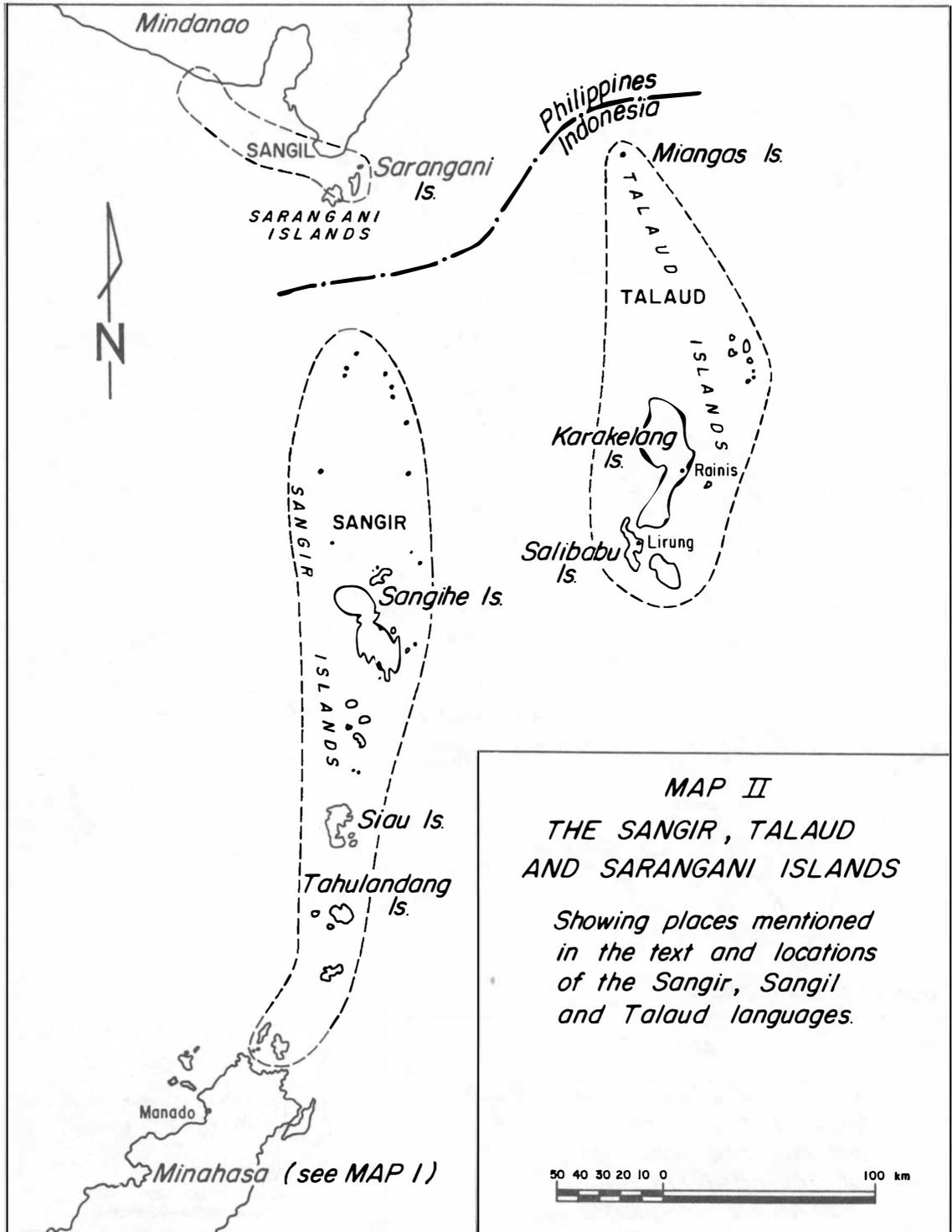
All information on Sangil is from Kenneth Maryott, obtained either from publications or in private communications. I gratefully acknowledge his patience and thoroughness in answering many questions on the language.

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

A	Adriani (1911)	Tah	Tahulandang
Ban	Bantik	Tal	Talaud
Bug	Buginese	Tam	Tamako
C	any consonant	Tar	Taruna
K	Koorders (1898)	Tbl	Tombulu
Mak	Makassarese	Tdn	Tondano
Mal	Malay	Tse	Tonsea
Mdw	Mongondow	Tsw	Tonsawang
N	Niemann (1869-70)	Ttb	Tontemboan
PAN	Proto-Austronesian	V	any vowel
PMin	Proto-Minahasan	WBM	Western Bukidnon Manobo
PMP	Proto-Malayo-Polynesian	<x>	x is an orthographic device
PNSan	Proto-North-Sangiric	x → y	x becomes y (synchronic change)
Pon	Ponosakan	x > y	x becomes y (diachronic change)
PPh	Proto-Philippine	x < y	x derives from y (diachronic change)
PSan	Proto-Sangiric	[x]	x is a phone
PSSan	Proto-South-Sangiric	*x	x is a reconstruction
RM	repeated monosyllable	**x	x does not occur
Rth	Ratahan	(x)	occurrence of segment x is uncertain
S	Steller (1913)	x/y	a segment occurs but no decision can be made as to whether it is x or y
San	Sangir	x ~ y	x and y alternate freely
Sas	Sasahara		
Snl	Sangil		
Tab	Tabukang		





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 inter-relationships. 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 [səŋihə?], where Maryott's final <é> represents [ə?].

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 (Snl) 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 Snl 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 [səŋirə?]. For the present work the better known, and less confusing, name Sangil is used.³

Information on Snl 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 Talaut

was used but more recently the name Talaud has become general, deriving from the San word [ta|audə?].

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 ŋ 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 lexico-statistical 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 Benteenan, 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.⁴

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 <ə> 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:

PPh	PSan	
*həmay	*əmay	<i>rice</i>
*huRas	*uRas	<i>to wash</i>
*bihaR	*biaR	<i>alive</i>
*tahəp	*taəp	<i>to winnow</i>
*tu:mah	*tuma	<i>louse</i>
*qu:luh	*ulu	<i>upstream</i>

(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:

PPh	PSan	
*taqun	*taun	<i>year</i>
*puqun	*puən	<i>trunk</i>
*bəkaq	*bəka	<i>split</i>
*tanəq	*tana	<i>earth</i>

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):

PPh	PSan	
*lu(N)tuq	*lutuʔ	<i>to cook</i>
*kakaq	*kakaʔ	<i>older sibling</i>
*liqəR	*leReʔ	<i>neck</i> ⁵

(c) Replacement of *ə in final syllables

When *ə 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.

PPh	PSan	
*xənəm	*ənum	<i>six</i>
*qitəm	*itum	<i>black</i>
*qatəp	*atup	<i>roof</i>
*Dakəp	*dakup	<i>to catch</i>

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

PPh	PSan	
*bələs	*bəlas	<i>to borrow</i>
*takəp	*takap	<i>to cover</i>
*Dakəl	*dakel	<i>many</i>
*bəŋəl	*beŋel	<i>deaf</i>
*ikət	*ikit	<i>to tie</i>
*quləj	*ulid	<i>worm</i>

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

PPh	PSan	
*kaʔən	*kaən	<i>to eat</i>
*tuqən	*tuən	<i>to put on fire</i>
*tahəp	*taəp	<i>to winnow</i>

In other words the change occurred in this environment also:⁶

PPh	PSan	
*tuqəD	*tuid	<i>stump</i>
*bihəd	*biad	<i>fish roe</i>

(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):⁷

PPh	PSan	
*uliq	*ule	<i>to return</i>
*piliq	*pile	<i>to choose</i>
*bunuq	*buno	<i>to kill</i>
*uDuuq	*udo	<i>magic spell</i>

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

PPh	PSan	
*tapiq	*tapiʔ	<i>bathing cloth</i>
*lu(N)tuq	*lutuʔ	<i>to cook</i>

(e) *a dissimilation

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

PPh	PSan	
*Zalan	*dalen	<i>road</i>
*habaRat	*baRet	<i>west wind</i>
*palaj	*paled	<i>palm (of hand)</i>
	*tages	<i>low tide</i>

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-Minahasan *tagas *to ebb (of tide)*.

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

PPh	PSan	
*baNtal	*bantal	<i>bundle</i>
*Ra(m)pas	*Rampas	<i>to rob</i>

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

PPh	PSan	
*salar	*saleR	<i>nest</i>

No other PSan reflexes of PPh words ending in *R and with *a in each of the last two syllables have been identified.⁸ 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 lagadə?, Ban lágada?, Rth lahar *boar* is one such case. The word occurs in all the Minahasan languages and is reconstructed as *lagad for Proto-Minahasan. The item in the Sangiric languages is for the time being assumed to be a post-PSan borrowing. San balarə? *to divide*, Snl badə? *to pay* (PPh *bayad *pay*) are probably borrowings (San having irregular r instead of d), alongside San baehə? *to pay*, cf. Proto-Minahasan *baer *to pay*.

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

PPh	PSan	
*alap	*alap	<i>to get, fetch</i>
*tasak	*tasak	<i>ripe</i>
*[d]aŋaw	*daŋaw	<i>span</i>
*payaŋ	*payaŋ	<i>thigh</i>

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 *-ən, marking goal, merged in PSan into one morpheme with three variants: *-en occurring after closed syllables containing *a, *-ən occurring after final mid and low vowels and *-an occurring elsewhere, e.g.:

*suanen *will be planted* (*suan *to plant*)
 *babaen *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:

PPh	PSan	
*dəmdəm	*dəndum	<i>dark</i>
*paŋpaŋ	*pəmpaŋ	<i>bank</i>
*bunbun	*bumbun	<i>heap</i>

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

PPh	PSan	
*dapdap	*dədap	<i>tree sp.</i>
*bukbuk	*bəbuk	<i>wood borer</i>
*tadtad	*tətad	<i>to chop</i>

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

PPh	PSan	
*bulbul	*bəbul	<i>to pluck feathers</i>
*basbas	*bəbas	<i>to cut off</i>
*kiskis	*kəkis	<i>to scrape</i>

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:⁹

PPh	PSan	
*ki(q)kiq	*kiki	<i>to bite</i>
*piqpiq	*pepe	<i>to urinate</i>

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:

PPh	PSan	
*bunbun	*bumbun	<i>heap</i>
*TuŋTuŋ	*tuntuŋ	<i>noise</i>
*paŋpaŋ	*pəmpaŋ	<i>bank</i>
*diŋdiŋ	*dəndiŋ	<i>wall</i>

(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):

PPh	PSan	
*Raqaŋ	*Raən	<i>light</i>
*puqun	*puən	<i>trunk</i>
*pasaqaŋ	*pasaən	<i>to carry on shoulder</i>

(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*; *baline *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).*

*ədu *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.).

*əlo *tears.* This may reflect PPh **lu:həq* via a metathesised form **həluq*. If so the metathesis is unique to the Sangiric group.

*idun *nose.* This is from PPh **qijuŋ* but with phonological change, final **ŋ* being replaced by **n*.

*utak *hair.* This reflects PPh **qutak brain* but has undergone semantic change.

*bəbəlaw *afternoon.* Compare PSan **baba below* and **əlaw day; sun.*

*bəlīs *rotten.*

*bənāR *wide, broad.*

*bināba *cloud.*

*busak *banana.* This is possibly a reflex of PPh **buswak blossom forth* but has undergone semantic change, cf. also Timugon Murut *busak flower*.

*dəndipaR *rainbow.* This is probably related to PAN *(dD)ipaR *cross (river)*; PPh **i(N)paR other side, beyond* but shows phonological and semantic differences.

*deno *to bath.*

*dou *thirst.*

*gəlīd *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.

*kaRibu *to weave.* This may be related to Bikol *gí:bu to make, do*, although the prefix and specialisation of meaning are unique.

*kinas *fish.*

*lae/id *foot.*

- *ləgay *to laugh*. This is related to PPh *gəli() *laugh, tickle* but has undergone phonological changes, including metathesis of *g and *l.
- *loso *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:si? *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 ɓa|e, Ban su baley, Rth su ɓaley *at/to the house*. The corresponding dative marker, for common names, personal names and pronouns, is *si, e.g. San, Ban si sie, Rth si se *to him*. si is common in Philippine languages as a marker of personal nouns and su 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 *tarihtih *light rain, drizzle* but has undergone semantic change.
- *təlak *to fly*.
- *təŋad *right, correct*.
- *tiap *to count*. This is related to Proto-Minahasan *iap, PPh *həyap *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.¹¹ 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.

PMin *əɫəp *to drink*, PSan *əɫup *to swallow*.

PMin *balina, PSan *baline *other*.

PMin *batuna, PSan *batune *seed (of fruit)*.

PMin, PSan *baya *to permit, allow*.

PMin *bəndu *hard work; distress*, PSan *bəndu (San *trouble, difficulty*, Rth *to sob*).

PMin *keʔkeʔ *to laugh*, PSan *kekeʔ (San *to call out; laugh*, Rth *to quarrel*).

PMin *kətəh, PSan *kətɪR *hard*.

PMin *ləheʔ, PSan *ləReʔ *neck*. This reflects PPh *liqəR *neck* with metathesis of the last two consonants being a shared innovation.

PMin, PSan *lias *to urinate*.

PMin, PSan *pənad *buttocks*.

PMin, PSan *pəndam *to feel*.

PMin, PSan *pəsut *to press, squeeze*.

PMin *rəŋis, PSan *Rəŋis *to burn*.

PMin *seŋkot, PSan *seŋgot *to sail*.

PMin, PSan *səkol *cough*.

PMin *səɫət, PSan *səɫet *to insert between two things*.

PMin *təkəl, PSan *tikil *to sleep*.

PMin *təpəh, PSan *təpiR *mat*.

PMin, PSan *tumpa *to descend, alight*.

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 l, 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 *utukə?* *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?* *hair*. This has cognates in the other Sangiric languages from which PSan **utak hair* can be reconstructed (from PPh **qutak brain*, with change of meaning).

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

Snl *ɸilaŋ to count* is related to Dibabawon, Western Bukidnon Manobo, Mamanwa *bilan*. 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 *qesəg*. 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.¹³

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?kos head* are the probably source for the Rth word.

Rth *ɸar to pay* appears to be a borrowing from Ttb *waer*.¹⁴ San *baehə?* *to pay* represents the directly inherited form and is cognate with the Ttb word.

Rth *səbur to sow, scatter* is probably from Ttb or Pon *sawur*. San *səbuə?* represents the inherited form from PSan.

Rth untó? *to live; stop* has no known Sangiric cognates and is probably from Tth ento?.

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 iraŋ *shy*.

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

Ban léoso?, 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 kalipopo *butterfly* has no known cognates in Sangiric languages and Tbl, Tdn kalipo?po? are the probable source for the Ban form.

Ban lampada? *wide* reflects earlier *ləmpad and must be a borrowing from Tbl or Tse in which the present-day forms are ləmpaž and dəmpad 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 kayoŋ *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 banáŋ, Rth bunáŋ *debt* may have been borrowed from forms in adjacent Minahasan languages reflecting PMin *bənəŋ, either before or after Ban and Rth replaced *ə by other vowels.

Ban pati?, 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, over-caution 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 *baRi *rotten* rests on the evidence of San, Ban bahi and PPh *baRiw *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 dədu|əʔ, Ban duduluʔ *to pull out* is reconstructed PSan *dədul. Although no cognates are known the form suggests a possible Pre-PSan etymon *duldul,¹⁸ cf. the pattern San bəbul|əʔ, Ban bubuluʔ *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 lakuʔ *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 eʔe *that*, southern San dialects, Ban lotaʔ *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 innovation during the short period of their exclusively shared 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 *suka*⁷, 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.²⁰

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 P_{San} 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. P_{San} phonemes and their distribution within the word are given.

The evidence of the reconstructions and the development of P_{San} 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.²¹ Manganitu has the following segmental phonemes:

p	t	k	ʔ
b	d	g	
ɸ	r	ɣ	
m	n	ŋ	
	s		h
	l	ɭ	
i		u	
e	ə	o	
	a		

When occurring after ə, nasals and l are lengthened: əlo [ə'l:o] *day*, ənuŋ [ə'n:uŋ] *six*. All other consonants which can occur after ə are preglottalised except h: əbuʔ [ə'buʔ] *to pull out*, əsa [ə'sa] *one*. Since these phenomena are predictable they are not indicated in the phonemic script.

ɸ and ɣ are bilabial and velar fricatives respectively and r is an alveolar flap or trill.

l is a voiced alveolar lateral while ɭ is a retroflexed lateral flap.²²

All consonants except ɸ, ɣ, ɭ and ʔ 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 əʔ, in which case it falls on the third-last syllable, e.g. ɭ'kudəʔ *back* (see section 2.1.6. for a discussion of final syllable əʔ).

2.1.2. Sangil phonology

2.1.2.1. Segmental phonemes

Sangil (Sarangani dialect) has the following segmental phonemes:²³

p	t	k	ʔ
b	d	g	
ɸ		h	
m	n	ŋ	
	s		
	r		
	l	ɭ	
w	y		
i		u	
e	ə	o	
	a		

The phonetic natures of l and ɭ are as described for San (see section 2.1.1.1.).

Nasals and l are lengthened after ə, as in San, but other consonants are not preglottalised in this position as they are in San.

All consonants except h, w, y and ʔ occur word-initially although ɭ 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. kápu *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 ə and the final syllable contains some other vowel, in which case stress falls on the final syllable, e.g. ɓátu *stone*, kégəŋ *dried* but tǎáʔ *fly*, kəŋkúŋ *fist*.

The final syllable əʔ does not take stress and does not influence stress placement, e.g. líkudəʔ *back*, səkóəʔ *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:

p	t	k	ʔ
b	d	g	
ɓ	r	h	
m	n	ŋ	
	s		
	ʒ		
	l	ɭ	
i		u	
e	ə	o	
	a		

ʒ is a voiced retroflexed fricative.²⁴

l and ɭ 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, ɓ, r and h respectively, are in free variation word-initially, at least in some words, e.g. ɓɓone ~ ɓɓone *mountain*, doŋŋa ~ roŋŋa *leaf*, gati ~ hati *face*. However, apparent contrast has been recorded word-initially, e.g. rurukka (*is*) *sailing* and durukka *sail!* Usually only the continuants occur intervocalically but the stops occur after some prefixes (see example below). For the present work stops and corresponding continuants are treated as phonemically separate.

In some dialects ɓ 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. maballasa *will borrow* and mabballasa *is borrowing*, allaja *slave* and alajja *to swim*.

Adriani (1911) does not refer to gemination except in reference to its occurrence stem-initially following prefix Cu-, e.g. Cu + daḷanna *to walk* → duddaḷanna *is walking*. Steller (1913) points out that consonants are doubled following a where this is a reflex of a previous *ə. 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*, laḡitta *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. allaja *slave*, annuma *six*, or is a nasal-stop cluster, e.g. sandaka *to lean*, seḡgota *to sail* or is ž, e.g. bažata *west*, užasa *to wash*.²⁵

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

p	t	k	ʔ
b	d	g	
m	n	ŋ	
	s		h
w	y		
i		u	
e	ə	o	
	a		

b, d and g are realised as voiced stops in all environments.

l is a retroflexed lateral flap [ɭ] 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*, makapála? *thick*. In a large number of words it falls on the final syllable, this being synchronically unpredictable: mahemé *full*, mabahá? *heavy*, lumampán *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 saháŋ *ant*, mamúku (stem búku) *to kneel* and mamukú (stem pukú) *to bend*, pahígi *well* and pahigí *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:

p	t	k	ʔ
b	d	g	
ɸ	r	h	
m	n	ŋ	
	s		(-)
	l		
w	y		
i		u	
e	ə	o	
	a		

Phoneme ɸ has the following allophones: voiceless bilabial fricative [ɸ] occurs word-finally and before a consonant: kukáɸ [kukáɸ] *wing*, kukáɸne [kukáɸne] *its wing*. A voiced bilabial or labiovelar continuant [ɸ ~ v] occurs elsewhere, being to some degree influenced by adjacent vowels. This set of allophones will henceforth be represented by [ɸ]: ɸáley [ɸáleⁱ] *house*, líɸu [líɸu] *to go around*.

Phoneme h has the following allophones: voiceless velar fricative [x] occurs finally: ɸalukáh [ɸalukáh] *chaff*. Voiceless glottal fricative [h] occurs elsewhere: hahasen [hasásen] *sand*.

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. ndipa *rainbow*, indak *to breathe*, ŋgipu *soot*, munga? *to decrease*. Like h, r (trilled or flapped vibrant [r̄ ~ r̄]) occurs initially, intervocalically and finally, e.g. rua *two*, arey *chin*, lar *foot*.

The situation with *b* and *ɸ* is basically the same, *b* occurring after *m*, e.g. *mbulu feather*, *timbow to float*, and *ɸ* occurring elsewhere, as exemplified above. However, in a few words *b* and *ɸ* occur in free variation intervocalically, 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 *ɸ* mentioned above, it has been decided to represent them separately in Rth, at least for the purposes of this comparative study.²⁷ 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 *u* velar constriction results in a faint velar fricative quality [x]. Preceding *i* palatal constriction results in a faint palatal fricative quality [ç] 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?* [ā.mu? ~ hāmu?] *root*, *ṭtik* [ī.tík ~ hītík] *swell*. This phoneme occurs medially only in reduplicated words: *ūmitiṭtik* [hūmitihītík] *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: *káyu wood*, *háley house*. In a large number of words stress falls on the final syllable: *sukól cough*, *tiník mosquito*. Stress contrast is shown by the following pairs: *mundúpa to put* and *mundupá to measure a span*, *níu winnowing pan* and *niú 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 → *sumuán 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,²⁸ e.g. [manú:k] *manúuk to draw water*, [rá:mi] *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:bí] *kaabí 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 ɲ and ʔ. This syllable is əʔ in San and Snl and Vʔ 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 *úhasəʔ*, Snl *úrasəʔ*, Ban *úhasaʔ 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 Vʔ is often the final syllable of the root morpheme, e.g. *kinakaʔ 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 *úhasaʔ*, with stress on the antepenultimate syllable, and *kinakaʔ*, 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.²⁹

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 *uhaseɲ*, Snl *uraseɲ*, Tal *užasanna 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. *ha|əʔ work + -e → ha|əʔe his work*. Loss of the paragoge is synchronically unpredictable in Snl when suffix *-e his, its* occurs, e.g. *bagəʔ strength + -e → bagəʔe its strength* but *ɬadəʔ payment + -e → ɬadə 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 [úhasəʔ].

In Snl the diachronic loss of *| 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 *səkoəʔ cough* (from earlier *səkoləʔ). From the representation *səko* the surface form *səkoəʔ* 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 ŋ. This frequently reflects a previous *m or *n (see section 2.3.5.).

When a suffix is added in Ban, ŋ is replaced by the original nasal, e.g. *inuŋ to drink + -an → inumaŋ will be drunk*, *suaŋ to plant + -eŋ → suaneŋ will be planted*.

In San ŋ generally remains when a suffix is added. Thus *undaŋ to treat medically* (PSan *undam) + *-eŋ → undaŋeŋ will be treated*, *suəŋ to carry on the head* (PSan *suən) + *-aŋ → suəŋaŋ will be carried on the head*.³¹

In Snl final ŋ is replaced by n before a suffix irrespective of what the nasal was in PSan. Thus *inuŋ to drink* (PSan *inum) + *-aŋ → inunaŋ will be drunk*, *suaŋ to plant* (PSan *suan) + *-eŋ → suaneŋ will be planted*, *tubaŋ to fell* (PSan *tubaŋ) + *-eŋ → tubaneŋ 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 ŋ in final position being predictable. However, for this comparative study ŋ 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

p	t	k	ʔ
b	d	g	
m	n	ŋ	
	s		R
	l		
w	y		
i		u	
e	ə	o	
	a		

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 [ɭ] (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	<i>roof</i>	*ikit	<i>to tie</i>
*ebeR	<i>saliva</i>	*olay	<i>spadix</i>
*əRab	<i>to sharpen</i>	*ulid	<i>worm</i>

All vowels occurred in medial position:

*tali	<i>rope</i>	*lima	<i>five</i>
*beŋel	<i>deaf</i>	*tolay	<i>tail</i>
*pəku	<i>to bend</i>	*kumi	<i>moustache</i>

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

*lima	<i>five</i>	*buno	<i>to kill</i>
*pile	<i>to choose</i>	*pitu	<i>seven</i>
*tali	<i>rope</i>		

Two vowels could occur in sequence. The only clusters reconstructed within the morpheme involving *ə are *aə, *iə and *uə. Sequences of two identical vowels did not occur. Examples of vowel sequences:

*polaen	<i>wrist</i>	*sai	<i>who</i>
*kaən	<i>food</i>	*tuadi	<i>younger sibling</i>
*taun	<i>year</i>	*luəm	<i>overcast</i>
*sie	<i>he</i>	*loaŋ	<i>wide</i>
*Riud	<i>to pull</i>	*tuid	<i>stump</i>

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

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

*pait	<i>bitter</i>	*mata	<i>eye</i>
*baRi	<i>rotten</i>	*niuR	<i>coconut</i>
*tau	<i>person</i>	*ŋuda	<i>young</i>
*dalen	<i>road</i>	*saŋu	<i>steam</i>
*kayu	<i>wood</i>	*ləgay	<i>to laugh</i>
*gudaŋ	<i>old</i>	*Ramut	<i>root</i>

All consonants occurred intervocalically except *ʔ:

*lipan	<i>centipede</i>	*tanak	<i>to live</i>
*səbu	<i>froth</i>	*saŋu	<i>steam</i>
*batu	<i>stone</i>	*tasik	<i>sea</i>
*gudaŋ	<i>old</i>	*təlak	<i>to fly</i>
*səkol	<i>cough</i>	*bəRu	<i>new</i>
*tages	<i>reef</i>	*kayu	<i>wood</i>
*lima	<i>five</i>	*awak	<i>body</i>

All consonants occurred finally:

*əluḡ	<i>to swallow</i>	*ləbiŋ	<i>grave</i>
*səsub	<i>steam</i>	*bitis	<i>calf</i>
*bəRat	<i>heavy</i>	*sadeR	<i>to lean against</i>
*likud	<i>back</i>	*kəpal	<i>thick</i>
*manuk	<i>bird</i>	*ləgay	<i>to laugh</i>
*bulag	<i>blind</i>	*talaw	<i>cowardly</i>
*inum	<i>to drink</i>	*ləReʔ	<i>neck</i>
*luan	<i>to exchange</i>		

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

*kumpas	<i>tree sp.</i>	*lənsik	<i>to bounce</i>
*bəmbulu	<i>feather</i>	*kəŋkum	<i>fistful</i>
*pəntas	<i>to harvest</i>	*tiŋgum	<i>riddle</i>
*dəndum	<i>dark</i>		

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:

PSan	San	Snl	Tal	Ban	Rth	
*kaən	kaəŋ	kaŋ	anna	kaŋ	kan	<i>to eat</i> ³⁴
*luəm	luəŋ	-	lumma	luŋ	lum	<i>shade</i>

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 a:, e: and o: respectively. But Steller and Aebersold give forms with ə, rather than lengthening of the preceding vowel. Thus Adriani (1893:157) pəndareno:ŋ, Steller and Aebersold pəndarenoəŋ *bathing place*, from deno *to bath*.

In the other languages the same reduction occurs between morphemes as occurred diachronically within morphemes; suffix *-ən has reduced to -ŋ in Snl and Ban, -n in Rth and -n(nə) 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*, lebáŋ *licked*, cf. San lebaəŋ

Tal tumpa *to descend*, tatumpanna *place of descent*

Ban baká *to split*, bakáŋ *will be split*
tudo *to leak*, tudóŋ *leaking*

Rth buká *to split*, bukáŋ *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.

PSan	Snl (Sarangani)	Snl (Mindanao)	Ban	Rth	
*əlup	luʔ	əlʔ	luʔ	lup	<i>to swallow</i>
*maɣəlup	maɣəluʔ	maɣəlʔ	maɣulúʔ	maɣulúp	<i>is swallowing</i>

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 əndaʊ *here you are*, Ban ampahaʔ *underlayer* (PSan *əmpaR), Rth ʊŋgóŋ *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:

PSan	Ban	Rth	
*bəkis	bikisiʔ	ʔikís	<i>to bind</i>
*səlet	seléʔ	suléʔ	<i>to insert</i>
*bəka	baká	ʔuká	<i>to split</i>
*ləno	lonó	lunó	<i>smooth</i>
*bəndu	bundú	ʔundú	<i>difficult</i>

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:

PSan	Pre-Rth	Rth	
*səRam	*saham	saam	<i>ant</i>
*bəRat	*bahaʔ	baaʔ	<i>heavy</i>

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 **buhaʔ, and finally **buaʔ. 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 *a. 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:

PSan	Ban	Rth	
*taRendum	tahundún	taandúm	<i>to remember</i>
*kaRəbi	kahibí	kaaíbí	<i>yesterday</i>

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, *Rendum became Rth ūndúm *to remember* (see *endum 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:

PSan	San	Tal	
*əpat	əpaʔ	appata	<i>four</i>
*bəli	bəli	balli	<i>to buy</i>
*dəndum	dəndun	danduma	<i>dark</i>

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 ʔ (see section 2.3.3.). In the following illustrations Ban cognates are included for comparison:

PSan	San	Snl	Tal	Ban	
*Ratus	hasuʔ	rasuʔ	ʒasutta	hátsusuʔ	<i>hundred</i>
*bitis	bisiʔ	bisiʔ	bisitta	bítisiʔ	<i>calf of leg</i>

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.

PSan	San	Snl	Tal	Ban	
*taŋis	saŋi?	saŋi?	saŋitta	táŋisi?	<i>to cry</i>
*tages	sage?	sahe?	sahatta	tágese?	<i>reef</i>

Metathesis did not always occur in San, Snl and Tal in the environment described above. For example, San, Snl tapisə? *to sieve*, San togasə?, Snl tohasə?, Tal tohasa *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 togasə? 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 tapisə? 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 pre-nasalised:

PSan	San	Ban	Rth	
*pəntas	pənsa?	pantasa?	puntás	<i>to harvest</i>

The above example is the only one recorded but it is sufficient to allow items such as San balontasə? *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 tətəsə? *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 *tətəs 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:

PSan	San	Snl	Ban	
*tasik	sasi?	sasi?	tasi?	<i>sea</i>
*tasak	sasa?	sasa?	tasa?	<i>ripe</i>
*talisy	sa ise	sa isy	talisey	<i>tree sp.</i>

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 sub-grouping. 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 sub-grouping 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.:

PSan	Tal	
*uRas	uʒasa	<i>to wash</i>
*inum	inumma	<i>to drink</i>
*laŋit	laŋitta	<i>sky</i>
*utak	utaʔa	<i>hair</i>

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 əʔ, i.e. schwa followed by glottal stop:

PSan	San	Snl	
*uRas	uhasəʔ	urasəʔ	<i>to wash</i>
*likud	likudəʔ	likudəʔ	<i>back</i>

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

PSan	Ban	
*uRas	úhasaʔ	<i>to wash</i>
*didiR	dídihiʔ	<i>yellow</i>
*səkol	sokoloʔ	<i>to cough</i>

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 ʔ, unless it was a nasal or itself ʔ. Replacement of final consonants by ʔ is hereafter called final consonant reduction.³⁸

PSan	San, Snl, Ban	Tal	
*atup	atu?	atuppa	<i>roof</i>
*takut	taku?	ta?utta	<i>afraid</i>
*manuk	manu?	manu?a	<i>bird</i>

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 kínsa?, San/Snl kina? *fish*; Ban ápuhu?, San/Snl apu? *lime*; Ban béŋkolo?, San beŋko? *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 sa!uhə? *drain, channel*³⁹; disi? and disihə? *to stand firm*; bæhi? and bæhisə? *line, stripe*; lintu? *to descend* and lintuhə? *degree of descent*; poŋgo? and poŋgo!ə?. 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 lebohə? *young coconut*.

A very few examples have been noted where San and Snl disagree in the occurrence or not of the paragoge: San ma-ririhe?, Snl ma-didi? *yellow* (the Snl form may be irregular – see the note to *didiR in the wordlist, section 3.2.); San hunu? *fire*, Snl lu-runusə? *bonfire*; San bisu!ə?, 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, *kəmis, *kinas, *nipis) and one case of doublets (see *bəRis).⁴⁰ 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 səda? *to set (of sun)*, from PSan *sədap, and sədapə? *delicious*, from Mal sədap. San (Tabukang) otakə? and Snl utukə? *brain* are borrowings, occurring beside the inherited word uta? *hair*, from PSan *utak (see comments in section 1.6.).⁴¹ 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 kapalə?, Snl kapə? *ship*, from Mal kapal; San malasə? *lazy*, from Mal malas; San harapə?, Snl ha!apə? *hope*, from Mal harap; San porokə? *fork*, from Dutch work, and many others. Note, however, San, Snl bebe? *duck*, with unexpected consonant reduction, beside Ban bébeke?, 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 ɸ, 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*

*sengot > Snl sengot? *to sail* + -aŋ → sengotaŋ *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

Ban	pálede? nu lima	<i>palm of the hand</i>
San	paled u lima	<i>palm of the hand</i>
Tal	papaidd u manu?a	<i>bird's feathers</i>

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 ʔ. (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 *kinaʔ *fish* and thus did not operate on it but 'found' Pre-Ban *kinas, which thus took the paragoge, reflected in modern Ban kinasəʔ, 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 *əʔ in all languages, as regular sound changes operating in Tal and Ban could explain the present-day forms in terms of developments from *əʔ. In Tal *ə became a in all environments and final *ʔ was lost.⁴⁴ In Ban *ə regularly assimilated to the following vowel; if the paragoge was originally *əʔ then in this case the direction of assimilation was reversed, *ə 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 ʔ. Tal cognates are included for comparison:

PSan	Rth	Tal	
*laŋit	laŋeʔ	laŋitta	<i>sky</i>
*əpat	paʔ	appata	<i>four</i>
*takut	takuʔ	taʔutta	<i>fear</i>

Since final *t reduced to ʔ 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 ʔ. 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 ʔ 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 ʔ is replaced by another consonant (see note 42 to section 2.3.3.) before the passive suffix:

PSan	Ban	Rth	San	
*ləbat	labáʔ, labaʔeŋ	lubáʔ, lubaʔen	ləbaʔ, ləbakeŋ	<i>to cross (river)</i> <i>be crossed</i>

This is weak evidence as there are only two possibilities: retention of ʔ 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:

PSan	San, Snl, Ban	Tal	Rth	
*inum	inuŋ	inumma	inum	<i>to drink</i>
*suan	suaŋ	suanna	suán	<i>to plant</i>

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 :

PSan	San	Snl	Tal	Ban	Rth	
*balay	bale	bale	bale	baley	baley	house
*takaw	tako	tako	taʔo	-	takow	to steal
*babinay	bəbine	bəbinay	bəbine	babiney	bəbiney ~ bəbinay	woman
*əmay	əme	may	amme	mey	may	rice
*siaw	sio	siaw	sio	siow	siaw	nine
*tolay	tole	toay	tole	toley	toley	tail

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 [m^aai] *rice*, and raised and backed before w, e.g. saw [sa^u] (in free variation with sow [so^u]) *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 ai 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]

*balaŋaw *anchor*, with reflexes San balaŋo, Ban bulaŋow [bu|áŋow]

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 ai 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

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

PSan	PNSan	San	Tal	
*kentoʔ		kentoʔ	ento	<i>lame</i>
*Ramuʔ		hamuʔ	ʒamu	<i>red</i>
	*peneʔ	peneʔ	pene	<i>full</i> ⁴⁵
	*siŋkaʔ	siŋkaʔ	siŋka	<i>to know</i>

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

PSan	PNSan	San	Tal	
*leReʔ		leheʔ	ulekka	<i>neck</i>
	*kaŋedeʔ	kaŋereʔ	aŋera	<i>when</i>
	*Roseʔ	hoseʔ	<ɾossa>	<i>to bind</i> ⁴⁶

2.3.8. Reflexes of *k in Talaud

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

PSan	Tal	
*kinas	inassa	<i>fish</i>
*kiki	iʔi	<i>to bite</i>
*likud	liʔudda	<i>back</i>
*manuk	manuʔa	<i>bird</i>

Following a nasal k remains:

PSan	Tal	
*kaŋkum	saŋ-kaŋkuma	<i>fistful</i>
*beŋkol	beŋkola	<i>bent</i>

Also initially k remains following the genitive marker N-: ba|e ŋkami *our house*, cf. (i)ami *we* (nominative).

The change PSan *k > Tal ʔ occurred after the change PSan *ʔ > Tal Ø (otherwise the reflex of *k would be Ø) and it reintroduced ʔ 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:

PSan	Rth (Niemann)	Rth (modern)	
*Rabun	<hawun>	ābun	<i>cloud</i>
*Rusuk	<husuk>	ūsuk	<i>thin</i>
*bəRat	<waha>	baa?	<i>heavy</i>
*duRi	<ruhi>	ru	<i>bone</i>
*bibIR	<wiwi>	bi̯bi	<i>lips</i>
*namuR	<namu>	namu	<i>dew</i>

*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: [ʀʁ] (1977). Below are illustrated reflexes in San (Manganitu) and in Snl:

PSan	San	Snl	
*Ramut	hamu?	ramu?	<i>root</i>
*duRi	duhi	duri	<i>bone</i>
*bibIR	bi̯bi̯hə?	bi̯bi̯rə?	<i>lip</i>

In Tal (Salibabu) *R became k after *ə, 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.:

PSan	Tal	
*əRe	akke	<i>grass sp.</i>
*bəRu	bakku	<i>new</i>
*bibIR	bi̯bi̯kka	<i>lip</i>
*bəŋaR	baŋŋaka	<i>molar</i>

In the dialect of Haines (Karakelang) *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 bi̯bi̯tta *lip* and baŋŋata *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 *ə 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 ʔ (see section 2.3.8.) as k remains unchanged where it reflects earlier *R.

In other environments PSan *R became Tal ʒ:

PSan	Tal	
*Ramut	ʒamutta	<i>root</i>
*daRa	daʒa	<i>blood</i>

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 phonetically similar segments (hence the changes to *R?). Interestingly the Snl reflex r [r̥⁹] 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 retroflexed lateral flap [ɭ] in all positions in Ban. In a few items *l is reflected by h or Ø 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 l occurs word-initially and following front vowels. It occurs after ə in San and after a in Tal where this reflects earlier *ə (see section 2.3.1.). In both languages l 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.):

PSan	San	Tal	
*laŋit	laŋiʔ	laŋitta	<i>sky</i>
*bilat	bilaʔ	bilatta	<i>to spread out</i>
*tatəlu	tatəlu	tatallu	<i>three</i>

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:

PSan	San	Tal	
*balay	baɭe	baɭe	<i>house</i>
*tulid	tuɭidəʔ	tuɭidda	<i>straight</i>
*boɭeŋ	boɭeŋ	boɭeŋŋa	<i>to pull</i>

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:

PSan	San	Tal	
*kəpaɭ	kəpaɭəʔ	appala	<i>thick</i>
*timbuɭ	timbuɭəʔ	timbula	<i>to rise</i>

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

In borrowings l is not necessarily replaced by ɭ in environments where PSan *l is reflected by ɭ, probably because the change *y > l has made l a possible

choice in such environments, e.g. San *malasəʔ* *lazy* from Mal *malas*. But following a, u or o and preceding the paragoge, where l does not occur in San, ʔ replaces l in borrowings, e.g. *kapaləʔ* *ship* from Mal *kapal*.

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

PSan	Snl	
*laŋit	laŋiʔ	<i>sky</i>
*kilat	kilaʔ	<i>lightning</i>
*pakel	pakeləʔ	<i>heel</i>
*əluʔ	(maŋ)əluʔ	<i>to swallow</i>
*əlaw	law	<i>day</i>

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

PSan	Snl	
*bəli	bəli	<i>to buy</i>
*paled	pələdəʔ	<i>palm</i>
*tuli	tuli	<i>ear</i>

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

PSan	Snl	
*təlak	təaʔ	<i>to fly</i>
*dəluk	dəuʔ	<i>thunder</i>
*balu	bəu	<i>widow</i>
*tolay	toay	<i>tail</i>
*pulo	puo	<i>ten</i>

Loss of *l occurred after changes to *aw and *ay described in section 2.3.6. Thus PSan *balay *house* became Snl bəʔe; 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 *tolay.

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

PSan	Snl	
*bulud	budəʔ	<i>mountain</i>
*sala	sa	<i>mistake</i>
*dalait	daiʔ	<i>bad</i>

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

PSan	Snl	
*solo	so ~ soyo	<i>lamp</i>
*alap	aʔ ~ ayaʔ	<i>to fetch</i>

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 əʔ would not have been added. When *l was lost in this position the preceding vowel was also lost if unstressed but remained if stressed:

PSan	Pre-Snl	Snl	
*səkol	*səkóləʔ	səkoəʔ	<i>cough</i>
*kəpal	*kəpáləʔ	kəpəəʔ	<i>thick</i>
*pundal	*púndaləʔ	pundəʔ	<i>paddle</i>
	*kápaləʔ	kapəʔ	<i>ship</i>

The last item above is from Mal but was borrowed before the separation of San and Snl, cf. San kapa|əʔ, with later loss of *| and the preceding vowel in Snl.

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

PSan	San	Snl	
* idik	iriʔ	i iʔ	<i>garden</i>
* udan	uraŋ	u aŋ	<i>load</i>
* eReʔ	eheʔ	rerəʔ	<i>neck</i>
* inuR	inuhəʔ	rinurəʔ	<i>earthquake</i>

Contrast between | and | was brought about in Snl by later changes. For instance, *d became | intervocalically (see section 2.3.13.), thus producing contrast with l, e.g. si|i (PSan *sidi) *to separate grain* and sili *to defer to*. Word-initially | occurs as a result of several morphophonemic processes (discussed by Maryott, 1978a:116), e.g. |atu *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.⁴⁷ In aluləʔ *raft* l-loss did not occur. This might be due to influence of the preceding | but the word is probably a borrowing, cf. Samal alul *raft*. Word-initially | occurs instead of d in |aw *distance* and |ow *thirst*. These usually occur as adjectives ma|aw *far* and ma|ow *thirsty* (where *d > | intervocalically) and initial | may result from analogy with the adjectival forms.

Word-initial | is usually lost in Snl if the addition of a prefix produces the environment in which it was lost historically, e.g. ma- + lukadəʔ *to watch, keep guard* → ma|ukadəʔ *morning* (cf. San ma|ukadəʔ *morning*). The vowel of the prefix is lost if unstressed and followed, after l-loss, by ə, as also occurred historically preceding the paragoge (see above), e.g. ma- + ləmbay → məmbay *remaining*, ka- + ləndiʔ → kəndiʔ *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 |:

PSan	San	Tal	
*baya	bala	bala	<i>to allow</i>
*kayu	kalu	alu	<i>wood</i>

This change has resulted in contrast between | and | (see section 2.3.10.). The change of *y to | 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.

PSan	Snl	
*payaŋ	payaŋ	<i>thigh</i>
*nayaŋ	nayaŋ ~ naŋ	<i>to play</i>
*daya	daya ~ da	<i>inland</i>
*maRuaya	maruá	<i>girl</i>

Loss of *y in Snl followed changes to diphthongs described in section 2.3.6. Thus PSan *dayaw *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 iúr [yúř] *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 + akaŋ), yupuŋ *grandparent* (< i + upuŋ). His other example is yuta?, San iuta? *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:

PSan	Tal	
*aden	aranna	<i>name</i>
*paled	paladda	<i>palm</i>
*saleR	sa akka	<i>nest</i>

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.(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 *ə: PPh *saNdəR, PSan *sander, Tal sandaka *to lean*;⁴⁹ PPh *dakəl, PSan *dakel *big, many*, Tal <da'ala> (from Steller and Aebersold, presumably da?alla).

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 *itəm, PSan *itum *black*; PPh *atəp, PSan *atup *roof*. It became *i in some other words, e.g. PPh *ikət, 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 *a (see section 1.4.1.(f)). Thus PSan *suanen (← *suan + *-en) > Tal suananna (← 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:

	initial	post-nasal	post-ə	intervocalic	final
San	S	S	S	C	S
Snl	S,C	S	S	C	S
Tal	S,C	S	S	C (S)	S
Ban	S	S	S	S	S
Rth	C	S	C	C (S)	C

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 [b ~ v], its exact nature depending on the phonological environment. Word-finally in Rth it is voiceless [p̥]. Where [p̥] occurs in the present-day language Niemann writes <w> or <u>, probably representing [b̥], e.g. <ahaw>, modern aab [a:p̥] *fern sp.*; <kanehau>, modern kaneab̥ [kanéap̥] *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 [ɺ] in the Sarangani dialect of Snl and as [ɻ] in the Mindanao dialect and in all other languages.

In Sarangani the development of ɺ as the reflex of intervocalic *d post-dates the rule of l-loss in certain environments (see section 2.3.10.) as ɺ from *d was not lost in these positions. Thus PSan *sala *wrong* > San sa|a, Snl sa but PSan *mada *dry* > San mara, Snl ma|a.

Sarangani ɺ 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:

PSan	Snl	
*Rodaw	roro	<i>sharp</i>
*Rado	raro	<i>tame</i>

(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 [g̊]. In Rth voiceless velar fricative [x] occurs word-finally and [h] elsewhere. Rth probably had [g̊] 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 [g̊], e.g. <lugai> *laugh* and <lughai> *laughter*, for present-day luháy.

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 b̥, d and r, g and g̊ 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. diadi *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 d̥ from Mal j, instead of d, which occurs in direct correspondences, e.g. San daleŋ, Mal jalan *road*; San dahami *unused ricefield*, Mal jərəmi *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*, gəli? *to give*, ba|e *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 бага? *lungs*

resembles PPh *baRaʔ but contains two irregularities apart from initial b, i.e. medial g, which is not a correct reflex of *R, and occurrence of final ʔ, where PPh final ʔ is usually, although not always, lost in PSan, cf. San lum-baha *lungs*, which shows correct reflexes of PPh *baRaʔ.

Contrast between former variants of the same phoneme has also come about medially either through borrowing, as in the case of b and ɓ, e.g. tuɓu *sugarcane* and kubuʔ *grave* (from Mal kubur), or through merger with another phoneme; thus the non-stop variant of *d has become ! in Sarangani, merging with a consonant already in contrast with d (see section 2.3.10.).⁵⁰ 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 [ʔ] are in complementary distribution as are [g], [h] and [x]. [b], [ɓ] and [ɸ] 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, ɓ [ɓ, ɸ], 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 *ə 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 [ɓ], [ʔ] 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 *ə, 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 *ŋg

Medial *ŋg is reflected in San, Snl and Tal as ŋg and in Ban and Rth as ŋk:

PSan	San	Ban	Rth	
*tengor	tengohəʔ	téŋkohoʔ	teŋko	<i>to strike</i>
*tingum	tiŋguŋ	tiŋkuŋ	tiŋkum	<i>riddle</i>
*səŋgap	səŋgaʔ	saŋkáʔ	suŋkap-án	<i>group</i>

Two unexplained occurrences of ŋg have been recorded for Rth: uŋgón *to call out*, cf. San əŋgo *to make a noise to attract attention*; ŋgonguán *throat*, cf. San təŋgo!əŋ. The first pair above can be treated as cognates but the second pair cannot despite the partial phonological resemblance. In ŋgonguán Rth has possibly retained medial ŋg under influence of the identical word-initial cluster.

In Ban also ŋg occurs in two recorded items: púŋgutu? *stunted*, cf. San pungu? *tailless*, Rth punku? *low*; Ban sagéŋele? *to carry on strap*, cf. San sagəŋelə?, Rth saŋkel. 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 g may have been an influencing factor.

In Ban and Rth the cluster ŋg occurs intervocally at a morpheme boundary, e.g. Ban maN- + gau → mangau *to lie*, Rth muN - + ha? (from *gaət) → munga? *to lessen*. The cluster ŋg 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 phenomenon (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 ʒ), a doubled consonant or a nasal-stop cluster (see sections 2.1.3.1. and 2.3.9. for examples).

Gemination following PSan *ə 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 *ləmis > Tal lammissa *to drown* but PSan *Ramis > Tal ʒamissa *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 ə, while in Ban the sequence *wa became o:

PSan	San/Snl	Tal	Ban	Rth	
*awak	aba?	aba?a	ao?	abak	<i>body</i>
*bulawan		bu!abanna	bulaon		<i>gold</i>

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 bu!aen, Snl buaen *gold*, Rth bulaun *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 intervocalic allophone of *b, which is reflected as b in Ban; both sounds being reflected as ɸ in all other Sangiric languages. Some other items can be reconstructed for PSan with medial *w even though Ban evidence is lacking, if external evidence supports the reconstruction. Thus from San, Snl, Tal, Rth *saba* 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 [wá|a], Rth [wá|a] *tusk*, cf. Ban [ú|a] *to disembowel*, Rth [ú|a] *to rummage*. 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 ɸ. Thus ɸaw *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:

PSan	Tal	
*pait	petta	<i>bitter</i>
*laed	ledda	<i>foot</i>
*daun	doŋŋa	<i>leaf</i>

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 *laedə?*.

(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:

PSan	Rth	
*suay	soy	<i>finished, used up</i>
*uay	oy	<i>mango</i>
*uai	oy	<i>rattan</i>
*puRay	puay	<i>shell fish</i>

2.3.18. First syllable loss in Rth

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

PSan	Rth	
*kəŋkum	ŋkum	<i>handful</i>
*kəkud	kur	<i>to dig</i>
*tətur	tu	<i>hot coals</i>
*səsəb	sub	<i>smoke</i>
*bəmbulu	mbulu	<i>feather</i>
*dəndipaR	ndipa	<i>rainbow</i>

In most cases recorded the PSan forms reflect PPh repeated monosyllables. Thus the first two items above reflect PPh *kəmkəm 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.⁵³ 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:

PPh	PSan	Rth	
*bukbuk	*bəbuk	bubúk	<i>borer</i>
*dəmdəm	*dəndum	rundúm	<i>dark</i>
*paŋpaŋ	*pəmpaŋ	pumpáŋ	<i>river bank</i>

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 $C\emptyset$ before a nasal-voiced stop cluster (see section 2.3.18.) left the cluster word-initially, as in the last two examples below:

PSan	Rth	
*gipu	ŋgipu	<i>soot</i>
*bud/lalak	mbulalak	<i>tree sp.</i>
*bəmbulu	mbulu	<i>feather</i>
*dəndeRoŋ	ndeoŋ	<i>tree sp.</i>

In some cases where initial syllable $C\emptyset$ was lost from PSan reflexes of earlier RMs an initial nasal was added to the remaining monosyllable:

PSan	Rth	
*dədap	ndap	<i>tree sp.</i>
*tətul	ntul	<i>tree sp.</i>

Many of the words undergoing prenasalisation are the names of plants and trees; the reason for this connection is not known.⁵⁴

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:

San	Snl	Tal	Ban	Rth	
linuhə?	rinurə?	linukka	dínuhu?	rinu	<i>earthquake</i>
loŋi?	loŋi?	-	doŋi?	roŋi?	<i>guns</i>
kulilasə?	-	-	kudilas	kurilas	<i>spleen</i>

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	
buraɭa?	mbulalak	<i>tree sp.</i>
duɭuŋ	lulun	<i>to roll up</i>
daɭaŋiraŋ	laliŋiran	<i>tree sp.</i>

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

San	Snl	Tal	Ban	Rth	
dila, lila	dila	lila	dila	rila	<i>tongue</i>

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*; linuhə?, Siau dinuhə?, 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	<i>water</i>
deno?	deno?	deno	deno	<i>to bath</i>
deso?	deso?	deso	deso	<i>to store</i>
kite?	kite? ⁵⁶	kite	kite	<i>we</i>
kapuna? ⁵⁷	-	kapuna	kapuna	<i>dog</i>

Where cognates are known in other languages they do not have final glottal stop. Thus Ternate aki, Galelarese ake *water*; Mal kita, PPh *kita *we*. 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, kungsi? *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 *liR 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:

PSan	San	Tal	Ban	Rth	
*uluR	u uhə?	-	úhuhu?	uu	<i>to lower</i>
*kuluR	ku u?	-	kúhuhu?	kuu	<i>breadfruit</i>
*saliR	ənsa i?	-	sáhihi?	sai	<i>floor</i>
*paŋkul	paŋku ə?	-	páŋkuhu?	-	<i>to beat</i>
*oŋgol	oŋgo?	oŋgola	óŋkoho?	-	<i>to give</i>

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

PSan	San	Rth	
*silaR	silahə?	silá	<i>palm sp.</i>

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:

PSan	San	Ban	Rth	
*leRe?	lehe?	ehe?	-	<i>neck</i>
*leneR	lenehə?	énehe?	-	<i>calm</i>
*lətuR	lətuhə?	lutuhu?	ūtú	<i>bang, thud</i>
*lintuR	lintuhə?	íntuhu?	ƒntu	<i>to descend</i>
*liRa	liha	-	ia	<i>ant sp.</i>
*le/iŋoR	leŋohə?	-	liŋo	<i>insane</i>

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 ə (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 *ə (see section 2.1.3.2.). Thus in San and Tal there is evidence that PSan stress also fell always on the penult:

PSan	San	Tal	
*təlu	təlu	tállu	<i>three</i>

Stress is largely predictable in Snl, although in a small number of words phonological changes have resulted in stress contrast. Thus contrast occurs between kápu *to rub* and kapú *desire*, the latter from earlier *kapúyu, with loss of *y and vowel contraction (see section 2.3.11.). The word pasáŋ *to carry on the shoulder*, from PSan *pasaən, exemplifies occurrence of final stress resulting from ə-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 búku, Rth búku *to kneel*, from PSan *buku, and Ban, Rth pukú *to bend*, from PSan *pəku.

It is possible that in PSan stress did not fall on *ə 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 *ə must have occurred separately in Ban and Rth (see section 2.3.1.), stress shifts occurred before changes to *ə and could have been a common innovation. That stress shift in Ban and Rth pre-dated changes to *ə is established by evidence such as that given above: if *ə in *pəku *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 *ə was replaced by another vowel.

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

PSan	Rth	
*Ríud	iúr	<i>to pull</i>
*tían	tián	<i>belly</i>
*súan	suán	<i>to plant</i>
*túid	tuír	<i>stump</i>

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

PSan	Pre-Rth	Rth	
*níuR	*niúh	niú	<i>coconut</i>
*níRu	*níhu	níu	<i>winnowing pan</i>
*búat	*buá?	buá?	<i>to stand up</i>
*súRat	*súha?	súa?	<i>fish poison</i>

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 η 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	
*seŋgot	seŋko?	seŋkot	<i>to sail</i>
*teŋgoR	téŋkoho?	teŋkor	<i>to beat (gong)</i>

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 Aebersold'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 ɓauriŋ *tree sp.*

Ban bebeʔ, Rth ɓebeʔ *to carry by rope*. These are cognate with San ɓebeʔ *carry by handle*, reflecting PPh *bitbit. Ban and Rth share irregular change of *ə to e. Although *ə 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 bokaŋ, Rth ɓokaŋ *maize*. San bokaŋ *cataract of the eye* may be related.

Ban bule, Rth ɓule *to release*. San bule *to forget* is related but has a different meaning.

Ban dádeheʔ *to depend*, Rth rare *to lean*. San darehəʔ *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 duhúʔ, Rth ruup *face*. San dəhuʔ *forehead* is related but has a different meaning.

Ban hemaŋ, Rth ɛmaŋ *flame*. San hiemaŋ *flame* is related but has vowel sequence ia where Ban and Rth have e.

Ban kanehabaʔ, Rth kaneab *yesterday*.

Ban kaŋedeŋ, Rth kaneren *when?*. The cognate in the North Sangiric languages has final ʔ instead of ŋ.

Ban, Rth kumú *you (pl)*. This reflects *kəmu 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 kemboʔ *back of the neck*.

Ban kóyabaʔ, Rth koyab *to yawn*. San kiolabəʔ, 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 *ə by a, cf. San læsia, PMin *ləseʔa *nit*.

Ban, Rth maya *all*. PMin *baya *all* is related but has a different initial consonant.

Ban, Rth naiʔ *long*.

Ban polaeŋ, Rth polán *upper arm*. San polaeŋ *wrist* is related but has a different meaning.

Ban timbonaŋ, Rth timbonan *head*.

Ban tiŋkahia, Rth toŋkayá *ear*. A parallel to the first syllable occurs in Ban timpunú, Rth tompunú *tortoise*, which are innovations, cf. PPh *pənu *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 ɲu in Rth, in free variation with a homorganic nasal before stops and s:

Ban tiloʔ nu babi, tiloʔ mbabi *pig's foot*.

Rth lar nu ɬabi, lar mbabi *pig's foot*.

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

San apeŋ u rano *banks of the lake*, tipu nsosoʔ *cigarette smoke*.

Snl kaŋ u katoaŋ *snake's food*, bisa ŋkatoaŋ *snake's poison*.

Tal sakaeŋ u ratu *chief's boat*, ba|e ndatu *chief's house*.

The personal genitive marker in Ban and Rth is ni, for some speakers ɲi 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 daβid *David's son*, ba|e nsimone *Simon's house*.

Tal arann i tuaŋŋa *name of the Lord*, ba|e njon *John's house*.

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

Ban nialaʔ nside *fetched by them*, baley nside *their house*.

Rth nialaʔe ŋkami *fetched by us*, ɬaley 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*, ba|e ŋkami *our house*.

Tal nisuann i ami *planted by us*, ba|e 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:

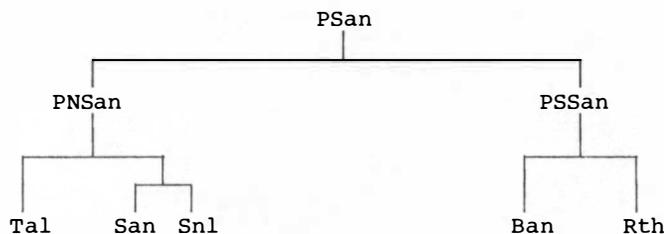
	Snl	San	Tal	Ban
Rth	54	54	47	59
Ban	58	58	51	
Tal	66	66		
San	82			

San and Snl, with 82% cognates, clearly form a subgroup of closely related speech forms.⁶³ 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:



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, ə, i, o, u, b, d, g, R, k, l, m, n, ŋ, 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 *ŋ in the reconstruction. A final glottal stop placed in square brackets indicates that no decision can be made between *ʔ and any one of a number of other consonants. N and [ʔ] 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 *dəRup 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

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 *saşolón lamp* is one morpheme in the present-day language but is represented *sa-soló-n* as it derives historically from three morphemes, **sa-solo-ən*, 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 *doŋŋa* and *roŋŋa leaf* were both recorded but only *roŋŋa* 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 *ʔ. Thus from San, Snl, Ban, Rth *kilaʔ 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 **kilaʔ. In the case of San *ləŋkuʔ dirt*, Rth *luŋkúʔ mildew*, no external evidence is known and the PSan etymon (at least for the present) must be reconstructed as *ləŋkut/ʔ.

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

Where evidence is available from San, Snl and Ban only ŋ 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 *luraŋ*, San *lulaŋ to load* and PPh *lu:jan *ride in vehicle*, Tagalog *lu:lan to load cargo*, can be reconstructed PSan *ludan.

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 <ə> 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 ʔ 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 *abe to cut off something hanging up high; to tap sugar palm*; Ban *abey*,
Rth *abey to tap sugar palm*.⁶⁴
- *abit *to climb (tree):*
San, Snl, Rth *abi?*, Tal *abit*, 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 *a|e*, Ban *adey*, Rth *arey chin* [PPh *azəy jaw].
- *aden *name:*
San *areŋ*, Snl *a|eŋ*, Tal *aranna*, Ban *adeŋ*, Rth *aren name* [PPh *ajan name].
- *adik *kiss:*
Rth *arik kiss* [PPh *hajək kiss].
- *aRab *fern sp.:*
San *ahabə?*, Tal *ažaba*, 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].⁶⁵
- *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 *ahusə?*, Rth *aus to succeed (a person), change (clothes), replace*; Snl
arusə? *to succeed (a person)*.
- *akan *eldest sibling:*
San *akan the eldest of two siblings*; Snl, Rth *akan*, Tal *aʔaŋa eldest sibling*
[Proto-Western Malayo-Polynesian (Blust) *aká-ŋ *elder sibling of the same*
sex (vocative)].⁶⁶
- *ake *water:*
San, Snl *ake?*, Tal *uaʔe*, Ban, Rth *ake water*; San *ake sap* [Ternate *aki*,
Galelarese (Morotai) *ake water*].^{67,68}

- *akel *sugar palm* (*Arenga saccharifera*):
San akeləʔ, Ban ákeleʔ, Rth akel *sugar palm* (*Arenga saccharifera*) [PMin *akəl *sugar palm*].
- *alap *to get, fetch*:
San, Ban, Rth alaʔ, Snl aʔ, ayaʔ, Tal alappa *to get, fetch* [PPh *alap *take, get, gather*].⁶⁹
- *alin *to move, transfer*:
San a|ɪŋ *to move, transfer, move house*; Rth alin *to pour; to transfer rice seedlings to field* [PPh *halin *move over; transfer*].
- *aluN *space under house; underneath*:
San a|uŋ, Snl auŋ *space under house; underneath*; Ban aluŋ *underneath* [Agta qaddun *space under house; under; ? PPh *aləm darkness, night*].
- *amaŋ *father*:
San, Snl, Rth amaŋ, Tal amaŋa *father* [PAN (Blust), PMin *amaŋ *father*]. cf. *amaʔ.⁷⁰
- *amaʔ *father*:
San (Siau, Tam), Ban amaʔ *father*; Snl amaʔ *father* (familiar reference and vocative) [PMin *amaʔ *father*]. cf. *amaŋ.⁷¹
- *anak *child*:
San, Ban anaʔ, Tal anaʔa, Rth anak *child* [PPh *anak *child*].
- *anam *to weave*:
San, Snl anaŋ, Rth anam *to weave (mat, basket)* [PPh *añam *weave*].
- *anup *to hunt*:
San, Snl, Ban anuʔ *to hunt*: Rth anup *come unexpectedly upon someone* [PAN (Blust) *qaNup *hunt*].
- *aŋin *wind*:
San, Snl aŋiŋ, Tal aŋinna *wind* [PPh *haŋin *wind; air*].
- *apa *what?*:
San, Snl, Tal, Ban, Rth apa *what?* [PPh *apa *what?*].
- *apuR *lime*:
San, Snl apuʔ, Tal (A) <apuka>, Ban ápuhuʔ, Rth apu *lime* [PPh *qapuR *lime*].
- *asaŋ *gills*:
San, Ban, Rth asaŋ *gills* [PPh *ha(N)saŋ *gills*].
- *asik *to dibble; plant rice*:
San asiʔ *to plant rice, strictly the first process: to make holes in the ground*; Snl asiʔ *to sow, drop seeds (rice, corn) into holes*; Tal asiʔa *to plant rice*; Ban asiʔ *to plant rice by broadcasting*; Rth asik *to dibble, make holes to plant rice seeds in* [PAN (Blust) *Sasək *dibble, make a hole to plant seeds*].
- *asin *salt*:
San, Ban asiŋ, Rth asin *salt* [PPh *asin *salt*].

- *atay *liver*:
San, Snl, Tal ate, Ban, Rth atey *liver* [PPh *qaCəy *liver*].
- *atis *soursop (Anona squamosa)*:
San atisəʔ, Rth atís *soursop (Anona squamosa)* [PPh *atis *Anona squamosa*].⁷²
- *atup *roof, thatch*:
San, Snl, Ban atuʔ, Tal atuppa, Rth atup *roof, thatch* [PPh *qatəp *roof, thatch*].
- *awak *body*:
San, Snl abaʔ, Tal abaʔa, Ban aoʔ, Rth abak *body* [PPh *hawak *body*].
- *ebeR *saliva; desire*:
San ebehəʔ *to have a good appetite*; Rth ebe *saliva; to crave, desire* [PPh *ibəR *desire; like, love*; PMin *ebəh *desire, crave*].⁷³
- *eget:
San egeʔ *to bind (coconuts) in pairs*; Rth eheʔ *near*.⁷⁴
- *elot/?:
San (Siau), Ban eloʔ *to massage, knead*; Rth eloʔ *to feel, handle*.
- *əbut *to pull out*:
San əbuʔ, Tal abbuta, Rth ubúʔ *to pull out (hair, plants, etc.)* [cf. PPh *Rabut *rip loose/out*; Mal rəbut *snatch, seize*].
- *ədu *spittle; to spit*:
San ədu, Tal addu *spittle, to spit*; Snl, Ban du *spittle*, Snl -ədu, Ban -udú *to spit*.
- *əRab *to sharpen*:
San əhabəʔ, Snl rabəʔ, Rth āb *to sharpen (a point)* [Mdw orob *make a sharp point*].
- *əRe *tall grass sp. (Imperata cylindrica)*:
San əhe, Snl re, Tal akke, Ban he, Rth ē *tall grass sp. (Imperata cylindrica)*.⁷⁵
- *əlaw *day; sun*:
San əlo, Snl law *day*; Tal allo, Ban, Rth low *day; sun* [PPh *qaN/Ljaw *day; sun*].
- *əlit/?:
San əliʔ, Snl liʔ *bottom of the sea*; Ban ma-líʔ *dark*; Rth ma-líʔ *night*; mu-líʔ *dark* [? PAN (Blust) *ələt *intervening space*].⁷⁶
- *əlo *tears*:
San əlo, Snl, Ban, Rth lo, Tal allo mata *tears*; Rth -uló *to shed tears* [? PPh (Zorc) *lu:həq, PMin *lueʔ *tears*].
- *əluP *to swallow*:
San əluʔ, Snl -əluʔ, Tal allupa, Ban -ulúʔ, Rth -ulúp *to swallow* [PMin *ələp *to drink*].

*əmay *rice (in field)*:

San əme, Snl may, Tal amme, Ban mey, Rth may *rice (in field)* [PPh *həmay *rice (cooked)*].

*əmaʔ *mother*:

Ban maʔ, Rth umáʔ *mother*; Rth maʔ *mother* (vocative) [cf. Mal əmak *mother*].⁷⁷

*əmis *sweet*:

Tal (A) <amisa>, Ban -misiʔ, Rth -mis *sweet* [Binukid, Western Bukidnon Manobo qəmis *sweet*].

*əmpaR *underlayer, sheet*:

San la-əmpahəʔ, Ban ampahaʔ, Rth umpá *underlayer, sheet* [PPh (Charles) *qəmpar *to spread (a mat, etc.)*].

*ənum *six*:

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

*əndum:

San ənduŋ *to learn*; əndum-aŋ *understanding*; Rth ūndúm *to remember* [cf. PPh *ədəm *brood*]. cf. *taRəndum.⁷⁸

*əŋgo(ŋ):

San əŋgo *to make a noise to warn others of one's presence*; Rth uŋgón *to call out (to someone)* [cf. PPh *əNŋəŋ *moan, hum*].⁷⁹

*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*].⁸⁰

*əsi *meat*:

Rth si *meat* [PAN (Dahl) *Səsi *meat*].⁸¹

*ətut *to fart*:

San ətuʔ, Tal (A) <atuta>, Ban, Rth -utuʔ *to fart* [PPh *ə(N)tut *flatulence*].

*iaʔ *I*:

San, Snl, Ban, Rth iáʔ *I*.⁸²

*idun *nose*:

San iruŋ, Snl iŋuŋ, Tal ŋirunna, Ban iduŋ, Rth irun *nose* [cf. PPh (Zorc) *qijúŋ *nose*].⁸³

*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 ihiʔ *to become less, run out*; Rth iik *little; to make little*.

*iRup *to sip*:

Tal ižupa *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 i?itta *to bind, tie up* [PPh *ikət tie].
- *inaŋ *mother:*
 San, Snl inaŋ, Tal innana *mother* [PAN (Blust), PMin *inaŋ *mother*]. cf. *ina?.⁸⁴
- *ina? *mother:*
 San (Tam) ina? *mother*; Snl ina? *mother* (familiar reference and vocative) [PMin *ina?, Mdw ina? *mother*]. cf. *inaŋ.
- *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 inda? *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 *qitəm *black*].
- *oban *grey hair:*
 San oŋaŋ, Ban oŋaŋ, Rth (N) <owan> *grey hair* [PPh *quban *grey hair*].⁸⁵
- *olay *sugar palm spadix:*
 San oŋe, Ban oley, Rth olay *spadix of sugar palm, from which toddy is collected*.
- *onap *fish scales:*
 San, Snl ona?, Tal onappa, Ban ono?, Rth onop *scales of fish* [PPh *qunap *to scale fish*].⁸⁶
- *onas:
 San onasə? *waste, scraps, peel, etc.; to scrape off*; Rth onas *to pound rice for the second time*.
- *o/untap *to operate bellows:*
 San, Snl onta?, Siau unta?, 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 óŋkoho? *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 *uaʔ *to slice open, disembowel*; Mdw uaʔ *to wound*].⁸⁷
- *uai *mango*:
San, Tal, Ban uai, Rth oy *mango*.⁸⁸
- *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 ua|u, Snl uaw, Ban, Rth ualu *eight* [PAN (Dahl) *ualu *eight*].
- *uanay *termite*:
San uane, Ban, Rth uaney *termite* [cf. PPh *·anay *termite*].⁸⁹
- *uay *rattan*:
San, Tal ue, Snl uay, Ban uey, Rth oy *rattan* [PPh *qu·əy *rattan, reed*].⁸⁸
- *udaŋ *prawn*:
San uraŋ, Ban udaŋ *prawn* [PPh *quDaŋ *shrimp*].
- *udo *charm, magic spell*:
San, Rth uro *spell, magic charm (used against thieves)* [PPh *uDuuq *medicine; charm*].
- *udum *to dive, swim underwater*:
San uruŋ, Tal urumma, Ban udun, Rth urum *to dive, swim underwater*.
- *uRas *to wash (hands)*:
San uhasəʔ, Snl urasəʔ, Tal uʒasa, Ban úhasaʔ *to wash (hands)* [PPh *huRas *wash*].⁹⁰
- *uRat *vein*:
San ihaʔ, Tah, Ban uhaʔ *strength, strong; vein*; Snl iraʔ, Rth uaʔ (N <uha>) *vein* [Mal urat, WBM uʒat, Samal uʒat *vein*].⁹¹
- *uRup:
Rth uup *dip, immerse in water; enter water*, (N) <manguhuʔ> *overflow* [Tdn urəp *deep; flood*].⁹²
- *ulaŋ *thick rope from palm fibres*:
San ulaŋ, Snl uaŋ, Ban, Rth ulaŋ *thick rope from palm fibres* [Mdw ulaŋ *rope from palm fibre*; Tdn ulaŋ *palm fibre*; Sa'dan ulaŋ *rope; to spin rope*].
- *ule *to return*:
San ule, Ban ule *to return (to previous condition)*; Rth ule *to return, go home* [PPh *uliq *return*].
- *ulid *worm*:
San ulidəʔ, Tal ulidda, Rth ulir *worm* [PPh *uləj *worm*].

*ulu:

San u|u *interior, inland, upstream*; Ban ulu *upland, above; water spring* [PPh (Zorc) *qu:luh *head*].

*uluR *to lower (by rope)*:

San u|uhəʔ, Ban úhuhuʔ, Rth uu *to lower (by rope)* [PPh *huluR *fall, drop; pay out*].

*unaw:

San uno *to dip, plunge in water*; Ban unow *worn away (e.g. of knife blade), used up (e.g. of soap)*; Rth unow *to melt*.

*unid *core, pith*:

San unidəʔ, Rth uŋir *core, pith (of plants)*; Tal unidda *to bury underground* [PMin *unəd *middle, centre*; Timugon Murut unod *kernel*].⁹³

*undam *medicine*:

San, Snl, Ban undaŋ, Tal undamma, Rth undam *medicine*; Ban undam-eŋ *be treated medically* [PPh *uNdam *medicine*].

*uŋket/?:

San uŋkeʔ *young boy, younger brother*; Rth uŋkeʔ *word used to call young boy, "hey, lad!"*.

*utak *hair*:

San, Snl, Ban utaʔ, Tal utaʔa, Rth utak *hair* [PPh *qutak *brain*].

*utut/? *torch*:

San, Rth utuʔ *torch*.

*baeR *to pay*:

San baehəʔ, Tal baekka, Ban baheʔ *to pay* [PMin *baer *to pay*; cf. PPh *bayaD *pay*].⁹⁴

*baba (1) *to carry on the back*:

San baba *to carry* (general term); Tal, Rth ɓaba *to carry on the back* [PPh *baba *carry on one's back*].

*baba (2) *below; downwards*:

San baba, Ban baba *below (lower than); downwards*; Rth sene ɓaba *there (in downwards direction)* [PPh *babaq *below*].

*babaw *above*:

San baɓo, Tal ɓaɓo *shallow (where sea bed is elevated)*; Rth ɓaɓow *above, on top of* [PPh *babaw *above*].

*babəlaw *afternoon*:

San babəlo, Snl ɓaɓəaw, Ban babolów, Rth ɓaɓulów *afternoon*. cf. *baba (2) and *əlaw.

*babi *pig*:

San baɓi, Ban babi, Rth ɓaɓi *pig* [PPh *babuy *pig*].⁹⁵

*babinay *woman*:

San baɓine, Snl ɓaɓinay, Tal ɓaɓine, Ban babiney, Rth ɓaɓiney, ɓaɓinay *woman* [PAN (Dempwolff) *babinay *woman*].

- *baduk (1) *palm sp.*:
San baru?, Rth ɓaruk *palm sp.* [PMin *baruk *palm sp.*]. cf. *baduk (2).
- *baduk (2) *tinder*:
San baru?, Rth ɓaruk *powder from palm fronds used for caulking boats or as tinder* [PPh *baDuk *tinder*].
- *baRa *monkey*:
San baha, Rth ɓaa (N <waha>) *monkey*.
- *baRani *brave*:
San bahani, Rth ɓaani *brave* [PPh *baRani *brave, fearless*].⁹⁶
- *baRet *west wind*:
San bahe?, Snl ɓare? *west wind*; Tal baʒata *west*; Rth ɓae? *wind* [PPh *-baRat *north west wind*].
- *baRi *rotten*:
San, Ban bahi *rotten (of food)* [PPh *baRiw *rotten*].
- *baRiŋ *to snore*:
San, Ban bahiŋ, Rth ɓaiŋ *to snore*.
- *baRudiŋ *tree sp.*:
Ban (K) <bahuding> *tree, Eugenia sp.*; Rth ɓauriŋ (K <wahuring>) *tree with edible fruit*.
- *bala:
San ba|a *valley, field*; Ban bala *bottommost, at the bottom*; Rth ɓala *centre*.
- *balaŋaw *anchor*:
San ba|aŋo, Snl ɓaŋo, Ban bulaŋow *anchor* [Ttb walaŋow, Mak balaŋo *anchor*].⁹⁷
- *balay *house*:
San, Tal ba|e, Snl ɓa|e, Ban baley, Rth ɓaley *house* [PPh *balay *house*].
- *baləbidaan *tree sp.*:
San ba|əbiraŋ, Rth ɓaliɓiran *tree sp., fruit small, eaten by birds*.
- *baləka(g) *chaff*:
San ba|əka, Tal ba|a?a, Ban balaká?, Rth ɓalukáh *chaff*.
- *balian *shaman*:
San ba|iaŋ *trainee for (pagan) priesthood*; Rth (N) <walian> *priest* [PAN (Blust) *balian *shaman*].⁹⁵
- *baliuŋ *axe*:
San ba|iuŋ, Ban baliuŋ, Rth ɓaliúŋ *axe* [PPh *bali·uŋ *axe*].
- *balik *to return, go back*:
San, Snl ba|i?, Tal ba|i?a, Ban bali? *to return, go back* [PPh *balik *turn around*].

- *baline *other*:
San ba|ine, Snl, Tal baine, Ban baline *other* [PMin *balina *other*].⁹⁸
- *balu *widow*:
San ba|u, Snl baw, Ban balu *widow* [PPh *balu· *widow*].⁹⁹
- *baluk *to sell*:
San balu?, Snl bau?, Tal ba|u?a, Ban balu? *to sell* [Mak balu? *to sell*, pa?-ba|uk-aŋ *to sell for someone*].
- *balukin *to carry on the back*:
San baku|iŋ, Ban balukin, Rth balukin *to carry on the back*; Ban balukin-aŋ *be carried on the back*.¹⁰⁰
- *balun *provisions for journey*:
San ba|uŋ, Rth balun *provisions for journey* [PMin *balun *provisions for journey*; ? PPh *balun *roll up (together)*].
- *baluy *to change, alter*:
San ba|uy, Snl bauy, 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*].¹⁰¹
- *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|ə? *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 baŋku *to bump (one's head)*.¹⁰²
- *bataŋ *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(ea)yaqu kemiri (*Aleurites moluccana*)].

*beŋel deaf:

San beŋeləʔ, Snl beŋeləʔ, Tal beŋella, Rth beŋel deaf [PPh *beŋəl deaf].

*beŋkol bent, crooked:

San beŋkoʔ, Tal beŋkola, Ban beŋkoloʔ, Rth beŋkol bent, crooked.

*bəbas to cut off, slash:

San bəbasəʔ, Tal babbasa to cut off, slash (high grass, bushes, etc.) [PPh *basbas cut off].

*bəbet to carry (something hanging down from hand):

San bəbeʔ to carry (basket, bag) by handle; Ban bebeʔ, Rth bəbeʔ to carry on the end of a rope (held by hand) [PPh *bitbit to carry in hand].¹⁰³

*bəbuR porridge:

San bəbuḥəʔ a dish of slightly cooked vegetables in sauce; Siau watery sago porridge; Ban bubuhuʔ to make porridge, b-in-ubuhuʔ porridge [PPh *buRbuR cook rice; Mal bubur porridge].

*bəbuk wood borer; dust (of damaged wood):

San bəbuʔ, Rth bəbūk wood borer; Tal babbuʔa, Ban bubuʔ dust, powder (of wood damaged by borer) [PPh *bukbuk (insect) wood borer; dust].¹⁰⁴

*bəbul to pluck out (hair, feathers):

San bəbuḷəʔ to pluck out; to fall out (of hair, feathers); classifier for hair, feathers, etc.; Ban bubuluʔ to pluck out (hair, feathers) [PPh *bulbul pubescent hair; PMin *bulbul feather, body hair].

*bəRat heavy:

San bəhaʔ, Snl bəraʔ, Tal bəkka, Ban baháʔ, Rth bəaʔ (N <waha>) heavy [PPh *bəRqat heavy].¹⁰⁵

*bəRis line:

San bəhiʔ, bəhiḥəʔ line, stripe; Ban bíhisiʔ to form a line.¹⁰⁶

*bəRu new:

San buhu, Snl buRú, Tal bakku, Ban buhú, Rth buu (N <wuhu>) [PPh *baqəRu, PMin *bəru new].¹⁰⁷

*bəka to split:

San bəka, Tal baʔa, Ban baká, Rth bəká to split [PPh *bəkaq split].

*bəke story:

San bəke genealogy; story; Tal (A) <ba'e>, Rth bəké story.

- *bəkis *to tie together in a bundle:*
 San bəkisəʔ, Tal baʔisa, Rth ɸikís *to tie together in a bundle*; Ban bikisiʔ *to tie tightly, tighten knot* [PPh *bəRkəs *bundle*; (Charles) *to tie*].
- *bəlas (1) *to borrow:*
 Tal ballasa, Ban balasaʔ, Rth ɸulás *to borrow* [PPh (Charles) *bələs *borrow*].
- *bəlas (2) *tree sp.:*
 San bələsəʔ, Ban (K) <barasa>, Rth ɸulás *tree sp.* [Ttb awəlas *Ficus sp.*].¹⁰⁸
- *bəli *to buy:*
 San bəli, Snl ɸə|i, Tal balli, Rth ɸilí *to buy* [Mal bəli *buy*; cf. PPh *bili *buy, value*].
- *bəlis *rancid, rotten (of food):*
 San bəlisəʔ, Snl ɸə|isəʔ, Rth ɸilís *rancid, rotten (of food)*.¹⁰⁹
- *bəmbaŋ *shoulder:*
 San, Snl bəmbaŋ, Ban bambáŋ *shoulder* [? Mak barambaŋ *chest*].
- *bəmbulu *feather, body hair:*
 San bəmbulu *feather*; *crude word for pubic hair*; Snl ɸəmbú, Tal bambulu *feather*; Ban bumbulu, Rth mbulu *feather, body hair, fur* [cf. PPh *bulu *feather, hair*].
- *bənaR *broad, wide:*
 San bənahəʔ, Rth ɸuná *broad, wide*.
- *bənan *to sneeze:*
 San bənaŋ, Tal bannana, Rth ɸunán *to sneeze* [cf. PPh *baqaħən *sneeze*].
- *bənit/? *to peel off:*
 San bəniʔ, Ban biníʔ, Rth ɸiniʔ *to peel off (rind, bark)*.
- *bəndu:
 San (Sas) bəndu *trouble, difficulty; sick from excessive exertion*; Ban bundú *difficult (of work)*; Rth ɸundú *to sob* [PMin *bəndu *hard work; distress*].
- *bəŋaR *molar tooth:*
 San bəŋahəʔ *jaw*; isi mbəŋahəʔ *molar tooth*; Tal baŋŋaka, Ban baŋahaʔ, Rth ɸuŋá *molar tooth* [cf. PPh *baRqaŋ *molar tooth*].
- *bəŋaʔ *opening:*
 San bəŋaʔ *bight, gulf; opening*; Rth ɸuŋáʔ *to open (e.g. mouth)* [Ttb wəŋaʔ *crack, opening*].
- *bəŋkaw *spear:*
 San bəŋko, Snl ɸəŋkaw, Ban boŋków *spear*; Rth (N) <wungkou> *lance* [PPh *baŋkaw *spear/lance*].⁸⁵
- *biad *fish roe:*
 San biadəʔ, Snl ɸiadəʔ, Tal (A) <biada> *fish roe* [PPh *bihəd, Mdw biod *roe, fish eggs*].

*biaR *alive; to live:*

San biahəʔ, Snl ɓiarəʔ, Tal biakka, Ban b'iahaʔ, Rth ɓia *alive; to live* [PPh *bihaR *alive*].¹¹⁰

*bibiR *lip(s):*

San biɓihəʔ, Snl ɓiɓirəʔ, Tal biɓikka, Ban b'ibihiʔ, Rth ɓiɓi *lip(s)* [PPh *bibiR *lip(s)*].

*bida *white:*

San bira, Snl ɓiɓa, Tal ɓira, Ban bida *white*.

*biRas *husked rice:*

San bihasəʔ *semen*; Snl ɓirasəʔ, Rth ɓias *husked rice* [PPh *bəRas *husked rice*].¹¹¹

*bi/eRay *to give:*

Ban bihey, Rth ɓey *to give* [PPh *bəRəy *give*].¹¹²

*biRiŋ *slanting, at an angle:*

San bihiŋ *to turn round, revolve*; Ban bihiŋ, Rth ɓiiŋ *slanting, at an angle* [cf. Mal miriŋ *aslant, at an angle*].¹¹³

*biku:

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

*bilat *mat; to spread out:*

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

*biliŋ *to turn around or over:*

San biliŋ, Snl, Rth ɓiliŋ *to turn over, turn around* [PPh *biliŋ *wind, turn*].

*binaba *cloud:*

San binaba, Snl, Rth ɓinaba, Tal ɓinababa, Ban binaba *cloud*.¹¹⁴

*bintoit/?:

San bintoitʔ *large grass sp.*; Rth ɓintoitʔ *bamboo sp.*

*biŋiR *to pour:*

San biŋihəʔ, Ban biŋihiʔ *to pour*.

*bisu(R) *full, satisfied:*

Rth ɓisu *full, satisfied* [PPh *bəsuR *full, satisfied*].¹¹⁵

*bisul *boil:*

San bisuləʔ, Snl ɓisuʔ, Ban b'isuluʔ, Rth ɓisul *boil* [Mal bisul *boil*].

*bitin *to hang:*

San bitin *to hang on a rope*; Snl ɓitin *to hang*; Tal bitinna *to hang, dangle by arms*; Rth (N) <pamamitinan> *gallows*, <mamitin> *to hang up* [PPh *bitin *hang, dangle*].⁸⁵

*bitis *calf of leg:*

San bisitʔ *leg between knee and ankle*; Snl ɓisitʔ *leg (including foot)*; Tal bisitta, Ban b'itisiʔ, Rth ɓitis *calf of leg* [PPh *bə(N)tiʔ *calf of leg*].

- *boboŋ *bamboo water container*:
San boboŋ, Rth ʔobobŋ *bamboo water container* [Ttb wowoŋ *drinking vessel*].
- *boboʔ *dumb, mute*:
San (Siau), Ban boboʔ, Tal ʔobo, Rth ʔoboʔ *dumb, mute* [PMin *boboʔ *dumb, mute*].¹¹⁶
- *boReŋ *charcoal*:
San boheŋ, Snl ʔoreŋ, Tal boʒeŋa, Rth ʔoeŋ *charcoal* [PPh *b-ujin *charcoal*].
- *boRet *to write*:
San, Ban boheʔ, Tal boʒeta *to write*.
- *bo/uRintin *speckled, multicoloured*:
San bohintin, Ban buhintin, Rth ʔuintin *speckled, multicoloured (of fowls)*.
- *bokan *maize*:
Ban bokaŋ, Rth ʔokan *maize*.¹¹⁷
- *boleŋ:
San boleŋ, Snl ʔoleŋ, Tal boleŋŋa *to pull*; Ban boleŋ, Rth ʔoleŋ *to carry on a pole between two people* [Ttn wuleŋ *carry on shoulder*].
- *boyoŋ-boyoŋ *wasp*:
San bolon-bolon *small beetle*; Siau *wasp*; Rth mboyoŋ-boyoŋ *large wasp sp.* [cf. Mak royon-royon *wasp*].
- *bua *fruit*:
San, Tal, Ban bua, Snl, Rth ʔua *fruit* [PPh *bu·aq *fruit*].
- *buat *to stand up; depart*:
San buaʔ *to stand (from a sitting position); lift; depart*; Tal buatta *to stand up*; Rth ʔuaʔ *to get up; to depart* [? PPh *buhat *do, make, work*].
- *bubu *fish trap*:
San buʔu, Ban bubu, Rth ʔuʔu *fish trap* [PPh *bubu *fish trap*].
- *bubuR *kapok*:
San buʔuhəʔ, Snl ʔuʔurəʔ, Tal (S) <bumbuka>, Ban búbuhuʔ *kapok*.¹¹⁸
- *budak *blossom*:
San buraʔ, Ban budaʔ, Rth ʔurak *blossom (before fruit)*; Snl ʔulaʔ *flower* [PPh *buJak *flower*].
- *bud/lalak *tree sp.*:
San bura!aʔ, Rth mbulalak *tree sp.*
- *buduŋ *to whisper*:
San buruŋ, Ban buduŋ, Rth ʔuruŋ *whisper* [Ttb wuruŋ *mumble, mutter*].
- *buRa *to smear, rub in*:
San, Ban buha, Tal ʔuʒa *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:*

San bukan, Tal bu?anna, Rth bukan *drunk, intoxicated* [cf. Mal mabuk *drunk*].

*bukid *mountain, hill:*

San bukidə? *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 bulagə? *where the light is out, where one cannot see*; Ban búlaga? *European; light-skinned person*; Rth bulah *grey* [PAN (Blust) *bulaR *cataract of the eye*; PPh *bulaR *blind; eye disease*].¹¹⁹

*bulan *moon:*

San bulan, Snl buan, Tal bu!anna, Ban bulan, Rth bulan *moon* [PPh *bulan *moon*].

*bula/et/? *cockfight:*

San bu!e?, Ban bula?, Rth bula? *cockfight* [cf. PPh *bulan *cockfight*].

*bulawan *gold:*

Tal bu!abanna, Ban bulaon *gold* [PPh *bulaw-an *gold coloured*].¹²⁰

*bule:

San bu!e *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 *buluQ *bamboo*].¹²¹

*bumbun *heap:*

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

*bunal *bruise:*

San buna!ə? *bruise, wound*; Rth bunal *bruised, soft* (e.g. of fruit fallen from tree).

*buni *to hide:*

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

*buno *to kill; fight:*

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

*bunut *coconut husk:*

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

*bunəŋ *flower:*

San, Ban bunəŋ, Rth bunəŋ *flower* [PMin *bunəŋ *flower*].¹²²

- *buŋkele *groin*:
 San buŋkele *groin*; buŋkeleəŋ, Rth buŋkelén *having pain in groin (from infection)*; Ban buŋkele *pain in groin (from infection)* [Ttb wuŋkele? *ankle*; Mdw buŋkele? *lump in the groin*].
- *buŋkut *bent, stooped*:
 San buŋku? *knot, bump*; Ban buŋku?, Rth buŋku? *bent, stooped* [Mdw buŋkut *hump, hunch; bent (with age)*].
- *busak *banana*:
 San, Ban busa?, Snl busa?, Tal busa?a, Rth busak *banana* [Timugon Murut *busak flower*; PPh *buswak *blossom forth*].
- *buta *blind*:
 San, Ban buta, Snl, Rth buta *blind* [PPh *buta *blind*].
- *butas *behead, cut off head*:
 San busa?, Tal busatta, Ban bútas?, Rth (N) <mawutas> *behead; cut off head (of fish, etc.)* [PAN (Blust) *bu(ŋ)tas *perforate*].
- *butiR:
 San butihə? *knob, outgrowth, outcrop (of stones, etc.)*; Rth buti *bundle, bunch* [PPh *butiR *grain, small round thing; bump*].
- *butu *castrate*:
 San butu *to make a hole; cut open; castrate*; Rth butu *castrate*.
- *dau *far; distance*:
 San, Ban dau, Snl law, Tal, Rth rau *far; distance* [PPh *Za()uq *distant, remote*].¹²³
- *dauŋ *leaf*:
 San, Snl, Ban dauŋ, Tal roŋŋa *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 daŋaŋ, Tal daraŋŋa, Ban dadaŋ *to warm oneself by fire* [PPh *da(n)daŋ *to warm up; singe*].
- *dadeR:
 Ban dadehe? *to be dependent, depend (on other people)*; Rth rare *to lean (against something)* [? PPh *dadaR *in rows*].¹²⁴
- *dadio? *child*:
 San dario? *child (offspring)*; *small, young*; Snl daŋio *child*; Ban dadio? *young*; Rth raro? *children*.¹²⁵
- *dadua *two*:
 San, Tal darua, Snl daŋua, Ban dadua, Rth raro *two* [PAN (Blust) *DaDuSa *two*].¹²⁶
- *dadum:
 San daruŋ *have a cold*; Ban daduŋ *sick*; Rth raro *(feel) cold*.

***daRa blood:**

San, Ban daha, Snl dara, Tal daža *blood* [PPh *DaRaQ *blood*].

***daRami disused rice field:**

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

***daRəmu nest, lair:**

Ban dahumú *nest (of bird, pig, etc.)*; Rth raamú *nest on ground (of pig, rat, etc.)*¹²⁷

***daRum:**

San da-rahun, Snl darun *needle*; Ban dahun, Rth raum *to sew*; Ban dahum-aŋ *will be sewn* [PPh *ZaRum *needle (sewing)*].

***dakel big; many:**

San dakelə? *big*; Ban dákele?, Rth rakel *many* [PPh *Dakəl *big; many*].¹²⁸

***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 *Dakəp *hold; capture/catch*].

***d/lalait/? bad:**

San da|ai?, Snl dai?, |ai?, Ban dalai?, Rth lalai? *bad* [cf. PPh *zaqət *bad, evil*].¹²⁹

***d/lala/iŋidan tree sp.:**

San da|aŋiraŋ, Rth laliŋiran *tree sp.*

***dalen road, path:**

San, Snl da|eŋ, Tal da|anna *road, trail; to walk*; Ban dalen, Rth ralen *road, path* [PPh *Zalan *road, way*].

***dalikan fireplace, hearth:**

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

***dalum deep:**

San da|uŋ *inside; deep*; Snl daun, Tal ra|umma, Ban daluŋ, Rth ralum *deep* [PPh *daləm *deep, depth; in*].

***damay peace:**

San dame, Snl dami, Rth (N) <ramej> *peace* [PPh *damay *peace*].^{85,130}

***danaw lake:**

San dano *lake; pool, puddle*; Snl |ano *lake, dano pool, puddle*; Rth ranow *lake* [PPh *Danaw *lake*].¹³¹

***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)aŋaw
measure: from thumb tip to tip of middle finger].
- *daŋen *to climb stairs*:
 San daŋeŋ, Tal daŋanna, 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 *dapuq *perch, step*].
- *dapuRan *hearth, kitchen*:
 San dapuhaŋ *kitchen, hearth*; Tal (S) <dapuŋana> *hearth*; Rth rapuan *spouse*
 [PPh *dapuR *hearth, kitchen*].
- *datu *ruler, chief*:
 San, Snl, Tal datu *ruler, chief*; Snl !atu *high chieftain, king* [PPh *Datu
ruler].¹³¹
- *daya *inland*:
 San dala *behind, in the direction away from the sea, inland*; Tal dala
inland (direction); Ban daya se?e *up there (direction away from the sea)*;
 Rth sene raya *there (northerly direction)* [PPh *(d)aya *inland*].
- *dayaw *to praise*:
 San, Tal dalo, Snl dayo, 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 desə?, Rth res *pandanus sp.*
- *deso *to store*:
 San, Snl deso?, Tal, Ban deso, Rth reso *to store*.¹³²
- *dədak *chest*:
 Ban dadá?, Rth rak *chest* [Ttb ra?ndak, Tsw dadah *chest*].¹³³
- *dədap *tree sp. (Erythrina indica)*:
 San dəda?, Tal raddapa, Ban dadá?, Rth ndap *tree sp. (Erythrina indica)*
 [PPh *dapdap *tree (Erythrina indica)*].
- *dədul *to pluck out, pull out*:
 San dədu!ə?, Ban dudulu? *to pluck out (feathers, hair, etc.), to pull out*
(e.g. stake from the ground) [? Proto-South-Philippine (Zorc) *duldul
cotton].

*dəRup:

San dəhu?, Snl dəru? *forehead*; Ban duhú?, Rth ruup (N <ruhup>) *face*.

*dəluk *thunder*:

San dəlu?, Snl dəu?, Tal rallu?a, Ban dulú?, Rth rulúk *thunder* [Agta dɔlɔk *thunder*; cf. PAN (Blust) *dəRu *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)*.

*dəme *to throw away*:

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

*dəndeRəŋ *tree sp.*:

San dēndehəŋ, Tal (S) <danderonga>, Ban dēndehəŋ, Rth ndeəŋ *tree sp.*

*dəndiŋ *wall*:

Ban dindīŋ, Rth rindīŋ *wall* [PPh *dīŋdīŋ *wall*].

*dəndipaR *rainbow*:

San dēndipahə?, Snl dēndiparə?, Tal (A) <dandipaka>, Ban nīpaha?, Rth ndipa *rainbow* [? PAN (Blust) *(dD)i(ŋ)paR *ford a river*; ? PPh *i(N)paR *other side, beyond*].¹³⁵

*dəndum *dark*:

San dēnduŋ *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 *Dəpa *armspan; fathom*].

*dəsun *to descend (mountain)*:

San dəsun, Ban dusún, Rth rusún *to descend (mountain)*.

*didiR *yellow*:

San dirihe?, Snl didi?, Tal ririkka, Ban dídihi?, Rth riri *yellow* [PPh (Charles) *didiR *yellow*].¹³⁷

*d/liduŋ *to shelter, protect*:

San liruŋ, Ban liduŋ, Rth riruŋ *to shelter, protect, cover up*.¹³⁸

*dikit *to light*:

Tal di?i, Rth riki? *to light (fire, lamp, etc.)* [PPh *dəkət *kindle, set on fire*; PMin *dikət *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 linuhəʔ, Siau dinuhəʔ, Tah dinuhiʔ, Snl rinurəʔ, Tal (A) <linuka>, Ban dīnuhuʔ, Rth rinu *earthquake* [PPh *linuR *earthquake*].
- *diŋan *together; companion*:
 San diŋaŋ *with; to accompany; companion*; Snl diŋaŋ *companion*; Ban diŋaŋ *to carry*; Rth riŋan (*act*) *together; to carry* [PPh *(d)əŋan *together; companion*].
- *diŋiR *to hear*:
 San diŋihəʔ, Snl diŋirəʔ, Tal da-riŋi, da-riŋikka, Ban da-dīŋihiʔ, Rth ra-riŋi *to hear* [PPh *DəŋəR *hear, listen*].^{141, 142}
- *diŋkalen *tree sp.*:
 San diŋka|eŋ *tree (Calophyllum inophyllum)*; Rth (K) <ringkalen> *tree sp.* [Tagalog diŋkálan *Alexandrian laural or sweet-scented calophyllum*].
- *dou *thirsty; thirst*:
 San, Ban dou, Snl |ow, Tal, Rth rou *thirsty; thirst*.¹²³
- *dodot/? *to alight, perch*:
 San dorəʔ, Snl do|oʔ, Rth roroʔ *to alight, perch*.
- *dokot/? *to pick up with both hands*:
 San, Ban dokoʔ, Rth rokoʔ *to pick up with both hands*.
- *dondos *to fall slowly, slip down; to lower*:
 San (Siau) dondosəʔ *to fall*; Ban dóndosoʔ, Rth rondos *to fall slowly, slip down; to lower (e.g. on rope)* [Ttb karondosa *time when ripe fruit falls*].
- *d/loŋit/? *gums*:
 San, Snl loŋiʔ, Ban doŋiʔ, Rth roŋiʔ *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 dukuʔ *grass, vegetables* [PPh *dukut *grass*].
- *d/lulun *to roll up*:
 San du|uŋ, Rth lulun *to roll up* [PPh *lulun *roll together*].
- *dunuk *flood*:
 San dunuʔ *violent and continual (or rain)*, Tah *sharp rise in river level because of rain*; Rth runuk *flood* [PPh *dunuk *flood*].
- *gaət *to separate*:
 San gaəʔ, Snl gaʔ *to separate, part*; Rth haʔ *to lessen (load)* [PPh (Charles) *ga(qh)(ə)ʔ *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 haguraŋŋa, Ban gagudaŋ, Rth hahuraŋ parents. cf. *gudaŋ.¹⁴³

***ganton to hang (on gallows):**

San ganton, Rth hanton to hang (on gallows) [PPh *gaNtuŋ hang].

***geRet/? to tear:**

San, Ban gehe?, Rth (N) <guhe> to tear, tear up; Snl gere a tear.^{144, 145}

***gəlay to ask:**

San gəle to demand; ask; Rth huláy to ask, request.

***gəlid:**

San, Snl gəli? to give; Ban gilidi?, Rth hilír love, affection; San gəlir-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 ŋgipu soot on walls and ceiling of kitchen.

***gogaR:**

San gogaŋ?, Ban gógaha? 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 guraŋ, Ban gudaŋ, Rth huraŋ old [PPh *guDaŋ old, aged].

***Raen light (in weight); fast:**

San haen light; fast; Snl raŋ, Tal žanna, Ban haŋ, Rth ān (N <mahan>) light (in weight) [PPh (Zorc) *Raqaŋ light; fast].

***Rabun:**

Ban habuŋ soot and dust which drops from dirty ceiling, h-um-abuŋ to rain lightly; Rth ābun 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 hakidə? to bind fast, tie up; Ban hákidi? to tie up, tether (an animal); bind (e.g. wood) in bundle; Rth ākir to tether (an animal) [PPh *Rakəd tie, bundle].

- *Rakit *raft; to join together*:
 San haki? *raft; to connect, join together*; Ban haki?, Rth āki? *raft* [PPh *Rakit *raft; tie up together*].
- *Rakut *to tie tightly; tie together*:
 San haku?, Rth āku? *to tie tightly, tie together*; Ban haku? *to grasp tightly to one* [PPh *Rakut *rope; bind*; PAN (Blust) *Raku(Ct) *tie, fasten*].
- *Ramis *to knead, massage; mix*:
 San hamisə?, Snl ramisə?, Tal žamissa *to knead, massage*; Rth āmis *to mix* [PPh (Charles) *Rames *to mix, knead*].¹⁴⁶
- *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 hampasə?, Rth (N) <hampas> *to rob, plunder* [PPh *Ra(m)pas *to tear, pull loose*].⁸⁵
- *Raŋu *dry*:
 San haŋu *severe drought*; Ban haŋu, Rth -aŋu (J <mahangu>) *dry, withered (of dead trees, fallen leaves, etc.)* [Ata na-gaŋo, Dibabawon gaŋu *dry*].
- *Rapa *to guard, keep watch*:
 San, Ban hapa *to guard, keep watch*.
- *Rapus *to bind, tie up*:
 San hapusə? *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*].¹⁴⁷
- *Ratus *hundred*:
 San hasu?, Snl rasu?, Tal žasutta, Ban háтусu? [PPh *Ratus *hundred*].
- *Renes *rotten*:
 San hene?, Snl rene?, Tal ženessa, Rth ēnes *rotten*.
- *Rəbi *night*:
 San həbi, Snl rəbi, Tal žabbi, Ban hibí *night* [PPh *Rabi·i *night, evening*].
- *Rəbog *to slip into hole or mud*:
 San həbo?, Rth ūbóh *to slip into hole or mud (of foot)*.
- *Rəbu *to bark*:
 San həbu, Ban hubú, Rth ūbú (N <huwu>) *to bark (of dog)*.
- *Rəmbut/? *to connect, attach*:
 San həmpu?, Rth ūmpú? *to connect, attach*. cf. *səmpu[?].

*Rəŋis *burnt; to burn:*

San həŋisəʔ, Ban hiŋisiʔ *burnt; to burn* [PMin *rəŋis *burn*].

*Rəsam *fern sp.:*

San həsaŋ *tall moss sp.; climbing fern sp.*; Rth ūsám *creeping fern sp.*, (N) <husam> *creeper* [PPh (Charles) *aRsam *fern*; Mal rəsam *large ferns, bracken*].

*Rətas *to cut through:*

San həsaʔ, Rth ūtás *to cut through* [PPh *Rətas *undo; open*; Mal rətas *rip, break open*].

*Rətik:

San hətiʔ *to sprout; (begin to) crack, burst*; Ban hitiʔ *begin to split (of wood)*; Rth Ttik *to swell*.

*Riambaŋ *flame; to flame, flare up:*

San hiambaŋ *high, bright flame*; Ban hembraŋ, Rth ēmbaŋ (N <hembang>) *a flame; to flame, flare up*.¹⁴⁸

*Riək *to thresh (grain):*

San hiəʔ, Ban hiʔ *to thresh (grain)* [PPh *Riək *thresh grain*].

*Riud *to pull:*

San hiudəʔ, Snl riudəʔ, Ban hiuduʔ, Rth iúr *to pull* [PPh (Charles) *Ruyud *to drag*].¹⁴⁹

*Riba *lap; to hold in lap:*

San hiə lap; *hold in lap*; Tal žiba *lap*; Ban hiba *responsibility; to care for, watch over* [Mal riba, Bug riwa *lap; hold in lap*].

*Ribu *thousand:*

San hiəu, Snl riəu, Tal žiəu, Ban hibū, Rth Təu *thousand* [PPh *ribu *thousand*].

*Ribu[?] *mist, fog:*

San hiəuʔ, Snl riəuʔ, Ban hibūʔ *mist, fog* [? Mal ribut *stir, commotion; storm, gale*].

*Rimukud *soul, spirit:*

San himukudəʔ, Ban himúkuduʔ, Rth Tmukur *soul, spirit* [PPh (Charles) *Rimukud *soul, spirit*].

*Rinduk *to hiccup:*

San, Ban hinduʔ, Rth induk (N <hinduk>) *to hiccup*; Snl ni-rinduk-aŋ *affected by hiccups*.

*Rodaw *sharp:*

San horo, Snl roro, Tal žoro, Ban hodow, Rth ōrow (N <horou>) *sharp*.¹⁵⁰

*Roma *sheath:*

San, Ban homa, Snl roma, Rth ōma *sheath (for knife)* [PPh *Rumaq *house*].

*Rompon:

San la-hompon *to squat*; Ban hompon *to sit*.

- *Roŋa *having teeth missing*:
 San hoŋa *having large chips (of knife, plate, etc.)*; *having teeth missing, fallen out*; Tal žoŋa, Ban hoŋa *toothless*; Rth oŋa *having teeth missing, fallen out*.
- *Ropet/? *tree (Ficus sp.)*:
 San hope? *fig sp. with sharp leaves*; Ban hope?, Rth ope? (K <hope>) *Ficus sp., berries eaten by birds*.
- *Roto *to cut through, slice*:
 San hoto *to cut through*; Rth oto *to slice (e.g. bread)*, (N) <muhoto> *to cut*.
- *Royaw:
 San holo *to get wet; make wet*; Snl oyo *to wade*; Tal žolo *wet*; Ban hoyow, Rth -oyow *to swim*.¹⁵⁰
- *Ruəŋ:
 San huaŋ *subsidence of ground; hole, pit, huaŋ-eŋ hold of ship; partition*; Ban su huaŋ *inside* [PPh *Ruəŋ *space, expanse*].
- *Rumbia *sago palm*:
 San, Ban humbia, Snl rumbia, Rth ūmbia (K <humbia>) *sago palm* [PPh *ruNbi·a *sago palm*].
- *Rusuk *rib; thin (of person)*:
 San husu?, Snl rusu? *thin (of person); rib*; Tal žusu?a *rib*; Ban husu? *thin (of person)*, duhi nu husu? *rib(s)*; Rth ūsuk (N <husuk>) *thin (of person)* [PPh *Rusuk *rib*].
- *Rutum *hunger; hungry*:
 San, Ban hutuŋ, Snl rutuŋ, Rth ūtum *hunger; hungry* [PPh (Charles) *Rutəm *hungry*].
- *kae/iR *to scratch; sweep*:
 San kaehə?, Rth kai *to sweep (with broom)*; Ban káehe? *to scratch (of hen)* [PPh (Charles) *kahiR *to scratch, sweep*].
- *kaən *to eat; cooked rice, food*:
 San kaəŋ *to eat; food*; Tab *cooked rice*; Snl kaŋ *to eat; cooked rice*; Tal anna *to eat; food*; Ban kaŋ *to eat*; Rth kan *to eat; cooked rice, food*; Ban kan-eŋ *will be eaten* [PPh (Zorc) *ka?ən *eat*].
- *kau *you (sg.)*:
 San, Ban, Rth kau, Snl kaw *you (sg.)* [PPh *kaw, *ikaw *you sg.*].¹⁵¹
- *kabus:
 San kabusə? *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*].
- *kadadəmaR *morning star (Venus)*:
 San kadadəmahə?, Tah kararumahī?, Snl kadadəmarə?, Tal (S) <aradamaka>, Rth kararumá *morning star (Venus)*.¹⁵²

*kagudangen *woods, forest:*

Tal ahurananna, Rth kahurangan *woods, forest* [Mansaka kagurangan, Kalagan kagulangan *woods*]. cf. *gudaŋ.

*kaRəbi *yesterday, last night:*

San kahəbi, Snl karəbi, Tal aʒabbi *yesterday*; Ban kahibí, Rth kaabí *last night* [PPh (Charles) *kaRabiŌi *last night*; PPh (Zorc) *ka-Rabí:ʔiH *yesterday*]. cf. *Rəbi.

*kaRibu *to weave:*

San kahiḅu *to weave (cloth)*; sarong, *sleeping robe*; Snl kariḅu *blanket*; kariḅu-aŋ *to weave (cloth)*; Rth (N) <mangahiwu> *to weave*.¹⁵³

*kaRo *to scratch:*

San kaho, Snl karo, Rth kao *to scratch*; Tal aʒo *to comb* [PPh (Zorc) *ka:Raw *small biting insect, itchy-mite*].

*kakaʔ *older sibling:*

San, Snl kakaʔ *older sibling* (term of address); Ban k-in-akaʔ, Rth kakaʔ *older sibling* [PPh *kaka (kin) *older sister*].

*kakənit/? *tree sp.:*

San kakəniʔ *tree sp.*; Ban, Rth kakiniʔ *tree sp., bark used for twine*.

*kaleak *green parrot:*

San ka|eaʔ, Ban kaleaʔ, Rth kaliák *green parrot* [Ttb kəleak, Mdw kaleaʔ *green parrot*].¹⁵⁴

*kaləpa:

San ka|əpa *palm branch (section without leaves)*; Ban kalapá, Rth kalupá *palm frond*.

*kali *to dig:*

San ka|i, Tal a|i, Ban kali *to dig* [PPh *kali *bury, dig*].

*kaliməŋa *plant sp.:*

San ka|iməŋa, Ban kaliməŋá, Rth kaluməŋá *plant sp. like ginger, used medicinally* [Ttb kariməŋa *plant sp.*].¹⁵⁵

*kal/numpeReŋ *wasp:*

San kanumpeheŋ *wasp*; Ban kalumpeheŋ *large wasp sp.*; Rth kampeeŋ *small wasp sp.*¹⁵⁶

*kamet *to signal with the hand:*

San kameʔ *to touch with fingertips to attract attention; signal with slight movement of the hand*; Rth kameʔ *to beckon with the hand* [PPh (Charles) *(k,g)amət *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 kanehabaʔ, Rth kaneəḅ *yesterday*.¹⁵⁸

- *kanuku (*finger*)*nail, claw*:
San, Snl kanuku, Tal anu?u *finger**nail*; Ban, Rth kanuku (*finger*)*nail, claw*
[Buol kanuku *claw*].
- *kandoŋ *to spin rope*:
San, Ban kandoŋ, Tal (A) <andongga> *to spin rope* [Tinombo (Central Sulawesi)
andoŋ *to spin rope*].¹⁵⁹
- *kaŋeden/? *when?*:
San (Siau) kaŋere?, Snl ŋe|e?, Tal aŋera, Rth kaneren *when?*; San ka?ŋere?,
Ban kaŋeden *when?* (*in the past*); San aŋere?, Ban ŋeden *when?* (*in the*
future).¹⁶⁰
- *kaŋko *edible water plant*:
San kaŋko?, Rth kaŋko *waterplant, leaves eaten* [cf. PPh *kaNkuŋ *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 *kapət *cling to; vine*; Tdn
kaput *to cling (of a vine, etc.)*].
- *kasaw *rafters*:
San kaso, Ban, Rth kasow *rafters* [PPh *kasaw *rafters*].
- *kasili *eel*:
San, Snl, Ban, Rth kasili, Tal asili *eel* [PPh *ka-sili· *eel*].
- *kasuaŋ *spirit, ghost*:
San kasuaŋ *corpse*; (sometimes also used for) *spirit*; Ban kasuaŋ, Rth
kasuaŋ *ghost*.
- *katil *itch; itchy*:
San, Snl kati?, Rth katil *itch; itchy* [PPh *katəl *itch*].
- *katoan *snake*:
San katoaŋ, Tah katón, Rth katón *python*; Snl katoaŋ, Tal atoanna *snake*.¹⁶¹
- *kayab *to fan fire*:
San kalabə?, Ban káyaba?, Rth kayab *to fan fire* [PPh (Charles) *kayab *to*
fan fire].
- *kayu *wood; tree*:
San kalu, Snl kayu, Tal alu, ŋ-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(z)ap *sparkle, shine*].
- *keke?:
San keke? *to call out; laugh*; Rth keke? *to quarrel; scold* [PMin *ke?ke?
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)əpa *rice chaff*].

*kəbit *touch to attract attention:*

San kəbi?, Tal a]abbita, Ban kibi?, Rth kibi? *touch (someone) to attract attention* [PPh *kəbit *hook (with fingers)*].¹⁶²

*kədut *to pinch:*

San kədu?, Ban kudú?, Rth kurú? *to pinch (with fingernails)*. [PAN (Blust) *kə(zZ)ut; PPh *kəDut *pinch*].

*kəkiR *to shiver, tremble:*

San kəkihə?, Ban kikihi? *to shiver, tremble* [PPh *kə-kəR *shake, tremble*].

*kəkud:

Ban kukudu? *to scratch*; Rth kur *to dig* [PPh *kuDkuD *scrape*].

*kəlis *wrinkled, shrivelled:*

San kəlisə? *hard, tough*; Ban kilisi? *wrinkle; wrinkled*; Rth kilís *to shrink; wrinkled, shrivelled* [Ttb, Tsw kələs *wrinkled, shrivelled*].

*kəmis *to squeeze, wring:*

Tal ma-kkamissa, Ban kimisi?, Rth kimís *to squeeze, wring* [PMin *kəməs *wring out, squeeze*; PAN (Blust) *kəməs *held or squeezed in hollow of hand*].¹⁶³

*kəmu *you (pl.):*

Siau kəmu, Tah kumu, Ban, Rth kumú *you (pl.)*.

*kəmbal *young edible coconut:*

San kəmba|ə?, Ban kambala? *young edible coconut* [Ttb kəmbal *young edible coconut*].

*kəniŋ *eyebrows:*

Ban, Rth kiníŋ *eyebrows* [PPh *kəniŋ *eyebrows*].¹⁶⁴

*kəŋkum *to hold in fist; handful:*

San, Snl kəŋkuŋ *fist; to hold in closed hand*; Tal saŋ-kəŋkuma *a handful*; Rth ŋkum *to hold in hand* [PPh *kəmkəm *hold closed; handful*].

*kəpal *thick:*

San kəpa|ə? *many*; Snl kəpəə?, Tal appala, Rth kupál *thick*; Ban kapala *thick; many* [PPh *kəpal *thick*].¹⁶⁵

- *kəpit:
Rth kipi? *to carry under the arm; to squeeze; tight* [PPh *kə(N)pit *press, clamp*].
- *kətiR *hard*:
San, Snl kəti?, Tal atti, attika *hard (of object)*; San kətih-aŋ *constipated* [PMin *kəteh *hard*].¹⁴¹
- *kətiŋ *taut; to stretch taut*:
San kətiŋ, Tal attiŋa, Rth kitíŋ *taut; to stretch (rope, etc.) taut* [Ttb, Tse kətəŋ *tight, taut*].
- *k(i)oyab *to yawn*:
San kiolabə?, Tal (A) <iolaba>, Ban kóyaba?, Rth koyab *to yawn* [cf. PAN (Blust) *Suab *yawn*].
- *kiday:
Ban kidey, Rth kirey (N <kirai>) *forehead* [PPh *kiDay, PAN (Blust) *kiray *eyebrow*].
- *kiRi *to scrape, grate, shave*:
San, Ban kihi, Snl kiri, Rth kii *to scrape, grate, shave*.
- *kiRit/? *backside, buttocks*:
San kihi?, Rth kii? *backside, buttocks*; Ban kihi? *female genitals*.
- *kiki *to bite*:
San, Snl, Ban, Rth kiki, Tal i?i *to bite* [PPh (Charles) *ki(q)kiq *bite*].
- *kilat *lightning*:
San, Snl, Ban, Rth kila? *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 kínasa?, Rth kinas *fish*; San, Snl kinas-aŋ *be eaten (of meat)*.
- *kite *we* (inclusive):
San kite?, Tal ite, ŋ-kite (possessive form), Ban, Rth kite *we* (inclusive); Snl kite? *you* (pl.) [PPh *kita *we* (inclusive)].
- *ko/uanen *rightside*:
San, Snl koaneŋ, Tal uananna, Ban kuanen, Rth kuanen, koanen *rightside* [PPh (Zorc) *kawanan, PMP (Blust) *ka-wanan *rightside*].¹⁶⁶
- *ko/uiRi *leftside*:
San kaihi, Snl kairi, Tal aiži, Ban kuihi, Rth koy (N <kohii>) *leftside* [PMP (Blust) *ka-wiRi *leftside*].^{166, 167}
- *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 kɔ|a, Ban, Rth kola *to fry without using oil.*

*kolay *taro:*

San kɔ|e, Ban kɔ|ey, Rth kɔ|ey, kolay *taro* [PMin *kolay *taro*].

*kombaŋ *stomach:*

San, Rth kombaŋ, Tal (A) <ombanga> *stomach*; Ban kombaŋ *greedy, gluttonous* [Pon, Mdw 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.*

*kuən *say; it is said:*

San kuən, Rth kun *say, it is said* [PPh *ku'an *whatchamacallit*].¹⁶⁹

*kubaŋ *coconut shell drinking vessel:*

San kubaŋ, Tal (A) <uwanga>, Ban kubaŋ *coconut shell used as drinking vessel* [WBM kuvaŋ *coconut shell drinking vessel*].

*kud/lilas *spleen:*

San kulilasə?, Ban kud|lasa?, Rth kurilas *spleen.*

*kudin *earthen cooking pot:*

San kuriŋ, Snl ku|iŋ, Tal (A) <urina>, Rth kurin *earthen cooking pot* [PPh *ku(D)ən *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*].

*kuRuŋ *cage, enclosure:*

San kuhuŋ *pen, cage, animal enclosure*; Rth kuuŋ *bamboo basket to enclose fowls* [PPh *kuruŋ *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 ku|i *toughness (e.g. of meat)*; *tough*; Rth kuli *tough (of meat), hard (of wood).*

*kulit *bark used for making rope:*

San ku|i?, Ban kuli? *bark used for making rope*; Tal u|iitta *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 ku|u?, Ban kúhuhu?, 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 kumpasə?, Rth kumpas *tree with edible fruit (Eugenia sp.)*.
- *kunid *tumeric (Curcuma longa)*:
San kuni?, Ban kúnidi?, Rth kunir *tumeric (Curcuma longa)* [PPh (Charles) *kunj 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/id *foot*:
San, Snl laedə?, Tal ledda, Rth lar *foot*.¹⁷⁰
- *laud *ocean*:
San, Snl laudə?, Ban láodo? *ocean*; Tal lodda *direction seaward, (S) <loda> beach* [PPh *la·ud *sea*].¹⁷¹
- *ladaŋ *thorn*:
San laraŋ, Snl |a|aŋ, Ban ladaŋ *thorn* [PPh (Charles) *la(Dj)aŋ *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 lanisə? *begin to ripen (of corn); begin to grow yellow and ripe (of coconuts)*; Ban lánisi?, Rth lanis *withered, dried out (of leaves)*.
- *lansik *to bounce, jump about*:
San lansiq? *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 laŋo, Ban, Rth laŋow *fly* [PPh *laŋaw *fly (insect)*].
- *laŋit *sky*:
San, Snl, Ban laŋiq?, 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) *ləba *lick*].

*le/iaw *tree with edible fruit:*

San leau, North San leo, Rth liáw *tree with edible fruit* [Ttb leow *tree* (*Nauclea macrophylla*)].¹⁷³

*leRe? *neck:*

San lehe?, Snl rerə?, Tal ulekka, Ban ehe? *neck* [PPh *liqəR, PMin *lehe? *neck*].^{67, 174}

*leneR *still, calm (of sea, wind):*

San lenehə?, Ban énehe? *still, calm (of sea, wind)* [PPh (Charles) *lini(dj) (*of sea*) *to be calm*].

*le/iŋoR:

San leŋohə? *disobedient; shamming deafness*; Rth liŋo *insane*.

*lepe[?]:

San lepe? *double (such as two pieces of fruit growing into each other)*; Ban lepe? *twin*.

*ləbak *to pound rice:*

Ban labá?, Rth lubák *to pound rice* [PPh *ləbək *pound (rice)*].

*ləbat *to cross:*

San ləba? *to wade across (river)*; Ban labá?, Rth lubá? *to cross (river, valley)* [Tdn ləwət *cross to the other side*].

*ləbiŋ *grave; to bury:*

San, Snl ləbiŋ *grave; to bury*; Tal (S) <la|abingana>, Rth (N) <liwing> *grave*; Ban libiŋ *to bury* [PPh *ləbəŋ *bury*].¹⁷⁵

*ləgay *to laugh:*

San ləge, Snl ləgay, Tal lu-llage, Ban legéy, Rth luháy *to laugh* [cf. PPh *gəli *laugh, tickle*].¹⁷⁶

*ləka:

San ləka *trees and shrubs floating in the sea after being washed out by floodwaters*; Rth luká *to topple over (of a tree)*.

*ləku *to fold:*

San ləku, Ban, Rth lukú *to fold* [Ttb ləku *bend, bend over*].

*ləkub:

San ləkubə? *bent back, bent over*; Ban luku? *bend down, duck head*; Rth lukúb *enfold chicks under wings (of hen)* [PPh *ləkəb *close (shutter/door)*].¹⁷⁷

- *ləlay *paralysed*:
Rth (N) <lulai> *paralysed* [Tbl laylay *powerless in the joints*; Tse laylay *paralysed*; Ttb laylay *weak in the joints, paralysed*].¹⁷⁸
- *ləlut *bamboo cooker; to cook in bamboo*:
San ləluʔ, Tal lalluta, Ban luluʔ *bamboo cooker; to cook in a bamboo cooker*;
Rth luluʔ *bamboo* (general term); *to cook in bamboo* [PPh (Charles) *lutlut
to stuff food in bamboo to cook].¹⁷⁹
- *ləmis *to drown*:
San ləmisəʔ, Tal lammisa, Ban limisiʔ, Rth limís *to drown* [PPh *ləmēs *sink*;
drown].
- *ləno *smooth*:
San, Snl ləno, Ban lonó, Rth lunó *smooth* [Sindangan Subanun lənuʔ, Siocon
Subanon lonuʔ *smooth*].¹⁸⁰
- *ləndim *cold*:
San ləndiŋ, Snl dəndiŋ, Tal (A) <landima>, Ban da-lindíŋ *cold*.¹⁸¹
- *ləŋa *sesame (herb)*:
San ləŋa *sesame*; Rth luŋaluŋá *a plant used for medicinal purposes* [PPh
*ləŋa *herb: sesame*].
- *ləŋkut/?:
San ləŋkuʔ *dirt on body*; Rth luŋkúʔ *moss, mildew*.
- *ləsia *nit, louse egg*:
San ləsia, Ban, Rth lasia *nit, louse egg* [PPh *lisəhaq *nit, louse egg*].¹⁸²
- *ləsiŋ *sour*:
Ban, Rth lisíŋ *sour* [cf. Sarangani Manobo mɔlaksiŋ, Kalagan malagsiŋ *sour*].¹⁸³
- *lətaw *to float; rise to surface*:
San ləto, Tal latto, Ban lotów *to float; rise to surface*; Rth lutów *rise*
(of sun, boil); *emerge, come to surface* [PPh *lətaw *float; erupt*].
- *lətuR *bang, thud, noise of explosion*:
San lətuheʔ, Ban lutuhuʔ, Rth ūtú *bang, thud, noise of explosion*.
- *lia *ginger*:
San, Snl, Ban, Rth lia *ginger* [PMin *lia *ginger*].
- *lias *urine; to urinate*:
San, Snl liasəʔ, Ban líasaʔ, 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 upsidedown*; 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 liwua? *hollows washed out by water at edge of river or sea*].
- *lidik *to bring land under cultivation; gardens*:
 San (Tar) liri? *bring land under cultivation, make gardens*; Snl lili? *cleared land*; Ban lidi?, Rth lirik (*dry*) *cultivated field, gardens; bring land under cultivation*.
- *liRa *large red tree ant*:
 San liha, Rth ia *large red ants which live in trees*.
- *likud *back*:
 San, Snl likudə?, Tal li?udda, Ban líkudu?, Rth likur *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*].
- *limbuḡ *round*:
 San limbuḡ *piled up (of soil, etc.)*; Ban, Rth limbuḡ *round* [Dampelasa, Balantak (Central Sulawesi) *limbuḡ round*].
- *limpudus *waterspout; whirlpool*:
 San limpurusə? *waterspout*; Rth limpurus *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) *li:naw *clear (water); pool in stream*].
- *lintuR *to descend (stairs)*:
 San lintu?, Ban íntuhu?, Rth Tntu (N <muhintu>) *to descend (stairs)*; San lintuhə? *degree of descent*.
- *lipan *centipede*:
 San, Snl lipaḡ, 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)*.
- *lisuḡ *rice mortar*:
 San, Snl, Ban, Rth lisuḡ, Tal (A) <lisunga> *block on which rice is pounded, mortar* [PPh *ləsuḡ *mortar*].
- *loaḡ *wide*:
 San, Snl loaḡ, Tal (A) <loanga> *wide; width*; Ban loaḡ *outside; to go outside*; Rth loaḡ *loose, too wide* [PPh *luaḡ *wide*].

- *lobot/? *soft, tender*:
 San, Rth lobo?, Ban lobo? *soft, tender* [? PPh *lənbut *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, Tal lombo *to fish with a cast net*; Snl lombo *casting net*; Ban lombo *to fish with a cast net; to throw*; Rth lombo *to throw* [Tdn lobo? *to throw; cast a net*; Mdw lumbu? *to throw away*].
- *loso *hot*:
 San loso *to burn oneself; a burn (on body)*; Snl noso *burned (of skin)*; Tal, Rth loso *hot* [cf. Proto-Sa'dan (Mills) *læssu, PAN (Blust) *la(cs)uq *hot*].¹⁸⁴
- *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 luaŋ *to buy*; Rth sa-luán *to exchange* [PPh (Charles) *liwan *to replace, to pass, to exchange*].
- *luəm *overcast; shady*:
 San luəŋ *overcast, cloudy*; Tal lumma *shade, shadow*; Rth lum *to shelter (from sun)*; *overcast; shade* [? PPh (Charles) *lə:(q)um *within*].
- *ludan *load; to load*:
 San luraŋ *cargo, freight; to load*; Snl lu!aŋ *load* [PPh (Zorc) *lu:jan *ride/put in vehicle*; Tagalog lu:lan *to load cargo*].
- *luga *to cook*:
 San luga *to cook well; cooked until soft*; Rth luha *cooked; to cook*.
- *lukad *to keep watch; watchman*:
 San lukadə? *morning; watchman; vigilant*; Snl lukadə? *morning; to watch (for something)*; Ban lúkada? *guard, watchman*; Rth lukar *to guard, keep watch; watchman* [PMin *lukad *watchman; to guard, keep watch*].
- *lulid *to roll*:
 Ban úlidi?, Rth lulir *to roll (of ball, etc.)* [cf. PPh *lilid *roll up*].¹⁸⁵
- *lumu *soft, weak*:
 San, Ban, Rth lumu *soft, weak* [PPh *-lumu *easy; soft*].
- *lumut *moss, algae*:
 San lumu? *moss*; Ban lumu? *green scum on water surface, algae; mould on fruit* [PPh *lumut *moss, algae*].
- *lunaw *green*:
 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*].¹⁸⁶

*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 ma|a, 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*].¹⁸⁷

*maRuaya *young girl*:

San mahuala, Snl maruá, Rth muaya; Ban mahuaya *pretty*.¹⁸⁷

*malənsa *blood*:

San ma|ənsa *blood; amniotic fluid*; Rth malunsá *blood* [cf. Ilianen Manobo, WBM ləŋəsa *blood*].

*mama *to chew betel*:

San, Snl, Ban, Rth mama *to chew betel* [PPh *mamaq *chew*]. cf. *mamaən.

*mamaən *areca nut*:

San mamaən *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*].

*moRoj *mouth*:

San, Ban mohon, Snl moron, Tal možonja, Rth moon (N <mohong>) *mouth*.

*momo *blunt*:

San, Snl momo *blunt (of knife)*; Rth momo *toothless; blunt*.

*munsij *charcoal*:

San, Ban munsij, Tal munsija *charcoal; cold remains of fire* [cf. PPh (Charles) *(q)usij *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 naraŋ *custom, habit; accustomed*; Snl na|aŋ *accustomed (to), acquainted (with)*; Ban ma-naraŋ *tame*; Rth ma-naram *usually* [PMin *naram *tame*; Mak naraŋ *tame; accustomed*].
- *namuR *dew*:
San namuhə?, Ban námuhu?, 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*].
- *natiŋ *plant with edible leaves*:
San (Tab), Ban, Rth natiŋ *plant sp., leaves eaten* [PAN (Dahl) *NaCəŋ *vegetables*].
- *nayaŋ *to play*:
San nalaŋ, Snl nayaŋ, naŋ, Tal nalaŋŋa, Ban, Rth nayaŋ *to play* [cf. PPh (Zorc) *qayam, Tdn pa?yaŋ *to play*].
- *niuR *coconut*:
San niuhə? *palm sp. with small fruit*; Snl niure? *ripe coconut*; Tal niukka, Rth niú *coconut* [PPh *ñi·uR *coconut*].
- *niRu *winnowing pan*:
San nihuŋ, Tah nihu, Tal nižu, Rth niu *winnowing pan* [PAN (Blust) *ñiRu *winnow, winnowing basket*].¹⁸⁸
- *nipis *thin*:
San, Snl nipi?, Tal nipi, Ban nípisi?, Rth nipis *thin* [PPh *nipis *thin*].¹⁸⁹
- *nonaŋ *tree sp. with edible leaves*:
San, Rth nonaŋ *tree sp., young leaves eaten*.
- *nunuk *banyan*:
San nunu?, Rth nunuk *banyan tree* [Proto-Indonesian (Mills) *nunuk banyan*].
- *ŋaŋa *to gape; open the mouth*:
San ŋaŋa *to gape*; Ban, Rth ŋaŋa *to open the mouth* [PPh *ŋaŋa *agape; open (mouth)*].¹⁹⁰
- *ŋeŋeŋ *small bee*:
Ban ŋeŋeŋ, Rth ŋeŋeŋ *small yellow bee* [Tdn ŋeŋeŋ *buzzing noise*; Ttb ŋeŋeŋ *bush insect named for its noise*; cf. PPh *əŋəŋ *buzzing*].¹⁹¹

*ɲuda *young*:

San ɲura *young forest; low scrub*; Snl ɲu|a *young*; Ban ɲuda, Rth ɲura *young*; *unripe* [PPh (Charles) *ɲu(d)ha, Karo Batak ɲuda *young*].¹⁹²

*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 *acid, bitter*].

*paRa *drying rack*:

San, Ban paha, Rth paa *rack above fire for drying (fish, copra, etc.)* [PPh (Charles) *paRa(paRa) *shelf over hearth*].

*paRes *to hit with object*:

San pahesəʔ, Rth paes *to hit with object (stick, whip, etc.)*; Tal paʒasa *to knock down fruit with pole*; Ban páheseʔ *to whip*.

*paRəpat *mangrove*:

San pahəpaʔ *mangrove*; Rth paapaʔ *tree sp. (not mangrove)* [PPh (Charles) *pa(Dj)əpat *mangrove*; PPh (Charles) *paRatpat *tree sp.*].

*paRi *ray (fish)*:

San, Ban pahi, Rth pai *ray (fish)* [PPh *paRi(h) *ray*].

*paRigi *well*:

San pahigi, Ban pahigi, Rth paihi *well* [Mal pərigi *well*].

*paRudu *bait*:

San pahuru, Tal paʒuru, Ban pahudu, Rth pauru *bait*.

*pakel *heel*:

San, Snl pakeləʔ, Tal paʔalla *heel*; Rth pakel *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 pa|edəʔ, Tal pa|adda, Ban páledeʔ, Rth paler *palm (of hand), sole (of foot)* [PPh *palaj *palm (of hand)*].

*paluka *shoulder*:

San pa|uka *shoulder blade, Tah shoulder*; Rth paluka *shoulder* [PMin *paluka *shoulder*; Tomini paluʔa *shoulder blade*].

*paŋkul *to beat*:

San paŋkuləʔ, Ban páŋkuhuʔ *to beat (with hammer, wood)* [Mdw paŋkul *to beat (e.g. with a piece of wood)*].

*pasaən *to carry on shoulder*:

San pasaəŋ, Snl, Ban pasáŋ, Tal pasanna, Rth pasán *to carry on shoulder* [PPh (Charles) *pasaqan *carry on shoulder*].

- *pasik *to insert stick or post in ground:*
 San, Ban pasi?, 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 pasolo?d *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 katiupaŋ *honey bee*; Snl patiukaŋ *bee*; Ban patiukaŋ, 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*].
- *peRa? *fish roe:*
 Ban peha?, Rth pea? (N <peha>) *fish roe* [PPh (Charles) *piRa(q) *roe*].
- *pensol:
 San pensolə? *piece, fragment*; Rth pensol *blunt*.
- *pepe:
 San, Snl pepe *urine; to urinate*; Rth pepe *to wash clothes* [PPh *piqqiq *wash clothes or private parts*; Tse pi?pi? *to wet, wash*; Tbl, Ttb pi?pi? *urine; to urinate*].
- *pədis *to sting, smart:*
 San pədisə? *hot sunshine*; Ban pidisi?, Rth pirís *to sting, smart, be sore* [PPh *pəDəs *hot, spicy, sting (pain)*].
- *pədu *gall, bile:*
 San, Snl pədu *gall; anger*; Tal (A) <padu> *gall*; Ban pudú *bitter; bile, gall*; Rth purú *gall, bile* [PPh (Charles) *pəjú *gall, bile*].
- *pəRa *to squeeze; wring out:*
 San pəha, Ban pahá *to squeeze; wring out* [PPh *pəRaŋ *wring out*].
- *pəku *to bend:*
 San pəku, Ban, Rth pukú *to bend* [Ttb pəku? *broken, snapped*].
- *pəmpaŋ *bank of river:*
 San pəmpaŋ, p-ah-əmpaŋ *precipice, abyss*; Rth pəmpáŋ *bank of river* [PPh *paŋpaŋ *bank*].
- *pənad *buttocks, backside:*
 San, Snl pənədə?, Ban panada? *buttocks, backside*; Rth punár *plug, stopper; to plug up* [PMin *pənad *buttocks, backside*].
- *pəndam *to feel:*
 San pəndaŋ, Ban pandáŋ, Rth pundám *to feel* [PMin *pəndam *to feel, touch*].

*pəntas *to pick rice, harvest:*

San pənsəʔ, Ban pantasaʔ, Rth puntás *to pick rice, harvest.*

*pəsok *to release, let go:*

Ban posóʔ, Rth pusók *to release, let go (from hand).*

*pəsut *to press out, squeeze out:*

San pəsuʔ, Rth pusúʔ *to press out, squeeze out (e.g. seed from fruit)* [PMin *pəsut *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 pi|a, Ban pida *how many?* [PPh *pijaʔ *how much?, how many?*].

*pile *to choose:*

San, Snl, Ban, Rth pile *to choose* [PPh *piliq *select, choose*].

*pipi *cheek:*

San, Snl pipiʔ, Ban, Rth pipi *cheek* [PPh *pipi *cheek*].

*pisi *skin, bark:*

San, Snl, Tal, Ban, Rth pisi *skin, bark* [PPh (Zorc) *pi:siʔ *rope; bark*].

*pitik:

San pitiʔ *to shoot with bow and arrow, Tab to spear fish; Tal (A) <papiti'a> bow; Ban pitiʔ 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 *pituʔ *seven*].

*po/uikan *turtle:*

San, Snl puikaŋ, Ban poikaŋ, 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 pondo|əʔ, Snl pondəʔ, Ban póndoloʔ, Rth pondol *tip, point, end* [Ttb popondol *finger, toe*].

*popos *areca nut:*

San poposəʔ *areca nut at the stage of development most favoured for eating; Ban póposoʔ 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*].
- *puən *trunk, tree; origin:*
 San puən *trunk of tree, especially lower part, foot; source, origin;* Snl puŋ *base (e.g. of tree);* Ban puŋ, Rth puŋ *trunk; tree* [PPh *puqun *basis, trunk, origin*].¹⁹⁶
- *puid *navel:*
 San puide? *navel; middle;* Ban púidi?, Rth puír *navel*.
- *pudut *to pick up:*
 San, Rth puru?, Tal purutta, Ban pudu? *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 puliŋ, Ban, Rth puliŋ *dust or grit in eye* [PPh (Zorc) *pu:liŋ *blinded by dirt in eye*].
- *pulo *ten:*
 San, Tal pu|o, Snl puo, Ban, Rth pulo *ten* [PPh *puluq *ten*].
- *pulu *handle:*
 San pu|u, 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 pune, Rth punay *dove;* Ban puney *bird sp. (not dove)* [PPh *punay *(bird) wild dove*].
- *pundal *paddle, to paddle:*
 San punda|ə?, Snl punda?, Ban púndala?, Rth pundal *paddle, to paddle*.
- *pungut:
 San pungu?, Tal punguta *tailless;* Rth puŋku? *low* [Ttb puŋkut *to break off a piece*].¹⁹⁷
- *pusid *navel:*
 Tal (A) <pusida> *navel;* Ban púsidi?, Rth pusir *whorl of hair* [PPh *pusəj *navel; *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 puyun, Rth puyun *grandchild*.

*sai *who?*:

San, Tal, Ban, Rth sai, Snl say *who?* [PPh (Charles) *sa0i *who?*].

*saud *to put on hook*:

San saudəʔ *to put bait on hook*; Ban sáuduʔ *to hang on hook*.

*sabənaR *north*:

San sabənahəʔ, Tal sabənnaka, Rth (N) <sawuna> *north*.²⁰¹

*sabuR *to sow, scatter*:

San sabuəʔ, Tal (A) <sawuka> *to sow, scatter* [PPh *sabuR *scatter, strew*].²⁰²

*sada *boundary*:

San, Rth sara *boundary*; Tal (A) <sasara> *boundary marker*; Ban pa-sadá-ŋ *border, boundary*.

*sadeR *to lean against*:

San sarehəʔ, Ban sádeheʔ, Rth sare *to lean against* [PPh *sa(N)DIR *lean on*].
cf. *sandeR.

*sagengel *to carry on shoulder strap*:

San sagəŋeləʔ, Tal sahengela, Ban sagéŋeleʔ, Rth saŋkel *to carry on strap over shoulder*.²⁰³

*sagudaŋ:

Snl sagu|aŋ *cobra*; Ban sagudaŋ, Rth sahuraŋ *crocodile* [cf. Tdn saŋuran, Tbl sawuʒaŋ, Ttb sawuraŋ *crocodile*]. cf. *gudaŋ.

*saRaŋ:

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 sahiʔ *to skim off, to cut a small piece off the end*; Rth saip *to scrape off, shave off* [cf. PPh *sagəp *scoop out*; *sagap *skim off*; *scoop up*].

*saRup *to scoop up*:

San sahuʔ *to fill up, replenish; add to*; Ban sahuʔ, Rth saup *to scoop up (with ladle)* [PPh *saJAp *scoop up/out*].

- *saka *to climb (mountain)*:
San, Ban, Rth saka, Tal saʔa *to climb (mountain)*.
- *sakaen *boat*:
San, Snl, Ban sakaen *boat* [Palawan Batak sakayan, Sindangan Subanun səkayan *boat*; Proto-South-Philippine (Zorc) *sakayán *thing to ride on*].
- *sakay *to ride; mount*:
San, Snl sake, Tal saʔe, Ban sakey *to ride; mount* [PPh *sakay *ride; mount, ascend*].
- *sakel *heel*:
San sakeləʔ *heel of animal; cockspur*; Ban sákeleʔ *to kick (with toes)* [Subanon sakil, Kalagan sa:kil *heel*].
- *sakit *sick*:
San, Rth sakiʔ *sick*; Ban sakiʔ *evil spirit* [PPh *sakit *sick, pain(ful)*].²⁰⁴
- *sakul:
San sakuləʔ *to beat sago with a wooden hammer*; Ban sákuluʔ *to fight with a weapon*; Rth sakul *to fight with a hand-held lance*.
- *sala *wrong; mistake*:
San, Tal sa|a, Snl sa, Ban, Rth sala *wrong; mistake* [PPh *salaq *err(or), mistake*].
- *saleR *nest*:
San sa|ehəʔ, Tal sa|akka [PPh (Charles) *salaR *nest*].
- *saliu *to exchange*:
San, Snl sa|iu *to exchange*; Rth saliu *to overtake* [PPh (Charles) *saliw *exchange*].
- *saliR *floor*:
San, Snl ənsa|iʔ, Ban sáhihiʔ, Rth sai *floor* [PPh *saləR *floor*].²⁰⁵
- *saluR *river*:
San sa|uʔ, Tah sa|uhiʔ, Snl saurəʔ, Tal sa|ukka *river*; San sa|uhəʔ *drain, gutter* [PPh *saluR *waters*].
- *samudi *behind*:
San, Rth samuri, Ban samudi *behind* [cf. PPh *-uriq *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 sanaʔ *low; humble, meek*; Snl sanaʔ *short (of person)*; Ban sanaʔ *short (of length)*.

*sander *to lean against*:

San sandehə?, Tal sandaka *to lean against* [PPh *saNdəR *lean against*]. cf. *sadeR.

*sandig *near*:

San, Snl sandigə?, 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 saba *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 salabu, Ban (K) <sayabu>, Rth sayabu *vine with edible tubers* [Tb1 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)*.

*seRet/? *hoarse*:

San sehe?, Rth see? *hoarse* [cf. Ttb saret *hoarse*].

*seRo[?] *to sip*:

San, Ban seho? *to sip (e.g. hot liquid)*; Rth seo? *to suck, smoke cigarette* [? PPh *siRup *slurp*].²⁰⁶

*seley *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*.²⁰⁷

*sengot *sail; to sail*:

San, Snl sengə?, Tal sengota, Ban senko? *sail; to sail* [PMin *senkot *to sail*].

*sepa *to kick*:

San sepa *to play with a rattan ball*; Snl sepa?, Ban sepa *to kick* [PPh *sipa *kick*].

*sepet *to carry under the arm*:

San, Snl, Ban, Rth sepe? *to carry under the arm* [PPh *sipit *carry under arm*]. cf. *sipit.

*səbaŋ *to rise (of sun):*

San, Snl səbaŋ *to go outside; rise (of sun, moon)*; Tal (A) <sasabangana> *door, way out*; Ban sabáŋ, Rth subáŋ *to rise (of sun)* [PPh (Charles) *səbaŋ *(of heavenly body) to rise*].

*səbaŋen *east:*

San, Snl səbaŋen, Ban sabaŋen, Rth subaŋen *east*. cf. *səbaŋ.²⁰⁸

*səbat/? *to name, mention:*

San səbaʔ, Ban sabáʔ, Rth subáʔ *to name, mention* [cf. Mal səbut *to name, mention*].

*səbik:

San səbiʔ *time when fish are scarce; have a craving for fish during this period*; Rth sibík *to want, desire*.

*səbu *froth, foam; to extinguish fire:*

San səbu, Tal (A) <sabu>, Ban subú, Rth subú *foam, froth; to extinguish fire with water* [PPh *səbu *develop steam; seethe; extinguish/quench*].

*sədap *to set (of sun):*

San sədaʔ *to set (of sun); press down, hold under*; Ban sadáʔ, Rth suráp *to set (of sun)* [PAN (Blust) *sə(Ddj)əp *set (of sun)*].

*sədapen *west:*

San, Snl sədapen, Rth surapen *west*. cf. *sədap.²⁰⁹

*səgad *to sting (of insect):*

San səgadəʔ, Rth suhar (N <sugar>) *to sting (of insect)* [PPh *səGəd *sting(er)*].²¹⁰

*səRam *ant:*

Ban saháŋ, Rth saam (N <saham>) *ant* [Ttb sərəm, Pon soyom *ant*].

*səki *to bind tightly together:*

San səki, Ban, Rth sikí *to bind tightly together*.

*səkol *cough; to cough:*

San səko|əʔ, Snl səkoəʔ, Tal (A) <soʔola>, Ban sokoloʔ, Rth sukól *cough; to cough* [Ttb səkol *cough*].²¹¹

*səlat *space; between:*

San səlaʔ *space between two things*; Ban saláʔ, Rth suláʔ *between* [PPh *səlat *space*]. cf. *səlet.

*səlet *to insert between two things:*

San səleʔ *food which sticks between teeth; to stick between, insert*; Tal sallata *something to separate two things*; Ban seléʔ, Rth suléʔ *to insert between two things* [PMin *səlet *insert between two things*]. cf. *səlat.²¹²

*səluŋ:

San səluŋ *to go under, put under*; Ban, Rth sulúŋ *to shelter (from sun, rain)*.

*səmuR *nasal mucus:*

San səmuŋ, Siau səmuhéʔ, Ban sumuhuʔ, Rth sumú *nasal mucus*.²¹³

*səmpay to hang over rope:

Tal sampe to hang on rope; Ban sempéy, Rth sumpáy to hang over rope or rack [PPh (Charles) *s(a,ə)mpay to hang].²¹⁴

*səmpu[?] to attach, add:

San səmpu? to add a piece; tie on; Ban sumpú? to connect, attach.

*səndiRan side:

San səndihaŋ side (of the body); Ban sindihaŋ, Rth sindian side (of body, house, etc.) [PMin *səndih isolated, secluded place; Tse səndii side, edge].

*sənsiŋ to plug up:

San sənsiŋ, Ban, Rth sinsiŋ to plug up [PPh (Charles) *sənsəŋ stopper, stop up].

*səŋit to stink:

San səŋi? have a sharp smell, smell strongly; Ban siŋi? foul smell; to stink; Rth siŋi? small animal with a foul smell; bad (of smell) [Ttb səŋit to stink; cf. PPh *səŋid stink].

*səŋgap:

San səŋga? some, part, a portion; Ban saŋká? the others; the rest, remainder; Rth suŋkap-án group, herd.²¹⁵

*səŋkul:

San səŋku?, səŋku|ə? to rebuke, reprimand; Rth suŋkúl to dispute, oppose, argue.²¹⁶

*səpa to chew:

San səpa, Ban sapá to chew; Rth supá to chew noisily, munch [PPh *səpaq chew thoroughly].

*səput blowpipe; to use a blowpipe:

San səpu?, Rth supú? blowpipe; to use a blowpipe [PMin *səput blowpipe].

*səsa nipa palm (Nipa fructicans):

San, Snl səsa nipa palm (Nipa fructicans); Ban sasá leaves of the nipa palm used for thatch [Ttb səsa, Mansaka sasa nipa palm].

*səsal to forge:

San səsa|ə?, Rth (N) <mansal> to forge, work metal [PPh (Charles) *salsal to work iron].²¹⁷

*səsek tight, crowded:

San səse?, Ban sesé?, Rth sesék tight, crowded [PPh *səksək stuff, cram, fill in].

*səsub:

San səsubə? 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 susuw vapour, steam; Tsw susub to dry (e.g. kopra) over fire; treat sick person over steaming water].

- *si to (dative marker):
San, Snl, Tal, Ban, Rth si to (a person - dative marker). [PPh *si topic pronoun formative]. cf. *su.²¹⁸
- *siaw *nine*:
San, Tal sio, Snl siaw, Ban siow, Rth siáw *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 si|e, Ban side *they* [PPh *siDa· *they*].
- *sidi to *separate grain*:
San siri to *separate husked rice in winnowing pan*; Snl si|i, Rth siri to *separate grain* [PPh *siji *sieve, sift*].
- *siduŋ to *shelter*:
San siruŋ *large leaf used as rain shelter; to shelter*; Rth siruŋ to *shelter* [PPh *siD/ruŋ *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 silahə? *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) *sipi(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 sogelə? to *stab or shove horizontally with stick or other implement*; Ban sogel to *knock down fruit with pole*; Rth sohel to *stab*.

*soRob:

San sohobəʔ, Ban sóhoboʔ *to scorch over fire*; Rth soob *to burn (wood), burn down* [Ttb soroʔb *put wood on fire*].

*soRo[ʔ]:

San sohoʔ *to move back, retreat*; Snl soroʔ *to move backward*; Ban sohoʔ *to shift, move* [cf. PPh *surud *withdraw, yield*].²²²

*solo *lamp*

San, Tal so!o; Snl so, soyo, Rth sa-soló-n *lamp* [PPh *suluq *torch*].²²³

*sosop *cigarette; to smoke cigarette:*

San, Ban sosoʔ, 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 suən, Tal suanna, Rth suán *to plant*; Ban suan-ən *will be planted* [Toba Batak suan *to plant*].

*suapa *where?:*

San, Snl, Tal, Rth suapa *where?* cf. *su, *apa.

*suay *finished, used up:*

San sue, Ban suey, Rth soy *finished, used up* [Ttn sui *to finish, complete*].

*suən *to carry on head:*

San suən, Snl ənsuən, Ban suən, Rth sun *to carry on head*; Ban sun-ən *will be carried on head* [PPh *suqun *carry on head*].²⁰⁵

*suət *to enter:*

San suəʔ, Snl, Ban, Rth suʔ, Tal sutta *to enter* [PPh (Zorc) *suʔət *enter*].

*suRat *creeper, extract from roots used to stun fish:*

San suhaʔ *fish poison*; Tal sukkata, Ban suhaʔ, Rth suaʔ *a creeper, juice from roots used to stun fish* [PMin *surat *plant whose roots are used to stun fish (Milletia sericea)*].²²⁴

*suRuk *to draw, scoop up water:*

San, Ban suhuʔ, Tal suzuʔa, 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 sukaʔ *to measure; sound water*; Tal suʔata *to measure depth of water*; Ban, Rth sukaʔ *to measure* [PPh *sukat *to measure*].²²⁵

*sunəy *horn (of animal):*

San sunə, Ban sunəy, Rth sunəy *horn (of animal)* [PPh *sunəy *horn*].

*susu *breast*:

San, Snl, Tal, Ban, Rth susu *breast (of woman)* [PPh *susu *breast*].

*taəp *to winnow*:

San taəʔ, Tal tappa, Ban taʔ, Rth tap *to winnow* [PPh *taəp, PAN (Blust) *taSəp *winnow*].²²⁶

*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)aqən *lay a trap*].²²⁷

*tau *person*:

San tau, Snl taw, Rth tou *person* [PPh *tawu *person*].²²⁸

*taumata *person*:

San, Snl, Tal taumata, Ban toumata *person*; Rth tomata *the people* [PMP (Blust) *tau-mataq *person, human being*]. cf. *tau.²²⁸

*taun *year*:

San, Snl taun, Tal tonna, Ban taon, Rth ton *year* [PPh *taun *year, season*].^{171, 228}

*tabu *penis*:

San, Tal, Rth tabu, Ban tabu *penis*.

*tada *cockspur*:

San tara, Ban tada, Rth ta-tara *cockspur*.²²⁹

*tagaloaŋ *open sea, ocean*:

San (Sas) taga|oaŋ, Ban tagaloaŋ *the open sea, ocean*; Tal taha|oaŋŋa *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)*].²³⁰

*taRa *chop wood into planks or beams*:

San taha, Rth taa *chop wood into planks or beams* [PPh *taRaŋ *chop, cut, plane*].

*taRanak:

San tahanaʔ *to rear, care for (a child)*; Tal (A) <dua taʔana'a> *one person with a child*; Ban tahanaʔ, Rth taanak *family* [Ttb, Tbl taranak *family, relatives*].

*taRəndum *memory; to remember, think of*:

San tahənduŋ, Ban tahundúŋ, Rth taandum *memory; to remember, think of*. cf. *əndum.

*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 taka? to cover (with a lid); Tal (A) <ta'apa> to cover (with the hand) [PPh *takəp cover].

*takaw to steal:

San, Snl tako, Tal ta'o, Rth takow to steal [PPh *takaw steal].

*takut fear; afraid:

San, Snl, Ban, Rth taku?, Tal ta'utta fear; afraid [PPh *takut fear].

*talaw cowardly:

San, Tal ta|o, Ban talow cowardly [PPh *talaw cowardly].

*talətat notch in tree to aid climbing:

San talətadə? notch (especially in coconut tree to aid climbing); Rth talutár rung, step; notch in tree to aid climbing.

*talətuɡ:

San talətuɡə? middle of the back (from neck to waist); Rth talutúh backbone.

*tali rope:

San, Snl, Tal ta|i, Ban, Rth tali rope [PPh *tali· rope, string].

*talikud to turn the back; separate:

San talikudə?, Ban talíkudu?, 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 sa|ise shore tree sp. bearing edible nuts (Terminalia catapa); Snl sa|isay 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 *mataq raw, unripe].²³¹

*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 *taNbun heap, pile; *ta(N)bun heap over, cover over].

*tana earth, ground, land:

San, Snl əntana, Ban, Rth tana earth, ground, land [PPh (Charles) *tanəq earth, ground, land].²⁰⁵

*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.

- *tanaᅇaw *insect which damages rice:*
 San tanaᅇo *small, strong smelling grasshopper which causes damage to rice plants; Ban tanaᅇow, Rth tanaᅇaw, tanaᅇow insect which damages rice* [PPh *tanaᅇaw *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*].
- *taᅇis *to cry, weep:*
 San, Snl saᅇi?, Tal saᅇitta, Rth taᅇis *to cry, weep; Ban táᅇisi? crybaby* [PPh *(tC)aᅇis *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 tapise?, Ban táᅇisi?, Rth tapis *to strain, filter; Snl tapise? to strain through fabric* [PPh *tapis *strain, filter*].
- *tapi? *cloth worn when bathing:*
 San tapi?, Ban ta-tapi? *cloth worn when bathing* [PPh *tapiᅇ *apron; skirt*].
- *tasak *ripe, cooked:*
 San, Snl sasa?, Ban tasa?, Rth tasak *ripe, cooked* [PPh (Charles) *tasak *ripe*].
- *tasik *sea; seawater:*
 San, Snl sasi? *sea; seawater; Ban tasi?, Rth tasik sea* [PPh *tasik *saltwater; (Charles) sea*].
- *tatəlu *three:*
 San tatəlu, Snl tatəw, Tal tatəllu, Ban tatəlu, Rth tatəlu *three*. cf. *təlu.^{134, 232}
- *tedeR:
 San terehə? *to stroll, saunter; Rth tere to run*.
- *tengoR *to beat, strike:*
 San tengohə?, Ban téᅇkoho?, Rth tenko *to beat, strike (gong)* [PMin *tenkor *beat (gong, drum)*].²³³
- *təbaᅇ *flavourless:*
 San təbaᅇ *to wash out in fresh water (nets, etc. soaked in salt water); to wash anus; Ban tabəᅇ lacking in salt, tasteless; Rth tuᅇáᅇ tasteless, flavourless* [PPh *tabqəᅇ *flavourless; fresh water*].²³⁴
- *təbas *to chop (down):*
 Ban tabasa? *to hack down (e.g. scrub to make gardens); Rth tuᅇás to chop, hack; fight with sword* [PPh *təbas *fell, cut; PAN (Blust) (Ct)əbas close the harvest*].
- *təduk *pain; painful:*
 San tədu? *pain, illness; very ill; Rth turúk painful, hurt severely*.

- *təgap *tree sp.*:
San təgáʔ, Ban tagáʔ, Rth tuháp (K <tugap>) *tree sp. with large leaves.*
- *təkin (*walking*) *stick, staff*:
San təkin, Rth tikín (*walking*) *stick, staff* [PPh *təkən *pole, stick*].
- *təlak *to fly*:
San təlaʔ, Snl tēaʔ, Tal tallaʔa, Ban taláʔ, Rth tulák *to fly*.
- *təlu *three*:
San təlu, Snl taw, Tal tallu, Ban tulu, Rth tulú *three* [PPh *təlu·
three].^{134, 232}
- *təluR *egg*:
San təluhəʔ, Snl taurəʔ, Tal talluka, Rth tuu (N <tuhu>) *egg* [PPh *təluR
egg].¹³⁴
- *tənaR:
San tənahəʔ *working fast and powerfully for evil*; Rth tuná *to work fast and skillfully (with hands)*.
- *tənik *mosquito*:
San, Snl tēniʔ, Ban tiníʔ, Rth tiník *mosquito* [PPh (Charles) *t(a)(g)ənək
fly, mosquito; Ilongot *tənnək mosquito*].
- *təndak *fence*:
San, Snl tēndaʔ, Ban tandáʔ *fence* [PMin *təndək *post, stake*].
- *tə/intalaŋ *naked*:
San təntalaŋ, Siau tintoŋ, Rth tintalaŋ *naked*.²³⁵
- *təŋad *right, correct*:
San təŋadəʔ, Ban təŋadaʔ, Rth tuŋa-tuŋár *right, correct*.
- *tə/ingaR *dry*:
San təŋgahəʔ *to become dry (of throat, reef)*; Rth tinka *dry*.²³⁶
- *təpiR *mat*:
San təpihəʔ, Snl təpireʔ, Rth (N) <tipi> *mat* [PMin *təpeh, Mak tappərəʔ
mat].⁸⁵
- *təsik *to spurt, spray out*:
San səsiʔ, Rth tisík *to spurt, spray out*.
- *tətəs *to cut (stitches, thread)*:
San tətəsəʔ *to break (of thread, rope); to cut loose, unstitch (seam)*
[PPh (Charles) *təstəs *to cut, tear, open stitches; cut through*].
- *tətuR *hot coals*:
San tətuəʔ, Ban tutuhuʔ, Rth tu *hot coals*.
- *tətul *large tree sp.*:
San tətuləʔ, Ban tutuluʔ, Rth ntul *large tree sp.*

- *tian *belly*:
San, Snl, Ban tiaŋ, Tal tianna, Rth tián *belly* [PPh *ti'an *stomach, belly*].
- *tiap *to count*:
San, Ban tiaʔ, Rth tiáp *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 tiuʔ, Tal tiuppa, Rth tiúp *to blow* [Mal tiup *to blow*].
- *tiRas *hard (of wood)*:
San tihəsəʔ *pure, unadulterated; hard and strong*; Rth tias *hard wood inside tree* [PPh *təRas *hard (wood)*].
- *tikil *to sleep*:
San, Snl tikiʔ, Tal tiʔilla, Ban tiki, Rth tikil *to sleep*; San, Snl kata-tikil-aŋ *sleeping place, bed* [PMin *təkəl *sleep*].²³⁷
- *tilaN *clear, pure (of water)*:
San, Ban tilaŋ *clear, pure (of water)*.
- *timuR *south*:
San timuhəʔ, Tal (A) <timuka>, Ban tímuhuʔ, Rth (N) <timu> *south* [PPh *timuR *rain wind*].⁸⁵
- *timbaw *on top*:
San timbo *be on top (of something); put on top*; Ban timbow *shallow; on top of*; Rth timbow *to float, rise to surface; put on top* [PPh *ti(N)baw *high, height*].
- *timbəlaŋ *thin bamboo sp.*:
San timbəlaŋ, Tal timballaŋa, Ban timbaláŋ, Rth timbuláŋ *thin bamboo sp.* [PMin *tambəlaŋ *bamboo sp.*].
- *timbonan *head*:
Ban timbonaŋ, 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*].²³⁸
- *tinaw *clear*:
Rth tinaw *clear, pure (of water)* [PPh *tin/qaw *clear*].²³⁹
- *tiŋada *to look upwards*:
San, Tal, Rth tiŋara, Ban tiŋada *to look upwards* [PPh *tiŋaJaŋ *look up(wards)*].

- *tiŋiR *voice, sound*:
 San tiŋihəʔ, Tal (A) <tingika>, Rth tiŋi *voice, sound* [PPh *tiŋəR *voice, sound*].
- *tiŋgi *to roll, revolve*:
 San tiŋgi, Rth tiŋki *to roll, revolve*.
- *tiŋgum *to tell riddles*:
 San ta-tiŋgʊ, Ban tiŋkʊ, Rth tiŋkum *to tell riddles*.
- *tiŋkait/? *bad, wicked*:
 San, Ban, Rth tiŋkaiʔ *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 típasaʔ, Rth tipas *palm wine*.
- *típo *to pick (fruit)*:
 San, Ban, Rth típo *to pick (fruit)* [PPh *tipu(q) *fall down (of fruit)*].
- *tipu *smoke*:
 San, Snl, Ban tipu *smoke*.
- *togas *hard; strong*:
 San togasəʔ, Snl tohasəʔ, Rth tohas (N <togas>) *hard; strong*; Tal tohassa, Ban tógasaʔ *hard*.²⁴²
- *tolay *tail*:
 San, Tal tolə, 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*.
- *tuadi *younger sibling*:
 San, Tal, Rth tuari, Snl tua|i, Ban tuadi *younger sibling* [PPh *tu·aJi *younger sibling*].
- *tuən *to place (pot) on fire*:
 San tuəŋ *to cook*; Tal tunna, Ban tuŋ, Rth tun *to place (pot) on fire*; Ban tun-aŋ *will be placed on fire* [PPh (Charles) *tu(ŋ)əŋ *to place (pot) on fire*].
- *tuid *stump (of chopped-down tree)*:
 San, Snl tuidəʔ, Rth tuír *stump (of chopped-down tree)* [PPh *tuqəŋ *stump*].

- *tubaŋ *to fell tree*:
San, Snl, Rth tubaŋ, Ban tubaŋ *to fell, chop down tree* [cf. PPh *təbaŋ *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*].¹²¹
- *tubu *sugarcane*:
San, Snl, Tal, Rth tubu *sugarcane* [cf. PPh (Zorc) *təbuh *sugarcane*].
- *tudo *leak; to drip*:
San, Rth turo, Snl tu|o, Ban tudo *to leak; drip* [PPh *tuDuq *drip*].
- *tuRaŋ:
San tuhaŋ *the oldest, first-born*; Snl turaŋ *older sibling* (term of reference); Tal (A) <tuŋaŋa> *older sibling*; Ban tuhaŋ *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 tukadə?, Ban túkada?, Rth tukar *ladder, stairs* [PPh *tu(N)kad *go up; ladder*].
- *tukus *to wrap up*:
San tukusə? *to wrap oneself up completely*; Rth tukus *to wrap up*.
- *tuli:
San tu|i *to land; make for a place*; Ban, Rth tuli *to call on, visit* [PPh *tuli *stay overnight*].
- *tulid *straight*:
San, Snl tu|iðə?, Tal tu|iidda, Ban túlidi?, Rth tulir *straight* [PPh *tul/qid *straight*].
- *tulud *to push*:
San tuludə? *to push off from a height*; Rth tultur *to shove, push* [PPh *tulu(d) *push along*].
- *tuluj *to help*:
San tu|uj, Ban, Rth tuluj *to help* [PPh *tuluj *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 tətune *thorn*].

*tunu to bake, roast:

San tunu to scorch; scald; Tal, Ban, Rth tunu to bake, roast [PPh *tunu burn, roast].

*tuntuŋ:

San tuntuŋ (onomatopoeic) sound of a type of large drum; to make a thumping noise like such a drum; Rth t-ar-untuŋ noise, sound; noisy [PPh *TuŋTuŋ (sound) thud].²⁴³

*tuŋaw mite which causes skin irritation:

San tuŋo, Ban, Rth tuŋow very small bush mite which causes skin irritation [PPh *tuŋaw (insect) mite].

*tutub to cover, close:

San tutubəʔ to cover; Snl tutubəʔ vagina; Tal tutubba to close (of door, etc.); Ban tútubuʔ to put on lid or cover; Rth tutub veil; to cover [Ttb tutuw to close, cover over].

*tutuŋ to burn:

San, Snl, Ban tutuŋ, Tal tutuŋga to burn [PPh *tutuŋ 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. Watusoke (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 [saŋirəʔ], 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 *tuən 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 *polaen, lar *foot* from PSan *lae/id.

15. The earlier occurrence of *ə is indicated by the penultimate stress in Ban. An original **lampad would have been reflected as **lámпада? (see section 2.3.23.). The Tbl and Tse forms both reflect earlier *ləmpad.

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 *duldul *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 ə. 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 <ɾ̥> (Adriani 1893) and <rɿ> (Maryott 1961). Both these reflect the r-like nature of this sound. Steller and Aebersold use the symbol <ɿ>, which is also used in this work. Maryott (1978) uses <ll> to represent [l̥], where the doubling has nothing to do with gemination, while <l> represents the alveolar lateral. Steller and Aebersold use <ll> for geminate l after ə.

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 ɓ, g and h, as they occur as separate phonemes in Indonesian. They appear not to be aware of the differences between [ɸ] and [ɓ] 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 congruity, 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 səkol, from which the surface form səkoəʔ 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 səkoəʔ is unpredictable except by recognition of final əʔ 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* → paŋaŋinumaŋ *drinking vessel*. But Adriani (1893:157) gives ŋ here also: paŋaŋinuŋaŋ. On the other hand, Adriani and Djajengwasito give inumaŋ *will be drunk* for which the informant for this study gave inuŋaŋ. 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 iruŋ to *rest the head* → paŋaŋiruŋumaŋ *pillow*, although Steller and Aebersold give paŋaŋiruŋaŋ, 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-, r-, Ban 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, kadadəmahəʔ, has a known Rth cognate, kararumá (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 ə in San kəŋ as resulting from 'secondary diphthongisation' of a before a nasal. However, this does not account for the presence of ə after other vowels, as in luəŋ, or before non-nasals, as in təəʔ to *winnow* (< PSan *təəp), and this ə can only be regarded as a retention from PSan.

35. It is possible that San səsaʔ to *drop, collapse, fall out; to be cut off* reflects PPh *tastas, in which case metathesis occurred also in RMS and San tətəsəʔ is a borrowing. But it is also possible that səsaʔ reflects PPh *saksak *pierce, stab, chop; knock fruit (out of tree)*.

36. Difficulty occurs with the item San atisəʔ, Rth atís *soursop (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 *o* after final consonants while Makassarese has added the paragoge after final continuants and reduced final stops to *ʔ*. Adriani and Kruijt (1914:178) refer to Petapa, a Tomini language of Central Sulawesi, as undergoing both processes. Thus, besides *ulis skin*, are variants *uli* and *ulisi*, besides *pulut sap*, are variants *pulu* and *puluti*.

39. There is another word, *sa|ugəʔ* synonym of *sa|uʔ* and *sa|uhəʔ*, 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 *hunuʔ fire*, Snl *lu-runusəʔ bonfire*, mentioned in the text, and *ləhaʔ to pound rice again to get it white* (PPh *DəRas). Charles (1974:463) refers to this last item as problematic because the expected form would be ***ləhəsəʔ*. 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 *kinaʔ*, PSan **kinas 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 **kinas*, 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 *ʔ*? The only explanation is that *kinaʔ*, 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 *ʔ* is replaced before a suffix by *t* if the preceding consonant is a velar, e.g. *takaʔ to cover* + *-eŋ* → *takateŋ be covered* and by *k* elsewhere, e.g. *potoʔ to cut off* + *-aŋ* → *potokaŋ 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 *katatikilaŋ sleeping loft, bed* (a form reflecting earlier *tikil *to sleep* with fossilised affixation), besides *katatikitaŋ any place on which one sleeps* (a derivative of modern tiki?); San, Snl *sədapeŋ west, place where the sun sets* (*sədap + -en), besides *sədakeŋ be put down into something* (modern səda? + -eŋ).

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. *taurə? u puikaŋ ~ taur u puikaŋ 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. *laŋitta sky* < PSan *laŋit, 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 *ə(?). Thus *laŋitta* probably reflects an earlier *laŋittə(?).

45. Although this item has many cognates in other languages, they usually have o or u in the final syllable, reflecting PPh *pənuq. 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 <ɾ> = ʒ.

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 *ia? 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 *saŋdaR *to lean against* but this could not be the etymon of PSan *sandeR 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 |, 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 *kawanān > PSan *ko/uanen *right(side)*, PPh *kawiRi > PSan *ko/uiRi *left(side)*, PPh *pAwikan > PSan *po/uikan *turtle*.

52. This may be cognate with San, Snl *panidə? 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 *bəley 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 *mʰihiʔ* (possibly (u)m- + *ʰihiʔ*) *to flow* and San *ilihəʔ 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 *elehəʔ*, 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-geminating 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 u o*, when stressed, developed long allophones, some peculiarity in the nature of ə 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 *kəRət *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 **aʔaŋŋa.

67. Initial u in Tal uaʔe *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 ʔ for expected p.

70. The Tal form was recorded for expected **amaŋŋa.

71. Ttb and Snl have amaʔ 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 *həRət *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 eheʔ *to put on (shawl), gird on (sword)*, indicating the occurrence of a PSan form *eRet.

75. San həgiʔ *plant sp.* may be a borrowing from a cognate in an unidentified language. If so it would indicate an earlier etymon *həRiq.

76. San əlitaŋ *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 imaʔ. In Rth occurrence of the person marker preserved *ə, reflected correctly in the present-day language by u; the word is normally iumaʔ. With the absence of i in the vocative initial

*ə was lost by regular rule, giving maʔ. If the word is directly related to Mal əmak then reduction of *k to ʔ 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 *əmak. 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 *Rəndum, where prefix-final *R, see *taRəndum, was reanalysed as belonging to the root.

79. Occurrence of ŋg for expected ŋk in Rth is irregular (see section 2.3.14.).

80. This form is used in counting, e.g. San mapuʔo əsa, Snl mapuʔosa, Tal mapuʔo assa, Ban, Rth mapulo sa *eleven*.

81. Mills (1975b) tentatively reconstructs Proto-South-Sulawesi *ə(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 *iaʔ reflects an earlier base *ak, cf. Agta qiyak, Bug (Mills 1975b) iaq, (Ide Said 1977) iak, Lampung (Walker 1976) nyaq, (Haaksma 1933) ñak I, all, apparently, with a formative i or ni preceding the base. (Haaksma derives Lampung ñak from ni- + ak, ultimately from ni- + aku.) If the PSan form reflects an earlier root *ak reduction of *k to ʔ 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 *əmaʔ *mother*). In this case the PSan form would have been *iak. 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 ʔ prior to PSan.

83. Initial ŋ in Tal is unexplained but note PMin *ŋiruŋ *nose*.

84. Gemination of n in Tal instead of ŋ (expected **inaŋŋa) 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 onasəʔ (see *onas) 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 uá 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-iha? 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 ***báehe?*. Presumably **e* was lost after *a*, following development of the paragoge (whose vowel assimilates to the preceding vowel). Rth *bar*, from earlier **baer* (Niemann gives <mamajer>), is probably a borrowing from Ttb *waer* or Tsw *baer*. Snl *badə?*, from earlier **bayadə?* *to pay* and San *balara?* *to divide, share* are borrowings (see section 1.4.1.(e)).

95. Reid (1971) gives San *bəbi? 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 *bərani* 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 *baline not that*. If this is the directly inherited form then *baine* 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 *dajikaŋ* 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 *baukə?* *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 ***bebé?*, Rth ***bubé?*, 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 **bihʔsiʔ.
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 ɬalle *rotten* appears to be related but has unexplained replacement of the final syllable.
110. Stress on the penult in Rth, for expected **biá, 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 bogasəʔ, 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 togasəʔ, 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 biliŋ (see *biliŋ).
114. This is presumably a base *baba with fossilised infix *-in-, the infix occurring within a fossilised prefix ba- in Tal. Medial b in Tal, for expected ɬ, is unexplained.
115. Cognates occur in the Minahasan languages, with PMin reconstruction *bəsuɦ. However, the Rth form is unlikely to be a borrowing as the expected borrowed form would be **busú. The change *ə > i in the first syllable is a common PSan innovation, cf. PPh *bəRas > PSan *biRas.
116. The Siau form may be a borrowing from Ban, having medial b instead of ɬ. However, the phonology of Siau 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 bu|aəŋ, Snl buaəŋ *gold*, Rth ɬulaun *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 bu|aəŋ alongside correct Mandar bulawaŋ, Sa'dan bulawan.

121. Snl *bəaw bamboo* and *təw grow* have unexplained final *aw*. They are more frequently used than regular *bəo* and *təo* (Maryott, personal communication).
122. San also has *bunə fungus, mould*.
123. Although Snl *!* is regular intervocalically in *ma!aw far* and *ma!ow 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 *!ai? bad* (see **d/lalait/?*), discussed by Maryott (to appear).
124. San *darehə? fish with diagonal stripes* may be related.
125. Tal *dario?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 bəle*, Rth *raruə bəley two houses*. The unreduplicated form occurs in derived words, e.g. San, Rth *karuane second*, and in complex numbers, e.g. San *dua mpu!o*, Rth *rua mpulo twenty*, San *mapu!o dua*, Rth *mapulo rua twelve*. cf. **təlu* and **tatəlu*.
127. This form is possible a post-PSan innovation. San has *dəmuŋ pig's nest*, reflecting PPh (Charles) **dəmun 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 *dakələ?* so presumably the meaning is the same.
129. Maryott (to appear) derives the San word from a root *!ai? ugly* but this is not given by Steller and Aebersold. In the same article he discusses the origin of the Snl form *!ai?* (with irregular initial *!*). 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 *!*, probably derives from **da!ano* (*← Ca-* (intensive) + *dano pool, puddle*) \rightarrow **!a!ano* (assimilation of *d* to following *!*) \rightarrow *!ano* (loss of *!* 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 *desokaŋ be stored*, part of its productive morphological system, as well as *desoŋ 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 + -ən* (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 **əlu* in Snl (see section 2.3.10.), *ə* was replaced by *a* in some words. Thus **təluR > taurə? egg*, **təlu > taw three*. But *ə* remained unchanged in **dəluk > dəu? thunder*. No other items have been recorded, except *ləuse? (San dəluse?) 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 dænduŋ, darænduŋ, Snl da|ænduŋ *wall, partition* may be from the same root. If so Tal daranduna *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 liduŋ, for expected **diduŋ may be a borrowing. San has a doublet linduŋ (PPh *liNDuŋ) *defence, shade*.
139. Loss of the final consonant in Tal is unexplained. cf. Tal bakka from *bəRat.
140. The irregularity of correspondences in this item is discussed in section 2.3.20.
141. Reflexes of *diŋiR and *kətiR 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 *ʔ 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 ʔ 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. PSan 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 iʔo. 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 ʔ rather than zero as it was initially (cf. i ami *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 o (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 | respectively. The word may be based on an original root *demaR (cf. PPh *damaR *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 ə in Manganitu although this is not indicated by Steller and Aebersold, e.g. kadera [ka'dera] *chair*, peda [pe'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 *ə.

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 *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 *ŋ to final n. There may have been two original forms: *kaŋeden/? and *ŋeden/?, indicating past and non-past. Both San forms appear to contain irregularities, medial ? in ka'ŋere? and initial a in aŋere?.

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 -al-. Blust (1973:47) cites WBM kəvit *touch someone to draw attention*, Tiruray kəbit *touch, call attention* as apparently reflecting a form *kəbi(Ct), not yet reconstructible for PAN.

163. San kəmi? *silent (with lips closed); close the mouth* may be cognate. Tal kk, for expected ?, is unexplained.

164. San kəniŋ *shave off hair around ears and neck* may be cognate.

165. Absence of final glottal stop in Ban is unexplained.

166. 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.

167. The form in the North Sangiric languages results either from unexplained loss of *o/u or from a different tradition. Niemann gives Rth <kohii> for expected **koihi. 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.

168. The paragoge drops preceding a genitive phrase in Tal. The free form thus could well be expected oto?a.

169. The San and Rth forms occur with a possessive, e.g. San kuəŋku *I say*, Rth kun tow *people say, it is said*.

170. For Rth Niemann gives both <lair> and <lajir>, which indicate that loss of i is recent. It is on Niemann's evidence that possible *i is reconstructed.

171. In Ban *u has been replaced by o in reflexes of *laud and *taun.

172. 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).

173. The San form leau is unexplained, although expected leo occurs in northern dialects.

174. Snl has ə in the final syllable for expected e. This seems to parallel the process in Tal (see section 2.3.7.) whereby final *e? was lost and the paragoge added after final *R.

175. 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.

176. 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 *ə), sequences of geminate consonants not occurring. The root is probably lagge.

177. Ban stress is unexplained, for expected **lukú?

178. 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 *laylay would occur in PSan as *ləlay for which the correct Rth reflex would be luláy or luléy. Thus the Rth form is almost certainly a cognate of the forms in the Minahasan languages rather than a borrowing.

179. 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 *dəndiŋ* derives from **da- + ləndiŋ*, 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 **ə* to *a*, for expected **lisia*.

183. The word *masiŋ sour* is given for Snl in Reid's list. This may be the prefixed form of a root *ləsiŋ*. If so the expected form would be **məsiŋ*, with regular loss of **l* and the preceding, rather than following, vowel (see the end of section 2.3.10.).

184. The Snl word derives from **na- + loso* with deletion of intervocalic **l* and the preceding vowel, cf. San *naloso burned* (Maryott, to appear).

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 *ŋ* 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 *ŋaŋa* becomes Ban *gumaŋa*, Rth *ūmaŋa* (N *<gumaŋa>*).

191. Final **n* in Rth probably results from dissimilation.

192. San has another word, *ŋudaʔ 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 *ate* for San. For Rth the form *papatey 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 *puəŋ u kalu*, Ban *puŋ kayu tree or trunk of tree*. It usually occurs with the name of a tree, e.g. Ban *puŋ busaʔ banana tree*, Rth *pun akel sugar palm*.

197. Ban *pūŋgutuʔ stunted* has unexplained *ŋg* and paragoge (for expected ***puŋkuʔ*) and is probably a borrowing.

198. San, Snl pəpuso, Tal pappuso, 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 **putuŋa.

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 səbuná, 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 ə instead of expected e in the second syllable, possibly resulting from 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 ən to *salir and *tana in San and Snl and to *suən in Snl is unexplained.

206. Although final ? in Rth usually reflects *t or *ʔ, forms such as PPh *sɪRup *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 səbaneŋ *place where one goes outside*, which results from productive suffix addition to the stem səbaŋ *to go outside*. Replacement of final ŋ 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 *səlet 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 η instead of $**h\epsilon?$.
214. Ban and Rth reflect PPh $*s\epsilon m p a y$. However, Tal *sampe* is etymologically ambiguous as it could be cognate with San *sampe to hang*, reflecting PPh $*s a m p a y$.
215. Occurrence of stress on the fossilised suffix in Rth is unexplained.
216. For Rth Niemann gives $\langle manungkul \rangle$ *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 *nsal*, 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 *sikatə?* *brush*, with irregular paragoge instead of t-reduction, is a borrowing.
221. San *sipi?* also means *thin*. This may be etymologically distinct, reflecting PPh $*tipis$ *thin*.
222. There is also a cognate set San *suhudə?*, Snl *surudə?*, Tal *sužuda to push*, reflecting PNSan $*suRud$.
223. San *sulu?* *torch, firebrand* is probably a later borrowing. It reflects PPh word-final $*uq$ by $u?$ 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 $**su?atta$.
226. San (Tar, Tab) $\epsilon ta?$, Snl $ta?$, $-\epsilon ta?$ *to winnow* are not directly related and may be borrowings, cf. Cotabato Manobo $q\epsilon t\epsilon\theta$, Sarangani Manobo $q\lambda t\epsilon\theta$ *to winnow*.
227. Charles reconstructs PPh $*taq\alpha n$ (*en*)*trap*. The expected reflex of this would be $**ta\epsilon n$ (see section 1.4.1.(h)), whereas PSan $*ta\epsilon n$ could reflect an earlier $*taq\alpha n$, cf. PSan $*tuid$ *stump* $<$ PPh $*tuq\epsilon D$.
228. In the reflex of $*tau$, $*a$ 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 $*taun$ 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 $?$ 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 tatəlu bæle, Rth tatulú bæley *three houses*. The simple form occurs in derived words, e.g. San katəlune, Rth katulune *third*, and in complex numbers, e.g. San mapuʔo təlu, Rth mapulo tulú *thirteen*; San təlu mpuʔo, Rth tulú mpulo *thirty*.

233. San has a doublet with medial k: tenkoəʔ *to knock, tap*.

234. Ttb, Tbl, Tse təwaŋ *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. Siau o in the second syllable is unexplained. On the correspondence San ə, Rth i cf. *tə/iŋgaR.

236. On the correspondence San ə, Rth i cf. *tə/intalaŋ. San tiŋkaəʔ *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 tiŋkodəʔ *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) tuntuŋa *to throw* may be related.

244. Rth has unexplained e for expected i.

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<i>BijdrTLV</i>	<i>Bijdragen tot de Taal-, Land- en Volkenkunde</i>
<i>IJAL</i>	<i>International Journal of American Linguistics</i>
<i>OL</i>	<i>Oceanic Linguistics</i>
<i>PL</i>	<i>Pacific Linguistics</i>
<i>SPL</i>	<i>Studies in Philippine Linguistics</i>
<i>TTLV</i>	<i>Tijdschrift voor Indische Taal-, Land- en Volkenkunde</i>
<i>WPLUH</i>	<i>Working Papers in Linguistics, University of Hawaii</i>

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