The Bidayuh Language
Yesterday, Today and Tomorrow
Revised and Expanded

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Foreword

Y. B. Datuk Michael Manyin

First and foremost, I wish to extend my congratulations to Dr. Calvin R. Rensch and his wife Carolyn M. Rensch, Mr. Jonas Noeb and Mr. Robert Sulis Ridu on the publication of this book on the Bidayuh language.

The Bidayuh community, though a minority ethnic group consisting of only eight percent or about 170,000 out of a total population of 2.7 million for the state of Sarawak, speak more than twenty dialects, which collectively make up the Bidayuh language. These dialects are traditionally grouped into four main clusters, namely Bukar-Sadung, Biatah, Bau-Jagoi and Salako-Rara.

Migration to urban centers, cultural assimilation through intermarriage and also the apparent lack of relevance of the Bidayuh language to the changing times are resulting in the younger urban Bidayuh slowly resorting to other languages. If the Bidayuh language is not developed and spoken widely, its declining use may lead to its disappearance in years to come.

The Bidayuh community must be proactive towards the development of the Bidayuh language because it needs tremendous commitment from all Bidayuh to expand the language use into modern domains and obtain adoption as a school subject, so that the language will be more comprehensive and relevant in this ever-changing world. The Bidayuh Language Development Project, under whose auspices this book is produced, is doing valuable work in that direction.

This publication answers the urgent need for documentation of the Bidayuh language. It explores some aspects of Bidayuh phonology and includes a collection of words in various dialects. Research and community work now in progress should in the future result in the publication of collections, grammars and dictionaries.

I hope this book will not only be found in Bidayuh homes, but also will become a morale booster to all Bidayuh, especially Bidayuh intellectuals. May it spur them to work together towards conserving and developing the language and increasing its relevance for future generations.

Finally, a record of thanks and appreciation to all consultants of SIL International, and all committee and subcommittee members of the Bidayuh Language Development Project for their dedication, interest, support and effort to develop the Bidayuh language.

YB Dato Sri Michael Manyin ak Jawong
PNBS, PGBK, AMN, PPT, PPB (Gold)
Minister of Infrastructure Development and Communications Sarawak
Preface to the Revised and Expanded Edition

It is five years since the print version of this volume was published. For this international electronic edition, new maps in color have been furnished for page 3, and color illustrations for page 10.

An addendum to Part I brings the record of Bidayuh language development up to date. The Bidayuh language development recorded in this book only concerns the Land Dayaks in Sarawak, Malaysia. Many other Land Dayaks live across the border in Kalimantan, Indonesia. By some accounts, Bidayuhs have lived in Sarawak for about a thousand years. The Bidayuh hope to be resident here as a distinct people for a long time to come.

The linguistic write-ups have also been updated; some points of analysis in Part II have been modified, and the cognate sets in appendix 1 of part III are slightly more complete and correct than they were in 2006.

The varieties of language spoken by the Bidayuh people exhibit a rich variety with regard to pronunciation of the vowels, especially the central vowel, and spread and blocking of nasality. This study of these and other features of Bidayuh is offered to the Bidayuh people with the hope that it will help them in their language development efforts, and to a wider linguistic audience that may find these features interesting from a typological and historical perspective.

On 2 April 2010, Carolyn McMullin Rensch passed away peacefully, surrounded by her family and loved ones. This international edition is dedicated to her memory.

Jonas Noeb BBS, PPT, PPS
Robert Sulis Ridu PBS, ABS, BBS
Dr. Calvin R. Rensch

June 2011
Introduction to Part I

Today more and more Bidayuh are aware of the urgent need to preserve and develop their language. The publication of this book is one of the ways to let the people know more about the Bidayuh language. The birth of this book was made possible through the visions and concerns of various people.

We would particularly like to thank the Association of Research and Development Movement of Singai (Redeems) for inviting language consultants from SIL International to come and help us with the Bidayuh Language Development Project. We thank the Dayak Bidayuh National Association (DBNA) too for its support. We also wish to thank the Sarawak Government, especially the State Planning Unit, for its approval of SIL personnel to come to Sarawak. We wish to put on record our sincere thanks to Mr. John Wayne King, Dr. Michael Boutin, Mr. David Nichols and Mr. Hans Combrink, who are the past and present directors of SIL, Malaysia Branch, respectively, for their support and understanding. Our special thanks, too, go to all our hardworking, understanding, sincere and friendly SIL project consultants, both past and present, namely Dr. Calvin Rensch, his wife Carolyn Rensch, Dr. Grace Tan, Ms. Jey Lingam, Mr. Guillermo Vega and his wife Marilina Bongarrá de Vega, Mr. Eric Albright and his wife Allison Albright, and also to other SIL consultants who visited the project and gave expert help and advice, such as Drs. Dennis and Susan Malone, Jim and Karla Smith, and others.

We also wish to extend our gratitude to Mr. Jayl Langub (formerly the Secretary of Majlis Adat Istiadat, Sarawak, now a Senior Research Fellow at Universiti Malaysia Sarawak) for his encouragement and advice, and also to Ms. Liana Chua, a Ph. D. student at Cambridge University, England, for reading the early draft of our part of the book and making several useful comments and suggestions.

We would like to record our sincere appreciation to Dr. Grace Tan for her guidance, patience and expert editing, and to Ms. Marilina Bongarrá de Vega for designing the cover of this book.

Our special thanks go to Datu Nillie Tangai, the Head of Majlis Adat Istiadat, Sarawak, for his advice and understanding, and also to Ms. Magdalen Kapa, who patiently typed drafts of our paper into the computer.

A special note of appreciation is due to Y.B. Datuk Michael Manyin, Minister of Environment and Public Health Sarawak, to Y.B. Peter Nansian Nguse, and also to many others for their support and encouragement.

Finally, we would like to acknowledge our deep appreciation to Y.B. Dato’ Sri Adenan Haji Satem, Minister of Natural Resources and Environment, Malaysia, for his inspiration, and his assistance in financing the publication of this book through the Sarawak Foundation.

Jonas Noeb BBS, PPT, PPS
Robert Sulis Ridu PBS, ABS, BBS
Introduction to Parts II and III

Overview

Bidayuh is the name of a grouping of dialects/languages\(^1\) that forms a sub-section of the Land Dayak group, which is ultimately a part of the great Austronesian language family.

The many varieties of Bidayuh are spoken primarily in the Malaysian state of Sarawak in the districts of Serian, Kuching, Bau and Lundu. The variety called Rara, also spoken in Lundu District, is commonly regarded as Bidayuh as well. However, at least some speakers of Rara call themselves Bakati’, and this term appears to be in common use for dialects related to Rara that are spoken in West Kalimantan, Indonesia.

Although the present homelands of the Bidayuh-speaking peoples are principally in western Sarawak, some Bidayuhs as well as speakers of rather closely related languages are found in the interior of the Indonesian province of West Kalimantan. It is understood by the Bidayuh people themselves that at an earlier period of their history all of them lived in areas that are now part of West Kalimantan. Of course, Bidayuhs have now lived in Sarawak for many generations.

It should be noted that Salako is not directly included in this study. The Salako-speaking people have shared much cultural history with the Bidayuh-speaking people in the past as well as today, especially with the Rara-speaking people. In the socio-political context of modern Sarawak the Salako people form a part of the Bidayuh cultural group. This cultural contact has resulted in some common vocabulary and some similar phonetic features. Nevertheless, the Salako language is a part of the Malayic group of languages\(^2\) and has been found to be closer linguistically to Iban and Malay than it is to Bidayuh and Bakati’. Of course, all of these languages ultimately form a part of the large Austronesian language family.

Approximately 25 Bidayuh dialects have been included in this study in addition to Rara and other varieties of Bakati’ as well as Kembayan, Ribun and Semandang, spoken farther south in West Kalimantan. These Bidayuh dialects are Singai, Gumbang, Jagoi (Serambu/Birois, Bratak, Serasot, Grogo, Stass), Biatah, Penrissen (Bistaang, Benuk), Lower Padawan (Sapug, Pinyawa’, Bengoh), Upper Padawan (Anah Rais, Biya), Sembaan, Tringgus Raya, Tringgus Bireng, Bukar, Sadung (Sadung/Tebedu, Bibengih/Kedup, Tebakang, Bukar-Sadung, Sangking, Bunan).

Sources of Data

This study is based on a corpus of vocabulary items drawn from several sources. The major source is a wordlist collected by Carolyn Rensch, Calvin Rensch and Grace Tan for the Bidayuh

\(^1\) This study does not make a systematic attempt to distinguish between the terms “dialect” and “language”. The varieties of Bidayuh are traditionally called dialects, and that is the term commonly used in this study. Using the criterion of intelligibility, one might consider that the Bidayuh dialect network includes four languages, but that figure would vary depending on the threshold of intelligibility that is applied. For further consideration of dialect differences and similarities, see Studies in the early Bidayuh language, sec. 2.4.

\(^2\) Hudson (1970:301-2) also points out some cultural features which distinguish the Salako from the Land Dayak peoples. Cf. also Adelaar (1992:381-2)
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Language Development Project during the period March 2001 to December 2002. They represent the responses of many individuals in numerous locations (see Map) to the elicitation of a wordlist. Those speakers voluntarily contributed their time and linguistic skills toward this end. This wordlist of 346 items was collected from a variety of speakers from 27 regional varieties of Bidayuh as well as Rara and Salako. During the course of eliciting these wordlists it became evident that certain additional words were of phonological interest, and about 50 additional items were collected in some of the varieties. This corpus was augmented by a wordlist with a partially overlapping set of items collected by Paul Kroeger in 1993 in about 20 dialects of Bidayuh primarily in the Kuching District. A Sapug wordlist was collected by Eric and Allison Albright in 2002 and was kindly made available for this study.

Map of Bidayuh dialect areas

Locations from which wordlists were collected:

(W = Western Group, C = Central Group, S = Sembaan Group, E = Eastern Group)

19. Anah Rais – C 29. Ta’ee – E

Note: These are the places of origin of the wordlist source people. Sometimes the place name corresponds with the dialect name used in this volume, sometimes not.
In the Bau and Serian regions speakers of various regional varieties have been collaborating to compile a regional dictionary in each of those regions. A few of the cognate sets cite entries from those provisional dictionaries, labeled “Bau dictionary” and “Serian dictionary”, respectively. In addition, the compendious *Bidayuh-English Dictionary* compiled by Datuk William Nais (1988) is a significant reference for Biatah, and it was an important source of data for the papers in this volume.

This study also made use of several wordlists of A. B. Hudson, published on dialects spoken in the Bau District and West Kalimantan (Hudson 1970, pp. 308–316). These lists included one variety of Bidayuh, one variety of Bakati’ and three varieties of Southern Land Dayak. The Hudson materials for the southern Land Dayak languages of Kembayan and Ribun were supplemented to a considerable extent by referring to unpublished wordlists collected and kindly made available by K. Alexander Adelaar.

Finally, the Rara wordlist was compared with three wordlists compiled by Carmen Bryant in a variety of Rara and two related varieties, Sara/Riok and Kendayan, all spoken in West Kalimantan, and kindly made available for this study.

**Appreciation**

We wish to thank the cultural leadership of the Bidayuh people, especially the members of the steering committee of the Bidayuh Language Development Project, for their unfailing support and encouragement in this project. Jonas Noeb and Robert Sulis Ridu, the leaders of the Project, have sacrificially given of their time to offer guidance and to make arrangements for many data-gathering sessions throughout the Bidayuh Belt.

It is always hazardous to name individuals who have been particularly active in supporting the project since inevitably some worthy names may be omitted. Nevertheless, it seems right to thank especially Jonas Noeb, Robert Sulis Ridu, Datu Stephen Jussem, Justin Milus and James Manis for the many occasions when they made arrangements for us to collect and then to (re)check Bidayuh language materials.

There are many who spent hours with us, contributing their time and linguistic skills. They provided Bidayuh dialect materials and answered our many questions, and upon many occasions offered special Bidayuh hospitality. These include at least the following:

**Singai:** Jonas Noeb, Temenggong Datu Stephen Jussem Dundon, Penghulu Sebastian Desson, Patrick Rigep, Joseph Charles

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**Serambu/Birois:** Penghulu Ranjes, Ketua Kampung Atew, Ahew Sajek, Edward Akui, Patrick Doya

**Bratak:** Michael Jindiau, Joseph Nyogen

**Grogo:** Joneh anak Bidon

**Serasot:** Cikgu Patrick Kukut

**Stass:** Nilaw Nokap, Swami

**Biatah:** Crispin Jusib, Stephen Rungan Satom, Ritikos Jitab

**Bistaang:** Dripin Sakoi, Rex Johnson Sayo
Benuk: Kamar anak Sti’, Teresa Majet

Sapug: Justin Kirim

Pinyawa’: Cikgu Justin Milus

Bengoh: Anyew, Karid, Cikgu Samus Rama, Nelson, Sora Rusa

Anah Rais: John Awang, Semaruh, Nyapang

Biya: Cikgu Lepon, Rudin Engges

Sembaan: Baha’ anak Batel, Abum anak New

Tringgus Raya: Ketua Kaum Toe anak New, Zakaria Jaim

Tringgus Bireng: Getor anak Masoun/Mahun

Bukar: Robert Sulis Ridu, Henry Ginai Langgie, Nori Kiyui, Edward Sian, Cesario Athos Langgi, Claude Laum anak Rikes

Sadung (Kpg Sejijak): Irene A/P Sanyung

Bibengih: Henry Sadok

Tebakang: Theresa Atet, Cikgu Maurice Budit

Bukar-Sadung: Stephen Naidi

Sangking: Makew Nyusung

Bunan: Sibok anak Juwai, David Serejen, Joseph Linggong, Tawi anak Saran

Rara: Philipsen Jeff, Risiden Mambon Nidy Jueng

Salako: Mejus anak Nimbun

Note: In some cases both the husband and his wife were present and contributing useful language material.

We want to acknowledge the painstaking editorial work of Grace Tan in preparing this manuscript for publication. We also wish to give special thanks to Paul Kroeger, Grace Tan, Guillermo and Marilina Vega and Jey Lingam for many useful discussions regarding Bidayuh language and analysis.

Cal and Carolyn Rensch
PART I

Language Development in Bidayuh: Past, Present and Future

Jonas Noeb
Robert Sulis Ridu

1 Who are the Bidayuh?
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1 Who are the Bidayuh?

The non-Muslim indigenous peoples of Sarawak are collectively known as Dayak, comprising the Iban, the Bidayuh and various other ethnic groups collectively known as the Orang Ulu, each having its own language. As with the other Dayak groups, the language of the Bidayuh belongs to the Austronesian family. The Bidayuh people are, however, notable for the great variety of dialects that they speak.

The Bidayuh belt spans the districts of the Kuching Division (covering Lundu, Bau and Kuching Districts) and the Serian District in the Samarahan Division, in the western end of Sarawak (see Figure 1). These administrative districts roughly correspond to the major dialect divisions among the Bidayuh. The dialects in the Serian, Kuching and Bau districts are all considered to be in the “Bidayuhic” family of languages. In general, they are mutually intelligible within the districts but not between districts. The dialects found in the Lundu district are more distantly related; in fact, Salako actually belongs to a different family of languages, Malayic. How did the speakers of these diverse tongues all come to be considered as part of the Bidayuh people?

1.1 The origins and character of the Bidayuh

According to early Western writers, the Bidayuh are believed to be among the earliest inhabitants of Borneo (Low [1848] 1990:275, Sheldor [1916] 1985:306, Staal 1940:55, MacDonald 1956 [1985]:50). However, their place of origin before they came to Borneo is lost in the mists of prehistory (Noeb 1992).

The Bidayuh have a story that, in ancient times, they were living in the coastal areas of Western Borneo (Drake-Brockman 1959). Some of them moved further and further inland in order to avoid being taken as slaves, preyed upon by pirates, harassed by lackeys of the Sultan of Brunei (the overlord of Sarawak before the Brooke raj), hunted by headhunters and cheated through the unfair trading system of forced trade. Nevertheless, they had to continually contend with these hardships until the Brookes came.

In view of this traumatic past, it is not surprising that early Western writers saw the Bidayuh as shy, timid or ignorant. For example, Ling Roth considered them “too far oppressed … to recover their manliness and independence, so to succeed and multiply”, and was uncertain whether they would survive many more generations ([1896] 1980, V. 1, p. xx). More sympathetically, the Bidayuh have been characterized as humble, conservative, hospitable, modest, polite and respectfully unassertive (Staal 1940). Having said that, there is evidence that the helplessness and timidity of the Bidayuh was overstated. According to J. H. Walker (2002:14), the Bidayuh were prominent in the rebellion against Brunei rule in the 1830s, and Brooke experienced difficulties in establishing his control over some Bidayuh.
1.2 *Classifications of the Bidayuh, past and present*
1.1.1 By location

Before the coming in 1841 of Sir James Brooke, the first White Rajah of Sarawak, the focus of the Daya’ in the then Sarawak Proper was where a person came from. Daya’ is a Bidayuh word for person or human. Thus, Daya’ Bijagoi means ‘people of Jagoi’ (Jagoi being the name of a mountain in the Bau District), Daya’ Bibukar means ‘people of Bukar’ (the name Bukar derives from the word for river mud—this refers to a river in the Serian district), and so on.¹ This is the usual mechanism that has given rise to the various dialect names of the Bidayuh.

After the arrival of the Brookes, this method of classification was observed and recorded by some Western writers. For example, Reijffert (1956:50–51) notes that Land Dayaks on the Samarahan River and its tributaries are the Bisopug, Pinyawah (Serin tributary) and Bibukar (Bukar tributary). Those groups whose villages are on the southern branch of the Sarawak River are the Biparuch, Bibanuk, Sikog, Biotah, Bikuab, Bibonguh, Brang, Bionah, Pidiah and Biman (Sumban). Some of the groups Reijffert listed for the western branch of Sarawak River are the Seringos (Tringgus), Bigumang, Biratak, Bijagüé, Bisingai and Sikaruch Birais. (The spelling is Reijffert’s; these observations were actually made in 1889 or so.)

The sub-ethnic groups in the Sadung are the Taup, Temong, Riih, Semabang, Ankaru, Sumpas, Mentu and Sambat (Roberts 1949).

1.1.2 By cultural characteristics—as Land Dayaks

During the Brooke and colonial periods (1841–1963) the generic term Land Dayak was used to refer to those groups of daya’ in the western end of Sarawak who shared similar cultural characteristics. In the Lundu District, the Rara (often called Lara) and Salako (often called Selakau) were also grouped as Land Dayaks (though the language of the Salako is Malayic).

The various branches of Land Dayaks were originally of one stock, but then they drifted apart, with different customs and different dialects (Elam 1937). Conversely, although in the past all these various branches of Bidayuhs lived as separate communities, today they all identify themselves as belonging to a common ethnic group.

One unique characteristic of the various Bidayuh groups in the early days was their traditional icon, the round community house (called the baruk, balū or panggah, depending on the dialect) where visitors and village bachelors slept, big ritualistic ceremonies were held, and important matters were settled.

Early Western writers called the baruk the “head house” because the skulls of chieftains and warriors taken during the headhunting days were kept in the community house as they were also considered “guests” of the community. Today, not many villages still have the baruk. One has been built for display in the cultural village at Santubong. However, there is also an authentic and quite well-known baruk at Kampung Opar, in the Bau District, still serving its original purpose in the community.

It is worth noting that in 1912 Hose classified the Land Dayak as Klemantan. This term also included Seping, Tanjong, Kanowit, Bekatan, Lugat, Melanau, Narum, Miri, the Berawan subgroup, the Baram subgroup and Maloh (Leach 1950:49). The classification was based on the characteristic of the Klemantans that

¹For a discussion of some of the grammatical functions of the bi- affix, see C. M. Rensch, sec. 7.4.2, this volume.
they were then and formerly sago eaters. The present-day languages of “Klemantan stock” do give indication of a common origin. The ceremonies of healing the sick using the swing was also common especially among the Melanau and the Bidayuh.

In 1945, R. Kennedy classified the Land Dayak together with Ayon, Desa, Lundu, Manyukei and Mualong Sidin (Leach 1950:49).

Finally, in 1950, Leach himself defined the Land Dayak as “those communities of the First Division of Sarawak, whatever their dialect, which possess, or recently possessed a ‘head-house’ (Baloi, Panggah) as a feature of their village organisation” (Leach 1950:54). Leach’s definition—which explicitly ignores language as a criterion—became the basis for the identification of the present-day Bidayuh people.

1.1.3 The process of Bidayuh self-identification

The people considered by Leach to be Land Dayak have indeed felt a cultural commonality, despite their various tongues. Also, they were already used to being grouped together by the Brooke and colonial regimes. As the prospect of independence from the British drew nearer in the 1950s, community leaders saw an advantage in working together to present a common face at the state and national level. However, there was initially some difficulty in deciding how to refer to themselves.

The Land Dayaks wished to be known by a self-chosen name, rather than one devised by the Brooke regime. Since 1955, the majority of the Land Dayak leaders have preferred the term ‘Bidayuh’ for themselves, rather than ‘Land Dayak’. Bidayuh means “the people of the hinterland”, which at that time was “strictly applicable only to the people of the Sadong amongst whom it had currency” (Geddes 1954:6). At first the label ‘Bidayuh’ was unacceptable to some Land Dayak people, including some of the Bisingai who were aggrieved to be called Bidayuh. But since ‘Bidayuh’ was the only alternative to ‘Land Dayak’ that was ever proposed, and meanwhile an association bearing the name was formed, eventually everyone came to accept it.

The purpose of the formation of the Bidayuh National Association in 1955 was to assert the Bidayuh identity and to reaffirm its ethnicity. Later, in 1971, the Bidayuh National Association was renamed the Dayak Bidayuh National Association (DBNA), in order to associate itself with other Dayak associations in Sarawak. The formation of Dayak associations is very much linked to the nature of economic development and nation-building (Tan Chee-Beng 1994:227); many of them were contending for similar interests on behalf of their ethnic groups.

The change of the name for the Bidayuh people became law when the Interpretation (Amendment) Bill 2002 was passed at the sitting of the State Legislative Assembly on May 6, 2002. This amendment stated that the Iban, Bidayuh and Lun Bawang communities would no longer be referred to as ‘Sea Dayak’, ‘Land Dayak’ and ‘Murut’ respectively.

YB. Datuk Patinggi Tan Sri Alfred Jabu ak Numpang, Deputy Chief Minister of Sarawak, when tabling the Bill, said that sometimes it was necessary to amend the Interpretation Ordinance to discard some old terminologies or names which were given by the Brooke and colonial administrators, especially to the ethnic or native communities in the State (Sarawak Tribune, 7 May 2002).
2 Language development before 1963

2.1 The setting

In the past, like other Dayak groups, the various Bidayuh groups lived in longhouses. The longhouse was a community. Each longhouse had a headman who presided over its activities. The community had many things in common. They had a common religion, a religion of the ancient rites, common rituals and taboos; common customs and traditions which they called *adat*; a common dialect; and a common ceremonial and religious home. They also had a common fear, a fear of headhunters and pirates. But there was no fear that their language would be extinct because their common possessions helped to strengthen their culture and cultural practices.

There are numerous tales and stories of how the Bidayuh groups suffered before the arrival of James Brooke. Representatives of the Brunei regime came to kill, plunder and take slaves whenever they felt that their numerous inhumane demands were not met. In addition, the Bidayuhs suffered from raids by pirates from the east, and from headhunting wars with other indigenous groups.

However, during the Brooke regime (1841–1941), the government put a stop to both headhunting and piracy. Within a few years after James Brooke first established himself in Kuching in 1841, the first Christian missionaries arrived. From 1850 onwards, they brought Christianity to some Bidayuh areas such as Kampung Stunggang in Lundu District, Kampung Quop (modern spelling Kuap) and other Bidayuh villages in the Kuching-Penrissen area, Kampung Ta’ee in Serian District and the Singai area in Bau District (Kedit et al. 1998, Nuek 2002:105).

In 1946, Charles Vyner Brooke, the third and last of the Brooke rajahs, handed Sarawak over to the British Empire. Sarawak was then under British colonial rule until 1963, when it became part of the independent country of Malaysia. Under colonial rule, missionaries continued to expand into the Bidayuh belt, setting up new churches and centers.

During the Brooke and colonial periods, both missionaries and administrators were interested in collecting wordlists of the indigenous languages. However, all of the language development among the Bidayuh—written materials and education—was carried out by Christian missionaries interested in developing the Christian faith and general welfare of the Bidayuhs.

2.2 Wordlists, dictionaries and other research

Early missionaries such as Rev. William Chalmers, Rev. Fr. A. Reijffert, Rev. L. Zaender and Rev. William Gomez collected vocabularies of several Bidayuh dialects.

Rev. William Chalmers’ wordlist contains more than 3000 entries in English, Sarawak Malay and Biatah (one of the Bidayuh dialects; there are also some words in Rara, a western Bidayuh dialect). It was printed in 1861 at the St. Augustine’s College Press, Canterbury, England (also in Ling Roth [1896]
Although a few brief wordlists were published earlier, Chalmers’ work is the oldest dictionary for a western Bornean language, marking the start of serious study of the indigenous languages of western Borneo.\(^2\)

Another missioner who collected a considerable number of Bidayuh words was Rev. Fr. A. Reijffert. He compiled an English–Sarawak Land Dayak (Singai dialect) vocabulary, but his work was not printed until over forty years after his death in 1914 (Reijffert 1956).

Other missionaries also made lists of Land Dayak words: Rev. L. Zaender (first published with other lists by F. A. Swettenham), Rev. F. W. Abe (Biatah) and Rev. William Gomez (Rara, Salako and Dayak Lundu (the original inhabitants of Lundu River)). Rev. Chas. Hupé also collected words for forty-three items in a great number of Bornean languages, including several Land Dayak dialects. All these, along with Chalmers’ dictionary, were published or republished in Volume II of Henry Ling Roth’s work, *The Natives of Sarawak and British North Borneo* (originally compiled in 1896, republished in 1968 and 1980). Later, Rev. P. Aichner (1949) also published a wordlist of the Upper Sarawak, Penrissen and Tebakang dialects of Land Dayak.

There were also other Western writers—most of them administrators for the Brooke regime—who collected and compiled Bidayuhic wordlists. Among them were Spencer St. John (Sadung and Rara; in Ling Roth [1896] 1980, originally published in 1862), E. H. Elam (Salako and Rara, 1935; Sadung, 1937), W. S. B. Bucks (Land Dayak of Kampung Boyan, upper Sarawak River, 1933) and N. Mace (Sadung at Tebakang, 1935).

2.3 Christian materials

The Christian missionaries not only compiled wordlists, but also made use of them to write prayer books, catechisms, Bible stories and other religious books for use in the various Bidayuh areas. These were the first reading materials ever produced in Bidayuh.

Rev. Fr. Peter H. H. Howes, an Anglican missionary who worked in Sarawak from 1937 to 1981, was particularly active in developing materials. While he was interned during World War II, he translated the New Testament into the Biatah dialect (*Kitab Payu Bauh*). This was first published in 1963. He also translated and published liturgical materials (hymns and prayerbooks) in Biatah (see also the section on education).

In the Bau district, from 1957 to 1980, Rev. Fr. Luis Schwabl of the Roman Catholic church did much to develop Christian materials. He trained a number of Bidayuhs as catechists, and together they wrote many new books, including prayer books and religious instruction books, and revised old books. Rev. Fr. Luis also changed the spelling system then in use in Bau.

Indeed, the main institution today that still actively uses, preserves and develops terminology for the Bidayuh dialects is the Christian church. The Anglican, Catholic and Seventh Day Adventist missions in

\(^2\)A conference was held to commemorate Chalmers’ dictionary: *The Languages and Literatures of Western Borneo: 144 Years of Research*, on 31 January–2 February 2005 at the Universiti Kebangsaan Malaysia (UKM), Bangi. Proceedings will be published by the Institut Alam dan Tamadun Melayu at UKM.
the Bidayuh belt make use of the regional dialects of Bidayuh to write and preach the good news. If it were not for the Christian missions, the Bidayuh dialects would have declined in use more rapidly.

However, since travel between the different Bidayuh areas was formerly very difficult, missionaries in one area worked independently from those in another area. Thus, each mission devised and used a different orthography—Bidayuh Christian literature written in Bau-Jagoi, Biatah and Bukar-Sadung use different spelling systems. Indeed, each of the three denominations working in the Bukar-Sadung area developed its own spelling system.

At the present time, with greater interaction taking place among the various Bidayuh groups, these disparate spelling systems are inconsistent with Bidayuh unity, and they should be rectified to make the learning of the various dialects easier and less confusing.

2.4 Education

2.4.1 During the Brooke regime (1841–1941)³

Sarawak does not have a long history of education establishment. Besides the Malay traditional religious schools, formal education came to Sarawak after the arrival of James Brooke. The missionaries started schools in Kuching very soon after their first arrival, but for a long time did little to bring education to the villages.

Very little is known about James Brooke’s ideas on education. However, Henry Keppel, James Brooke’s life-long friend, suggested that missionary education and Christianity would “transform the Dayaks into a peaceful people”. Nevertheless, it was Rajah James Brooke who in 1847 persuaded the Society for the Propagation of the Gospel (SPG) to bring education and Christianity to Sarawak in order “to plant the seeds of peace, freedom, order and civilization.”

Spencer St. John, Rajah James Brooke’s private secretary, who remembered the bitter lessons which Brooke’s government learned during the period of “subversive Malay plots” and Chinese rebellion, had other reasons why Christian missionaries should be invited to come to Sarawak. Spencer St. John argued that resourceful and practical missionaries running schools and rural clinics could build a better Sarawak and that “few thousand Christian Dayaks would be a counterpoise to the Mohammedan Malays.”

Spencer St. John’s motive of using missionary education for internal political stability was more or less shared by Charles Grant, one of the officers in the Brooke government. He visualised that native converts would be a source of political strength to the government in that they would be loyal citizens ready to help and co-operate with the government to develop Sarawak.

Charles Brooke, the second White Rajah, adopted a policy of *masing-masing bertangga* (‘each to have its own ladder’). That is, the Chinese, Malays and Dayaks should be educated each in their own language medium, and the Malays and Dayaks, the “natives of the soil” (now called *bumiputera*, the equivalent Malay term) should be equipped with enough practical skills so that they could live “a happier and productive life in their native environment.” Charles Vyner Brooke, the third and last White Rajah

³Most of the information in this section is obtained from Seymour (1970).
(1917–1941) also held this attitude. He recommended a vernacular curriculum in the native schools to help the pupils “take their place in the structure of their own community.”

Actually, all three White Rajahs had a laissez-faire policy towards the schools in Sarawak. The non-Muslim bumiputera’s education was left entirely to Christian missionaries. However, as both Anglican and Catholic mission schools were in town areas, very few non-Muslim bumiputera could afford to attend schools. Thus non-Muslim bumiputera pupils did not benefit much from such educational facilities.

The first Bidayuh pupils to receive education were in Quop, where a vernacular school was established by Walter (sic) Chalmers in 1858. According to his record there were twenty “regular learners” including a few girls. Chalmers also toured the upper Sarawak River area, where he found a group of Bidayuh (the Bianah) very receptive to his hymns.

In 1916, the Anglican mission established a school at Ta’ee, a Bidayuh village near Serian. In 1933, the Seventh Day Adventist mission built a school at the foot of Stabun mountain, near Serian, to provide academic and agricultural training for the Serian Bidayuhs. In the same year, 1933, the Roman Catholics built a school, a small hut, in Serian, where a number of Bidayuhs came to learn how to read and write.

Christianity was brought to Singai, a Bidayuh village near Bau, in 1885 by Rev. Fr. Felix Westerwoudt, but no formal education was established at that time. It was only in 1936 that St. Michael’s school at Sudoh, Singai, was built. Thus, towards the closing years of the Brooke regime, there was not even one Government-supported school built for the Bidayuh. All in all, at that time (1941) in Sarawak, there were 11 Anglican mission schools, 27 Roman Catholic schools, 3 Seventh Day Adventist schools, 33 Government-supported Malay schools, 144 Chinese schools and 1 Iban school.

During the Japanese occupation (1942–1945), most of the schools in Sarawak were closed. However, some Sarawakians were taught Japanese in those schools that remained open.

2.4.2 During British colonial rule (1946–1963)

When Malcolm MacDonald, the then British Governor-General, Lloyd Thomas, District Officer for Bau and the Datu Bandar paid an official visit to Singai in 1949, the Bisingai’s Paramount chief, Orang Kaya Babai Jorai, told the British Governor-General in front of Lloyd Thomas and the Datu Bandar that the Brookes had educated the Malays, but had provided no schools for the Bidayuhs. He and his people hoped that the British colonial administration would also educate the Dayaks (MacDonald 1956).

Accordingly, the British colonial government built many primary schools in rural areas, under the jurisdiction of the district councils. A number of secondary schools were also built by the government under the Colombo Plan, for example, Dragon School (now called Kolej Tun Abdul Razak), at the 24th

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4Perhaps it is not surprising that the first Bidayuh to pass the Junior Cambridge examination, in the 1930s, was a girl from Quop, Jessica Simigaat, a student of St. Mary’s School, Kuching (Osman 1990). Jessica went on to become one of the first batch of three Bidayuh teachers in the school at Quop.

5The Colombo Plan is an international economic organization that came into force in 1951, whereby the richer countries of the British Commonwealth helped the poorer countries with their educational and other needs. Under this plan, many overseas scholarships were awarded to promising students (quite a number later went on to high office after their countries’ independence) and many schools were built throughout the British Empire.
mile of the Kuching–Serian road. All these schools used English as the medium of instruction; however, to communicate the material better to their students, local teachers liberally mixed their English instruction with the vernacular. Figure 2 shows the progress in education made by Dayaks during the colonial period.

During this period, missionaries also started a number of primary schools in Bidayuh villages where the local dialects, notably Biatah in the Kuching-Padawan region and Bukar-Sadung in Serian District, were used as the medium of instruction. Table 1 lists a few Bidayuh-language textbooks developed by the missionaries:

Table 1. Some Bidayuh-language textbooks developed by missionaries

<table>
<thead>
<tr>
<th>Title</th>
<th>Purpose</th>
<th>Dialect</th>
<th>Year</th>
<th>Author</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surat Tangga Bidayuh</td>
<td>Primer and storybook</td>
<td>Sadung</td>
<td>?</td>
<td>? (used by Catholic Mission in Serian)</td>
<td>?</td>
</tr>
<tr>
<td>Surat Basa: A Land Dayak (Biatah) Primer</td>
<td>Primer</td>
<td>Biatah</td>
<td>?</td>
<td>P. H. H. Howes</td>
<td>?</td>
</tr>
</tbody>
</table>
3 Language development after 1963

Most of the institutions mentioned here actually had their genesis during the British colonial period. However, they are listed here because they have had more development and activity since the independence of Malaysia in 1963.

3.1 The Borneo Literature Bureau

Until it ceased operation in 1977, the Borneo Literature Bureau (BLB) was the major agent encouraging the writing and publication of non-church material in the indigenous languages of Sarawak. This Kuching-based publishing house was established on 15 September 1959. Its functions were:

1. To encourage the local people to write suitable reading materials to fulfill the needs of local readers.
2. To help in the effort of commercializing local books by introducing and selling not only those books that were published by the bureau but also the imported ones.
3. To provide services in items of technical information, pre-technical or in the form of orders to any government departments that were involved in publishing books for the people of Sabah and Sarawak.
4. To help in encouraging and to popularise the use of standard Bahasa Melayu.

The Bureau had two revolving funds: an account for publication and an account for dissemination. The publication of the Bureau’s books was funded by the account for publication, which received grants from:

1. Sarawak Government
2. Sabah Government
3. Asia Foundation

The functions of the publication section were:

1. To create official or unofficial contact with writers or potential writers, assigning them to prepare manuscripts that were needed to cover planned topics.
2. To encourage all writers and previous winners (of writing competitions) to keep on writing.
3. To preserve the local languages spoken in Sabah and Sarawak in the form of writing and printing.

Apart from that, the Borneo Literature Bureau also created a research section in 1972. The aims of this section were as follows:

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1. To study, record and collect materials regarding local languages spoken by the multi-racial people of Sabah and Sarawak.

2. To study, record and collect different terminologies used in Sabah and Sarawak to enrich Bahasa Melayu.

The Borneo Literature Bureau published a couple of Bidayuh phrasebooks. It also organized writing competitions in various Bidayuh dialects and published the prizewinning stories in a few titles. Also it published translations from English, such as the story of Daniel. Table 2 shows the BLB publications in Bidayuh that the authors are aware of.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Year</th>
<th>Genre</th>
<th>Dialect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serita Pasar Daniel (Story about Daniel)</td>
<td>Fr. Francis and Michael Diway, trans.</td>
<td>[1961]*</td>
<td>Storybook</td>
<td>Bau-Jagoi</td>
</tr>
<tr>
<td>Koda Koda Gaya Pingajar</td>
<td>Stephen Jussem Dundon</td>
<td>1968</td>
<td>Story with moral purpose</td>
<td>Bau-Jagoi</td>
</tr>
<tr>
<td>Denan Mung Oma</td>
<td>T. Gunjew Nicolaus and Michael Sadin</td>
<td>1968</td>
<td>Collection of traditional stories</td>
<td>Bau-Jagoi</td>
</tr>
<tr>
<td>English–Biatah Phrase Book (Buk Piminyu Branda–Biatah)</td>
<td>none listed in book (Ritikos Jitab is credited in a bibliography)</td>
<td>1968</td>
<td>Phrasebook</td>
<td>Biatah</td>
</tr>
<tr>
<td>Dundan Pasar Daniel (Story about Daniel)</td>
<td>Ewiim Jaboh, trans.</td>
<td>[1961]*</td>
<td>Storybook</td>
<td>Biatah</td>
</tr>
<tr>
<td>Dundan Pimanug Daya Bidayuh Siburan</td>
<td>Simigaat, Helbourne and T. K. Mijad Simanjar</td>
<td>1968</td>
<td>Storybook</td>
<td>Biatah</td>
</tr>
<tr>
<td>Pimangan Raja Naya</td>
<td>Norbert Nyulin Sium and Martin Ephraem Kiliw</td>
<td>1969</td>
<td>Storybook</td>
<td>Bukar-Sadung</td>
</tr>
<tr>
<td>Ra Turun Ku Pait, Ra Ru-an Ku Sayang</td>
<td>Arthur Atos Langgi and T. K. Mijad</td>
<td>1972</td>
<td>Storybook</td>
<td>Bukar-Sadung</td>
</tr>
<tr>
<td>Tanun Bidayuh</td>
<td>Arthur Atos Langgi</td>
<td>1976</td>
<td>Storybook</td>
<td>Bukar-Sadung</td>
</tr>
<tr>
<td>Tamûn Pasal Daniel (Story about Daniel)</td>
<td>Arthur Atos Langgi, trans.</td>
<td>1976</td>
<td>Storybook</td>
<td>Bukar-Sadung</td>
</tr>
</tbody>
</table>

* This is apparently the date of publication of the English original, which was written by Lucy Diamond. The translated Daniel storybooks were published by Wills and Hepworth, in association with the Borneo Literature Bureau.
However, when the Dewan Bahasa dan Pustaka, Kuala Lumpur, formed its branches in Sabah and Sarawak in 1977, the Borneo Literature Bureau ceased operation. Its premises were taken over by the Dewan Bahasa dan Pustaka Sarawak Branch.

The key aim of the Dewan Bahasa dan Pustaka (Institute of Language and Literature Malaysia) is to develop and promote the use of the national language, Bahasa Melayu (the Malay language). It does not take responsibility for the publication of non-Malay literature. However, the DBP Sarawak Branch has conducted research on a number of Sarawakian languages including Malay-Selakau and Malay-Biatah vocabularies.

### 3.2 The Bidayuh–English Dictionary

This is a landmark publication, to date the most substantial work published in Bidayuh—a 680-page dictionary of Biatah words (and a few words in other dialects) with English definitions. It was compiled by Datuk William Nais, who was a Resident (administrative officer) and after his retirement a senior research assistant at the Majlis Adat Istiadat, Sarawak (see below). This volume was published in 1988 by the Sarawak Literary Society. It is widely used as a reference by the Biatah, as well as by urban Bidayuh of various dialects. Some flaws and errors have been found in it, but it is nevertheless a towering achievement. Nais also published two small books in English and Bidayuh with the Sarawak Literary Society, one a story (1987) and one on augury (1993).

### 3.3 Radio Sarawak / RTM

Radio Sarawak, the forerunner of today’s Radio Television Malaysia (RTM), was established in 1954 to provide a system of mass communication. It was officially on the air on 7 June 1954, when the then Governor of Sarawak, Sir Anthony Abell declared the service open (Hickling 1959:132).

Radio Sarawak at first broadcast daily in English, Malay, Chinese (Mandarin) and Iban. Later on, the Dayak service was further expanded to include not only Iban but also Bidayuh and Orang Ulu services.

The Bidayuh service of Radio Sarawak broadcast news items in the Biatah, Bau-Jagoi and Bukar-Sadung dialects (translated from English by Bidayuh staff). Today, the Bidayuh service of RTM broadcasts for nine hours a day. It features not only news items but also songs, stories and discussion forums in the various Bidayuh dialects. Thus, a number of Bidayuh singers, who write and sing their songs in Bidayuh, have them broadcast through the RTM Bidayuh section (see also next section).

### 3.4 Bidayuh singers

Bidayuh singers merit inclusion in this paper because at this time they produce the most widely used non-church Bidayuh-language materials.

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7The Dewan Bahasa dan Pustaka has a website (in Malay) at http://www.dbp.gov.my/lamandbp/main.php. A brief account of the DBP (in English) may also be found at http://www.languageinindia.com/nov2004/dewanbahasa1.html.
Artistic pursuits such as singing and writing songs need creativity and discipline. Singers also normally command a number of languages, besides having pleasant, soothing and melodious voices when they sing. Singing involves a good sense of rhythm, and a lot of stamina. It is not easy to be a singer.

The singers we speak of here did not come from the traditional music of the Bidayuh, which features chanting by Bidayuh priestesses, and also courtship and harvest songs by male and female singers. Popular singers developed through a different route.

Since the days of the Brooke raj, there have been some Bidayuh who stamped their mark as musicians and singers. One such group was the Quop band. In 1930 this group, together with the third Rajah of Sarawak, Sir Charles Vyner Brooke, visited Kampung Skra (sic). The people of that village were so impressed by the Rajah's visit and the band's performances that a number of talented youngsters formed their own musical band in 1938 (The Star, 28 April 2002). These early singers performed Western music in English, as well as kerongchong music.

The advent of pop songs and pop singers in the 1960s attracted a number of budding Bidayuh singers and song writers, who for the first time began writing pop songs in Bidayuh. A number of them shot to fame in the music industry. This was made possible through the recording and playing of their songs in the RTM studio, especially in the lagu pimite (song requests) program of the Bidayuh service of RTM. Some lucky singers caught the attention of owners of recording studios, who then invited them to cut albums.

Some of them also got themselves invited to local functions such as concerts and wedding parties, where they were normally invited to spice the evening with their rendition of Bidayuh, English, Iban and Malay songs.

Today, there are a number of digital recording studios in Kuching and other towns in Sarawak, where talented singers and music-makers have the opportunity to sing and record their songs on cassette tapes and VCDs. These VCDs sell well in regional towns such as Serian. Bands playing Bidayuh joget music are also popular, being invited to provide entertainment and dance music at many village functions.

Over the years, some Bidayuh songs have achieved popularity beyond their home dialect areas. In the 1970s, for example, Richmond Allan Morsidi’s rendition of “Bua Pütük Para” was heard not only in Serian but also in many other areas, including non-Bidayuh areas, in Sarawak. Similarly, today, Fiona John’s song “Adat Bidingan” is popular not only in Bau but also in Serian, Kuching and Kota Samarahan.

The Bidayuh singers play a very important role in promoting and preserving the Bidayuh language. Even if there were many books in the Bidayuh language, chances are that not many young Bidayuh would buy them. But many of them, and even non-Bidayuh, buy cassette tapes and karaoke VCDs of good and pleasant songs in Bidayuh. The Bidayuh lyrics found on the VCDs are widely read and sung—far more so than any non-church Bidayuh books. As such, they are influential in teaching reading and spelling in Bidayuh, as well as passing on Bidayuh words to a new generation.
3.5 Majlis Adat Istiadat Sarawak

The Council for Customs and Traditions, Sarawak (Majlis Adat Istiadat, Sarawak) was established in the Chief Minister’s department on 1 October 1974. It was formed not only as a center for the collection, codification, interpretation and dissemination of adat laws of the various Dayak peoples but also as a center for the collection, transcription and translation of the various oral traditions which include, among other things, legends, folklore, myths, history, chants, traditional songs, traditional music and games. In short, its mission is to preserve and nurture the customs and traditions of the Dayaks of Sarawak so as to maintain order and development of the community (Laws of Sarawak 1977).

After detailed discussions and consultations with knowledgeable Bidayuhs, Adat Bidayuh 1994 or Bidayuh Customary Law 1994 was codified and published in English and in Bau-Jagoi, Biatah and Bukar-Sadung. A Salako translation was published in 2009. For uniformity across dialects, the laws were first compiled in English, then translated back into the various Bidayuh dialects.

In 2001, the Bidayuh Research Section of the Majlis Adat Istiadat, Sarawak, together with the Dayak studies program at the Universiti Malaysia Sarawak (UNIMAS) published one volume of Bidayuh dundan (stories) which contained ten Bidayuh folk stories in Bidayuh dialects (some in Singai, some Biatah, some Bukar) and English (Ridu, Noeb and Jitab 2001). In 2004, five titles of Bidayuh folktales were published in the Bukar-Sadung dialect (Ridu 2004a–e).

3.6 The Sarawak Gazette and Sarawak Museum Journal

The Sarawak Gazette (started in 1870) and the Sarawak Museum Journal (started in 1911) were both publications begun by the Brooke government to disseminate information, whether they were official government announcements and current events or conditions (the Gazette) or academic studies in various fields (the Museum Journal). Though the Brooke government is now gone, the publications continue to this date, and they serve as a treasure trove of all kinds of information on Sarawak.

In an earlier section of this paper, a number of wordlists published after 1900 were mentioned. All of these were published by the Sarawak Museum Journal. Up to today, both the Sarawak Gazette and the Sarawak Museum Journal occasionally publish some Bidayuh stories and other articles. These are mostly in English, but a few are in both English and Bidayuh. One example of such an article is the story of Kumang Ruwai, or Sirituh Kumang Ruwai (Nyandoh 1956), in the Sarawak Museum Journal.

3.7 Oral Traditions project

In conjunction with Sarawak’s 25 years of independence within Malaysia, a symposium on “Sarawak Cultural Heritage” was organised in 1988 by the Sarawak government. One of the resolutions of the symposium was to ask the State Government to save the oral traditions of the various ethnic groups in Sarawak. Thus, the Oral Traditions project was launched on 4 October, 1990. This project was to record the various oral traditions of all the ethnic groups in Sarawak from 1991 to 1992.
The Majlis Pembangunan Sosial (Council for Social Development), under the Kementerian Pembangunan Sosial, was given the task of carrying out the project; according to Katalog Tradisi Lisan Sarawak, Jilid 1, 1992, 217 Bidayuh Oral Traditions were recorded in various dialects of Bidayuh.

3.8 Continuing activities of the churches

The major church denominations among the Bidayuh (Anglican, Roman Catholic and Seventh Day Adventist) began activities during the Brooke regime, but continue to produce new materials today and to revise older materials. Since these materials are used in church activities throughout the Bidayuh belt, the churches continue to be major players in the development of the Bidayuh language.

Major works produced since 1963 include:


2. The Biatah Old Testament, also translated by Fr. Gregory, now nearing completion and to be published with the New Testament as a complete Bible.

3. Revised and new prayer books and catechism books in the Bau district, with a new spelling, all done by Fr. Luis Schwabl and his assistants.

4. The prayerbook and Psalms in Bukar, done by the Anglican church. A revised version of the Psalms is currently being tested.

5. English–Sadung and Sadung–English vocabularies, compiled in the 1970s by Rev. Fr. J. Houben and several volunteers, including Paul Subeh, Louis Nyaoi and Teresa Yong. (These are unpublished to date.)

6. *Agah Katholik*: a Catholic newsletter in Sadung, published and distributed once every three months. This was started by Rev. Fr. Jerome Juleng in the late 1990s.

The Roman Catholic Church in Bau and Lundu (where Rev. Fr. Jerome Juleng is the parish priest) has also been actively translating liturgy into Salako and smaller Bidayuh dialects such as Rara and Tringgus, as well as translating hymns and composing new songs in these dialects. Fr. Jerome is also supervising translations of the Bible in the Bau and Bukar-Sadung areas.
4 Recent efforts to develop the Bidayuh language

4.1 Causes for concern

The Bidayuh belt’s close proximity to urban centers and their modernizing influences makes the Bidayuh people very vulnerable to rapid social and development changes. The Bidayuh communities once enjoyed a tranquil existence and were agriculturally self-sufficient. But now they find that their unspoilt but undeveloped belt is unable to help them in their quest for new opportunities, new expectations, new meanings and new influences in modern and progressive Sarawak. Job opportunities created by the nation’s economic development, for example, have afforded able-bodied Bidayuh men and women the opportunity to pursue diverse employment other than the traditional rice planting.

All these changes have affected aspects of their life. Those who migrate to town centers, for example, live in an urban environment together with non-Bidayuh people such as the Chinese, Malays, Iban, Orang Ulu and many others.

Modernization and rapid social changes bring about social adaptation. This poses new challenges to the Bidayuh and their language. Since independence within Malaysia, Malaysians have to master the national language, Malay. This is very important for education, job opportunities, harmonious relations and political stability. However, this has a negative impact on the Bidayuh language.

Today, the number of young urban Bidayuh who do not speak the language well, let alone who are able to understand and appreciate its literature, is to all appearances on the increase. They prefer to use Bahasa Melayu and English at work and at home because they feel that their dialects lack the industrial and scientific concepts necessary to express complex thoughts and life needs in the scientific and industrial society of today. Another reason for the decline in the use of the Bidayuh language is that some Bidayuh parents are not speaking to their children in Bidayuh. Contrary to the findings of many studies (UNESCO 2003), some of them believe that, if they “Speak English” and “Malaysian’s Malay”, their children may do better in English and Bahasa Melayu in schools.

Interruption, urbanization, language contact, language prestige and the formal education system are some of the many reasons for this negative trend. If nothing is done to arrest it, there is a distinct possibility that, in the not-so-distant future, the Bidayuh language will become extinct. This would be a tragedy because language is an important component of what constitutes the identity of an ethnic group. Therefore, our concern for the preservation of our identity as Bidayuh people should express itself in a serious effort to engineer and develop our language so that it can adequately put across the distinctive life force, the attributes, the character and inspiration of our people.
4.2 Efforts towards language unity and language development

Many members of the Bidayuh community are aware of the need to develop the Bidayuh language. After the formation of the Dayak Bidayuh National Association (DBNA) in 1955, many meetings and talks were conducted to discuss the development of the language. However, agreement on the subject always turned out to be very elusive. Regional pride coupled with a tendency to focus on the differences rather than the similarities of the various dialects made it difficult to move the DBNA to agree on a plan to develop the Bidayuh language.

Yang Berhormat Datuk Michael Manyin anak Jawong, in 1997, soon after his appointment as Assistant Minister of Finance and Public Utilities in September 1996, invited a number of Bidayuh education officers, principals, headmasters, and professionals from some institutions of higher learning in Kuching for a discussion on the formation of the Bidayuh Language Curriculum Committee. After an active discussion, a Bidayuh Language Curriculum Committee was formed. Specific duties were also assigned to certain committee members to pursue. There were a couple of Committee meetings after that, but no further action was taken.

On Sunday, 18 May 1998, speaking at the Bidayuh Cultural Night, Datuk Michael Manyin urged the Bidayuh community to work towards achieving a common dialect which can create a sense of oneness and identity for the community. He called on the Bidayuh community to have a dream that one day they could sit together and converse in a common dialect (Sarawak Tribune, 19 May 1998).

In 2000, the Association of Research and Development Movement of Singai (Redeems) took up the challenge. The treasurer of Redeems at that time, YB Peter Nansian, suggested in a Redeems committee meeting that Redeems should take the lead in developing the language for all the Bidayuh. This was agreed, and a letter was sent to the Director of SIL International (Malaysia Branch) to ask for volunteers to staff the project. At this point of time also, the Bidayuh Language Development Committee was formed. It included representatives from all the Bidayuh regions. Redeems applied for permission from the government through the State Planning Unit (SPU) to bring in seasoned professional linguists from SIL International for the project. The authors of this paper were elected as project coordinators, and have been heavily involved since.

In December 2000, the Sarawak State Planning Unit granted permission for consultants of the project to work in Sarawak. Linguists from SIL International first arrived in January 2001, and the Bidayuh Language Development Project began.
5 The Bidayuh Language Development Project

The Bidayuh Language Development Project was formed to preserve and promote the Bidayuh language in the home, in schools and among Bidayuh communities so that the language and culture will continue to be used and practised, passed from one generation to the next. Language is seen as a resource among the Bidayuh and in the world.

5.1 Project goals

- To revitalise the language, i.e., forgotten and neglected terms will be recovered.
- To develop a unified orthography for all dialects of Bidayuh
- To expand the body of literature written in Bidayuh
- To facilitate having Bidayuh taught in school as a subject

5.2 Some project objectives

- Collect word lists in various dialects
- Conduct writers’ workshops
- Compile dictionaries
- Train trainers who will in turn train Bidayuh writers, teachers, etc.
- Establish a language council or language foundation to plan and oversee activities
- Establish infrastructure for ongoing literature development
- Produce in-depth linguistic studies of the major varieties of Bidayuh

Since its inception in 2000, the Bidayuh Language Development Project (BLDP) has planned and conducted activities in most of these areas.

5.3 Project activities

5.3.1 Linguistic research and presentation of findings

Linguistic research was necessary before any of the language development activities of the project could take place. The first year of the project was devoted entirely to this. Now that other activities have been launched, less time is spent on research, but it continues and is necessary for many of the long-term goals of the project, such as reference dictionaries and a Bidayuh language curriculum for formal school.

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8Material in this section is drawn either from Tan et al. (2002) or from “The Bidayuh Language Development Project: A Status Report” (2003). Events since 2003 are recounted from the authors’ personal experience and records.
Language consultants from SIL working for the BLDP visited various regions of the Bidayuh belt in 2001. Much of that year was spent in the collection and phonological analysis of wordlists of various Bidayuh dialects. Based on this, a prototype unified Bidayuh orthography was put forth at the end of 2001 (see next section).

After this, phonological analysis continued on the Bidayuh dialects in all their rich variety. Some of the results of that analysis can be seen in the parts of this volume written by Calvin R. Rensch and Carolyn M. Rensch. Much remains to be explored.

Meanwhile, other SIL researchers did some analysis of the grammar of some Bidayuh dialects. A grammar sketch of the Jagoi dialect (Bau District) has been written up, but is not yet ready for publication (Vega and Vega 2003). However, further work was done on one of the most interesting aspects of Jagoi grammar that was discovered: Jagoi, and also Singai, has special intensifier words, unique for each adjective, that have lost all their independent meaning. This was compared with the Bukar dialect in Serian District, where no such phenomenon was found. However, Bukar does display a wide range of meanings when adjectives are reduplicated or repeated. The findings on these two dialects were written up and presented in 2005, at the conference held to commemorate Chalmers’ pioneering dictionary of Biatah (Vega and Tan 2005).

5.3.2 A unified Bidayuh orthography

A proposal for a unified orthography was put forward in November 2001. The proposal was publicized throughout the Bidayuh belt by means of an orthography promotion workshop conducted on 15–16 March 2002. It served as a public launch of the unified orthography. About 100 participants from all the Bidayuh regions attended the workshop. They expressed support for the unified orthography and were also supportive of the further development of the Bidayuh language.

The orthography was further tested and refined in the early months of 2003 with groups in the different districts. Then, two orthography consultation sessions, with representatives from all Bidayuh regions, were held in July and August 2003. A consensus for a unified orthography for all Bidayuh dialects was finally reached on 10 August, 2003. This is an achievement which has long been awaited by our community. With this success, all the dialects that collectively make up the Bidayuh Language (except for Salako and Rara) now have a similar spelling system.

As it turned out, there was little difficulty in agreeing on the symbols for most of the unified Bidayuh alphabet. The symbolization of consonants was nearly the same for all the dialects, and so emerged mostly unchanged. The most important change is the symbolization of the formerly ignored glottal stop by ‘ ’. However, as Table 3 shows, there have been much larger differences in the symbolization of the vowels, since they are pronounced differently by different dialects. Even so, rapid agreement was reached on all the vowels but one—the high central vowel (second to last in the table). The entire second session of the orthography consultation was given to arguing the pros and cons of the various possible symbols for this vowel. Finally, the symbol ‘ŭ’, which has a strong tradition in some areas, was decided upon.
Table 3. Current and unified symbolizations for Bidayuh vowels

<table>
<thead>
<tr>
<th>Pronunciation</th>
<th>Current Spelling</th>
<th>Unified Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bau</td>
<td>Kuching</td>
</tr>
<tr>
<td>[a]</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>[a]/[ʌ]</td>
<td>----</td>
<td>a</td>
</tr>
<tr>
<td>[iɑ]/[ɛ]</td>
<td>ie</td>
<td>e</td>
</tr>
<tr>
<td>[i]</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>[uɑ]/[ɔ]</td>
<td>uo</td>
<td>o</td>
</tr>
<tr>
<td>[o]/[u]</td>
<td>o</td>
<td>ü</td>
</tr>
<tr>
<td>[u]</td>
<td>u</td>
<td>u</td>
</tr>
</tbody>
</table>

Now that consensus on a unified orthography has been achieved, story collections and dictionaries are being prepared using this spelling. Some have already been published (see Ridu 2004a–e), and more should follow soon.

5.3.3 Learning that LASTS (training methodology)

A major way that this project hopes to achieve its aims is to recruit and train as many Bidayuhs as possible to write, compile, publish and distribute materials in Bidayuh. Thus, those involved in the project need to be themselves equipped to train others.

SIL International provides a training methodology, to be used for training adults, called Learning that LASTS (LtL). Personnel from the BLDP attended two LtL workshops in Kota Kinabalu, the first on 1–5 April 2002, and the second, a more advanced workshop on Training Planning and Module Preparation, on 12–16 May 2003.

At these workshops, participants learned how to structure their courses and training modules so that they would be learner-centered, and the learners would actively participate in mastering the knowledge, skills, and attitudes the trainer was passing on. Participants actually experienced these principles at work in the way the LtL workshop itself was designed. Then, in pairs, participants designed and taught modules based on these principles.

The team from the BLDP immediately applied what they had learned from the April 2002 workshop when they planned and conducted a Writers’ Workshop one month later, in Bau. The LtL training has continued to prove its value in the many workshops held in the BLDP since then.

A delightful side benefit of workshops like this is the chance to meet like-minded people from other indigenous groups. The authors attended the LtL workshop in April 2002, and met Rita Lasimbang and Trixie Kinajil, two very seasoned key personnel from the Kadazandusun Language Foundation. So, not only did we gain valuable knowledge of how to apply LtL principles and techniques in designing and running workshops for the BLDP, but we were also given a very useful insight into the setting up of the Kadazandusun Language Foundation.
5.3.4 Writers’ workshops

A healthy and vital language will have a widely-based body of literature of all types, for all audiences and purposes. At present, there is no published material in Bidayuh for very young children and beginning readers. The BLDP has conducted Writers’ Workshops to create such materials. These workshops have been held in Serian, Bau, Kuching and Lundu since May 2002. At such workshops, participants, mostly teachers and pensioners, learn to write, edit, illustrate and lay out simple stories in Bidayuh for beginning readers, especially young children who have not yet been to school. The participants also learn a method that can be used by anyone to produce simple books for reading.

It is expected that they in turn will teach the method to many other potential writers and illustrators and get them involved in producing books as well. The books produced during the various workshops will thereafter be used on a trial basis and improved, and eventually published for wider use.

5.3.5 Curriculum development

A Curriculum Development Seminar was organised in Kuching on 4 February 2003, conducted by Ms. Karla Smith, a seasoned and well-qualified education specialist and literacy consultant from SIL International. In spite of torrential rain and floods in most Bidayuh areas, 30 people, mostly educationists, came to participate in the workshop. The seminar ended with the formation of the Curriculum Committee.

The plan is to develop Bidayuh primers and reading materials, beginning with the preschool level, then continuing to higher levels. The curriculum that is to be put into use will also need to be monitored, evaluated and revised.

5.3.6 Dictionary workshops

One of our goals is to compile a dictionary database suitable for the production of various dictionaries, including one for school use in each dialect cluster, one for authors (linking similar words), and finally a full reference dictionary.

The school dictionaries and authors’ dictionaries will list whole words and not have entries broken down into roots and grammatical affixes. However, the reference dictionary will arrange the information by root words and affixes, and will be a more complete record of the Bidayuh language and culture.

This is not just the idea of a few Bidayuh leaders. Dictionaries are strongly desired by many ordinary Bidayuh people to preserve the Bidayuh cultural heritage, and also to encourage the usage of “old words” that are now being lost.

At dictionary workshops held in 2003, the participants listed the following reasons for wanting a dictionary in the Bidayuh Language.

❖ It would be a reference for writing, for general information and to discover words and their meanings.
❖ It would show the correct spelling and pronunciation
❖ It would help them learn how to use the words in sentences
❖ It would limit the need to borrow words for lack of vocabulary
- It would be a source for linguistic creativity
- It would be a lasting treasury of the language, and keep the language and culture alive by preserving old words and their meanings
- It would help promote, develop and publicize the languages
- It would be a language learning resource for people who want to learn to speak Bidayuh

The dictionary work is an ongoing project. The workshops in 2003 utilized a method developed by Ron Moe of SIL International to very quickly generate a large database of words and rough translations. In 2005, eight persons, two each from the Serian, Bau, Kuching and Lundu districts, were sent to Sabah to attend a two-week dictionary workshop conducted by Dr. Charles E. Grimes, on 6–17 June, which taught participants some principles of lexicography and also taught them how to apply these principles in starting a dictionary database using Toolbox, a linguistic database program developed by SIL. This enabled participants to expand and refine information for each entry, and also to link related entries.

However, in the course of two weeks only a bare beginning could be made. Much work remains to be done on the databases, and there is still much to be learned about lexicography. The regional dictionaries will need sustained efforts by many dedicated people to advance through the remaining stages of dictionary preparation before they can be published.
6 Dreams for the future

It is not easy to predict the future of the Bidayuh language. However, whether we like it or not, globalization is here to stay. In a globalized world, major languages in any country will have tremendous advantages over minor languages. In Malaysia, Malaysians—including the Bidayuh people—find it very beneficial to master Bahasa Melayu, English, Mandarin and other major languages in the country because up-to-date knowledge, including scientific knowledge, will be published in these languages. They will become the vehicles for successful lifestyles.

A minority language such as the Bidayuh language which has no political and economic clout could eventually crumble. This is because globalization will continue to permeate aspects of our culture, including customs and traditions. Those aspects of our culture such as our language, if not developed and vitalized, will not be able to withstand the challenges forced by the silent tsunamic wave of globalization.

But, the Bidayuh customs and traditions which we call adat, language, music and dance, art, ritual festivals and some other cultural items collectively make up the cultural and historical heritage of the Bidayuh people. This heritage is what makes the various groups Bidayuh and not anything else. It is a divine gift handed down to our ancestors and they in turn handed it down to us. Thus this heritage connects the past to the present. It helps us as a basis to shape the future.

So, it is worthwhile to preserve and develop our language. And we believe that the effort will not be futile. A model for how Bidayuh can coexist with more powerful languages was developed and presented at the International Conference on Language Development in Minority Language Communities, 6–8 November 2003, in Bangkok (Lingam et al. 2003). This model considers the traditional Bidayuh longhouse, which is built halfway up a mountain, not on the top of it. Halfway up the mountain turns out to be the best position for a longhouse, poised between enemies coming from below and inhospitable terrain on the upper slopes. Similarly, the Bidayuh language can thrive if it is sufficiently developed, but it does not need to be as fully developed as the powerful national and international languages occupying the top of the mountain.

Thus, we persevere with language development. Besides the activities we have described in the previous section, we see some concrete and probably necessary steps that can be taken to strengthen the Bidayuh language for the future.

6.1 Bidayuh Language Foundation

It is important that a body, either a language council or a language foundation, be established to create and implement strategic activities to meet both short term and long term goals of the language development program. It is hoped that the establishment of the foundation will not only secure the well-
being of the Bidayuh language but also its protection and promotion among the Bidayuh community. It is our hope that it will be formed as soon as possible.

The Kadazandusun Language Foundation (KLF) in Sabah serves as a model for a way that a foundation can be set up and run. Ms. Rita Lasimbang, the CEO of KLF, had been most encouraging to Bidayuh leaders when they went to Sabah for workshops. On 13 November 2003, YB Datuk Michael Manyin, then Minister of Housing, his personal secretary George Oscar Sindon and the authors of this paper went to Sabah to meet with Tan Sri Bernard Dompok, the political patron of KLF, as well as to tour the office of KLF and meet its staff.

6.2 Bidayuh language taught in school as a subject

Research studies have found that a strong foundation in the mother tongue and a carefully planned and graded process of bridging to the new language is an important factor in helping minority learners achieve success in education (e.g., Malone 2001).

The rationale for learning using the mother tongue or first language is based on the pedagogical principle of starting with the known and going to the unknown.

There is ample research showing that children are quicker to learn to read and acquire other academic skills when first taught in their mother tongue. They also learn a second language more quickly than those initially taught to read in an unfamiliar language (see, e.g., UNESCO 2003).

Our dream is to see that the Bidayuh language becomes the “strength” of our community and that the language is further developed and revitalized and that it is taught as a subject during primary schooling in Bidayuh areas.
7 Concluding remarks

The greatest threat to the survival of our language is our own indifference to the language and our younger generation’s ignorance of it. Our children are at a very early age educated in schools where they find themselves in a new society, in which they have to learn and master at least two foreign languages, English and Bahasa Melayu. They have no choice but to learn and accept the alien languages and cultures. It is therefore up to us, the parents, to make sure that our children speak our own language and learn our culture. As parents, it is our duty to not only take a keen interest in what our children learn in school, but also to impart to them our own language and customs through oral traditions such as myths, folklore, legends and songs. We must act now to propagate and promote our own language and at the same time instill our traditional values and norms, so that our ancestry and our heritage will be a source of pride for our children as well as for ourselves.
8 Addendum — Events since 2005

This book was first published at the beginning of 2006. Since then, language development efforts have continued apace. There has also been a major new project in multilingual education (MLE) which has built on and extended all the efforts that came previous to it.

8.1 Multilingual Education (MLE)

Multilingual education aims to empower children in minority language communities to learn well in the languages of wider communication without having to sacrifice their own language and culture.

The initiative for this project came from the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Asia. As part of its Education for All program, it wished to start a multilingual education pilot project in every country in Asia. In early 2006, it approached Dr. Karla Smith of SIL for her recommendation. She had just conducted a seminar on MLE with the Bidayuh community. On the strength of the enthusiasm she found there, she recommended that the Bidayuh community host the MLE pilot project for Malaysia. In July 2006, the Dayak Bidayuh National Association (DBNA) signed a contract with UNESCO for this pilot project. Dr. Karla Smith developed the curriculum, and other SIL staff facilitated the development of the required Bidayuh-language materials.

The Bidayuh MLE program puts an emphasis on the Bidayuh cultural heritage through stories, songs, dances, art and craft and teaching on culturally important topics. Where possible, members of the older generation come to the classroom to teach music, dance and crafts. Parents are also encouraged to participate in looking after the young children.

8.2 Materials development workshops

Many written materials in Bidayuh had to be developed for use in the MLE project. DBNA decided on simultaneous development of the MLE program for all major varieties of the Bidayuh language: Bau-Jagoi, Biatah, Bukar-Sadung, Rara and Salako. This meant developing five sets of materials, all at the same time.

The Bidayuh-language playschools required listening stories, children’s songs and preprimers in Bidayuh. Also required were suitable cultural activities for three- and four-year-old children. All these were developed in a series of workshops from August to December 2006, and improved after they were put into use.

In 2008, much effort was put into development of the curriculum and the Bidayuh-language materials needed for Bidayuh MLE kindergartens — big book stories for shared reading, primers and primer exercises, more listening stories and songs, more Bidayuh cultural activities. A mathematics workbook with instructions in Bidayuh was also created. Curriculum materials in the national language were also developed for the learning of Bahasa Malaysia (the national language) as a subject, and for
moral education. Again, all these were corrected and improved after they were put into use. Other materials such as sequence cards for the big book stories and mathematics games were also added after the first year of kindergarten classes.

### 8.3 Playschools and kindergartens

After intensive preparation of Bidayuh-language materials and training of teachers, playschool classes (for three- and four-year-old children) started on 15 January 2007 in a few selected villages in Bau, Serian, Kuching/Penrissen and Lundu in the Kuching and Samarahan Divisions of Sarawak.

Two years later, on 12 January 2009, DBNA opened MLE kindergartens (for five-year-old children) in some of these villages. In these kindergartens, all subjects except Bahasa Malaysia continue to be taught in Bidayuh. Some of the playschool teachers were retrained as kindergarten teachers. They use a reading method based on the multistrategy method. (This is a two-track methodology, with a story track and a primer track.) This has proven effective; by the end of the year, the children can read in their own language. They can also do simple addition and subtraction.

### 8.4 The next step for Bidayuh MLE

Now that it has been demonstrated how well the children can perform when taught in their own language, DBNA has decided to develop curricula and materials for the next stage, which is the second year of kindergarten. Reading and writing in Bidayuh would be reinforced, reading and writing in Bahasa Malaysia would be introduced, and oral English would be introduced. Students would also reinforce and build on their skills in mathematics in their own language, while learning the terminology for them in Bahasa Malaysia. The same will happen for health, science and arts and culture. All these will lay a good foundation for Bidayuh children to perform better as they begin their formal schooling, as well as to retain a firm sense of their Bidayuh identity and heritage.

### 8.5 Picture Dictionaries

These are fifty-page books with pictures of about 500 items, arranged by topic. Common objects are depicted, along with traditional cultural items such as types of baskets, farming tools, musical instruments and buildings.

Committees were formed in all major Bidayuh areas to write and produce the picture dictionaries. The committees for Bau, Serian, Kuching/Penrissen and Salako, with guidance and financial help from SIL, have completed and published their respective dictionaries. The Rara group from Lundu is still in the process of completing their version of the picture dictionary.

These picture dictionaries are useful for pupils in MLE classes, and also for promoting the new orthography.
8.6 Wordlist project

This is a continuation of the dictionary workshops described in section 5.3.6. Each of the dictionary workshops produced about 8,000–10,000 Bidayuh words. These words were entered into Toolbox databases. (Some of these have since been ported into the Fieldworks Language Explorer.) Each entry still needed to be checked. Spellings and English glosses needed to be corrected, and glosses in Bahasa Malaysia added.

Committees for this project were formed in Bau, Serian, Kuching/Penrissen and Lundu. These small groups continue to gather regularly to verify and improve each dictionary entry, eliminate duplicates, and also to cross-link related entries and make them consistent with each other.

The Bau group completed the corpus for this wordlist in 2008, but still needs to edit for consistency. The project is still going on in the other Bidayuh areas.

8.7 Bidayuh Language Online Project

The Association Of Research And Development Movement Of Singai (REDEEMS) is currently working with University Malaysia Sarawak (UNIMAS) on the Bidayuh Language Online Project (Singai dialect).

This is a revitalization and maintenance project through information technology and community participation. It is hoped that the approach taken will involve the engagement of Singai communities both in Sarawak, Borneo and diaspora communities elsewhere in the world.

REDEEMS is also embarking on a project to document the Bidayuh Singai material culture, especially those materials that have something to do with paddy planting. There will be writeups, with glossaries of words that are now seldom used. The process of making mats, carrying-baskets, fishtraps and the various implements used in the planting of hill paddy will all be described. This project will also document the traditional paths from the various Singai kampungs to Mount Singai, naming all the streams, hills, fruit trees and landscape along the way. Traditional Singai poems, songs and proverbs are also being collected.
PART II

Nasality in Bidayuh Phonology

Carolyn M. Rensch

1 Introduction
2 Nasality
3 Sounds of Bidayuh
4 Canonical shapes of Bidayuh words
5 Nasal spread
6 ‘New’ nasality
7 Nasals in Bidayuh morphology
8 Closing remarks

List of tables:
Consonants
Vowels of the ultima (tonic syllable)

Table 1. Distribution of Biatah labial-consonant Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed: numbers of occurrences in the Nais dictionary

Table 2. Distribution of the three nasal-initial Biatah Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed: numbers of occurrences in the Nais dictionary

Table 3. Distribution of six common Biatah Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed: numbers of occurrences in the Nais dictionary

Table 4. Estimated level of productivity of Ci- prefixes in Biatah dialect
1 Introduction

The intent of this paper is to describe in a reasonable amount of detail the phonetic nature, occurrences and behaviors of nasality as it operates across the spectrum of Bidayuh dialects in Sarawak, Malaysia.\(^1\) The focus is not intended to be on theoretical matters, and there is little attempt made to tie up all loose ends of analytical detail or to assign the analysis to a particular theory.\(^2\)

\(^1\)Much credit must be given at the beginning of this paper to the late Datu’ William Nais, whose *Bidayuh–English Dictionary* (1988) provided most of the Biatah-dialect forms and definitions shown in Section 7 and elsewhere in this paper.

\(^2\)However, it may be useful to note that the behaviors of nasality and some other features of this language might provide fertile ground for autosegmental analysis.
2 Nasality

An important and virtually universal phonetic opposition in the world’s languages is that of nasality vs. orality. Most kinds of speech sounds are produced by air that is initiated in the speaker’s lungs and moves upward through the vocal tract, passing the larynx and one or more resonance chambers and articulating organs before exiting in the form of audible speech. Air that produces ordinary (oral) vowel sounds and many common consonant sounds is blocked (by closure of the velic) from exiting via the nasal passage and therefore exits via the mouth only. Air that produces nasal consonants is blocked by a closure in the mouth and cannot exit via that passage, so exits via the nose only. Air that produces nasalized vowels is not blocked in either the oral or the nasal chamber, so exits via both portals simultaneously. In the opposition of nasality vs. orality, particularly as it applies to vowels, nasality occurs less commonly in languages than orality. Therefore, vowel nasality is called a ‘marked’ feature. Vowel orality, being more common, is called an ‘unmarked’ feature.

Some sounds may be difficult to nasalize, but most sounds, whether vowels or consonants, can be modified by nasality in one way or another and can, therefore, be described in terms of that attribute: [+nas] if they have it, [–nas] if they do not. All languages exhibit some form of nasality, having at least one nasal consonant, but there is wide variety in how significant a role nasality plays in phonological systems. In Bidayuh it has a variety of occurrences and behaviors, some of them significant and some merely interesting.

The most common nasality opposition is between nasal stops (or simply ‘nasals’) and the corresponding oral stops (or ‘plosives’). However, in some languages other consonants as well can exhibit the nasality feature. An example of the nasal vs. oral stop opposition is n, a nasal stop, which is [+nas], vs. d and/or t, oral stops (plosives), that are pronounced at the same place in the mouth as n but are [–nas]. Other comparable pairs of nasal vs. oral stops include: m vs. b and/or p; ŋ vs. j and/or c; й vs. ɡ and/or k. The principal difference in articulation between m and b, n and d, ŋ and j, й and ɡ is the portal via which air exits. b, d, j, ɡ are oral; when the closure opens, air exits via the mouth. m, n, ŋ, й are nasal; air exits only via the nose. p, t, c, k are oral; when the closure opens, air exits via the mouth. They also differ from the nasal consonants by being voiceless as well as oral. The nasal consonants are [+nas], [+vd]; the voiced stops are [–nas], [+vd]; the voiceless stops are [–nas], [–vd].

As already stated, vowel sounds as well as consonant sounds can exhibit the nasality opposition according to whether the airstream exits via the mouth only (oral vowels) or via the mouth and nose simultaneously (nasalized vowels): a, an oral vowel, is [–nas]; ã, a nasalized vowel, is [+nas], etc.

Virtually all languages have at least one nasal stop that opposes one or more corresponding oral stops to differentiate lexical items of the language. If a language has only one nasal stop, usually it is n. Less commonly it might be m or й.

Nasalized vowels are far from being universal in languages. In many languages where they do exist, the occurrence of vowel nasalization is caused (or ‘conditioned’) by adjacent nasal consonants or other
nasal(ized) sounds. There are some languages—e.g., standard Spanish and RP English—where vowel nasalization virtually does not occur. Yet there are other languages that have as many as ten nasalized vowels systematically opposing/matching a corresponding set of oral vowels in such a way that the nasalization feature differentiates lexical items. Chinantecan languages of Mexico, for example, have a full set of nasalized vowels corresponding to a large set of oral vowels; the nasality differences contrast meanings. Still other languages, French for example, have fewer nasalized than oral vowels. Higher vowels do not occur nasalized; only lower vowels have corresponding nasalized forms that contrast with oral forms to differentiate meanings.\(^3\)

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\(^3\)Chinanteco de Lalana: /tɔ:\=/ ‘brain’ vs. /tʊ:\=/ ‘thorn’; /tʊ:\=/ ‘turkey’ vs. /tʊ:\=/ ‘drum’

French: /bo/ = beau ‘beautiful’ vs. /bõ/ = bon ‘good’
3 Sounds of Bidayuh

The following chart summarizes the basic sounds (phonemes) of Bidayuh, which are organized according to their phonetic classifications with an approximate phonetic symbol or symbols to show their pronunciation. Some of the sounds/phonemes comprise more than one phonetic variant.

3.1 Chart of Bidayuh phonemes

Phonetic representations:

<table>
<thead>
<tr>
<th>Consonants</th>
<th>labial</th>
<th>apical</th>
<th>palatal</th>
<th>velar</th>
<th>laryngeal</th>
</tr>
</thead>
<tbody>
<tr>
<td>obstruents—voiced</td>
<td>/b/ [b]</td>
<td>/d/ [d]</td>
<td>/j/ [dʒ]</td>
<td>/g/ [g]</td>
<td>/h/ [ʔ]</td>
</tr>
<tr>
<td>nasals (nasal stops)</td>
<td>/m [m]</td>
<td>/n/ [n]</td>
<td>/ŋ/ [n̥]</td>
<td>/ŋ̥/ [ŋ̡]</td>
<td></td>
</tr>
<tr>
<td>liquid—vibrant</td>
<td>/r̃/ [r̃] [r]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>liquid—lateral</td>
<td>/l/ [l]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>semivowels/glides</td>
<td>/w [w]</td>
<td>/y/ [y]</td>
<td></td>
<td>/ʔ/ [ʔ]</td>
<td></td>
</tr>
<tr>
<td>laryngeal—stop</td>
<td></td>
<td></td>
<td></td>
<td>/h/ [h]</td>
<td></td>
</tr>
<tr>
<td>laryngeal—fricative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Phonetic norms and other details of the vowel systems of the Bidayuh dialects vary from one dialect area to another in both the tonic syllable (in this case the ultima/final syllable) and the penult (next-to-last syllable) and other pre-tonic syllables (syllables that precede the ultima). The vowels of Bidayuh are addressed elsewhere in this volume, but the tonic vowels will be summarized here briefly and will be further referenced when they affect other topics.
<table>
<thead>
<tr>
<th>Vowels of the ultima (tonic syllable)</th>
<th>front</th>
<th>central</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>high</strong> /i/ [i]</td>
<td></td>
<td>/u/ [u]</td>
<td></td>
</tr>
<tr>
<td><strong>mid</strong> /e/ [e]</td>
<td>/o/ [o]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/e/ [e]</td>
<td>/o/ [o]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/ie/ [i]</td>
<td>/oa/ [a]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/ia/ [a]</td>
<td>/ua/ [a]</td>
<td></td>
</tr>
<tr>
<td><strong>low</strong> /a/ [a]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: In eastern and central dialects lengthened vowels of each vowel quality can occur in the ultima, contrasting with vowels of ordinary length; /a:/ is more common than other lengthened vowels, just as /a/ is more common than other non-lengthened vowels.

### 3.2 Further explanation about specific phonemes

Most Bidayuh sounds/phonemes are pronounced approximately according to the common usages of the symbols in the chart, except where otherwise mentioned. Since the focus of this paper is nasal sounds, there will be fewer specific details about pronunciation of other types of sounds. However, a few comments and explanations about the Chart of Phonemes may prove helpful.

#### 3.2.1 All Bidayuh dialects have a voiceless palatal fricative, /s/

Eastern dialects have in addition a voiceless palatal affricate phoneme /c/, pronounced as [ts]. However, /c/ is somewhat rare even in the eastern dialects and participates little in phonological processes. Although /s/ is considered an apical phoneme in many of the world’s languages, both /s/ and /c/ pattern as palatals in Bidayuh, which is also the case in the national language. As shown in the chart of sounds, /s/ can vary in pronunciation from [s] to [ʃ], [c] or [ç], the exact pronunciation depending on the dialect and on which vowel follows it.

#### 3.2.2 Most Bidayuh dialects have only one liquid

The liquid is commonly pronounced as a voiced apical tap/flap, [ɾ], when syllable-initial and as a voiced apical trill [r̃] when word-final. In only one dialect, Sembaan, the liquid is pronounced as [l] in all

5See p. 225 of this volume for a chart of Bidayuh dialects as analyzed by Calvin R. Rensch.

6The most common pronunciation of the /r/ phoneme across the Bidayuh area is the apical tap/flap; the other pronunciations are less so. The usual IPA symbol for the apical tap/flap, [ɾ], is considered unnecessarily exotic to be used for this very commonly occurring sound. Therefore, for the sake of convenience the standard letter ‘r’ will be used in this paper to symbolize the /r/ phoneme and also the tap/flap when it is written in phonetic writing.
positions. In some western dialects, especially some Jagoi dialects, the tap/flap sometimes has a lateral quality, and speakers may think of it as /l/. Eastern dialects and Rara have both kinds of liquid as phonemes—i.e., /l/ as well as /r/. However, /l/ is less frequent and less broad in occurrence than /r/.

In some Sadung dialects, /r/ is pronounced as a uvular scrape, [ʁ], when syllable-initial and as an apical trill, [ɾ], when word-final. In data collected for this project the uvular pronunciation was observed only in speakers from Bunan and Terbat, two Sadung dialects that are geographically (and linguistically) close. In both cases the speakers’ comments as well as direct observation indicated that they use the uvular pronunciation less today than in the fairly recent past, especially when talking with speakers of other dialects. The apical tap, [ɾ], the usual pronunciation of the /r/ phoneme in most Bidayuh dialects, is seemingly replacing the uvular pronunciation in syllable-initial position; the trill predominates in word- and phrase-final position in these dialects.

3.2.3 The semivowels (or glides), /w/ and /y/, have limited distribution

They do not occur word-initial in content words. In some dialects more than others they do occur word-initially in some particles, monosyllables and loanwords. They are ordinary consonants when they occur word-medially between two vowels. In word-final position they occur as non-syllabic glides that follow the main vowel of a syllable, [a'#, u'#, o'#, a#']. Some clearcut examples of contrast between word-final /...Vy#/ and /...V.syllabic i#/ occur and perhaps between /...Vw#/ and /...V.syllabic u#/ as well. However, while examples of word-final glides are frequent, clearcut examples of word-final, open syllables in which a syllabic high vowel follows another vowel are not so common. The most telling factors leading to the conclusion that these are word-final semivowels and not simply occurrences of the high vowels are a) they are phonetically non-syllabic, b) to treat them as ordinary simple vowels would mean that roots in which they occur consist of three syllables, which is not at all the norm for Bidayuh roots, and c) stress falls on the first (more syllabic) of the two rather than on the second.

The semivowels do not contrast with their absence in the sequences [i(y)V] and [u(w)V], where they are automatically inserted between the high vowel and the following vowel. They may be inserted as well in the sequences [V(y)i] and [V(w)u] which could be interpreted efficiently as /iV/ and /uV/, /Vi/ and /Vu/. However, many speakers ‘feel’ the presence of the semivowels in these positions and believe they should be symbolized in written Bidayuh, especially in short, simple words like (C)V.V(C). They rarely write the semivowels where they are inserted after or before the counterpart high vowels in a three-syllable word, but they usually write them in two-syllable words.

In nasal environments the palatal semivowel nasalizes readily (> [y]) and varies optionally with the palatal nasal. The nature and extent of this alternation differ somewhat from dialect to dialect and from speaker to speaker.

Two other phonetic symbols, [ɾ] and [ʁ], representing the trill and the uvular scrape, respectively, will be used where the phonetic detail is of interest or useful.
3.2.4 There are two laryngeal phonemes, /ʔ/ (glottal stop) and /h/ (glottal fricative)

Glottal stop contrasts meanings in intervocalic\(^7\) and word-final positions. It occurs non-contrastively before word-/phrase-initial vowels.

In eastern dialects, the Sembaan-group (except Tringgus-Bireng) and Rara /h/ occurs and contrasts meanings in both word-medial and word-final positions. In central and western dialects it occurs and contrasts meanings only in word-final position.

3.2.5 The voiceless velar stop

In most dialects /k/ is always pronounced as a velar stop.

In eastern dialects /k/ is optionally pronounced as a velar fricative in intervocalic or word-final position.

However, in Singai /k/ in final position is [ʔ]. Slightly differing qualities of the preceding vowel distinguish final /k/ from final /ʔ/.

Optional rule: /k/ > [+cont]/V_V, _V# OR /k/ > [x]/V_V, _#.

3.2.6 The central vowel

Among the Bidayuh dialects spoken in Sarawak there are several ways of pronouncing the central vowel, /a/, depending on which dialect it is: Singai speakers pronounce it as [ə] in the penult and as [i] in the ultima. Jagoi speakers pronounce it as [ɔ] (or [ɔ]) in both positions; Gumbang speakers pronounce it as [i] in both positions. Just this small amount of information from three western dialects shows that pronunciations of the central vowel vary significantly. Further details for pronouncing it in other dialects are presented elsewhere in this volume. Note that the technical symbol used here for the central vowel phoneme is /a/, a phonetic symbol that is called ‘schwa’.

Rara does not have the sixth (central) vowel. It uses /a/ or /u/ where Bidayuh dialects use /a/.

3.3 Vowel dynamic

Three types of length phenomena affect Bidayuh vowels and yield different vowel sub-systems. These important, but complex, issues are introduced here briefly but are discussed more thoroughly elsewhere in this volume\(^8\).

3.3.1 Vowel length in the ultima

Eastern and central Bidayuh dialects show an opposition between lengthened vs. ordinary-length vowels in the ultima. The vowel that is most commonly lengthened is the most commonly occurring vowel, /aː/, followed by /ɔː/ and /ɛː/. In some dialects the high vowels and the central vowel can also occur

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\(^7\)Glottal stop does not occur intervocically in Rara.

\(^8\)See “Studies of the early Bidayuh language: Proto-Bidayuh and its relatives” by C. R. Rensch in this book, secs. 2.3.2.5 (vowel length in the ultima and rearticulated vowels), and 2.4.2.2 (full and reduced vowels).
lengthened, but that is not common. In the group of dialects that exhibit length contrast the lengthened vowels are unisyllabic. They will be symbolized as ‘a’, ‘o’, etc.

### 3.3.2 Rearticulated vowels

In western dialects words having the shape #(C)V₁.V₁(C)# are disyllabic. In such words #(C)V₁ is the penult; V₁(C)# is the ultima and as such is the tonic syllable. It receives the word-accent. Vowels of this type are symbolized in the orthography as ‘aa’, ‘uu’, etc.

### 3.3.3 Full vs. reduced penult vowels

In eastern and central dialects a type of length distinction is found in penultimate syllables that differs somewhat from the length phenomenon of the ultima. Some penult vowels are held or sustained. Those are termed ‘full (penult) vowels’. Other penult vowels are uttered very quickly and are somewhat ballistic in character. Those cannot be sustained. They are termed ‘reduced (penult) vowels’.

The symbols /ā/, /ū/, etc. represent full (sustainable) penult vowels whereas /ă/, /ŭ/, etc. represent reduced (quickly uttered, non-sustainable) penult vowels. In some dialects the phonetic realization of /ā/ varies between [ă] and [a]. However, in most eastern and some central dialects /ă/ and /ŭ/ are different phonemes that contrast meanings of words.

(Optional rule in some eastern and central dialects: /ă/ > [ă]~[ŭ]).

In this paper unmodified vowel symbols in the penult—‘a’, ‘u’, etc.—indicate that either that dialect does not have the full-reduced penult vowel contrast, or that word has not been checked for the full-reduced feature, or that the full-reduced feature is considered irrelevant to that discussion.

The full-reduced penult-vowel contrast clearly operates in most eastern, central and Sembaan-group dialects. Apparently it does not operate in western dialects. It is also not clear whether the contrast operates in ante-penults and ante-antepenults. The present (tentative) conclusion is that it does not.

### 3.4 Symbolization conventions

#### 3.4.1 Types of brackets

The types of brackets used around language data show the analytical status of the material they enclose. **Square brackets 1:** [−cont] [−vd] [−nas] [+lab] > /p/. = phonetic features that identify a particular sound or set of sounds and differentiate it/them from other sounds of the language. The presence or absence of each feature in the production or perception of a given sound is shown by plus and minus signs.

**Square brackets 2:** [kãm.bit] = phonetically-written material. These brackets, which look the same as those above, indicate words or larger chunks of speech written in phonetic symbols. The transcriber of the data endeavors to show by phonetic symbols how that material is pronounced. These brackets can also be used to show that material inside the brackets is unanalysed.

**Slant-line brackets:** /kamb/ = phonemically-written material, a sound, morpheme, word, etc. written in symbols that represent only the basic, underlying phonological units (phonemes) of the language, omitting non-phonemic phonetic information.
Curly brackets: \{bi-\} in /bi-suwat/ ‘having flowers’ = a piece of speech that has meaning, a morpheme. It may comprise a whole word that has only one meaningful part or a smaller bit from words that have more than one meaningful part. The form in curly brackets is the underlying form of the morpheme. If pronunciation of that morpheme can vary according to its different places of articulation, e.g., \{N-\}, a rule (explanation) is needed to explain variations in pronunciation, i.e., why N is pronounced as /m/, /n/, /p/ or /ŋ/ in some environments.

Parentheses: As used in writing language data in this paper, parentheses indicate that the sound or symbol enclosed by the parentheses is a) sometimes there but not always or b) used to be there but has dropped out partially or completely or c) there is some uncertainty about it. In a word like /än(d)u/ ‘day’ the voiced stop has (partially) dropped out following the nasal. In a word like /k()ābas/ ‘dead’ the parentheses show uncertainty as to whether /k/ is a prefix or part of the root morpheme.

Quotation marks: These indicate the gloss (or meaning) of a word or other phonological piece, as in /manuk/ ‘bird’.

3.4.2 Symbolization of canonical shapes (phonological constructs)

C represents a consonant (or any consonant)

V represents a vowel (or any vowel).

T represents a (or any) voiceless obstruent.

D represents a (or any) voiced obstruent.

N represents a (or any) nasal.

In Bidayuh N can directly precede root-initial voiceless or voiced obstruents when it is the replacive-nasal prefix. It takes the same place of articulation as the obstruent and replaces the obstruent. That prefix is here symbolized as \{N-\}. A similar prefix that occurs only before voiceless obstruents is \{N-\}, here termed the syllabic-nasal prefix. These and other prefixes are connected to the root by a hyphen. The N-prefixes are homorganic to (i.e., pronounced at the same place in the mouth as) the obstruents that they replace or precede. The place of articulation of the obstruent determines which specific nasal occurs as the prefix, and the bracketed N’s are summary labels for that.

(D) in parentheses in this document symbolizes a weakened voiced obstruent, the onset of an ultima that has dropped out partially or completely following a nasal.

( ) parentheses around an obstruent symbol indicates the obstruent that is replaced by a preceding replacive-nasal prefix.

In this paper the word ‘obstruent’ will normally be used rather than ‘stop’ or ‘plosive’. The reasons for this are a) the palatal ‘stops’ of Bidayuh include /s/, /c/ and /j/, none of which is technically a simple ‘stop’ or ‘plosive’. The first is a fricative, the latter two are affricates (stops with fricative release) and b) the more common of the two voiceless palatal obstruents is /s/, the fricative. (Generally speaking, central and western Bidayuh dialects have only one voiceless palatal obstruent, /s/. Some words that contain phonetic [c] occur as well, but in those dialects [c] either occurs in loanwords or is a conditioned variant of /s/. In Bukar-Sadung (eastern) dialects both /c/ and /s/ are phonemes, but /c/ has limited occurrence. Even the dialects that have not had /c/ as a traditional phoneme are likely to use it in loanwords nowadays.
in some dialects, \textit{t} in others is a quickly pronounced voiced or voiceless oral stop inserted between an oral vowel in the ultima and a word-final nasal coda. The stop takes the same place of articulation as the nasal and blocks nasality from spreading backward from the coda nasal to the vowel of the ultima. This phenomenon is called ‘preplosion’ of word-final nasals, and the coda is termed a preploded nasal. Example: [pi?idn] ‘water’. The oral vowel of the ultima is protected by insertion of \textit{d}/t from absorbing nasality from the \textit{n} that is the word-final coda. Preplosion occurs also where the vowel of the ultima remains oral following a nasal onset because the remnant of a lost (or almost-lost) voiced-obstruent onset protects it from becoming a nasalized vowel.

\textbf{H} is a laryngeal (or any laryngeal). In Bidayuh it can refer to either /h/ (a glottal fricative) or /ʔ/ (a glottal stop) or both.

\# (number sign) represents a word boundary. Thus, \#_ represents word-beginning; _# represents word-end; _-_# represents word-beginning and end; __#_ represents a word-division, the dividing point between two words.

__ (dot) represents a syllable boundary. (S may sometimes be used to represent a syllable whose content is not specified.)

xx-xxxx-yy (hyphen) marks the boundary of an affix where it attaches to a root or stem: xx- is a prefix; -yy is a suffix; a hyphen at both ends marks an infix, e.g., -xx-. A root morpheme has no hyphen at either end.

(xxxx) + xx: Although the plus sign has various possible meanings, even within this paper, it will be used to mark a ‘clitic’. Clitics in Bidayuh are suffix-like, but they can relate to a whole phrase, sentence or even paragraph, not just to the word to which they attach.

xxx–yyy: This wavy line (tilde) shows alternation (optional variation) between the forms on either side of it. However, when the tilde is a diacritic over a letter, usually a vowel letter, it shows that the sound is (phonetically) nasalized: [ä, ü, ÿ, î].

*xxxx: Assumed underlying (or earlier) forms of current words. Such forms are not directly observable in the current language.

**xxxx: A presumed root, observed with affixes but not known to exist in isolation.

\textbf{3.4.3 Symbolization of phonetic features of sounds}

A small set of phonetic features can identify any specific sound or classify a group of sounds that share one or more features. Thus, /b/ is [–continuant] (or [–sonorant]) [+ voiced] [–nasal] [+ labial], whereas /m/ is [–continuant]\footnote{Whether a nasal consonant is a continuant or a stop depends on how one looks at it. Nasal consonants \textit{are} continuants in terms of their sustainability while air is exiting via the nose. However, articulation of the specific nasal stops that occurs in the mouth is exactly the same as articulation of the corresponding oral stops. The articulation completely blocks the outgoing airstream from exiting via the mouth. Therefore, convention as well as presumed convenience in linguistic description have decreed that nasal consonants should be classified as [–cont].} [+ nasal] [+ labial]. (For the sake of convenience these few features can be abbreviated as follows: [cont], [son], [vd], [nas], [lab], etc.) The nasal consonants, /m, n, ŋ/, are [ + nas]. Nasalized vowels or normally-oral consonants that are affected by nasalization are also [ + nas].
Thus, [ä], [ũ], [ŷ], [ũ], [Ṽ], etc. are [+nas]. Any group (or class) of sounds that share some features can be represented purely by the phonetic features, as above. An inclusive symbol for a class of sounds may be used with just the feature(s) that is/are relevant to a particular discussion. The relevant feature(s) can be shown in square brackets after the letter that symbolizes the sound. For example, X [+nas] could represent a class of sounds, all of which are nasal. C [+nas] represents a nasal or a nasalized consonant; C[–nas] represents a non-nasal consonant, V[+nas] is a nasalized vowel.

X[αplace]...Y[αplace] means that the two sounds or two groups of sounds whose features are shown are pronounced at the same place in the mouth, e.g., both are labial, both are palatal, etc.

3.4.4 Symbolization of phonological processes

One focus of this paper is on developments that have caused or changed the pronunciations of sounds. Over many years words and sounds may change in pronunciation in certain phonological contexts (or ‘environments’), changing from an ‘underlying’ (older, more basic) form to the present-day form. Formulas (or phonological ‘rules’) can describe not only historical changes from past to present pronunciations but also pronunciation variants that occur in the present.

Palatalization of /h/ following /i/ in word-final position: /h/ > /s/ /i__#. Word-final /h/ has come to be pronounced as /s/ when the preceding vowel is /i/. This change or a similar change has happened in a number of Bidayuh dialects (e.g., Singai).

Below are additional examples of phonological ‘rules’ of Bidayuh. They are given in various formats and are not necessarily intended to be consistent among themselves. Neither the format nor the terminology is as ‘tight’ as a more formal study would make them.

In the formulas below a right-pointing arrow (>) indicates the direction of change from an underlying (or earlier) form, shown on the left of the arrow, toward a later or present-day realization of that form, shown on the right.

Variation caused by an adjacent sound: X > Y/Z__. A basic sound or class of sounds, ‘X’, is pronounced as ‘Y’, which represents another sound or class of sounds, when it occurs after a different sound or class of sounds, represented by ‘Z’. Thus, ‘ZX’ is pronounced as ‘ZY’.

Assimilation to the place of articulation of a neighboring sound: X > [αplace] /__Y [αplace]. The place of articulation of a sound or a class of sounds, ‘X’, changes to match the place of articulation of the sound that follows it when that following sound is ‘Y’ or a ‘Y’-type sound.

Nasal assimilation of vowels: V > [+nas]/C[+nas]__. Vowels become nasalized when they occur after a nasal consonant.

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11The word ‘form’ is used as a loose categorization to talk about a linguistic chunk or piece—a sound, a morpheme, a word, etc.

12This paper will not present exact derivations based on ordered rules. It will merely introduce some phonological processes that have operated or are operating in the language.

Please note that where source dialects are given for examples used in the text the list of dialects is not always exhaustive.
Palatal offglide of velars before front vowels and labial offglide of velars and labials before /o/: The oral and nasal velar stops\(^{13}\), /k/, /ŋ/ (and /g/\(^{14}\)) have a palatal release before front vowels, quite pronouncedly so before /e/, less obviously so before /i/. Thus, /k/ > [k’], /ŋ/ > [ŋ’], /g/ > [ŋ’] OR C[+vel] > [+pal rel]/\textsubscript{V}[+ft]. This ‘rule’ shows palatalization of a set of consonants having the same place of articulation in the same environment. (The palatal nasal /ŋ/ always has a palatal(ized) release before any vowel: /ŋ/ > \textit{ŋ̱}.) The [ŋ’] is a transition sound produced automatically as the tongue moves from the velar position to the front-vowel position. It is a predictable feature, not a phonemic feature. Thus, the sequences /ki/, /gi/ and /ŋi/ are pronounced as [k’i], [g’i] and [ŋ’i]; the sequences /ke/, /ge/ and /ŋe/ are pronounced as [k’e], [g’e] and [ŋ’e].\(^{15}\) This pronunciation ‘rule’ can also be expressed in terms of features that group together the classes (sets) of sounds that share those features:

\[
\text{C[+vel]} \rightarrow [+\text{pal rel}]/\_\text{V}[+\text{ft}] \text{ OR } \text{C[+vel]} \rightarrow [+\text{pal rel}]/\_+[\text{voc}][+\text{ft}].
\]

Velar and labial stops (oral or nasal) may have a labial release before /o/. Thus, /p/ > [p’], /m/ > [m’], /b/ > [b’], /k/ > [k’], /ŋ/ > [ŋ’], /g/ > [g’] before /o/.

This pronunciation ‘rule’ can also be expressed in terms of phonetic features:

\[
\text{C[+acute]}^{16} \rightarrow [+\text{lab rel}]/\_\text{V}[+\text{lab}]
\]

\text{[–cont]} \quad \text{[–high]}

Prepllosion of word-final nasals:

\[
\emptyset > \text{C[–cont]}/\text{V[–nas]} \_\text{C[–cont]}#
\]

\text{[–nas]} \quad \text{[+nas]}

\text{[αplace]} \quad \text{[σplace]}

An oral stop pronounced at the same place of articulation as the word-final nasal is inserted between an oral vowel and a word-final nasal (to prevent the nasal from nasalizing the preceding vowel).

**Nasal release of word-final oral stops.** In citation pronunciations word-final oral stops, whether voiceless or voiced, may be pronounced optionally with a quick nasal release. This kind of stop + nasal ending is of shorter duration and less consciously pronounced than the stop + nasal endings that constitute prepllosion of a word-final nasal. In prepllosion the stop is sometimes sustained and the nasal that follows it is slightly syllabic. Here again ‘stops’, not ‘obstruents’, is the intended word because the process does not affect affricates or fricatives. Most of the available examples of nasally released stops are apical.

Nasal initiation of word-initial stops can sometimes be heard as well, but no record of that phenomenon is at hand.

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\(^{13}\)Note that ‘stops’ is the intended word here rather than ‘obstruents’, because this ‘rule’ does not apply to affricates or to the fricative.

\(^{14}\)Relevant data on /g/ in these positions are quite scanty.

\(^{15}\)The involvement of /e/ in this rule applies to the Bidayuh dialects in which /e/ is pronounced as a single, simple vowel. In western and most central dialects, where /e/ (> [i]) is phonetically a ‘breaking’ vowel (Blust’s term; Blust 1988:180), the same rule applies, but in a less direct way.

\(^{16}\)The feature [acute] refers to sounds made at the extremes of the oral cavity—in Bidayuh, these are labial or velar positions.
Examples of nasally-released word-final stops:

/kijat/ > [ki:̥.jat] ‘lightning bolt’ (Bratak) (16)
/məkəd/ > [mə:̥.kəd̥] ‘to cough’ (Bratak) (128)
/sino/ > [si.n̥o] ‘comb’ (Bunuc) (209)
/bəkəd/ > [bə.k̥id̥] ‘pillow’ (Sembaan) (270)
/mi̊jog/ > [mĩ.j̥og] ‘to stand’ (Tebakang) (132)

3.5 The nasal consonants of Bidayuh

Bidayuh has four nasal stops: /m/ (labial), /n/ (apical), /ŋ/ (velar). All four of them occur syllable-initial, including word-initial. Only /m, n, ŋ/ occur syllable-final, including word-final; /ŋ/ does not occur syllable-final. Therefore, only /m, n, ŋ/ occur in word-medial nasal + obstruent clusters; /ŋ/ does not participate in those clusters, which consist of a nasal followed by the obstruent made at the same (or nearly same) place of articulation; /n/ substitutes for /ŋ/ in such clusters with palatal obstruents: N+palatal obstruent > n.s, (n.c), n.j. Bidayuh speakers themselves consider the nasal that occurs before palatal obstruents to be /n/, not /ŋ/, and they also write it as ‘n’.

When /ŋ/ is in word-initial position, it is expectably an occurrence of the replacive-nasal prefix, {N-}, which replaces the initial obstruent of a root with its homorganic (same place of articulation) nasal, creating a prefixed stem. The palatal nasal can replace any of the palatal obstruents: {N-} > ŋ/s, c, j…; s, c, j > Ø/{N-}_.

Examples of the replacive-nasal prefix with /s/-initial words:
/simen/ ‘cement’, /nimen/ ‘cover (something) with cement’ (Biatah-Nais)
/sābu/ ‘second weeding of a padi field’, /nabu/ ‘to weed, cut grass’ (Biatah-Nais)

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17 Numbers following cited forms refer to the numbers of relevant cognate sets in Appendix I.
18 An example of this same word in Bukar releases final /g/ with ‘/r/’, rather than the nasal release. Not only is releasing of stops in word-final position optional in its occurrence but also there is some variation between nasal and oral forms of release, perhaps only if the stop is voiced. Other situations where schwa release, ‘/r/’, often occurs are with word-final /r/, which is usually pronounced as a tongue-tip trill when word-final. Schwa can also be an onset to word-initial trilled /r/.
19 It is only in dialects of the eastern region that the full complement of nasal + obstruent clusters is found: m.p, m.b, n.t, n.d, n.c, n.j, ŋ.k, ŋ.g. In central and western Bidayuh the clusters are fewer because nasals have dropped out from nasal + voiceless-obstruent clusters, except in Rara, while voiced obstruents have become weakened and some have dropped out entirely from the nasal + voiced-obstruent clusters, including in Rara. Rara retains the nasal + voiceless-obstruent clusters, but has n+s rather than n+c. The latter occurs in eastern dialects.
20 Most Bidayuh words that begin with a nasal contain the derivational prefix {N-}, which is here called the replacive-nasal prefix. It is common to use this (or some other nasal prefix) to form an active verb from a noun or adjective or to change the grammatical function of a verb. However, some nasal-initial words are not recognizable as verbs. In those words the initial nasal may be evidence of such a prefix in a ‘frozen’ word. Many words that seem to be ‘frozen’ are names of plants, animals, utensils or cultural features.
/sābeʔ/ ‘a slash, transverse cut; thorn, very sharp edge’, /nābeʔ/ ‘to slash, hack to pieces, cut off at a sharp angle’ (Biatah-Nais)

/səʔuh/ ‘burned, passive’, /nəʔuh/ ‘burns (a field), active’ (Singai) (231)

When it is word-initial or between vowels and nasal spread is not blocked, the palatal nasal creates a strong nasalizing environment. In some dialects ŋ varies optionally with a nasalized form of the palatal semivowel: /ŋ/~/y/(> [ý]) /#_V, V_V. The palatal semivowel if nasalized in this way has a similarly strong nasalizing effect.
4 Canonical shapes of Bidayuh words

4.1 Structure of the word

Most Bidayuh roots and many stems consist of two syllables. A stem is formed from a root by the addition of a derivational prefix, which in most cases changes the grammatical role or function of the root. For example, the replacive-nasal prefix can change a noun or adjective root into an active verb by replacing the root-initial obstruent with a nasal that is pronounced at the same place of articulation as the obstruent. Because this prefix replaces the obstruent (with a nasal), it does not add an additional syllable to the word.

If the root begins with a vowel, a single-consonant prefix can attach directly to the vowel becoming the onset of the initial syllable; the word still has two syllables because the prefix, although adding a consonant, does not add a syllable.

In addition to the replacive-nasal and other single-consonant prefixes that do not add a syllable, some words can add one or two more prefixes, each consisting of a consonant followed by the vowel /i/: Ci-. Each Ci- prefix adds a syllable, as does an infix -iC- inserted following the initial consonant of a root or stem.

4.1.1 Limitations of phoneme occurrence in the word

In the most ordinary kinds of words—i.e., (C)V.CV(C)—almost any consonant can occur in any position, with a few exceptions as follows:

a) Glottal stop occurs between vowels and word-finally. It also occurs, but non-phonemically, before word-initial vowels, especially in citation forms.

b) Central and western dialects use /h/ in word-final position only. Eastern dialects and Rara use /h/ between vowels as well, where it is the onset of the ultima. However, /h/ does not occur word-initially in indigenous words.

c) Semi-vowels do not occur word-initially in basic Bidayuh lexical items but can be found in that position in some particles and loanwords.

d) Word-final codas (final consonant of the last syllable) can be any consonant except /ɲ/ whereas only /m, n, ŋ/ can be coda of a non-final syllable. Only eastern dialects and Biatah and also Rara have nasal codas in pre-penultimate syllables.

The syllable peak of the ultima can be any of the six vowels. In eastern and central dialects the vowel of the ultima can occur contrastively lengthened, with /aː/ being by far the most common lengthened vowel.
4.1.2 Structure of the ultima

In Bidayuh the ultima (last syllable) is the nucleus of the word. It receives the peak of word stress—at least in citation forms (words that are pronounced individually). The ultima can have a somewhat more complex structure and a greater variety of phonological content than other syllables. Its most common canonical shape is CV(C), but it can be of any syllable shape that is possible in the language. A less common syllable shape is V(C), which can occur word-initially and as the ultima of a (C)V.V(C) word. Vowel-initial syllables without a final consonant are rare in word-final position.

In some words of the shape (C)V.V(C), in western dialects (Singai, Jagoi) and also in Rara, the same vowel occurs in both the ultima (last syllable) and the penult (second-to-last syllable). In such words initiation of stress (accent) on the ultima vowel is usually perceptible: (C)V₁.V₂(C).

A limited set of one-syllable words can begin with a consonant cluster consisting of a voiced or voiceless obstruent preceded by a nasal consonant pronounced at the same place of articulation: #NT/DV(C)#.

Examples of word-initial nasal + voiced obstruent clusters:

"/Nb/ > [m(b)i]/ ‘already’ (Bukar-Sadung dialect, Tebakang)"

"/ndi/ > [n(d)i/ ‘one’ (Bunan, Bukar-Sadung dialect) (281)"

Examples of word-initial nasal + voiceless obstruent clusters:

"/N(-)tək/ > [ntikateral] ‘brain’ (Bunan, Bibengih) (91)"

"/N(-)puan/ > [m:pu.ʔan] ‘lungs’ (Bibengih, Bukar-Sadung dialect, Bukar) (98)"

4.1.3 Structure of the penult

The penult (next-to-last syllable) most often has the shape CV. It can have a nasal coda if the nasal is followed by an obstruent as onset of the ultima: #CVDV(T)/DV(C)#. The penult can be VN if it is the first syllable of the word and followed by an obstruent: #VNT/DV(C)#, or it can be simply V. Most eastern dialects, Biatah, and probably other central dialects, have words in which the penult is a vowel and the preceding syllable is CV, usually a prefix. This produces a V₁.V₂ sequence at the junction of the antepenult and the penult. This pattern appears not to be common.

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21Loanwords have brought variety to the content of the penult-coda position. As an example, the Biatah dictionary (Nais 1988) shows words with /k/ as coda of the penult followed by an obstruent as onset of the ultima. These appear to be mostly words borrowed from Sanskrit, Hindi, English or perhaps Chinese dialects. Examples:

"/sakpua/ ‘abacus’, /saktian/ ‘supernatural power that can do wonders’, /saksi/ ‘witness’, /sakrian/ ‘all sorts of...’.

Other words have /s/ as coda of the penult: /gostan/ > [go.stan] ‘go astern, reverse direction’. A similar word shows /s/ as the coda of the penult where a prefix vowel has dropped out, followed by an obstruent as onset of the ultima:

"/bi-s(i)-tuju/ > /bi-s-tuju/ > [bis.tu.ju] ‘agreed’, /si-tuju/ ‘agree, be of the same opinion’ < /tuju/ ‘a motive, aim, motivating thought or feeling’.

Furthermore, reduplicated words, especially those that duplicate the whole root, produce still more combinations of consonants in word-medial clusters. Examples: /rep-rep/ ‘the sound of a branch, etc. breaking, the sound of malignant splashing’, /gadap-gadup/ ‘in a frenzy of feeling’ (Biatah-Nais).
Examples of ambisyllabic $V_1, V_2$ sequences at the junction of ante-penult (a prefix) and penult:

/πi(-)amah/ > [πi.a.mih] ‘to dream’ (Bukar and Sadung dialects) (135)

/si-arap/ > [si.a.rap] ‘the worst’, /arap/ ‘bad, ugly, unreliable, abusive, etc.’ (Biatah-Nais) (169)

4.1.4 Structure of the ante-penult and ante-ante-penult (second- and third-from-last syllables of a four-syllable word)

Some words consist of three or four syllables. Many of the multi-syllable words are prefixed forms. Some vowel-initial roots can take as many as three prefixes: one first-order prefix—a single-consonant prefix that does not add a syllable and in most cases is a nasal—plus two CV- prefixes. The latter consist of a consonant plus a vowel, and the vowel is normally /i/. If there is a second-order prefix, which is the first prefix that can be used with an /r/-initial root or stem, it has the shape Ci-. It adds a syllable at the beginning of the word, becoming the ante-penult. If there is a third-order prefix, it adds an additional syllable at the beginning of the word, becoming the ante-ante-penult. All of the prefixes are attached to and before the penult one after the other, moving outward (leftward) from the root: A first-order prefix, if there is one, becomes the onset of the penult; a second-order prefix, if there is one, becomes the antepenult; a third-order prefix, if there is one, becomes the ante-ante-penult. The maximum prefixed form can be roughly\(^\text{22}\) represented as Ci-.Ci-.C-V(N).CV(C). In pre-penultimate syllables in Bidayuh dialects the expected vowel is /i/; Rara uses /a/ (> [a]~[a]), as do the other Bakati’ dialects in Kalimantan.

In most Bukar-Sadung dialects a sub-group of the roots that begin with a voiceless obstruent can take a syllabic-nasal prefix, {N/uni02D0-}, which is also homorganic\(^\text{23}\) with the initial obstruent. Whereas the replacive-nasal prefix replaces the initial obstruent with a homorganic nasal, the syllabic-nasal prefix attaches to the obstruent but does not displace it. Even in Bukar-Sadung dialects more of the roots that begin with voiceless obstruents take the replacive-nasal prefix than take the syllabic-nasal prefix.

Examples of Bukar-Sadung verb forms containing syllabic-nasal prefix:

/Ni(-)tubak/ > [ṅtu.bik] ‘to see’ (Bunan, Bukar, Bibengih) (115)

/Ni(-)kurak/ > [ŋku rak] ‘boiling’ (Bunan, Terbat, Bibengih, Bukar-Sadung dialect, Bukar) (221)

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\(^{22}\)This formula is a generalization that characterizes the shape of very common words but does not account for every possibility. E.g., it does not account for one-syllable words or consonant clusters, except those that consist of nasal plus obstruent.

\(^{23}\)Two or more sounds are homorganic if they are articulated at the same place in the mouth—e.g., labials m and b or p, apicals n and d or t, velars ñ and k or g. The fourth Bidayuh nasal, the palatal nasal, ñ, and its homorganic obstruents, j, s and/or c occur together too, but in more limited contexts. When it is the replacive-nasal prefix, ñ itself can occur because the nasal-replacive occurs syllable-initial. When it is in a consonant cluster, ñ cannot occur because it cannot occur syllable-final (including word-final). When ñ would be the expected nasal (i.e., before a palatal obstruent) n occurs instead.
4.1.5 Word-initial consonant clusters

One type of word-initial consonant cluster results from weakening and subsequent loss of a reduced penult vowel between two consonant-types that are subject to clustering. These include a) stop + reduced vowel + liquid and b) /s/ + reduced vowel + stop.24

In central dialects some words begin with a cluster of oral stop + /r/. The most common combinations involve labial and velar stops: pr, br, kr, gr. Where an oral stop and /r/ are the onsets of the first two syllables of a word and the vowel between them is a reduced vowel or the prefix vowel, /i/, the vowel is subject to dropping out; if it drops out, the word is shortened by a syllable. The vowel that drops out is the penult vowel if it is a two-syllable word, > one syllable. It is the antepenult vowel that drops out if it is a three-syllable word, > two syllables (and possibly the ante-ante-penult vowel if it is a four-syllable word, > three syllables). This leaves the first two consonants of the word side-by-side as a cluster. It can occur like this whether the first two syllables are two prefixes or one prefix and the penult of the root. The consonant clusters that result where this kind of vowel loss has occurred are most often a stop, commonly labial or velar, followed by a liquid. Less commonly they may be /s/ followed by a stop.25

Examples in central dialects of loss of prefix vowel, three syllables > two syllables:

/pi(-)rakis/ > /präkis~/präkih/ ‘(a) boil (skin infection)’ (Benuk), / > präkis/ (Bengoh). The Bengoh speaker said that this word should not be pronounced with pi- (123)

/gi-radak/ > /gradak/ ‘floor’. The speaker said ‘not gi-’ (Bengoh) (276)

/ti-ri(-)pod/ > /tripod/ ‘white ant, termite’ (Anah Rais) (64)

/si-pägi/ > /spägi/ ‘tomorrow’ (Anah Rais) (26)

/si-taka?/ > /staka?/ ‘spider’ The speaker said ‘not si-’ (Anah Rais) (63)

In some words of the type shown above, speakers pronounced the prefix vowel very slightly or used it optionally. They also made it clear that in these words the /i/ should not be (fully) pronounced. In some word-sets the form pronounced without the prefix vowel has (or has come to have) a slightly

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24The word ‘stop’ is used in this context, rather than obstruent, because the two affricates and the fricative, which are also obstruents, do not participate in this process.

25An unusual pair of entries in the Biatah dictionary (op. cit.) show that it is possible in that dialect to apply the process of vowel-reduction to the antepenult vowel even if there is another syllable/prefix before it—if the right kinds of consonants are present in the required order.

*/bi-si-tuju/ > /bi-s-tuju/ > [bi.stu.ju] (or [bis.tu.ju]?) ‘agree, have the same opinion, offer’; /si-tuju/ ‘having the same opinion, willing, in harmony’, /tuju/ ‘motive, aim, intent’.

*/bi-si-tura/? > /bi-s-tura/? > [bi.stu.ra]? (or [bis.tu.ra]?) ‘be face to face’; /si-tura/? ‘face-to-face’; /tura/? ‘toward, beside’.

In other Biatah data there is no example of an indigenous word where /s/ + stop clusters occur word-initial. It is interesting and perhaps unusual that they do occur (although rarely) where two prefixes meet, as in the above examples.
different meaning from the form with the full prefix. The prefixes in the above examples, all from central dialects located higher in the mountains than Biatah, are still functioning prefixes. Apparently it is the whole word without the prefix vowel that has become ‘frozen’, not specifically the prefix. Like many of the words that appear to be ‘frozen’, these words are nouns.

Examples in Biatah of word-pairs that have the same source, some of which have slight meaning differences with a prefix vowel or without one:

/bi-riŋab/ ‘greasy, having an oily taste’, /b-riŋab/ ‘having an oily taste, /riŋab/ ‘oily taste’ (Biatah-Nais)
/bi-r-akar/ ‘skillful, dexterous, cunning, shrewd’, /b-r-akar/ ‘cunning, clever, intelligent, resourceful, sensible’, /akar/ ‘root, trick, excuse, wit, intelligence, logic, tact, sense’ (Biatah-Nais)
/pi-ri-pañot/ ‘giving a twinge of pain, painful’, /p-ri-pañot/ ‘throbbing with pain’, /añot/ ‘tingling of the tongue’ (Biatah-Nais)

Another type of word-initial consonant cluster is unlikely to have its source in loanwords from other languages. It has been observed in some (not all) Penrissen-Padawan (upper central) dialects. These clusters occur in some words where a nasal-initial prefix is attached to an /r/-initial root. The pronunciation is similar to that of the syllabic-nasal prefixes of Bukar and Sadung that occur before voiceless obstruents in some examples. In this case a slightly syllabic /ŋ/ (or /ŋ/) is prefixed to an /r/-initial root. It is the realization in these Penrissen-Padawan dialects of the //i-/~/ŋi-/ prefix of Biatah, but with the prefix vowel dropped out. The Biatah prefix too is used before /r/, but Biatah prefixes that attach to /r/-initial roots always include the vowel /i/. The nasal-only prefix of Penrissen-Padawan dialects occurs only a few times in the wordlist data and only with a few of the /r/-initial roots.

Examples in Penrissen-Padawan dialects of /ŋ/ (or /ŋ/) as prefix to /r/-initial roots:
/ŋ-ruŋjaʔ/ ‘to spit’ (Benuk), /ŋ-(o)ʔiŋjaʔ/ (Bistaang), /ŋ-ruiŋjaʔ/ (Bengoh) (154)
/ŋ-rutaʔ/ (Bengoh) ‘to vomit’, /ŋ-taʔ/ (Benuk) (125)

There are other unusual (for Bidayuh) word-initial consonant clusters here and there in the wordlist data, largely in central and Semban-Group dialects. Those clusters also result from optional loss of the vowel of a prefix. Obstruent plus obstruent is an example.

Examples in Penrissen-Padawan dialects of unusual word-initial consonant clusters:
/ti-piris/~/tpiris/ ‘swift, swallow (kind of bird)’ (Anah Rais) (237)
/kasıʔ/ > [ktuŋ] ‘to wipe’ (Benuk) (160)

Thus, most words that begin with a consonant cluster have that cluster because they have lost the reduced vowel from the penult or antepenult. In central and western dialects and one eastern sub-dialect some nasal-initial monosyllables result from loss of the vowel of a (C)V/N penult that is followed by a


26‘Word-set’ as used here refers to a group of words that have the same root. The words in a word-set have related meanings and similar phonological content. A ‘word-pair’ is a word-set of two members.
voiced obstruent as onset of the ultima. The voiced obstruent has weakened in this position and (virtually) dropped out, allowing the nasal coda of the penult to move over and become onset of the ultima. The vowel of the ultima has remained oral even though the voiced obstruent that previously protected it from becoming nasalized has (all but) dropped out:

\[(C)V \overset{\text{–nas}}{\text{N.DV}}(C) \rightarrow (C)V \overset{\text{–nas}}{\text{N}}(D\overset{\text{–nas}}{\text{V}}(C)) \rightarrow NV(–nas)(C)\#

### 4.1.6 Word-medial consonant clusters

As already mentioned, the prototypical root-medial consonant cluster of Bidayuh consists of the nasal coda of the penult followed by a homorganic obstruent as onset of the ultima: …VN.T/DV… Only the Bukar-Sadung dialects and Rara still exhibit the full set of clusters of this type more or less intact (or perhaps have introduced or reintroduced some of them).

In root-medial clusters in central and western dialects, considerable change has taken place. The nasal has dropped out of nasal+voiceless-obstruent clusters.

Examples of development from nasal+voiceless-obstruent clusters:

/bintan/ \(\rightarrow\) [bĩn.ta/uni0261/kŋ] ‘star’ (eastern dialects and Rara); /bĩn.t/uni0259/uni0294/ > [bĩn.t/uni0268/uni0294] (eastern dialects); >

/bitan/ \(\rightarrow\) [bi.tag/kŋ] ~ [bi.tāŋ] (central and western dialects) (10)

/buntan/ \(\rightarrow\) [bũn.tad/tn] ‘coconut’ (eastern dialects and Rara); /bunta/ > [bũn.ti?] (eastern dialects);

/butan/ > /bu.tad/tn] (central and western dialects) (38)

In western and central dialects root-medial nasal+voiced-obstruent clusters have undergone a process akin to the process that has produced word-initial nasal+voiced-obstruent clusters in certain monosyllables. However, words/roots that contain medial clusters have retained the penult vowel, which is lost in those dialects if the cluster becomes word-initial. In medial nasal+voiced-obstruent clusters, as in word-/root-initial clusters, the obstruent is the sound that weakens and, in some cases, drops out. The cluster has resyllabified so that the nasal has become the onset of the ultima. Even if the voiced obstruent drops out altogether the vowel of the ultima continues to be oral, not affected by spread of nasality from the nasal consonant that precedes it. This persistent orality of the ultima vowel is evidence of the lingering presence of the voiced obstruent. Nevertheless, as time passes, protection of the oral form of the vowel does begin to weaken in many cases and the vowel does become affected by nasality. The first stage of this change is optional variation between an oral rime\(^{28}\) and the same rime nasalized. Later the nasalized rime may come to be used rather than the oral rime.

The Nais dictionary shows a small set of words, possibly some of them compounds, that exhibit unusual medial consonant clusters. All of these have the morph /sak/ (< Hindi, Sanskrit) as initial syllable and several of them relate to speech. The /k/ is followed by an obstruent or the liquid. The last three examples appear to be reduplications. (Cf. /sak/ ‘according to, as it sounds’.) /sakpua/ ‘abacus’;

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\(^{27}\)A usual process in Bidayuh is for nasality of a nasal onset to spread to the following vowel, which results in the vowel becoming phonetically nasalized. Nasal spread will be discussed in more detail in Section 5.

\(^{28}\)The rime is the latter part of a syllable and includes its nucleus/peak (its vowel/s) and its coda (its final consonant/s) and any prosodic features of that syllable (pitch, length, dynamic, etc.). Linguists may divide syllables into their onset (initial consonant/s) and rime.
/saktian/ ‘a supernatural power that can do wonders’; /sakrian/ ‘various, all sorts’; /saksi/ ‘witness’;
/sak-sak/ ‘sounds the same’; /sak-sok/ ‘walk in and out impolitely’; /sak-sik/ ‘talkatively, speak
continually and in quantity’.

4.1.7 Vocalic sequences

All dialects of Bidayuh have words/roots in which two vowels occur side-by-side. In the eastern and
central dialects two adjacent syllable nuclei with no consonant between are always of different vowel
qualities: $V_1V_2$. The first vowel in such a sequence is the nucleus of the penult; the second is the nucleus
of the ultima. Most words of this type have a consonant before and/or a consonant after the two vowels:
$CV_1V_2C$. In dialects that exhibit contrast between full and reduced penult vowels, the penult vowel in this
kind of vowel sequence is expectably a full vowel.

Examples of $V_1V_2$ sequences:

- $CV_1V_2C/ /bua/ \rightarrow [bu.a] \text{ or } [bu.wa] \text{ ‘fruit’ (most dialects)}$ (35)
- $V_1V_2C/ /uat/ \rightarrow [u.\text{at}] \text{ (or } [u.\text{wat}] \text{ or } [?\text{wat}] \text{ ‘root’ (most central dialects)}$ (32)
- $CV_1V_2 /jua/ \rightarrow [ju.a] \text{ (or } [ju.wa] \text{) ‘sell’ (most dialects in each of the regions; a few speakers gave}
\text{ /nu.wa/}, \text{ which is a verb stem in the same word-set)}$ (262)
- $V_1V_2 /ui/ \rightarrow [u.i] \text{ (or } [u.\text{wi}] \text{ or } [\text{wi}] \text{) ‘rattan’ (most dialects); } [u.\text{we}] \text{ or } [\text{we}] \text{ (Rara)}$ (45)

All Bidayuh dialects also have vowel sequences in which a laryngeal separates $V_1V_2$: $[V_1.V_2] \text{ occurs}
in all dialects except Rara. Eastern dialects and Rara have $[V_1.'hV_2]$ as well.

Western dialects and Rara have some words/roots containing a vowel sequence that consists of two
occurrences of the same vowel, one as the penult vowel with the same vowel following it as the ultima
vowel.\footnote{Another type of vowel contrast is found in eastern and central dialects, which have lengthened (or sustained),
not rearticulated, vowels in the ultima. These contrast with simple/single vowels in the same position. They do
not constitute two syllable nuclei even though they are longer than the usual duration of a single vowel. In view
of general word shape, word length, extra duration of the vowel and the places where they occur, these
lengthened vowels are single, unit vowels, not sequences of two vowels.
Example showing contrast of normal vs. lengthened vowel:
/ma.n(d)abm/ ‘sick, in pain’ vs. /ma.dabm/ ‘rotten’ (Biatah) (305).} In such words the second vowel is phonetically a rearticulation of the first: $/\#(\ldots)CVVC#/ \rightarrow
[/#CV_1.V_2C#]. \text{ When this kind of word is articulated carefully, a syllable juncture is audible between the}
two adjacent same vowels, as is a slight decay from the first vowel, which is the nucleus (or peak) of the
penult, followed by a step-up of intensity and pitch on the second vowel, which is the nucleus (or peak)
of the ultima. However, when words of this type are used in continuous speech and at normal speed, the
two vowels are likely to coalesce into a single, somewhat lengthened vowel.

Examples of rearticulated vowels:

- /taas/ > [ta.a$] \text{ ‘ironwood’ (Jagoi dialects, Rara)}$ (33)
- /baay/ > [ba.a$] \text{ ‘areca nut’ (Jagoi dialects)}$ (243)
- /muun/ > [mu.\text{un}] \text{ ‘descend’ (Jagoi dialects)}$ (143)
Words that in Jagoi are pronounced with a rearticulated vowel are pronounced with a lengthened, not rearticulated, vowel in the central dialects. In eastern dialects those same words are pronounced with /h/ between the two same vowels:

/\#C\V,1.hV,C#/>=[\#C\V,1.'hV,C#]>[t\a.'has] ‘ironwood’ (eastern and Sembaan dialects and Rara) (33).

Examples of same-vowel and different-vowel sequences with and without laryngeals:

V_iV_1 /taas/>=[ta.'a\̃] ‘ironwood’ (Jagoi dialects); [ta.'a\̃]~[t\a\̃] (Singai) (33)

V_i;/taas/>=[ta\̃] ‘ironwood’ (central dialects) (33)

V_i,hV_2;/t\̃has/>=[t\a.'has] ‘ironwood’ (Bukar-Sadung and Sembaan dialects); [t\a.'has] (Rara) (33)

V_1/V_2 /bua?/>=[bu.'a?} (or [bu.'wa?}) ‘fruit’ (most dialects) (35)

V_i/V_1 /pi?in/>=[pi.'i\̃d\̃] ‘water’ (western dialects) (6)

V_i,V_2 /sa?uk/>=[sa.'u\̃k] ‘dipper’ (Pinyawa’) (224)

V_1,hV_2 /dihan/>=[di.'had\̃} ‘durian’ (Bukar) (37)

It should be noted that in some ways the vowels of \[V.V\], \[V.?V\] and \[V.hV\] sequences are more closely connected or interdependent than are the two vowels in ordinary \[#(C)V.CV(C)#\] or \[#(C)VN.CV(C)#\] penult-ultima combinations. This is perhaps more obvious where the two are the same vowel, but is also true where the vowels are different. For that reason consideration was given to treating \[#(C)V.C#\] words/roots, as well as \[#(C)V.?V(C)#\] and \[#(C)V.hVC#\], words as an intermediate type of form, not quite monosyllables, yet also not quite like other two-syllable words/roots. However, the present view is that for most purposes such sequences do function as two syllables—i.e., a vowel-final penult followed by a vowel-initial ultima.

4.1.8 Other issues of phoneme interrelatedness

a) Assimilation: There is some tendency for a same-place-of-articulation consonant to be favored for the initial consonant of the penult and the initial consonant of the ultima. Some words of this type are likely to have resulted from what were reduplicated words at an earlier stage. For example, /b\̃ba?/ ‘mouth’, /pips/ ‘broom’, /dudu(?)/ ‘thunder’.

b) Vowel mirroring: It is fairly common in Bidayuh generally for the penult vowel to mirror the vowel of the ultima. In many words a high or mid front vowel in the ultima, /i/ or /e/, is reflected by a high front vowel (/i/) in the penult. The equivalent pattern holds for high and mid back vowels as well: If /u/ or /o/ is the vowel of the ultima, it may be reflected by the high back vowel (/u/) in the penult. In some dialects a mid vowel in the ultima (/e/ or /o/) can be reflected by the same mid vowel in the penult, even though mid vowels otherwise occur only in the ultima. Thus, if the ultima vowel is a mid vowel, there is optional variation in the penult between the corresponding high vowel and the mid vowel.

Another case of vowel-mirroring in some central dialects involves high vowels in the penult. In words with one high vowel in the ultima (/i/ or /u/) and the opposite high vowel (/u/ or /i/) in the penult, the penult vowel may change to match the vowel of the ultima. For example, /sikuh/ ‘elbow’ (Bengoh, Pinyawa’ and Anah Rais) varies in Anah Rais with /sukuh/ (105).
Still another example of phonetic vowel mirroring occurs in Singai where the vowel /a/ is pronounced [i] in the ultima and [ɔ] in the penult. For example, /kəbas/ [kəbis] ‘die’ (129). However, when the intervocalic consonant is /ʔ/, the pronunciation of /a/ in the penult mirrors that of the ultima, and both are pronounced as [i]: /baʔas/ > [biʔis] ‘sleep’ (133).

4.2 Shorter (one-syllable) words/roots

In Biatah some particles and some content words consist of just one syllable. Other dialects have short words as well. Most Biatah monosyllables have the shape CVC, and in most of them the vowel is /a/ or /ɑː/. It is common for such monosyllables to end with a nasal, and many also begin with a nasal.

Examples from Biatah (Nais op. cit.) of monosyllabic content words and particles:

Particles:
/baŋ/ ‘classifier for onions, garlic, etc.’; /daŋ/ ‘classifier for four-footed animals’; /da/ ‘no, not, is not, there isn’t’; /ka/ ‘then, and, toward, to’

Nouns:
/bab/ or /bap/ ‘a flapping sound’; /ban/ ‘dam’; /kam/ ‘thorny pine (kind of tree)’; /mam/ ‘mumps’; /min/ ‘ground ivy, mint’; /ŋaŋ/ ‘growl of a dog, rumble, warning’

Verbs:
/da/ ‘allow, permit, let’; /maŋ/ ‘to open up (fruit, speech)’; /nam/ ‘to answer’; /naŋ/ ‘say, state, scold, forbid, blame’; /nan/ ‘holding out against’

Modifiers:
/ba/ ‘flooded’; /bas/ ‘great, big’, /daŋ/ ‘enough, no more, about’; /ŋam/ ‘on good terms with, having same view, suitable’

Western and central dialects and at least one eastern dialect have some roots that are monosyllabic because they have lost all or part of the penult. They once had a (C)V /N syllable with a reduced vowel and a nasal coda as penult. The onset of the ultima that followed the nasal coda of the penult was a voiced obstruent. The voiced obstruent weakened in that position and (virtually) dropped out, allowing the nasal coda of the penult to move over and replace it as the onset of the ultima. The vowel of the ultima has remained oral, unaffected by forward nasal spread even though the voiced obstruent that protected it from being nasalized has (all but) dropped out:

/#(C)V/N.[–nas](C)#/ > [#(C)Ṽ.V.(D)V.[–nas](C)#] > [#V.[–nas](C)#].

Examples of one-syllable words that have undergone penult-vowel and voiced-obstruent loss:
/VNbaʔ/ > *Vm.ba > [.m(b)aʔ]~[maʔ] ‘don’t (imperative)’ (Singai, etc.) (332)
/VNdąg/ > *Vn. ⟨diɡ⟩ > [.n(d)ig]~[nɪŋ] ‘come’ (Singai, etc.) (140)
/VNdůŋ/ > *Vn. ⟨dʊŋɡ⟩ > [.n(d)ʊŋɡ]~[nʊŋɡ] ‘nose’ (Singai). Cf. /uNdůŋ/ > *ʔun. ⟨ dukŋ⟩ > [ʔu.⟨d⟩uŋɡ] (Terbat); /důŋ/ > [dʊŋ]‘nose’ (Rara) (84)

30Nasal spread will be discussed in more detail in Section 5.

31See footnote 49.
In some words of this type the process has gone a step further. Those words have lost the protection against nasal spreading to the vowel of the ultima that the voiced obstruent provided, allowing the vowel of the ultima to become nasalized, \(\#NV[+nas](C)\). All that remains of the former penult is its nasal coda, which is now the onset of the ultima. In the speech of some speakers the development of words like these has moved a step further, allowing the vowel of the ultima to become nasalized.

Examples of oral vowels optionally nasalized after loss of a voiced obstruent:

- \(\text{VNdi}/\) \(\Rightarrow\) \(\text{Vn.di}/\) \(\Rightarrow\) \(\text{ndi}/\) \(\Rightarrow\) \(\text{n(d)i}/\) [ni/] ‘one’ (Singai). Cf. \(\text{INdi}/\) \(\Rightarrow\) \(\text{nm.di}/\) ‘one’ (Terbat), \(\Rightarrow\) \(\text{m.ni}/\) (Bukar) (281)
- \(\text{VNgen}/\) \(\Rightarrow\) \(\text{Vŋ.9etn}/\) ‘to give’ (Biatah), \(\Rightarrow\) \(\text{ŋa/cdn}/\) (Pinyawa), \(\Rightarrow\) \(\text{ŋën}/\) (Bistaang). Cf.
- \(\text{VNken}/\) \(\Rightarrow\) \(\text{Vŋ.9kícdn}/\) ‘to give’ (Bengoh) (162)

Significant reduction and loss of the penult vowel, or in some cases the whole penult, has occurred in Bistaang and to a lesser extent in Benuk, both of which belong to the Penrissen sub-group of central dialects. This kind of outcome is also found in dialects of the Sembaan group. As is to be expected, the process of loss has affected words that have a reduced penult vowel. As a result, vocabulary items in those dialects are in many cases shorter than the corresponding words in other dialects. Those dialects seem to have more one-syllable words than other dialects.

Examples of penult reduction and loss in Sembaan dialect:

- Loss of whole penult
  \(\text{bitan}/\) \(\Rightarrow\) \([\text{takŋ}]/\) ‘star’ (Sembaan) (10)

- Loss of penult vowel, forming a one-syllable word with initial consonant cluster:
  \(\text{búlan}/\) \(\Rightarrow\) \([\text{blatn}]/\) ‘moon’ (Sembaan) (9)
  \(\text{súkuh}/\) \(\Rightarrow\) \([\text{kuh}]/\) ‘fingernail/toenail’ (Sembaan) (105)

### 4.3 Longer words

Although the number of examples is not large in the wordlists collected, the Bidayuh language has many words that are longer than two syllables. Some longer words appear to be frozen forms in which one or more prefixes is inseparable from the rest of the word and other parts of the word are no longer separately productive.

### 4.3.1 Possible three-syllable stems

Many of the three-syllable words found in the Biatah dictionary (op. cit.) are names of animals, plants, implements and cultural features. In some cases these names, especially the names of animals, may be descriptions, euphemisms or circumlocutions that are used instead of more direct names, e.g., to talk about dangerous or destructive animals. Most such words consist of one or two recognizable prefixes, or a prefix and an infix, attached to a root or stem of uncertain meaning. Additional forms related to these words have not been found in the dictionary. The prefixes are still active since they occur in other word-sets as separable prefixes. Curiously, many of the presumed root forms in this kind of word begin with
/r/—or possibly /r/ is the remnant of an infix /-ir-/. Also curious is the fact that the presumed stem in frozen forms rarely begins with a nasal.

Examples of three-syllable words that consist of an unknown root plus a prefix, words that are thought to be ‘frozen’:

/bi-raNbaŋ/ or /b-ir-əNbaŋ/ > [bi.ra.m(b)agŋ] > [bi.ra.magŋ] ‘butterfly, moth’ (Pinyawa’); cf. /ri-baNbaŋ/ > [ɾi.bəm.bagŋ] ‘butterfly, moth’ (Bunan) (65)

/ri-ŋ(-)andip/ ‘rag-worm, luminous millipede’ (Biatah-Nais)

/ri-piteʔ/ > [ɾi.pi.tə/aʔ] (most Jagoi dialects); Cf. /si-piteʔ/ > [ʃi.pi.teʔ] ‘butterfly, moth’ (Gumbang) (65)

/g(i)-rinoʔ/ or /g-ir-inoʔ/ > [ɡi.núʔ] ‘butterfly, moth’ (Singai) (65)

/t(i)-r(-)upoʔd/ or /t-ir-upoʔd/ > [t(i).ru.púʔod] ‘termite, white ant’ (Pinyawa’) (64)

/p(i)-r(-)unŋan/ or /p-ir-unŋan/ > [pr.ŋąŋ] ‘mosquito’ (Serasot) (62)

/gi-m(-)ärar/ ‘a type of ginger used as medicine’ (Biatah-Nais)

/gi-ruNbiŋ/ > [ɡi.rum.biŋ] ‘a kind of acidy red fruit’ (Biatah-Nais)

/gi-rágar/ ‘cross-beam of a house’ (Biatah-Nais)

/gi-raN(un)/ or /g-ir-əN(un)/ > [ɡi-raŋ] ‘rainbow’ (Singai) (17)

/si-baNbe/ > /sibambe/ > [si.bã.m(b)íʔ]~[si.bã.míʔ]~[si.bã.míʔ] ‘shadow, reflection’ (Singai) (17)

A similar group of three-syllable words contains ordinary roots/stems prefixed by the same kinds of prefixes as those in the above examples. For these words other forms with the same root are available. Examples of ‘non-frozen’ three-syllable words that consist of a root plus an affix:

/bi-sukan/ > [bi.su.kadn] ‘playing hide-and-seek’ (Singai); /{N-}(s)ukan/ > [nu.kadn] ‘hide (self)’ (Singai); /sukan:/ ‘to hide something, to hide oneself, to keep a secret’ (Biatah-Nais) (157)

/gi-bāʔuh/ > [ɡi.bāʔuʔ] ‘recent(ly)’; /bāʔuh/ ‘new’ (Biatah-Nais) (323)

/s-in-ipak/ > [s.i.ni.pak] ‘to kick a ball to someone, kick the ball to someone! (imperative)’;

/{N-}(s)ipak/ > [ʃi.pak] ‘to kick (a ball)’ (Tebakang); /sipak/ ‘a kick, act of kicking’ (Biatah-Nais) (150)

/k-in-äbəs/ > [ki.näb.bis] ‘to kill someone, cause someone to die’; cf. /kábəs/ > [káb.bis] ‘dead’; /bi-kábəs/ > [bi.káb.bis] ‘killing each other’ (Tebakang) (126, 201)

### 4.3.2 Reduplicative words

Reduplicative words in Bidayuh are constructed in various ways. In some the two parts are identical and in others they differ. Where the two parts differ, the copied portion of the word may be related to the main part or possibly may be a nonsense form whose sound is like the intended meaning and/or ‘sounds good’ with the first part. Commonly, but not always, the two parts have the same number of syllables, making an even number of syllables overall, but there are reduplicative words with an odd number as well.

Reduplicative words can be formed in various ways: two monosyllabic roots or stems, two disyllabic roots or stems, two prefixed roots or stems. Odd numbers of syllables occur if, for example, only one of
two root-forms is prefixed or if one root is entire and the other is partial. Many reduplicative words are onomatopoetic or are descriptive of sounds, sensations, actions, visible features, etc.:

Examples of reduplication:

\[\text{'slowly' (Singai text); cf. 'push, thrust, impulse' (Biatah-Nais). This form might be unrelated to the Singai form shown.}\]
\[\text{'all'; 'finish' (Tebakang) (293)}\]
\[\text{'sound of walking in a puddle'; 'a shallow puddle' (Biatah-Nais)}\]
\[\text{'flaming, shining, flashing'; 'a flame' (Biatah-Nais)}\]
\[\text{(do something) with all one's might'; 'beehive'; this may not be related. Both parts of the word have a prefix. (Biatah-Nais)}\]
\[\text{'rotation, circulation, spinning' (Biatah-Nais)}\]
\[\text{a very long time'; 'year' (Singai text) (20)}\]
\[\text{as far as (someone) realizes'; 'to know, understand'. In this example the prefix seems to relate to the whole word. (Biatah-Nais) (261)}\]
\[\text{ultimately, forever'; 'in the passage of time'; 'a length of time'; 'a long time' (Biatah-Nais)}\]

4.3.3 Possible compound words

There are other four-syllable forms that consist of two roots or two stems. These appear to be compound words. If they are not single words, they are phrases. These have not been studied sufficiently to draw definite conclusions about their characteristics or how and under what circumstances they are formed. Some possible examples are shown below. Some of the examples are formed from two roots that together communicate the intended concept; in some cases half of the word may not be a word in its own right, but rather a nonsense form that 'sounds good' with the other half of the word.

Examples of possible compound words:

\[\text{male married person unknown to the speaker'; 'father'; 'unknown person' (Tebakang) (252)}\]
\[\text{'nuclear family'; 'house'; 'home' (Singai) (271)}\]
\[\text{to converse in a social way'; 'talk'; 'chatter, conversation; to talk' (Singai) (181)}\]
\[\text{all beautiful', 'the most beautiful', 'done with, finished, all used up'; 'beautiful' (Biatah-Nais)}\]
\[\text{upper part of a Land Dayak living room' (in a longhouse?); 'head'; no meaning was found for 'sleep' (Biatah-Nais) (76).}\]
\[\text{'act of bragging, boasting'; 'spread false reports about; calumny'. The /bi/- is a Ci- prefix one of whose functions is description. (Biatah-Nais)}\]
Possibly words like /uatki/ > [ʔwat.ki:] ‘how?’; /uat/ ‘like’; /ki/ ‘question marker’ (Singai) also fit in the category of compound words. The word-medial consonant combination in this word (tk) is of a different type from usual Bidayuh patterns for word-internal consonant clusters. Furthermore, only some particles, some one-syllable words and borrowed words normally begin with a semivowel. Thus, the part that appears to be the first syllable may be two syllables, i.e., /u.at/ rather than */wat/. Or this may be a loan morpheme. Another word with the reverse of this medial consonant cluster is presumed to be a loanword: /saktian/ > [sak.ti.an] ‘a supernatural power’ (Singai). This word probably comes from Sanskrit or Hindi, presumably through Malay.

4.4 Affixes

As can be noted in a study of the Nais dictionary, a great deal of Bidayuh grammar (in this case grammar of the Biatah-dialect) is carried by fifteen or so derivational prefixes. The exact number is not absolutely known; very likely it varies somewhat among dialects. Prefixes can change and mold meanings and functions of a root morpheme in several ways. In most cases the root morpheme is also a word in its own right. The choice among prefix options depends on the kind of (grammatical) meaning needed and is also affected by phonological and grammatical characteristics of the particular root or stem and of the particular prefixes.

Each prefix consists of a single consonant or a single Ci- syllable. A possible third type of prefix is a small set of two-syllable forms that begin with a labial obstruent and have the shape C[l + lab]ări-: /pări-/, /bări-/, /mări/-.. Latterly a few examples have come to light of two-syllable prefix forms of this type in which the obstruent is not labial. Three of those examples have /k/ as initial obstruent and three have /t/.

In addition to these Ăari- examples there is a different and much more common type of two-syllable prefix form (214 entries over six and a half pages): /pi-uni0272i-/ Nais viewed all of the above forms as two-syllable prefixes. However, /pi-uni0272i-/ is more likely than the Ăari- forms to be a sequence consisting of two productive prefixes. Some word-sets include all three possibilities: /pi-/, /uni0272i-/ and /pi-uni0272i-/.

Vowelless prefixes include:

a) homorganic replacive-nasal prefix that displaces a root-initial obstruent and replaces it with a nasal without changing the canonical shape of the word: {N-},

b) syllabic-nasal prefix found in Bukar-Sadung dialects that attaches to a root-initial voiceless obstruent without displacing it: {N/uni02D0-} and adds a phonetic syllable to the word,

c) single-consonant prefixes used with vowel-initial roots: /m-, n-, ŋ-, k-, r-/.

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32Most of this and subsequent discussion of prefixes is based on research in the William Nais dictionary (1988, op. cit.).

33Words in the Nais dictionary that contain non-labial Ăari- prefixes: /kări-bukan/ ‘sick due to food poisoning’, /kări-bit/uni0259n/ ‘constipation, indigestion’, /kări-mansaŋ/ ‘horse mango’; /tări-dikap/ ‘rushing here and there’, /tări-saŋan/ ‘empty (like a longhouse in farming season)’, /tări-toŋ/ ‘accounted for’, /tări-tuh/ ‘in a mash/mass’, /tări-padas/ ‘fire ant’. As can be noted, two words in this group are the names of an animal and a fruit respectively, one is an abstract noun and the rest are descriptives. The forms containing the kări- prefix all relate to digestion or foods. This prefix Ăari- is perhaps related to the historical proto prefix Cali- described in Blust (2001).
A number of consonants that occur as single-consonant prefixes also occur as the C of a Ci- prefix. The consonants of Ci- prefixes include the following: nasals /m, n, ŋ/; voiceless obstruents /p, t, s, k/; voiced obstruents /b, d, g/; liquid /r/. Among these, it is /m/, /n/, /ŋ/ and /k/ that clearly are also single-consonant prefixes used with vowel-initial roots.

At an earlier stage there were two or three apparently productive -VC- infixes that could be inserted directly into a root between the onset and the vowel of the penult: *-in-, *-ir-, and *-im-. These -in- is the only one that is widely productive today. Because the infixes contain a vowel, they add a third syllable to the word. Prefixes (and infixes) come early in the word. Those that are or contain nasals can and in many cases do initiate forward nasal spread.

In addition to prefixes and infixes there are a few morphemes of the shape -CV that can be added at the end of a word. These look like suffixes but are probably post-clitics instead. The CV- prefixes (> Ci-) and some function particles also consist of a single syllable. Although particles have not been studied in detail, it appears that many of them have a rather simple structure, limited phoneme content and limited application of the phonological rules that affect content morphemes. For example, in the Jagoi (western) dialects, pronunciation of the mid vowels used in particles is quite different from that used in content morphemes: /e/ and /o/ > [e] and [ɔ] in particles/function words; /e/ and /o/ > [ia] and [ua] in the ultima of content morphemes.

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The first of these, -in-, is clearly recognizable in such pairs as: /kâbas/ > [kâ.bis] ‘dead’ and /k-in-âbas/ > [ki.nâ.bis] ‘kill’ (eastern dialects) (129, 201), the second, -ir-, in such pairs as /puŋgaŋ/ > [pu.ŋaŋ] ‘mosquito’ (Pinyawa’) and /p-ir-uŋgaŋ/ > [pi.ru.ŋaŋ] (Biatah), > [pi.ru.ŋaŋ] (Singai) (62).

A third infix, -im- < *-um- ‘active’, which is said to have occurred in Proto Malayo-Polynesian and to have contrasted with *-in- ‘passive’ (McGinn 1999:211). Some evidence of this has been noted in Bidayuh, but it needs further study.
Movements of the speech organs do not coordinate completely with one another. There is overlapping of sounds, finishing off the previous sound while articulating the one that follows or anticipation of the next sound in pronouncing the present one. There is a tendency in spoken language for some kinds of features to affect other, neighboring sounds. The [+nas] feature is one that quite commonly spreads to other sounds. It can spread from a nasal consonant onto one or more susceptible ([–nas]) sounds in either direction. The process of nasal spreading has been observed in many linguistic areas—e.g., in indigenous languages of Colombia and Peru—and has been described as well by those who have written about Bornean languages, including Bidayuh (see Scott 1964, Blust 1977, Blust 1997 and Boutin 2000).

In some languages, e.g., Chinanteco (Mexico), the vowel that follows a nasal consonant absorbs nasality from that consonant and becomes nasalized. In such languages the nasal that initiates forward spread of nasality is the onset of a syllable. Spread of nasality from a nasal to the vowel of that syllable is here called forward (or progressive) nasal spread. In other languages, e.g., American English, the vowel that occurs before a nasal consonant, especially if the nasal is the syllable coda, becomes nasalized in anticipation of the nasal consonant. This is here called reverse (or regressive) nasal spread.

Forward (or progressive) nasal spread is a traditional process of Bidayuh and has also been reported for some other Bornean languages. It occurs in every Bidayuh dialect. It is common and quite consistent that the vowel of the ultima predictably absorbs nasality from a nasal segment that (immediately) precedes it. Less consistently, the penult or antepenult vowel likewise absorbs nasality from a preceding nasal segment. This traditional, but non-phonemic, process is so characteristic of Bidayuh that its

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35 The term ‘nasal spread’ is used here in preference to ‘nasal harmony’, a term advocated in Blust (1997) and elsewhere. ‘Spread’ seems a better description of this process. In ‘harmony’, e.g., ‘vowel harmony’, the tongue-position feature traditionally jumps over consonants to bring vowels into line, whereas in ‘nasal spread’ the nasality feature affects not only vowels but also intervening consonants that are susceptible to it. There are languages in South America (e.g., Tucanoan) where words are either all nasal or all oral, but the all-nasal words occur in Bidayuh only where the individual sounds are subject to nasal spread.

36 In addition to predictable nasalization of vowels caused by forward nasal spread, Chinanteco has a whole set of unpredictably nasalized vowels that occur after non-nasal consonants and match the oral vowel-set. Both the predictable and the unpredictable nasalized vowels can pass nasalization forward to the coda of the stem. However, there is only one coda consonant that can receive it, namely /n/, which as a coda manifests at least three grammatical morphemes. After a non-nasal vowel stem-final /n/ is barely audible. It is a voiceless, very lenis tongue-tip touch, unreleased and non-nasal. However, following a vowel that is nasalized, whether unpredictably or predictably, its true nature comes forth. The latent nasality of word-final /n/ is reinforced by nasality of the preceding vowel and becomes clearly perceptible.
systematic failure to occur in certain kinds of environments is a significant factor in the phonology of the language.

Reverse nasal spread has also been observed in all Bidayuh dialects studied but is more common in some dialects, some speakers and some social contexts than others. Apparently, it is also more common in younger people than in older. Thus, how and when it occurs may depend at least as much on sociolinguistic factors as on linguistic factors.

5.1 Forward (progressive) nasal spread

As stated above, the basic direction of nasal spread in Bidayuh is forward, starting at or near the beginning of the word and moving toward the end. Forward spread is initiated by a nasal consonant, usually one in syllable-onset position of the penult or ultima or, less commonly, the antepenult. Nasality advances from its source through the rest of the word in a sort of chain reaction, nasalizing all susceptible sounds in its path, unless and until it is blocked by a non-susceptible consonant or by word-end, in which case it shuts off.

Blocking elements for nasal spread, in addition to word-end, are the obstruents and in most dialects the liquid(s). Sounds that are susceptible to nasal spread and are able to pass it on are the vowels, semi-vowels, laryngeals and Ø. (Zero here refers to [\ldots V.\'V\ldots\#] sequences in which there is no laryngeal between the two adjacent vowels.) In Jagoi dialects, especially Gumbang, the liquid also can pass on nasality and be nasalized by it (/r/ > [ɾ̃, l̃ or n]). Simple nasal onsets that occur after the place in a word where nasality is initiated also pass it on (or perhaps re-initiate it). These non-blocking segments not only enable nasality to spread farther into the word but also intensify it. Nasalization is not always very noticeable in a penult or antepenult vowel that immediately follows an initiating nasal; it is likely to be more obvious in the vowel of the ultima.

It should be noted that nasalization that results from forward nasal spread tends to be strongest if the vowel is flanked by nasals: (\ldots V).NVN\# > (\ldots V).NV[+nas]N\# or (\ldots V).NVNV(C)\# > (\ldots V).NV[+nas]NV[+nas](C)#. The presence of another nasal intensifies nasality that has been initiated by the syllable onset. Other contexts that yield strong nasalization are where /n/ is the onset of the penult and another /n/ or a /y/ is the onset of the ultima or where the initiating nasal is the onset of the penult and the onset of the ultima is a semi-vowel, laryngeal or Ø. If the coda of the ultima is a nasal or /h/, all the more so. That is to say that /n/ is a strong initiator and carrier of nasalization and /h/, especially in word-final position, seems to attract it, pull it forward and even intensify it. For example: /pɪŋəyoh/ > [pɪ.ŋã./uni1EF9ũ/uni0259̃h̃] ‘canoe paddle’ (Singai) (199)

One kind of sound that seems to impede or weaken forward nasal spread in Bidayuh is a voiced obstruent. This occurs anywhere in the word, not only as onset of the ultima, a position where it blocks nasal spread in any case. Even where it is the word-final coda, it appears to inhibit nasality’s reach for the vowel of the ultima.

Examples showing spreading, blocking and inhibiting of forward nasal spread:

Spreading:

/pəʔuh/ > [pə̠ʔi̠h] ‘to burn (a field)’ (Singai) (231)
/piŋayuh/ > [pi.ŋã.ũh̃] ‘canoe paddle’ (Bukar) (199)
/māwah-māwah/ > [mĩ.ũãh.ũãh] ‘to play’ (Gumbang) (139)
/simah/ > [si.mũh] ‘ten’ (Bukar) (290)
/māiň/ > [mĩ.ĩŋ] ‘eight’ (Gumbang) (288)
/miriň/ > [mĩ.ĩh̃] ‘to buy’ (Gumbang) (263)

Blocking, with the blocker underlined and bolded:
/riŋupo/ > [rũ.ŋũ.pũd] ‘termite/white ant’ (Biatah) (64)
/nāku/ > [nũkũ] ‘to steal’ (Singai) (163)
/õNdũ/ > [n(d)ũŋũ] ‘nose’ (Singai) (84)
/mādud/ > [mã.dud] ‘cold’ (Biatah) (315)
/nar/ > [nũ.rik] ‘to swallow’ (Singai) (237)

/inhibiting, with the inhibitor underlined and bolded:
/sinod/ > [ʃinodu] ‘comb (noun)’ (Gumbang) (209)

As already noted, in some Jagoi dialects the liquid does not always block forward nasal spread but optionally passes it on. Speakers of those dialects identify their liquid phoneme as a lateral, /l/, although it more often sounds like a tongue-tip tap, [r], and can vary to a tapped lateral, [l] or to [n]. In some Jagoi examples, especially in Gumbang, nasality passes through the liquid and may also nasalize it, changing it to nasalized [r̃] or [l̃] or tapped [n].

Examples in Jagoi dialects of nasality passing through the liquid:
/nuruk/ > [nũ.rũk] ‘to diggle’ (Gumbang), > [nũ.ruk] (Serambu), > [tu.ruk]~[tu.luk]

dibble stick’ (Serambot) (188)
/marah/ > [mã.rãh̃] (Serasot), > [mã.ũãh̃] (Gumbang), > [ma.rãh̃] (Serambu) ‘angry’ (177)
/ŋaram/ > [ŋã.ɾũm] ‘night’ (Bratak), > [ŋa.ɾũm] (Serambu); /ŋaram/ > [ŋa.ɾũm] ~ [ŋa.ɾũm]

(Gumbang) (22)
/narik/ > [nã.rik]~[nã.nik] (Gumbang), > [nã.rik] (Serasot), /nərik/ > [ñ.rik] (Bratak) ‘to pull’ (151)
/nar/ > [nũ.riń]~[nũ.niń] (Gumbang), > [nũ.riń] (Serambu, Serasot), > [nũ.niń] (Bratak)

to swallow food’ (237)
/timiriř/ > [ti.miriř] (Serambu), > [ti.miriř] (Serasot, Bratak); /simariř/ > [ʃi.mariř] ~
[jma.ɾũm]~[ʃi.mariř] ‘to fly’ (Gumbang). Possibly the final [m] in Gumbang represents an
unusual case of nasal-spread. On the other hand, several pairs of forms in other dialects and other
branches of the broader language relationship show the same kind of obstruent–nasal situation in
word-final position in this word. (141)
/mirih/ > [mĩ.ĩh̃] (Bratak), > [mĩ.ĩh̃] (Serasot), > [mĩ.ĩh̃]~[mĩ.ĩh̃] (Serambu), > [mĩ.ĩh̃]

(Gumbang) ‘to buy’ (263)

Optional rule for /r/ in Jagoi dialects: /r/ > [ + nas]/V[ + nas]_
In most western and some central dialects nasality ‘should’ spread forward from a nasal onset of the ultima to the following vowel but does not spread. Some nasal onsets of the ultima spread nasality to the vowel that follows and some do not. It turns out that words that have an oral vowel in the ultima following a nasal onset are words that in eastern and some central dialects have a voiced stop between the nasal consonant and the oral vowel. In the eastern and central dialects the consonant cluster in such words is ambisyllabic, and the words have the shape [...]VN.DV[-nas](C)#, whereas in many central and all western dialects the voiced obstruent after the nasal has (nearly) disappeared. A faint, lenis form of the obstruent can sometimes be heard. Nevertheless, its residue remains in that it still blocks the spread of nasality to the ultima vowel. The vowel continues to be oral and to exert its influence as though the voiced obstruent were still there and fully pronounced. Thus, if a word ends [...]V.NV[ + nas](C)#, with the ultima vowel nasalized, the onset of the ultima is an ordinary simple nasal that spreads nasality to the vowel of the ultima. On the other hand, if that vowel is oral, the nasal was once the coda of the penult, a voiced obstruent of the same place of articulation as the nasal was the onset of the ultima. When the voiced obstruent weakened, resyllabification took place. This moved the nasal over to become the onset of the ultima. However, the residual presence of the obstruent continues to protect the vowel from absorbing nasality and demonstrates continuing partial presence of the voiced obstruent. The list of obstruents that block forward nasal spread in these dialects includes that set of underlying voiced obstruents that once followed the nasal in a word-medial cluster but have dropped out leaving only the oral vowel. These obstruents can be recognized by the presence of an oral vowel after a nasal consonant. If the word has a nasal as its final consonant, that nasal is preploded following the oral vowel to prevent the oral vowel from becoming nasalized and thereby losing the contrast between N and ND:

...VN.DV[-nas](C)# > ... V.N(D)VN[-nas](C)# > ... V.NV[-nas](C)#

Another kind of phonetic residue of a voiced obstruent occurs optionally in most of the dialects that exhibit voiced-obstruent weakening and loss after nasals. That feature is phonetic lengthening of the nasal, another way of compensating for the lost obstruent. Such lengthening does not usually substitute for orality of the ultima vowel but, rather, accompanies and reinforces it. Note the form of the second entry in the following set of examples:

Examples of apparent contrast between nasalized vowel vs. oral vowel after a nasal onset > contrast of simple nasal with nasal + voiced obstruent as onset of ultima:

/ṿa/ > [ṃa/̣ḥ] ‘padi field’ vs. /ṃa/ > [ṃa/̣]| tired’ (Bistaang) (194)

/p̣ɑ̡/ > [p̣a/̡ṇ] ‘giddy’ vs. /p̣ɑ̡ṇ/ > [p̣a/̡ṇ]| ‘already’ (Bistaang) (194)

/ŋ̣ɑ̡/ > [ŋ̣a̡/̣ṃ] ‘cheek’ (Pinyawa)’ (85, 156)

/ŋ̣ɑ̡/ > [ŋ̣a̡/̣ṃ] ‘make a mat’ vs. /ŋ̣ɑ̡/ > [ŋ̣a̡/̣ṃ] ‘to borrow’ (Bistaang) (211)

/ta̡/ > [ṭa̡/̣ṇ] ‘tree (trunk)’ vs. /ṭa̡/ > [ṭa̡/̣ṇ] ‘straight’ (Singai) (28, 319)
5.2 Reverse (regressive) nasal spread

Nasal spread in Bidayuh can also move backward, with a nasal consonant at the end of a syllable (especially at word-end) nasalizing the vowel that precedes it. This nasalization is anticipatory, ‘turning on’ ahead of the nasal consonant that follows it. Reverse spread is usually initiated by the nasal coda of a (C)VN syllable. Often this is the coda of the ultima, but it can be a nasal coda elsewhere in the word or even an intervocalic nasal. A vowel is susceptible to reverse nasal spread if it is oral and followed by a nasal onset.

In reverse nasal spread nasality spreads only to the vowel immediately preceding a nasal consonant. It does not pass through or nasalize non-nasal consonants, nor does it nasalize other vowels, semivowels, laryngeals or liquids. If a Bidayuh syllable begins and ends with a nasal, the coda will automatically be a simple nasal, not preploided, because the vowel is nasalized by forward nasal spread from the nasal onset. If the onset consonant is not a nasal and the vowel of the ultima is therefore oral, the coda nasal, which is normally preploided after an oral vowel, may begin to lose its preplosion and come to be pronounced as a simple nasal. If the coda is pronounced as a simple nasal, the vowel of that syllable will most likely become nasalized by reverse nasal spread.37

Reverse nasal spread in Bidayuh is an optional process. When speakers pronounce a word that is susceptible to reverse spread two or more times in succession or when different speakers pronounce it, the vowel may be oral one time and nasalized the next, not necessarily in that order. Forward nasal spread in Bidayuh is intrinsic and more prevalent, more consistent and traditionally more ‘correct’ (i.e., it has higher sociolinguistic status) than reverse nasal spread. Optional rule for reverse nasal spread: V > + [nasal]/__C[ + nasal]

Examples of environments for reverse nasal spread:

- a) [#…V.C[–nas]]V[–nas](d/t)N#] ~ [#…V.C[–nas]]V[ + nas]N#] or
- b) [#…V.NT/(D)V[–nas](d/t)N#] ~ [#…V.NT/(D)V[ + nas]N#] or
- c) [#…V[–nas]].NV[ + nas](C)#] ~ [#…V[ + nas]].NV[ + nas](C)#].

Reverse nasal spread can be initiated by any nasal that follows an oral vowel, whether it is a word-final coda, the coda of the penult or an intervocalic nasal. On a somewhat irregular basis, reverse spread nasalizes the vowel of an open syllable that occurs before a nasal onset of the following syllable (c above). This can happen at more than one place in words of three or more syllables. It happens more

37 Where the vowel is nasalized in a syllable with nasals as both onset and coda, it seems reasonable to think that the onset is the initiator of nasality rather than the coda. This is because forward nasal spread is the traditional kind in Bidayuh and because it is more systematic and consistent than reverse spread. However, if a vowel is flanked by two nasals, nasalization of the vowel is usually stronger than where only one of the flanking consonants is a nasal.
commonly in Bukar-Sadung (eastern) dialects and in Bengoh (a central dialect) and Rara than elsewhere.

More words in those dialects than in others have syllables before the penult and antepenult and/or contain two /C)VN/ syllables. If the nasal is a coda, the vowel of that syllable can be nasalized by reverse spread. If the nasal is an onset it can nasalize the vowel of that syllable by forward spread and sometimes nasalizes the vowel of a preceding open syllable by reverse spread (c above). Reverse spread from the coda of the ultima can occur in words where forward spread from the penult is blocked by the onset consonant of the ultima, but it can go no farther than the immediately preceding vowel.

Examples of reverse nasal spread:

/ti-gen/ > [ti.g'cdn] ~ [ti.g'ɛn] ‘to hold something (visible) in hand’ (Bengoh) (165)
  (reverse nasal spread in ultima)

/{N-}(p)usiŋ/ > [mu.sɨŋ] ~ [mu.sɨŋ] ‘to spin’ (Bengoh) (156)
  (reverse nasal spread in ultima)

/laNtiŋ/ > [lã.ti/uni0261ŋ] ‘raft’ (Bukar) (197)
  (reverse nasal spread in penult)

Potentially preplosion of the final consonant of this word could be lost and the vowel of the ultima affected by reverse nasal spread; > *[lãn.tiŋ].

/suNko(:)/ > [sõŋ.ko:] ‘nasi (i.e., cooked rice)’ (Bukar) (217)
  (reverse nasal spread in penult)

/biNtaŋ/ > [bĩn.ta/uni0261ŋ] ‘star’ (Bunan) (10)
  (reverse nasal spread in penult)

/siNd/uni0259/uni0294/ > *sint/uni0259/uni0294 > [s/uni0283ĩn.t/uni0268/uni02D0/uni0294] ‘mother’ (Bengoh) (249)
  (reverse nasal spread in penult)

/uNpan/ > [ũm.patn] ‘worm’ (Rara) (54)
  (reverse nasal spread in penult)

/baNduŋ/ > *bantuŋ > [bãn.tũŋ] (Bengoh) ‘cassava’ (43)
  (reverse nasal spread in penult and ultima)

/saNbilan/ > [sõm.bi.lân] ‘nine’ (Rara) (289)
  (reverse nasal spread in antepenult and ultima)

/barañak/ > [ba.rã.nãk] ‘to play’ (Rara) (139)
  (reverse nasal spread in penult, forward nasal spread in ultima)

Reverse nasal spread appears to be increasing in Bidayuh alongside the more traditional and more standard forward nasal spread, especially in some dialects, some speakers and probably some social contexts. Reverse spread is beginning to produce some contrast between oral and nasalized vowels on a limited basis in Rara and more so in Rara’s neighboring language, Salako. A similar contrast is perhaps marginally present in the Bunau sub-dialect of Sadung (eastern) as well. In dialects other than these, reverse nasal spread appears to be optional and occurs only in predictable phonological environments.

Being optional in most dialects, reverse nasal spread is less consistent than forward spread. Apart from the very few dialects where it is becoming somewhat contrastive, speakers use reverse spread in informal speech more than in formal speech, where attention to ‘correct’ pronunciation is appropriate.
Reverse spread is more likely to occur in a word that is non-final in a phrase than in the same word in final position. Generally speaking, modern/younger speakers use it more and conservative/older speakers use it less. In pronouncing words where the only nasal is word-final, older speakers seem to favor traditional, oral endings: i.e., an oral vowel in the ultima with the word-final nasal preploded. They apparently reserve nasal endings (i.e., nasalized vowel with final simple nasal) for words in which the ultima vowel is nasalized by forward nasal spread, see below.

### 5.3 Nasal spread and preplosion of word-final nasals

Following an oral vowel—i.e., a vowel that has not been nasalized by forward nasal spread, word-final nasals are normally pronounced with preplosion. Preplosion means that a homorganic stop,\(^{38}\) in most cases a quickly articulated one, is inserted between an oral vowel and a nasal coda. The stop (preplosion) is homorganic to the nasal of the coda and creates a smooth, oral transition between the vowel’s orality and the nasal coda’s nasality. It also protects orality of the ultima vowel by blocking potential backflow of reverse nasal spread from the nasal coda to that vowel. Such backflow would nasalize the vowel and thus remove the residue of the voiced obstruent of a nasal + voiced-obstruent cluster that keeps the vowel from becoming nasalized in the first place.

The inserted transitional stop can be either voiced or voiceless depending on the dialect. Some dialects where it is voiceless are Bistaang, Biya and Sembaan (central and Sembaan-group dialects). Some of the dialects where it is voiced are Pinyawa’ (another central dialect) and Singai (a western dialect). Voiced preplosion is usually quick and lenis: \(\text{V[–nas]bm#}, \text{V[–nas]dn#} \text{ or V[–nas]mn#}\). Voiceless preplosion may be more fortis and of longer duration: \(\text{V[–nas]pm#}, \text{V[–nas]tn#} \text{ or V[–nas]kn#}\). Voiceless preplosion may have as much duration as the nasal itself—in some cases even more. However, the phonetic syllable this creates is not a phonemic syllable. Preplosion and the nasal together form the coda of the ultima.

In Anah Rais, a central dialect, preplosion is voiceless, which is quick and lenis after lengthened vowels and more sustained after non-lengthened vowels.\(^{39}\) In still other dialects—e.g., Biatah, a central dialect, and Bukar, an eastern dialect—preplosion tends to be voiced after lengthened vowels and voiceless-varying-to-voiced after non-lengthened vowels. In Benuk, a central dialect, there is variation between voiced and voiceless preplosion, which appears to be optional. That may be true as well of Gumbang, which has both voiced and voiceless preplosion. No particular pattern of predictability has emerged.

Preplosion is not unique to Bidayuh. The same or similar nasal-related phenomena have been observed and described in other parts of Borneo and of the world.\(^{40}\)

Examples of preploded nasals in Bidayuh:

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\(^{38}\) The word ‘stop’ is used here rather than ‘obstruent’ because the palatal obstruents, which strictly speaking are not stops, do not occur as preplosion. Furthermore, among palatals, only /s/ occurs word-finally. The other palatals, /p, j, c/, do not.

\(^{39}\) This is one of the types of compensatory lengthening that affects several aspects of Bidayuh phonology.

\(^{40}\) For example, Bonggi, Sabah, North Borneo, Malaysia, and some languages of South America.
5.4 Nasal spread and nasal + obstruent clusters

Another factor affecting nasal spread is the word-medial consonant clusters, which have already been described. In indigenous words these clusters consist of a nasal with an obstruent of the same place of articulation. They occur in most cases at the juncture of the penult and ultima, where the nasal is the coda of the penult and the obstruent is the onset of the ultima. Rara has in addition some three- and four-syllable words in which such clusters occur at the juncture of the antepenult and penult or the antepenult and antepenult.

Examples from Rara showing nasal + obstruent clusters that occur before the ultima:

/tampuan/ > [tãm.pã.nũ.ãn] ‘burial place’ (Rara) (130)
(reverse nasal spread in ante-antepenult, antepenult, forward nasal spread in penult and ultima)

/pantujok/ > [pãn.tu.jok] ‘mosquito’ (Rara) (62)
(reverse nasal spread in antepenult)

Traditionally nasal + obstruent clusters are of two sub-types: nasal + voiceless and nasal + voiced obstruent. The cluster of a nasal with a voiced obstruent seems to have occurred only at the junction of the penult and ultima. The two cluster sub-types have developed in different ways: Most Bidayuh dialects have lost the nasal from nasal + voiceless-obstruent clusters. Only Bukar-Sadung (eastern) dialects and Rara have retained the nasal in such clusters. The sub-dialects of Sadung, except in the Bunan area, have also preserved nasal + voiced-obstruent clusters intact, as has Bengoh in the central region. In most other dialects the voiced obstruent in such clusters has weakened and continues to weaken. Voiced obstruents seem to be disappearing completely from these clusters in some words. Nevertheless, most

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41 Obstruents in these clusters are in most cases stops/plosives. However, there are some instances of /j/ (the voiced palatal affricate), of /s/ (the voiceless palatal fricative), and a few instances of /c/ (the voiceless palatal affricate). Only Bukar-Sadung dialects have both /c/ and /s/, the voiceless palatal obstruents, in their basic phoneme inventory. Traditionally /s/, very likely varying allophonically between [s] and [c], is the (only) voiceless palatal obstruent; /c/, which occurs principally in loanwords, is not common.

42 In Bengoh nasal + voiced-obstruent clusters are in a sense preserved in that voiced obstruents have become devoiced, thereby strengthening the clusters.
words affected by this weakening process show a lingering residue of the voiced obstruent that indicates its presence ‘in spirit’—i.e., in underlying structure. The residue is the preserved orality of the ultima vowel. The obstruent itself is more easily perceived in some dialects and in some speakers’ usage than in others. It is not heard at all in some of the affected words in other speakers’ usage. Interestingly, some speakers who pronounce the vowel as oral do not recognize it as the indicator of a voiced obstruent. Neither do speakers who now pronounce the ultima as nasalized. When asked ‘Is there a ‘d’ (or a ‘b’, ‘j’, or ‘g’)?’ in certain words that have lost the voiced obstruent, both a Bunah speaker and a Rara speaker stated with conviction that that sound does not occur in the word.

There are (at least) five stages in the process by which voiced obstruents in word-medial clusters become compromised, lose their features and gradually disappear. In current speech patterns of western and most central dialects the process is advancing, but probably slowly. The order and pace of feature loss may vary from place to place and person to person, particularly as regards stages a) vs. b) below. (The stages of loss listed here apply to Bidayuh in general, not just to a certain dialect.)

a) resyllabification moves the nasal from the coda position of the penult to the onset position of the ultima, where it shares space with (the remnant of) the voiced obstruent that previously was the onset of the ultima; that structure is unstable in Bidayuh;
b) the voiced obstruent weakens;
c) the voiced obstruent drops out;
d) the oral vowel of the ultima becomes nasalized;
e) the coda, if a word-final nasal, loses its prepllosion.

If any of the following situations exists, the word is still exhibiting the presence of the (underlying) voiced obstruent: if the consonant cluster is still ambisyllabic, if the voiced obstruent is still pronounced even though very slightly, if the nasal is still lengthened, if the vowel of the ultima is still oral, if a nasal coda is still preploded. If or when all of these evidences of the voiced obstruent are lost from a word, that word has been changed phonemically and has a simple nasal as onset of the ultima. If the Bukar word /tări-băNbaŋ/ ‘butterfly’ (65), which is pronounced as [tă.ri.băm.baŋ] (…CV.NDV[–nas]ɡn) should come to be pronounced as *[tă.ri.ba.măŋ] (…CV.NV[+nas]ɡn), then the simple nasal alone will remain as the medial consonant between the penult vowel and the ultima vowel. The word will no longer have a consonant cluster in this position. The root of the word will rhyme with /rămaŋ/ > [ră.măŋ] ‘cloud’ (12) and also with /ămaŋ/ > [ă.măŋ] ‘father’ (248). This process appears to be under way in Bukar. However, the phonetic changes so far are apparently taking place quite slowly, leaving a lot of room for optional variation. As illustrated in the above examples, words that underlyingly contain a nasal + voiced-obstruent cluster show a fair amount of variety in pronunciation. This kind of variation was heard between the Bukar speakers who provided data and also within the speech of each of those individuals.

As already noted, some Bidayuh dialects have a smallish set of one-syllable words whose onset is a cluster of a non-syllabic nasal plus a (weakened or lost) voiced obstruent. This kind of one-syllable word has developed where a word-initial #(C)VN penult before a voiced obstruent as onset of the ultima has been reduced by loss of everything except its nasal coda. The nasal coda has moved over to become onset of the ultima and the voiced obstruent has weakened or dropped out. However, influence of the voiced
obstruent continues to protect the ultima vowel from becoming nasalized by forward nasal spread. Specific words of this type are fairly consistent from dialect to dialect, although the number of them varies. Virtually all of them are nouns, descriptives or particles, not verbs. The phonetic content, process and effect of these monosyllables are quite similar to what is described above for ultimas of two-syllable words that contain word-medial nasal + voiced-obstruent clusters. This kind of onset in word-initial position normally involves voiced obstruents only. In these words, just as in two-syllable words with word-medial nasal + voiced-obstruent clusters the voiced obstruent keeps the vowel of the ultima oral.

Although these words are monosyllabic, they are presumed to have been reduced from two syllables to one by loss of the penult vowel (and onset if there was one). (The penult vowels that have been lost were reduced vowels.) As with word-medial clusters of this type, the principal features that remain from the obstruent are an oral vowel and, if the word ends in a nasal, preplosion of the word-final nasal.

Some Bidayuh speakers include the voiced obstruent as well as the nasal when they spell words like these. Others include the obstruent in only some of the words where an oral vowel follows a nasal sound in the ultima, not in all such words. This, coupled with the existence of optional pronunciation variants, indicates a) that forms of a word containing the cluster and forms containing only the nasal as onset are competing in at least some dialect areas and some speakers and b) that oral endings are being superseded in this kind of word, merging with nasal endings. As can be seen in the examples below, some Bukar-Sadung speakers still pronounce these words with two syllables and the ambisyllabic consonant cluster. Apparently such forms have not become monosyllables in that area.

Examples of word-initial nasal + voiced-obstruent clusters in monosyllables:

\[ /Nbuh/ > [m(b)uh] \sim [ʔə.məh] 'long' (Bunan); cf. [ʔə.m.buh] (Tebakang) (298) \]
\[ /Nduŋ/ > [ʔnːd(ug)n] \sim [nugŋ] 'nose' (Bunan); cf. [ʔun.dugŋ] (Tebakang) (84) \]
\[ /Ndǐʔ/ > [n(d)iʔ] \sim [nǐʔ] 'one' (Bunan); cf. [ʔɛn.diʔ] (Terbat, Bibengih, Tebakang, Bunau, Bukar); /Ndǐʔ/ > [n(d)iʔ] \sim [nǐʔ] (Gumbang), > [nịʔ] \sim [nǐʔ] (Bengoh) (281) \]
\[ /aNjan/ > [ʔan,jadn] 'stairs, ladder' (Bunan), > [ʔən,padn] (Terbat), > [ʔən,jən] (Tebakang); /Njadn/ > [nadn] (Bunan), > [njadn] \sim [njən] (Bukar-Sadung dialect) (274) \]

The sole exception is the Bengoh dialect, where voiced obstruents in this kind of cluster have been replaced by their voiceless counterparts. Also, there are monosyllabic words in some Bukar and Sadung dialects that begin with nasal + voiceless-obstruent clusters—e.g., /Npat/ > [mpat] ‘four’ (Bunan, Bukar-Sadung dialect). Cf. /uNpat/ > [um,pat] ‘four’ (Terbat, Tebakang, Bukar); /Npat/ > [mpat] \sim [5mpat] ‘four’ (Bibengih) (284). It is preferable to view these monosyllables with voiceless-obstruent clusters as counterparts of the monosyllabic words with initial voiced-obstruent clusters rather than as examples of the syllabic-nasal prefix, because the nasal in these words has no apparent effect on the meaning of the monosyllables.

However, it happens in some people's speech that if the word ends with a nasal, reverse nasal spread can overrule the oral vowel and nasalize it.
5.5 Outcomes of nasal + obstruent clusters in major dialect groupings

5.5.1 Eastern dialects

Bukar and Sadung are closely related sub-groups of the eastern dialects, geographically adjacent to one another in Serian District, Sarawak. These dialects have retained both types of nasal + obstruent clusters; in most Sadung dialects the complete set of these clusters is more thoroughly preserved than in Bukar. In Sadung dialects, with the exception of Bunan, a word medial cluster consisting of a nasal followed by either a voiceless or a voiced obstruent is a fully-pronounced ambisyllabic cluster. Bukar, on the other hand, is somewhat more like central and western dialects in having weakened the voiced obstruent in some words with medial nasal + voiced-obstruent clusters. Where the voiced obstruent has weakened, the cluster has resyllabified; the nasal that was coda of the penult has become onset of the ultima. In most words of this type the voiced obstruent itself has by now virtually dropped out, but its residue, or the ‘memory’ of it, maintains the contrast. Eastern dialects, apart from the partial exception in the Bunan region, exhibit the following occurrences of nasals, obstruents and vowels in the ultima:

a) simple voiceless obstruent, oral vowel: V.TV[–nas];
b) simple voiced obstruent, oral vowel: V.DV[–nas];
c) simple nasal, nasalized vowel: VNV[+nas];
d) ambisyllabic cluster – nasal, voiceless obstruent, oral vowel: VN.TV[–nas];
e) (in most Sadung dialects) ambisyllabic cluster – nasal, voiced obstruent, oral vowel:
   VN.DV[–nas];
f) (in Bukar and the Bunan-area sub-dialect of Sadung) unisyllabic cluster – nasal, weakened/reduced
   voiced obstruent, oral vowel: V.N(D)V[–nas]
   Vowels that follow an obstruent, including a weakened/reduced voiced obstruent, are oral, as in a),
b), d), e), f). Vowels that occur after simple nasal onsets are nasalized by forward nasal spread, as in c).
   Rule: Nasal spread to vowels that follow nasals: V > V[+nas] /N__(C)#.

5.5.2 Western dialects (Bau District) and most central dialects (Kuching District)

These dialects have lost the nasal from earlier nasal + voiceless-obstruent clusters, leaving only the obstruent, which is followed by an oral vowel:

VN.TV[–nas] > V.TV[–nas]... (or N > Ø/_T)

Except Bengoh (see above), these dialects have resyllabified nasal + voiced-obstruent clusters. Voiced obstruents have lost their force and duration but a residue is preserved in orality and timing features of the ultima, specifically orality of the ultima vowel and preplosion of the final nasal if there is one. Nasality does not spread to the ultima vowel but cuts off quite precisely following the nasal, which resyllabification has moved to the onset of the ultima. This happens even though the voiced obstruent itself may not be perceptible.

VN.DV[–nas](C)# > V.N(D)V[–nas](C)#–V.NV[–nas](C)# (or D > Ø/N_V[–nas](C)#)

If an ultima continues to have an oral ending, a voiced obstruent is still present after the nasal as an underlying segment, even though its phonetic nature has been altered. However, if orality of the ultima
vowel does not persist and that vowel becomes consistently nasalized, then ‘memory’ of the voiced obstruent would be gone. This would complete the simplifying of both kinds of consonant clusters in underlying forms: no more nasal in former N.T clusters and no more voiced obstruent in former N.D clusters. Only single consonants would remain where there were medial nasal + obstruent N.D clusters earlier. Bau and Kuching dialects, except Bengoh and perhaps Biatah, exhibit the following arrangements of nasals, obstruents and vowels in the ultima:

a) simple voiceless obstruent, oral vowel: V.TV[–nas];
b) simple voiced obstruent, oral vowel: V.DV[–nas];
c) simple nasal, nasalized vowel V.NV[+nas];
d) (most Bau and Kuching dialects) unisyllabic cluster—nasal, weakened/lost voiced obstruent, oral vowel: V.N(D)V[–nas] > [V.NV[–nas]]
e) (Biatah) ambisyllabic cluster—nasal, voiced obstruent, oral vowel: VN.DV[–nas]
f) (Bengoh) ambisyllabic cluster—nasal, voiceless obstruent, oral vowel: VN.TV[–nas]

Vowels that follow an obstruent, including a weakened voiced obstruent, are oral, as in a), b), d), e), and f). Vowels that follow a simple nasal are nasalized by forward nasal spread as in c).

V.TV is the present-day outcome of both former V.TV and VN.TV; VN.DV has undergone resyllabification (> V.N(D)V[–nas]) due to weakening of voiced obstruents in clusters with nasals. Even if it is no longer actually pronounced, D is signaled by the clear cut-off of nasality between a nasal and the following vowel (> V.NV[–nas]), and by preplosion of the word-final nasal if there is one.

Vowels that follow an obstruent, including a weakened/reduced voiced obstruent, are oral unless nasal spread, forward or reverse, overrides the orality (see below). Vowels that follow a simple-nasal onset are nasalized by forward nasal spread.
6 ‘New’ nasality

As may be concluded from earlier portions of this paper, there are at least two trends in process that affect Bidayuh nasality patterns and phonetic rules: a) erosion of the residual phonetic features that signal the presence of a voiced obstruent in word-medial consonant clusters and block forward nasal spread into the ultima and b) decreasing use of preplosion from word-final nasals that follow an oral vowel, leaving ordinary (simple) nasals as word-final codas and allowing reverse nasal spread from the coda to nasalize the (previously oral) vowel of the ultima. Both of these trends, one coming from the beginning of the ultima and the other coming from the end of the ultima, are resulting in increased nasality of the rime of the ultima. Nasalization of vowels, already an observable phonetic characteristic of the language due to forward nasal spread, is gaining ground and might be on its way to becoming phonemic (to a limited extent) in one or two dialects, specifically in Rara and perhaps in the Bunan-area dialect as well.

These two ‘new’ nasality trends often intersect in ultimas that begin with a nasal + voiced-obstruent cluster and end with a preploded nasal. When the voiced obstruent has weakened completely and disappeared, the vowel becomes nasalized by forward spread from the nasal onset. This in turn causes the word-final nasal, if there is one, to lose preplosion. Or perhaps the process may start with the loss of preplosion. If that happens, the vowel can absorb nasality from the coda and, thus, lose the orality residue of the voiced obstruent. In either case the result for the ultima is: .N(D)V[–nas]dN# > .NV[+nas]N#. It should be mentioned that reverse spread from a word-final nasal that has lost protective preplosion is more likely to nasalize the vowel of an ultima if the ultima has a non-nasal onset than if the onset is a nasal. Presumably this is because generalized loss of preplosion from word-final nasals alone will not affect the phonemic content of a word unless a) the onset of the ultima is a nasal + voiced-obstruent cluster or b) some word-final nasals have lost preplosion and others have not. Either of these situations could yield a contrast between oral and nasalized vowels or between simple and preploded nasals. If loss of preplosion were to become generalized but occur only where the onset of the coda is not a nasal, only phonetic values would be changed, not phonemic values. This might suggest that the primary factor in this aspect of ‘new’ nasality is loss of preplosion.

6.1 Increase of forward nasal spread from nasal + voiced-obstruent clusters

Forward spread of nasality from the N in nasal + voiced-obstruent clusters is blocked by the obstruent. A nasal alone as onset of the ultima spreads nasality to the vowel of the ultima and on to the coda if the coda is a (preploded) nasal. If residual orality of the voiced obstruent in V,N(D)V[–nas]# clusters weakens and disappears completely, the nasal onset of the ultima is left unblocked, which can allow nasality to spread to the vowel and on to the coda. Previously, orality of the voiced obstruent guarded
the ultima vowel from the front and preplosition of the final nasal, if the coda was a nasal, guarded it from the rear, keeping it from becoming nasalized. Ultimas with a nasal + voiced-obstruent cluster as onset have been recognizable and differentiated from ultimas with a simple nasal onset.

In some dialects VN.DV[–nas](C)# has become V.N(D)V[–nas](C)#, which has become V.NV[–nas](C)# and finally V.NV[ + nas](C)#. In some dialects in the speech of some speakers this switchover to nasality is already taking place, in at least some words. This change simplifies canonical patterns by means of cluster simplification. On the other hand, if V.NV[–nas](C)# continues to exist alongside V.NV[ + nas](C)#, the potential result is a surface contrast between oral and nasalized vowels that is found only in ultimas with a nasal as onset. So far, the last stage of this process seems not to be widespread. In most places where it is occurring the change is only partial and/or apparently optional. However, it has produced some contrasts in some dialects (and/or some speakers).

6.2 Increase of reverse nasal spread from (preploded) word-final nasals

This change is more common in Rara than elsewhere and has been reported in Bunan. It was observable to some extent in other areas. There is increasing use of reverse nasal spread in ultimas with non-nasal onsets, i.e., where the (preploded) nasal coda is the only nasal in the word. Younger speakers in particular were said to be adopting this speech style. Like the first trend, it could potentially develop into contrast of either vowel-nasalization or obstruent preplosition in a rather limited environment. So far it is optional and not thorough-going. This imbalance may be temporary. Yet at present there is some contrast of oral vs. nasalized vowels in ultimas with nasal codas: .C[–nas]V[–nas](d)N# > .C[–nas]V[ + nas]N#.

In the available data the dialects in which a significant incidence of ‘new’ nasality was observed or reported were Rara, Bukar, Bengoh and Bunan.

Following are observations regarding how ‘new’ nasality appears to be affecting some of these dialects. The details vary from dialect to dialect and probably from speaker to speaker, but across dialects the developments are quite similar.

6.3 ‘New’ nasality in Bukar

Bukar is a relatively homogeneous subset of the eastern dialects that, together with Sadung dialects, are located in Serian District.

6.3.1 Developments from medial clusters in Bukar

As already mentioned, most Bukar-Sadung (eastern) dialects, unlike western and most central dialects, retain ambisyllabic nasal + voiceless-obstruent clusters intact and fully articulated: VN.TV[–nas]. On the other hand, nasal + voiced-obstruent clusters, which are ambisyllabic in most Sadung dialects, are usually resyllabified in Bukar as V.N(D)V[–nas]. Resyllabification and weakening of voiced obstruents are two parts of the same process that ultimately results in loss of the voiced obstruent and spread of nasalization to the ultima vowel. In Bukar more than most other dialects, forward nasal spread was observed in ultimas where voiced obstruents have weakened and dropped out. However, there is some variety in the Bukar data. It is not yet clear whether this is a general process or whether it is only that the voiced
obstruent has dropped out in particular words. Where the obstruent has been lost, nasality usually
spreads to the ultima vowel, a less common occurrence in other dialects. When a formerly oral vowel
becomes nasalized, prepllosion of the coda, if it is a nasal, usually drops out as well. Following are
examples showing varying phonetic realizations of medial nasal + voiced-obstruent clusters in Bukar.\(^{45}\)

Bukar examples of optionally varying pronunciations of medial nasal + voiced-obstruent clusters:

\[
\begin{array}{lll}
/dâNba/ & > [dâm.ba] & \text{‘old (thing)’} \\
CV[ + nas]N.bV[–nas]\# & & (324)^{46}
\end{array}
\]

\[
\begin{array}{lll}
/\{N\}-(d)aN.ba/ & > [nâm.ba] & \text{‘old (person)’} \\
CV[ + nas]N.bV[–nas]\# & & (325)
\end{array}
\]

\[
\begin{array}{lll}
/âNbu/h & > [räm.buh] & ~ [rä.m(b)ûh] \\
\end{array}
\]

\[
\begin{array}{lll}
/âNdu/ & > [rän.(d)u:] & ~ [rä.n:u:] \\
V.N.(d)V[–nas] & V.N.V[–nas] & V.N(ö)\# & & (19)
\end{array}
\]

\[
\begin{array}{lll}
/bâNdůŋ/ & > [bän.nûŋ] & ~ [bän.n(b)ûŋ] \\
\end{array}
\]

\[
\begin{array}{lll}
/ũNdu(ː)n/^{47} & > [nã.n(ː)d] & \text{‘yesterday’} \\
NV[ + nas].NV[–nas](ː)dn & (25)
\end{array}
\]

\[
\begin{array}{lll}
/ãNja/n & > [rä.n.jadn] & ~ [rä.n.nadn] \\
\end{array}
\]

\[
\begin{array}{lll}
/ãNjan/ & > [rä.n.(j)adn] & ~ [rä.n.nadn] \\
\end{array}
\]

\[
\begin{array}{lll}
/ãNjan/ & > [rä.n.(j)adn] & ~ [rä.n.nadn] \\
\end{array}
\]

\[\]

Note re vowel diacritics: In the phonemic form of each example (on the left) the penult vowel is
marked as full or reduced if that is relevant and/or if it is known. In the phonetic forms (to the right)
the marking of phonetic nasalization takes precedence over marking of full and reduced penult vowels.
This is because of the technical difficulty of marking both features over the same vowel symbol. Note
that several of these examples exhibit reverse nasal spread into the penult.

In Bukar, as shown in the above data, a voiced obstruent following a medial nasal can have any of
the following phonetic outcomes:

a) it remains phonetically intact or

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b) it drops out but is substituted for by lengthening of the nasal and preserved orality of the ultima vowel or
c) it drops out but is signaled by orality of the vowel and a preploded nasal coda or
d) it drops out but is signaled by a combination of b and c, or
e) it drops out completely, allowing the ultima vowel to become nasalized and the word-final nasal to lose preplosion. If outcome e) occurs, the voiced obstruent is entirely gone; no evidence of it is left.

### 6.3.2 Reverse nasal spread in Bukar

Reverse nasal spread, the other aspect of what is here called ‘new’ nasality, also occurs in Bukar. Words that have a nasal as final consonant and a non-nasal as onset of the ultima are often pronounced with a simple nasal as coda (i.e., without preplosion). This allows nasalization to spread backward from the end of the word, nasalizing the vowel of the ultima. Nasals that occur medially in the word, whether as codas or as onsets, can also nasalize the preceding vowel. Reverse nasal spread occurs irregularly among speakers and also varies within the speech of individuals. For example, one of the Bukar speakers tended to use reverse nasal spread more than the other.

Examples of optional reverse nasal spread in Bukar:

/\textit{si}\text{"en}/ > [\textit{si.\text{"e}d\text{"e}}]~[\textit{si.\text{"e}n}] ‘he, she’ (341)
/\textit{tur}\text{"a}ŋ/ > [\textit{tu.rak/\text{"a}ŋ}]~[\textit{tu.r\text{"a}ŋ}] ‘bone’ (70)
/\textit{siso}\text{"a}ŋ/ > [\textit{si.s/\text{"a}k/\text{"a}ŋ}]~[\textit{si.s/\text{"a}̃ŋ}] ‘breast’ (94)

### 6.4 ‘New’ nasality in Bunan

The Bunan area is located in the eastern region (Serian District) near the border with West Kalimantan, Indonesia. Bunan dialect is a variety of Sadung. The area that will usually be called ‘Bunan’ in the following pages covers more than one \textit{kampung}, including Terbat, Mujat and others in addition to Bunan itself. The language varieties of those areas are similar. Two adult male speakers provided the Bunan wordlist, with some input from onlookers. An older woman, who has lived in another dialect area for many years but still knows her own dialect, provided the Terbat data, and a male speaker of Mujat dialect provided that wordlist.

### 6.4.1 Developments from medial clusters in Bunan

Like all Bukar-Sadung dialects, Bunan retains nasal + voiceless-obstruent clusters as ambisyllabic and fully articulated (…\textit{VN.TV}…). Most Sadung dialects also retain fully articulated nasal + voiced-obstruent

\footnote{Six wordlists were collected from Sadung areas, but only in the Bunan area did the topic of new nasality, specifically reverse nasal spread, arise for discussion. However, two other Sadung wordlists show significant amounts of (optional) reverse spread that was noted when words were pronounced more than once. One of those lists came from the Tebakang dialect area and the other from a dialect that the speaker calls “the real Bukar-Sadung” because his village lies at the intersection of Bukar and Sadung geographical areas. (That dialect seems to be phonologically similar to Sadung.) It should be noted that the other Sadung data show less reverse nasal spread than those already mentioned.}
clusters (…VN.DV…). However, Bunam, even more than Bukar, departs from this regional norm. Like Bukar and the western and central dialects (except probably Biatah), Bunam has weakened the obstruents in nasal + voiced-obstruent clusters. Most voiced obstruents after nasals are preserved only by their residue: weak/optional voiced obstruents and/or lengthened medial nasals and/or orality of the ultima vowel and/or prepiration of nasal codas. In only a few words that formerly had medial clusters were the voiced obstruents in the clusters fully pronounced; even words where they were sometimes pronounced exhibited (free) variation between presence and absence of the obstruent. The ultimas of such words were usually pronounced with a simple nasal onset followed by an oral vowel. When the speakers were queried about some words that in other dialects contain N.D clusters, their opinion was that those words do not include a voiced obstruent. On the other hand, they usually pronounced words of the shape …V.N(D)V(C)# with a clearly oral vowel in the ultima. If the word-final consonant in such words was a nasal, they usually pronounced it with prepiration. It was rare for them to nasalize the vowel of the ultima in such words, but sometimes they did so.

Examples in Bunam of obstruent weakening with optional variation of N.D clusters:

/laNbat/ > [la.m(b)a]t ‘afternoon’ (Bunan), > [la.m] (Terbat) (24)
/tibaNbaŋ/ > [ti.ba.mak/g/xŋ] ‘butterfly/moth’ (Terbat), > /ri.baNbaŋ/ > [si.bam.bagŋ] (Bunan) (65)
/(ɔ)Nbuŋ/ > [(ɔ).m(b)uh] ‘long’ (Terbat), > [m(b)uh]~[ʔa.muh]~[muh] (Bunan) (298)
/siNdik/ > [ji.n(d)ik] ‘near’ (Terbat), > [sinik] (Bunan) (303)
/(u)Ndŋ/ > [ʔu.n(d)ukŋ] ‘nose’ (Terbat), > [ndugŋ] (reported for Bunam younger speakers, probably influenced by other dialects)~[nugŋ] (Bunan older speakers) (84)
/riNgɑ?/ > [siŋ.ɡi?] ‘termite’ (Bunan), > [si.ɡi?] (Terbat) (64)

In each of the above examples a residue of the obstruent of a medial nasal + voiced-obstruent cluster persists, whether or not speakers recognize its presence. When carried to its logical conclusion, the outcome of weakening and loss of voiced obstruents from medial clusters is likely to be merging of VN.DV[–nas] > V.NV[+nas] with V.NV[+nas]. Compare /kaNbat/ > /kamat/ > [ka.mit] ‘(someone) forgets (something)’ (133), which exhibits forward nasal spread into the ultima, and shows no evidence of an /mb/ cluster, with /lambat/ > [la.m(b)a]t ‘afternoon’ (Bunan), > [la.m] (Terbat) (24). In its first pronunciation the Bunam form retains a bit of the /b/ and also orality of the ultima vowel. In the second pronunciation it retains only orality of the ultima vowel. When this kind of change becomes thorough-going, the distinction between the nasal + voiced-obstruent cluster and the simple nasal is lost in word-medial position.

Examples of voiced-obstruent loss by stages; forward nasal spread nasalizes oral endings:
/tuNbaŋ/ > [tu.m(b)agŋ] > [tu.agn] > [tu.mɔŋ] ‘(trip and) fall’ (Bunan) (144)
/piruNgaŋ/ > [pi.ɾu.ŋ(a)gŋ] ~ [pi.ɾuŋ.ɡaŋ] ‘mosquito’ (Bunan) Note that the second phonetic form of ‘mosquito’ preserves the voiced obstruent in the cluster but nasalizes the ultima vowel, which is one way of maintaining the contrast between the cluster and the simple nasal;
The woman who provided Terbat data has lived away from her original kampung for many years in an area where a different Sadung dialect is spoken, one that fully articulates nasal + obstruent (including voiced-obstruent) clusters. Nevertheless, when she gave Terbat data, the voiced obstruents in nasal + obstruent clusters were weakened and were most easily perceived by orality of the following vowel. There are no data available on how younger Terbat speakers pronounce those words, but the woman used oral ultimas. She did not vary between oral and nasal ultimas as the male Bunan speakers often did. The third wordlist from this area, obtained from a middle-aged male speaker in the village of Mujat, shows maintenance of both kinds of nasal + obstruent clusters. However, while the clusters with voiceless obstruents remain full and ambiasyllabic, those with voiced obstruents are resyllabified. Words with nasal + voiceless obstruent were transcribed as VN.TV and words with nasal + voiced obstruent were transcribed as V.NDV, showing a unisyllabic, complex syllable-onset. All dialects that weaken voiced obstruents in clusters exhibit resyllabification of this sort.

Thus, weakening of voiced obstruents in medial nasal + voiced-obstruent clusters, even though not typical of other Sadung dialects, is occurring in Bunan, which is in the eastern region, as well as in central and western Bidayuh, where it is almost universal. The three wordlists from the Bunan area, which may to some extent represent different generations as well as slightly different regions, present a picture of progressive weakening of word-medial clusters. The Mujat speaker has begun the process of weakening voiced obstruents through resyllabification of clusters and subordination of voiced obstruents. He appears to retain the clusters as unisyllabic syllable-onset clusters. The speaker who grew up in Terbat has also resyllabified the clusters and has also subordinated the voiced obstruents. She seems closer to dropping out voiced obstruents than the Mujat speaker. She retains residue of the voiced obstruents chiefly as orality of the ultima vowel, which is also the main indicator for the Bunan speakers. However, in Bunan the voiced obstruents themselves are already gone from former clusters in some words and are close to being gone in others. For the present, however, the range of possible variations in these words in Bunan is still not very different from the rest of Bukar-Sadung, in spite of the ongoing process of weakening.

6.4.2 Reverse nasal spread in Bunan

The Bunan speakers who provided wordlist data reported that nowadays their young people prefer to use plain, rather than preploded, nasal codas. Examples given by the speakers showed loss of nasal prepllosion and resulting nasalization of ultima vowels by reverse nasal spread. However, this was only in words where the onset of the ultima is not a nasal. Therefore, unless this change should turn out to be a partial one, it will not establish a new set of contrasts. The words in which reverse nasal spread is occurring are mostly words in which forward nasal spread cannot occur, usually words in which the only nasal is word-final, i.e., not in a position to initiate forward nasal spread. They are words in which the ultima used to be $C[–nas]V[–nas]dN#$. Prepllosion has dropped out so that they now have reverse nasal spread in the ultima, $> C[–nas]V[+nas]N#$ as ultima. This process in Bunan is not at present introducing a contrast between forward nasal spread and its absence or between the outputs of forward nasal spread and reverse nasal spread.
Examples of the reported increase in use of reverse nasal spread by younger Bunan speakers:

In each example the first phonetic form is the one that was given by the men who provided the data. They made the further comment that younger people pronounce that word as in the second phonetic form. Note that all examples mentioned by the speakers involve the velar nasal, which is the most common word-final nasal in Bidayuh. Data are not available to show whether reverse nasal spread is equally likely to occur where the word-final nasal is labial or apical.

/kəpiŋ/ > [kə.pɨŋ]~[kə.piŋ] ‘ear’ (87)
/sisuŋ/ > [si.sukŋ]~[si.sũŋ] ‘breast’ (94)
/putuŋ/ > [pu.tu/uni0261ŋ]~[pu.tũŋ] ‘belly’ (101)
/turaŋ/ > [tu./uni0281ak//uni0261ŋ]~[tu.rãŋ] ‘bone’ (70)
/bədaŋ/ > [ba.dagŋ]~[ba.dâŋ] ‘sword’ (207)

6.4.3 Sociolinguistic aspects of Bunan nasality

Two Bunan speakers mentioned that they believe their dialect is to some extent losing ground to other languages and dialects, particularly in the speech of young people. They said that the dialect is being affected both lexically and phonologically by Malay, which young people have to use in school, and also by the other Bidayuh dialects that are spoken by fellow students in the secondary schools they attend. Young people, they said, no longer use some of the more unusual phonological features of their own local Bidayuh. The affected features were reported to include prepllosion of final nasals, loss of which allows the ultima vowel to be nasalized by reverse nasal spread, and complete loss of voiced stops from some clusters with nasals, which allows a nasal that has become simple onset of the ultima to nasalize the vowel of the ultima by forward nasal spread.49

The actual pronunciations of Bunan words showed less ‘new’ nasality than had been expected based on what had been reported. For the most part elicitation from adult male speakers yielded classic pronunciations and exemplified traditional rules of forward nasal spread: a) vowels are oral unless affected by nasal spread, b) nasal spread is initiated by a nasal onset at or near the beginning of a word and moves forward through the word unless/until blocked by an obstruent, liquid or word-end and c) word-final nasals are preploded after an oral vowel in the ultima, protecting the vowel from ‘infection’ by reverse nasal spread from a word-final nasal. Some instances of variation were heard in which an oral vowel followed by a preploded nasal alternated with a nasalized vowel followed by a simple nasal, as in /kəpiŋ/ > [kə.pɨŋ]~[kə.piŋ] ‘ear’ (87) and /sisuŋ/ > [si.sukŋ]~[si.sũŋ] ‘breast’ (94). Where the vowel was oral and the nasal preploded, the ‘old rules’ for forward nasal spread were operating and reverse spread could not occur. Where the vowel was nasalized and the coda was a simple nasal, reverse spread from the nasal coda was operating. The present level of variation between these pronunciations depends partly on free variation, partly on generational and social context and partly on position of the word in a larger linguistic context.

49 An additional, but unrelated, change, the men said, involves the liquid, /r/. Formerly it was uvular in syllable-initial position. Now the uvular form is being replaced by the apical /ɾ/.
6.5 ‘New’ nasality in Bengoh

Bengoh dialect is a central dialect belonging to the Lower Padawan sub-group. As has been mentioned, that dialect differs from western dialects and from other central dialects in the development of nasal + voiced-obstruent clusters.

6.5.1 Developments from medial clusters in Bengoh

Like other dialects of the central and western regions, Bengoh has lost the nasal from former nasal + voiceless-obstruent clusters: N > Ø/__\text{T}. Unlike most other central dialects and the western dialects, Bengoh did not resyllabify nasal + voiced-obstruent sequences. Rather, it retained them as clusters. Instead of becoming weakened, the voiced obstruents in the clusters were strengthened by devoicing them. This change did not introduce a new set of contrasts because the former nasal + voiceless-obstruent clusters had lost the nasal and were no longer clusters. They became simply voiceless obstruents. The [+vd] feature of the formerly-voiced obstruents in clusters became [–vd]: N > Ø /__\text{T} (or VN.TV > V.TV); D > T/N._ (or VN.DV > VN.TV). The now voiceless (formerly-voiced) obstruents in nasal + voiced-obstruent clusters are fully articulated and the clusters are ambisyllabic.

Examples of nasal + voiceless- (< voiced-) obstruent clusters in Bengoh dialect:\footnote{Notice that all these examples exhibit reverse nasal spread.}

- /\text{sNbu}/ > [\text{ʔm.pu}] ‘long’ (298)
- /\text{baNdu}\text{ŋ}/ > [\text{bän.tuŋ}] ‘cassava’ (43)
- /\text{t(i)Nju}/ > [\text{trîn.c/su}] ‘(index?) finger’ (107)
- /\text{tN}/ > [\text{t̃ŋ.k/̃n}]~[\text{t̃ŋ.k/̃n}] ‘straight’ (319)

Like the Bengoh nasal + voiceless- (< voiced-) obstruent clusters that are fully articulated and ambisyllabic in word-medial position, there are also a few monosyllables in the data that contain onset clusters: #NTV(C)#. These clusters parallel word-initial #NDV(C)# clusters in the same words in other dialects.

Examples of monosyllabic words in Bengoh dialect with initial nasal + obstruent clusters:

- *(V)Ndu\text{ŋ} > /(V)Ntu\text{ŋ}/ > [\text{ʔntuŋ}] ‘nose’ (84)
- *(V)Nd\text{i} > /(V)Nti\text{ʔ}/ > [\text{ʔntiʔ}]~[\text{niʔ}] ‘one’ (281)\footnote{Reportedly, younger Bengoh speakers have begun to pronounce the word /nti\text{ʔ}/ > [\text{ʔn.tiʔ}] ‘one’ as [niʔ] or [n(d)iʔ]. This change was said to result from the Bengoh students’ attending (boarding) school with students and teachers from other dialects, especially the influential Biatah dialect.}

6.5.2 Reverse nasal spread in Bengoh

Bengoh data exhibit a considerable amount of (optional) reverse nasal spread. This feature was discussed briefly by those who provided the data. They said it is the way younger people speak nowadays. The men themselves also used reverse nasal spread in pronouncing many of the words. However, it does not appear that contrastive vowel nasalization is developing from this trend. In part this is because reverse nasal spread in Bengoh, as in Bunun, occurs principally in positions where it does not encounter forward
nasal spread—i.e., it occurs in words where the coda nasal is the only nasal in the word. Forward nasal spread can occur in the ultima only if the onset of the ultima is a simple nasal or the penult vowel has become nasalized by a nasal consonant earlier in the word. Reverse nasal spread can affect only one vowel, most commonly the vowel of the ultima. In general it occurs only where the syllable has a nasal coda. As already noted, former nasal + voiced-obstruent clusters are ambisyllabic in Bengoh, consisting of a nasal plus a fully-articulated voiceless obstruent. Devoicing of the voiced obstruents in medial clusters in Bengoh has strengthened rather than weakened the clusters. Forward nasal spread cannot occur because the nasal is shielded by the voiceless obstruent, which protects the ultima vowel from forward nasal spread. Nasality can spread to the vowel of the ultima only by reverse nasal spread from a nasal coda that is not protected by prepllosion or by forward nasal spread from a simple nasal that occurs earlier in the word and is not blocked. (Note that all reverse nasal spread is optional.)

Examples of optional reverse nasal spread in Bengoh:

\*biNtaŋ > /bitaŋ/ > [bi.tan] ‘star’ (10)$^{52}$

\*toNkan > /takan/ > [to.kan] ‘straight’ (319)$^{53}$

Bengoh dialect evidences more reverse nasal spread than other central dialects for which data are available. Bistaang, a Penrissen (also central) dialect, has it to some degree. Generally speaking, though, other central dialects, comprising Padawan and Penrissen sub-groupings and Biatah, do not exhibit it to a great extent.$^{54}$

### 6.6 ‘New’ nasality in Rara

Rara is spoken by a smallish group of Bidayuh people in Lundu District, at the western extreme of the Bidayuh region of Sarawak. It is the most divergent of the dialects spoken in Sarawak because it is a member of a different sub-family of Land Dayak languages, i.e., Bakati’. A much larger group of Rara Bakati’ speakers is found across the border in West Kalimantan, Indonesia.

Rara, alone among the dialects studied in the western region, exhibits a significant amount of ‘new’ nasality, which includes both forward and reverse nasal spread. Forward nasal spread has increased through resyllabification and the weakening and loss of voiced obstruents from clusters with nasals, allowing nasality to spread to the vowel of the ultima. Reverse nasal spread has increased where prepllosion has dropped out, allowing nasality to spread from a word-final nasal to the formerly ‘protected’ vowel of the ultima. Data from dialects in Bau district (Singai, Gumbang, Tringgus and

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$^{52}$ In these sets the forms marked by asterisk represent an approximation of pre-Bengoh when the changes in the medial nasal + obstruent clusters had not yet taken place.

$^{53}$ In the last variant shown in this example both syllables are nasalized as a result of reverse nasal spread.

$^{54}$ In Bistaang and Benuk (Penrissen dialects), Sembaan and Tringgus (Sembaan-group dialects) pre-ultima syllables that contain a ‘reduced’ (rather than a ‘full’) vowel undergo contraction. Pre-ultima syllables are eroded by deletion of the vowel and collapsing the consonants onto the ultima, forming a complex syllable onset. This process is most thorough-going in Sembaan. It occurs somewhat in Bistaang, less so in Benuk and Tringgus. The process can affect initial nasals, including the replacive-nasal prefix, but is much more general than that. It is hoped that more on this topic can be presented at a later date.
various varieties of Jagoi) exhibit only occasional instances of ‘new’ nasality. However, the occasional instances show that new nasality is available in those dialects as an option, even if not widely used.55

Rara speakers and Salako speakers live intermingled in Lundu District, Sarawak, and apparently in West Kalimantan also. In Sarawak Salakos are officially members of the Bidayuh ethnic group, but their language belongs to a different stream of Austronesian, the Malayic family.

Rara and Salako people overlap socially as well as geographically. There are many opportunities for contact, and there is significant intermarriage between the two groups. Their two dialects appear to have mutually affected one another, with the result that Rara has some vocabulary and phonological features typical of Salako,56 and Salako has some vocabulary and features typical of Rara.57

6.6.1 Developments from medial clusters in Rara

Like the eastern Bidayuh dialects, Rara has retained fully articulated, ambisyllabic nasal + voiceless-obstruent clusters. In many words that traditionally contain nasal + voiced-obstruent clusters the voiced obstruents have weakened as they have in western and most central dialects. Common words of the shape #…V(N(D)V[--nas](C)#, which developed from #…VN.DV(C)#, have become #…V.NV[--nas](C)#. They continue to be pronounced with the ultima vowel oral, at least optionally. The same words can also be heard with the ultima vowel nasalized: > #…V.NV[+nas](C)#. As in Bunun dialect, residue of the voiced obstruent has in some words become so reduced and/or so variable that it is no longer perceived as occurring in those words. Thus, it no longer blocks forward nasal spread.

Rara also has some words with fully ambisyllabic nasal + voiced-obstruent clusters. Possibly those words have been borrowed more recently from Malay or other languages.

The variability (optionality) of forward nasal spread in Rara is observable in successive repetitions of the same word by the same speaker, in repetitions of the same word by the same speaker separated in time and in pronunciations of the same word by different speakers. It appears that there is some regional and/or personal variation in the use of nasal spread, especially reverse nasal spread. Finally, in connected speech Rara speakers, like speakers of the Bidayuh dialects, tend to simplify the pronunciation of words that are not phrase final. When a word is non-final and therefore less prominent, speakers are less likely to give attention to such articulatory detail as is needed to pronounce an oral vowel after a nasal consonant or to insert preplosion before a nasal coda.58

55In those dialects the use vs. non-use of reverse spread may be more personal than dialectal.
56Besides shared vocabulary, these include lack of a sixth (central) vowel; occurrence of /a/ rather than /i/ as the default vowel in pre-penultimate syllables (/a/ > [a]~[a']); use of two liquids, /l/ and /r/; limitations of occurrence such that semi-vowels and voiced stops occur syllable-initially only; the non-occurrence of glottal stop between vowels; and possibly a developing contrast between nasalized and oral vowels (or between preploled and simple nasal codas).
57Besides shared vocabulary, these include preplosion of nasal codas to protect orality of ultima vowels that ‘should not be’ nasalized.
58In Bidayuh generally, other features that may be lost or minimized in this simplification process include phonemic features as well as phonetic: vowel lengthening, final /ʔ/ and /h/ and in some dialects intervocalic /ʔ/,
The following examples illustrate nasality in Rara in various phonological contexts. These examples focus on the medial consonant(s) and the ultima. Nasalization of the penult vowel is not under attention here, although that is very usual in Rara if the penult, the antepenult or the ante-antepenult has a nasal coda.

Examples of nasal + voiceless-obstruent clusters in Rara:
/suNpot/ > [sũm.pot] ‘blowpipe’ (205)
/jaNtuʔ/ > [jăn.tuʔ] ‘to fall’ (144)
/juNkoʔ/ > [jũŋ.koʔ] ‘handspan, thumb to index finger’ (297)
/naNko/ > [nãŋ.ko:] ‘to steal’ (163)

In each of the above examples the voiceless obstruent prevents nasality from spreading forward, thus allowing the ultima vowel to be oral.

Examples of ambisyllabic nasal + voiced-obstruent clusters in Rara:
/tuNbak/ > [tũm.bak] ‘spear’ (204)
/baluNbaʔ/ > [bǎ.lum.baʔ] ‘competing’
/saNbilan/ > [sõm.bì.lăn] ‘nine’ (289)
/jaNdaʔ/ > [jăn.daʔ] ‘widow, divorced woman’ (254)
/nĩNgu/ > [nĩŋ.guʔ] ‘to punch someone with fist’ (178)

In the above examples a fully articulated voiced obstruent as onset of the ultima protects the vowel of the ultima from forward nasal spread and keeps it oral. In western and central Bidayuh dialects, where a voiced obstruent that follows a nasal coda of the penult has weakened and has come to be signaled principally by orality of the ultima vowel and/or prepllosion of a final nasal, one also hears some full, ambisyllabic nasal + voiced-obstruent clusters, especially in words from Malay and other languages. In the above words ‘widow’ (Malay janda) and ‘nine’ (Malay sembilan) come from Malay. This may be true as well of ‘to punch’ (Malay tinju ‘to box’), although the morphology is Bidayuh.

Examples of oral~nasal variation of Rara vowels before and after nasal consonants:
/Nbeen/ > *m(b)een > [m/uni025B/uni02D0dn]~[me./uni02C8/uni025Bdn]~[me./uni02C8/uni025B̃n] ‘to wash’ (166)

which does not occur in Rara, however. Word-initial [ʔ], which in citation forms is a non-phonemic initiator of word-initial vowels and syllabic nasals, usually does not occur if pronunciation is not in focus, but it can be heard when vowel-initial forms are reduplicated.

Notes regarding examples of optional variation of oral and nasalized vowels:
The words meaning ‘wash’, ‘day’, ‘short (thing)’, ‘tall’ and ‘long (thing)’ contain nasal + voiced-obstruent clusters in Bidayuh dialects—in whatever form such clusters occur in each particular dialect. Beyond words like these, which in Rara usage illustrate (free) variation between oral and nasalized vowels in the ultima, there are other Rara words that, although cognate with words that have nasal + voiced-obstruent clusters in other dialects, have been heard in Rara only with a nasalized vowel in the ultima. Thus, some words whose cognates in Bidayuh dialects normally have an oral vowel after the medial nasal have yielded to forward nasal spread in Rara, especially in younger speakers, it is said. Even the residue of the voiced obstruent is no longer perceived.

In this and the examples that follow the forms marked by asterisk represent an intermediate stage that is postulated between the first form given and the phonetic forms to the right.
Examples of nasalized vowels after nasals in Rara that correspond with oral vowels after nasals in speech of other dialect groups where the voiced obstruent has been lost:

/aNdɔ/ > *an(d)o > [ʔa.nɔ]~[ʔa.nõ] 'day' (19)
/oNdɔk/ > *on(d)ɔk > [ʔo.nɔk]~[ʔo.nõk] 'short (thing)' (296, 309)
/ŋaNdɔ̃/ > *nam(b)ɔ > [ŋa.mɔ]~[ŋa.mõ]~[ŋa.m̃ɔ] 'tall' (298)
/aNgɔʔ/ > [ʔaŋ.gəʔ]~[ʔaŋ.nəʔ]~[ʔaŋ.ñəʔ] 'spider' (63)
/aNgɔ/ > [ʔaŋ.ho]~[ʔaŋ.ŋo]~[ʔaŋ.ŋõ]~[ʔaŋ.ŋ̃] 'long (thing)' (298)\textsuperscript{61}

Examples of nasalized vowels after nasals in Rara that correspond with oral vowels after nasal+voiced-obstruent clusters in speech of other groups:

/aNdɔ/ > *an(d)o > [ʔa.nɔ]~[ʔa.nõ] 'day' (19)
/oNdɔk/ > *on(d)ɔk > [ʔo.nɔk]~[ʔo.nõk] 'short (thing)' (296, 309)
/ŋaNdɔ̃/ > *nam(b)ɔ > [ŋa.mɔ]~[ŋa.mõ]~[ŋa.m̃ɔ] 'tall' (298)
/aNgɔʔ/ > [ʔaŋ.gəʔ]~[ʔaŋ.nəʔ]~[ʔaŋ.ñəʔ] 'spider' (63)
/aNgɔ/ > [ʔaŋ.ho]~[ʔaŋ.ŋo]~[ʔaŋ.ŋõ]~[ʔaŋ.ŋ̃] 'long (thing)' (298)\textsuperscript{61}

Examples of oral vowels between nasals in Rara that correspond with vowels after nasal+voiced-obstruent clusters in speech of other groups:

a) between nasals:

/jaNdɔ/ > *ja.m(b)akŋ > [ja.makŋ] 'a kind of big pot' (223)
/raNdɔ̃/ > *ra.n(d)akŋ > [ra.nakŋ] 'white' (329)
/baNdɔ̃/ > *ba.n(d)okŋ > [ba.nökŋ]~[ba.ñökŋ] 'cassava' (43)\textsuperscript{63}
/aNjoŋ/ > *a.n(j)okŋ > [ʔa.nökŋ]~[ʔa.ñökŋ] 'deer' (57)
/aNdam/ > *a.n(d)apm > [ʔa.ñapm] 'ill, painful' (435)

b) following a nasal:

/uNdɔk/ > *u.n(d)ak > [ʔu.nak] 'thorn' (31)
/ne/iNgɔʔ/ > *ne/i.ŋ(ɡ)oʔ > [ñe.ŋ(ɡ)oʔ]~[ni.ŋoʔ] 'to tie' (159)

\textsuperscript{61}The first pronunciation of the word meaning 'long (thing)' was given by a speaker in a linguistically more conservative Rara \textit{kampung}. The [h] is corroborated by data from closely related Bakati’ dialects/languages of West Kalimantan (Bryant, 1990). There is a second example in which [h] follows a nasal. However, it is not clear that that [h] relates to orality-preservation: [pãn.ɦũʔ]~[pa.nũʔ] 'full (thing)' (311). These two are the only examples in the Rara data of [h] clustering with a nasal.

\textsuperscript{62}In one instance 'mother', a word commonly used as a base for figurative noun phrases, was heard with an oral vowel in the ultima. This was in non-final position in a noun phrase, a position where even contrastive features are often weakened or lost.

\textsuperscript{63}As shown, the Rara speakers who contributed data pronounced ‘cassava’ (43) and ‘deer’ (57) with optional nasalization of the vowel of the ultima while retaining prelosion of the word-final nasal. These words seem to illustrate the conclusion suggested in Section 6.3.1, i.e., that as long as any of the three identifying residues remains, the obstruent of a nasal + voiced-obstruent cluster persists. These residues are a) orality of the ultima vowel, b) prelosion of a word-final nasal if there is one or c) lengthening of the medial nasal.

\textsuperscript{64}Variation of the penult vowel in ‘to tie’ is apparently dialectal or idiolectal. The form with /i/ was used by the most conservative of the speakers who provided data. In languages of the region variation of /A/ > /e/ or /i/ ~ /e/ is common, especially before velar consonants. This is also the case with /u/ > /o/ or /u/ ~ /o/.
In the corpus there are a few other words like the last set of examples in which nasality does not spread forward. In such words nasal consonants occur before oral vowels without obvious phonological predictability and without an indication from other dialects that the word has—even used to have—a voiced stop following the nasal.

Examples in which nasality does not spread forward in Malay loanwords:

- [ʔə.ɲiŋ] < /aŋin/ ‘wind’ (13)
- [ra.ɲiʔt] < /raŋit/ ‘sky’ (11)

When asked whether pronunciations are acceptable that nasalize the ultima vowel in these two words and/or preplode the final nasal of ‘wind’, the Rara speaker said, “No, because those are Malay words.” It appears that in his thinking specific Malay words do not undergo forward nasal spread even though other, clearly Malay-source words do exhibit it. Perhaps the latter are earlier borrowings.

Another three Malay-source words that do not exhibit nasal spread after nasals:

- [ku.ɲit] ‘yellow herb used for cooking fish; turmeric’ (330)
- [bə.ɲal] ‘deaf’ (118)
- [ʔə.ɲak] ‘offspring (of)’ (256).

‘Offspring’ is the same as the Malay word meaning ‘(someone’s) child’ or ‘child of…’ and occurs in many people’s full names. Either of these factors may help to explain the lack of forward nasal spread into the ultima. In some Bidayuh dialects the vowel of the ultima in /anak/ is (optionally) nasalized; others are like Rara in having an oral ultima vowel after the /n/. There is no evidence to treat this word as */aNdak/.

In language generally high vowels, especially the high front vowel, are less susceptible to nasalization than lower vowels; this may be another contributing factor in some cases where nasality fails to spread. However, there are other examples of nasalized /i/ between, after and before nasals:

- [ku.ɲiŋ] ‘yellow’ (from Malay; exhibits forward nasal spread in the ultima) (330)
- [ʔi.ɲık]~[ʔe.ɲek] ‘small’ (One variant exhibits nasal spread, the other does not.) (318)
- [ʔi.ɲiʔ] ‘he’ (exhibits nasal spread in the ultima) (341)

/iNja/ > *ʔi.ɲja: > *ʔi.ɲ(n)ja: > [ʔi.ɲa:] ‘not it, not that, not this’ (332)\(^\text{66}\)

As already stated, forward nasal spread from a nasal onset of the ultima can be blocked by a voiceless stop, T, a voiced stop, D, a weakened (nearly lost) voiced stop, (D) (or a liquid—usually /r/, but it can also be /l/). Only in a sequence of the shape [#….NV(C)#] does nasalization spread to the

\(^\text{65}\)In Bidayuh a lengthened nasal consonant occurs fairly commonly in word-medial position before an oral vowel as a variant realization/residue of the nasal + voiced-stop cluster. In the Rara data available, however, this is the unique instance of that.

\(^\text{66}\)The most comparable form that has been observed to date is /iŋa/ ‘it is not’ in Sara/Riok, another Bakati’ dialect, located on the other side of the international border.

Also, Rara’s neighbor, Salako, has a negative form [ʔə.ɲəp] ‘(I) don’t have’, which, although its meaning is somewhat different from ‘not it’, might be a remotely possible source.
ultima vowel by forward nasal spread: /...(V).NV(C)/ > [...(V).NV[+nas](C)]. Rara has four kinds of word-medial patterns that involve nasals: ...(V).N.TV[–nas](C)#, ...(V).N.DV[–nas](C)#, ...(V).N(D)V[–nas](C)# and ...(V).NV[+nas](C)#. At the present stage of development there is some contrast between ...(V).N.DV[–nas](C)# and ...(V).N(V)[+nas](C)# and between ...(V).N(D)V[–nas](C)# and ...(V).NV[+nas](C)#. These (incipient) contrasts have not been found to the same degree in the Bidayuh dialects but they are found in Salako, Rara’s neighbor language. As in Bidayuh dialects, orality of the ultima vowel in the sequence ...(V).N(D)V[–nas](C)# gives evidence of a (D) that is no longer perceptually present as such. Yet in Rara there are other words where D is still fully articulated: ...(V).N.DV[–nas](C)#. These words either have not lost the voiced obstruent from nasal + voiced-obstruent clusters or have borrowed it back after it weakened and dropped out. (It may be that words with full N.D clusters may represent relatively recent (re)borrowings from Malay or other languages.)

Probably because full, ambisyllabic N.D clusters also exist and also are followed by an oral vowel, Rara speakers seem less likely than speakers of other dialects to think that an oral vowel following a medial nasal indicates the presence of a voiced obstruent. As a result there has come to be a limited contrast between oral and nasalized vowels in nasal-initial ultimas (or between N(D) and N before oral vowels).

Examples showing the range of occurrence of nasalized vs. oral vowels after a nasal or nasal + obstruent clusters in Rara:

...N.TV... /tampas/ > [tãm.pas] ‘new (regrowth) jungle’ (27)
...N.DV... /tumbak/ > [tũm.bak] ‘spear’ (204)
....NV[–nas] < N.(D)V[–nas]... /un(d)ak/ > [ʔu.nak] ‘thorn’ (31)
....NV[+nas] < ...NV... /lamak/ > [la.mãk] ‘fat, oil’ (220)\(^{67}\)

Examples that are thought to show the process in Rara of voiced-obstruent loss after nasals:

/aNba/ > */uni0294ãm.ba* > */uni0294ã.m(b)a/ > [ʔã.mã:] ‘old (thing)’ (324)
/aNdo/ > */uni0294ãn.do* > */uni0294ã.n(d)o/ > [ʔã.no:]~[ʔã.nõ:] ‘day’ (19)

Example of contrast in Rara of oral vs. nasalized vowel between nasals: (NVN vs. NVN):

/uman/ > [ʔu.mãn] ‘eat’ (232) vs. /jam(b)aŋ/ > [ja.makŋ] ‘a kind of big cooking pot’ (223)

### 6.6.2 Reverse nasal spread in Rara

The status of nasality in Rara (and in Salako) appears to be somewhat in a state of flux, although thorough-going changes may lie far in the future. There is considerable (free) variation in the use of both forward and reverse nasal spread. Rara may exhibit more of such variation than Salako. Some of the variation results from personal, generational and geographical differences. Some of it occurs in successive repetitions of the same word by a single speaker on the same or different occasions. Many words whose only nasal consonant is a word-final coda exhibit alternation between oral and nasal rimes. Both Rara and Salako show instances of reverse nasal spread from word-final nasal codas that seemingly contrast

\(^{67}\)Only the last example shows forward nasal spread in the ultima. Nasalized vowels in the penult in these words result from reverse nasal spread.
with instances of non-spread. Such contrasts might result from variation in the use of reverse nasal spread.

Examples of contrast between nasal and oral rimes in Rara (use vs. non-use of reverse nasal spread):

[la.u.t än] ‘sea’ (8) vs. [bün.tatn] ‘coconut’ (38)
[län.tïn] ‘raft’ (197) vs. [ʔän.ikan] ‘urine’ (71)
[...ga.wän] ‘crow’ (52) vs. [...ʔa.bakŋ] ‘cock’ (56)
[ka.rïn] ‘dry’ (172) vs. [ʔän.ikan] ‘urine’ (71)
[ba.ri.ũn]~[bri.ũn] ‘wind’, possibly ‘strong wind’ (13) vs. [ʔu.yuŋ] ‘hen’ (56) and [ʔu.tukŋ]
(a guest) coming back’ (140)

Examples of varying use of reverse nasal spread by a single Rara speaker:
[ma.däm]~[ma.dabm] ‘rotten’ (speaker #1) (305)
[ʔu.lũn]~[ʔu.ludn] ‘slave’ (speaker #1) (259)

Examples of varying use of reverse nasal spread by three Rara speakers, not on the same occasion:
[ŋa.ruŋ] ‘night’, “not [ŋa.ruŋ]” (speaker #3) vs. [ŋa.ruŋm] (speaker #1) (22)
[mä.sũm] ‘sour’ (speaker #1) vs. [ma.supm], “not [mä.sũm]” (speaker #3) (239)
[(na).re.kîn] ‘to count’ (speaker #1) vs. [(na).re.kînd] (speaker #3) (294)
[bän.tän] ‘longhouse’ (speaker #1) vs. [bän.tagŋ] (speaker #2) (272)
[ga.óu] ‘a kind of big mat’ (speaker #1) vs. [ga.ogŋ] (speaker #3) (280)
[ka.rïn] ‘dry’ (speaker #1) vs. [ka.rikŋ] (speaker #3) (172, 236, 317)

Examples of contrasting use of oral vs. nasal rimes, with comments re ‘correctness’:
[ŋa.ruŋ] ‘night’, “not [ŋa.ruŋ]”, speaker #3 said emphatically, (22) vs. [mä.sũm] ‘sour’, “not
[ mä.sũm]”, speaker #3 said. (329)
[da.ruŋm] ‘deep’ (speakers #1, #3); “not [da.ruŋ]”, speaker #3 said. (316)
[ja.ruŋm] ‘needle’; neither a variant nor a comment is available for this example, but it is comparable
to the preceding examples. (213)
[la.u.t än] ‘sea’ (8) vs. [ma.tatn] ‘to throw away’(155), [bün.tatn] ‘coconut’(38)

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68See footnote 26.
69In this set of examples all of the nasal spread shown is reverse spread. The lack of reverse spread in the penult of
‘coconut’ is likely to result from the tendency for optional variation between oral and nasal endings of such words
or from the transcriber’s failure to hear/record vowel nasalization in that syllable. The first pair of words in this
group is phonetically similar but may be grammatically different in that the /(-)an/ ending of ‘sea’ is probably a
suffix, whereas ‘coconut’ has no suffix. (In Salako, the neighboring language, many words end with a suffix, /-an/.
This word may be influenced by the equivalent Salako word.)
70A different speaker pronounced this word as [ka.rikŋ] ‘dry’ (172)
71In this set of examples the forms given by speakers #2 and #3 are more conservative than those given by #1 in
that they usually have oral endings rather than the nasal endings that result from reverse nasal spread. In their
elicitation situations speakers #1 and #2 presumably gave their own natural pronunciations. Speaker #3, on the
other hand, is likely to be less conservative in ordinary speech than in the elicitation situation, because he was
helping to check data and focused on giving ‘correct’ pronunciations.
[län.tîŋ] ‘raft’, “not [län.tîkŋ]”, speaker #3 said. (197)

Among available Rara words, the pairs in which oral and nasal endings appear to contrast are rather few at this point. Phonological environment(s) in which this (apparent) contrast occurs are limited. Furthermore, it is not unlikely that (all) speakers vary oral endings with nasal endings in pronouncing some of the words, including examples for which only one of the possible variants has so far been observed. However, if this kind of near-contrast situation persists and grows more common, it will indicate that a contrast of either vowel-nasality or simple vs. preploded nasals is developing in ultimas that end with a nasal. This kind of contrast has not been observed in other Bidayuh dialects. However, it does exist and on a somewhat broader scale in Rara’s neighbor language, Salako.

Use of reverse nasal spread appears to be increasing generally in Rara, although contrasts coming from it are limited. Whether it occurs or not is also optional. At this stage the option of using it seems to be acceptable in only some words but not in all potentially affectable words.

6.6.3 Observations re nasal spread in Rara

Forward nasal spread into the rime of the ultima is increasing with some decrease in the vowel orality that has been the remnant and principal identifying feature of (nearly) lost voiced obstruents in clusters with nasals. The difference between (V).NV[+nas] sequences and (V)N.DV[–nas] sequences continues to erode. Most of the latter have become (V).N(D)V[–nas] but they continue to move in the direction of (V).NV[ + nas]. Perhaps distinctive vowel orality will be retained longer in very common words and/or in minimal pairs and the ultima vowel in other words will be permitted to nasalize freely in nasal environments. So far no minimal pair for vowel nasalization has been found in the Rara data. In any case the Rara speaker who gave an opinion about this definitely does perceive a voiced stop between the nasal and the vowel in words where an oral vowel follows a nasal consonant.

Reverse spread of nasality is also increasing in Rara, particularly in nasal-final words that exhibit no forward spread toward the ultima because the word contains no other nasal to initiate nasality or pass it on. Reverse spread has created a limited nasality contrast where presumably there was not a contrast at an earlier stage. However, if both forward and reverse spread continue to increase, reverse spread, which is both optional and inconsistent, may eventually become standard in all nasal-final words and, thereby, eliminate the present imbalance.

6.7 Summary of nasal spread in Bidayuh as a whole

6.7.1 Environments that promote forward nasal spread

Some types of sounds allow nasality to spread forward in words while other types block or discourage it. Likewise, there are some kinds of larger environments that promote nasal spread more than others. Phonological environments in which nasality is most likely to spread forward are the following:
A vowel between two simple/single nasals\(^\text{72}\) is usually strongly nasalized. This happens especially where NVN is a syllable, and also where the second nasal is the onset of the ultima, as in the following construction: \(\ldots\)NVNVN\(\ldots\) \(\rightarrow\) \([\ldots\text{N.N.N}\ldots]\). An inventory of environments and their phonetic outcomes includes: NVN \(\rightarrow\) \([\text{NVN}]\); NVVN \(\rightarrow\) \([\text{N.VVN}]\); NVNVN \(\rightarrow\) \([\text{N.NVN}]\); NVNVN(C) \(\rightarrow\) \([\text{N.NN}\text{N}(C)]\).

Examples of forward nasal spread to vowels that occur between two nasals:\(^\text{73}\)

\[
\begin{array}{ll}
\text{N.VN/} & /\eta/ > [\eta/\text{an}] \text{‘3rd person plural’ (Biya) (345)}
\text{N.VN.V/} & /\mu/ /\eta/ > [\mu./\text{ânu}n] \text{‘to descend’ (Gumbang) (143)}
\text{N.VN.C/} & /\mu/ /\eta/ /\eta/ > [\mu./\eta/\text{ânu}p] \text{‘to lose (something)’ (Sembaan) (161)}
\text{CVN.V/} & /\eta/ /\eta/ > [\eta/\text{man} â/\text{mu}n] \text{‘cloud’ (Bukar, most Sadung dialects) (12)}
\text{N.VN.C/} & /\mu/ /\eta/ /\eta/ > [\mu./\eta/\text{muh} â/\text{mu}h] \text{‘to bathe’ (Singai) (168)}
\text{N.VN.N/} & /\eta/ /\eta/ > [\eta/\text{muh} â/\text{mu}h] \text{‘bird’ (Singai) (47)}
\text{N.VN.V/} & /\eta/ /\eta/ /\eta/ > [\eta/\text{man} â/\text{mu}n] \text{‘how many?’ (Rara) (334)}
\end{array}
\]

Laryngeals have an affinity for nasality. Perhaps this is because they can be pronounced with the velic closed or open. Both of the Bidayuh laryngeals, /h/ and /\eta/, allow nasality to spread forward to the vowel that follows. However, /h/ is stronger and more consistent in this than /\eta/. Not only does /h/ attract nasality and pass it on, but it also intensifies it: /\text{NV}/ > \([\text{NV}\ ̃\text{h}]\); /\text{NV}/ /\eta/ /\eta/ > \([\text{NV}\ ̃\eta\ ̃\text{h}]\); /\text{NV}/ /\eta/ /\eta/ /\eta/ > \([\text{NV}\ ̃\eta\ ̃\eta\ ̃\text{h}]\).

The palatal nasal, /\text{N}/, is a strong nasalizer in Bidayuh. Vowels that become nasalized by /\text{N}/ may have perceptibly stronger nasal quality than vowels affected by other nasals. In many of the dialects /\text{N}/ has an optional variant, the palatal semivowel nasalized, [\text{N}]. Like /\text{N}/ itself, the nasalized semi-vowel is a strong transmitter of forward nasal spread. In some dialects [\text{N}] and [\text{N}] optionally vary with one another even in word-initial position. This is in spite of the fact that in ordinary usage /\text{N}/ itself does not occur in word-initial position.\(^\text{74}\) Because word-initial position is not a normal one for Bidayuh /\text{N}/, and because ordinarily /\text{N}/ does not initiate nasal spread, it is clear that [\text{N}] in word-initial position is an optional, although persistent, variant of the palatal nasal phoneme. In some dialects this optional

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\(^{72}\)Simple nasal, as used here, refers to a nasal consonant that is not clustered with an obstruent, including a weakened or reduced voiced obstruent, nor is preploded. It does not include N.T, N.D, N(D) nor (V)dN, (V)tN.

\(^{73}\)In these examples, if the penult vowel is nasalized in addition to being marked full or reduced, it is not feasible to use both diacritics over the same vowel. Therefore, the full-reduced symbol will appear in the phonemic form only and the symbol for nasalization will appear in the phonetic form.

\(^{74}\)However, it can be heard in some borrowed, onomatopoeic and ‘expressive’ forms.
variation occurs in intervocalic position as well. However, in other dialects there appears to be contrast; note the following evidence: /mâŋap/ > [mâŋâp] ‘lost’ (161) vs. /ŋâyam/ > [ŋâ.ȳâm] ‘to weave (mat)’ (Biya) (211).

Optional rule for many dialects: /ŋ/ > [n]~[ŋ] / #__, NV._V.

The role of intervocalic [ŋ] in words of the phonetic structure [NV.ŋ̃V(C)] is potentially ambiguous. In this context it may represent /ŋ/ or may represent an instance of /y/ nasalized by forward nasal spread from an onset nasal in the penult. This ambiguity, along with the fact that other languages in the Bidayuhs’ repertoire do have word-initial /y/, can cause Bidayuh speakers to be unsure whether they are saying /ŋ/ or /y/ in a nasal(ized) environment. Perception in this situation varies somewhat among the dialects. However, as a rule of thumb, if intervocalic [ŋ] varies to [n] and is followed by a nasalized vowel, it represents /ŋ/. If it does not vary to [n], it represents /y/.

Where the phoneme /y/ occurs between vowels and there is no nasal in the environment to spread nasality to it, /y/ will not be confused with /ŋ/ since /y/ is oral and unambiguously /y/, as in /daya/? > [da.ya?] ‘person’ (Singai) (257). If the phoneme /ŋ/ occurs between vowels (except where a following voiced obstruent has been lost), nasality spreads forward to nasalize the following vowel. Thus, orality of an ultima where /y/ occurs between oral vowels contrasts with nasality of the ultima where /ŋ/ occurs between nasalized vowels or before a nasalized vowel.

Example of intervocalic /ŋ/ > [n]~[ŋ] with nasal ending vs. intervocalic /y/ with oral ending:
/ŋaþah/ > [bu.ñuh]~[bu.þuh] ‘lime’ (245) vs. /ŋþah/ > [pa.þih] ‘space above fireplace for drying firewood’ (228) and /ŋayuh/ > [ka.þuh] ‘wood, thing’ (Singai) (229)

Examples of forward nasal spread involving laryngeals, semivowels and /ŋ/:
[NVh]/ /mah/ > [mâh] ‘padi field’ (Bistaang) (194)
[NVhV(C)] /mâhu/ > [mâ.hû] ‘to say/talk’ (Sembaan) (181)
/ŋñap/ > [ni.þëp]~[ýi.þëp] ‘to drink’ (Bukar) (235)
[VN?V]/ /umaʔ/ > [u.ʔmaʔ] ‘padi field’ (Rara) (194)
[CNVwVh]/ /mawah-mawah/ > [mî.wâh.mî.wâh] ‘to play’ (Gumbang) (139)
[CNVwVh]/ /piŋayoh/ > [pi.ɲâ.yûñî] ‘canoe paddle’ (Singai) (199)
[CVn/(y)NyVh]/ /mîŋâyuh/ > [mî.nâ.ñûñî]~[mîŋâyuh] > [mî.nâ.ûñî]~[mî.ӳûñî] ‘rainbow’ (Bukar, Terbat, Bibengih, Bukar-Sadung dialect) (17)
[NV/y/nVh]/ /mâŋuph/ (or /mâ.yûnh/) > [mâ.ñûñî]~[mâ.ûñî] ‘skinny’ (Anah Rais) (317)
[NVÝ/nVN] /ŋaŋam/ (or /ŋaŋam/) > [ŋi.ñaŋam]~[ŋi.ûŋam] ‘to weave’ (Pinyawa)’ (211)
[NVÝVN] /ŋyaŋam/ > [ŋa.ûŋam] ‘to weave’ (Biya) (211)

There is no example in the Biya data where the phoneme /ŋ/ exhibits optional variation of [n] to [ŋ] in intervocalic position such as occurs in other central dialects and some eastern and western dialects. Nor is there neutralization of the contrast between /ŋ/ and /y/ as phonemes in this position. Compare /ŋâyam/ > [ŋâ.ȳâm] ‘to weave (a mat)’ (211) with /mâŋap/ > [mâŋâp] ‘to lose something’ (Biya) (161).
6.7.2 Environments that hinder or prevent forward nasal spread

Some environments or specific sounds are blockers of forward nasal spread, specifically obstruents and word end. The liquid, /r/ (or in some dialects /l/), also blocks nasal spread in most dialects (cf. Boutin, 2000 on Bonggi). In Bukar and Sadung dialects, which have two liquid phonemes, both liquids block forward spread of nasalization. Exceptions that have been noted are Gumbang and to a lesser extent other Jagoi dialects. In those dialects the liquid can allow nasality to spread forward. In examples where the liquid occurs between vowels and the preceding vowel is nasalized by forward nasal spread, the liquid optionally occurs as a nasalized lateral, [l̃], nasalized vibrant, [r ̃] or as an apical nasal, [n]:

Optional rule: /r/ > [+nas]/#NV[+nas]_V.

If a voiced obstruent occurs anywhere in a word, even as coda of the ultima, forward nasal spread tends to be weaker or suppressed, as in the following example:

/sinod/ > [sinɔd] ‘comb’ (Gumbang) (209)

As already noted, voiced obstruents that have been weakened and (nearly) lost from medial clusters continue to block nasal spread in most words in most dialects, evidence that they are or have been there. In some dialects this principle is being relaxed to some degree by ‘new’ nasality.

Forward nasal spread from prefixes has yet to be studied in detail. It often occurs, but there is some degree of optionality or variability in how it is applied. The replacive-nasal prefix that occurs in all dialects can initiate forward nasal spread because it is followed by a vowel, but the syllabic-nasal prefix that occurs in a subset of stems in Bukar and some Sadung dialects cannot initiate nasal spread because it is always followed by a (voiceless) obstruent. It appears that the replacive-nasal prefix is more likely to cause spread where it replaces a voiceless obstruent than a voiced one. Forward spread from a nasal prefix is quite likely to occur with vowel-initial roots unless nasal spread to the ultima will be blocked by a following consonant. In that case nasality is likely to be weaker or not occur.

6.7.3 Reverse nasal spread in various environments

In nasal-final ultimas. By far the most common position for reverse nasal spread in Bidayuh is the ultima, where the majority of syllable-final nasals occur. Reverse nasal spread happens most commonly in words where the coda of the ultima is the only nasal. The nasal loses its (non-phonemic) protective prepllosion, exposing the ultima vowel to absorb nasalization from that nasal. The rime of the ultima of that word comes to have a nasalized vowel and a simple nasal coda: .C[–nas]V[–nas]d/tN# > C[–nas]V[+nas]N#.

In pre-ultima closed syllables. Another position where reverse spread commonly occurs is in pre-ultima closed syllables: (C)VN.C…# > (C)VN.C…#. Because such codas are not preploded and therefore do not protect the vowel from reverse nasal spread, they are quite likely to nasalize the vowel of the syllable: CVN.CV(C) > C̃VN.CV.CV(C); (C)VN.CV(C) > (C)VN.CV(C), etc. This applies only to Bukar, the Sadung dialects, Biatah and Rara, which are the only dialects where pre-ultima syllables are closed (by a nasal). Note that, although the coda of a word-final syllable can be almost any consonant, nasals (excluding /ν/) are the only possible codas of pre-ultima syllables in indigenous words.
In open syllables. If the dialect (or speaker) is one that practices reverse nasal spread from nasal codas, it is fairly common for nasality to spread backward from a nasal onset to the vowel of an immediately preceding open syllable. It can spread from a nasal onset of the ultima to the penult vowel, from a nasal onset of the penult to the antepenult vowel, from a nasal onset of antepenult to the ante-antepenult vowel. In this situation preplosion is not involved because we are talking about open syllables. Preplosion occurs only in word-final nasal codas.

In contexts of less focus on pronunciation. As is normal in any language, an effort for precise pronunciation is usual in elicitation situations and is more common in formal situations than in casual speech. In non-phrase-final position in longer utterances pronunciation tends to be less ‘precise’ than in final position, especially where the ultima is the peak syllable of the word, as it is in Bidayuh. The result is that some phonetic features may be reduced or lost in the less focused positions or situations, including some features or segments that are otherwise contrastive. It is common in Bidayuh, for example, for word-final and intervocalic glottal stop to be weakened or lost in the middle of an utterance that is spoken at normal conversational speed. In informal speech as well, some features may be weakened or omitted. Nasal preplosion is an easily-omitted feature, which contributes to reverse nasal spread being fairly common.
7 Nasals in Bidayuh morphology

What follows is not presented as an in-depth description of Bidayuh morphology. It does not attempt to identify or explain all morpheme types. It does present some observations made by inspecting words that include morphological prefixes. Some of those words were offered by Bidayuh speakers in the process of wordlist collection; others were noted in looking at a few published texts. However, the majority of the words used here are based on a fairly detailed examination of many entries and definitions in the Bidayuh-English Dictionary (of the Biatah dialect, 1988) assembled by the late Datuk William Nais.\textsuperscript{76}

In grammatical terms Bidayuh words may consist of a root alone, a stem that consists of a root plus one to three prefixes, two roots compounded or a root or stem reduplicated in one of several ways.\textsuperscript{77} One or both parts of a reduplicated word may include a prefix.\textsuperscript{78}

Suffixes as such have not been identified. However, a few morphemes, essentially singular person-markers, can be attached to the end of some roots or stems, no more than one of them to any one word. These morphemes are viewed here as post-clitics, not suffixes, because they can refer to phrases as well as words (see §7.2.1).

The grammatical function of a word may be verbal, with lexical content referencing an action or state; nominal, with lexical content referencing a being, a thing or an abstract concept; descriptive, with lexical content describing or limiting a noun or verb.

\textsuperscript{76}Most examples in this section are from the dictionary and are written more or less phonemically. Exact pronunciations, including information about nasal spread, were for the most part not available. The dictionary does not group together or cross-reference words that are based on the same root. Therefore, finding and associating the forms in any given word-set was to some extent a hit-or-miss process. Most transcriptions of Biatah data in this paper follow Nais’s transcriptions, with a few modifications including the following:

a) addition of glottal stop to words that were known to include it;
b) use of semivowel symbols for non-syllabic high-vocalic sounds in word-final position;
c) use of symbols ‘ŋ’ and ‘ŋ’ rather than the digraphs ‘ny’ and ‘ng’ used in the orthography;
d) use of the macron diacritic for full /ā/ and the breve for reduced /ă/;
e) use of ‘-‘ in phonemic data to mark morpheme boundaries and ‘.’ in phonetic data to mark syllable boundaries;
f) simplification and/or shortening of many glosses, although much of the glossing retains the original words and flavor of the dictionary entries.

\textsuperscript{77}Reduplication may be partial or complete. The nature of reduplication in Bidayuh has yet to be thoroughly explored, but for a first attempt to do so cf. Vega and Tan (2005).

\textsuperscript{78}For additional consideration of reduplicated and compounded words, see §4.3.2 and §4.3.3.
7.1 Grammatical meaning

Every language has grammatical meaning in addition to the more familiar lexical meaning. For communication to take place both kinds of meaning must be imparted. Grammatical meaning imparts such information as the following, although not all of these are found in Bidayuh:

- identification of the participants in an event—persons, animals, things or concepts, including the instrument(s) used to do something; roles of the participants—actor, patient/undergoer or beneficiary of action; instrument used to perform action, etc.;
- timing of the event in relation to a more fixed time; whether the event has or has not been completed; whether the event is punctiliar, continuous, sporadic, repetitive, etc.; the direction or position in which the event happens, etc.;
- kind of sentence: declaration, question or command; negative, affirmative, etc.;
- active or passive voice;
- attitude of the speaker toward the event or its participant(s).

Depending on how the specific language works, such meanings may be communicated by one or more grammatical devices:

- **morphology**, the use of affixes that are added to lexical roots or stems. Examples are person, tense or aspect affixes.
- **particles**, which are free (unattached) words, often small ones, usually unaffixed. Examples include prepositions and conjunctions.
- **clitics**, which are affix-like morphemes attached phonologically to a single word as affixes are. They may relate to a whole phrase or sentence or even a paragraph, not just to a single word. Cf. §7.2.1.
- **syntax**, order and arrangement of the parts of an utterance according to patterns of that language for forming words, phrases, sentences, paragraphs, discourses.

All languages have syntax; most of them make use of it for communicating at least some of the grammatical meaning. Some languages, e.g., Chinese, use very few (or no) affixes and are able to transmit grammatical meanings mainly through syntax and particles. Such languages usually use function words/particles to transmit various kinds of grammatical meaning such as space and time relationships, logical relationships, connections between portions of a discourse, participant reference and whatever else the particular language requires to be included.

Still other languages, e.g., Latin, make much use of affixes to show relationships and functions. For these languages syntax is less crucial. Bidayuh lies between the two extremes. It utilizes syntax for some purposes but also has a modest inventory of prefixes (about fifteen, some of which may be no longer productive). Bidayuh prefixes are derivational. They change the grammatical function, or roles, of the roots and stems to which they attach.


7.2 Elements of Bidayuh morphology

7.2.1 Morphemes added at the end of words: suffixes or post-clitics?

Bidayuh (Biatah dialect) has at least three singular person-marking morphemes that can be attached at the end of words. Each of these is just one syllable, and they look like suffixes. Although the difference(s) between a clitic and an affix may not always be easy to assess, these morphemes are viewed here as (post-)clitics, not suffixes. They can relate to whole phrases as well as to single words. The three post-clitics mark a first-, a second- and a third-person singular possessor or the recipient or beneficiary of an action. In Biatah dialect the specific morphemes are + ku? ‘first-person singular possessor, recipient or beneficiary’; + mu > [mũ] ‘second-person singular (informal)’; and + i ‘third-person singular’. Free pronouns comparable to these three post-clitics occur also. Three of the free pronouns that indicate first-, second- and third-person singular have two syllables. Two of them have reduced /ă/ as penult. In Biatah dialect the pronouns are: /ăku/ ‘first-person singular subject’ /ku/ ‘second-person singular subject’ and /ăy/ > [ǎ.y] ‘third person singular subject’. In Biatah and other dialects the free form of each of the pronouns has as its grammatical roles subject (actor) and direct object (patient/undergoer).

7.2.2 Morphemes added at the beginning of words: prefixes

Compared with some languages, Bidayuh does not have a highly complex word structure. As already mentioned, the typical root consists of two syllables, although some roots have only one. Up to three prefixes can be added, two of which will add a syllable (one syllable each) to the root. The principal affixes are a set of derivational prefixes that interact with the root and with one another in complex relationships. Much of the grammar relies on these prefixes, either individually or in various combinations, to signal or change grammatical functions, roles or word-classes of the roots or stems to which they attach. Three more morphemes with similar functions occur near or at the beginning of a word. These are -VC- infixes although they may sometimes look like prefixes and are part of the general prefixal system. These will be addressed more specifically farther on (cf. §7.4.1).

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79 Post-clitics attach phonologically to the end of one word, just as a suffix would. However, they may relate grammatically to a whole phrase, sentence, paragraph, etc. Because word stress falls on the final syllable in Bidayuh citation forms, and perhaps in context, a clitic receives the stress placement in the word to which it is attached.

80 The third-person singular clitic in most Bidayuh dialects has other uses as well. Some words seem to require it as part of the word. Sometimes it seems to be used as a discourse marker. Possibly it is also used in conversation to fill in hesitation gaps.

81 Although meanings of the singular person-marking clitics and free words are as given, it is not appropriate to use these basic pronominal forms, especially the second-person forms, with persons other than those who are one’s peers or younger. There are respect forms used for talking or referring to more than one person or to an individual whose higher status should be taken into account. The more honorific forms are free words, some of them consisting of more than one morpheme or word. They vary from dialect to dialect.
To attach an exact grammatical meaning or function to each prefix would be difficult or maybe impossible. The role(s) or function(s) of any given prefix seem to overlap with those of one or more other prefixes such that more than one prefix communicates the same grammatical meaning(s). The particular meaning of a particular prefix in a particular instance depends not only on the prefix itself but also on the inherent grammatical and lexical properties of the root to which it attaches. Furthermore, there are phonological rules and constraints that also affect prefix choice in that they determine which prefixes may or may not collocate with which roots or stems. Possible conclusions about grammatical roles or constraints on usage that suggest themselves are rarely consistent with one hundred percent of the data. Such conclusions describe tendencies—even strong tendencies, but virtually all of the tendencies have exceptions.

Forms and presumably functions of the prefixes are fairly similar across dialects, even though the prefixes may play a more extensive role in some dialects than in others.

7.3 A non-segmental morphological feature: penult-vowel dynamic

Some word-sets in some Bidayuh dialects mark different forms of verbs, not (only) by changing or adding prefixes but also by alternations between full /ā/ and reduced /ă/ as penult vowel; /ă/ can replace /ā/, or vice versa. This alternation commonly indicates a difference of mood or voice⁸² imperative vs. indicative mood and/or passive vs. active voice.

The full vowel typically marks imperative mood and/or passive voice while the reduced vowel is more common in active verb forms. In the western dialects, which do not have the full-reduced contrast, similar interplay can occur between /ā/ and /ă/. It is difficult to find minimally differing examples of this contrast in the forms of a single verb—even in dialects that, like Tebakang (eastern), have the complete set of full and reduced penult vowels. Dialects of the Sembaan group also have the full set. Yet a bit of exploration in Tringgus Raya, one of the dialects in that group, did not reveal any word-sets in which the full vs. reduced contrast alone differentiates forms of a verb. When a word-set includes a form with a full vowel and another with the corresponding reduced vowel, the vowel difference is accompanied by an addition or change of prefix. In that group of dialects the full-reduced contrast has a larger role in differentiating lexical items than in distinguishing among verb forms.

As with prefixes, a particular penult-vowel substitution does not necessarily have consistent meaning across word-sets and across dialects. Thus, the specific meaning of a particular full-vs.-reduced substitution, with or without an accompanying change of prefix, may vary according to the semantic and grammatical content of the root.

Examples of contrast between /ā/, full, and /ă/, reduced, penult vowels in verb forms:

/ṭādak/ > [ṭā.dak] ‘(to) smell’, /{N-}(t)ādak/ > [nād.dak] ‘someone smells something (active)’

(Tebakang) (119)

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⁸²See Court 1977:1–3 for a discussion of this kind of phenomenon in Męntu, one of the Sadung dialects.
/tăn/ ‘cook (it)! (imperative)’, /tăn/ ‘bamboo container for cooking’, /{N-}(t)ăn (tubi)/ > /năn (tubi)/ ‘cooks (rice) (active)’, /bi-tăn/ ‘many people are cooking (something)’ (Tebakang) (222)

/ka\uni0304.b/ > [ka\uni0304.b] ‘tie (it)! (imperative)’, /kăb/ > [kăb.b] ‘ties (it) (active)’ (Tebakang) (159)

/ňa\̃/ > [ña\̃] ‘scratch it! (imperative)’, /{N-}(/ña\̃y) > [ŋ̃a\̃̃] ‘scratches something (active)’, /t̃i\̃/ > [ti-g̃a\̃].y ‘was scratched (passive)’ (Tebakang) (122)

/sahu/ ‘burn it! (imperative)’, /săhu/ ‘burned (passive)’, /{N-}(s)ăhu/ > [nă.hū] ‘someone burns something (active)’ (Bunan) (231) This dialect does not have the full-reduced /a/ contrast, but does have a central and low vowel (/a/ and /a/) that are used similarly. This example shows the central vowel alternating with the low vowel in the same way that full and reduced vowels alternate in Tebakang and some other Sadung dialects.

Perhaps more common than its role in differentiating verb forms, the ‘full’ vs. ‘reduced’ contrast /ā/ vs. /ā/ differentiates minimal pairs of unrelated words. In some eastern and central dialects, where the ‘full–reduced’ contrast is more elaborated, there are full and reduced forms not only of /a/, but also of /i/, /a/ and /u/. However, no clear-cut example has been noted in any dialect in which a full vs. reduced non-low vowel contrasts different forms of the same verb.83 The only examples of contrast between full and reduced non-low vowels encountered in any dialect were in unrelated words.84 Examples of full vs. reduced vowels that contrast unrelated lexical items:

/mā/ (Tebakang) (161, 180)

/ɹa\̃/ ‘blowpipe dart’, /ɹa\̃/ ‘sharp, thorn’. These words appear to be semantically related. (Anah Rais) (307, 31)

/ba\̃u/ ‘new’, /bă\̃u/ ‘eagle’ (Upper Padawan dialects, Semaan Group) (323)

/bi\̃a/ ‘can, able to’, /bī\̃a/ ‘wet’ (Anah Rais) (306)

/tūra/ (61), /tūrã/ ‘bone’ (Penrissen, Upper Padawan, Semaan-group dialects, Tebakang) (70)

Only a few dialects have the complete set of four full and four reduced penult vowels: /i, ĩ; ū, ŭ; ā, ă/. The dialects that have all four pairs are Tebakang in the eastern region, Upper Padawan dialects (Anah Rais and Biya) in the central region and the Semaan group dialects (Semaan, Tringgus Raya and Tringgus Bireng). Benuk, a Penrissen (lower-central) dialect, has full and reduced forms of the three cardinal vowels, /i, a, u/; the central vowel occurs, but not in full vs. reduced forms: /i, ĩ; ū, ŭ; ā, ă; a/. Some eastern dialects (Bukar and some Sadung dialects) and some mid-central dialects (Bistaang) and lower central dialects (Biatah) also have four vowel qualities in the penult, but only the low vowel (/a/)

83 However, it is possible that some forms in the data such as the following will eventually demonstrate that some word-sets have one form with a full non-low vowel and another with a reduced vowel of the same quality: Cf. /pā\̃ap/ ‘sucking’, /cā\̃ap/ ‘suck it!’ (Tebakang) (146); /ū\̃e/ ‘vomitus’, /ŋū\̃e/ ‘to vomit’ (125).

84 The eastern and central dialects also exhibit contrasts between non-lengthened and lengthened vowels in the ultima—especially, but not exclusively, /a/ vs. /a/; example: /buha\̃/ ‘fence’ vs. /buh\̃a/ ‘bear (animal)’ (Tebakang) (279). There is some variety among dialects as to which vowels can occur lengthened.
has full and reduced forms; the high vowels and /a/ are not differentiated in this way. The western dialects (Singai, Jagoi) and also Pinyawa’ and Bengoh (central) and Bunan (eastern) do not have the full-reduced feature as such. However, alternation between the low vowel and the central vowel (/a/ vs. /ā/) correlates in some word-sets with the kinds of meaning difference produced by /ā/ vs. /ā/. Rara, which belongs to a different sub-family, does not have full vs. reduced penult vowels, nor does it have a phonemic central vowel in any position in the word. Only the cardinal vowels, (/i, a, u/), occur in the penult.

7.4 Prefixes

Prefixes in the Biatah dialect of Bidayuh will be the focus here because of the richness of data in the Nais dictionary, which is devoted principally to that dialect. Some prefixes consist of a nasal alone and some consist of a CV- syllable in which the C is a nasal. There are also prefixes of those shapes that are not nasals and do not contain a nasal. This presentation will concern itself primarily with nasal prefixes but will also make some reference to non-nasal prefixes. It will consider the functions of the prefixes and phonological constraints that affect them. Until more thorough studies are made of how the language operates in connected speech, details of the prefixal system and related grammatical features are incomplete.

As already stated, a major portion of grammatical meaning in Biatah, perhaps more than in some other dialects, is carried by derivational prefixes that attach to a root or stem and show its grammatical function or role in the particular context. An addition or change of prefix can change the class of the word or its type of function. A prefix can change a noun or adjective root into a verb or vice versa. It can change the transitivity type of a verb. A prefix can make a stative/descriptive verb into an active verb (i.e., intransitive, transitive, ditransitive, causative).

Nasal prefixes, especially the homorganic replacive-nasal, are basic to the prefixal system in all dialects, including changing non-verb roots into active verbs. There are other nasal (and non-nasal) prefixes that function similarly and are used with roots and stems that do not occur with the (homorganic) nasals.

Nominalization of verb roots or stems is achieved by a prefix, most commonly /pi-/, although the functions of /pi-/ are not limited to noun-formation, in that it can also form descriptives and causative verbs. The specific role of a noun prefixed by /pi-/ is determined by the lexical content of the root or stem and by context and syntax. The resulting noun may be the actor or doer of an action, the patient or undergoer of the action (the person or thing to/on whom the action is performed), the beneficiary or recipient of the action, the instrument used to perform the action or an abstract reference to that kind of action or state.

The choice of prefix depends on both grammatical and phonological characteristics of the root or stem. A word formed by the addition of a prefix reflects not only the lexical content of its root or stem

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Some prefixes are rare. In some cases they occur in frozen forms, and it is unclear whether they are still productive or not.
but also the grammatical content of that (kind of) prefix and any collocational restrictions (limitations as to place of occurrence) that are applicable to the prefix and the root or stem.

Phonological rules and constraints play a part in determining which prefixes occur with which roots and stems. For example, the two kinds of homorganic-nasal prefixes occur with obstruent-initial roots only; /τ/-initial roots or stems do not occur with any single-consonant prefix, including those used with vowel-initial roots. In accordance with canonical patterns of Bidayuh, /τ/-initial roots take only syllabic prefixes—i.e., CV-.

Single-consonant (C-) prefixes and full-syllable (Ci-) prefixes that contain the same consonant can be viewed as phonologically determined variants of one another with their distributions dependent on the kind of sound—vowel or consonant—with which they occur. Although it would be possible to treat /i/, the default prefix vowel, as an epenthetic vowel, predictably inserted between a consonantal prefix and the next consonant, it is here viewed as part of each Ci- prefix. In part this is because there are some (non-nasal) Ci- prefixes for which single-consonant counterparts have not been recognized.

In general, the prefixes are paired; each single-consonant prefix corresponds to a CV- prefix in which that consonant is the C. If the root is vowel-initial, the prefix should be a single consonant. If the root is consonant-initial, the prefix should be a full syllable, CV-. The prefix vowel is almost always /i/. The prefix consonant may range through the whole gamut of Bidayuh consonant phonemes: obstruents, nasals, liquid. Only the laryngeals (/u̯/ , /h/), the semivowels (/w/, /y/) and the voiced affricate (/j/) are not found as prefixes, nor are /l/ and /c/, which appear not to be basic to the phonemic system.

7.4.1 First-order prefixes

First-order prefixes in Bidayuh consist of a single consonant and are those that can occur closest to the beginning of the root. There are three types of first-order, single-consonant prefixes:

a) All dialects use the homorganic replacive-nasal prefix for (some) obstruent-initial roots. In general, the root-initial obstruents are voiceless, but some are voiced. This nasal prefix replaces the root-initial obstruent with the nasal made at the same place of articulation and becomes the onset of the penult.

b) The homorganic syllabic-nasal prefix is found in some words in Bukar and in most Sadung dialects. The syllabic nasal is prefixed to the beginning of a root that begins with a voiceless obstruent, but it does not displace anything. It becomes part of a stem-initial nasal + voiceless-obstruent cluster.

c) The single-consonant prefixes include several consonants that are used to prefix vowel-initial forms.

Because they consist of a single consonant, they can attach to a vowel-initial root without adding a syllable. They merely add an onset to the V(C) penult of the root. These consonants include nasals /ŋ-/ , /m-/ and in some dialects /n-/ , as well as the non-nasal prefixes /k-/ and /r-./.

Addition of any of the above prefixes forms a new word that has a different initial consonant from that of the root. The new word belongs to the same lexical word-set as the root, but the prefix changes its grammatical usage. Some obstruent-initial roots can occur with both of the homorganic-nasal prefixes,

86It should be noted that the frequently occurring CV prefixes, /bi-/, /pi-/ and /si-/ , apparently do not have a single-consonant prefix to which they are paired. It is interesting to note that these constitute the same sub-set of Ci- prefixes that can occur with vowel-initial roots.
but these two kinds of prefix do not occur together in the same word. In some cases the two resulting words differ in (grammatical) meaning; in other word-sets the two words appear not to have different meanings but possibly may differ in grammatical function in ways that are not obvious.

The homorganic\(^{87}\) replacive-nasal prefix. A notable feature of Bidayuh and related languages is a prefix consisting of a nasal consonant that can be added to an obstruent-initial root, replacing the initial obstruent. When added to the root, the nasal assumes the same place of articulation as the obstruent and replaces the obstruent. Because one consonant replaces another, no additional syllable is added. This is a very common and basic derivational prefix of Bidayuh. It is represented here as \{N-\}, a summary symbol. It has four realizations: /m-/, /n-/, /p-/ or /b-; /n- (apical) replaces /t/ or /d/; /p- (palatal) replaces /s/, /c/ or /j/; /ŋ- (velar) replaces /k/ or /g/.

The replacive-nasal prefix can change a noun or adjective root into its related (active) verb, commonly yielding a transitive or causative verb, or it can change a verb root into another, related verb form. It is used only with obstruent-initial roots. A large sub-set of obstruent-initial roots take this prefix, but not all do. Some obstruent-initial roots, as well as roots of other types, use other kinds of prefixes to achieve the same kinds of meaning. Roots that begin with /t/ do not take any of the single-consonant prefixes.

Examples from Biatah dictionary: obstruent-initial roots with replacive-nasal prefix:

Noun root > transitive verb stem
/bukut/ ‘hard blow with fist’, \{N-\}(b)ukut/ > [mu.kut] ‘to sock with fist’ (Biatah-Nais) (178)

Noun root > intransitive (transitive?) verb stem:
/tigaʔ/ ‘heel, a kick with hind leg’, \(N\)-(t)igaʔ/ > [ni.gaʔ] ‘to kick (something?) with the heel, to kick backwards’ (Biatah-Nais) (113)

Adjective root > transitive verb stem:
/jakit/ ‘contagious’, \(N\)-(j)akit/ > [na.kit]\(^{88}\) ‘to vaccinate’ (Biatah-Nais)

Intransitive (transitive?) verb root > transitive verb stem:
/gutos/ ‘rub/wipe with a cloth’, \(N\)-(g)utos/ > [ŋu.t] ‘rub something off, wipe off’ (Biatah-Nais) (294)

Examples from wordlists: obstruent-initial roots with replacive-nasal prefix:
/piliʔ/ > [pi.liʔ] ‘choose! (imperative)’, \(N\)-(p)iliʔ/ > [mĩ.liʔ] ‘chooses’ (Tebakang) (164)
/biriʔ/ > [bĩ.riʔ] ‘sell! (imperative)', \(N\)-(b)iriʔ/ > [mĩ.riʔ] ‘sells’ (Tebakang) (263)
/tand/ > [tän.ku:] ‘steal! (imperative)', \(N\)-(t)and/ > [nän.ku:] ‘steals (active)’ (Tebakang) (163)
/jogon/ > [jõ.gõn] ‘give (something to someone)!' (imperative)', \(N\)-(j)ogon/ > [ŋõ.gõn] ‘gives (something to someone) (active)’ (Tebakang) (162)

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\(^{87}\)Homorganic: see footnote 22.

\(^{88}\)The penult vowel was not marked as full or reduced in the dictionary.
The homorganic syllabic-nasal prefix of Bukar-Sadung. Syllabic nasals that function as prefixes occur principally in some Bukar and Sadung\(^9\) dialects, but may be less used in Bukar than in the Sadung dialects. Although the replacive-nasal prefix is found in every Bidayuh dialect including Bukar and Sadung, the syllabic-nasal prefix occurs principally in the eastern dialects. A syllabic nasal is a vowelless phonetic syllable that consists only of a nasal consonant. The nasal is somewhat lengthened and has a bit of syllabic ‘pulse’. When the word is pronounced as a citation form, the syllabic nasal is usually initiated by non-phonemic glottal stop as though it were a word-initial vowel. Like the replacive nasal, the syllabic nasal is homorganic with the initial obstruent of the root, but unlike the replacive nasal, it does not displace or replace the obstruent. It merely attaches to the beginning of the root, creating a word-initial cluster of nasal + voiceless obstruent (> \[#N\]). It is likely that the syllabic nasal is thought of as though it were a word-initial VN syllable, either uN, øN or iN.

The syllabic-nasal prefix adds a phonetic syllable to the word to which it is prefixed. It forms a word-initial consonant cluster, nasal + voiceless obstruent.

Functions of the homorganic syllabic-nasal prefix of Bukar and Sadung appear to overlap partially with those of the homorganic replacive-nasal prefix. Although these two nasal prefixes do not occur together in the same word, the Bunun wordlist contains a number of examples in which the same root occurs with the two nasal prefixes separately. In some of the word-pairs where a root occurs with each of the prefixes it appears to have the same grammatical meaning with each while in other such pairs the two meanings differ. Where the meanings differ, the nature of the difference is rather unclear, especially in cross-dialect comparisons within Bukar and Sadung dialects. In some examples the syllabic nasal changes a non-verb into a verb stem (noun/adjective root > active verb) just as the nasal-replacive does in other words in the same dialect and in equivalent words in other, closely related dialects. If the root is a verb, the syllabic nasal can change its transitivity, making it transitive by addition of an object (intransitive > transitive/causative). There are Bukar and Sadung roots, some of them verbs and some of them non-verbs, that take the syllabic-nasal prefix but not the replacive-nasal, and there are many more roots that take the replacive-nasal prefix but not the syllabic nasal.

Not all word-initial syllabic nasals are prefixes. The roots of some words that have initial syllabic nasals are comparable to roots in other dialects that do not occur with a syllabic nasal or any prefix. Some variety in the function of such words depends on whether the root consists of one syllable or two,

\(^9\)Although Tebakang is a Sadung dialect, it apparently does not normally use the syllabic nasal to form either verbs or non-verbs. The only instance noted was one word that exhibited optional variation between a word-initial syllabic nasal and a word-initial #VC syllable.
on whether it is a noun or descriptive vs. a verb, and on the lexical content of the root. The reasons for occurrence of a syllabic nasal with a monosyllabic noun root that lacks a related verb form almost certainly differ from reasons for its occurrence as a prefix. A syllabic nasal that occurs with monosyllabic noun or descriptive roots is the eroded remnant of a (C)VN penult that may once have been part of the root itself. All that remains of the penult is the nasal. In Bukar and some Sadung dialects a vowel usually occurs before this kind of nasal forming a word-initial syllable, (#VC.). In words where the syllabic nasal is a (productive) prefix, most of them verbs, an initial vowel is less common.

With some disyllabic noun roots and descriptive roots, addition of the syllabic nasal yields an active verb, transitive or causative. With other disyllabic non-verb roots, most of them nouns, the syllabic-nasal prefix may be the remnant of a pro-clitic, possibly a classifier, a genitive marker or some other kind of connecting morpheme. Especially with disyllabic noun roots that lack a related verb form, use of the syllabic nasal may have become somewhat optional. With disyllabic verb roots it is a prefix that changes the grammatical function of the verb.

In the examples below the following functions of the syllabic nasal can be observed:

a) changes a noun root into a verb stem, e.g., ‘hunting’ and ‘hear’;
b) adds a ‘participant’, making an intransitive verb root transitive, e.g., ‘stand’ and ‘return home’;
c) has the same meaning and grammatical function as the replacive-nasal prefix, e.g., ‘bury (a human or animal)’.

Examples in Bunan: syllabic nasal with monosyllabic noun or modifier roots and no apparent difference of meaning:

/N:/uni02D0-kay/ > [ʔŋː.kɔː] ‘tail’ (Bunan) (50)
/N:/uni02D0-pat/ > [ʔmː.pat] ‘four’ (Bunan, Bukar-Sadung dialect) (284)

Examples in Terbat: syllabic nasal with disyllabic noun root and no apparent difference of meaning:

/N:/uni02D0-tura/ > [ʔnː.ʔu.raʔ] ‘(a) fly’ (Terbat) (61)
/N:/uni02D0-kaŋi/ > [ʔŋː.ka.ɲiː] ‘shadow, image’ (Terbat) (18)

Example in Bukar: syllabic nasal as optional antepenult of non-verb:

/(N:/uni02D0-)tāŋan/ > [ʔnː.ʔa.ŋan]~[tā.ŋan] ‘longhouse’ (Bukar) (272). Cf. /tāŋan/ > [tā.ŋan] ‘longhouse’ (Tebakang). Speakers of some other Sadung dialects apparently use only the syllabic-nasal form of this word.

Examples in Bunan: syllabic-nasal prefix with disyllabic noun root; noun root > intransitive (or transitive?) verb stem:

/tærun/ > [tã.ɾudn] ‘the bush’, /(N:/uni02D0-)tærun/ > [ʔnː.tæ.ɾudn] ‘hunting’ (Bunan) (27)
/kapinj/ > [kã.piŋ] ‘ear’, /(N:/uni02D0-)kapinj/ > [ʔŋː.kã.piŋ] ‘to hear’ (Bunan) (87, 117)

Examples in Bunan: verb roots with replacive-nasal and syllabic-nasal prefixes that have different grammatical meanings; replacive-nasal form > intransitive verb stem, syllabic-nasal form > transitive/causative verb stem:

/(N:/p)ijo/ > [mĩ.joːŋ] ‘to stand’, /(N:/p)ijo/ > [ʔmː.pi.jɔŋ] ‘to stand something up’ (Bunan). (Cf. /pijog/ > [pĩd.joːŋ] ‘to stand something up’ (Tebakang) and /pi.jog/ ‘to place upright, keep erect,
install’ (Biatah-Nais). /p̪ījo:/ may be the root here, even though, as in other examples, this obstruent-initial form involves more participants than /m̪ījo:/, the nasal-initial form. Biatah has an additional form that is vowel-initial: /ājo:/ > [ā.jo:] ‘upright position, height of a person/animal’ (Biatah-Nais) (132)

/{N-}(p)ariŋ/ > [mā.ʁiŋ] ‘to return home (also a euphemism for death)’, /{N-}pəriŋ/ > [t̪mː.pa.ʁiŋ] ‘to return something’ (Bunan) (140)

Examples in Bunan: replacive-nasal and syllabic-nasal prefixes have same meaning:

/{N-}(p)adel/ > [ma.ḍel]~/{N-}pədel/ > [t̪mː.pa.ḍel] ‘to bury (an animal)’ (Bunan) (130)
/{N-}(k)ubur/ > [ŋũ.bur]~/{N-}kubur/ > [ŋ̪o. ku. bur] ‘to bury (a human)’ (Bunan) (130)90

When prefixed to a verb root, the syllabic nasal has grammatical meaning and, thus, is clearly a prefix, as it also is when it makes a noun root into a verb. However, it appears that with some verb roots it produces a grammatical meaning different from that of the replacive nasal, and with other verb roots the two meanings are the same. Most verb and non-verb roots that take the syllabic nasal as prefix are disyllabic.

In dialects that have the contrast of full vs. reduced penult vowels the vowel that has dropped out from the word-initial syllable was most likely a reduced vowel: #(C)V /uni0306N…. In verbs speakers of Bukar and the Sadung dialects tend to use the syllabic nasal with no preceding vowel: #/?Nː-…, but in non-verbs they use a VN-syllable: #/?VN….91

The syllabic nasal, whether functioning as a prefix or not, occurs only with roots that begin with voiceless obstruents. It does not occur together in the same word with the replacive-nasal prefix, and no example has been observed in which it occurs with any other prefix. As noted earlier, most Bukar and Sadung dialects retain both voiceless and voiced obstruents in nasal+obstruent clusters. In general, the nasal and the obstruent in such clusters are fully pronounced and the cluster is ambisyllabic. Persistence of the word-medial nasal + voiceless-obstruent clusters in the eastern dialects is apparently what allows the syllabic-nasal prefix to occur before (voiceless) obstruents. Western and central dialects, having completely lost the nasal from word-medial nasal + voiceless-obstruent clusters and having resyllabified nasal + voiced-obstruent clusters as V.N(D)V, use only the replacive-nasal prefix; the syllabic-nasal prefix would not fit their canonical patterns.

Bukar speakers and some of the Sadung speakers who provided data, women in particular, tended to perceive initial syllabic nasals as a VN syllable, especially in non-verbs. In many cases those speakers pronounced a specific initial vowel in the VN syllable, sometimes varying it with a syllable consisting of the syllabic nasal only. If they spelled the word, they virtually always supplied a specific initial vowel for each word. Those speakers perceived /{N-}TV/ as VN.TV. When speakers commented on the spelling of

90Possibly the alternate forms in these word-sets have a transitivity difference.

This pair of roots illustrates the distinction often made in Bidayuh between an event that involves an animal and the same kind of event that involves a human. In some cases the animal term is a variant of the form used for humans, but in others it is a completely different lexical form.

91The dialect where syllabic nasals were most used in non-verbs was Bunan.
those words, they often said that the vowel of the initial syllable should be ‘u’. In a few instances they identified it as ‘a’ or ‘e’, and in at least one instance as ‘i’. Perhaps ‘a’ refers to [a] and ‘e’, as in Malay, refers to [ə]. One speaker spelled all syllabic nasals with a word-initial ‘u’ before the nasal. Possibly he intended ‘u’ to be ‘î’, a symbol that is commonly used in the region to represent [i]. This person spelled \(N\cdot\)taki/ > [\(\?\cdot\)ta.ki?] ‘to defecate’ as ‘untaki’. On the other hand, another speaker spelled it as ‘ntaki’. A number of Sadung speakers, especially men, used only the nasal letter to represent syllabic nasals in words whose root consists of two syllables. They used the vowelless symbolization in most verbs, in many of the two-syllable nouns and in one or two descriptives. Perception of a specific vowel sound to be used in pronouncing the syllabic nasal and the symbols used to write it may be affected by patterns of sound distribution, by the ultima vowel, by memory of a specific vowel that was formerly pronounced in that word or by knowing which vowel symbol is used in the dialects that do not have syllabic nasals.

It seems likely that use of the syllabic nasal is decreasing, especially in non-verbs, where it has apparently no assigned meaning in the current language and where corresponding words in dialects of the other major regions do not have it. Even perception of the syllabic nasals that are verbal prefixes varies somewhat among the various Bukar and Sadung dialects and possibly also among speakers of the same dialect. In some cross-dialect comparisons the syllabic-nasal prefix appears to have the same meaning in one dialect as the replacive-nasal prefix has in other dialects.

Examples of monosyllabic non-verb roots with a word-initial syllabic nasal compared with VN penults in other Bukar-Sadung dialects:

\(N\cdot\)pat/ > [\(m\cdot\)pat] ‘four’ (Bunan, Bibengih); cf. /unpat/ > [\(um\cdot\)pat] (Tebakang, Terbat, Bukar) (284)
\(N\cdot\)pa?/ > [\(m\cdot\)pa?] ‘(a) betel chew’ (Bunan); cf. /unpa?/ > [\(um\cdot\)pa?] (other Bukar-Sadung dialects) (244)
\(N\cdot\)tak/ > [\(m\cdot\)tik] ‘brain’ (Bunan, Bibengih); cf. /iNtak/ > [\(m\cdot\)tik] (Terbat), /aNtak/ > [\(in\cdot\)tik] (other Bukar-Sadung dialects) (91)
\(N\cdot\)kad/ > [\(\eta\cdot\)kid] ‘(a) cough’; cf. /mA\(N\cdot\)kad/ > [\(m\cdot\)n\(\eta\cdot\)kid] ‘to cough’ (Tebakang) (128)
\(N\cdot\)kay/ > [\(\eta\cdot\)ka:] ‘tail’ (Bunan); cf. /uNku(:y)/ > [\(\eta\cdot\)ku(:y)] (most other Bukar-Sadung dialects) (50)
\(N\cdot\)kak/ > [\(\eta\cdot\)ka:k] ‘(a) crow’ (Bunan, Bibengih); cf. /a\(N\cdot\)kak/ > [\(\eta\cdot\)ka:k] (Bukar-Sadung dialect, Tebakang, Bukar) (This word is probably onomatopoetic.) (52)

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92 In many of the dialects the central vowel is pronounced as [i], especially in the ultima and, in some dialects, in the penult as well.
93 It is common for Bidayuh writers not to represent medial or final /\(\eta\)/, even though its presence contrasts with its absence in both intervocalic and word-final positions.
94 In some cases the vowel they assigned to the syllabic nasal mirrors the vowel of the ultima. Mirroring of the ultima vowel in the penult vowel is a common distributional pattern in Bidayuh, but is not universal. Where the penult vowel mirrors the ultima vowel, the penult vowel is expectably a reduced vowel.
Examples of Bukar and Sadung roots that can take both of the homorganic-nasal prefixes, but with different meanings:

Intransitive verb root > transitive/causative verb stem:

\(/\{N-\}(p)\text{arîŋ} /\) > \([m\text{ä}.\text{r}/\text{kîŋ}\] – \([m\text{ä}.\text{r}/\text{kîŋ}] \) ‘return home’ (also a euphemism for death), \(/\{N-\}p\text{arîŋ} /\) > \([\text{mä}.\text{r}/\text{kîŋ}] \) ‘to return something’ (Bunan) (140)

\(/\{N-\}(p)i\text{jøg} /\) > \([m\text{i}.\text{jøg}] \) ‘to stand’ (Bunan, Terbat), \(/\{N-\}pi\text{jøg} /\) > \([\text{mä}.\text{jøg}] \) ‘to stand something up’ (Bunan). Cf. \(/\text{pijøg} /\) > \([\text{pîjøg}] \) ‘to stand something up, to erect a building (e.g., a longhouse)’ (Tebakang) (132)

In the two examples above, both of them from Bunan, the replacive-nasal prefix added to the root makes an intransitive verb stem. The syllabic-nasal prefix makes the verb transitive or causative. However, in the Tebakang example—and in some central-dialect data as well—it is the unprefixed form that is transitive/causative.

Some data from various central dialects for comparison: 95

\(/\{N-\}(p)i\text{jøg} /\) > \([\text{mä}.\text{dco}] \) ‘to stand’ (Sembaan) (132)

\(/\{N-\}(p)i\text{jøg} /\) > \([m\text{i}.\text{juag}] \) – \(/\{N-\}pijøg /\) > \([\text{mä}.\text{juag}] \) ‘to stand’ (Benuk) (forms from two different speakers) (132)

\(/\text{pijøg} /\) > \([\text{pi.jøg}] \) ‘to stand something up’, \(/\{N-\}(p)\text{åjo(c)g} /\) > \([måjo(c)g] \) ‘to stand’ (Bistaang) (132)

\(/\text{pijøg} /\) > \([\text{pi.jøg}] \) ‘to keep something erect, stand something up, install something’, \(/\{N-\}(p)\text{ijøg} /\) > \([m\text{i}.\text{jøg}] \) ‘to stand up, get up’, \(/\text{ájøg} /\) > \([\text{ájøg}] \) ‘upright position, height’ (Biatah-Nais) (132)

\(/\{N-\}(p)i\text{jøg} /\) > \([m\text{i}.\text{juag}] \) ‘to stand’, \(/\text{jøg} /\) > \([\text{juag}] \) ‘height’ (Pinyawa’) (132)

Palatal obstruents, like other obstruents, can take the homorganic nasal prefixes. In Bukar and Sadung dialects they can take the syllabic nasal as well as the replacive nasal. However, details of this prefixation differ between the two kinds of homorganic nasal prefix. As is to be expected, the palatal nasal, /\text{n}/, is the replacive nasal for any of the palatal obstruents: /\text{s}/, /\text{j}/ or /\text{c}/. 96 However, since the

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95The additional data for ‘to stand’ show further variations of this word-set in some central dialects. They also add uncertainty as to how much of this word constitutes the root and how much is prefix. The root may be \(\text{pịjo(c)g}/\) rather than \(\text{pijøg}/\). Cf. Biatah data below.

96Roots that begin with /\text{c}/ are relatively uncommon. Bukar-Sadung dialects have some, and scattered examples occur in other dialects, especially in loanwords. However, these do not represent the basic phonological system, and palatal-initial roots prefixed by nasals are not very common.

Only Bukar and Sadung dialects have significant contrast between /\text{c}/ and /\text{s}/, the latter being the basic voiceless palatal obstruent. There are very few examples of root-initial /\text{c}/ with a nasal prefix. Of those in the available data three have syllabic /\text{n}/ as the prefix, while the fourth has replacive /\text{n}/.

However, some data, from western and Sembaan-group dialects in particular, show /\text{c}/ as an optional variant of /\text{s}/ when /\text{s}/ is word-initial or follows /\text{n}/.

Examples of /\text{c}/~\text{s}/:\[f]/:

\(/\text{säka}\text{?} /\) > \([\text{a}.\text{ka}]\) – \([\text{ca}.\text{ka}]\) ‘chin’ (Tringgus Bireng) (86)

\(/\text{si-ra.ka}\text{?} /\) > \([\text{f}.\text{ra.ka}]\) ‘chin’ (Bratak), > \([\text{ci.ra.ka}]\) (Serasot) (86)
palatal nasal cannot occur in syllable- (or word-) final position, the syllabic-nasal prefix for palatal is not */n:-/, but rather /n:-/. (As already noted the same restriction applies as well to ambisyllabic, word-medial nasal + obstruent clusters.)

Cross-dialect example from two eastern dialects in which a root occurs with both of the homorganic-nasal prefixes and the meanings are apparently the same in the two dialects:

/{N-}(k)āgan/ > [ŋā.ɡdn] ‘to lose something/someone’ (Tebakang), /{N-}kāgan > [ŋ.ŋ.ɡdn] ‘to lose something/someone’ (Bukar) (161)

Some central dialects—Benuk, Bistaang and especially Sembaan—also have penults that consist of a lengthened nasal only. However, those lengthened nasals have a different source. In those dialects syllabic nasals are neither prefixes nor the remains of prefixes but, rather, are the result of collapsing a reduced penult vowel and its contiguous nasal into one lengthened nasal segment. That is one of several strategies in a general process that collapses the penult and the ultima. In Sembaan, for example, a reduced high vowel drops out of the penult and the consonants on either side of it are pushed together. If either the initial or the medial consonant is a nasal, it is lengthened to compensate for loss of the vowel. If the initial consonant is a voiceless obstruent and the medial consonant is a nasal, the voiceless obstruent is replaced by pre-aspiration of the nasal and the nasal is lengthened. (Phonetically this pre-aspiration is a voiceless nasal and is homorganic to the medial nasal.) It is symbolized here as [h]. Thus, /#T postpone#V…#/ > [hN postponeV…#].

Examples of lengthened initial nasal in Sembaan:

* tūŋo > /hŋo/ > [ŋo] ‘neck’ (Sembaan) (192); cf. /tūŋo/ (Tringgus-Raya)

*pūno > /hno/ > [nō] ‘full’ (Sembaan) (311); cf. /pūno/ (Tringgus-Raya)

Single-consonant prefixes with vowel-initial roots: Is a vowel-initial word ‘the root’? In terms of phonetic content a vowel-initial form, e.g., #V(N).CV(C)#, is the simplest form of a two-syllable Bidayuh content morpheme and would seem to be the root form. In terms of grammatical content it is most often a noun and less commonly a descriptive. In many cases the vowel-initial form has a more complex or more abstract meaning than an obstruent-initial form in the same word-set. It is as though the vowel-initial form were an affixed form. In such word-sets the obstruent-initial form(s), including prefixed forms, have simpler or more concrete meanings. The vowel-initial form may be an active verb, transitive or causative, or it may be an abstract noun, meaning ‘the act/practice/principle of doing something’.

Many word-sets that include a vowel-initial form also have an obstruent-initial form that can be seen as ‘competing’ with the vowel-initial form for the title of ‘root’. If, however, one knows only the vowel-initial form, it is not possible to predict the obstruent-initial form(s) or the prefixed form(s) for which the obstruent-initial form is a base. Thus, where an obstruent-initial form exists, it seems preferable to regard that as the root, the most basic form of the word-set, even though its phonetic content may be more
complex than, for example, a vowel-initial form or one prefixed by the homorganic nasal prefix. The vowel-initial form in such word-sets can be regarded as a shortened or reduced form of the root.\textsuperscript{98} If there is no obstruent-initial form in a given word-set, the vowel-initial form can be regarded as the root.

A significant portion of word-sets that include both a vowel-initial form and one or more obstruent-initial forms have /k/ as the obstruent, but some have /b/ or /p/ and a few have /t/ or /d/. Probably /g/ could be found as well, and there are a few examples of /s/, suggesting that forms with initial /j/ are also possible as obstruent-initial roots.

Vowel-initial forms can be prefixed by any of several single-consonant prefixes, including some that produce verbs from non-verbs. The single consonant is placed before the initial vowel, adding a consonantal onset to that initial syllable (in this case the penult). Like the replacive nasal, these single-consonant prefixes add or change grammatical meaning but do not add an antepenult. They impart various grammatical functions/meanings, some of which appear to be the same meanings as those imparted by the replacive- and/or syllabic-nasal prefixes already discussed and other prefixes not yet mentioned. The syllabic-nasal prefix of Bukar and some Sadung dialects adds a phonetic syllable, which does not have to be viewed as an additional phonemic syllable. On the other hand, where syllabic nasals are (re)interpreted (in speech or writing) as #VN, which is the usual practice in some Sadung dialects, the syllabic nasal does constitute an additional phonemic VC syllable, an antepenult, and the resulting form has three phonemic syllables: #VN.TV(N).CV(C)#.

Three of the single-consonant prefixes are nasals, /m-/, /n-/ and /ŋ-//, which can occur with vowel-initial forms.

The single-nasal prefixes, except /n-/, have a CV variant that is used with consonant-initial forms. There are also some single-consonant and CV prefixes that do not contain a nasal; those will be mentioned later. The single-nasal prefixes and their CV counterparts are the following:

\textbf{a) /ŋ-/: the general verbalizing prefix for vowel-initial forms.} The grammatical meaning(s) imparted by /ŋ-/ when it is prefixed to a vowel-initial form is/are more or less equivalent to the meaning(s) imparted by the replacive-nasal prefix when the latter is prefixed to an obstruent-initial root. The resulting form is most commonly an active verb, commonly transitive or causative. Therefore, the /ŋ-/-prefix can be viewed as the before-vowels variant of the replacive nasal prefix.

Of course, /ŋ-/-is also the form of the replacive-nasal prefix that replaces a velar obstruent in roots whose initial obstruent is /k/ or /g/. The grammatical meaning that results from prefixing /ŋ-/-to a root is the same or similar whether it is added to a vowel-initial root or replaces a root-initial velar obstruent. Thus, it may be difficult to determine whether any given /ŋ/-initial form is derived from a vowel-initial form or from a velar-obstruent-initial form. If a word-set in which /ŋ/-is the principal verbalizing prefix

\textsuperscript{98}One can hypothesize that abstract nouns, which is what many vowel-initial forms are, may be a more recent addition to the language. Inspection of the Biatah dictionary (Nais 1988) shows that in all probability new words are/have been added to Bidayuh not only through borrowing but also through adding, dropping or changing a phoneme somewhere in the word. Thus, it should not be surprising if a dropped root-initial obstruent has produced vowel-initial forms to name processes, events, actions, etc.
has no form that begins with /k/ or /g/ and if it does have a vowel-initial form, the vowel-initial form is presumed to be the root.

It appears that /ŋi-/ (varying to /pi-/ in the central dialects) constitutes the CV-, before-consonants counterpart of the /ŋ-/ single-consonant prefix. In the Biatah dictionary \(^9\) occurrences of /ŋi-/ as prefix are far more numerous than occurrences of /ŋi-/ vs. /ŋi-/ are used to verbalize roots that begin with /r/. In the Biatah dialect /pi-/, the palatal form of the prefix, can occur with roots and stems that begin with any consonant except /ŋ/ itself, including other nasals, mostly /m/ (20 entries). However, its occurrences with nasal-initial stems are not numerous. \(^10\) It occurs most commonly before /r/ (246 entries), /k/ (171 entries) and /b/ (150 entries). By contrast, /ŋi-/occurs only before /r/ (22 entries), /m/ (10 entries) and /d/ (1 entry).

Some of the /r/-initial roots that can take the /ŋi-/ form of the prefix can also take /pi-/. Most pairs of words in which the two forms of the prefix are used with the same root or stem carry essentially the same meaning. If sub-groupings of roots were based on their occurrence with /pi-/ vs. /ŋi-/ the two groups would be overlapping and somewhat arbitrary. Therefore, these two CV- forms are here considered to be the CV- counterparts of the same single-consonant prefix, /ŋ-/.

Examples of /ŋ-/ prefixed to vowel-initial noun and adjective roots in Biatah:

/atur/ ‘rules, law, policy, etc.’, /ŋ-atur/ ‘to control, direct, command, etc.’ (Biatah-Nais)
/isi/ ‘filling, stuffing, contents’, /ŋ-isi/ ‘to stuff in, load up, fill up something’ (Biatah-Nais and other dialects) (505)
/utana/ ‘debt’, /ŋ-utana/ ‘to owe’ (Biatah-Nais and other dialects) (264)
/urap/ ‘bamboo strip’, /ŋ-urap/ ‘to peel bamboo’ (Biatah-Nais)
/iše/ ‘anything mashed into small particles’, /ŋ-iše/ ‘to crush, mash’ (Biatah-Nais)

Examples of /pi-/ and /ŋi-/ prefixed to /r/-initial and other C-initial roots (or stems) in Biatah:

/rāba/ ‘felling of jungle, felled timbers’, /ŋi-rāba/ ‘to destroy much of something, to waste’ (Biatah-Nais)
/raman/ ‘happy’, /ŋi-raman/ ‘to make happy, comfort, soothe’ (Biatah-Nais)
/ruyak/ ‘ripples in water’, /ŋi-ruyak/ ‘to ripple, cause ripples in water’ (Biatah-Nais)
/ŋi-rambu/ ‘/ŋi-rambu/ ‘to sleep under mosquito netting’ (Biatah-Nais)
/ŋi-ripi/ ‘/ŋi-ripi/ ‘partial, biased, unfair’ (Biatah-Nais)
/ŋi-rara/ ‘to intervene in a quarrel, to fight’, /ŋi-rara/ ‘to stop spread of sickness, to intervene’ (Biatah-Nais)
/pasān/ ‘(rising) tide’, /ŋi-(N-)(p)asān/ > [ma-san] ‘to go forward, thrive’,
/ŋi-(N-)(p)asān/ > /ŋi-ma-san/ ‘to nurture, develop, to progress’ (Biatah-Nais)
/ŋi-ŋanga/ ‘half-closed, oblique’, /ŋi-ŋanga/ ‘in oblique position’ (Biatah-Nais)


\(^10\) Nais 1988 shows twenty occurrences of /ŋi-/ prefixed to a stem that begins with the replacive nasal /m/, two that begin with /n/ and one that begins with /ŋ/.
b) /m-/ is another single-consonant nasal prefix used with vowel-initial roots. Like other nasal prefixes, /m-/ yields principally verb stems. However, stems prefixed by /m-/ and those prefixed by /ŋ-/ normally impart different grammatical meanings. Whereas roots prefixed by /ŋ-/ are active verbs, usually transitive or causative in meaning, many stems prefixed by /m-/ are descriptives/stative verbs.

Of course, /m-/ is also the form of the replacive-nasal prefix used with roots that begin with a labial obstruent, /p/ or /b/. For any given stem that begins with /m/ it may be difficult to determine whether it is the labial-nasal single-consonant prefix or the labial replacive nasal. As with the velar-nasal prefix, this can be determined in part by whether the word-set includes an obstruent-initial form in addition to the vowel-initial form. If there is a form that begins with /b/ or /p/ in the word-set, the /m-/ prefix is presumed to be the replacive nasal. If the resulting nasal-initial stem has transitive or causative meaning, that reinforces the conclusion that it is the replacive nasal. The single-consonant /m-/ prefix, on the other hand, is more likely to have a descriptive or stative meaning and less likely to occur in a word-set that includes a labial obstruent.

The CV-variant of the single-consonant prefix /m-/ that occurs before vowels is /mi-/. Like its single-consonant brother, /m-, /mi-/ yields forms that have primarily descriptive or stative meanings.

Examples of the /m-/ single-consonant prefix with vowel-initial noun and descriptive roots:

/ădud/ ‘coldness, coolant, a chill’, /m-ădud/ ‘cold (descriptive)’. Cf. /k-ădud/ ‘to chill, cool something’. In this example both m- and k- are single-consonant prefixes, and the vowel-initial form is the root. The /k/-initial form is not the root because there is not a verb form in this word-set that begins with the velar nasal. (Biatah-Nais and other dialects) (315)

/ăndam/ ‘illness, ‘disease’, /m-ăndam/ ‘ill, in pain’. Cf. /k-ăndam/ ‘illness, disease, pestilence’ This word-set is similar to the example that follows. (Biatah-Nais and other dialects) (435)

/ăda/uni02D0m/ ‘rotten, putrid’, /m-ăda/uni02D0m/ ‘rotting, rotten’. Cf. /k-ăda/uni02D0m/ ‘to cause to rot, putrefy’. (Biatah-Nais and other dialects) (305)

/ijsup/ ‘(a) faint’, /m-ijsup/ ‘having fainting spells, swooning’. (Biatah-Nais)

/udas/ ‘perspiration’, /m-udas/ ‘sweaty, perspiring; to perspire’. (A form, /kudas/, exists, but it means ‘bruised’, which does not appear to tie it to /udas/.) (Biatah-Nais and other dialects) (67)

c) There are two more single-consonant nasal prefixes with vowel-initial forms. Two more Bidayuh nasals need to be mentioned in this discussion of single-nasal prefixes. First, even though in Biatah the full-syllable prefix /uni0272i-/ commonly occurs with consonant-initial roots and stems, the palatal nasal, /uni0272/, itself, apparently does not occur as a single consonant prefix with vowel-initial roots. Only its velar counterpart, /ŋ/, occurs in that distribution. However, /ŋ/ is the palatal replacive-nasal prefix that forms verb stems with roots that begin with a palatal obstruent: /j/, /s/ or /c/.

Secondly, there is the apical nasal, /n-/. Its most common function is as replacive-nasal prefix for apical obstruents: /t/ and /d/. This usage occurs in all dialects and, like other homorganic replacive nasals, the replacive /n-/ yields principally active-verb stems that are transitive or causative in function.

In addition, some dialects of the language give evidence of a prefix /n-/ and a related infix, /-in-/. The infix generally forms an active verb with transitive/causative meaning. In some word-sets the
function of the stem with the infix seems not to differ from that of the same stem with the replacive-nasal prefix. In some dialects it also has a passive/imperative function.

However, verb stems with the prefix /n-/ generally function as the imperative (command) and/or the passive form of a verb. This is especially common in Bukar and the Sadung dialects. In some dialects it also has a passive/imperative function. They occur in word-sets where the active-verb stem has /ŋ- or /m- as prefix and where in most cases no vowel-initial root has been observed. Words that take this prefix give an impression that they ‘ought to have’ a vowel-initial root, but apparently only some of them have it. The /n-/ prefix is found with velar-initial (/k/) roots and, less commonly, with labial-initial (/b/) roots.

Examples of the /n-/ prefix in Sadung word-sets that do not have an apical-initial root:

/ŋ-umpah/ (or /{N-}(k/g)umpah/) > [nũm.pih] ‘to pound rice (active)’, /n-umpah/ > [nũm.pih] ‘pound it (rice)! (imperative)’. Neither an obstruent-initial nor a vowel-initial root has been found for this word-set. It looks as though there ‘should be’ a vowel-initial root, but it might be velar-initial. (Bukar-Sadung dialect, Tebakang) (190)

/ŋ-itos/ (or /{N-}(k/g)itos/) > [ŋũtis] ‘to count (active)’, /n-itos/ > [ni.tos] ‘count it! (imperative)’ (Bunan). The Nais dictionary shows a vowel-initial form for this word-set: /itos/ > [tis] ‘calculation, discussion, opinion’. Although a (velar) obstruent-initial root might be another possibility, that does not occur in the dictionary. (Biatah-Nais) (294)

/ŋ-ājah/ (or /{N-}(k/g)ājah/) > [ŋa.] ‘to follow (active)’, /n-ājah/ > [na.] ‘follow! (imperative)’, /ājah-ājah/ > [a.] ‘to follow blindly’. No simple vowel-initial form is available, but such is observable in the reduplicated form. A (velar) obstruent-initial root would also be an expectable possibility, but that has not been observed. (Tebakang)

/ŋ-araŋ/ (or /{N-}(k/g)araŋ/) > [ŋa.akaŋ] ‘handspan’, /n-araŋ/ > [na.akaŋ] ‘to measure by handspans, to make something clear’ (Tebakang, Bunun) (297)


/pāghu/ ‘good’, /{N-}(p)āghu/ (or /m-āghu/) > [ma:guh] ‘improve something’, /p-in-āghu/ (or /pi-n-āghu) ‘improve’, /pi-{N-}(p)āghu/ (or /pi-m-āghu/) > [pi.ma:guh] ‘beauty’. Unambiguous identification of every prefix in this word-set is not possible at the present state of understanding. The two longer words may contain the infix /-in-/, or may not, depending on how morphemes should be divided; /m-/ may be the labial replacive nasal for /p/ or may, along with /ŋ-/ and /n-/ be a single-consonant prefix. The complication is that no vowel-initial form is available (if such exists). (Bukar) (170)

/ţutc?: ‘vomitus’, /ŋ-ţutc?: ‘to vomit’, /n-ţutc?: ‘vomit it! (imperative)’ (Tebakang) (125)

Infixes. In addition to the infix /-in-/ there is evidence in the Bidayuh dialects of two more infixes, /-im-/ and /-ir-. There is not much room to doubt the existence of these infixes. The infixes /-in-/ and /-
im-/ occur most commonly with /k/-initial roots or with vowel-initial roots that are prefixed by /k-/. Some examples also occur with b-initial roots. These infixes presumably reflect the Proto Malayo-Polynesian forms *-in- ‘passive’ and *-um- ‘active’ (cf. footnote 32).

Examples of Biatah forms having the /-in-/ and /-im-/ infixes with /k/-initial roots:
/kăb/uni0259s/ ‘die, dying, dead’, /k-in-ăb/uni0259s/ ‘kill (someone)’ (Biatah-Nais) (129, 201)
/kătis/ ‘dirty’, /k-in-ătis/ ‘make (something) dirty’ (Biatah-Nais) (171)
/kitak/, ‘movement’, /(N-){k}itak/) > [nĭ.tak] ‘to tug (as fish on a fishing line)’, /k-im-itak/ ‘capable of action, motion’ (Biatah-Nais)
/kătăr/, ‘tremble (verb), warble (verb); a quiver, a trill’, /(N-){k}ătăr/) > [ŋi.tar] ‘cause to shiver’, /k-im-ătăr/ ‘trembling (noun), trilling, frantic (descriptive)’ (Biatah-Nais)

Examples of Biatah forms having a nasal infix with vowel-initial root prefixed by /k-/:
/adăm/ ‘putrid, rotten, decayed; something dead’, /k-ădăm/ ‘to rot, tarnish, mar, cause to rot’, /k-in-adăm/ ‘cause to rot; defame’. (Biatah-Nais) (305)
/ătет/ ‘noise of two things rubbing together forcefully’, /k-ătет/ ‘sound of teeth, etc., grinding together’,
/k-im-ătет/ ‘having clattering teeth’ (Biatah-Nais)
/irit/ ‘in-and-out plaiting/weaving’, /k-irit/ ‘wriggling sensation’, /k-im-irit ‘wriggling (e.g., maggots)’ (Biatah-Nais)

Example of a Tebakang form having a nasal infix with a b-initial root:
/băvăs/ ‘sleep, asleep’, /b-in-ăvăs/ ‘to sleep with someone’ (Tebakang) (133)

Example of a form having an infix with a k-initial root that apparently has a b-initial stem variant:
/bi-kăji/ ‘hate each other’ (Tebakang), /(N-){k}ăji/ > [nă.ji] ‘hate (active)’ (Tebakang), /k-in-ăji/ ‘annoy, disturb, tease, anger’ (Biatah-Nais), /k-in-ăji/ ‘is hated (passive)’ (Tebakang); /băji/ ‘angry, get angry’ (Biatah-Nais, Tebakang), /(N-){b}ăji/ > [mă.ji] ‘hate someone’ (Tebakang) (177)

The evidence for the /-ir-/ infix is of a different nature. Whereas the two nasal infixes are reflected in varying morphological forms in some Bidayuh dialects, the evidence for the liquid infix, /-ir-/ comes primarily from differing dialect forms, some with internal /r/ and others without.

Examples of cognates forms with and without internal /r/:
/bămbăn/ ‘butterfly’ (Sembaan), /b-ir-ămbăn/ (Biatah), /b-r-ămbăn/ Bistaang; note also /ri-bănbaŋ/ (Bunan) (65)
/pŭnğan/ ‘mosquito’ (Pinyawa’), /p-ir-ŭnğan/ (Sapug), /p-r-ŭnğan/ Benuk (62)
/pimăh/ ‘dream’ (Singai), /p-r-imăh/ (Pinyawa’); note also /pi-ă-măh/ (Bukar) with an internal /ă/ rather than /r/ (135)
/kasăh/ ‘rattan floor mat’ (Singai), /k-ir-ăsah/ (Bunan), /k-r-ăsăh/ (Tebakang) (280)
/nuja?i/ ‘spit’ (Serambu), /n-ir-uja?i/ (Bukar); in this example the /r/ may have been original (cf. PMP *luzaq) (154)
/tiju?i/, /rinju?i/ ‘point’ (Tringgus Raya), /piniju?i/‘index finger’ (Tebakang), /t-ir-inju?i/ ‘finger’ (Biatah), /t-ar-ăpŏ/ ‘middle three fingers’ (Rara) (107)
d) There are at least two non-nasal single-consonant prefixes with vowel-initial forms. They are /r-/ (with its Ci- counterpart, /ri-/), and /k-/ (with its Ci- counterpart, /ki-/). In some words that have /r-/ or /ri-/ as prefix, the /r(i)/ probably represents the infix, /-ir-. Some words that appear to have /k-/ as prefix are /k/-initial roots with the /-in-/ (or in a few cases /-ir-/) infix.

Biatah examples of vowel-initial roots that form stems with two or more of the single-consonant prefixes:

/ăŋas/ ‘withered branches or leaves’, /m-ăŋas/ ‘scorched by fire or lightning’, /r-ăŋas/ ‘a mass of dry fallen branches’ (Biatah-Nais)

/arah/ ‘knocked out, defeated’, /r-arah/ ‘tired, weary, tiresome’, /k(-)arah/ ‘a defeat, defeated’, /η(-)arah/ (or /{(N-)}(k)arah/) > [ηa.rah]) ‘to overcome, defeat, conquer’. It is not certain whether /karah/ in this word-set is an obstruent-initial root or a vowel-initial root with the /k-/ prefix. Cf. /k-ir-arah/ (or /ki-r-arah/) ‘in death throes, looking miserable, half dead’ (Biatah-Nais)

/atın/ ‘disappear, vanish; invisible’, /m-atın/ ‘none, nothing’, /r-atın/ ‘cause to disappear’, /(katañ-){N-}(k)atın/ ‘searching frantically for something lost’ (/katañ/ ‘discontinue, cause to cease’), /{(N-)}(k)atın/ or /η-atın/ ‘cause to disappear’. Cf. /k-in-atın/ (or /ki-n-atın/) ‘to make (something) disappear, to be lost’. It is not known whether /ŋatın/ ‘cause to disappear’, /ratin/ ‘cause to disappear’ and /kinatın/ ‘make (something) disappear’ can or cannot be used interchangeably. Another word-set is related to this set and overlaps it. Forms in that set have /a/ in the ultima where this set has /i/; /katañ/ in the reduplicated form above belongs to the related word-set. (Biatah-Nais)

/upet/ ‘a fold or crease’, /ŋ-upet/ to fold over, turn down, hem’, /r-upet/ ‘lug, projection, projecting part of a mat or basket, lapel, pleat, hem’ (Biatah-Nais).

/uru/ ‘array (for battle or wedding)’, /ŋ-uru/ ‘to lead the way, spearhead an army’, /r-uru/ ‘a position on something, a court case’, /bi-r-uru/ ‘in order, in array’. No obstruent-initial root was identified for this word-set (unless possibly it is /uni0261uru/ ‘teacher’). (Biatah-Nais)

Biatah examples of word-sets that include an obstruent-initial and a vowel-initial root and form stems with both:

/atur/ ‘command, policy, rules, law’, /ŋ-atur/ ‘to control, direct, restrain’, /batur/ ‘correct, right, perfect’, /{(N-)}(b)atur/ > /m-atur/ ‘to adjust, put right’. Note that /m-atur/ here, judging by its transitive/causative meaning, is more likely to be the nasal-replacive form of /batur/ than to be the vowel-initial form with /m- as a single-consonant prefix. If it were the /m- prefix, the meaning would more likely be descriptive rather than transitive. (Biatah-Nais)

/ibat/ ‘fully occupied’, /ŋ-ibat/ ‘to bother with, worry about’, /r-ibat/ ‘overburdened with possessions’, /pibat/ ‘to incapacitate, overburden’, /{(N-)}(p)ibat/ > [mi.bat] ‘to bother with’ (Biatah-Nais). This word-set builds on (adds prefixes to) both the obstruent-initial (p) root: (/pibat/ > /m-ibat/) and the vowel-initial root: /ibat/ > /ŋ-ibat/, /r-ibat/). It is not known whether /m-ibat/ ‘to bother with’ and /ŋ-ibat/ ‘to bother with, worry about’ are interchangeable.
/udip/ /n third order (full-syllable) prefixes: Ci-

In order to fit the canonical patterns of Bidayuh, second- and third-order prefixes, counting leftward from the root, must contain a vowel. They normally have the shape Ci-, although there are a few exceptions. In some of them the C is a nasal: /ŋi-/ (which varies to /ni-/ in the central dialects), /mi-/. Generally speaking, nasal-initial Ci- prefixes impart the same (or similar) kinds of grammatical meaning as other nasal prefixes, i.e., predominantly verbal meanings. (Non-nasal Ci- prefixes also occur.)

Biatah examples of words containing a first-order and a nasal-initial second-order prefix:

/atur/ ‘command, policy’, /m-atur/ ‘to adjust, put right’, /ŋi-m-atur/ ‘to adjust, put right’ (Biatah-Nais)

If the first-order prefix is non-nasal, a second-order nasal-initial Ci- prefix can produce verbal-type meanings comparable to those produced by the replacive nasal and syllabic nasal.

Biatah example of oral first-order prefix with nasal-initial second-order prefix:

/umbak/ ‘agitated surface of water’, /r-umbak/ ‘wallowed in mud’, /ŋi-r-umbak/ ‘to wallow in mud’ (Biatah-Nais)

Some non-nasal prefixes impart verbal-type meanings.

If a word contains one of the single-consonant prefixes as first-order prefix, the next prefix—second out from the root or stem—will be a Ci- prefix. If the first-order prefix is the single-nasal /m-/ it is common for the second-order prefix to be /ŋi-/ (or /ni-/).

Biatah example of first-order /m-/ with second-order /ŋi-/ or /ni-/ prefixes:

/atur/ ‘command, policy’, /m-atur/ ‘to adjust, put right’, /ŋi-m-atur/ ‘to adjust, put right’ (Biatah-Nais)

If the first-order prefix is non-nasal, a second-order nasal-initial Ci- prefix can produce verbal-type meanings comparable to those produced by the replacive nasal and syllabic nasal.

Biatah example of oral first-order prefix with nasal-initial second-order prefix:

/umbak/ ‘agitated surface of water’, /r-umbak/ ‘wallowed in mud’, /ŋi-r-umbak/ ‘to wallow in mud’ (Biatah-Nais)

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103 This word-set, very rich in forms, was pointed out by Grace Tan, who had recorded the data from a speaker of the Bukar dialect. The data given here are also in the Nais (1988) dictionary, but do not have exactly the same meanings as the Bukar data.

104 There is an example in the Biatah dictionary (Nais 1988) of /ŋi-/ as the second-order prefix: /pi-ŋi-rami/ ‘celebration’ < /rami/ ‘merry, happy; celebration; merriment’. The same word with the same meaning occurs in another entry with /ni-/ as the second prefix: /pi-ni-rami/ ‘ceremony, celebration’. This and other entries appear to indicate optional variation (in some words) between the forms of this prefix, /ŋi-/ and /ni-/. (Perhaps the variation is between the two nasals.)

There is no prefix form */ni-/ included here because /n-/ occurs only as a single-consonant prefix and has no Ci-counterpart. The infix /-in-/ however, does occur.
As stated in the preceding section, /ŋ-/ is the primary verbalizing prefix for vowel-initial roots, commonly yielding an active verb that is transitive or causative. The /m-/ prefix also yields a verb, but usually one that is descriptive/stative in function. If the second-order prefix /ŋi-/ occurs with the first-order prefix /m-/ a transitive or causative verb form is usually produced. The combination /ŋi-/ (or /ni-/ with /m-/ has a grammatical function more or less equivalent to the function of the replacive nasal.

Biatah example of first-order /m-/ ‘descriptive’ and second-order /ŋi-/ resulting in a transitive or causative meaning:


Several examples already shown have vowel-initial roots with /r-/ as a first-order, single-consonant prefix; other words in the same sets have /ŋ-/ /m-/ or /n-/ as the first-order, single-consonant prefix. Although /r/-initial roots are numerous, not as many examples have been found of stems that are formed by the /r/- prefixed vowel-initial root. This lack may be due to the {-ir-} infix (or the /r(i)-/ prefix) having become non-productive, or perhaps some words that appear to be /r/-initial roots are actually stems formed in the past by the /r/- prefix.

Biatah example of a vowel-initial form with the first-order prefix /r-/ and a second-order Ci-prefix:

/i/ ‘footprint’, /r-i/ ‘soft, crumpled, rumpled (of mashed vegetables)’, /ni-r-i/ ‘to beat into a soft mass’ (Biatah-Nais)

The first-order prefix that occurs with a vowel-initial root is one of the single-consonant prefixes: /ŋ-/ /m-/ /n-/ /k-/ or /r-. A second-order (Ci-) prefix, generally one that begins with a different consonant, can be added to a stem that already includes a first-order prefix. If the first-order prefix is not a nasal or if it is /m-/ the second-order prefix is likely to be nasal-initial. It becomes the antepenult of a three-syllable word.

Biatah examples of a vowel-initial root with first- and second-order prefixes:

/udip/ ‘alive’, /ki-udip/ ‘to bring up, raise’, /ni-k-udip/ ‘to bring to life’ (Biatah-Nais) (328)


In addition to the nasal-initial second-order prefixes, /mi-/ and /ŋi-/ (varying to /ni-/), already discussed, there are obstruent-initial second-order prefixes, /bi-/, /si-/, and the less frequent /ti-/, /di-/, /ki-/, /gi-/ and the liquid-initial /ri-/. (See §§7.4.3, 7.4.5 and 7.4.6.)

If a third-order prefix is added, it is also of the Ci-type but it is not one that begins with a nasal. The resulting word has four syllables. Third-order prefixes are a very limited set. According to present

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105 A derivational prefix is considered to be no longer (or less) productive if a large portion of the words containing that prefix are names of plants and animals or features, artifacts or utensils of the culture or if the words that contain it are mostly onomatopoetic.
knowledge, there is only one third-order prefix in Biatah that is clearly still productive. That is \{pi-\}.\(^{106}\) a versatile morpheme whose most common function, especially when it occurs with a nasal or nasal-initial prefix, is to yield a noun stem with one of several kinds of grammatical roles.\(^{107}\)

Biatah examples with first-, second- and third-order prefixes:

- /pi-/uni0272i-k-udip/ ‘act of keeping alive’ (Biatah-Nais) (328)
- /pi-/uni0272i-m-ăd/uni0259d/ ‘too slow to act, lazy’ (Biatah-Nais)

### 7.4.3 Prefix combinations

A common first-order prefix to an obstruent-initial root is the replacive-nasal prefix. Any additional prefixes are full-syllable prefixes: Ci-. The Ci- prefixes are here termed ‘second-order and third-order’ prefixes because they can occur in combination with other prefixes, even though in some words they occur as the first or only prefix. It is especially common for /r/-initial roots to take a Ci- prefix as their only prefix. In some cases a full-syllable prefix is added to a stem that consists of a root plus a single-consonant prefix or a root plus a single-consonant prefix plus one Ci- prefix. Some words consist of a root plus two Ci- prefixes. Words containing more than two full-syllable prefixes are apparently quite rare, although they do occur.\(^{108}\)

Apart from single-consonant prefixes, which include the replacive-nasal, the syllabic-nasal of Bukar and Sadung and the consonant prefixes used for vowel-initial roots, all other Biatah prefixes consist of a Ci syllable.

In the Biatah dictionary (Nais 1988), there are some entries in which VV sequences occur that are not penult-ultima combinations. Some CV- prefixes occur with certain vowel-initial roots. They are pi-, si-, bi- (and to a lesser extent di- and ri-). There are \([V_1,V_2]\) sequences in which \(V_1\) is the nucleus of the antepenult and the second vowel is the nucleus of the penult. The antepenult (first) vowel of all such VV sequences is /i/. The second vowel is predominantly /a/, but there are also a few instances of /u/ and even fewer of /i/ as the second vowel. An example of a form that is found in all of the eastern dialects is /pi-am/uni0259h/ > \[pi.a.m/uni0268 ̃h ̃\] (or \[pi.ya.m/uni0268 ̃h ̃\]) ‘to dream’. Another example, from Bistaang, is /miajah/ > \[mi.a.jah\] (or \[mi.ya.jah\]) ‘yesterday’.

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\(^{106}\)If one regards the ‘two-syllable’ prefixes as combinations of a third- and a second-order prefix—\{pări-\} < \{pi-\} + \{ri-\}; \{bări-\} < \{bi-\} + \{ri-\}; \{mări-\} < \{mi-\} + \{ri-\)—then the prefixes \{bi-\} and \{mi-\} as well as \{pi-\} should be classified as third-order prefixes. This is, in fact, the point of view adopted here.

\(^{107}\)\(\text{pi-}\) has variants that can occur when the second-order prefix is /ri-/: /p-/; /pa-/ and /pi-/.

\(^{108}\)One example shows a five-syllable word with three Ci- prefixes. It is /pi-pi-gi-rinduŋ/ > \[pi.pi.gi.rin.duŋ\] ‘protector, defender; protection’. Other forms of this word are /gi-rinduŋ/ ‘to defend, protect, shade, impede’ and /rinduŋ/ ‘a shade, screen, or blind’ (Biatah-Nais). This /pi-pi-\ is the fairly common second-order + third-order prefix sequence already mentioned as occurring farthest out from the root. The /gi-\ is a non-nasal verbalizing prefix thought to be no longer (very) productive. Since no vowel-initial root for this word-set has been noted, /r/ is probably the initial consonant of the root, not a prefix. Because there is not a single-consonant prefix, this five-syllable word has the normal maximum of three prefixes.
Where a Ci- prefix is the only prefix in a word, it can be any Ci- prefix that is semantically and grammatically appropriate to that root. If the stem has two syllables, the Ci- prefix becomes the antepenult. If there are two Ci- prefixes, they are the antepenult and ante-antepenult. In words having a vowel-initial root and two more prefixes, the first-order prefix is a single-consonant: /ŋ/, /m-/, /n-/, /k-/ or /r/. The second-order prefix is /nji-/ (varying to /ni-/ or /ri-/). The third-order prefix is /pi-/ or its variant /pă-/ as the ante-antepenult. In some words where the second-order prefix is /ri-/, the vowel of /pi-/ drops out before the /r/, making a word-initial obstruent-plus-liquid cluster and thus not adding a syllable.

Certain other disyllabic sequences were considered by Nais to be two-syllable prefixes: /pări-/, /mări-/, /bări-/, in addition to /pi-ni-/. These do not occur together with the replacive-nasal or single-consonant prefixes, but they do result in four-syllable words. Possibly the ‘two-syllable prefixes’ represent earlier combinations of the labial-initial prefixes /pi-/ /bi-/ and /mi-/ with the prefix /ri-/ Only /pi-ni- and to a lesser extent /pi-ri- and /pă-ri- occur in the dictionary with any frequency. These occur with vowel-initial and voiced- and voiceless-obstruent-initial roots and stems; /mă-ri- occurs a very few times before /p, b, g/ and /mi-ri- a few times before /b, g/. /bă-ri- occurs only once (in /bă-ri-bădap/ ‘startled by something’); */bi-ri- as such does not occur. However, examples of /p-ri- and /b-ri- occur word-initial with some frequency. Those are thought to be short forms of /pi-ri- and /bi-ri-, resulting from loss of a reduced vowel between the obstruent and /r/. Apart from /pi-/, which, like /pi-/ itself, commonly yields a noun, virtually all words that contain ‘two-syllable prefixes’ are descriptive—of a sound, a sight, a sensation, an action. Examples are /p-ri-paseg/ ‘dripping (a liquid)’; /b-ri-bu(w)eh/ ‘having lack of control of quid-juice in the mouth’; /mă-ri-bădap/ ‘suddenly alarmed, startled, revulsed’; /pă-ri-patak/ ‘rattling’; /bă-ri-bădap/ ‘startled by something’. Examples of vowel-initial roots in four-syllable words with /pi-/ as first syllable (ante-antepenult), /ni-/ (or /ni-/) or /ri- as the second syllable (antepenult) and a single consonant as first-order prefix (except in the fifth example):

/pi-ni-m-ădud/ ‘easily gets cold (e.g., a person in poor health)’, /ădud/ ‘coldness, chill’, /m-ădud/ ‘cold’, /pi-m-ădud/ ‘unable to resist cold’ (Biatah-Nais) (315)
/pi-ni-m-ăkat/ ‘resurrection, being alive again after death’, /ăkat/ ‘upper part of a (long)house, growing up’, /pakat/ ‘rank, grade, title, status; to lift up, raise up’, /{N-}(p)ăkat/ (or /m-ăkat/) > [mă.kat] ‘elevate, raise in rank’, /pi-m-akat/ departure, resurrection, a (new?) start, resurgence’ (Biatah-Nais)
/pi-ni-k-agah/ ‘publicity’, /agah/ ‘news, message, gossip’, /k-agah/ ‘publicize, make known’, /{N-}(k)agah/ or /η-agah/ > [η.agah] ‘to summon, call for’ (Biatah-Nais)
/pi-ri-r-upe(/u)p/ a fold, crease, /upe(/u)p/ ‘a fold, crease’, /η-uper/ ‘to fold over, turn down, fold up, weave the edge of a mat’, /r-uper(/u)p/ a lug, projecting part used to grasp something’ (Biatah-Nais)
/pa-ri-ajo(/u)/ ‘standing upright’, /ajo(/u)/ ‘upright position’ Cf. /pijo/ ‘stand something up, install something’, /mijo/ ‘stand, stand up, get up’ (Biatah-Nais) (132)

Vowel-initial roots can take a total of three prefixes: a first-order, single-consonant prefix plus /pi-ni-/ /pi- or /p(ă)-ri-; /pi- or /ri- is the second-order prefix and /pi-/ (or /p(ă)-/ or just /p-) is
Consonant-initial roots and stems generally take a maximum of two prefixes. In threesyllable words formed by an obstruent-initial root and one Ci- prefix, that prefix can be any of the /Ci-/ prefixes. In four-syllable words /pi-ni-/ and /p(ă)-ri-/ are the principal second- and third-order prefix combinations. Note that all three of those prefixes—/pi-/, /ni-/ (or /ņi-/), and /ri-/—can also occur as the only prefix to a root. As in the above examples, when a vowel-initial root is prefixed by a single-consonant prefix, any of these three prefixes can occur as the preceding prefix.

Examples of consonant-initial roots with /pi-/ (or /pă-/) plus /uni0272i-/ (or /ņi-/) or /ri-/, as prefixes:

- /pi-/uni0272i-rami/ (also /pi-ņi-rami/) 'celebration, ceremony', /rami/ 'happy, sociable' (Biatah-Nais)
- /pi-ri-/uni0261iat/ 'irritating, causing a twinge of pain', /giat/ 'sudden sharp pain, twinge' (Biatah-Nais)
- /p(a)-ri-kuit/ 'flicking (of a tail)', /kuit/ 'to wag tail' (Biatah-Nais)
- /p(a)-ri-supek/ 'in tatters, in small pieces', /supek/ 'a splinter, fragment, piece, scrap' (Biatah-Nais)

7.4.4 Nasal-initial Ci- prefixes

Nasal-initial Ci- prefixes that occur with consonant-initial roots and stems, principally /r/-initial, are approximately comparable in meaning and grammatical function to single-consonant prefixes that have that same consonant before vowel-initial roots. The nasal-initial Ci- prefixes include /mi-/ which is comparable in function to /m-/ in that both of these prefixes produce primarily descriptives; /ņi-/ (varying in the central dialects to //uni0272i-/) which is comparable in function to /ņ-/ in that it produces primarily active verbs, especially transitive or causative. (Although there is no */ni-/ prefix as such, there is an /n-/ prefix, comparable to the /-in-/ infix.)

The match between single-consonant nasal prefixes that are used with vowel-initial root forms and the initial nasals of the corresponding syllabic (Ci-) prefixes, is not quite one-to-one. The only nasals that clearly function as single-consonant prefixes are /m-/, /n-/, and /ņ-. The nasal-initial Ci- prefixes are /mi-/ and /ņi-/ (which in the central dialects including Biatah varies to /ņi-/).

It appears that in the central dialects the two prefix forms, /ņi-/ and /ņi-/, are almost interchangeable and that together they function as the post-apical Ci- prefix for some consonant-initial roots and stems. In eastern and western dialects the palatal-nasal Ci- prefix has not been observed. It is

109 Note that the ordering of prefixes is from the root outwards while the order of pronouncing them is from the third-order prefix toward the root.

110 Four- and three-syllable words’ in this section refers to prefixed forms only. Post-root additions to words are not in focus here.

111 In stem-initial position /ņ/ /ņ/ and /n/ contrast before /i/. (In Bidayuh there is not much tendency for /n/ to palatalize before /i/.) Examples of the contrast can be found among nasal-initial stems in penults that begin with each of these three nasals followed by /i/. These stem-initial nasals represent three realizations of the replacive-nasal prefix as it occurs with stem-initial palatal, velar and apical obstruents respectively.

Examples from Bunan showing contrast of stem-initial /ņi- /ņi- /ni-:

- /ņigit/ > [ņi.ɡit] 'bite (verb)', /giit/ > [gi.ɡit] 'tooth/teeth' (Bunan) (147)
- /ņihap/ > [ņi.ɦap] 'to drink', /sihap/ > [si.ɦip] 'drink it! (imperative)' (Bunan) (235)
likely that /ŋi-/ is the equivalent prefix there. In Biatah, a central dialect, /ŋi-/ occurs only with a small subset of /r/-initial roots and a few words with stem-initial /m/. The dictionary shows that a major portion of /r/-initial roots and /m/-initial stems that take /ŋi-/ can occur with /ni-/ as well. Some, but not all, roots and stems that occur with both of these prefixes have the same meaning with both. This does not seem to be a clearcut case of optional variation between two forms of the prefix. There appears to be optional variation in some words. Double forms seem to be well established in the central dialects; the speakers of those dialects are aware that the two prefixes are different. However, uncertainty was observed in some speakers as to whether /ni-/, which is phonetically [ŋiː], would be ‘correct’ or whether it should be /ŋi-/ which is phonetically [ŋiː]. In some cases the speaker was unsure which form he/she was using, demonstrating at least some degree of neutralization between the two forms. Speakers of central dialects, of which Biatah is one, use /ŋi-/ for this prefix in many more words than they use /ŋi-/, but they do use both. As shown, both of these nasals are phonetically palatalized before /i/, and /ɲ/ is quite palatalized wherever it occurs. The two forms sound quite similar.

In Biatah the form of the nasal Ci- prefix that occurs most commonly with /r/-initial roots is /ŋi-/; the dictionary shows 246 examples. There are also 23 examples in which /r/-initial roots and stems occur with /ŋi-/ as prefix. However, at least 14 of those occur with /ni-/ as well. In most word-sets that use both /ŋi-/ and /ni-/ the meaning of the /ŋi-/ form is the same as—or very similar to—that of the /ni-/ form: With /r/-initial roots /ŋi-/ produces mainly transitive or causative forms; /ni-/ forms too are mainly active verbs. (However, there are a few word-sets where the two prefixes mark different grammatical functions: intransitive/transitive/causative.) No phonological criterion or major lexical difference has been identified as a determining factor in whether a given /r/-initial root occurs with /ŋi-/ or /ni-/ or with both or neither.

Examples of Biatah /r/-initial roots with /ŋi-/; noun/adjective > transitive verb:

/ŋi-rentis/ ‘to cut a narrow path in jungle’, /rentis/ ‘a trail, trace, narrow path cut through jungle’

(Biatah-Nais)

Examples of Biatah /r/-initial roots with /ni-/; noun > transitive (?) verb:

/ni-ruti/ ‘to remove rough skin from sugar cane, rattan, etc.’ (Biatah-Nais)

Examples of Biatah /r/-initial roots or stems that occur with both /ŋi-/ and /ni-/:

/ŋi-rripi/ ‘biased; cause prejudice in, take sides, favor’, /ŋi-ripi/ ‘partial, biased, unfair’ (Biatah-Nais)

/ŋi-răpah/ ‘to season a vegetable’, /ŋi-răpah/ ‘to season with spices’ (Biatah-Nais)

/ni/uni0272ul/ > [nĩ./uni0272ũl] ~ /ninjul/ > [ninjul] ‘to push’ (Bunan), /ti/uni0272ul/ > [tĩ./uni0272ũl] ~ /tinjul/ > [tĩn.jul] ‘to push’ (Terbat) (152)
It is not absolutely clear whether an /r/ between a Ci- prefix and a vowel-initial root is always a prefix. Possibly it is a remnant of the /-ir-/ infix, or it may be (or have been) epenthetic, i.e., inserted automatically into certain words to separate the vowel of the Ci- prefix from the initial vowel of a root and/or to create a new lexical form.

Examples of the /r-/ (prefix ?) between the Ni- prefix and a vowel-initial root:

/ni-r-akar/ ‘to cheat by talking, to con, coax, or persuade’, /ŋi-r-akar/ ‘to bluff, fool, deceive, concealed’, /akar/ ‘root, intelligence, wit, trick’ (Biatah-Nais) (32)

/ni-r-ɪŋuk/ ‘to beat into a soft mass (e.g., cucumber leaves), to mash’, /ŋi-r-ɪŋuk/ ‘to knead’, /r-ɪŋuk/ ‘soft (e.g., cooked vegetable mash)’, /ɪŋuk/ ‘footprint, dent or mark left by pressure’ (Biatah-Nais)

/ni-r-umbak/ ‘to “rootle” (pig digging on dry land) or roll in mud’, /ŋi-r-umbak/ ‘to wallow about (in mud)’, /r-umbak/ ‘wallowed earth’, /umbak/ ‘rolling waves, whirlpool, etc.’ (Biatah-Nais)

/ni-r(-)urut/ ‘to massage (body)’, /ŋi-r(-)urut/ ‘to massage (body)’. Cf. /ni-r-əras/ > [ni.ri.rips] ‘idem.’ and /ərat/ > [ʔi.ri.t] ‘line or mark made by folding or pressing, crease’.

The form /ni-/ as verbalizing prefix occurs also with a large subset of obstruent-initial roots (more than 500 in the dictionary). Some of those are roots that do not take the replacive-nasal as first-order verbalizing prefix. For those roots /ni-/ is the principal verbalizer. However, many obstruent-initial roots can take the /ni-/ prefix together with /m-/ as replacive-nasal prefix. The /ni-/ prefix occurs as well in a very few entries (at most three) that have /n-/ or /ŋ-/ as replacive-nasal prefix. For those the replacive-nasal stem and the replacive-nasal+/ni-/ stem may have essentially the same meaning. All root-initial obstruents can occur with the /ni-/ prefix, but palatal consonants are very few because of dissimilation, the strong tendency not to use a Ci- prefix whose consonant is pronounced at the same place of articulation as the initial consonant of the root. Among the obstruents, /b/ and /k/ are those that occur most commonly with /ni-/. The resulting /ni-/ forms are in most cases descriptive/intransitive or transitive/causative verbs.

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112 This example illustrates a /u/ > [u] ~ /u/ > [i] variation that can be observed in a number of dictionary entries (Biatah-Nais). One gets an impression that in some semantic areas [i]-forms have been created from /u/-forms to fill gaps in older word-sets.

Sample words from related word-sets with /u/ and /ə/ (> [i]) intermingled:

/abur/ ‘(early) at dawn, early morning, flying of a bird’; /m-abar/ (> [ma.bir]) ‘fly away, fly off, soar up’; /k(-)abar/ ‘invisible, dim, not clear’; /k(-)abar/ > [ka.bir] ‘flying away, zooming up; sudden upward flight of a bird’; /ŋ-abar/ ‘to hurl, throw about; to dull an eyesight’; /mi-kabar/ ‘fly away, flying, swooping’; /pi-kabar/ ‘make an eyesight dim’; /pi-ŋ-abar/ > [pi.ŋa.bir] ‘act of flying’ (Biatah-Nais) (141)

Sample words from two word-sets having different but similar meanings, differing by /u/ vs. /ə/ (> [i]):

/adəd/ (> [a.did]) ‘anesthesia, coolant, numbness,’ vs. /ādud/ ‘coldness, coolant, (a) chill’

/m-adəd/ (> [ma.did]) ‘anesthetized, numb, insensitive’ vs. /m-ādud/ ‘cold, chilled, numbed’ (Biatah-Nais) (315) These two word-sets are not identical throughout. They differ slightly in prefix choices. It is not known whether forms with /ə/ in the ultima can have reduced /ā/ in the penult. It appears that they can, but few, if any entries in the dictionary show this combination.
Examples from Biatah of /ŋi-/ with obstruent-initial roots; noun/adjective > transitive/causative, stative/descriptive:

/ŋi-punok/ 'to turn one’s back on', /punok/ ‘back’ (Biatah-Nais) (99)
/ŋi-bădăh/ ‘to cause something to dry’, /bădăh/ ‘dry’ (Biatah-Nais) (172)
/ŋi-bădăh/ ‘to hunt land turtles’, /bădăh/ ‘land turtle’ (Biatah-Nais) (172)
/ŋi-băji/? ‘to reprove, scold, anger’, /băji/? ‘angry, become angry’. Cf. /{N-}(băji)/ > [mă.ji?] ‘to annoy, disturb, anger’ (Biatah-Nais) (172)

/ŋi-barik/ ‘wrong way round, upside down, inside out’, /barik/ ‘not straight, zig-zag’. Cf. /{N-}(b)arik/ > [ma.rik] ‘to turn over, pervert, turn aside from intended use’. Note that /ŋi-/ can prefix both the obstruent-initial root and the {N}-stem, yielding somewhat different meanings. (Biatah-Nais)
/ŋi-du(w)ah/ > [ŋi.du.(w)ih] ‘to divide (people, etc.) into (groups of) two’, /du(w)ah/ ‘two, two by two’. Cf. /ŋi-{N-}(d)u(w)ah/ > [ŋi.nu.(w)ih] ‘to bisect, cut in half’ Note that /ŋi-/ occurs as prefix with both the root and the {N}-stem, and that the two forms differ slightly in meaning. On the other hand, the {N}-stem itself does not occur as a separate dictionary entry. (Biatah-Nais) (282)

Both /ŋi-/ and /ŋi-/ can be prefixed to /m-/ initial stems. When they occur with /m-/ prefixed stems, there is almost no overlap between the set of roots/stems that occurs with /ŋi-/ (10) and the set that occurs with /ŋi- (25). The two sets do overlap in grammatical function, however. With /m-/ stems both /ŋi-/ and /ŋi-/ can produce transitives/causatives and that is also the principal role of /m-/ when the latter is functioning as the replacive-nasal prefix for /p/ or /b/ in an obstruent-initial stem. The /m-/ initial stems with /ŋi-/ are more likely to have a stative/descriptive function; the /m-/ initial stems with /ŋi-/ are more likely to have a transitive/causative function. Both sets of roots/stems can also yield statives/descriptives, which is the principal role of /m-/ when it occurs with vowel-initial roots. There is some lack of clarity as to whether given instances of stem-initial /m-/ manifest the replacive-nasal /m-/.

113 It seems that in this word-set and a number of others there are two roots. In this case one is an obstruent-initial root (/b/) and the other a vowel-initial root. With this hypothesis, there are two possible sources for /mătur/: It may be /bătur/ with the nasal-replacive prefix or it may be /ătur/ with the single-consonant /m-/ prefix that occurs with vowel-initial roots. The form /mătur/ lies at the intersection of developments from both roots. However, in this case the meaning suggests that /m-/ is the replacive-nasal rather than the single-consonant /m-/ prefix because the replacive prefix most commonly yields transitive/causative verbs and the /m-/ prefix most commonly yields descriptives. Note also that the further-prefixed stem based on /mătur/ takes the /ŋi-/ form of the /ŋi-/ prefix while the prefixed stem based on /bătur/ takes the /ŋi-/ form of the prefix. This supports a conclusion that /mătur/ may in some sense represent both the /m-/ prefix and the nasal-replacive. A vowel-initial root exists as does a form with the /ŋi-/ prefix. Both /m-/ and /ŋi- are prefixes used with vowel-initial roots.
or the single-consonant prefix /m-/. Certain functions point to certain derivations, but there is still lack of clarity.

Examples from Biatah of /ni-/, or /ŋi-/, one example with a descriptive /m-/ stem and two others with the replacive-nasal /m/-stems:

With descriptive /m-/

/ni-m-ădăd/ > [ni.mă.dăd] 'to anesthetize', /m-ădă/ 'numb', /ădă/ 'numbness'. This word-set does not include any form with an initial labial obstruent, /p/ or /b/, so /m-/ is presumed not to be the replacive nasal but rather the single-consonant prefix. (Biatah-Nais)

With replacive /m-/:

/ŋi-{N-}(p)asaŋ/ > [ŋi.ma.saŋ] 'to nurture, develop, enhance, progress', {N-}(p)asaŋ/ > [ma.saŋ] 'to move forward, advance, thrive, take the lead in a race', /pasăŋ/ '(rising) tide, tidal flow'. In this word-set there is a root-form with initial labial obstruent, so /m-/ is presumed to be the replacive nasal. (Biatah-Nais)

With replacive /m-/:

/ŋi-{N-}(b)ătak/ > [ŋi.mă.tak] 'plain, clear (of speech)', /m-ătak/ 'to convince, persuade by argument or proof', /bătak/ 'to pull, draw toward oneself, drag'. The forms /bătak/ and /mătak/, if correctly transcribed in the Biatah dictionary, have full, rather than reduced, /a/ in the penult; /bătak/ also has a meaning that is less than clearly related to meanings of the other forms, but a labial obstruent appears to be indicated by the other forms. This word-set has a mix of /ā/ forms and /ă/ forms, as do many other sets in the dictionary and many word-sets in the eastern region (cf. §7.3). The rest of this mix of forms includes the following: /ătak/ 'headwaters of a stream or river', /mătak/ 'to go, set to work, go to (one’s) farm or garden'. (Biatah-Nais)

7.4.5 Limitations and affinities of prefix and stem combinations

The nasal-initial, full-syllable prefixes and most of the non-nasal, full-syllable prefixes have the shape /Ci-/. The /Ci-/ prefix closest to a root or stem becomes the antepenult; if there is a second, outer prefix, it becomes the ante-antepenult. The root or stem that occurs most commonly with only /Ci-/ prefixes has /r/ as its initial consonant because /r/-initial forms cannot take the replacive-nasal or other single-consonant prefixes. The subset of words with obstruent-initial roots that do not include the replacive-nasal prefix but are verbalized by /mi-/ or /ŋi-/ (which varies in central dialects to /ni-/) contain three syllables.

Biatah has some constraints regarding sequences of consonants that occur in successive syllables where a Ci- prefix is joined to an obstruent-initial root or stem. The prefix consonant is normally not one that is pronounced at the same place of articulation as the stem consonant. Furthermore, some prefixes do not occur with every class of sound: voiceless and voiced obstruents, nasals, liquid, vowels. Looking at the labial-initial Ci- prefixes (/mi-/, /bi-/, /pi-/), we observe the following (approximate) distributions:
Table 1. Distribution of Biatah labial-consonant Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed: numbers of occurrences in the Nais dictionary

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Obstruents</th>
<th>Nasals</th>
<th>Liquid</th>
<th>Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>voiceless</td>
<td>voiced</td>
<td></td>
<td>a</td>
</tr>
<tr>
<td>/mi-/</td>
<td>38</td>
<td>5</td>
<td>74</td>
<td>123</td>
</tr>
<tr>
<td>(esp velar)</td>
<td></td>
<td></td>
<td>(esp /n/)</td>
<td></td>
</tr>
<tr>
<td>/bi-/</td>
<td>535</td>
<td>300</td>
<td>15</td>
<td>245</td>
</tr>
<tr>
<td>/pi-/</td>
<td>45</td>
<td>127</td>
<td>686</td>
<td>211</td>
</tr>
</tbody>
</table>

Among the three labial prefixes shown in the above chart, /pi-/ occurs many times before nasals and significantly less often before obstruents; /bi-/ occurs very commonly before obstruents, both voiced and voiceless, but much less often before nasals; /mi-/ is less common overall than either of the others. (It should be noted that /bi-/ is less constrained than most of the other prefixes mentioned here in that it occurs, apparently rather freely, with roots and stems that begin with labial consonants. It occurs before /p/ in 63 words and before /b/ in 66, but before /m/ in only six.) Consonants that follow /mi-/ are divided among obstruents, nasals and /r/, with /r/ predominating. Nasals are almost twice as common as obstruents with /mi-/ but /r/ occurs as many times as all other sounds put together. All three of the labial-consonant Ci- prefixes occur in significant numbers before /r/, which takes only Ci- prefixes. Among the three labial prefixes only /pi-/ and /bi-/ can prefix vowel-initial forms.

Table 2. Distribution of the three nasal-initial Biatah Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed: numbers of occurrences in the Nais dictionary

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Obstruents</th>
<th>Nasals</th>
<th>Liquid</th>
<th>Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>voiceless</td>
<td>voiced</td>
<td></td>
<td>a</td>
</tr>
<tr>
<td>/mi-/</td>
<td>38</td>
<td>5</td>
<td>74</td>
<td>123</td>
</tr>
<tr>
<td>(esp velar)</td>
<td></td>
<td></td>
<td>(esp /n/)</td>
<td></td>
</tr>
<tr>
<td>/pi-/</td>
<td>275</td>
<td>241</td>
<td>24</td>
<td>246</td>
</tr>
<tr>
<td>/ŋi-/</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>22</td>
</tr>
</tbody>
</table>

Comparing the three nasal-initial Ci- prefixes (above), we can observe that /pi-/ occurs about equally before /r/, voiceless obstruents and voiced obstruents; /mi-/ and /ŋi-/ are less common generally than /pi-/ but are fairly consistent in which kinds of consonant(s) they precede: /ŋi-/ precedes /r/ and /m/ but not obstruents; /mi-/ most often precedes /r/ and less often nasals and obstruents.

Another Ci- prefix, /si-/, which is non-labial, can also occur with vowel-initial roots. There is one example of /ki/ as antepenult but probably not a prefix that is followed by a vowel; apparently it is a loan word.
Table 3. Distribution of six common Biatah Ci- prefixes with the kinds of root-/stem-initial consonants and vowels to which they are prefixed:
numbers of occurrences in the Nais dictionary

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Obstruents</th>
<th>Nasals</th>
<th>Liquid</th>
<th>Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>voiceless</td>
<td>voiced</td>
<td>a</td>
<td>i</td>
</tr>
<tr>
<td>/pi-/</td>
<td>275</td>
<td>241</td>
<td>24</td>
<td>246</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(esp /m/)</td>
</tr>
<tr>
<td>/pi-/</td>
<td>45</td>
<td>127</td>
<td>686</td>
<td>211</td>
</tr>
<tr>
<td>/bi-/</td>
<td>535</td>
<td>300</td>
<td>15</td>
<td>245</td>
</tr>
<tr>
<td>/si-/</td>
<td>242</td>
<td>221</td>
<td>85</td>
<td>88</td>
</tr>
<tr>
<td>/ti-/</td>
<td>127</td>
<td>103</td>
<td>24</td>
<td>99</td>
</tr>
<tr>
<td>/ki-/</td>
<td>12</td>
<td>14</td>
<td>45</td>
<td>45</td>
</tr>
</tbody>
</table>

The third chart of prefixes (above) compares the five common non-nasal Ci- prefixes with the most common nasal Ci- prefix, /pi-/:  
/pi-/ makes /r/-initial and obstruent-initial roots, most commonly those that begin with /k/ or /b/, into active verbs. It is uncommon with nasal-initial stems.  
/pi-/ on the other hand, most commonly prefixes nasal-initial stems, most of which are active-verb stems. It produces principally nouns but also some descriptives and verb-forms. The nouns may function as ‘actor’ or ‘patient’ of an active verb, as the ‘instrument’ used to carry out an action or as the abstract characterization of an action or state. That is why /pi-/ occurs as prefix with so many nasal-initial stems, more than do the other prefixes. If /pi-/ is prefixed to a noun root, the resulting stem is a descriptive/stative verb; if prefixed to descriptive/stative or intransitive stem, it yields a transitive or causative verb.  
/bi-/ in some examples yields an active verb, but more commonly /bi-/prefixed words are descriptive of a state or condition or of doing something, being something, or feeling something. A group doing things together may be involved in the action or condition described by a /bi-/ stem, or the form may show reciprocal action. These kinds of meanings tend to build on nouns rather than on active verbs. Therefore, /bi-/ occurs principally with obstruent-initial and /r/-initial roots, very little with nasals.  
/si-/ has a variety of outcomes—in many, but not all, cases its meaning relates to the concept ‘one’. Possibly the prefix is related to satu, which is ‘one’ in Malay. (Cf. also Proto Land Dayak *səh, *āsa? ‘one’ (281) and Proto Malayo-Polynesian *āsə? ‘one’). The prefix can be used to show one instance or example of something, or the prototypical example, to communicate the meaning ‘superlative’, to indicate unity.  
/ti-/ prefixed words are largely descriptive of events or conditions, but some appear to be ordinary nouns or adjectives. The latter include a sprinkling of plant and animal names, which are presumed to be ‘frozen’ forms. A major meaning component that can be imparted by a /ti-/ form is that the happening or

115Information from C. R. Rensch, personal communication.
condition it describes is accidental, unexpected, surprising or uncontrollable. (This is parallel to an
implication of the Malay prefix ter-.)

/ki-/ is commonly descriptive of appearance or sound, etc. It occurs prefixed primarily to stems that
begin with a nasal or liquid, less commonly to roots that begin with an obstruent but not at all to roots
that begin with a vowel.

Although most Ci- prefixes are used with consonant-initial roots or stems, /bi-/ /pi-/ and /si-/ can
prefix some vowel-initial roots. In the majority of those words the root has /a/ as its initial segment. This
is not surprising considering that /a/ is by far the most common vowel in the language and the one most
likely to occur root-/word-initial.

As it is with all languages, so with Bidayuh: most generalizations or ‘rules’ have exceptions. For
example, among entries in the Bidayuh dictionary that begin with the prefix /mi-/, there are exactly two
words in which /mi-/ prefixes an /m/-initial stem. These words are exceptions to the generalization
(‘rule’) that a Ci- prefix is not (normally) used with roots or stems that begin with a consonant
pronounced at the same place of articulation as the consonant of the prefix. Apart from these two
‘exceptions’ the rule is true for the data available. There is no other example in which /mi-/ is prefixed to
a root or stem that begins with /p/, /b/ or /m/.

Unique examples of /mi-/ as verbalizing prefix to an /m/-initial stem:

/mi-{N-}(p)uji/ > [mi.mu.ji] ‘to praise, flatter, try to gain favor by flattery’, /{N-}(p)uji/ > [mu.ji] ‘to
praise, flatter’, /puji/ ‘praise (noun), adoration’ (This word comes from Hindi or Sanskrit, perhaps
via Malay.) (Biatah-Nais) (65)

/mi-{N-}(p)uruh/ > /mi.mu.ruh/ ‘planting (verb) (e.g., fruit trees), raising various crops’, /{N-
}(p)uruh/ > [mu.ruh] ‘to plant’, /puruh/ ‘to grow (plants)’ (This root seems to be indigenous.
Each of these three forms has been observed in some Bidayuh dialects, but /muruh/ is not found
in the Biatah dictionary.) (Biatah-Nais) (187)

Other generalizations can be made about /mi-/ as well. Although in a few words it occurs prefixed to
obstruents (non-labial), in particular /k/ and /g/, its most common occurrence is with /r/. It also occurs
with nasal-initial (i.e., verb) stems, chiefly those that begin with /n/.

7.4.6 Other Ci- prefixes as observed in the Nais dictionary

The remaining prefixes of Biatah, insofar as could be determined from available resources, have the
shape Ci- and are not nasal-initial. Most of the prefixes already discussed and some others as well appear
to be still productive. A few other prefixes (or possibly just the words in which they occur) are thought to
be no longer productive (or are ‘frozen’, ‘petrified’, etc.). Conclusions about the present productivity of
specific prefixes are based on a) a small vs. large set of examples and b) the kinds of meaning assigned to
the words. Prefixes that occur almost exclusively in the names of animals, plants, specialized tools,
cultural items or practices, along with prefixes that occur in only a few words, are unlikely to be (very)
productive today.

A summary of the Ci- prefixes that have been identified in Biatah follows:
Table 4. Estimated level of productivity of Ci- prefixes in Biatah dialect

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Breadth of use</th>
<th>Productive?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni- verbalizers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/mi-/</td>
<td>/ni-/-~/ŋi-/</td>
<td>/ni-/-~/mi-/ broad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/ŋi-/- limited</td>
</tr>
<tr>
<td>non-nasal Ci- prefixes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/bi-/-</td>
<td>/pi-/-</td>
<td>/si-/</td>
</tr>
<tr>
<td>/ti-/-</td>
<td>/di-/-</td>
<td>/ri-/</td>
</tr>
<tr>
<td>/ki-/-</td>
<td>/gi-/</td>
<td>limited</td>
</tr>
</tbody>
</table>

A Ci- prefix that has presented a significant challenge is /ki-/.118 There is clearly a /ki/- prefix that can be attached to roots or stems beginning with almost any consonant except velars.

Examples of Biatah words prefixed by /ki-/: 

/ki-baruy/ ‘having a change of clothing on one’s body’, /baruy/ ‘transform, transformed, changed (in shape, color)’ (Biatah-Nais)
/ki-sinjaŋ/ ‘wearing trousers’, /sinjaŋ/ ‘trousers’ (Biatah-Nais)
/ki-daʔan/ ‘to tell’, /daʔan/ ‘to inform, say’ (Biatah-Nais)
/ki-jāraʔ?/ ‘to flog, whip, torture’, /jāraʔ?/ ‘arduous, agony, suffering’ (Biatah-Nais)
/ki-ruwaŋ/ ‘pit, seed, kernel’, /ruwaŋ/ ‘pip (small fruit seed), as of a rambutan’ (Biatah-Nais)
/ki-tawak/ ‘bass gong’, /tawak/ ‘big gong’ (Biatah-Nais)
/ki-bubuk/ ‘worm-eaten (planks, etc.)’, /bubuk/ ‘weevil, wood maggot’ (Biatah-Nais)
/ki-jaman/ ‘move toward here’, /muti/ ‘like this, in this way’ (Biatah-Nasi)
/ki-rakub/ ‘thudding sound of something falling’, /răkub/ ‘sound of a heavy body falling into water or onto flat ground, sound of a falling tree, slamming sound’ (Biatah-Nais)

Examples of Biatah words that may be prefixed by /ki/- but for which the root has not been identified: 

/ki-mata/ ‘back-basket’; /ki-rakap/ ‘millipede’; /ki-tumbar/ ‘coriander’; /ki-mayaw/ ‘a kind of fruit tree’; /ki-dāmbaʔ?/ ‘a kind of large pandanus’; /ki-răpaw/ ‘a kind of large squirrel’; /ki-marăn/ ‘swollen lymph gland’; /ki-maran/ ‘rice jar’; /ki-tupoŋ/ ‘lacking tail feathers’; /ki-bărat/ ‘to admit (someone) into a place’ (Biatah-Nais)

116 /di-/- is a locational, still in use, but seems to be as often a particle as a prefix.
117 The examples of the /ki/- prefix given below include cultural items and the names of animals and plants. Such words are not likely to include a prefix that is productive.
118 In some word-sets the form that begins with /kin/ turns out to be a /k/-initial root or stem containing the infix /-in-/. An alternate analysis of the /kin/ words could regard /ki-/ as a prefix and the /n-/ that follows it as a single-consonant nasal prefix to a (vowel-initial) root. Both ways of looking at this type of word present some complication.
The /ki-/ prefix is, of course, related to the single-consonant first-order prefix /k-/ (cf. discussion in §7.4.1.d).

Examples of Biatah words prefixed by /k-/
/k-ătet/ 'sound of teeth, etc., grinding together', /ătet/ ‘noise of two things rubbing together forcefully’
(See also /k-im-ătet/ ‘having clattering teeth' that shows both /k-/ and /-im-/.) (Biatah-Nais)
/k-irit/ ‘wriggling sensation’, /irit/ ‘in-and-out plaiting/weaving’ (See also /k-im-irit/ ‘wriggling (e.g., maggots)’ that shows both /k-/ and /-im-/.) (Biatah-Nais)
/k-ăda/uni02D0m/ ‘to rot, tarnish, mar, cause to rot’, /ada/uni02D0m/ ‘putrid, rotten, decayed; something dead’ (See also /k-in-ada/uni02D0m/ ‘cause to rot; defame’ that shows both /k-/ and /-in-/.) and /m-ăda/uni02D0m/ ‘rotten, rotting; carrion, decayed/rotting flesh’ that shows /m-/.) (Biatah-Nais) (305)

It would be possible to view the vowel in Ci- prefixes, /i/ (or /a/ in the case of Rara) as epenthetic. However, that conclusion leads to complication because some (non-nasal) Ci- prefixes do not have a single-consonant (C-) form. Furthermore, as has been mentioned, a few of the Ci- prefixes that are used primarily with consonant-initial roots and stems can occur as well with (some) vowel-initial roots. The Ci- prefixes that can occur attached directly to (some) vowel-initial roots are ones that do not have a corresponding C- form. The Ci- prefixes that most commonly occur with vowel-initial roots are bi-, pi- and si-. Apart from those, prevocalic position is an uncommon distribution for a Ci- prefix. The nasal-initial Ci- prefixes do not occur with vowel-initial roots; only their single-consonant counterparts do.

Examples in Biatah of non-nasal Ci- prefixes occurring with vowel-initial roots:
/pi-abun/ ‘dewy’, /abun/ ‘cloud’ (12); /pi-urun/ ‘making someone work too hard’, /urun/ ‘slave’ (Biatah-Nais) (259)
/si-ad/uni0259p/ ‘by oneself’, /ad/uni0259p/ ‘self’; /si-um/uni0259h/ ‘farming together with someone else’, /um/uni0259h/ ‘(padi-field)’ (Biatah-Nais) (194)

Although each of the vowel-initial roots in these examples occurs with one of the three Ci- prefixes, each root occurs with only that one, not with the other two. Because of semantic differences among roots and among these three prefixes, it is not so likely that any particular root would occur with more than one.

As already mentioned, there is some overlap in the grammatical meaning of prefixes. It is not a case of free choice, although there is some optional variation. In general each root uses a specific set of prefixes for specific kinds of meanings. The choice of prefix in any given instance depends not only on the grammatical meaning/function to be communicated but also on what is appropriate to the lexical content of the root and to the phonological characteristics of the root and prefix. Undoubtedly, discourse structure is involved as well. (That topic requires further investigation.)

Following is a summary of phonological factors that affect prefix choices in Biatah. Surely there are more to be discovered:
a) Number of syllables in the root/stem,
b) Canonical type of the first sound in the root/stem: vowel or consonant?
c) Type of consonant in root-/stem-initial position: Is it voiceless or voiced? Is it an obstruent, nasal, /r/? Most roots that begin with voiceless obstruents and some that begin with voiced obstruents use the homorganic replacive-nasal as the first-order, verbalizing prefix. That prefix cannot be used with /r/-initial roots/stems because /r/ has no nasal replacive; /r/ requires a syllabic prefix, one containing a vowel, and the replacive-nasal is a homorganic (nasal) consonant only. The replacive-nasal cannot be used with vowel-initial roots because there is no initial obstruent to be replaced.
d) Dissimilation: The homorganic-nasal prefixes, \{N-\} and \{N:-\}, take the same place of articulation as the root-initial obstruent. The replacive-nasal displaces the obstruent while the syllabic-nasal is added in front of the obstruent. Apart from these, it is fairly common in Biatah that a root or stem does not take a prefix that begins with the same consonant or with another consonant pronounced at the same place of articulation as the initial consonant of the root/stem. A few Ci- prefixes, especially /bi-/, /pi-/ and /si-/, the same Ci- prefixes that can be used with (some) vowel-initial roots, do not follow the place-of-articulation restriction so closely as other prefixes do.

7.4.7 More vs. less use of prefixes

The fact that a significant set of derivational prefixes exists in the Biatah dialect does not necessarily mean that those same prefixes are used or are used in the same way in all dialects. It appears from examining entries in the Biatah dictionary that in some entries a form with one or more prefixes and one with no prefix, or one with a different prefix, may have the same meaning. An impression one gets is that in ordinary conversation—and perhaps in ordinary writing—sentences sometimes consist mainly of a root ± a single-consonant nasal prefix ± particles arranged in appropriate syntactic order, but not including all of the possible prefixes.

Absence of prefixes can have meaning as well, especially in verb forms; strategic use or non-use of the prefixes undoubtedly plays a role in discourse structure and in development and maintenance of grammatical relationships. Perhaps the prefixes are in some sense an available resource to be called into action as needed for clarity of meaning and for identification of roles and participants in unfamiliar discourse. They may be less used in ordinary conversation. Formality level and relative status of the participants are likely to be factors as well. Specific factors and also usage probably vary from dialect to dialect and from speaker to speaker.

7.5 Nasals in word-initial position: Are some nasal-initial forms not verbs?

A large proportion of indigenous nasal-initial Bidayuh words are verb stems. Most of those verb stems consist of a) an obstruent-initial root with a replacive nasal or syllabic nasal as prefix or b) a vowel-initial root with a single nasal as prefix. In the case of vowel-initial roots, /ŋ-/, /m-/ or /n-/ is the prefix. In the case of /r/-initial and many other roots, a nasal-initial Ci- is the prefix. It can be symbolized as Ni-. Nasal prefixes are primarily verbalizers, but the reverse is not true: there are many verb stems that are not nasal-initial. Some obstruent-initial stems that have non-nasal prefixes are verbs. The grammatical
function of some obstruent-initial verb forms involve more participants than do nasal-initial forms in the same word-set. In other cases the same form can function as either a verb or a noun or adjective without adding, changing or removing a prefix. Such verbs undoubtedly are of different types.

The non-nasal consonants of Bidayuh include obstruents, liquid(s), semivowels and laryngeals. Generally speaking, root forms of content morphemes begin with either an obstruent (a common choice), the/a liquid or a vowel. Thus, a stem-/word-initial nasal can be identified as a prefix that enables the stem to change functions: replacive-nasal, syllabic-nasal, single-nasal (/m-/ , /n-/ , /ŋ-/ ) or nasal-initial Ni-prefix (/mi-/ , /ni-/ , /ŋi-/ ). This is true even of some loan words.

Examples of loanwords from English that use the replacive-nasal prefix in Biatah:

/simen/ ‘cement (n)’, /(N-)s)imen > [ni.men] ‘to cover (something) with concrete’; (Biatah-Nais)
/taip/ ‘typewriter’, /(N-)t)aip/ > [na.ip] ‘to type’ (Biatah-Nais)

Despite the above, it is possible that a smallish subset of words have only a nasal-initial form. A number of such words are not original Bidayuh words. They may be loanwords of long standing. For example, /mija/ ‘table’ comes from Portuguese via Malay. Or they may be forms from an indigenous word-set that has lost an obstruent-initial or vowel-initial form. If either of these situations is the case, those roots are (or have become) nasal-initial roots.

Most of the possibly nasal-initial roots that have been noted begin with /m/. They have a rather broad range of grammatical roles. Some can occur with Ci- prefixes that are added at the front of the nasal-initial base form.

Examples of nasal-initial forms in Biatah dictionary in which the nasal may be part of the root:

Non verbs:

/n/uni0259m/ ‘six’ (286)
/māi/ > [mā:i] ‘eight’ (288)
/mānuk/ ‘bird’; cf. /bi-manuk/ ‘calling for good omens using omen birds’ (47)
/manaŋ/ ‘shaman, sorcery’; cf. /bi-manaŋ/ ‘to practice/practicing sorcery’

Verbs:

/māmuh/ > [mā.mũh] ‘to bathe (self or someone else), take a bath; a bath’; cf. /pi-māmuh/ ‘act of giving a bath to (someone)’ or ‘fond of bathing’ (168)
/mu/uni02D0n/ > [mũ/uni02D0n] ‘to descend’ (143)
/nam/ ‘to answer’
/nock/ ‘to drink’; cf. /di-nok/ ‘to drink, to swallow [liquid]’ (235)
8 Closing remarks

This paper provides an introduction to and overview of the phonetic inventory and phonetic characteristics of Bidayuh speech, along with some rather general phonological analysis. The principal corpus on which it is based comprises twenty wordlists that were collected from mother-tongue speakers of Bidayuh-language dialects between March and December 2001 as part of the Bidayuh Language Development Project. The Bidayuh people who gave generously of their time and linguistic knowledge to further the cause of language development represent the five major geo-linguistic areas of the First Division of Sarawak, that is, Bukar-Sadung (eastern), Siburan-Penrissen-Padawan (central), Sembaan-Tringgus (Sembaan), Singai-Jagoi (western), and the smaller Rara area in Lundu District. (See Preface 2 to this volume for a detailed account of wordlist sources.)

A second type of data source was referenced, primarily for a side excursion into Bidayuh morphology, in particular the prefixes. That source is the *Bidayuh-English Dictionary* that was compiled over a number of years by the late Datu’ William Nais and was published in 1988. That monumental work features the Biatah dialect, a populous and rather prominent dialect of Bidayuh that is spoken in the lower altitudes of the central region.

The part of this analysis that is based on wordlists depends largely on personal phonetic perception, without access to instrumental data. The part that is based on the dictionary was done without access to a speaker of the language for checking phonetic data and therefore undoubtedly contains some phonetic inaccuracies due to the fact that the dictionary does not focus on phonetics.

This paper began as a study of nasalization in Bidayuh, with particular focus on the spread of nasality from nasal consonants onto and through vowels and susceptible consonants. Nasal spread was found to operate in two directions, both forward in the word, in some instances reaching from word-beginning through to word-end, and backward from a word-final nasal consonant to the preceding vowel. In spite of its pervasiveness, nasality appears not to be a contrastive feature of most varieties of Bidayuh speech, although it may become so in some dialects if certain phonological changes continue to develop.

Because some grammatical features of Bidayuh involve nasal morphemes and processes, the focus of the paper was expanded to include a modest investigation of the prefixes of Biatah, that dialect being chosen because of the large reference work that is available. The result is not a finished product in that there is much more to be learned and said about the phonology—and especially about the grammar—of this language family. This is a beginning effort, presented with much gratitude to those who have contributed to it and with the hope that mother-tongue speakers who are interested in how their beautiful language works will take the baton and produce ever-more-insightful treatises on the language for the benefit of their fellow-Bidayuh people and the world of Austronesian linguistics.

Other acknowledgements. Besides the wonderful Bidayuh people who shared their expertise, gratitude is offered to Dr. C. R. Rensch and to Dr. Grace Tan, who edited this volume.

Carolyn M. Rensch

May 2007
PART III

Studies in the Early Bidayuh Language: Proto Bidayuh and Its Relatives

Calvin R. Rensch

1 Overview
2 Proto Bidayuh
3 Proto Bakati'
4 Proto Bidayuh-Bakati'
5 Proto Land Dayak
6 Roots of the Land Dayak Languages in Early Forms of Austronesian
7 A final word
8 Appendix III A—Cognate sets
9 Appendix III B—Index of reconstructions
10 Appendix III C—Index of glosses used in the cognate sets
1 Overview

It has long been recognized that the varieties of Bidayuh are linguistically related in spite of the fact that some are quite different from others. Indeed, in some cases the speech of one variety is not fully intelligible to speakers of some other varieties. In recent decades it has become common to cite four varieties of Bidayuh, named for the four districts in which the speakers primarily reside—Serian, Kuching, Bau and Lundu. There certainly is a general validity to this four-way division, but the relationships among the varieties are proving to be much more complex than that.

It is evident that Rara is related to Bidayuh, which is its neighbor to the east in Sarawak. However, Rara is more closely related to Sara and other speech varieties spoken across the border in West Kalimantan, Indonesia in a family called Bakati’, a term which seems to have been coined using the negative, kati?, as its base.

Some of the languages of interior West Kalimantan are also evidently related to the Bidayuh and Bakati’ languages. As will be evident in a later section of this study, these languages appear to represent another wing of the Land Dayak languages parallel to the Bidayuh and Bakati’ wings farther north.

It is assumed here that long ago there was a single language, more or less uniform but surely having some internal variation, that was spoken in western Borneo. That language is here called Proto Land Dayak (PLD). It broke up, probably gradually, into several distinct varieties, one of which developed over time into the modern forms of Bidayuh. The sounds of that language, here called Proto Bidayuh (PBid), will be examined first (§2). Next, the parent of the Bakati’ languages that include Rara, here called Proto Bakati’ (PBak), will be examined (§3). Then, the commonalities shared by those two, here called Proto Bidayuh-Bakati’ (PBB), will be discussed (§4). Following that, Proto Land Dayak, the ancestor of the Bidayuh, Bakati’ and Southern Land Dayak languages, will be explored (§5). Finally, some of the ways by which the Land Dayak languages developed from the even more ancient Proto Austronesian (PAN) language will be suggested (§6).

References to their similarity and evident relatedness are found in publications dating from about the middle of the twentieth century (cf., for example, Aichner 1949). In fact, some similarities were noted in the late nineteenth century when early reports of Bidayuh/Land Dayak vocabulary were circulated.
2 Proto Bidayuh

2.1 Sounds of modern Bidayuh and their symbolization

Before considering the sounds of Proto Bidayuh, we will discuss some aspects of the system of sounds in modern varieties of Bidayuh. This is particularly necessary because there is considerable phonetic variation in how the sounds, especially the vowels, are pronounced from dialect to dialect, even though their phonological representations may look quite similar.

The consonants of Bidayuh include four voiceless stops /p, t, k/, four voiced stops /b, d, g/, four nasals /m, n, ŋ/, two liquids /r, l/, two semivowels /w, y/, the fricative /s/ and two laryngeals /h/ and //. The voiceless stop/affricate /c/ and the liquid /l/ occur contrastively only in the Bukar-Sadung dialects.

All varieties of Bidayuh have vowels of six qualities: /i, u, e, o, a/. All of them occur in the final (stressed) syllable of words. However, only /i, u, a/ occur in the pre-final syllable, and only /i/ occurs in the syllable before the pre-final one.

2.1.1 Vowels of the final syllable

Even though all varieties of Bidayuh can have any of the six vowels in the final syllable, the pronunciation of some of the vowels varies somewhat from one variety to another. In most dialects the central vowel is pronounced as /i/, high in the mouth and central (between front and back), while in others it is retracted to /y/, pronounced lower and farther back in the mouth. In some varieties the mid vowels, e and o, are pronounced as centralizing diphthongs, while in others they are unitary, generally [e/ɪ] or [o/ʊ].

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2 For additional discussion of the sounds of modern Bidayuh see C. M. Rensch, this volume.

3 The symbols used here and throughout are those of the International Phonetic Alphabet (IPA) with a few exceptions. The voiced palatal stop/affricate is written as j, the voiceless palatal stop/affricate as c and the palatal semivowel as y, as in Bahasa Malaysia. The following symbols have close equivalents in the writing system of Bahasa Malaysia: ŋ = ny, ŋ = ng. The symbol ə indicates the central vowel, which occurs commonly in Bidayuh. The symbol ? indicates the glottal stop, which may occur between vowels in the middle of a word or following a vowel at the end of a word.

These symbols represent the phonological elements of Bidayuh. This analysis is intended to lay a foundation for the development of a common writing system for Bidayuh, but the symbols used in the common writing system may be different in some respects.

4 In these centralizing diphthongs the tongue begins in the high front position [i] or the high back position [u] and moves downward and toward the center of the oral cavity, generally toward [ɔ] or [a].
For those who would like to relate the vowel symbols used here to the pronunciation of Bidayuh words in specific dialects, the following examples are given:

\[
\begin{align*}
\text{[i]} & \quad \text{[rimih]} \quad \text{‘five’ (285) in Singai, Biatah, Anah Rais, Bukar and Tebakang} \\
\text{[ɤ]} & \quad \text{[rimvh]} \quad \text{‘five’ (285) in Serambu, Bratak, Benuk, Pinyawa’ and Bengoh} \\
\text{[a]} & \quad \text{[pahi]} \quad \text{‘unhusked rice’ (215) in Singai, Bunan (and varying to [pahi] in Biatah, Benuk, Bengoh and Anah Rais)} \\
\text{[iə]} & \quad \text{[kiʔiəh]} \quad \text{‘we (exclusive)’ (342) in Pinyawa’, Bengoh and Anah Rais} \\
\text{[ua]} & \quad \text{[kasuŋŋ] \quad \text{‘dog’ (59) in Benuk, Pinyawa’, Bengoh and Anah Rais}} \\
\text{[nuəm]} & \quad \text{‘six’ (286) in Singai, Serambu, Bratak and Serasot}
\end{align*}
\]

These differences can be grouped into three patterns. Pattern A has six unitary vowels (monophthongs). In Pattern B the pronunciation is similar except that the two mid vowels are diphthongs, [iə] and [ua]. In Pattern C the mid vowels are diphthongs, and the central vowel is retracted to [ɤ]. The most common phonetic pronunciations of the vowels in final syllables are displayed in Table 1.

Table 1. Pronunciations of the Bidayuh vowels in final syllables

<table>
<thead>
<tr>
<th></th>
<th>/i/</th>
<th>/u/</th>
<th>/a/</th>
<th>/e/</th>
<th>/o/</th>
<th>/a/</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pattern A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gumbang, Biatah, Biya, Sembaan, Tringgus Raya, Tringgus Bireng, Bukar, Sadung, Bibengih, Tebakang, Bukar-Sadung, Bunan</td>
<td>[i]</td>
<td>[u]</td>
<td>[i]</td>
<td>[e]</td>
<td>[o]</td>
<td>[a]</td>
</tr>
<tr>
<td><strong>Pattern B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singai, Anah Rais</td>
<td>[i]</td>
<td>[u]</td>
<td>[i]</td>
<td>[iə]</td>
<td>[ua]</td>
<td>[a]</td>
</tr>
<tr>
<td><strong>Pattern C</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serambu, Bratak, Serasot, Grogo, Stass, Bistaang, Benuk, Pinyawa’, Sapug, Bengoh</td>
<td>[i]</td>
<td>[u]</td>
<td>[ɤ]</td>
<td>[iə]</td>
<td>[ua]</td>
<td>[a]</td>
</tr>
</tbody>
</table>

Notes for Table 1:

1. The mid vowels /e/ and /o/ are usually pronounced as [ɛ] and [ɔ] respectively in the Tringgus dialects. To some extent this is so in the other varieties that have this pattern as well.
2. The diphthongs [iə] and [ua] are pronounced as [iə] and [ua] before certain consonants, especially k, ŋ, ?, and the former as [ie] before apical consonants such as n.
3. The retracted pronunciation of the central vowel, [ɤ], varies to [ə] or [o].

All of the vowels in the final syllable can occur either with normal length or lengthened (marked as V). However, in the Singai-Jagoi dialects the contrast is between a single vowel and a rearticulated or double-pulse vowel. Phonologically, in most dialects there is a set of normal-length vowels that contrasts...
with a set of longer vowels, but in the Singai-Gumbang-Jagoi region one vowel contrasts with a sequence of two like vowels.

2.1.2 Vowels of the pre-final syllable

There are four vowel qualities that occur in the pre-final (penultimate) syllable in Bidayuh words: /i, u, a, a/. 6 In addition, most varieties of Bidayuh distinguish in this position between two types of vowels, called full and reduced vowels. The full vowels are marked with a macron, as ā, and the reduced vowels with a breve, as ă. 7 (When it is uncertain whether the vowel is full or reduced, neither mark is used.) The vowels of the first type have a full duration and an unmistakable vowel quality. The vowels of the second type are generally shorter in duration and in some cases are omitted entirely. The full vowels maintain a constant quality, but the reduced vowels sometimes vary from one quality to another, sometimes mirroring the quality of the vowel in the ultima.

Some varieties of Bidayuh have a full set of four full and four reduced vowels. Others exhibit the contrast only with the low vowel, i.e., distinguish only ā from ā. Still others do not have a contrast between full and reduced vowels at all.

Although the contrast between full and reduced vowels is found in the penultimate syllable of most dialects of Bidayuh, there is no single phonetic manifestation of the contrast that occurs in all dialects, and, in fact, the primary indicator of a reduced vowel varies slightly from dialect to dialect. We will now consider the most prominent indicators:

1. In most cases the reduced vowel has shorter duration than the full vowel.
   Anah Rais /rimah/ [rīmīh] ‘five’ (285) and /sīŋat/ [ʃiŋiʃ] ‘black’ (327).
   It is sometimes difficult to know whether a reduced vowel is very short or whether there is no vowel at all. In some dialects this seems to vary.
   Tringgus Bireng /kūrit/ [kurit], [krit] ‘skin, (tree) bark’ (29).

2. In some dialects a reduced vowel is regularly deleted entirely in certain environments, primarily between a stop and a liquid or between s and a stop or nasal.
   Tringgus Raya /sipak/ [sipak], Sembaan [sipak] ‘kick’ (150) and Tringgus Raya /sipot/ [sipot],
   Sembaan /spot/ [spot] ‘blowpipe’ (205).
   Biya /sūkan/ [sukaˈn], Sembaan [sukaːn] ‘hide’ (157) and Biya /sūkuh/ [sʊkʊh], Sembaan
   /skuh/ [skuh] ‘elbow’ (105).
   Biya /tūrak/ [turak] Benuk [tuɾak] ‘push’ (152) and Biya /tūraŋ/ [tʊraŋ], Benuk /traŋ/ [traŋ] ‘bone’ (70).

6 Some varieties in the Bukar-Sadung region have words that begin with a syllabic nasal rather than the more common CV(C)-initial syllables. For further discussion of such syllabic-nasal initial syllables, cf. C. M. Rensch (this volume).

7 Using the breve sign over the vowel letter to indicate the reduced vowels follows a Bidayuh tradition of using that sign to mark the reduced low vowel /ā/. It is exemplified, for example, in the Bidayuh-English Dictionary of William Naís (1988). Of course, this is not related to the use of the symbol ŭ to write the central vowel in some dialects.
3. In most dialects there is (or may be) a vowel quality difference between the full and reduced low vowel, i.e., /ā/ is phonetically [a] while /ā/ is phonetically [a]. In a few dialects the reduced high vowels may be [i] and [u] whereas the full high vowels are [i] and [u].

   Biatak /bāʔuħ/ [baʔuħ] ‘new’ (323) and /bāʔuħ/ [baʔuħ] ‘eagle’ (323).

4. In the Tringgus dialects the reduced high vowels, /ĭ/ and /ŭ/, are often replaced by the reduced central vowel, /ə/. This is an optional replacement of one vowel by another, not just two pronunciations of /ĭ/ and /ŭ/.

   Tringgus Bireng /jĭp̩un/ [jĭp̩un] or /jāp̩un/ [jāp̩un]; cf. Tebakang /jāp̩ah/ [jāp̩ah] ‘teeth’ (82).

5. In some dialects the reduced front and back penultimate vowels, /ĭ/ and /ŭ/, are pronounced as [i] and [u], are pronounced as [e] and [o] if /e/ and /o/ are in the ultima. In the penult there is no contrast between [i] and [e], [u] and [o]. However, this lowering of the front and back penultimate vowels occurs only if the vowel is a reduced one.

   Tebakang /būkoʔ/ [būkoʔ], Serambu [būkoʔ] ‘parang, bush knife’ (207).

6. In many dialects the consonant following a reduced penultimate vowel is lengthened/geminated whereas the consonant following a full penultimate vowel has a normal, shorter duration.

   Biya /bāt̩ah/ [bāt̩ah], [baʔt̩ah] ‘eye’ (88) and /bāt̩uħ/ [bāt̩uħ] ‘stone’ (4).

7. At times in Biya and Sembaan a reduced vowel undergoes devoicing before a voiceless stop. It is then pronounced either as a voiceless vowel or as a sequence of a voiced vowel plus h.

   Biya /prāk̩is/ [praʔk̩is] ‘boil, infection’ (123), /āt̩ak̩/ [ʔat̩ak̩] ‘brain’ (91), /āp̩uy/ [ʔap̩ui], [ʔap̩ui] ‘fire’ (225).
   Sembaan /ātaʔ kīʔeh/ [ʔaʔiʔ kīʔeh] ‘we (exclusive)’ (342).

   The pronunciation of the reduced vowels can vary somewhat from one utterance to another. However, the most common phonetic forms of the penultimate vowels in the various groupings of Bidayuh varieties are as displayed in Table 2.
Table 2. Pronunciations of the Bidayuh vowels in penultimate syllables

<table>
<thead>
<tr>
<th>Pattern A</th>
<th>/i/</th>
<th>/ĭ/</th>
<th>/ū/</th>
<th>/ū/</th>
<th>/ā/</th>
<th>/ā/</th>
<th>/ā/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anah Rais, Biya, Tringgus</td>
<td>[i]</td>
<td>[i]</td>
<td>[ū]</td>
<td>[ū]</td>
<td>[i]</td>
<td>[i]</td>
<td>[ā]</td>
</tr>
<tr>
<td>Bireng, Tebakang</td>
<td>[i]</td>
<td><a href="1">ī</a></td>
<td>[ū]</td>
<td><a href="1">ū</a></td>
<td>[i]</td>
<td>[i]</td>
<td>[ā]</td>
</tr>
<tr>
<td>Sembaan, Tringgus Raya</td>
<td>[i]</td>
<td><a href="1">ī</a></td>
<td>[ū]</td>
<td><a href="1">ū</a></td>
<td>[i]</td>
<td>[i]</td>
<td>[ā]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pattern B</th>
<th>/i/</th>
<th>/ĭ/</th>
<th>/ū/</th>
<th>/ū/</th>
<th>/a/</th>
<th>/ā/</th>
<th>/ā/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benuk</td>
<td>[i]</td>
<td>[i]</td>
<td>[ū]</td>
<td>[ū]</td>
<td>[a]</td>
<td>[ā]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pattern C</th>
<th>/i/</th>
<th>/u/</th>
<th>/ā/</th>
<th>/Ā/</th>
<th>/ā/</th>
<th>/ā/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biatah, Bibengih, Bukar-Sadung</td>
<td><a href="2">i</a></td>
<td>[u]</td>
<td>[i]</td>
<td>[a]</td>
<td>[ā],[ə]</td>
<td></td>
</tr>
<tr>
<td>Bukar</td>
<td>[i]</td>
<td>[u]</td>
<td>[i]</td>
<td>[ā]</td>
<td>[ā],[ə]</td>
<td></td>
</tr>
<tr>
<td>Bistaang, Sapug</td>
<td>[i]</td>
<td>[u]</td>
<td><a href="3">y</a></td>
<td>[a]</td>
<td>[ā],[ə]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pattern D</th>
<th>/i/</th>
<th>/u/</th>
<th>/ā/</th>
<th>/a/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singai, Pinyawa’, Bengoh, Bunan</td>
<td>[i]</td>
<td>[u]</td>
<td>[ā]</td>
<td>[a]</td>
</tr>
<tr>
<td>Gumbang</td>
<td>[i]</td>
<td>[u]</td>
<td>[i]</td>
<td>[a]</td>
</tr>
<tr>
<td>Serambu, Bratak, Grogo, Stass</td>
<td>[i]</td>
<td>[u]</td>
<td>[y]</td>
<td>[a]</td>
</tr>
</tbody>
</table>

Notes for Table 2:

1. Examples of /i/ and /ū/ are relatively infrequent in Tringgus Raya and Tringgus Bireng because they are often replaced by /ā/, as discussed above.
2. Further study may show that the Sadung varieties other than Bunan have more contrasts in the penult than are shown here. They may have a system more like that shown for Tebakang.
3. Some transcriptions of Sapug do not distinguish [y] from [ā] in the penult. If some speakers do not make this distinction, their system is like that of Pinyawa’ and Bengoh (Pattern D).

Given the fact that most Bidayuh varieties have a vowel-length contrast in the final syllable, one might consider regarding the full/reduced contrast in the pre-final syllable as a manifestation of the long/short contrast. This would, of course, reduce the number of contrasts posited for the phonological system of Bidayuh. However, for several reasons we have not adopted this view:

- The length in the final syllable is an addition to the vowel. The non-lengthened vowels are common; the lengthened vowels much less common. On the other hand, the duration of a full vowel in the penult is comparable to that of a short vowel in the ultima. It is the reduced vowel that is shortened, sometimes to the point of deletion.
- The reduced vowels sometimes cause changes in vowel quality and/or devoicing, as described above, but these are not features of vowel length. A reduced vowel can be signaled by compensatory
lengthening of the following consonant. Although in some dialects a short vowel in the ultima is accompanied by lengthening of the final consonant, this is not so widespread a phenomenon.

- The distribution of the full/reduced vowel contrast varies considerably from one variety of Bidayuh to another. The distribution of lengthened vowels in the ultima is much more uniform.
- The full/reduced contrast seems to have developed from a difference in accentual pattern at a very early stage of Austronesian. This does not seem to be the source of the length contrast in the ultima. Although its source is much less clear, a handful of sets suggest that length in the ultima developed from loss of word-medial laryngeals, *h or *ʔ.

### 2.2 Proto Bidayuh: the phonological word

As stated earlier, clearly the many dialects of Bidayuh are related and show evidence of having descended from a common ancestor language, called Proto Bidayuh. Even at a rather early stage, we may assume that there were divergent regional varieties of Proto Bidayuh, for example, the variety that gave rise to the Bukar-Sadung dialects⁸. We conclude this on the basis of vocabulary items and sound features that are found in the Bukar-Sadung region but not in other Bidayuh regions.

The phonological word—that is, a word that can naturally be pronounced by itself—in the Proto Bidayuh language consisted of (1) a final, stressed syllable (the ultima), which was preceded in most words by (2) a pre-final syllable (the penult). In some words this was preceded by (3) yet another syllable⁹ at the beginning (the antepenult). The structure of the ultima is the most complex; the structure of the penult considerably less so and that of the antepenult even less so.

By comparing the contemporary dialects of Bidayuh and identifying the features which they share, we may infer many aspects of the phonological structure of Proto Bidayuh. We will proceed through the groups of sounds found in various parts of the Proto Bidayuh word, identifying the sounds of Proto Bidayuh and showing one or more sets of cognates that provide evidence for that sound in that position. In cases where a Proto Bidayuh sound developed differently in different dialects, we will note the divergent developments.

### 2.3 The ultima (the final syllable)

The Proto Bidayuh syllable that occurs in final position (the ultima) comprises a consonant as onset, a vowel as nucleus and a consonant as coda. Nearly all ultimas have an onset as well as the obligatory

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⁸There are clusters of Bidayuh dialects that have similar reflexes of Proto Bidayuh sounds and which exhibit other similarities. In this study the Singai-Gumbang-Jagoi dialects are referred to collectively as western Bidayuh, the Bukar-Sadung dialects as eastern Bidayuh, the Biatah-Penrissen-Padawan dialects as central Bidayuh. Even though the Sembaan-Tringgus Raya-Tringgus Bireng group is sometimes grouped with the central dialects, they exhibit many distinctives and are referred to collectively as the Sembaan Group.

⁹It is possible that two or more syllables preceded the pre-final syllable of some words, but words with more than two syllables generally included more than one morpheme.
nucleus. Most were closed by a coda, but some were not. The most common pattern included all three elements, i.e., CVC.

2.3.1 Onset of the ultima

2.3.1.1 Inventory

Any of the set of 18 consonants can occur in the onset of the Proto Bidayuh ultima. These include three voiceless stops *p, *t, *k; four voiced stops *b, *d, *j, *g; four nasals *m, *n, *ŋ, *n̥; two liquids *r, *l; two semivowels *w, *y; the fricative *s and two laryngeals *h, *ʔ.

In this and many following sections one or more cognate sets will be cited to illustrate the sound or phonological item under attention. Many cognate sets have more than one reconstructed form, each one required by at least one dialect form in the set. In some cases one alternate form shows the result of a replacive in the rime (see §2.3.3.3) and another does not. Others reflect other differences, otherwise unaccounted for, such as differing reconstructed vowels.

In many cases one alternate begins with an obstruent and another begins with a nasal of the same point of articulation. In general, the nasal-initial alternate shows the nasal-replacive prefix, common in Bidayuh and many other related languages and also a feature of PBid morphology. Little attempt is made to set off the nasal-replacive prefix from the stem by a hyphen, either in the dialect forms or in the reconstructed PBid forms. Other dialect forms and reconstructed PBid forms begin with si, bi, ni and other sequences that are probably prefixes. Once again, these prefixes are not identified in most cases. In fact, the only affix that is regularly identified and set off by hyphens is the PBid *-ir- infix (cf. §2.5.1.2).

*p


10There is a group of words with the exceptional shape *CVVC: *suat ‘(fruit) flower’ (34), *siok ‘chicken’ (56), *puan, *puaw ‘lungs’ (98), *taud ‘knee’ (111), *tian ‘house post’ (273), etc. The last example may be a borrowing from Malay(ic).
11Although a palatal affricate c is a distinct sound in the Bukar-Sadung dialects, the evidence indicates that it was not a part of the PBid sounds. It was probably a feature of the parent of eastern Bidayuh. See below for further details.
12See footnote 3 about phonemic symbols. The asterisk (*) marks a sound or form of a reconstructed language, such as Proto Bidayuh, which is not directly attested. The symbol N followed by a hyphen indicates the nasal-replacive prefix; in some reconstructed forms *N indicates a nasal of uncertain place of articulation since cognates in the daughter languages have nasals of different places of articulation.
13The source labeled “Sadung” is a highland Sadung variety from near Tebedu.
14The source labeled “Bibengih” is from the upper Kedup Valley.
15The source labeled “Bukar-Sadung” is from the lowland area near Serian town.
Additional examples: *ŋum-poss ‘pound’ (190), *pipis ‘broom’ (210) and *um-pat ‘four’ (284).

*t

*bātuhan ‘stone’ Singai batuh, Gumbang batuh, Serambu batuh, Biatah bātuhan, Bistaang bātuhan, Benuk bātuhan, Pinyawa batuh, Anah Rais bātuhan, Biya bātuhan, Sembaan bātuhan, Tringgus Raya bātuhan, Tringgus Bireng bātuhan, Bukar bātuhan, Bibengih batuh, Tebakang bātuhan, Bukar-Sadung bātuhan, Bunau bātuhan. (4)

Also *bātohan ‘eye’ (88), *āti: ‘liver, heart’ (103) and *ūtan ‘debt, owe’ (264).

*k


Also *bŭko? ‘parang’ (207), *ikan, *iken ‘fish’ (53) and *jik ‘climb’ (142).

No *c. In several dialects the affractate [c] occurs. Regularly in Tringgus Bireng and rarely in Sembaan and Tringgus Raya [c] varies to [s] and is simply a variant of /s/. In Bengoh *j after *n became [c]. However, this affractate alternates with [s] and, similarly, seems to be simply a variant of /s/.

The Bukar-Sadung dialects, however, seem to have a true /c/ phoneme. Many of the forms with /c/ appear to be borrowed from or are related to Malay:

Bukar, Sadung, Bibengih cincin, Malay cincin ‘ring’ (266).
Bukar-Sadung ticuk, Malay tusuk ‘stab’ (145).
Tebakang lăncaŋ ‘fast’, Malay kelancangan ‘haste’ (326).
Sangking, Serian dictionary āncap, Bunau āncap, Malay hisap ‘suck’ (146).
Tebakang cawat, Malay cawat ‘loincloth’ (267).
Bukar căpat, Bunau capat, Malay cepat ‘fast’ (326).
Sadung, Sangking, Bukar-Sadung nclak, Bunau nclak, Tebakang cālak ‘red’, Malay/Minangkabau bercelak ‘shining, bright’ (331).

One form with ultima-initial beginning ca seems to have developed from a PBid form with ultima-initial *te.


Three other forms with c seem to have developed after n, presumably from the cluster *ns in a Proto Bidayuh form:

Tebakang pināncoŋ ‘stab with a knife’ (145); Tebakang câncaŋ ‘lice comb’ (417); Bunau ncaliŋ ‘(to) fly’ (141).

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16This set and some subsequent ones include citations from the “Bau dictionary” and the “Serian dictionary” drawn from databases being compiled by a group of Bidayuh lexicographers in the western and eastern Bidayuh regions, respectively.
Another form has c in the Bukar-Sadung dialects but without a preceding nasal. However, cognate items may support reconstructing a nasal cluster *ns:

*insak ‘small’ Serasot isak ‘small quantity’, Benuk ndak ‘so small, tiny’, Sapug sak, Bukar icak, Sadung icak, Bibengih icak, Sangking icak, Bukar-Sadung icak. (318)

There is just one more form that neither is clearly related to Malay nor is there evidence that it developed from the *ns cluster, i.e., Bunan-Terbat lacip ‘dart for blowpipe’. It is presumed that this form has an underlying *ns cluster and that only the affrication remains as evidence that there was formerly a nasal before the s.

Looking at the evidence as a whole, it appears that Proto Bidayuh did not have a voiceless palatal stop/affricate phoneme and that the principal internal source of c in Bukar-Sadung is the *ns cluster. This accords well with the fact that the Bukar-Sadung dialects, which have words with c, are the only ones that consistently preserve the nasal before a voiceless obstruent.

*b

*bibih, *bibin, *bibiy ‘lip’ Singai bibin, Gumbang bibin, Serambu bibiy, Bratak bibin, Serasot bibin, Grogo bibin, Stass bibin, Bistah bibis, Bistaang bibis, Benuk bibis, bibih, Sapug bibis, Pinyawa’ bibih, bibis, Bengoh bibis, Sembaan bih, Tringgus Raya bibih, Tringgus Bireng bibin, Bukar bibih, Sadung bibih, Bibengih bibih, Sangking bibih, Tebakang bibih, Bukar-Sadung bibih, Bunan bibih. (80)

Also *kābas ‘die’ (129), *sābaʔ, *sābaʔy ‘downriver’ (186) and *bābu ‘rat’ (58).

d

*ādas ‘sweat’ Singai das, Gumbang [mu]das, Serambu das, Bratak das, Serasot das, Grogo das, Stass madas, Biatah udas, Bistaang udas, Benuk das, Sapug udas, Pinyawa’ das, Bengoh das, Anah Rais das, Biya udas, Sembaan udas, Tringgus Raya udas, Tringgus Bireng udas, Bukar ādas, Sadung ādas, Bibengih ādas, Sangking das, Tebakang ādas, Bukar-Sadung ādas, Bunan ādas. (67)

Also *pādi ‘unhusked rice’ (215), *mādam ‘rotten’ (305) and *bādah ‘dry’ (172).

*j

*mijoɡ ‘stand’ Singai mujog, Gumbang mijoɡ, Serambu mujog, Bratak mujog, Serasot majog, Grogo mujog, Stass mujog, Biatah mijoɡ, Bistaang majo[ː]ɡ, Benuk mijoɡ, Sapug mijoɡ, Pinyawa’ mijoɡ, Bengoh mijoɡ, Anah Rais mijoɡ, Biya mijoɡ, Sembaan mijoɡ, Tringgus Raya mijoɡ, Tringgus Bireng majo[ː]ɡ, Bukar mijoɡ, Sadung mijoɡ, Bibengih mijoɡ, Sangking mijoɡ, Tebakang mijoɡ, Bukar-Sadung mijoɡ, Bunan mijoɡ. (132)

Also *tāja[1] ‘dull’ (308), *ṭjuʔ ‘seven’ (287) and *rājaʔ ‘thorn, sharp’(31, 307).

*g

*bāɡag ‘strong’ Gumbang bāɡag, Bengoh bāɡag, Anah Rais bāɡag, Biya bāɡag, Sembaan bāɡag, Tringgus Raya bāɡag, Tringgus Bireng bāɡag, Bukar bāɡag. (320)

Also *tīgaʔ ‘heel’ (113), *ṇagam ‘grasp’ (165) and *pāgi ‘morning’, in some places ‘tomorrow’ (21).

The nasals. Four nasals occurred in Proto Bidayuh: *m, *n, *ŋ and *ŋ.
*Vm

Vum, Vam 'paddy' field Singai vum, Gumbang vum, Serambu vum, Bratak vum, Serasot vum, Grogo vum, Stass vum, Biatah vum, Bistaang m, Benuk m, Sapug vam, Pinyawa’ [u]m, Bengoh vum, Anah Rais m, Biya m, Sambaan m, Tringgus Raya m, Tringgus Bireng m, Bukar vum, Sadung vum, Bibengih vum, Sangking vum, Tebakang vum, Bukar-Sadung vum, Bunun vum. (194)

Also *rim ‘five’ (285), *mamuh ‘bathe’ (168) and *ramin ‘house’ (271).

*Vn

Vpn ‘walk’ Singai vnu, Gumbang vnu, Serambu vnu, Bratak vnu, Serasot vnu, Grogo vnu, Stass vnu, Biatah vnu, Bistaang pnu, Benuk pnu, Sapug vnu, Pinyawa’ vnu, Bengoh vnu, Anah Rais pnu, Biya vnu, Sambaan knu, Tringgus Raya pnu, Tringgus Bireng pnu, Bukar pnu, Sadung pno, Tebakang pnu, Bukar-Sadung pnu. (138)

Also *sinod ‘comb’ (209), *ban ‘husband’ (250) and *anih ‘what?’ (335).


Also *i-no [?] ‘oil, fat’ (220), *ajit ‘skin’ (66) and *ina (and in the penult *naa) ‘people’ (257). n and y. There seems not to be contrast between *n and *y in a nasal environment, i.e., when a nasal consonant occurs in a preceding syllable and there is no intervening consonant that blocks the spread of nasality. Some dialects more frequently have /y/ and others have /n/, but there seems to be no consistent contrast. Note the following cognate sets:

*mayuh or *maju ‘skinny’ Singai mayuh, Gumbang mayuh, Serambu mayuh, Biatah majuh, Bistaang majuh, Bengoh majuh, Anah Rais majuh, Biya majuh, Tringgus Bireng majuh. (317)

*najam or *najam ‘weave’ Biatah najam, Bistaang najam, Benuk najam, Pinyawa’ najam, najam, Bengoh najam, Anah Rais najam, Biya najam, Tringgus Raya najam, Bukar najam. (211)

*majap or *majap ‘lose’ Singai majap, Gumbang majap, Bratak majap, Serasot majap, Grogo majap, Stass majap, Biatah majap, Bistaang majap, Benuk majap, Sapug majap, Pinyawa’ majap, Bengoh majap, Anah Rais majap, Biya majap, majap, Sambaan majap, majap, Tringgus Raya majap, Tringgus Bireng majap. (161)

*naj ‘sky’ Singai rait, Gumbang rait, Serambu rait, Bratak rait, Serasot rait, Grogo rait, Stass rait, Biatah rait, Bistaang rait, Benuk rait, Sapug rait, Pinyawa’ rait, Bengoh rait, Anah Rais rait, Biya rait, Sambaan rait, Tringgus Raya rait, Tringgus Bireng rait, Bukar rait, Bukar rait, Bibengih rait, Sangking rait, Tebakang rait, Bukar-Sadung rait, Bunun rait. (11)

Also *tan ‘hand’ (104), *datarn ‘friend’ (258) and *tungo ‘neck area’ (92).
The liquids. The two liquids *r and *l have fallen together as /r/ in all Bidayuh varieties except Bukar-Sadung.

*r

*kūrit ‘skin, (tree) bark’ Singai kūrit, Gumbang kūrit, Serambu kūrit, Bratak kūrit, Serasot kūrit, Grogo kūrit, Stass kūrit, Biatah kūrit, Bistaang kūrit, Benuk kūrit, Sapug kūrit, Pinyawa’ kūrit, Bengoh kūrit, Anah Rais kūrit, Biya kūrit, Sembaan kūrit, Tringgus Raya kūrit, Tringgus Bireng kūrit, Bukar kūrit, Sadung kūrit, Bibengih kūrit, Bunun kūrit. (29, 66)

Also *būruh ‘feather, body hair’ (49), *tŭran ‘bone’ (70) and *tarap ‘deep’ (316).

*l

*ălit ‘scar’ Singai ălit, Serambu ălit, Bratak ălit, Serasot ălit, Grogo ălit, Stass ălit, Biatah ălit, Bistaang [ă]lit, Benuk lit, Sapug ălit, Pinyawa’ lit, Bengoh ălit, Anah Rais ălit, Biya ălit, Sembaan ălit, Tringgus Raya ălit, Tringgus Bireng ălit, Bukar ălit, Sadung ălit, Bibengih ălit, Sangking ălit, Tebakang ălit, Bukar-Sadung ălit, Bunun alit. (124)

Also *tūloh, *(n)tŭlo ‘egg’ (51), *gūlo: ‘sit’ (131) and *gālo, *gūlo, *gālam ‘salt’ (219).

However, many of the sets supporting *l seem to be loans from Malay or else have been influenced by a Malayic source. Compare the following sets:

*pīlih, *mīlih ‘choose’ Singai pīlih, Gumbang pīlih, Serambu pīlih, Bratak pīlih, Serasot pīlih, Grogo pīlih, Stass pīlih, Pinyawa’ pīlih, Anah Rais pīlih, Biya pīlih, Tringgus Raya pīlih, Tringgus Bireng pīlih, Bukar pīlih, Sadung pīlih, Bibengih pīlih, pīlih, Sangking pīlih, Tebakang pīlih, Bukar-Sadung pīlih, Bunun pīlih, pīlih (164). (Cf. B.M. mīlih)

*lămak ‘fat (noun)’ Gumbang rămak, Serambu rămak, Bratak rămak, Serasot rămak, Grogo rămak, Stass rămak, Biatah (pî)rămak, Bistaang rămak, Benuk rămal, Sapug rămak, Pinyawa’ rămak, Bengoh rămak, Biya rămak, Sembaan rămak, Tringgus Bireng āmak, Bukar lămak, Sadung lămak, Sangking lămak, Tebakang lămak, Bukar-Sadung lămak, Bunun lămak (220). (Cf. B.M. lemak)

Furthermore, some doublets occur that include both r and l, suggesting alternation between the two liquids or possibly giving evidence of borrowing:

*jăran, *ăran ‘trail, footpath’ (202) but *jălan ‘walk’ (138).

*bări ‘hut, house’ (196); Sadung băla?.

Cf. a similar doublet in the penult of PBid *Răntuŋ17 ‘worm’ (60); Bibengih, Sangking and Bukar-Sadung have lăntuŋ, but other Bukar-Sadung dialects have răntuŋ.

Although some sets seem to justify the reconstruction of both *r and *l, it is entirely possible that PBid had only *r and that l was introduced from external sources. This is suggested by the fact that sets supporting *r are considerably more numerous than those supporting *l and that many items of apparently basic vocabulary have l in Malay but have *r in Bidayuh.

*w

*kăwi, *kăwin ‘shoulder, clavicle’ Singai kăwin, Gumbang kăwin, Serambu kăwin, Biatah kăwin, Bistaang kuin, Sapug kăwin, Pinyawa’ kăwin, Bengoh kăwin, Anah Rais kăwin, Biya kăwin,

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17R is used to indicate a liquid when the crucial evidence from Bukar-Sadung is lacking or conflicting.
Sembaan käw, Tringgus Raya käw, Tringgus Bireng käw, Bukar käwi, Sadung käwi, Bibengih käwi, Sangking käwi, Tebakang käwi, Bukar-Sadung käwi, Bunau käwi. (100)

Also *tawanj ‘mud’ (5), *dawanj, *däunj ‘leaf’ (30) and *sawaj ‘year’ (20).

*y
*däyanj ‘blood’ Snga dawunj, Gumbang dawunj, Serambu dawunj, Bratak dawunj, Serasot dawunj, Grogo dawunj, Stass dawunj, Biatåh dawunj, Bistaangi dawunj, Benuk dawunj, Sapug dawunj, Pinyawa’ dawunj, Bengoh dawunj, Anah Rais dawunj, Biya dawunj, Sembaan dawunj, Tringgus Raya dawunj, Tringgus Bireng dawunj, Bukar dawunj, Sadung dawunj, Bibengih dawunj, Sangking dawunj, Tebakang dawunj, Bukar-Sadung dawunj, Bunau dawunj:]i. (68)

Also *kayuj ‘wood’ (28, 229), *daunjy ‘woman’ (253) and *daunjy ‘hill(sde)’ (194).

*s
*kasonj, *kásunj, *käsuunj ‘dog’ Snga kasonj, Gumbang kasonj, Serambu kasonj, Bratak kasonj, Serasot kasonj, Grogo kasonj, Stass kasonj, Biatåh kasonj, Bistaangi kasonj, Benuk kasonj, Sapug kasonj, Pinyawa’ kasonj, Bengoh kasonj, Anah Rais kasonj, Biya kasonj, Sembaan kasonj, Tringgus Raya kasonj, Bukar kasonj, Sadung kasonj, Bibengih kasonj, Sangging kasonj, Tebakang kasonj, Bukar-Sadung kasonj, Bunau kasonj. (59)

Also *bisoj, *busoh ‘full (person)’ (234), *masem ‘sour’ (239) and *bisa ‘wet’ (306).

The laryngeals. Both *h and */ in the onset of the Proto Bidayuh ultima. However, *h in this position was lost in all varieties except Singai, Sapug, Pinyawa’, Sembaan, Tringgus Raya and the Bukar-Sadung dialects. In Singai careful speech it became /j/ but in rapid speech it is sometimes lost. In Sapug it is occasionally preserved as /j/. In Pinyawa’ it is generally preserved as /j/. In Sembaan, Tringgus Raya and Bukar-Sadung it is preserved as /h/.

*h

Also *bähat ‘heavy’ (313), *uhat ‘vein, root’ (32, 75), *bähit ‘left (hand)’ (183) and *muhun ‘descend’ (143).

In the onset of the ultima */ is generally preserved as /j/ everywhere.


Also* tāzin ‘belly’ (101), *lā?ih ‘ginger’ (241) and *dā?ah ‘tapang (bee tree)’ (361).

However, in the Tebakang, Bukar-Sadung and Sadung (Tebedu) varieties of Sadung */ is lost in the diverse-vowel sequences */u?/, */i?/ and */a?u/, where the penult has a full vowel. However, */ is retained in */a?u or */a?i, where the penult has a reduced vowel.
*būʔay ‘crocodile’ Singai buʔay (careful speech), buay (casual speech), Gumbang buʔay, Serambu buʔay, Bratak buʔay, Serasot buʔay, Grogo buʔay, Stass buʔay, Biatah buʔay, Bistaang buʔay, Benuk būʔay, Sapug buʔay, Pinyawa’ buʔay, Bengoh buʔay, Anah Rais būʔay, Biya buʔay, Sembaan būʔay, Tringgus Raya būʔay, Tringgus Bireng buʔay, Bukar buʔay, Sadung buay, Bibengih buʔay, Sangking buʔay, Tebakang buʔay, Bukar-Sadung buay, Bunan buʔay. (55)

Also *mūʔas ‘mourn’ (174) and *tŭ/uni0294a ‘primary forest’ (27). In the latter set Būstāŋ tă/unō294a/unō294an, Bēnuk tă/unō294a/unō294an and Sangkūng tŭ/unō294an suggest that the penult vowel was *ū, but *ʔ was lost in Tebakang tūan and Bukar-Sadung tūan, suggesting that the penult vowel was *ū.

*rīʔaŋ, *riʔaŋ, *rāʔaŋ, *riʔeŋ, *iʔaŋ ‘hard’ Singai rieŋ, rieŋ, Gumbang riʔeŋ, Serambu riʔeŋ,
Bratak rieŋ, Serasot riʔeŋ, Grogo riʔeŋ, Stass riʔeŋ, Biatah riʔaŋ, Bistaang rāʔaŋ, Benuk raʔaŋ,
Sapug raʔaŋ, Pinyawa’ riʔaŋ, Bengoh riʔaŋ, Anah Rais riʔaŋ, Biya riʔaŋ, Sembaan riʔaŋ,
Tringgus Raya rāʔaŋ, Tringgus Bireng iʔaŋ, Bukar riʔaŋ, Sadung riaŋ, Bibengih riʔaŋ, Sangking riʔaŋ, Tebakang riaŋ, Bukar-Sadung riaŋ, Bunan riʔaŋ. (312)

*bāʔuh ‘new’ Singai bauh (casual speech), bāʔuh (careful speech), Gumbang bāʔuh, Serambu bāʔuh,
Bratak bāʔuh, Serasot bāʔuh, Grogo bāʔuh, Stass bāʔuh, Biatah bāʔuh, Bistaang bāʔuh, Benuk bāʔuh, Sapug bāʔuh, Pinyawa’ bāʔuh, Bengoh bāʔuh, Anah Rais bāʔuh, Biya bāʔuh, Sembaan bāʔuh, Tringgus Raya bāʔuh, Tringgus Bireng bāʔuh, Bukar bāʔuh, Sadung bāuh, Bibengih bāʔuh, Sangking bāʔuh, Tebakang bāʔuh, Bukar-Sadung bāʔuh, Bunan bāʔuh. (323)

Also *lāʔut, *lāut, *lāw/unō294ut ‘sea’ (8).

*bāʔuh ‘eagle’ Singai bāʔuh, Gumbang bāʔuh, Serambu rīʔut, Bratak rīʔut, Serasot rīʔut,
Stass riʔut, Biatah bāʔuh, Bistaang bāʔuh, Benuk bāʔuh, Sapug bāʔuh (same as ‘new’),
Pinyawa’ bāʔuh, Bengoh bāʔuh, Anah Rais bāʔuh, Biya bāʔuh, Sembaan bāʔuh, Tringgus Raya bāʔuh, Tringgus Bireng bāʔuh, Tebakang bāʔuh, Bunan bāʔuh, Serian dictionary bāʔuh. (323)

*tāʔu ‘right (hand)’ Singai tāʔu, Gumbang taʔu, Serambu teʔu, Bratak tāʔu, Serasot taʔu,
Grogo taʔu, Stass taʔu, Biatah tāʔu, Bistaang tāʔu, Benuk tāʔu, Sapug taʔu, Pinyawa’ taʔu, Bengoh taʔu, Anah Rais tāʔu, Biya tāʔu, Sembaan tuʔu, Tringgus Raya tāʔu,
Tringgus Bireng tāʔu, Bukar tāʔu, Sadung ntāʔu, Bibengih ntāʔu, Sangking ntaʔu, Tebakang tāʔu, Bukar-Sadung ntāʔu, Bunan ntaʔu. (184)

Also *tāʔin ‘belly’ (101).

Various combinations of *h and *ʔ in the onset and coda of the ultima occurred in Proto Bidayuh. However, the sequence *ʔVʔ seems not to have been permitted. (See later in §2.3.3.1 a discussion of developments of laryngeals in the coda.)

### 2.3.1.2 Interchange of voiceless and voiced stops

There are a few sets that show a Proto-Bidayuh form with a voiceless stop initial in the ultima (or penult) as well as one with the corresponding voiced stop. At this stage it is unclear whether this was a widespread alternation in Proto Bidayuh or what mechanism may have triggered it.

*tâk, *kâ/dî-gan ‘hold’ Gumbang kaqan, Bratak takan, Serasot qan, Grogo kaqan, Biatah diqan, Bistaang dăqan, Sapug dăqan, Pinyawa’ dâqan, Sembaan qan. (165)


*kûtos, *nâdus ‘wipe’ Singai [ku]tos, Biatah gutos, nutos, Bistaang pâtos, Benuk [k]tos/h, Sapug tos, Pinyawa’ kutos, Bengoh kutos, Biya nutos, Bibengih nâdus, Sangking nâdus, Tebakang nâdus, Bukar-Sadung nâdus, Bunâ ndus. (160)

*gôr, *kâkor ‘throat’ Singai gôr, Gumbang kakor. (92)

For a similar alternation in the penult see the following sets:

*kûrak, *gurak ‘boil (intr.)’ Biatah nûrak, Bengoh bigurak, Biya gurak, Tringgus Raya groq, Bukar kurak, Bibengih nîrak, Sangking nûrak, Tebakang kûrak, Bukar-Sadung nûrak, Bunan nûrak. (221)

*tûmpap, *tûmpop, *dû[m] pâp ‘hand width (as a measure)’ Singai tupap, Gumbang tupap, Stass tupap, Biatah tûpap, Bistaang dûpap, Bukar tûmpop, Bunan tûmpop. (297)

### 2.3.1.3 No consonantal onset

There are some sets in which there is no consonantal onset. These ultimas, usually closed by a consonant, are almost always preceded by a syllable with the shape (C)V.\(^{18}\) In other words, an ultima of the shape *V(C)\(^{19}\) does not normally stand alone, and the preceding syllable must be an open syllable with the resulting two-syllable sequence being *(C)VV(C). The two-vowel sequences nearly always consist of a non-high (low or mid) vowel plus a high vowel /i/ or /u/. The Bukar-Sadung form, paah ‘deer’ (57), is an exception to this rule but in this context the *a may function as a high, i.e., non-low, vowel.

* kâi? ‘not’ Bukar kai?, Sadung kai?, Bibengih kai?, Sangking kai?, Tebakang kâi?, Bukar-Sadung kai?, Bunan kada?. (333) This is not, strictly speaking, a PBd set since it draws cognates from dialects in only one region, the Bukar-Sadung area.

*âus ‘thirsty’ Singai aus, Biatah âus, Bistaang âus, Sapug âwus, Pinyawa’ aus, Bunan aus. (236)

*main ‘play’ Singai main, Serambu main, Bratak main, Grogo main, Stass main, Biatah mân, Benuk mân, Bengoh bimain, Anah Rais mâin, Biya mâin, Sembaan mâin, Tringgus Raya mâin, Tringgus Bireng mâin, Bukar bimân, Sadung mâin, Bunan mâin. (139)

In these examples the first vowel is low and the second is high. The latter two sets are clearly related to the Malay terms, haus and main, which are traditionally written as CVVC. However, one should note

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\(^{18}\)At least three exceptional sets are reconstructed as *VC with no preceding syllable: *un ‘in the middle’ (23), *aŋ ‘inside’ (27) and *an ‘want’.

\(^{19}\)Although the overwhelming majority of such ultimas end in a consonant, a small handful consist of simply *V: *üi ‘rattan’ (45), *jua, *jua ‘sell’ (262) and *simua ‘all’ (293).
the Sapug example, written as āwus. This illustrates the tendency of some speakers to interpret CVuC as CVwuC and CViC as CVyiC.

There are many more sets with the shape CVVC in which the high vowel occurs in the first vowel position.

*siok 'chicken' Singai siok [siuak], Gumbang siok [siyak], Serambu siok [siyuak], Bratak siok [siwak], Serasot siok [siyuak], Grogo siok [siyok], Stass siok [siyuk], Biatah siok, Pinyawa' siok [siyuak], Bengoh siok [siyuak], Anah Rais siok [siwok], Biya siok, Sembaan siok, Tringgus Raya siok, Tringgus Bireng siok, Buka siok [siyok], Bibengih siok [siyak], Sangking siok [siyak], Tebakang siok, Buka-Sadung siok [siyok], Bunan siok [siyok]. (56)


There appear to be no cases in which CiyVC contrasts with CiVC or CuwVC with CuVC. For example, there is no contrast between suat and suwat. The principle of simplicity argues for regarding such sequences as simply CiVC or CuVC. Nevertheless, there is a strong tendency for some speakers to rather clearly pronounce a (predictable) semivowel in these contexts, and writers frequently write a semivowel in such contexts. For example, although there is no contrast between siok and siyok, some speakers clearly pronounce the semivowel and some write it as well.

Furthermore, there are some sets with differing vowels in the penult, one of which reflects a form with the shape CVVC and the other a form with the shape CVSVVC.

*tīuŋ, *tūyuŋ 'eggplant, brinjal' Singai tīuŋ, Gumbang tīuŋ, Serambu tīuŋ, Bratak tīuŋ, Serasot tīuŋ, Grogo tīuŋ, Stass tīuŋ, Biatah tīuŋ, Bistaang tīuŋ, Benuk tīuŋ, Sapug tīuŋ, Pinyawa' tīuŋ, Bengoh tīuŋ, Anah Rais tīuŋ, Biya tīuŋ, Sembaan tūyuŋ, Tringgus Raya buaʔ tūyuŋ, Tringgus Bireng tūruŋ (presence of r probably reflects Malayic influence), Buka tīuŋ, Saduŋ tīuŋ, Bibengih tīuŋ, Sangking tīuŋ, Tebakang tīuŋ, Buka-Sadung tīuŋ, Bunan tīuŋ. (40)

*tīwas, *tuas 'angry' Singai tīwas, Bratak tiwas, Serasot tiwas, Grogo tiwas, Stass tiwas, Biatah tuas, Bistaang tiwas, Benuk tiwas/h, Sapug tuas, Pinyawa' tuas, Biya tiwas, Sembaan tiwas, Serian dictionary tuas 'jealous'. (177)

In the above sets it seems sufficient to reconstruct the first forms as *tiuŋ and *tuas rather than *tiyuŋ and *tuwas. Nevertheless, there are alternate forms with different penultimate vowels, which do require a reconstruction with a medial semivowel, *tuyuŋ and *tīwas. This, then, raises the question of whether it would be preferable to reconstruct both alternates with a medial semivowel.

At this stage of our understanding of Proto Bidayuh it seems appropriate to reconstruct these forms as *CVVC. At the same time, we must recognize that the overwhelmingly dominant *CVCVC pattern in Bidayuh words has exerted pressure to reinterpret these *CVVC patterns as *CVSVC. However, there are at least two factors that inhibit this reinterpretation process: (1) the frequency of the CVVC canonical

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\(^{20}\)“S” is used here to designate a semivowel that harmonizes in position with the preceding vowel.
shape in Malay words and (2) the many words in contemporary western and central Bidayuh that have a CVVC pattern as a result of losing medial *h.

*tāhap* ‘loincloth’ Singai taop, Gumbang taop, Serambu taop, Bratak taap, Serasot taap, Grogo taub (...ap expected), Stass taop, Bau dictionary taap, Biatah tāap, Bistaang taop, Benuk taop, Sapug taop, Pinyawa’ taqap, Bengoh taop, Anah Rais tāap, Biya tāap, Sembaan tāap, Tringgus Raya tāap, Tringgus Bireng tāap, Bukar tāap, Sadung tahap, Bibengih tahap, Sangking tahap, Tebakang tāap, Bukar-Sadung tahap, Bunan tahap. (267)

*buhaŋ* ‘bear’ Serasot buaŋ, Batah buaŋ, Bistaang buaŋ, Pnyawa’ buaŋ, Bengoh buaŋ, Anah Raš buaŋ, Bya buaŋ, Sembaan buaŋ, Bukar buhaŋ, Tebakang buhaŋ, Bunan buhaŋ. (279)

*buhu* ‘run away’ Snga buu, Gumbang buu, Serambu buu, Anah Raš buu, Bya buu, Sembaan buhu, Trnggus Raya bŭhu, Trnggus Ḇreng buu, Bukar buhaŋ, Tebakang buhaŋ, Bunan buhaŋ. (153)

2.3.1.4 Nasal-plus-stop clusters

Combinations of nasal plus homorganic stop, whether voiceless or voiced, occurred in Proto Bidayuh where a nasal was in the coda of the penult and a stop in the onset of the ultima. The stops in these clusters continued unchanged except that in Bengoh the voiced stops were devoiced in such clusters. PBid *mb, *nd, *ŋ > Bengoh mp, nt, ns [nc], ŋk. (The nasal was lost before a voiceless stop in all regions except eastern Bidayuh, as seen in §2.4.3.2.)


In many dialects, especially those in western Bidayuh, articulation of voiced stops after a nasal is weak, at times virtually inaudible. However, the (lenis) stop blocks progressive spread of nasalization.
Indeed, in some cases orality of the following vowel and pre-plosition of a nasal coda that follows the vowel are the clearest indications of the presence of the voiced stop.

*ĭnduŋ, *ŭnduŋ ‘nose’ (84). In Singai [nduŋ], Bratak [ʔnduŋ] and Tabakang [ʔnduŋ] the voiced stop was recorded as well as the pre-ploded nasal. However, in Gumbang [nukŋ], Anah Rais [nukŋ], Sadung [ʔnunŋ] only the nasal was recorded. Nevertheless, the final pre-ploded nasal indicates the presence of the stop.

Further discussion of the nasal plus voiceless stop clusters may be found in the section where the coda of the penult is discussed (§2.4.3.2) since it is the nasal of such clusters that has been most affected. (Cf. also C. M. Rensch in this volume, §§4.1.3, 4.1.6, 5.4 and 5.5 on nasal plus voiceless stop clusters.)

2.3.2 Nucleus of the ultima

2.3.2.1 Inventory

Six vowels occurred in the Proto Bidayuh ultima: *i, *u, *œ, *e, *o, *a. Phonetic variation and distributional patterns indicate that they should be grouped as high (*i, *u), central (*œ), mid (*e,*o) and low (*a).

*i
*dāri ‘man, male’ Singai dari, Gumbang dari, Serambu dari, Bratak dari, Serasot dari, Grogo dari, Stass dari, Biatah dāri, Bistaang dāri, Benuk dāri, Sapug dāri, Pinyawa’ dari, Bengoh dari, Anah Rais dāri, Biya dāri, Sembaan dāri, Tringgus Raya dāri, Tringgus Bireng dāri, Bukar dāri, Sadung dari, Bibengih dāri, Sangking dāri, Tebakang dāri, Bukar-Sadung dāri? (< *dāri? ?), Bunan dari. (252)

*răŋit ‘sky’ Singai răŋit, Gumbang răŋit, Serambu răŋit, Bratak răŋit, Serasot răŋit, Grogo răŋit, Stass răŋit, Biatah răŋit, Bistaang răŋit, Benuk răŋit, Sapug răŋit, Pinyawa’ răŋit, Bengoh răŋit, Anah Rais răŋit, Biya răŋit, Sembaan răŋit, Tringgus Raya răŋit, Tringgus Bireng răŋit, Bukar răŋit, Sadung răŋit, Bibengih răŋit, Sangking răŋit, Tebakang răŋit, Bukar-Sadung răŋit, Bunan răŋit. (11)

*u

*tāruh ‘three’ Singai tāruh, Gumbang tāruh, Serambu tāruh, Bratak tāruh, Serasot tāruh, Grogo tāruh, Stass tāruh, Biatah tāruh, Bistaang tāruh, Benuk tāruh, Sapug tāruh, Pinyawa’ tāruh, Bengoh tāruh, Anah Rais tāruh, Biya tāruh, Sembaan tāruh, Tringgus Raya tāruh, Tringgus Bireng tāruh, Bukar tāruh, Sadung tāruh, Bibengih tāruh, Sangking tāruh, Tebakang tāruh, Bukar-Sadung tāruh, Bunan tāruh. (283)

*e
*tāja [I] ‘dull’ Singai taja, Gumbang sajal, Serambu taja, Bratak taja, Serasot taja, Grogo tajal, Stass taja, Biatah taja, Bistaang taja, Benuk taja, Sapug taja, Pinyawa’ taja, Bengoh taja, Anah Rais tajə,
Biya täja, Sembaan täja, Tringgus Raya täja, Tringgus Bireng tajä, Bukar täja, Sadung täja, Bibengih täjah, Sangking täja, Tebakang täja, Bukar-Sadung täja, Bunan tajä. (308)

*kabas* ‘dead’ Singai kabas, Gumbang kabas, Serambu kabas, Bratak kabas, Serasot kabas, Grogo kabas, Stass kabas, Biatah kâbas, Bistaang kâbas, Benuk kâbas/h, Sapug kabas, Pinyawa’ kabas, Bengoh kabas, Anah Rais kabas, Biya kâbas, Sembaan kâbas, Tringgus Raya kâbas, Tringgus Bireng kâbas, Bukar kâbas, Sadung kâbas, Bibengih kâbas, Sangking kâbas, Tebakang kâbas, Bukar-Sadung kâbas, Bunan kabas. (129)

*bireh* ‘red’ Snga bireh, Gumbang bireh, Serambu bireh, Bratak bireh, Grogo bireh, Stass bireh, Biatah bireh, Bistaang breh, Benuk gen, Sapug dïken, Bengoh tigen, Anah Rais dïken, Tringgus Raya dïken, Tringgus Bireng dïken, rïken. (165)

*bìtek* ‘bad (person)’ Bukar bìtek, Sadung bìtek, Bibengih bìtek, Sangking bìtek, Tebakang bìtek, Bukar-Sadung bìtek, Bunan bìtek. (169).

*siock* ‘chicken’ Singai siock [siuak], Gumbang siock [siyak], Serambu siock [siyuk], Bratak siock [siwak], Serasot siock [siyuk], Grogo siock [siyok], Stass siock [siyuk], Biatah siock, Pinyawa’ siock [siyuk], Bengoh siock [siyak], Anah Rais siock [siwok], Biya siock, Sembaan siock, Tringgus Raya siock, Tringgus Bireng siock, Bukar siock [siyok], Bibengih siock [siyok], Sangking siock [siyok], Tebakang siock, Bukar-Sadung siock [siyok], Bunan siock [siyok]. (56)


21 It is interesting that no sets have been found in which non-lengthened e in the Bukar-Sadung dialects matches non-lengthened e in the other dialects. There are sets that have it only in Bukar-Sadung; in other dialects cognates have not been identified.

22 The symbol _ marks a segment about which there is some uncertainty. For example, in this example it is uncertain whether the vowel of the Bukar form is really lengthened.
*ūm-pat ‘four’ Singai pat, Gumbang pat, Serambu pat, Bratak pat, Serasot pat, Grogo pat, Stass pat, Biatah pat, Bistaang pat, Benuk pat, Sapug pat, Pinyawa’ pat, Bengoh mpat, Anah Rais pat, Biya pat, Sembaan pat, Tringgus Raya pat, Tringgus Bireng pat, Bukar umpat, Sadung umpat, Bibengih âmpat, Sangking mpat, Tebakang umpat, Bukar-Sadung mpat, Bunan mpat. (284)

2.3.2.2 Labialized reflexes of *ə

The central vowel *ə is labialized to o in western Bidayuh and in Sembaan in certain labial environments.

Western Bidayuh. In Singai, Gumbang and the Jagoi varieties the central vowel *ə is labialized to o before a labial consonant. This pattern is virtually without exception. So, it can be stated as a sound change, as follows: *ə > o /p, b, m in Singai, Gumbang and Jagoi.

*ənəm, *nom ‘six’ Singai nom, Gumbang nom, Serambu nom, Bratak nom, Serasot nom, Grogo nom, Stass nom, Biatah nam, Bistaang nam, Benuk nam, Sapug nam, Pinyawa’ nam, Bengoh nam, Anah Rais nam, Biya nam, Sembaan nom, Tringgus Raya nam, Tringgus Bireng nam, Bukar ânam, Sadung ânam, Bibengih inam, Sangking nam, Tebakang ânam, Bukar-Sadung ânam, Bunan nam, inam. (286)


Also *ŋəgəm ‘grasp’ but cf. Singai ŋəgom, Gumbang ŋəgom, Serambu ŋəgom, Stass ŋəgom (165);
*dakəp ‘two arm spans (a measure)’ but cf. Singai dakəp (297);
*jinsəp ‘suck’ but cf. Singai sop ‘suck’, Gumbang sop ‘lick’, Bau dictionary sop ‘sip’ (146);
*Cvjab ‘(to) spear’ but cf. Singai njob, Gumbang njob, Bau dictionary njob ‘pierce’, njəb ‘pierced’; cf. also Tringgus Raya jegeb ‘pierce’ (145);
*məsəm, *məsməm ‘sour’ but cf. Singai masom, Gumbang masum, mason, Serambu masom, Bratak masom, Serasot masom, Grogo masom, Stass masom (239); *əsməm ‘mango’ but cf. Singai asom, Stass asom (424);
*tərop ‘deep’ but cf. Singai turop, Gumbang turop, Serambu turop, Bratak turop, Serasot turop, Grogo turop, Stass turop (316);
*kədəb ‘(chicken) lice’ but cf. Singai kudob, Gumbang kudob, Serambu kudom, Bratak kudob, Serasot kudob, Stass kudob (127);
*jəhəp ‘suck’ (146) but cf. Singai ŋuop, Gumbang ŋuop, Serambu ŋuop, Bratak ŋuop, Serasot ŋuop, Grogo ŋuop, Stass ŋuop (235, 146).

It is interesting to note that when *ə > o before a labial consonant in western Bidayuh, *ə in the penult is also labialized to *u, as illustrated by the last three sets shown above.
Sembaan. In general, in Sembaan the reflex of *ə remains ə. Note, for example, the set *kārob ‘knee’ (111), cited above, with Sembaan [bak] kārob.

However, when the vowel is nasalized, i.e., follows a nasal consonant without an intervening blocking consonant, the usual reflex is o. See *ānam ‘six’ (286), cited above, with the Sembaan cognate nom.

Also *tōŋan (kāyu) ‘tree’ but cf. Sembaan ḫon kāyu (28);

*jāhap ‘suck’ but cf. Sembaan Ḫhop (235, 146);

*bānāh ‘husband’ but cf. Sembaan bán (250);

*rīmāh ‘five’ but cf. Sembaan rīmoh (285);

*tāmāh ‘worm’ but cf. Sembaan tāmoh (60).

2.3.2.3 The mid vowels

The mid vowels, *e and *o, are pronounced as centralizing diphthongs in many dialects of Bidayuh, i.e., in all western dialects (except that the process is less thorough-going in Gumbang), all Penrissen and Lower Padawan dialects and the Anah Rais dialect of Upper Padawan. In the other dialects there is little noticeable gliding. The end point of the diphthongs varies depending on the final consonant, but the specifics seem to vary among dialects and even speakers. For example, the diphthong tends to ends lower, something like [ia], before ?, k or ŋ and generally higher, something like [ia] or [iɛ], before labial or apical consonants. Note the following examples from Serambu:

/rideʔ/ [riˈdɛʔ] ‘thin’ (322), /dien/ [diˈɛn] ‘durian’ (37)
/rison/ [riˈsuaŋ] ‘mortar’, (191) /masom/ [masuəm] ‘sour’ (239)

The PBid mid vowels occur rather infrequently, especially the front mid vowel, *e. They also are quite restricted with regard to the following consonant and to vocalic length. Mid vowels occur most frequently before a final */ʔ, *k, *ŋ, *n, *h or *s. These seem to be the favored consonantal environments for the mid vowels. By contrast, the PBid mid vowels occur only rarely before the oral stops /p/ and /t/ and virtually never in an open syllable.

The distribution of mid vowels with regard to the favored consonants is shown in the following chart:

<table>
<thead>
<tr>
<th>Final consonant</th>
<th>*ʔ</th>
<th>*k</th>
<th>*ŋ</th>
<th>*n</th>
<th>*h</th>
<th>*s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sets</td>
<td>22</td>
<td>13</td>
<td>10</td>
<td>11</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Percentage of these mid-vowel sets</td>
<td>33</td>
<td>20</td>
<td>15</td>
<td>17</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

23 For a discussion of nasal flow and blockage in Bidayuh, see C. M. Rensch in this volume.

24 These diphthongs are somewhat similar to the centralizing diphthongs described by Blust for Mukah Melanau. He posits a rule of “breaking” by which the diphthongs ia and uə are derived from i and u before k or ŋ, and ea is derived from a before k, ŋ or r (Blust 1988:180). See also Chou 2002 for further discussion of the diphthongs that have developed in some varieties of Melanau before certain final posterior consonants.
Furthermore, it should be noted that while the mid vowels occur less frequently overall as compared with high vowels, they occur rather frequently vis a vis the high vowels before the favored consonants. For example, before *k mid vowels are more frequent than high vowels (13 sets with mid vowels and 11 with high). They have a similarly high frequency before *? (22 mid and 34 high), *ŋ (10 mid and 18 high) and *n (11 mid and 11 high).


*siok 'chicken' Singai siok, Gumbang siok, Serambu siok, Bratak siok, Serasot siok, Grogo siok, Stass siok, Biatah siok, Pinyawa’ siok, Bengoh siok, Anah Rais siok, Biya siok, Sembaan siok, Tringgus Raya siok, Tringgus Bireng siok, Bukar siok, Bibengih siok, Sangking siok, Tebakang siok, Bukar-Sadung siok, Bunan siok. (56)


*sī/uni0294en, *si/uni0294an 'wał' Singai sī/en, Gumbang si/uni0294en, Serambu si/uni0294en, Bratak si/uni0294en, Serasot si/uni0294en, Grogo si/uni0294en, Stass si/uni0294en, Biatah si/uni0294en, Pinyawa’ si/uni0294en, Bengoh si/uni0294en, Anah Rais si/uni0294en, Biya si/uni0294en, Sembaan si/uni0294en, Tringgus Raya sa/uni0294en (cf. also pi/uni0294en ‘keeps on crying’), Tringgus Bireng si/uni0294en ‘cry’, Tebakang si/uni0294en. (174)

*tūloh, *tūlo/uni02D0/uni0294 ‘egg’ Singai turoh, Gumbang turoh, Serambu turoh, Bratak turoh, Serasot turoh, Grogo turoh, Stass turoh, Biatah turoh, Bistaang turoh, Benuk tūroh, Sapug turoh, Pinyawa’ turoh, Bengoh turoh, Anah Rais turoh, Biya tūroh, Sembaan tūroh, Tringgus Raya turoh, Tringgus Bireng troh, Bukar tulo?, Sadung tulo?:, Bibengih ntulo?, Sangking ntulo?:, Tekeng tulo?:, Bukar-Sadung ntulo?, Bunan ntulo?:. (51)

*utos, *atotos ‘needle’ Singai tos, Gumbang tos, Serambu tos, Bratak tos, Serasot tos, Grogo tos, Stass tos, Biatah utos, Bistaang tos, Benuk tos, toh, Sapug tos, Pinyawa’ tos, Bengoh tos, Anah Rais tos, Biya ŋotos, Sembaan tos, Tringgus Raya tos, Tringgus Bireng tos, Sangking tos. (213)

As mentioned above, a higher percentage of the mid vowels are lengthened than with the corresponding high vowels. Of 38 sets reconstructed with the vowel *o 20 (53%) have a lengthened vowel. Similarly, of 22 sets reconstructed with the vowel *e ten (45%) have a lengthened vowel. By contrast, only nine percent of the 81 sets with the vowel *u have a lengthened vowel, and only six percent of the 51 sets with the vowel *i have a lengthened vowel.

*midek, *mûdek 'go upriver' Singai midek, Gumbang midek, Biatah mudek, Bistaang mûdek, Sapug midek, Pinyawa’ mudek, Anah Rais mudek, Sembaan mde?, Tringgus Bireng mûdek, Tebakang mûdek, Bunau mudek. (185)

*pûno?, *puno: ‘full (thing)’ Sûnga puno/un, Gumbang puno/un, Bratak puno/un, Serasot puno/un, Grogo puno/un, Stass puno/un, Biatah puno/un, Bistaang puno/un, Benuk p[u]no/un, Sapug puno/un, Pinyawa’ puno/un, Bengoh puno/un, Anah Rais pûno/un, Biya pûno/un, Sembaan hno/un, Tringgus Raya pûno/un, Tringgus Bireng pûno/un, Bukar puno/un, Sadung puno/un, Bibengih puno/un, Sangking pûno/un, Tebakang pûno/un, Bukar-Sadung puno/un, Bunau puno/un. (311)


There are many cognate sets in which some Bidayuh varieties reflect a mid vowel while others reflect a high vowel (or in some cases *a). The front mid vowel, *e, alternates with *i in some sets and with *a in others. The back mid vowel, *o, alternates with *u in some sets and with *a in one, as illustrated in the following sections. These varying reflexes suggest that the mid vowels developed from the high vowels *i and *u, and perhaps in some cases from *a. But in which contexts? We have observed that the mid vowels occur more frequently before some consonants than before others and in a higher percentage of sets as compared with the corresponding high vowels. These observations suggest that at an early stage in the development of Proto Bidayuh the mid vowels developed from the high vowels when before these favored consonants, especially *i, *k, *ŋ and *n, and especially when the pre-Bidayuh high vowels were lengthened.

2.3.2.4 Vowel alternations

As mentioned above, a large number of cognate sets reflect one vowel in some regions and a different vowel in other regions. Many but not all of these alternations involve a mid vowel. These vowel alternations fall into four groupings: (1) *ə ~ *o, (2) *a ~ *e, (3) *i ~ *e and *u ~ *o and (4) *au or *aw ~ *awə.

2.3.2.4.1 Vowel alternation (1) (labialization): *ə ~ *o.

There are a number of sets that reflect *ə in some dialects but *o in others. In some cases, but not all, the *o-type reflexes are found in the western dialects. However, the distribution of the o-type vowels is not entirely consistent and predictable. So, it appears preferable to refer to these as vowel alternations and to symbolize them as *ə ~ *o rather than regard them as a regular development of *ə as in western Bidayuh and Sembaan *ə > o, which was discussed earlier.

In the following two sets the central vowel *ə is labialized before a labial consonant in Singai and Gumbang but not in the Jagoi dialects:

*ŋârəm, *ŋârom ‘night’ Singai ŋarəm, Gumbang ŋarəm, Serambu ŋarəm, Bratak ŋarəm, Serasot ŋarəm, Grogo ŋarəm, Stass ŋarəm, Biatah sînərəm, Bistaang ñârəm, Benuk sînərəm, Sapug
siṅārəm, Pinyawa [siɲarəm], Anah Rais siṅārəm, Biya njəm, Sembaan kəɾəm, Tringgus Raya siṅārəm, Tringgus Bireng kəɾəm, Bukar biɲəɾəʔ, Bibengih biɲəɾəʔ, Tebakang biɲəɾəʔ, Bukar-Sadung njæɾəʔ, Bunan njæɾəʔ. (22)

*tāhəp, *təhəp ‘loincloth’ Singai taop, Gumbang taop, Serambu taap, Bratak taap, Serasot taap, Grogo taub (…ap expected), Stass taap, Bau dictionary taap, Biatah tāap, Bistaang təp, Benuk təp, Sapug təp, Pinyawa’ taʔəp, Bengoh taop, Anah Rais təap, Biya təap, Sembaan təhəp, Tringgus Raya təhəp, Tringgus Bireng təap, Bukar təhəp, Sadung tahəp (final ḳ expected), Bibengih tahəp, Sangking tahəp, Tebakang təhəp, Bukar-Sadung tahəp, Bunan tahəp. (267)

In two sets *ə alternates with *o in the environment *p/b_k, i.e., when a labial environment precedes. The o variant occurs in several dialects, primarily in the western region, but its occurrence in a given dialect is not entirely predictable.

*sābək, *sābək ‘sarong (in some dialects only for a man)’ Singai sabok, Serambu sabok, Bratak sabok, Serasot sabok, Grogo sabok, Stass sabok, Benuk sābək, Sapug sābək, Pinyawa’ sabok, Bengoh sabok, Anah Rais sābək, Bukar sabok. (268)


There is a third set which follows this same *ə ~ *o pattern, and it presents the same preceding labial environment and a similarly unpredictable distribution pattern:

*ām[b]ək, *ām[b] ok ‘mat’ Singai ambək, Gumbang amək, Serambu amok, Bratak amok, Serasot amok, Stass am[b]ok, Biatah ambok, Bistaang mək, Benuk mbək, Sapug amok, Pinyawa’ mək, Bengoh amok, Anah Rais āmək, Biya am[b]ok, Sembaan āmək. (280)

The apparently cognate forms in the eastern dialects reflect *a rather than *ə. If they are directly cognate, this development is difficult to explain. *āmak ‘mat’ Bukar āmak, Sadung āmak, Bibengih āmak, Tebakang āmak, Bukar-Sadung āmak, Bunan [ə]mak. (280)

A fourth set, *ŋāmək, *ŋəmok, *ŋəmuk, also shows the *ə ~ *o alternation, but some of the Jagoi dialects show *u rather than *o, possibly as a result of the nasal environment created by the labial nasal. In fact, only Serambu and Benuk show the reflex *ə. However, a parallel set of dialect forms, reflecting *təbək, appear to be morphologically related and suggest that the underlying vowel is indeed *ə.

*ŋəmək, *ŋəmok, *ŋəmuk ‘stab’ Singai ŋəmək, Serambu ŋəmək, Bratak ŋəmuk, Serasot numuk, Grogo ŋəmuk, Stass ŋəmuk, Biatah kumək, Benuk ŋəmək, Bibengih ŋəmək, Sangking ŋəmək, Bunan ŋəmək. (145)

*təbək ‘stab’ Gumbang nəbək, Biatah təbək, Bistaang təbək, Benuk təbək, Bengoh nəbək, Biya təbək, Tringgus Raya təbək, Tringgus Bireng təbək, Bukar təbək, Sadung nəbək. (145)

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25This set does not seem to follow the usual pattern, viz., that penult vowels before *h are regularly reduced. (See §2.4.2.2.)

26Jagoi-H refers to a list of Jagoi words published by Hudson (1970).
Three more sets seem to provide evidence for the *a ~ *o alternation and the further alternation with *u. They show *u in most regions, but in some they show the *a ~ *o alternation with the o variant occurring primarily in the Jagoi dialects. However, it should be pointed out that these alternations do not in any way occur in a labial environment nor in most cases in a nasal environment. All of them have final *h and a voiced continuant preceding the vowel, specifically, *n/rVh.


*bijnuh, *bijnuh, *bijnuh ‘lime’ Singai bijnah, Gumbang bijnah, Serambu bjnh, Bratak bjnh, Serasot bjnh, Grogo bjnh, Stass bjnh, Biatah bjnh, Bistaang bjnh, Benuk bjnh, Sapug bjnh, Pinyawa’ bjnh, Bengoh bjnh, Anah Rais bjnh, Biya bjnh, Sembaan bjnh, Tringgus Raya bjnh, Tringgus Bireng bjnh, Bukar bjnh, Sadung bjnh, Bibengih bjnh, Sangking bjnh, Tebakang bjnh, Bukar-Sadung bjnh, Bunau bjnh. (245)

There is at least one more set which has *a in most dialect groups but has *u in the western dialects. Those are the dialects with *o reflexes in most of the preceding sets. It should be noted that the onset of the ultima is a labial consonant.

*kambat, *kambut ‘forget’ Singai kam[bt], Gumbang kamut, Serambu kamut, Bratak kambut, Serasot kamut, Grogo kandum, Stass kamut, Biatah kāmbat, Bistaang kāmat/kambad, Benuk kāmbat, Sapug kām[bt], Pinyawa’ kāmbat, Bengoh kāmpt, Anah Rais kāmat, Biya kām[bt], Sembaan kāmbat, Tringgus Raya kāmbat, Tringgus Bireng kāmbat, Bukar kāmbat, Sadung kāmat, Bibengih nkāmbat, Sangking nkāmbat, Tebakang kāmbat, Bukar-Sadung kāmbat, Bunau kāmbat. (134)

It is possible that the following set, with *u and a final labial, belongs in this same category:

*yup, *yap ‘blow on fire’ Singai yup, Gumbang yup, Serambu yup, Bratak yup, Serasot yup, Sembaan i(y)ap, Tringgus Raya yop. (148)

2.3.2.4.2 Vowel alternation (2) (palatalization): *a ~ *e.

There is a group of sets which have *a in some dialect groups and *e in others. In these sets the Bukar-Sadung group shows *a, and the Sembaan group nearly always shows *e. Generally, both the western group and the central group show *e, but in some cases just one of those groups shows *e while the other shows *a.
Interestingly, in the vast majority of the sets the vowel of the pre-final syllable is *i or *i is one of the alternants. Therefore, it is reasonable to view these as examples of the palatalizing effect of the penultimate *i on the low vowel.

Two quite similar sets, one with penultimate *i and the other with penultimate *a, seem to provide evidence that *i in the penult is, in fact, a factor in this palatalization process.


Four groups of sets show the *a ~ *e alternation. The four dialect groups27 show the following reflexes in the first group of sets: (western) e – (central) e – (Sembaan) e – (eastern) a.

*îkan, *îken, *ike?: ‘fish’ Singai ken, Gumbang ken, Serambu iken, Bratak iken, Serasot iken, Grogo iken, Stass iken, Biatah iken, Bistaang ken, Benuk [ iken, Sapug ken, Pinyawa’ [ iken, Bengoh ken, Anah Rais ken, Biya ken, Sembaan ken, Tringgus Raya ken, Tringgus Bireng ken, Bukar ikan, Sadung ikan, Bibengih ikan, Sangking ikan, Tebakang ike?, Bukar-Sadung ikan. (53)

*dîhan, *dîhen, *dîha? ‘durian’ Singai dien, Gumbang dien, Serambu dien, Bratak dien, Serasot dien, Grogo dien, Stass dien, Biatah dien, Bistaang dien, Benuk dien, Sapug dien, Pinyawa’ dien, Bengoh dien, Anah Rais dien, Biya dien, Sembaan dîhen, Tringgus Raya dîhen, Tringgus Bireng reen, Bukar dihan, Sadung dihan, Bibengih dîha?, Tebakang dihan, Bukar-Sadung dihan, Bunan dihan. (37)

Also *si2an, *si2en ‘cry’ (174), *bitiha?, *bitihe? ‘pregnancy’ (442).

In the preceding sets e occurs in all dialects except the Bukar-Sadung dialects, where a occurs.

In the next group of sets below e occurs in the forms of the western and Sembaan groups while a occurs in the others. In these sets we may state the distribution of reflexes as e – a – e – a.


27The four dialect groups are western Bidayuh (Singai-Gumbang-Jagoi), central Bidayuh (Biatah-Penrissen-Padawan), Sembaan group (Sembaan-Tringgus Raya and Bireng), eastern Bidayuh (Bukar-Sadung).
Also *kilet, *kilat ‘eyelashes, eyebrow’ (90) (In this set the vowel of Anah Rais and Biya agrees with that of the Sembaan Group); *kāka?, *sike? ‘older sibling’ (457); and *mihaŋ, *giheŋ ‘sago beetle’ (451).

In the third group of sets a occurs in eastern Bidayuh and e in the Sembaan dialects, as in the preceding two groups. However, in these sets the eastern group reflex is a (in the one set that shows western cognates) and is largely e, but mixed with a, in the central dialects. In this group the distribution of reflexes may be stated as a – e/a – e – a.

Also *isan, *san, *sen ‘morning’ (21); *ārap, *ārep ‘bad’ (169).

The fourth group of sets is quite different from the preceding three groups in that e is the reflex in the eastern dialects and a in all others, quite the opposite of the preceding patterns. In these sets we may state the distribution of reflexes as a – a – a – e. Both of the sets so far identified as belonging to this group end in *a:?

Also *ŋu-ta?, *ŋute/uni02D0/uni0294 ‘vomit’ (125).

Both of these sets in the fourth group present some difficulty related to palatalization. In the first set there is penultimate *i, but the alternation is between *a:? and *eh, which end in different laryngeals. In the other set the alternation is between *a:? and *e?:, but the penultimate vowel is *u rather than *i. Furthermore, Sadung-Bibengih has ģuta? rather than ģute?. It may eventually be concluded that this fourth group of sets does not, in fact, reflect palatalization.

**Palatalization in Tringgus Bireng:** *a > e. There is a group of sets, generally ending in *...an, which show e:? in Tringgus Bireng. In all but one of these sets a nasal consonant is the onset of the ultima. The sequence e:? in Bireng evidently has developed from *an in the context *N...# (where “N” represents a nasal consonant).

*tāŋan, *tāŋe/uni0294, *tāŋ/uni0259/uni0294 ‘hand’ Singai tāŋan, Gumbang tāŋan, Serambu tāŋan, Bratak tāŋan, Serasot tāŋan, Grogo tāŋan, Stass tāŋan, Biatah tāŋan, Bistaang tāŋan, Benuk tāŋan, Sapug tāŋan, Pinyawa’ tāŋan, Bengoh tāŋan, Anah Rais tāŋan, Biya tāŋan, Sembaan tāŋan, Tringgus Raya
tāŋan, Tringgus Bireng tāŋe?i, Bukar tāŋan, Sadung tāŋa?, Bibengih tāŋan, Sangking tāŋan, Tebakang tāŋa:]n, Bukar-Sadung tāŋan, Bunan tāŋan. (104)

*ımən 'go downstream' (186) with Tringgus Bireng āme?:;
*ğānam 'name' (260) with Tringgus Bireng ğāne?:;
*dījan 'friend' (258) with Tringgus Bireng dīne?:;
*maːn, *maʔən 'eat' (232) with Tringgus Bireng me?; (and Tringgus Raya men).

Another example is similar but does not have a nasal consonant in the onset.

*nāpan 'winnow' (193) with Tringgus Bireng nāpe?:.

Still another set has a similar cognate in Tringgus Bireng, but the development from the reconstructed root to the Tringgus Bireng form is not clear.

*dāhaŋ 'wild boar' (438, 355) with Tringgus Bireng dāŋe?:.

In this connection one may also note the following set:

*dīnah 'hear' (117) with Tringgus Bireng dīen rather than the expected *dīen?:.

This group of sets that has e in Tringgus Bireng but a in other dialects appears to be related to a group of sets with āg in Tringgus Bireng but a in other dialects. Whereas the preceding group of sets has a nasal context (*Nan), these sets have an oral preceding context, i.e., they do not have a nasal as onset of the ultima.

*ūtaŋ, *taŋ 'debt' Singai tan, utaŋ, Gumbang taŋ, Serambu taŋ, Bratak taŋ, Serasot [u]taŋ, Grogo utaŋ, Stass taŋ, Biatah utaŋ, Bistaang taŋ, nātaŋ, Benuk taŋ, brutaŋ, Sapug [u]taŋ, Pinyawa'

*pirūŋ/űraŋ 'mosquito' with Tringgus Bireng pūŋ (62);
*gāraŋ, *nāraŋ 'span from thumb to middle finger' with Tringgus Bireng nārag (297);
*tūraŋ 'bone' with Tringgus Bireng tūrag (70);
*rāyaŋ 'spit' with Tringgus Bireng āyag (154);
*rīzan 'hard' with Tringgus Bireng rīrag (312);
*tigāhan 'side' with Tringgus Bireng [tṛag] ąag (96);
*būhaŋ 'fence' with Tringgus Bireng buəg (279).

Cf. also *būdaŋ 'body' in which the Tringgus Bireng form is būdəŋ rather than the expected būdəg (218).

2.3.2.4.3 Vowel alternation (3a) (front vowel lowering): *i ~ *e.

There is a group of sets which have *i in some dialects and *e in others. In general, *e occurs in the central and Sembab dialects groups while *i occurs elsewhere. Using the representation employed earlier, this distribution of reflexes can be stated as i – e – e – i.
Vowel alternation (3b) (back vowel lowering): *u ~ *o. There is a parallel group of sets with *u in some dialects and *o in others. There seem to be two kinds of alternation, having contrasting distribution patterns.

The first group of these sets shows *u in eastern dialects and *o in the rest. This distribution of reflexes, not unlike the pattern for the *i ~ *e alternation, can be stated as o – o – o – u.

*kăsoŋ, *kăsuŋ, *kăsuh ‘dog’ Singai kăsoŋ, Gumbang kăsoŋ, Serambu kăsoŋ, Bratak kăsoŋ, Serasot kăsoŋ, Grogo kăsoŋ, Stass kăsoŋ, Bistaang kăsoŋ, Benuk kăsoŋ, Sapug kăsoŋ, Pinyawa’ kăsoŋ, Bengoh kăsoŋ, Anah Rais kăsoŋ, Biya kăsoŋ, Sembaan kăsuŋ, Tringgus Raya kăsuŋ, Tringgus Bireng kăsuŋ, (59)

Also *piriuŋ, *pirioŋ ‘rice pot’ (223); *unjkuŋ, *unjkoŋ ‘tail’ (50); *kubuy, *kuboy ‘intestines, stomach’ (102); *să?uk, *să?ok ‘dipper’ (but this has u in the Penrissen-Padawan dialects) (224).

The second group of sets with *u ~ *o alternation has essentially the opposite distribution pattern from the first group with *o in the eastern dialects and *u in the rest. This distribution pattern, the reverse of the preceding pattern, is similar to the last pattern of the *a ~ *e alternation. It can be stated as u – u – u – o.


Also *bānduŋ, *bāndoŋ, *bāndok ‘cassava’ (43); *māpuŋ, *muŋ o ‘white’ (329); *bubuk, *bubok ‘termite’ (64); *nāŋuy, *dūŋoŋ ‘swim’ (472); *tōŋ, *tāŋoŋ ‘sorong (man’s)’ (but with o in Biya) (268); *jāntuŋ, *sāntuŋ, *sintuŋ, *jāntoŋ ‘heart’ (but with u in Sangking, Bukar-Sadung and Bunan) (97); *nāmuk, *nāmok, *kumok ‘stab’ (but with o in Singai and Biatah) (145).
2.3.2.4.4 Vowel alternation (4a): *aw ~ *ăw乎.

There are two groups of sets with this rather unusual alternation: *Caw or *CaʔuC alternates with *CawC.28

In the first group *Caw occurs in the eastern dialects and *Căw/unC occurs in the other dialect groups.

*nătaw, *tătaw, *tăw乎 ‘laugh’ Singai tăw, Gumbang tăw, Serambu tăw, Bratak tăw, Serasot tăw, Grogo tăw, Stass tăw, Biatah tăw, Bistaang tuă, Benuk tăw, Sapug nătaw (similar to Bukar-Sadung forms; something like tăw乎 expected), Pinyawa’ tăw, Bengoh tăw, Anah Rais tăw, Biya tăw, Sembaan tăw, Tringgus Raya tăw, Tringgus Bireng tăw, Bukar nătaw, tătaw, Sadung nătaw, Bibengih nătaw, Sangking nataw, Tebakang nătaw, Bukar-Sadung nătaw, Bunun nataw. (176)

*ăsaw, *săw乎 ‘wife’ Singai săw, Gumbang săw, Serambu săw, Bratak săw, Serasot săw, Grogo săw, Stass săw, Biatah săw, Bistaang suan, Benuk săw, Sapug săw, Pinyawa’ săw, Bengoh săw, Anah Rais săw, Biya săw, Sembaan săw, Tringgus Raya săw, Tringgus Bireng săw, Bukar āsaw, Sadung āsaw, Bibengih asaw, Sangking saw, Tebakang āsaw, Bukar-Sadung āsaw, Bunun āsaw. (251)

Another set, *i-raw ‘roof’ (277), appears to be similar. However, there is not a widespread alternant such as *răw/unC, as there is in the other two sets. It may be that stems beginning with *r do not exhibit this type of alternation. There is a Tringgus Bireng form [r]ăw?, which might suggest the reconstruction of something like *raw乎. However, the Tringgus Bireng form is unique; not even in Bukar-Sadung is anything similar found.


Vowel alternation (4b): *aʔuC ~ *aw乎. There is a second group of such alternation sets. In this group of sets *CaʔuC occurs in the eastern dialects (and in the western group in the first set) while *CawC occurs in the central and Sembaan dialect groups.


*dăʔun, *dăw, *dăw乎 ‘leaf’ Singai dăw, Gumbang dăw, Serambu dăw, Bratak dăw, Serasot dăw, Grogo dăw, Stass dăw, Biatah dăw, Bistaang duan, Benuk dăw,  

28Although this alternation is included at the end of a list of vowel alternations, it involves more than just an interchange of vowels. It is really an interchange of syllable patterns that seems to be related to an accentual change.

29In this set the western dialects agree with the eastern dialects rather than with the central and Sembaan groups.
Pinyawa’ dawan, Bengoh dawan, Anah Ra’s dawan, Biya dawan, Sembaan dawan, Tringgus Raya dawan, Tringgus Bireng dawan, Bukar dawan, Sadung dawan, Bibengih dabiun, Sangking dabiun, Tekakang dawan, Bukar-Sadung dawan, Bunai dabiun. (30) (In this and the following set in some of the eastern dialects awC-type forms with the replacive *-a? have taken the place of the expected forms with a?u.)

Another set *taru, *tira?un ‘afraid’ (179) appears to be similar. However, there is no widespread alternant such as *tirawC, as there is in the other two sets. There are some eastern forms tiraw, but these seem to be the result of adding the replacive *-a?, which is common in the Bukar-Sadung dialects. In the discussion of *tiraw ‘roof’ in the previous group it was theorized that stems with *r as onset do not have a widespread alternant such as *rawC. This set appears to support that theory.


2.3.2.5 Vowel quantity

All six vowels occur short or long in the Proto Bidayuh ultima. Although examples of lengthened vowels are found with all six of the vowel qualities, the three lower vowels *e, *o and *a seem to occur lengthened considerably more frequently than do the three higher vowels. According to my calculation at one stage of the distribution of lengthened vowels in reconstructed stems *a: accounted for 41% of all lengthened vowels, *o: for 35% and *e: for 10%. By contrast, *a, *u and *i: accounted for only 6%, 5% and 3%, respectively.

Contrastively lengthened vowels occur almost exclusively in closed syllables. Most commonly they are followed by *, a nasal or a stop. Less commonly they are followed by a fricative or the semivowel *y.

*i / *i:

*kajit ‘ear’ Singai kajit, Gumbang kajit, Serambu kajit, Bratak kajit, Serasot kajit, Grogo kajit, Stass kajit, Biatah kajit, Bistaang kajit, Benuk kajit, Pinyawa’ kajit, Bengoh kajit, Anah Rais kajit, Biya kajit, Sembaan kajit, Tringgus Raya kajit, Tringgus Bireng kajit. (87)

*sit ‘small’ Singai sit, Gumbang sit, Bratak sit, Serasot sit, Grogo sit, Stass sit, Biatah sit, Bistaang sit, Benuk sit, Sembaan sit, Tringgus Raya sit, Tringgus Bireng sit. (301, 318)

*kawi, *kawin ‘shoulder, clavicle’ Singai kawin, Gumbang kawin, Serambu kawin, Biatah kawin, Bistaang kawin, Sapug kawi, Pinyawa’ kawin, Bengoh kawin, Anah Rais kawin, Biya kawin, Sembaan kawin, Tringgus Raya kawin, Tringgus Bireng kawin, Bukar kawi, Sadung kawi, Bibengih kawi, Sangking kawi, Tekakang kawi, Bukar-Sadung kawi, Bunai kawi. (100)

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30 For a discussion of this type of glottal stop insertion, see §2.3.3.3.3 Replacives in the rime (3): *-?.
*ätī, *ätin ‘liver, heart (often figurative)’ Singai ātīn, Gumbang ātīn, Serambu ātīn, Bratak ātīn, Serasot ātīn, Grogo ātīn, Stass ātīn, Biatah ātīn, Bistaang ātīm, Benuk ātīm, Sapug ātī; Pinyawa’ ātī, Bengoh ātīm, Anah ātīn, Biya ātīn, Sembaan ātīn, Tringgus Raya ātīm, Tringgus Bireng ātīm, Bukan ātī; Sadung ātī, Bibengih ātī; Sangking ti; Tebakang ātī, Bukar ātī, Sadung ātī, Biya ātī, Sembaan ātī, Tringgus Raya ātī, Tringgus Bireng ātīm, Bukan [a]tīeg (final eg unexplained). (103, 97)


*tāki? ‘excrement’ Snga tūk, Gumbang tūk, Serambu tūk, Bratak tūk, Serasot tūk, Grogo tūk, Stass tūk, Biatah tūk, Bistaang tūk, Benuk tūk, Sapug tūk, Pinyawa’ tūk, Bengoh tūk, Anah Rais tūk, Biya tūk, Sembaan tūk, Tringgus Raya tūk, Tringgus Bireng tūk;i, Bukar tūk, Sadung tūk, Bibengih tūk, Sangking tūk, Tebakang tūk, Bukar-Sadung tūk, Bunan tūk. (73)

*u / *u:

*āku? ‘I’ Snga /un əkū/un, Gumbang /un əkū/un, Serambu /un əkū/un, Bratak /un əkū/un, Serasot /un əkū/un, Grogo /un əkū/un, Stass /un əkū/un, Biatah /un əkū/un, Bistaang /un əkū/un, Benuk /un əkū/un, Sapug /un əkū/un, Pinyawa’ /un əkū/un, Bengoh /un əkū/un, Anah Rais /un əkū/un, Biya /un əkū/un, Sembaan /un əkū/un, Tringgus Raya /un əkū/un, Tringgus Bireng /un əkū/un, Bukar /un əkū/un, Sadung /un əkū/un, Bibengih /un əkū/un, Sangking /un əkū/un, Tebakang /un əkū/un, Bukar-Sadung /un əkū/un, Bunan /un əkū/un. (339)


*tārun ‘forest’ Singai tārun, Gumbang tārun, Bratak tārun, Serasot tārun, Stass tārun, Biatah tārun, Benuk tārun, Sapug tārun, Pinyawa’ tārun, Bengoh tārun, Anah Rais tārun, Biya tārun, Tringgus Bireng tārun, Bukan tārun, Sembaan tārun, Tringgus Raya tārun, Tringgus Bireng ku, Bukar tārun, Sadung tārun, Bibengih tārun, Sangking tārun, Tebakang tārun, Bukar-Sadung tārun, Bunan tārun. (27)


*kājan ‘wait’ Singai kajən, Gumbang kajən, Serambu kajən, Bratak kajən, Serasot kajən, Grogo kajən, Stass kajən, Biatah kajən, Bistaang kajən, Benuk kajən, Sapug kajən, Pinyawa’ kajən, Bengoh kajən, Anah Rais kajən, Biya kajən, Sembaan əkajən, Tringgus Raya kajən, Tringgus Bireng kajən. (137)

*āran ‘home’ Singai āran, Gumbang āran ‘floor’, Biatah āran, Benuk āran, Sapug āran, Pinyawa’ āran, Anah Rais āran, Biya āran ‘floor’, Tringgus Raya āran. (271)

*bāram ‘green’ Biatah bāram, Bistaang bāram, Benuk bāram, Sapug bāram, Anah Rais bāram. (328)

*tāran, *nara, *nara ‘swallow’ Singai nara, Gumbang narə, Serambu narə, Bratak narə, Serasot narə, Grogo narə, Stass narə, Biatah tarə, Bistaang tarə, narə, Benuk tərə, Sapug tarə, Pinyawa’ tarə, Bengoh tarə, Anah Rais tarə, Biya tərə, Sembaan hrən,
Tringgus Raya tran, Tringgus Bireng tran, Bukar narän, Sadung narän, Bibengih nira?i, Sangking nara?, Tebakang taraan, naranim, Bukar-Sadung nira?, Bunar narän. (237)

*e / *e:


*bîzek ‘bad (person)’ Bukar bïzek, Sedung bïzek, Bibengih bïzek, Tebakang bïzek, Bukar-Sadung bïzek, Bunar bïzek. (169)

*midek, *mûdek ‘go up’ Singai midek, Gumbang midek, Biatah mudek, Bistaang mâdek, Sapug midek, Pinyawa’ mudek, Anah Rais mudek, Sembaan mde?, Tringgus Bireng mûdek, Tebakang mûdek, Bunar mudek. (185)


*siboŋ ‘sheath for parang’ Singai siboŋ, Gumbang siboŋ, Biatah siboŋ, Bistaang sâboŋ, Benuk sâboŋ, Sapug siboŋ, Pinyawa’ sâboŋ, Bengoh siboŋ, Anah Rais siboŋ, Biya siboŋ, Sembaan siboŋ, Tringgus Bireng siboŋ, Bukar siboŋ, Sadung siboŋ, Bibengih siboŋ, Sangking siboŋ, Tebakang siboŋ, Bukar-Sadung siboŋ, Bunar siboŋ. (208)

*bûjąq ‘straight’ Bukar bujög, Sadung bujög, Bibengih bujög, Sangking bujög, Tebakang bûjuq, Bukar-Sadung bujög, Bunar bujög. (319)

*mîjoq, *mûjoq ‘(to) stand’ Singai mujög, Gumbang mujög, Serambu mujög, Bratak mujög, Serasot mujög, Grogo mujög, Stass mujög, Biatah mujög, Bistaang maju[:j], Benuk mujög, Sapug mujög, Pinyawa’ mujög, Bengoh mujög, Anah Rais mujög, Biya mujög, Sembaan mujög, Tringgus Raya mujög, Tringgus Bireng majo[:j], Bukar mujög, Sadung mujög, Bibengih mujög, Sangking mujög, Tebakang mujög, Bukar-Sadung mujög, Bunar mujög. (132)
*a / *a:

*buhang, *baug ‘fence’ Biatah buan, Bistaang buan, Benuk buan, Sapug buan, Pinyawa’ buan,

Bengoh buan, Anah Rais buan, Biya buan, Sembaan buan, bahan, Tringgus Bireng buan, Bukar buhan, Bibengih buhan, Sangking buhan, Tebakang buhan, Bunan buhan. (279)

*buaang ‘bear (animal)’ Serasot buan, Biatah buan, Bistaang buan, Benuk buan, Pinyawa’ buan,

Bengoh buan, Anah Rais buan, Biya buan, Sembaan buan, Bukar buhan, Tebakang buhan, Bunan buhan. (279)

*puran ‘know (a person)’ Snga puan (casual speech), puran (careful speech), Gumbang puran,

Serambu puran, Bratak puran, Serasot puran, Grogo puran, Stass puran, Biatah puran, Bistaang puran, Benuk puran, Sapug puran, Pinyawa’ puran, Bengoh puran, Anah Rais puran, Biya puran, Sembaan puran, Tringgus Raya puran, Bukar puran, Sadung puan, Bibengih puran,

Sangking puran, Tebakang puran, Bukar-Sadung puan, Bunau puran. (261)

*tua/uniD0n ‘primary forest’ Snga tuaan (casual speech), tuaan (careful speech), Serambu tuaan,

Bratak tuaan, Serasot tuaan, Biatah tuaan, Bistaang tuaan, Benuk tuaan, Sapug tuaan, Pinyawa’ tuaan, Bengoh tuaan, Anah Rais tuaan, Biya tuaan, Sembaan tuaan, Bukar tuaan, Bibengih tuaan,

Sangking tuaan, Tebakang tuaan, Bukar-Sadung tuaan, Bunau tuaan. (27)

This full set of length contrasts has not been preserved in all the modern Bidayuh dialects. In some of the Bukar-Sadung varieties it appears that the mid and low vowels (e, o and a) have contrastive length but not the high vowels. No clear evidence has been found for any length contrasts in Tringgus Raya.

In the western region there are sequences of identical vowels, which are sometimes pronounced as rearticulated vowels, i.e., with two phonetic pulses, but are sometimes simply pronounced with longer duration than ordinary vowels. These same-vowel sequences, which are the nuclei of two syllables, have resulted from the loss of medial *h and are not the development of Proto Bidayuh long vowels.

*bahat ‘heavy’ Snga baat (casual speech), baat (careful speech), Gumbang baat, Serambu baat,

Bratak baat, Serasot baat, Grogo baat, Stass baat, Biatah baat, Bistaang baat, Benuk baat, Sapug baat, Pinyawa’ baat, Bengoh baat, Anah Rais baat, Biya baat, Sembaan bahat, Tringgus Raya bahat, Tringgus Bireng baat, Bukar bahat, Sadung bhad, Bibengih bahat, Sangking bahat,

Tebakang bahat, Bukar-Sadung bahat, Bunau bahat. (313)


*muhun ‘descend’ Snga mwn, Gumbang mun, Serambu mun, Bratak mun, Serasot mun,

Grogo mun, Stass mun, Biatah mun, Bistaang mun, Benuk mun, Sapug mun, Pinyawa’ mun, Bengoh mun, Biya mun, Sembaan mun, Tringgus Raya mwn, Tringgus Bireng mun, Bukar mun, Sadung mun, Bibengih mwn, Sangking mwn, Tebakang mwn,

Bukar-Sadung mwn, Bunau mwn. (143)

Although the usual reflex of *VhV in Snga, especially in careful speech, is VV, there apparently are some VV sequences even in Snga: *dihen ‘durian’ > Snga dien (37), *jho ‘far’ > Snga juo? (302),

The following set is also of interest with regard to the origin of PBid lengthened vowels:

*kahak, *āŋ-kak ‘crow or another large black bird’ Singai manuk kaʔak (careful speech), manuk kaʔak (casual speech), Gumbang manuk kak, Serambu manuk kaak, Bratak manuk kaak, Stass manuk kaak, Biatah kaʔk, Bistaang kaʔk, Benuk manuk kaak, Pinyawa’ manuk kaak, Bengoh kaʔk, Anah Rais kaʔk, Biya kaʔk, Sembaan kaʔk, Tringgus Raya manuk kak, Tringgus Bireng kaʔk, Bukar manuk ăŋka:k, Sadung ăŋka:k, Bibengih ăŋka:k, Sangking kito 郢ka:k, Tebakang 郢ka:k, Bukar-Sadung 郢ka:k, Bunan 郢ka:k. (52)

The central, Sembaan and eastern groups of dialects reflect a Proto-Bidayuh lengthened vowel. However, the western forms seem to reflect *aha even though Singai is the only western dialect that attests the medial *h directly. This seems to indicate that there were alternate stems, *kahak and *kaʔak, and suggests that in some cases *V forms may have developed from *VhV forms.

Two similar sets, involving medial *ʔ rather than medial *h, also seem to point to the development of lengthened vowels from sequences of vowel + laryngeal + vowel: *u-bak, *baʔk, *băʔak ‘head’ (76); *man, *maʔam, etc. ‘eat’ (232).

2.3.3 Coda of the ultima

2.3.3.1 Inventory

Most of the Proto Bidayuh consonants occur in the coda of the ultima, i.e., finally in the stem: *p, *t, *k; *b, *d, *g; *m, *n, *ŋ; *l, *r; *w, *y; *s; *h and *. It should be noted that the voiced palatal consonants, *j and *n, do not occur in this position.

*p


Also *ārhap, *āreph ‘bad’ (169); *bātaph ‘spark’ (226).

*t

*rāŋit ‘sky’ Singai rāŋit, Gumbang rāŋit, Serambu rāŋit, Bratak rāŋit, Serasot rāŋit, Grogo rāŋit, Stass rāŋit, Biatah rāŋit, Bistaang rāŋit, Benuk rāŋit, Sapug rāŋit, Pinyawa’ rāŋit, Bengoh rāŋit, Anah Rais rāŋit, Biya rāŋit, Sembaan rāŋit, Tringgus Raya rāŋit, Tringgus Bireng Ḇiŋit, Bukar Ḇiŋit, 31The presence of /o/ in the penult of the Gumbang form is unusual. Cf. Gumbang juo? ‘far’. It is possible that further checking would show the two forms to have the same penult vowel. It is interesting, however, that they came from different sources in Proto Bidayuh. The form /juoʔ/ developed from PBid *juhoʔ, but /poop/ developed from PBid *nahap, which became *nohop as the vowels were labialized before *p.
Sadung râŋit, Bibengih râŋit, Sangking râŋit, Tebakang râŋit, Bukar-Sadung râŋit, Bunan râŋit.

(11)

Also *bâžat ‘boundary’ (313), *kîjat ‘lightning’ (16).

*k

In final position *k in Singai is usually pronounced as [ʔ]. This does not, however, merge with the outcome of *ʔ, which is usually pronounced as laryngealization.


Also *kîpak ‘(tree) bark’ (29); *kûduk ‘taro, yam’ (44).

*b

*timîrib, *mûrib ‘fly’ Singai timîrib, Gumbang simûrib, Serambu timîrib, Bratak timîrib, Serasot timîrib, Grogo timîrib, Stass timîrib, Anah Rais tikûrib (penult is anomalous), Biya mûrib, Sembaan hmûrib, Tringgus Raya mûrib, Tringgus Bireng mûrib, Bibengih mûrib, Sangking mûrib. (141)

Also *[bak] kârûb, *kârob ‘knee’ (111); *kôdôb, *kûna:b ‘(chicken) lice’ (127).

*d


Also *bârîd ‘betel (leaf)’ (242); *dârâd ‘mountain’ (1).

*g

*mîjôg, *mûjôg ‘(to) stand’ Singai mîjôg, Gumbang mîjôg, Serambu mîjôg, Bratak mîjôg, Serasot mîjôg, Grogo mîjôg, Stass mîjôg, Biatah mîjôg, Bistaang mîjôg, Benuk mîjôg, Sapug mîjôg, Pinyawa’ mîjôg, Bengoh mîjôg, Anah Rais mîjôg, Biya mîjôg, Sembaan mîjôg, Tringgus Raya mîjôg, Tringgus Bireng mîjôg, Bukar mîjôg, Sadung mîjôg, Bibengih mîjôg, Sangking mîjôg, Tebakang mîjôg, Bukar-Sadung mîjôg, Bunau mîjôg. (132)

Also *kâpôg ‘cut in pieces’ (378); *dûg ‘back’ (99).

There is a curious handful of sets that reflect a final voiced stop in Proto Bidayuh but include forms in one or two varieties that show evidence for the corresponding nasal. The examples reflect final *b~m or *d~n but there is no reason to believe that it cannot be found with *g~ŋ as well. The nasal occurs in the first four examples only in western Bidayuh; in the last example it occurs in the Sadung area.

*kôdôb, *kûdôb, *kûna:b Singai kudôb but Serambu kudôm ‘(chicken) lice’. (127)

*timîrib, *mûrib Singai timîrib but Gumbang simûrib ‘(to) fly’. (141)

*râd, *îrâd, *ûrâd, *ârâd Singai râd but Serambu irâd, i ran, Serasot irâd ‘wing’. (48)

*po:d Singai t[i]rupod but Serambu subi trupon ‘termite’. (64)
*bā'ak tuad* Bukar ba'ak tuad but Bunau bak tuad, ba'ak tuan 'knee'. (111)

One more, apparently similar example has been found in the Bakati languages:

*pan [d] u,R Rara panut, Sara/Riok panûd, Kendayan panûd, Bekati' pandu'n 'cold'. (315)

*mās/uni0259m, *măs/uni0259m 'sour' Singai masom, Gumbang masum, masoŋ, Serambu masom, Bratak masom, Serasot masom, Grogo masom, Stass masom, Biatah māsôm, Bistaang māsôm, Benuk māsôm, Sapug māsôm, Pinyawa' māsôm, Bengoh masum, masom, Anah Rais māsôm, Biya māsôm, Sembaan māsôm, Tringgus Raya māsôm, Tringgus Bireng māsôm, Bukar māsôm, Sadung māsôm, Bibengih māsôm, Sangking māsôm, Tebakang māsôm, Bukar-Sadung māsôm, Bunau māsôm.

(239)

Also *ânam, *nom 'six' (286); *măndam 'sick, in pain' (458).


Also *bŭran 'moon' (9); *rămin 'house' (271).

*tŭraŋ, *tŭr/uni0259/uni0261 'bone' Singai tuaraŋ, Gumbang tuaraŋ, Serambu tuaraŋ, Bratak tuaraŋ, Serasot tuaraŋ, Grogo tuaraŋ, Stass tuaraŋ, Biatah tuaraŋ, Bistaang traŋ, Benuk traŋ, Sapug traŋ, Pinyawa' tuaraŋ, Bengoh tuaraŋ, Anah Rais tuaraŋ, Sembaan traŋ, Tringgus Raya traŋ, Tringgus Bireng traŋ, Bukar tuaraŋ, Sadung tuaraŋ, Bibengih tuaraŋ, Sangking tuaraŋ, Tebakang tuaraŋ, Bukar-Sadung tuaraŋ, Bunau tuaraŋ. (70)

Also *dāyuŋ 'woman' (253); *lăntiŋ 'raft' (197).

*bāntal 'pillow' Singai batar, Gumbang batar, Serambu batar, Bratak batar, Serasot batar, Grogo batar, Stass batar, Biatah bâtar, Bistaang bâtar, Benuk bâtar, Sapug bâtar, Pinyawa' batar, Bengoh batar, Anah Rais bâtar, Biya bątai, Tringgus Raya bâtar, Tringgus Bireng bâtar, Bukar bântal, Sadung bantal, Bibengih bantal, Sangking bantal, Tebakang bantal, Bukar-Sadung bantal, Bunau bantal. (270)

Also *tábal 'thick' (321); *pāŋkul, *pāŋkol 'dig' (149).

*N-kūbur 'bury' Singai kubur, Gumbang kubur, Serambu ñubur, Bratak kubur, Serasot ñubur, Grogo kubur, Stass ñubur, Biatah ñubur, Bistaang ñubur, Benuk ñubur, Sapug ñubur 'grave', Pinyawa' kubur 'bury', Bengoh kubur, Biya kūbur, Sembaan kūbur 'grave', Tringgus Raya kubur, Tringgus Bireng kūbur/y, Bukar ñubur, kinubur Sadung kubur, Bibengih kinubur, Sangking ñubur, Tebakang ñubur, Bukar-Sadung kubur, Bunau ñubur. (130)

Also *băyar, *măyar 'pay' (265); *măbær, *mikăbur '(to) fly' (141).

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32 For details about Proto Bakati reconstructions and phonological developments within this group of languages, see §3.
The fricatives. The fricatives *s and *h contrast in final position (coda of the ultima). The contrast is undisturbed following the vowels other than *i. However, following *i the contrast is partly neutralized (see below).

**s / *h**

*kābas* ‘dead’ Singai kābas, Gumbang kābas, Serambu kābas, Bratak kābas, Serasot kābas, Grogo kābas, Stass kābas, Biatah kābas, Bistaang kābas, Benuk kābas/h, Sapug kābas, Pinyawa’ kābas, Bengoh kābas, Anah Rais kābas, Biya kābas, Sembaan kābas, Tringgus Raya kābas, Tringgus Bireng kābas, Bukar kābas, Sadung kābas, Bibengih kābas, Sangking kābas, Tebakang kābas, Bukar-Sadung kābas, Bunar kābas. (129)


*si-rātus* ‘one hundred’ Singai niʔ ratus, Gumbang siratus, Serambu siratus, Bratak siratus, Serasot siratus, Grogo saratus, Stass siratus, Biatah siratus, Bistaang saratus, Benuk srātus/h, Sapug sirātus, Pinyawa’ siratus, Bengoh s[ä]rātus, Anah Rais sirātus, Biya srātus, Sembaan hrātus, Tringgus Raya srātus, Tringgus Bireng sātus, Bukar sirātus, Sadung srātus, Bibengih sirātus, Sangking srātus, Tebakang sirātus, Bukar-Sadung s[i]rātus, Bunar siratus. (291)

*bātuh* ‘stone’ Singai batuh, Gumbang batuh, Serambu batuh, Bratak batuh, Serasot batuh, Grogo batuh, Stass batuh, Biatah bātuh, Bistaang bātuh, Benuk bātuh, Pinyawa’ batuh, Anah Rais bātuh, Biya bātuh, Sembaan bātuh, Tringgus Raya bātuh, Tringgus Bireng bātuh, Bukar bātuh, Sadung batuh, Bibengih batuh, Sangking bātuh, Tebakang bātuh, Bukar-Sadung batuh, Bunar batuh. (4)

However, following the high front vowel *i the two fricatives merge in some dialects. In that position both became s in Singai, for some Serambu speakers, Biatah, Bistaang, some Benuk speakers, some Sapug.
speakers, Pinyawa’ and Bengoh whereas they became h in Gumbang and for other speakers in Serambu, Benuk and Sapug. In the dialects in which some speakers use s and others use h there seems not to be contrast in the speech of any one speaker. In the variety of Benuk reported by Kroeger (1994a) as standard for that dialect the final h phoneme is pronounced as glottal stop followed by a quick voiceless rearticulation of the vowel. The two fricatives remained distinct in Jagoi (other than Serambu), Upper Padawan, the Sembaan group and Bukar-Sadung.

*kă?is ‘dirty (clothes)’ Singai kă?is, Gumbang kă?ih, Serambu kă?is/kă?i, Bratah kă?is, Serasot kă?is, Grogo kă?is, Stass kă?is, Bistaang kă?is, Benuk kă?is, kă?ih, Sapug kă?is, Pinyawa’ kă?is, Bengoh kă?is, Anah Rais kă?is, Biya kă?is, Sembaan kă?is, Tringgus Raya kă?is, Tringgus Bireng kă?is. (171)


*gūtih, *günih ‘(head) lice’ Biatah gūtis, Bistaang gūtis, Benuk gūtis, tih, Sapug gūtih, gūtis, Pinyawa’ gūtih, gūtis, Bengoh gūtis, Anah Rais gūtih, Biya gūtih, Sembaan gūtih, Tringgus Raya gūtih, Tringgus Bireng gūtih, Bukar gūtih, Sadung gūtih, Bibengih gūtih. (126)


*tarih, *tārin ‘rope’ Singai tariis, Serambu tariin, Bratah tariin, Serasot tariin, Grogo tarih, Stass tarih, Biatah tāris, Bistaang tāris, Benuk tāris, tarih, Sapug tarih, taris, Pinyawa’ tariis, Bengoh tarih, Anah Rais tārih, Biya tārih, Sembaan tārih, Tringgus Raya tārih, Tringgus Bireng tārih, Bukar tārih, Sadung tārih, Bibengih tārih, Sangking tārih, Tebakang tārih, Bukar-Sadung tārih, Bunang tarih. (206)

*hVh. There is a group of sets that appear to reflect *CVhVh, i.e., with *h in the onset and coda of the ultima.

Bireng māi / māi, Bukar māhi, Sadung māhi, Bibengih māhi, Sangking māhi, Tebakang māhi, Bukar-Sadung māhi, Bunan māhi. (288)

Also *puhoh ‘blow’ (148); *b/ruhoh ‘(to) lie’ (173); *bāhuh, *Ni-bǎhuh ‘winnow’ (193) and *sǎhuh, *sāhuh, */uni0272ăhuh, */uni0272āhuh ‘burn’ (231).

In these sets the western dialect forms end in h, but the forms from other dialects end in a vowel only, without an h. These forms could be reconstructed either as *CVhV (with the final h lost in most dialects) or as *CVhV (with a final h supplied automatically in western dialects).

However, we note two sets with this shape that have cognates in the Bakati’ languages:

Proto Bidayuh *māhih, *māhih ‘eight’ (see immediately above).

Proto Bakati’ *mahi, /uni0294 ‘eight’ Rara mahı/uni0294, Sara/Rok mahı/uni0294, Kendayan mahı/uni0294, Bekati’ māi?.


Proto Bakati’ *ŋampoh, *ŋampok (final h expected). (148)

We note that in the first set the Bakati’ forms have final /uni0294, which, as we will see below (§4.1.3), regularly corresponds to Bidayuh final *h (<PBB *h₁). In the second set the Bakati’ forms have final h, which in ten sets also corresponds to Bidayuh final *h (<PBB *h₂). On the basis of the existence, albeit limited, of a final laryngeal in Bakati’ it seems preferable to reconstruct these sets as *CVhV.

*ʔʔ ʔʔ

In Singai *ʔʔ in final position is often weakened to laryngealization of the vowel, which is the pronunciation of *ʔ in that position.


2.3.3.2 No final consonant

There are some Bidayuh sets in which the ultima is an open syllable, i.e., it has no final consonant.

*sünü ‘river’ Singai suñi, Serambu suñi, Bratak suñi, Serasot piʔin suñi, Grogo suñi, Stass suñi, Biatah suñi, Bistaang suñi, sni, Benuk sni, Sapug suñi, Pinyawa’ suñi, Bengoh suñi, Anah Rais suñi, Biya suñi, Sembaan suñi, Bukar suñi, Sadung suñi, Bibengih suñi, Sangking suñi, Tebakang suñi, Bukar-Sadung suñi, Bunan suñi. (7)
2.3.3.3 Replacives in the rime

There are many sets in which the forms in one region have one final consonant but equivalent forms in another region have a different consonant or no consonant at all. In some words both the vowel and final consonant are different. For example, where forms in some regions end in *h but equivalent forms in other regions end in *n. In these words *n has replaced *h. This substitution is called the *-n replacive.

Although the number of sets with such replacives is large, the number of types of phonological processes is not. There are four principal types of replacement processes: (1) *-n replacement, (2) laryngeal deletion, (3) *-/un/ insertion and (4) *-y replacement.

2.3.3.3.1 Replacives in the rime (1): *-n.

Many sets have some forms with final n and others without n. Many of the sets with n refer to body parts or to relatives. This suggests that the *-n replacive may have marked possession or close relationship. Perhaps this was a group of stems that were obligatorily possessed, at least in some of the regions.

The addition of -n is especially common in the western and Sembaan regions. It is also found in the central region but in every set where it occurs in the central region it is also found in at least one of the other two regions. Apart from a few, seemingly asystematic, examples it does not occur in the eastern region.

Interestingly, distribution patterns of final n seem to correlate with the shape of the stem. That is, different rimes are replaced by -n in different dialect groups.

(a) In the western group the *-n replacive is found only with two stems ending in *...oy.

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33The rime is the vowel plus final consonant of a syllable.

34It is possible that these final replacives relate to the marking of vocatives. Zorc (1978:94) reports that Proto Hesperonesian “marked vocatives in two ways: by (1) accent on the final syllable, and/or (2) addition of PHN *-ŋ, *-ŋ, *-ŋ, or *-ŋ.”
Also *kuboy, *kubuy, *kubon 'stomach, intestines'. (102)

(b) In the western group and Tringgus Bireng the *-n replacive is found in a large group of sets that end in a high vowel followed by *h.

Also *bŭruh, *burun, *bŭru' 'feather, body hair' (49); *bībih, *bibin 'lip' (80); *jipah, *jipan, *jupan 'teeth' (82); *bātah, *mātah, *bātan 'eye' (88); *sisuh, *sūsuh, *sisun, *susun, *susuŋ, *susun, *susuŋ, *susun 'breast (milk)' (Forms reflecting *susut occur in Upper Padawan and the Sembaan group, thus blocking the occurrence of *-n in Tringgus Bireng.) (94); *sīkuh, *sūkuh, *sikun, *sūkun 'elbow' (105) (the Singai form unaccountably lacks the final n); *sīrah, *sīrah, *sūruh, *sīruh, *sūrun 'fingernail' (108); *pă?ah, *pă?an 'thigh' (109, 110); *kiriŋ, *kirin 'see' (115) and *tāriŋ, *tārin 'rope' (206).

(c) There are five other sets that end in a high vowel plus *h in which the *-n replacive occurs in Tringgus Bireng, but not in the western dialects.

Also *p-ir-īm, *piăm, *pīm 'dream' (135); *jv/uni0306k/uni0259h, *jv/uni0306k/uni0259n 'climb' (142), *ŋum-p/uni0259h, *p/uni0259n 'to pound' (190); *mirih, *birih, *birin 'buy'. (263)

(d) In Serambu and Serasot but not other dialects of the western and Sembaan groups the *-n replacive occurs in just one set:

Also *pe?ah, *pe?an 'dream' (135); *jvēkah, *jēkah 'climb' (142), *ŋum-pēah, *pēan 'to pound' (190); *mirih, *birih, *birin 'buy'. (263)

(e) In the western, central and Sembaan groups the *-n replacive occurs primarily in sets that end in *i. It should be noted that the replacive *-n is not found in Sapug in any of these sets that end in *i. However, it does occur in Sapug in other sets that have this pattern of dialect distribution but a different rime. (See below in this section.)
*kăwi, *kăwin ‘shoulder, clavicle’ Singai kăwin, Gumbang kăwin, Serambu kăwin, Biatah kăwin, Bistaang kuin, Sapug kawi, Pinyawa’ kăwin, Bengoh kăwin, Anah Rais kăwin, Biya kăwin, Sembaan kăwin, Tringgus Raya kăwin, Tringgus Bireng kăwin, Bukar kăwi, Sadung kăwi, Bibengh kăwi, Sangking kăwi, Tebakang kăwi, Bukar-Sadung kăwi, Bunan kăwi. (100)

Also *āti, *ātin ‘liver, heart’ (103, 97); *jăwi, *jăwin, *jāw/un, *jăwa/un, *jăw/un/um ‘face’ (77) (has jăw/un in Tringgus Bireng).

There are two additional sets with the same dialect distribution of *-n but with stem shapes that do not end in *i.


Also *ăsaw, *săw/un ‘wife’. (251)

(f) In the central group (but not Sapug) and the Sembaan group, but not in the western or eastern groups the *-n replacive occurs in one set:


(g) Only in Sembaan (and one set in Tringgus Bireng) the *-n replacive occurs in three sets ending in *ih. These all seem to be interrogative words, so this *-n may be a marker of interrogation.


Also *dăkī, *dākī, *đīkī, *ākīn, *ikīn, *āpīh, *dāpīh ‘where?’ (337) (has ikīn in Tringgus Bireng);
*eśihn, *ēsi, *ēsin ‘who?’ (338)

(h) In addition to the groups of sets with *-n replacive that have been mentioned, there are four sets that in some Bukar-Sadung dialects have a final n that does not occur in western, central or Sembaan groups. These sets all end in an open syllable. However, this distribution of final n is very scattered. It seems unlikely that these are examples of the *-n replacive.

*bābu, *bābon ‘rat’ Gumbang babu, Serambu babu, Grogo babu, Biatah bābu, Bistaang bābu, Benuk bābu, Sapug bābu, Pinyawa’ babu, Bengoh babu, Anah Rais bābu, Biya bābu, Tringgus Raya bābu, Tringgus Bireng bābu, Bukar bābu, bābon, Bukar-Sadung bābu, Bunan babu. (58)

*jăndu, *jăndun ‘yesterday’ Bukar jăndun, Sadung yăndu, Bibengh jăndu, Tebakang jăndun, jănduy, Bukar-Sadung jăndun, Bunan jăndu, jăndun. (25)

*kinde, *kinden ‘you (plural)’ Bukar kende, Sadung kenden, Bibengh knden, Sangkng knde, Tebakang knde, kinde, kinden, Bukar-Sadung kinde, Bunan knden. (344)

Finally, it should be noted here that there are at least three sets, all ending in *ah, for which there are apparently related words in the western, central and Sembaan groups that end in *a(:)n. It may be that in these words something like *-an has been suffixed to the stem.

*băn/uni0259h, *băn/uni0259n, *băn/uni0259/uni0294 ‘husband’ (250); *băna/uni02D0n ‘married woman’ (250, 251)

*săw/uni0259n, *ăsaw ‘wife’ (251); *săwa/uni02D0n ‘married man’ (250, 251)

*jik/uni0259h, *jăk/uni0259h, *jăk/uni0259n ‘climb’ (142); *jĭkan ‘ladder’ (274)

Table 4. Distribution of Replacive 1 (*-n replacive)

<table>
<thead>
<tr>
<th></th>
<th>Western</th>
<th>Central</th>
<th>Sembaan</th>
<th>Eastern</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bănah (250)</td>
<td>n   n   n   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*sisuh (94)</td>
<td>n   n   n   n   n   n</td>
<td>t   t   t   t   t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*sîkuh (105)</td>
<td>n   n   n   n   n   n</td>
<td>n,h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bûruh (49)</td>
<td>n   n   y   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bibih (80)</td>
<td>n   y   n   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*jîpah (82)</td>
<td>n   n   y   n   n   n</td>
<td>n   n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bătâh (88)</td>
<td>n   n   y   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*sirăh (108)</td>
<td>n   n   n   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*pă?ah (109)</td>
<td>n   n   y   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*kîrh (115)</td>
<td>n   n   n   n   n   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*tărh (206)</td>
<td>h   n   n   n   h   n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Some Serambu (W3) speakers use both the *-y and *-n replacives where other speakers use only the *-n-replacive.

35 All forms of this set have the shape wăn, i.e., have the *-n replacive, but it would not be surprising if forms ending in *h were to be found.
Key to dialect numbers:

Western | Central | Sembaan | Eastern
--------|---------|---------|---------
W1 Singai | C1 Biatoh | S1 Sembaan | E1 Bukar
W2 Gumbang | C2 Bistaang | S2 Tringgus Raya | E2 Sadung
W3 Serambu | C3 Benuk | S3 Tringgus Bireng | E3 Bibengih
W4 Bratak | C4 Sapug |  | E4 Sangking
W5 Serasot | C5 Pinyawa’ |  | E5 Tebakang
W6 Grogo | C6 Bengoh |  | E6 Buka-Sadung
W7 Stass | C7 Anah Rais |  | E7 Bunah
         | C8 Biya

Key to symbols:

∅ laryngeal deleted
no mark no evidence

2.3.3.3.2 Replacives in the rime (2): Laryngeal deletion.

Many stems that end in a laryngeal (‘h or *?) lose the final laryngeal in some dialects.

(a) A group of sets that end in a high vowel followed by h lose the h in the western group, the central group (but not usually Sapug) and the Sembaan group. It is retained only in the eastern group.

*läʔi, *läʔi ‘ginger’ Singai räʔi, Gumbang räʔi, Serambu räʔi, Bratak räʔi, Serasot räʔi, Grogo räʔi, Stass räʔi, Biatoh räʔi, Bistaang räʔi, Benuk räʔi, Sapug räʔi, Pinyawa’ räʔi, Bengoh räʔi, Anah Rais räʔi, Biya räʔi, Sembaan räʔi, Tringgus Raya räʔi, Tringgus Bireng äʔi, Bukar läʔih, Sadung läʔih, Bibengih läʔih, Sangking läʔih, Tebakang läʔih, Buka-Sadung läʔih, Bunah lâʔih. (241)


(b) A group of six sets with the shape *hVh was mentioned above in the discussion of final consonants. The four sets that end in a high vowel followed by h lose the h in the central, Sembaan and eastern groups; it is retained only in the western group.

*mähi, *mähi ‘eight’ Singai mäʔih, Gumbang mäʔih, Serambu mäʔih, Bratak mäʔih, Serasot mäʔih, Grogo mäʔih, Stass mäʔih, Biatoh máʔi, Bistaang máʔi, Benuk máʔi, Sapug máʔi, maʔi, Pinyawa’ maʔi, Bengoh mai, Anah Rais máʔi, Biya máʔi, Sembaan mihi, máʔi, Tringgus Raya máʔi, Tringgus Bireng máʔi, máʔi, Bukar máhi, Sadung máhi, Bibengih máhi, Sangking máhi, Tebakang máhi, Buka-Sadung máhi, Bunah maʔi. (288)

Also *bahah ‘charcoal’ (226) and *njibahuh, *njibahu ‘winnow’. (193)

The two sets that end in a non-high vowel plus h appear to retain the h in the central and Sembaan groups in addition to the western group although the data are admittedly scanty.

*ni-poh, *puhoh, *njumpo: ‘blow’ Singai puh(?)oh, nipoh Gumbang puhoh, Grogo puhoh, Stass puhoh, Biatah poh, Bistaang poh, Benuk poh, Sapug puhoh, Pinyawa’ puʔoh, Bengoh ńipoh, Anah Rais poh, Biya poh, Tringgus Bireng poh, Bukar ńumpo; Sadung ńumpo; Bibengih ńumpo; Sangking ńumpo; Tebakang ńumpo; Bukar-Sadung ńumpo. (148)

Also *b/ruhoh ‘(to) lie’. (173)

(c) Another group of sets ending in *Vh lose the h in the eastern group.

*bisoh, *būsoh, *biso: ‘full (person)’ Singai busoh, Gumbang bisoh, Serambu busoh, Bratak busoh, Serasot busoh, Grogo busoh, Stass busoh, Biatah bisoh, Bistaang b[ā]soh, Benuk b[i]soh, Sapug bisoh, Pinyawa’ biso; Bengoh bisoh, Anah Rais bisoh, Biya bisoh, Sembaan soh, Tringgus Raya būsoh, Tringgus Bireng būsoh, Bukar biso; Sadung biso; Bibengih biso; Sangking biso; Tebakang biso; Bukar-Sadung biso, Bunan biso. (234)

Also *gituh, *gūthi, *gūthi, *gūtu ‘(head) lice’ (126) (Final h is retained in Bukar, Sadung and Bibengih); *tāwah, *tātaw, *nātaw ‘laugh’ (176); *sāwan36, *ásaw ‘wife’ (251) and *dāwan37, *dāwaʔ, *dāʔun ‘leaf’ (30).

(d) The final group of sets that delete a laryngeal are those ending in *V:ʔ that drop the ? in Bukar and in some sets in Bibengih or Sangking. In these sets given here the ultima vowel seems always to be a low vowel and the vowel of the penult seems almost always to be a reduced vowel.

*būkoʔ, *buko: ‘parang, bush knife’ Singai bukoʔ, Gumbang bukoʔ, Serambu bukoʔ, Bratak bukoʔ, Serasot bukoʔ, Grogo bukoʔ, Stass bukoʔ, Biatah bukoʔ, Bistaang bakoʔ, Benuk bukuʔ, Sapug bakoʔ, Pinyawa’ bukoʔ, Bengoh bukoʔ, Anah Rais būkoʔ, Biya būkoʔ, Sembaan koʔ; Tringgus Raya bukoʔ, Tringgus Bireng būkoʔ, Bukar buko; Sadung bukoʔ; Bibengih buko; Sangking bukoʔ; Tebakang būkoʔ; Bukar-Sadung bukoʔ; Bunan bukoʔ. (207)

Also *um-paʔ, *umpa: ‘betel chew’ (244); *pūnoʔ, *puno ‘full’ (311); *līdeʔ, *līde: ‘thin’ (322); *sihaʔ, *siha: ‘yellow’ (330); *tūloh, *(n)tūloʔ, *tulo: ‘egg’ (51) (the forms in the western, central and Sembaan groups have a final h rather than ? as in the previous sets). The set *sābaʔ, *sābāy ‘downriver’ (186) may perhaps fit the same pattern even though Bukar, Tebakang and Bunan have sābā:y rather than the expected sāba.:  

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36 All forms have the shape wan, i.e., have the *-n replacive, but it would not be surprising if forms ending in *h were to be found.

37 All forms have the shape wan, i.e., have the *-n replacive, but it would not be surprising if forms ending in *h were to be found.
### Table 5. Distribution of Replacive 2 (laryngeal deletion)

<table>
<thead>
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<th>Eastern</th>
</tr>
</thead>
<tbody>
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<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>*läʔih (241)</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
</tr>
<tr>
<td>*naʔah (257)</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
</tr>
<tr>
<td>*āmbuh (298)</td>
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<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
</tr>
<tr>
<td>*kūduh (334)</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅</td>
</tr>
<tr>
<td>*ānīh (335)</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ n ∅ ∅</td>
</tr>
<tr>
<td>*āsīh (338)</td>
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<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ n n</td>
</tr>
<tr>
<td>*dāpīh, āpīh (337)</td>
<td>∅ ∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ ∅ ∅ ∅ ∅</td>
<td>∅ ∅ n n</td>
</tr>
</tbody>
</table>

Note: Dialect numbers and symbols are the same as for Table 4.

### 2.3.3.3.3 Replacives in the rime (3): *?-.

There are two types of this replacive, both of which seems to occur only in the eastern group. The first type adds *ʔ to the final vowel of the stem. The second type replaces the final *V(C) with *əʔ.

(a) The stems of the first type have no final consonant, or they end with a nasal or h. The *ʔ replacive occurs usually in Bukar and occasionally in one or another Sadung dialect.

*buŋa, *buŋaʔ ‘flower’ Singai buŋa, Gumbang buŋa, Serambu buŋa, Bratak buŋa, Serasot buŋa, Grogo buŋa, Stass buŋa, Biatah buŋa, Bistaang buŋa, Benuk buŋa, Sapug buŋa, Pinyawa’ buŋa, Bengoh buŋa, Anah Rais buŋa, Biya buŋa, Tringgus Bireng buŋa, Bukar buŋa?, Sadung buŋa?, Bibengih buŋa, Tebakang buŋa?, Bukar-Sadung buŋa, Bunang buŋa. (34)

Also *dudu, *duduʔ ‘thunder’ (15); *kādoŋ, *kudoŋ, *mudoŋ, *kudoʔ ‘lie, tell untruth’ (173);
* [u] mon, *umoʔ ‘water’ (6); *tāru, *tiraʔun, *tirāwəʔ ‘afraid’ (179); *ŋu-ndah, *ŋundaʔ, *nday ‘make, weave (mat)’ (211) and *dāri, *dāriʔ ‘man, male’ (252) (this set has no ? in Bukar; ? only in Bukar-Sadung form).

(b) The stems of the second type usually end with *n or *ŋ. Less commonly, they have no final consonant or else end with *t, *m, *s, *w, *y, *h or *. The replacement of the rime by *əʔ may occur in any of the Bukar-Sadung dialects, but in our data it occurs most frequently in Sadung and Sangking, dialects in the western highlands, and least commonly in Bibengih and Bunang, dialects in the eastern highlands. Further study will be needed to determine whether there really is a decrease in the use of this feature when moving from west to east in the Sadung region.

*bīntaŋ, *bīntaŋ, *bintaʔ, *bīntaʔ ‘star’ Singai bīntaŋ, Gumbang bīntaŋ, Serambu bīntaŋ, Bratak bīntaŋ, Serasot bīntaŋ, Grogo bīntaŋ, Stass bīntaŋ, Biatah bīntaŋ, Bistaang bīntaŋ, Benuk bīntaŋ, Sapug bīntaŋ, Pinyawa’ bīntaŋ, Bengoh bīntaŋ, Anah Rais bīntaŋ, Biya bīntaŋ, Sembaan taŋ, Tringgus Raya bīntaŋ, Tringgus Bireng bīntaŋ, Bukar bīntaʔ, Sadung bīntaʔ, Bibengih bīntaŋ, Sangking bīntaʔ, Tebakang bīntaʔ, Bukar-Sadung bīntaʔ, Bunang bīntaŋ. (10)
*bāras, *bāraʔ ‘husked rice’ Singai baras, Gumbang baras, Serambu baras, Bratak baras, Serasot baras, Grogo baras, Stass baras, Biatah bāras, Bistaang bras, Benuk bāras, Sapug b[ā]ras, Pinyawa’ baras, Bengoh baras, Anah Rais bāras, Biya bāras, Semban bāras, Tringgus Raya bāras, Tringgus Bireng bāras, Bukar bāraʔ, Sadung bāraʔ, Bibengi bāraʔ, Sangking bāraʔ, Tebakan bāras, Bukar-Sadung bāraʔ, Bunaw bāraʔ. (216)


<table>
<thead>
<tr>
<th>Western</th>
<th>Central</th>
<th>Sembaan</th>
<th>Eastern</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*băr (216)</td>
<td>ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*jăwi (77)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*băr (196)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*ringa (64)</td>
<td>ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bănăh (250)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*k-ir-ăsăh (96, 280)</td>
<td>ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*părăs (314)</td>
<td>ʔ? ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*băbaʔ? (81)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*simbat (310)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*i-raw (277)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*mălaʔ (27)</td>
<td>ʔ? ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*tărăn (237)</td>
<td>ʔ? ʔ? ʔ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*dĭhan (37)</td>
<td>ʔ?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There is a striking difference between the geographical distribution of this *-ʔ replacive and that of the first two processes presented, the *-n and laryngeal deletion replacives. The distribution of the second sub-type of this replacive, the *-ʔ replacive, appears to be quite random in the eastern region. In only two of the 28 sets that exhibit this replacive is it found in all the Bukar-Sadung dialects. (The distribution of the first type, the *-ʔ replacive, although found in fewer sets, is similarly random.) This suggests that the *-ʔ replacive probably reflects something of the morphological system of the eastern region and that stems with and stems without this morphological device are preserved in the various dialect forms. This stands in contrast to the rather consistent presence of the *-n replacive and laryngeal deletion in the other three Bidayuh regions. This contrast in distributions can be seen in Figs. 4 and 5, which shows the distribution of the *-n and laryngeal deletion replacives in the western, central and Sembaan groups and the distribution of the *-ʔ replacive in the eastern group.

2.3.3.3.4 Replacives in the rime (4): *-y.

There is yet one more replacive, which occurs primarily in the eastern group. This replaces the final consonant, if any, of the stem with *y. It is found in forms in which the stem vowel is *e, *u, *a or *a. No clear example has been found in a stem with either mid vowel, *e or *o.

This replacive is found more often in Tebakang forms, but examples are found in each of the Bukar-Sadung dialects in our corpus. However, if in *tigaʔ, *tiguuy ‘heel’ (113) the second form is regarded as an alternate reconstruction, as it seems to be, rather than an example of the *-y replacive, no example of the *-y replacive occurs in the corpus in either the Sadung or the Bukar-Sadung dialect.


*jáwi, *jáwin, *jáway, *jáway, *jáwaʔ ‘face’ Singai jawin, Gumbang jawin, Serambu jawin, Bratak jawin, Serasot jawin, Grogo jawin, Stass jawin, Biatah jáwin, Bistaang juin, Benuk jáwin,
Sapug jawi, Pinyawa' jawi, Bengoh jawi, Anah Rais jawi, Biya jawi, Sembaan jawi, Tringgus Raya jawi, Tringgus Bireng jaway, Bukar jawi, Sadung jawo?, Bibengih jawi, Sangking jawi, Tekakang jawa/un, Bukar-Sadung jawi, Bunah. (77)

Also */uni0272ăndu, */uni0272ăndu/uni02D0n, */uni0272ăndu/uni02D0y 'yesterday' (25); *sibarək, *sibarəy 'hungry' (233); *sasək, *sasəy 'near' (303) and *jawaʔ, *jəway 'light (noun)' (419, 382).

Note also that there are a few sets that show forms ending in *y in dialects that are not in the eastern region.

Cf. *tuhuy, *tuhay, *tūʔuh 'old' (324, 325) with tuy (< *tuhuy) in Singai, Bau dictionary, Benuk, Tringgus Raya and Tringgus Bireng as well as tuhay in Bukar, Bunah and Seraman dictionary.

*jupoy, *jupor 'rat' (58) with jupoy in Sembaan as well as in Bibengih (and the Seraman dictionary). It may be that the Tekakang form with final r is anomalous.

*ŋu-ndah, *ŋunda/uni0294, *nday 'make, weave' (211) with n[ḍ]ay in Singai, Serasot, Stass, Sapug and Biya but no forms ending in y in the Bukar-Sadung group.

*kūbur, *kūbuy 'bury' (130) with both kubuy and kubur in Tringgus Bireng.

It should be noted that in the Tekakang data for *nəndu, *nəndun, *nəndury 'yesterday' (25) there are two forms, nənduy that has the *-y and nəndun that has the *-n replacive. Tringgus Bireng seems to have two forms for *kūbur, *kūbuy 'bury' (130), kūbur that has the final *r of the stem and kūbuy, seeming to reflect a form with the *-y replacive.

Furthermore, some Serambu speakers use both the *-y and *-n replacives, apparently to mark 'possession', while other Serambu speakers use only the *-n replacive for that purpose.

*təʔin, *nəʔih, *təʔiy 'belly' Singai təʔin, Gumbang təʔin, Serambu təʔin, təʔiy, Bratak təʔin, Serasot təʔin, Grogo təʔin, Stass təʔin, Biatah təʔin, Bistaang təʔin, Benuk təʔin, Sapug təʔin, Pinyawa' təʔin, Bengoh təʔin, Anah Rais təʔin, Biya təʔin, Sembaan təʔin, Tringgus Raya təʔin, Tringgus Bireng təʔin, Bukar naʔih, Sadung naʔih, Sangking tinəʔih, Tekakang naʔih, Bukar-Sadung naʔih. (101)

Also note *təŋan, *təŋeʔ, *təŋəʔ, *təŋay 'hand' (104) with Serambu forms təŋan and təŋay. However, the final n of the first form is likely a part of the stem rather than an example of the *-n replacive.

Cf. also the following sets with Serambu forms having only -y: *bibih, *bibin, *bibiy 'lip' (80) with Serambu form bibiy; *jipah, *jipan, *jupon, *jipay 'teeth' (82) (the Serambu form is jipay); *bətah, *mətəh, *bətən, *bətəy 'eye' (88) (the Serambu form is bətəy); *pəʔah, *pəʔan, *pəʔay 'thigh' (109) (the Serambu form is pəʔay).

The evidence suggests that the *-y replacive represents a Proto Bidayuh suffix, retained primarily in the eastern group and Serambu.

As is the case with the *-əʔ replacive, the *-y replacive has a rather random distribution, further suggesting that it played a role in Proto-Bidayuh morphology and has been preserved in some dialect forms but not in others. See Table 7.
Table 7. Distribution of Replacive 4 (*-y replacive)

<table>
<thead>
<tr>
<th></th>
<th>Western</th>
<th>Central</th>
<th>Sembaan</th>
<th>Eastern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>5 6 7</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>*ja'wi (77)</td>
<td></td>
<td>y</td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>*ja'ndu (25)</td>
<td></td>
<td></td>
<td></td>
<td>y, n</td>
</tr>
<tr>
<td>*tuha (324)</td>
<td>uy</td>
<td>u:</td>
<td>uy u:</td>
<td>ay</td>
</tr>
<tr>
<td>*sibarak (233)</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>*sasak (303)</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>*ndah (211)</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>*saba: (186)</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
<tr>
<td>*jawa? (419)</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
</tbody>
</table>

Note: Dialect numbers and symbols are the same as for Table 4.

2.3.3.3.5 Replacives in the rime: *-n, *-t.

Finally, there are two groups of sets ending in *Vŋ, in which the final velar nasal has been replaced by a different consonant. In one group the replacive is n and in the other group it is t.

The first sub-group of these sets might be regarded as manifesting an extension of the *-n replacive. However, these sets differ from the *-n replacive sets described in the earlier section in that (1) all of these sets end with a velar nasal whereas none in the earlier group does, and (2) the -n in these sets is rather randomly distributed within the various dialect groups whereas -n in the sets described earlier is quite regularly distributed.

*puśin, *mūsīn *puśin, *mūsīn ‘turn’ Singai tipusīŋ, Gumbang s[i]pusīŋ, Serambu tipusīŋ, Bratak pusīŋ, Serasot bipusīŋ, Stass pusīŋ, Biatah musīŋ, Bistaang bapusīŋ, musīŋ, Benuk mūsīŋ, Sapug musīŋ, Pinya' pusīŋ, Bengoh musīŋ, Sembaan mūsīn, Tringgus Raya pusīŋ, Bukar bipusīŋ, Sadung bipusīŋ, Bibengih mpusīŋ, Sangking bipusīŋ, Bukar-Sadung pusin, Bunau bipusīŋ, musīn.

Note that the Sembaan, Sangking, Bukar-Sadung and Bunau forms have final n whereas the other forms have final ŋ.

Also *ra'āŋ, *ra'ān ‘chin’ (86) with final n in the Serambu form; *pāraŋ, *pāran ‘body, a counter’ (69) with final n in the Singai and Biya forms and with n and ŋ in alternate Sapug forms; *bāraŋ, *bāran ‘round’ (69) with Biya final n and *sinsīŋ, *sinsin, *kin'kin, *jin'jin ‘ring’ (266) with final *n in Singai, Serambu, Bratak, Serasot, Grogo, Stass, Biatah, Sapug, Bukar, Sadung, Bibengih, Sangking, Tebakang, Bukar-Sadung and Bunau.

The set *jāguŋ ‘maize, corn’ (195) may belong in this group, but the other nasal which occurs in Serambu and Serasot is m, not n as in the preceding sets.
In the second sub-group of sets final ŋ is replaced by t. In at least two sets final ŋ is replaced in some sets by t and in others by n, as in the first sub-group of sets.


**2.4 The penult (the pre-final syllable)**

The syllable that occurs in pre-final position (the penult) of the Proto Bidayuh word comprises a consonant as onset, a vowel as nucleus and an optional nasal as coda.38

**2.4.1 Onset of the penult**

**2.4.1.1 Inventory**

All of the Proto Bidayuh consonants occurred in the onset of the penult except *w, *y, *h and *?.

*p

*purah, *puruŋ, *puroh, *pūroh ‘(to) plant’ Singai purah, Gumbang purah, Serambu puroh, Bratak puruh, Serasot puroh, Grogo puroh, Stass puruŋ, Biatah pruŋ, Bistaang pruŋ, Benuk prun, Sapug puruh, Pinyawa' puruŋ, Bengoh purun, Anah Rais pūroh, Biya pūroh, Sembaan puruŋ, Tringgus Raya puruŋ, Tringgus Bireng pūroh, Bukar puruh, Sadung mpuroh,

---

38Although many sets show that nasals occurred finally in the PBid penult before either voiced or voiceless obstruents, the occurrence of nasals in that position is more restricted in many contemporary Bidayuh dialects because of sound changes that have affected clusters.
Bibengih mpuruh, Sangking mpuruh, Tebakang puruh, Bukar-Sadung mpuruh, Bunan mpuruh.
(187)
*pāpi* 'shoulder' Singai papi, Bratak papi, Serasot papi, Grogo papi, Stass papi, Benuk papi. (100)
Also *pāras, *pāra?* 'hot' (314); *pānu* 'walk' (138) and *pādi* 'unhusked rice' (215).
*t*
Also *tōrap, *tōrap* 'deep' (316); *tihi?* 'itchy' (121); *tāya?:* 'field' (195).
*k*
*kābas* 'dead' Singai kābas, Gumbang kābas, Serambu kābas, Bratak kābas, Serasot kābas, Grogo kābas, Stass kābas, Biatah kābas, Bistaang kābas, Benuk kābas/h, Sapug kābas, Pinyawa' kābas, Bengoh kābas, Anah Rais kābas, Biya kābas, Sembaan kābas, Tringgus Raya kābas, Tringgus Bireng kābas, Bukar kābas, Sadung kābas, Bibengih kābas, Sangking kābas, Tebakang kābas, Bukar-Sadung kābas, Bunan kābas. (129)
Also *kāwi, *kāwin* 'shoulder' (100); *kāyu* 'tree, wood' (28) and *kāsoŋ, *kāsuŋ, *kāsuh* 'dog' (59).
*b*
*bātuh* 'stone' Singai batuh, Gumbang batuh, Serambu batuh, Bratak batuh, Serasot batuh, Grogo batuh, Stass batuh, Biatah bātuh, Bistaang bātuh, Benuk bātuh, Pinyawa' batuh, Anah Rais bātuh, Biya bātuh, Sembaan bātuh, Tringgus Raya bātuh, Tringgus Bireng bātuh, Bukar bātuh, Sadung batuh, Bibengih batuh, Sangking bātuh, Tebakang bātuh, Bukar-Sadung batuh, Bunan batuh. (4)
Also *bābu, *bābon* 'rat' (58), *bārid* 'betel (leaf)' (242) and *būntan* 'coconut (palm)' (38).
*d*
*dāri, *dāri?* 'man, male' Singai dāri, Gumbang dāri, Serambu dāri, Bratak dāri, Serasot dāri, Grogo dāri, Stass dāri, Biatah dāri, Bistaang dāri, Benuk dāri, Sapug dāri, Pinyawa' dāri, Bengoh dāri, Anah Rais dāri, Biya dāri, Sembaan dāri, Tringgus Raya dāri, Tringgus Bireng dāri, Bukar dāri, Sadung dāri, Bibengih dāri, Sangking dāri, Tebakang dāri, Bukar-Sadung dāri?, Bunan dāri.
(252)
Also *dudu, *dudu?* 'thunder' (15), *diṇah, *diṇen* 'hear, listen' (117) and *daya?:* 'blood'. (68)
Word-initial d is usually retained in Tringgus Bireng. However, in a few sets it becomes r. In two sets the initial Bireng consonant was recorded as r: *dihent* 'durian' (37) with Tringgus Bireng ren and* dipah* 'snake' (54) with Tringgus Bireng ripah. In three other sets two versions were recorded, one with initial d and one with initial r: *daya?:* 'blood' (68) with Tringgus Bireng dāya?:, rāya?:; *duah* 'two' (282) with Tringgus Bireng duah 'two', but cf. also Tringgus Bireng ta? ruah 'we (dual)' (346); *dāhaŋ* 'wild boar' (438, 355) with Tringgus Bireng dāŋe?, rāŋe? (presumably from a form like *dāŋe?*).
*j

*jămuh ‘sarong (usually a woman’s)’ Singai jamuh, Gumbang jamuh, Serambu jamuh, Serasot jamuh, Biatah jămuh, Bistaang jămuh, Benuk jămuh, Sapug jămuh, Bengoh jamuh, Biya jamuh, Sembaan jămuh, Tringgus Raya jămuh, Tringgus Bireng jămuh, Bibengih jămuh, Sangking jămuh, Bunun jamuh. (268)

Also *jăhoʔ, jăhoʔ ‘far’ (302); *jįpʰ, *jįpʰ, *jupʰ, *jipʰ ‘teeth’ (82); *jăwi, *jăwin, *jāw, *jăwa ‘face’ (77).

*g


Also *găloʔ, *gūloʔ, *gălam ‘salt’ (219); *gūti, *gūti, *gūtu ‘(head) lice’ (126) and *gąyu, *gąyas, *ṇąyas ‘scratch’ (122).

*m

Many sets which illustrate a nasal in the onset of the PBd penult have one alternate that begins with an obstruent and another that begins with a nasal of the same point of articulation. See, for example, *năṅku, *tăṅku ‘steal’, illustrating *n below. In general, in these sets the nasal-initial alternate shows the nasal-replacive prefix, common in Bidayuh and many other related languages and also in PBd morphology. Little attempt is made to set off the nasal-replacive prefix from the stem by a hyphen, either in the dialect forms or in the reconstructed PBd forms. Some nasal-initial forms do not seem to have an obstruent-initial or vowel-initial alternate, but most do.

*măhih, *măhih ‘eight’ Singai maʔih, Gumbang măih, Serambu măih, Bratak măih, Serasot măih, Grogo măih, Stass măih, Biatah măi, Bistaang măi, Benuk măi, Sapug măi, maʔi, Pinyawa’ măʔi, Bengoh mai, Anah Rais măi, Biya măi, Sembaan mihi, măi, Tringgus Raya măhi, Tringgus Bireng măi, măi, Bukar măhi, Sadung măhi, Bibengih măhi, Sangking măhi, Tebakang măhi, Bukar-Sadung măhi, Bunun măhi. (288)

Also *mănuk ‘bird’ (47); *mămuh ‘bathe’ (168) and *muhun ‘descend’ (143).

*n

*năṅku, *tăṅku ‘steal’ Singai năku, sitaku ‘thief’ Gumbang naku, Serambu naku, Bratak naku, Serasot naku, Grogo naku, Stass naku, Biatah naku, Bistaang năku, Benuk năku, Sapug năku, Pinyawa’ naku, Bengoh naku, Anah Rais naku, Biya naku, Sembaan năku, Tringgus Raya năku, Tringgus Bireng năku, tăku, Bukar năŋku, Sadung năŋku, Bibengih năŋku, Sangking năŋku, Tebakang năŋku, tăŋku (imperative), pinăŋku ‘thief’, Bukar-Sadung năŋku, Bunun nąŋku. (163)

Also *niap ‘count’ (294); *tăraŋ, *năraŋ, *nāraŋ ‘swallow’ (237) and *tărik, *tărik, *nărik, *nārik ‘pull’ (151).

*p

*pįʔit, *piʔit ‘sew’ Singai piʔit, Gumbang piʔit, Serambu piʔit, Bratak piʔit, Serasot piʔit, Grogo piʔit, Stass piʔit, Biatah piʔit, Bistaang piʔit, Benuk piʔit, Sapug piʔit, Pinyawa’ piʔit, Bengoh piʔit,
Anah Raṣi, Biya Raṣi, Sembaan Raṣi, Tringgus Raya Raṣi, Bukar Raṣi, Sadung Raṣi, Bibengih Raṣi, Sangking Raṣi, Tebakang Raṣi, ji Raṣi, Bukar-Sadung Raṣi, Bunau Raṣi. (212)

Also *nāmba, *nāmba 'old (person)' (323, 324); *nahap, *nihap 'suck, drink' (235, 146) and *nāŋkul, *nāŋkol 'dig' (149).

*ŋ *ŋār/um, *ŋute/um 'vomitt' (125);

*ŋām/um, *ŋāmuk, *ŋāmok 'stab' (145);

*si-ŋūmi 'afternoon'

*L *lă/um, *lă/um 'finger' Snga řn, Gumbang řn, Serambu řn, Bratak řn, Serasot řn, Grogo řn, Stass řn, Biatah řn, Bistaang řn, Benuk řn, Pinyawa’[s]řn, Bengoh řn, Anah Raĩ řn, Biya řn, Sangking řn, Tebakang řn, Bukar řn, Sadung řn, Bbengh řn, Sangkŋ řn, Tebakang řn, Bukar-Sadung řn, Bunau řn. (22)

Also *ŋu-ta/um, *ŋute/um 'vomitt' (125); *ŋu-ta/um, *ŋute/um 'vomitt' (125);

*ŋām/um, *ŋāmuk, *ŋāmok 'stab' (145);

*si-ŋūmi 'afternoon'

*L *lă/um, *lă/um 'finger' Snga řn, Gumbang řn, Serambu řn, Bratak řn, Serasot řn, Grogo řn, Stass řn, Bistaang řn, Benuk řn, Pinyawa’[s]řn, Bengoh řn, Anah Raĩ řn, Biya řn, Sangking řn, Tebakang řn, Bukar řn, Sadung řn, Bbengh řn, Sangkŋ řn, Tebakang řn, Bukar-Sadung řn, Bunau řn. (22)

Also *lā/um, *lāut, *lāw/um 'sea' (8); *lĭde/um, *lide/um 'thn' (322) and *lāntay, *lānt/um 'floor' (276).

*R *răŋit 'sky' Snga ř[n], Gumbang ř[n], Serambu ř[n], Bratak ř[n], Serasot ř[n], Grogo ř[n], Stass ř[n], Biatah ř[n], Bistaang ř[n], Benuk ř[n], Pinyawa’[s]ř[n], Bengoh ř[n], Anah Raĩ ř[n], Biya ř[n], Sangking ř[n], Tebakang ř[n], Bukar ř[n], Sadung ř[n], Bbengh ř[n], Sangkŋ ř[n], Tebakang ř[n], Bukar-Sadung ř[n], Bunau ř[n]. (11)

Also *răŋit, *răŋit, *lāw/um 'sea' (8); *lĭde/um, *lide/um 'thn' (322) and *lāntay, *lānt/um 'floor' (276).

Note *lāw/um 'sea' (8) with Tringgus Bireng āw/um; *lăkat 'stick to' (158) with Tringgus Bireng akat; *lăntiŋ 'raft' (197) with Tringgus Bireng āt/um; *lăti 'ganger' (241) with Tringgus Bireng ā/l; *răŋit 'sky' (11) with Tringgus Bireng ānj; *risoŋ, *risoŋ, *rusoŋ 'mortar (for pounding)' (191).

Liquids. A word-initial liquid, *l or *r, is regularly lost in Tringgus Bireng. The only exception that has been observed is radx ‘wing’ (48) (< *vrad), in which the *r is retained, perhaps to avoid a monosyllabic form which would then have no initial consonant.

Note *lăwat 'sea' (8) with Tringgus Bireng āwat; *lăkat 'stick to' (158) with Tringgus Bireng akat; *lăntiŋ 'raft' (197) with Tringgus Bireng āt/um; *lăti 'ganger' (241) with Tringgus Bireng ā/l; *răŋit 'sky' (11) with Tringgus Bireng ānj; *risoŋ, *risoŋ 'mortar' (191) with Tringgus Bireng āsoŋ; *rimah 'five' (285) with Tringgus Bireng āmah; *ribọ 'under' (304, 278) with Tringgus Bireng ābo?:

*radx, *frad, *ūrad, *ăräd 'wing' Snga rad, Gumbang rad, Serambu rad, Bratak rad, Serasot ian, Grogo rad, Stass rad, Biatah urad:jd, Bistaang rad, Benuk ārad, Sapug rad, Pinyawa’ urad, Bengoh urad, Anah Raĩ rad, Biya rad, Sembaan rad, Tringgus Raya rad, Tringgus Bireng rad, Bukar ārad, Sadung ārad, Bibengih ārad, Sangking ārad, Bukar-Sadung ārad, Bunau ārad, irad. (48)
2.4.1.2 Initial consonant deletion

There are about 20 sets that reflect two forms, one with an initial consonant in the onset of the penult and a similar form with no such consonant. It should be noted that in every case but one the penult is initial in the word.

The largest group of such alternating sets involves the presence or absence of *k:


Also *kap/āt, *dip/d, *ipād ‘(young) child’ (255); *kāna, *kina, *apa, *ina ‘(child of) person’ (255); *kami?, *nami?, *ami? ‘we (exclusive)’ (342) and *kita?, *āta?, *āta? ‘we (inclusive)’ (343).

There are two sets involving initial *g, that may also fit with the preceding group:

* [u] mōn, *umō? ‘water’ (6) and *gumōn, *gumo? ‘bathe’ (168); *gāsor, *āsor ‘spear’ (204). There is an additional handful of sets that show alternation between initial *d and no consonant as onset of the penult:

*damba, *āamba ‘old (object)’ Singai ām[b]a, Gumbang āma, Serambu āma, Bratak āma, Serasot āma, Grogo āma, Stass āma, Biatah āamba, Bistaang mba, Benuk mba, Sapug āamba, Pinyawa’ āamba, Bengoh ām[a], Anah Rais ām[b]a, Biya ām[b]a, Sembaan ām[a], Tringgus Raya āma, Tringgus Bireng ām[b]a, Bukar damba, Sadung damba, Bibengih damba, Sangking damba, Tebakang damba, Bukar-Sadung damba. (324, 325)

Also *dākap, *ākap ‘two arm spans, two handfuls’ (297) and *dāpih, *āpih and *dāki, *ākin ‘where?’ (337).

There is at least one set that shows alternation between initial *j and no consonant:
jāran, āran ‘trail, footpath’ Singai āran, Gumbang āran, Serambu āran, Bratak āran, Serasot āran, Grogo āran, Stass āran, Biatah āran, Bistaang ran, Benuk (a)ran, Sapug āran, Pinyawa’ āran, Bengoh āran, Anah Rais āran, Biya āran, Sembaan āran, Tringgus Raya āran, Tringgus Bireng āran, Bukar jāran, Sadung jāran, Bibengih jāran, Sangking jāran, Bukar-Sadung jāran, Bunan jāran. (138, 202)

Finally, there is a group of sets that show initial *s alternating with no consonant:


Also *sudiʔ, *sŭdeʔ, *sĭdeʔ, *sădeʔ, *ădeʔ ‘younger sibling’ (247); *sămaʔ, *ămaŋ ‘father’ (248); *să[ŋ] kiŋ, *ăŋkiŋ ‘little finger’ (107) and *săndu ‘daylight’ (25, 382) with *ăndu ‘day’ (19).

As can be observed from the examples cited above, the geographical distribution of the presence vs. absence of these initial consonants is somewhat random. If the consonant occurs in a form from one dialect of a region, in most cases it occurs in the forms from all dialects of that region. However, there are a few exceptions to even that generalization.

Secondly, it should be noted that pairs of terms, one with the initial consonant and one without it, can be found in the same dialect. Note, for example, the following pairs:

gumon ‘bathe’ (168) and ümoŋ ‘water’ (6) in many Bukar-Sadung dialects; ānak kapat ‘children’, ānak āpat ‘child’ (255) in Singai; and kata? [formal], ata? [informal] ‘we (inclusive)’ (343) in Sapug.

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Note a somewhat similar set from the neighboring Bakati’ languages, Rara and Sara/Riok:


The wide range of grammatical/semantic functions in these sets—verbalization, pluralization, social register and degree—makes it difficult to specify clearly a function for initial-consonant deletion in Proto Bidayuh. However, the occurrence of such reconstructed doublets and the presence of pairs of such forms in a single dialect, taken together, do suggest that consonantal deletion carried some function, probably grammatical.

2.4.2 Nucleus of the penult

2.4.2.1 Inventory

There are four vowel qualities that occur in the Proto-Bidayuh penult: *i, *u, *ə and *a.

Curiously, the central vowel *ə occurs in the penult only if the vowel of the ultima is also the central vowel *ə. Penultimate *ə always mirrors the quality of the vowel of the ultima. As noted earlier, in western Bidayuh when the central vowel *ə becomes o before a labial consonant in the ultima, the central vowel *ə in the penult is also labialized, becoming u (§2.3.2.2), in a similar type of mirroring of vowel quality.
In some eastern Bidayuh varieties the reflex of *ə in the penult split according to the point of articulation of the preceding consonant. In Bunau *ə > u following a labial consonant and *ə > i following a non-labial consonant. In Bibengih and Bukar-Sadung varieties *ə > ə following a labial consonant and *ə > i following a non-labial consonant.


*məŋkəd 'cough' Singai məŋkəd, Gumbang məŋkəd, Serambu məŋkəd, Serasot məŋkəd, Grogo məŋkəd, Stass məŋkəd, Biatah məŋkəd, Bistaang məŋkəd, Benu məŋkəd, Sapug məŋkən, Pinyawa’ məŋkəd, Bengoh məŋkəd, Anah Rais məŋkəd, Biya məŋkəd, Sembaan nəŋkəd, Tringgus Raya məŋkəd, Tringgus Bireng məŋkəd, Bibengih məŋkəd, Sangking məŋkəd, Tebakang məŋkəd, Bukar-Sadung məŋkəd, Bunau muŋkəd, Bunau-Terbat muŋkəd. (128)

*təɾən, *nəɾən, *nəɾə ‘swallow’ Singai nəɾən, Gumbang əɾən, Serambu nəɾən, Bratah nəɾən, Serasot nəɾən, Grogo nəɾən, Stass nəɾən, Biatah təɾən, Bistaang təɾən, nəɾən, Benu t(a)ɾən, Sapug təɾən, Pinyawa’ təɾən, Bengoh təɾən, Anah Rais təɾən, Biya təɾən, Sembaan hrən, Tringgus Raya təɾən, Tringgus Bireng təɾən, Bukar nəɾən, Sadung nəɾən, Bibengih niraʔ, Sangking naraʔ, Tebakang təɾən, nəɾən, Bukar-Sadung niraʔ, Bunau niraʔ. (237)

Also *pəʔəh, *pəan, *pəʔay ‘thigh’ (110) and *səkəh ‘smell (intr)’ (120).

The two mid vowels, *e and *o, that are included in the vowel inventory of the ultima do not occur in the penult.

2.4.2.2 Full and reduced vowels

In many of the modern dialects there are two types of penult vowels, called full vowels and reduced vowels. This contrast was also a part of the Proto Bidayuh system. Contemporary full vowels have a full, sustained duration and an unmistakable vowel quality while reduced vowels are generally shorter in duration and not infrequently vary from one quality to another. In some modern dialects they may be marked in other ways and have the potential for being deleted entirely.

In Proto Bidayuh all four of the vowel qualities occur as either full or reduced.39

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39The number of examples with ə in the penult is relatively small. Furthermore, evidence to demonstrate a contrast between full and reduced ə is scanty. Two of the sets cited below to demonstrate full ə have forms with a full vowel but forms from other varieties reflect a reduced vowel. More exhaustive study may show that in Proto Bidayuh the full/reduced contrast operated with the cardinal vowels, *i, *u, *a, but not with the vowel ə. It should be noted that in a number of Austronesian languages, including Malay, the vowel ə has special status with regard to accent placement and/or vocalic length.
Table 8. Proto-Bidayuh penult vowels

<table>
<thead>
<tr>
<th></th>
<th>Full</th>
<th>Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>*i</td>
<td>*ū</td>
</tr>
<tr>
<td>Central</td>
<td>*ā</td>
<td>*ā</td>
</tr>
<tr>
<td>Low</td>
<td>*ā</td>
<td></td>
</tr>
</tbody>
</table>

Frequently in eastern (and other regions of non-western) Bidayuh one verb form has a reduced vowel in the penult while another has a full vowel. Sometimes the obstruent-initial form has one type of penult vowel and the corresponding nasal-initial form has the other. At our present stage of knowledge it cannot be stated with certainty whether the Bukar-Sadung verb form cited in the cognate sets is the basic form, i.e., the one most appropriately compared with forms from other dialects. Therefore, in the cognate sets if the type of penult vowel of a Bukar-Sadung form seems to contradict the type of penult vowel indicated by forms from other regions, only the penult vowel indicated by the non-eastern dialects is reconstructed. This reconstruction practice is followed even in sets that do not appear to be verbs.

The two sets of Proto-Bidayuh penult vowels are illustrated by the following cognate sets.

40

Only forms from Bistaang, Benuk, Anah Rais, Biya, Sembaan, Tringgus Raya, Tringgus Bireng and Tebakang will be cited in sets of this section that reflect the full/reduced contrast in Proto-Bidayuh high vowels, *i, *u and *a. Those are the only dialects in which that contrast is preserved in high vowels.
*tūlak ‘push’ Bistaang turak, Benuk turak, Anah Rais turak, Biya turak, Sembaan turak, Tringgus Raya turak, Tringgus Bireng turak. (152)
*tūraŋ, *tūräq ‘bone’ Bistaang traŋ, Benuk traŋ, Anah Rais tŭraŋ, Biya tūraŋ, Sembaan tūraŋ, Tringgus Raya traŋ, Tringgus Bireng traŋ, Tebakang tūraŋ. (70)
*p/uni0259/uni0304r/uni0259/uni0261 ‘all, entirely’ Bistaang so/un0294 p/un0259r/un0259/un0261, Benuk so/un02D0/un0294 p/un0259r/un0259/un0261, Biya so/un0294 p/un0259r/un0259/un0261, Sembaan so/un0294 p/un0259r/un0259/un0261, Tringgus Raya so/un0294 p/un0259r/un0259/un0261, Tringgus Bireng so/un0294 p/un0259r/un0259/un0261. (293)
*p/uni0259/uni0306r/uni0259 ‘body’ Bistaang pr/un0259ŋ, Benuk păr/un0259ŋ, Biya p/un0259/un0306r/un0259/un0261, Tebakang p/un0259r/un0259/un0261. (69)
*t/uni0259/uni0304r/uni0259 ‘deep’ Bistaang t/un0259r/un0259, Benuk t/un0294 r/un0259, Anah Rais t/un0259/un0304r/un0259, Biya t/un0259/un0304r/un0259, Sembaan hr/un0259, Tringgus Raya t/un0259r/un0259, Tringgus Bireng t[ə]rap, Tebakang t/rap (316). The forms from the Sembaan group reflect a reduced vowel while the ones from the Penrissen-Padawan and Sadung areas reflect a full vowel.
*t/uni0259/uni0306r/uni0259 ‘swallow’ Bistaang tr/un0259r/un0259, nr/un0259n, Benuk t(a)r/un0259r/un0259, Anah Rais tăr/un0259r/un0259, Biya t/un0259/un0306r/un0259/un0259, Sembaan hr/un0259, Tringgus Raya tr/un0259n, Tringgus Bireng tr, Tebakang t/rap, (327). The penultimate vowels in Tebakang are probably full.
*sib/uni0259/uni0304r/uni0259k, *sib/uni0259/uni0306r/uni0259k ‘hungry’ Bistaang sb/un0259r/un0259k, Benuk [s]b/un0259r/un0259k, Anah Rais sbarok, Biya bərak, Tebakang sbərək (233). The Biya and Tebakang forms reflect a reduced vowel.
*tik-āp/uni0259k ‘ash’ S nga t?ap, Serambu tikapok, Jagoi-H tikapok, Bratak tikapok, Gredo tikapok, Stass tikapok, Biatah āpok, Sapug āpok, Bengoh tok āpok, Anah Rais āpok, Biya āpok, Sembaan āpok, Tringgus Raya āpok, Tringgus Bireng āpok. (226)

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41Forms from all the dialects will be cited in sets that reflect the Proto-Bidayuh low vowel *a because the full-reduced contrast is reflected in all of them.
*ätak, *ántok ‘brain’ Singai ätak, Gumbang ätak, Serambu ätak, Bratak ätak, Serasot ätak, Grogo ätak, Stass ätak, Biatah ätak, Bistaang ätak, Benuk ätak, Sapug ätak, Pinyawa’ ätak, Bengoh ätak, Anah Rais ätak, Biya ätak, Sembaan ätak, Tringgus Raya ätak, Tringgus Bireng ätak, Bukar äntak, Sadung äntak, Bibengih ntak, Sangking ntak, Tebakang äntak, Bukar-Sadung ntak, Bunan intak. (91)

*āruh ‘pestle’ Singai aruh, Gumbang aruh, Serambu aruh, Bratak aruh, Serasot aruh, Grogo aruh, Stass aruh, Biatah āruh, Bistaang āruh, Benuk āruh, Sapug āruh, Pinyawa’ aruh, Bengoh aruh, Anah Rais āruh, Biya āruh, Sembaan āruh, Tringgus Raya āruh, Tringgus Bireng āruh, Bukar āruh, Sadung aruh, Bibengih āruh, Sangking āruh, Tebakang āruh, Bukar-Sadung āruh, Bunan aruh. (192)

*ārud ‘boat’ Singai ārud, Gumbang ārud, Serambu ārud, Bratak ārud, Serasot ārud, Grogo ārud, Stass ārud, Biatah ārud, Bistaang ārud, Benuk ārud, Sapug ārud, Pinyawa’ ārud, Bengoh ārud, Anah Rais ārud, Biya ārud, Sembaan ārud, Tringgus Raya ārud, Tringgus Bireng ārud, Bukar ārud, Sadung ārud, Bibengih ārud, Sangking ārud, Tebakang ārud, Bukar-Sadung ārud, Bunan ārud. (198)

It should also be stated that there are some sets in which it is currently impossible to reconstruct unequivocally a specific vowel in the penult, whether full or reduced. In some sets this is because the set lacks a cognate from one of the dialects that clearly shows whether the vowel is full or reduced.

*kito ‘bird’ Bibengih kito, Sangking kito, Bukar-Sadung kito. (47)

*bisa ‘venom’ Biatah bisa, Bunau bisa. (306)

In other sets some of the dialects reflect a full vowel while other dialects reflect a reduced vowel.

*mās, *mas ‘sour’ Singai masom, Gumbang masom, masoŋ, Serambu masom, Bratak masom, Serasot masom, Grogo masom, Stass masom, Biatah mās, Bistaang mās, Benuk mās, Sapug mās, Pinyawa’ mās, Bengoh masom, masom, Anah Rais mās, Biya mās, Sembaan mās, Tringgus Raya mās, Tringgus Bireng mās, Bukar mās, Sadung mās, Bibengih mās, Sangking mās, Tebakang mās, Bukar-Sadung mās, Bunau mās (239). While most of the dialect forms reflect a full vowel, forms from Pinyawa’, Bengoh and the eastern group reflect a reduced vowel.

*pāndiŋ, *pandīnj ‘cheek’ Singai pandiŋ, Gumbang pandiŋ, Serambu pandiŋ, Bratak pandiŋ, Serasot pandiŋ, Grogo pandiŋ, Stass pandiŋ, Bistaang pandiŋ, Benuk pandiŋ, Sapug pandiŋ, Pinyawa’ pandiŋ, Bengoh pantiŋ, Sembaan pandiŋ (85). The western group reflects a full vowel while the central and Sembaan groups reflect a reduced vowel.

The contrast between full and reduced vowels seems to have been neutralized in the penult when the onset of the ultima contained no consonant or when it was *h.

Although there seems not to be a contrast, the penult consistently shows a full vowel in *CVVC sequences.
*niap 'count' Singai niap (once recorded as níap), Gumbang niap, Serambu niap (“old term”), Serasot niap, Biatah niap, Bistaang niap, Sapug niap, Pinyawa’ niap, Anah Rais niap, Biya niap, Sembaan niap, Tringgus Raya niap. (294)


*sūat ‘(fruit) flower) Singai suat, Gumbang suat, Bratak suat, Serasot suat, Biatah suat, Bistaang suat, Benuk suat, Pinyawa’ suat, Bengoh suat, Anah Rais suat, Biya suat, Sembaan suat, Tringgus Raya suat, Bukar suat, Bibengi suat, Sangking suat, Tebakang suat, Buka suat, Bina suat, Tringgus Brika suat, Sembaan suat, Tringgus Beka suat, Buka bima suat, Benar suat. (34)

*māin 'play' Singai main, Serambu main, Bratak main, Grogo main, Stass main, Biatah māin, Benuk māin, Bengoh bimain, Anah Rais māin, Biya māin, Sembaan māin, Tringgus Raya māin, Tringgus Bireng māin, Buka bima, Sadung māin, Buna māin. (139)

*kāi? ‘not' Sapug kaya?, Bukar kai?, Sadung kai?, Bibengi kai?, Sangking kai?, Tebakang kāi?, Bukar-Sadung kai?, Buna kada? (the Sapug and Buna forms are difficult) (333). This is not, strictly speaking, a PBid set since it draws cognates from only one region, the Bukar-Sadung region.

No example has been observed of the central vowel, *a, in the penult of *CVVC sequences.

Although there seems to be no full/reduced contrast in *CVhVC words, the penult consistently shows a reduced vowel.42 (The next section shows one minor exception.)

*bähit, *mähit ‘left (hand)' Singai ba?it (careful speech), bait (casual speech), Gumbang baït, Serambu bait, Bratak bait, Sera bat, Grogo baït, Biatah bāït, Bistaang baït, Benuk baït, Sapug ba[?}it, Bengoh bait, Anah Rais bait, Biya bait, Sembaan biihit, bāhit, Tringgus Raya bāhit, Tringgus Bireng bāit, Bukar kumāhit, Bibengi māhit, Tebakang ku māhit, Bukar-Sadung māhit, Bunar māhit. (183)

*māhu ‘wind’ Bibengi māhu, Sangking māhu, Bukar-Sadung māhu, Bunar māhu. (13)

*mīhu, *muhu ‘say' Biatah miu, Bistaang mānu, Benuk miu, Sapug miu, Pinyawa’ miu, mi?u, Bengoh miu, Anah Rais miu, Biya miu, Sembaan mahu, Tringgus Raya miu, Tringgus Bireng miu. (181)


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42The set *tāh/unp ‘loincloth’ (267) is an exception in that the dialects that preserve *h in the onset of the ultima generally reflect the full vowel, *ã, in the penult.
*simahɔŋ, *simahɔŋ 'ten' Singai simaŋŋ, Gumbang siməŋ, Serambu siməŋ, Bratak s[i]məŋ, Serasotsuməŋ, Grogo sməŋ, Stass sməŋ, Bau dictionary sməŋ, Biatah siməŋ, Bistaang s[ə]məŋ, Benuk sməŋ, Sapug siməŋ, hməŋ, Pinyawa’ simaŋŋ, Bengoh saməŋ, Anah Raits saməŋ, Biya suməŋ, Sembaan məhoŋ, smoŋ, Tringgus Raya simahɔŋ, Tringgus Bireng səməŋ, Bukar simahɔŋ, Sadung simahɔŋ, Bibengih simahɔŋ, Sangking simahɔŋ, Tebakang simahɔŋ, Bukar-Sadung s[i]məŋ, Bunan s[i]muhaŋ. (290)

However, in *CahaC sequences, i.e., when the vowel a occurs on both sides of *h, i.e., *CahaC, the situation is a bit more complex. The PBid medial *h is lost in some dialects but preserved as h or ? in others. Those dialects in which the medial consonant is lost indicate a full vowel in the penult. However, those dialects, apart from Singai, that preserve *h as h or ? indicate a reduced vowel in the penult.

*bəha/uni02D0/uni033Cy 'areca nut' Singai ba/y, Gumbang ba/y, Serambu ba/y, Bratak ba/y, Serasot ba/y, Grogo mbay, Stass bay, Biatah bacy, Bistaang bacy, Benuk bacy, Sapug bacy, Pinyawa’ ba/y, Bengoh bacy, Anah Raits bacy, Biya bacy, Biya bay, Sembaan bəhay, bahay, Tringgus Raya bəhay, Tringgus Bireng bacy, Bukar bəhay, Sadung bəhay, Sangking bəhay, Tebakang bəhay, Bukar-Sadung bəhay. (243)

*bəhas 'big' Singai ba/as, Serambu baas, Pinyawa’ bə/as, Tringgus Raya bəhas, Bukar bəhas, Sadung bəhas, Bibengih bəhas, piməhas ‘wide (thing)’, Sangking bəhas, Tebakang bəhas, Bukar-Sadung bəhas, Bunan bahas ‘grown up (person)’. (295)

*bəhat 'heavy' Singai baat (casual speech), ba/at (careful speech), Gumbang baat, Serambu baat, Bratak baat, Serasot baat, Grogo baat, Stass baat, Biatah bat, Bistaang bat, Benuk bat, Sapug bat, Pinyawa’ ba/at, Bengoh bat, Anah Raits bat, Biya bat, Sembaan bəhat, Tringgus Raya bəhat, Tringgus Bireng bat, Bukar bəhat, Sadung bəhad, Bibengih bəhat, Sangking bəhat, Tebakang bahat, Bukar-Sadung bəhat, Bunan bahat. (313)

*təhas ‘ironwood’ Singai ta/as, Gumbang taas, Serambu taas, Bratak taas, Serasot taas, Grogo taas, Stass taas, Biatah tas, Bistaang tas, Benuk tas, Sapug ta[ː]s, Pinyawa’ ta/as, Bengoh taas, Anah Raits taas, Biya tas, Sembaan tahas, Tringgus Raya təhas, Tringgus Bireng tas, Bukar təhas, Sadung təhas, Bibengih tahas, Sangking təhas, Tebakang təhas, Bukar-Sadung təhas, Bunan tahas. (33)

2.4.2.3 Full and reduced vowels in closed syllables

As will be seen in §2.4.3, the PBid penult is sometimes closed by a nasal with resulting ambisyllabic clusters of nasal + voiced stop and nasal + voiceless stop. The vowel in such closed penults can be either full or reduced. The examples of full and reduced vowels before nasal + voiced stop sequences are more numerous.

The examples of contrast before nasal + voiceless stop are less numerous. The first two examples demonstrate full and reduced low vowels, *ā and *ă, and in these words evidence for full vs. reduced vowels is found in all the dialect regions. The remaining sets illustrate the reduced vowels of other vowel qualities, but it should be noted that evidence for a reduced vowel is found only in the dialects that lose the nasal before voiceless stop. It is not clear whether non-low full vowels ever occur in closed syllables.

*lantîŋ ‘raft’ Singai ratiŋ, Gumbang ratiŋ, Serambu ratiŋ, Bratak ratiŋ, Serasot ratiŋ, Grogo ratiŋ, Stass ratiŋ, Biatah ratiŋ, Bistaang ratiŋ, Benuk ratiŋ, Sapug ratiŋ, Pinyawa’ ratiŋ, Bengoh ratiŋ, Anah Rais ratiŋ, Biya ratiŋ, Sembaan ratiŋ, Tringgus Raya ratiŋ, Tringgus Bireng aţiŋ, Bukar lantiŋ, Sadung lantiŋ, Bibengih lantiŋ, Sangking lantiŋ, Tekabang lantiŋ, Bukar-Sadung lantiŋ, Bunan lantiŋ. (197)


*mâŋkad ‘cough’ Singai maked, Gumbang maked, Serambu maked, Bratak maked, Serasot maked, Grogo maked, Stass maked, Biatah maked, Bistaang maked, Benuk mâkad, Sapug mâkad, Pinyawa’ maked, Bengoh mâkad, Anah Rais mâkad, Biya mâkad, Sembaan nkad, Tringgus Raya
mākañ, Tringgus Bireng mākañ, Bībengī maŋkāď, Sangking maŋkāď, Tebakang maŋkāď, Bukar-
Sadung maŋkāď, Bunan maŋkāď, Bunan-Terbat maŋkāď. (128)

*būntan ‘coconut (palm)’ Singai butan, Gumbang butan, Serambu butan, Bratak butan, Serasot
butan, Grogo butan, Stass butan, Biatah butan, Bistaang bātān, Benuk b[ā]tan, Sapug butan,
Pinyawa’ butan, Bengoh butan, Anah Rais butan, Biya būtān, Sembaan tan, Tringgus Raya butan,
Tringgus Bireng bātān, Bukar buntan, Sadung buntan, Bībengī buntan, Sangking buntan,
Tebakang buntan, Bukar-Sadung buntan, Bunan buntan. (38)

*sūŋkuh ‘grandchild’ Singai sukun, Gumbang sukun, Biatah sukun, Bīstaang skuh, ŋākuh ‘look after
grandchildren (verb)’, Pinyawa’ sukun, Bengoh sukun. (105)

*sămō, *sampoo, *səmpit ‘blowpipe’ Singai dipot, Gumbang dipot, Serambu dipot, Bratak dipot,
Serasot dipot, Grogo dipot, Stass supit (?), Biatah dipot, Bīstaang dipot, Benuk dipot, Sapug
dipot, Pinyawa’ supot, Bengoh dipot, Anah Rais dipot, Biya dipot, Sembaan dipot, Tringgus Raya
dipot, Tringgus Bireng dipot, Bukar sūmpot, Sadung sūmpot, Bībengī sūmpot, Sangking sūmpot,
Tebakang sūmpot, Bukar-Sadung sūmpot, Bunan sūmpot. (205)

*ăndu ‘day’ Singai āndu, Gumbang āndu, Serambu āndu, Bratak āndu, Serasot an[d]u, Grogo ānu,
āntu, Anah Rais āndu, Biya āndu, Sembaan āndu, Tringgus Raya āndu, Tringgus Bireng āndu,
Bukar āndu, Sadung āndu, Bībengī āndu, Sangking āndu, Tebakang āndu, Bukar-Sadung āndu,
Bunan āndu. (19)

*kahak, *āŋ-kak `crow or another large black bird’ Singai manuk kaʔak (careful speech), manuk
kaak (casual speech), Gumbang manuk kaak, Serambu manuk kaak, Bratak manuk kaak, Stass
manuk kaak, Biatah kaak, Bīstaang kaak, Benuk manuk kaak, Pinyawa’ manuk kaak, Bengoh kaak,
Anah Rais kaak, Biya kaak, Sembaan kaak, Tringgus Raya manuk kak, Tringgus Bireng kaak, Bukar
manuk ānjakaak, Sadung ānjakaak, Bībengī ānjakaak, Sangking kītako ānjakaak, Bukar-
Sadung ānjakaak, Bunan ānjakaak. (52)

*indī? ‘one’ Singai ndī?, Gumbang ndī?, Serambu n[d]iʔ, Bratak ndī?, Serasot n[d]iʔ, Grogo niʔ,
Stass niʔ, Biatah niʔ, Bīstaang indīʔ, Benuk ndīʔ, Sapug ndīʔ, Pinyawa’ ndīʔ, Bengoh niʔ,
Anah Rais n[d]iʔ, Biya niʔ, Sembaan niʔ, Tringgus Raya niʔ, Bukar indīʔ, Sadung indīʔ,
Bībengī indīʔ, Sangking indīʔ, Tebakang indīʔ?, Bukar-Sadung indīʔ?, Bunan ndīʔ. (281)

*ndūŋ, *induŋ, *ānduŋ ‘nose’ Singai ndūŋ, Gumbang ndūŋ, Serambu indūŋ, Bratak indūŋ, Serasot
indūŋ, Grogo indūŋ, Stass induŋ, Biatah undūŋ, Bīstaang ndūŋ, Benuk ndūŋ, Sapug ndūŋ,
Pinyawa’ ndūŋ, Bengoh ntūŋ, Anah Rais ndūŋ, Biya ndūŋ, Sembaan ndūŋ, Tringgus Raya ndūŋ,
Tringgus Bireng ndūŋ, Bukar undūŋ, Sadung undūŋ, Bībengī undūŋ, Sangking ndūŋ, Tebakang
undūŋ, Bukar-Sadung undūŋ, Bunan ndūŋ. (84)

*ūm-paʔ, *ūm-pa ‘betel chew’ Singai paʔ, Gumbang paʔ, Serambu paʔ, Serasot paʔ, Stass paʔ,
Biatah paʔ, Bīstaang paʔ, Benuk paʔ, Sapug paʔ, Pinyawa’ paʔ, Bengoh mapaʔ, Anah Rais

### 2.4.2.4 Vowel alternations

There are many sets that reflect one vowel quality in the penult in one dialect region and a different vowel quality in another region. The most frequent alternation of this kind is between *i* and *u*. In the vast majority of cases both of the alternating vowels are reduced, and in almost all cases there is a non-low vowel in the ultima. In the following illustrative set *i* alternates with *u*:

*būsoh, *būsoh, *biso*: ‘full (of a person)’ Singai busoh, Gumbang bisoh, Serambu busoh, Bratak busoh, Serasot busoh, Grogo busoh, Stass busoh, Biatah bisoh, Bistaang b[ă]soh, Benuk b[i]soh, Sapug bisoh, Pinyawa’ bisoh, Bengoh bisoh, Anah Rais bisoh, Biya būsoh, Sembaan soh, Tringgus Raya būsoh, Tringgus Bireng būsoh, Bukar biso; Sadung biso; Bibengih biso; Sangking biso; Tebakang biso; Bukar-Sadung biso, Bunan biso: (234)

Alternations of the penult vowel result from three types of processes: labialization, palatalization and mirroring.

#### 2.4.2.4.1 Labialization.

In sets that have a labialized penult vowel the vowel *i* becomes *ū* (1) following *p, *b or *m in the onset of the penult, (2) preceding *p in the onset of the ultima or (3) preceding *u* or *o in the nucleus of the ultima. Note the following examples, which illustrate the three labializing environments:

*midek, *mūdek* ‘go upriver’ Singai midek, Gumbang midek, Biatah mudek, Bistaang mādek, Sapug midek, Pinyawa’ mudek, Anah Rais mudek, Sembaan md?, Tringgus Bireng mūdek, Tebakang mūdek, Bunan mudek. (185)

*jīpah, *jīpān, *jīpāy, *jupān* ‘teeth’ Singai jupān, Gumbang jupān, Serambu jipāy, Bratak jupān, Serasot jupān, Grogo jupān, Stass jupān, Biatah jipāh, Bistaang jāpāh, Benuk jpāh, Sapug jipāh, Pinyawa’ jipah, Bengoh jipah, Anah Rais jipah, Biya gīpāh, Sembaan pāh, Tringgus Raya jipāh, Tringgus Bireng jipān, Bukar jipah, Sadung jipāh, Bibengih jipāh, Sangking jipāh, Tebakang jipāh, Bukar-Sadung jipāh, Bunan dzipān (jipān ?). (82)

*sīkuh, *sikun, *sūkuh, *sūkun* ‘elbow’ Singai siku (final n expected), Gumbang sikuon, Serambu suke, Bratak suke, Serasot suke, Grogo suke, Stass suke, Biatah suke, suke, Bistaang s[ă]kuh, Benuk skuh, Sapug suke[h], Pinyawa’ siku, Bengoh siku, Anah Rais suke, suke, Biya sūkuh, Sembaan skuh, Tringgus Raya skuh, Tringgus Bireng sūkun, sūkuh, Bukar suke, Sadung suke, Bibengih suke, Sangking suke, Tebakang suke, Bukar-Sadung suke, Bunan suke. (105)

#### 2.4.2.4.2 Palatalization.

In sets that have a palatalized penult vowel the vowel *ū* or *ā* becomes *ī* (1) following *s, *j or *n in the onset of the penult, (2) preceding *n in the onset of the ultima or (3) preceding *i* in the nucleus of the ultima. Note the following examples, which illustrate the three palatalizing environments:
2.4.2.4.3 Vowel mirroring.

In the preceding paragraphs we have seen that penultimate *u sometimes becomes *i before *i in the ultima and that a penultimate *i sometimes became *u before *u. Similarly, in a few cases a penultimate *i becomes *a before *a in the ultima. Cf. the following examples, which illustrate this last environment:

\*rĭ/uni0294aŋ, \*rī/uni0294aŋ, \*ră/uni0294aŋ, \*ri/uni0294eŋ, \*ī/uni0294/uni0259/uni0261 'hard' S\*nga\*r\*eŋ, r\*/un\*0294\*eŋ, Gumbang r\*/un\*0294eŋ, Serambu r\*/un\*0294eŋ, Bratak r\*\*i\*:t\*eŋ, Biatah r\*i\*:t\*eŋ, Bistaang r\*\*i\*:t\*eŋ, Benuk ra\*\*i\*:t\*eŋ, Sapug ra\*\*i\*:t\*eŋ, Pinyawa’ r\*\*i\*:t\*eŋ, Bengoh r\*\*i\*:t\*eŋ, Anah Ra\*s rī/un\*0294aŋ, B\*ya rĭ/un\*0294aŋ, Sembaan rĭ/un\*0294aŋ, Tr\*nggus Raya ră/un\*0294aŋ, Tr\*nggus B\*reng ī/un\*0294/un\*0259/un\*0261, Bukar jleh, Sadung jleh, B\*beng\*h jleh, Sangk\*ng jleh, Tebakang jle\*r\*a\*n, Bukar-Sadung jle\*r\*a\*n, Bunan jle\*r\*a\*n. (312)

As mentioned earlier (§§2.3.2.2 and 2.4.2.1), when *ə > o in western dialects before a labial consonant, a central vowel in the penult, *ə, becomes u in another type of vowel mirroring.

\*tarp, \*tārap, \*turop ‘deep’ Singai turop, Gumbang turop, Serambu turop, Bratak turop, Serasot turop, Grogo turop, Biatah tərap, Bistaang tərap, Benuk tərap, Sapug tərap, Pinyawa’ tərap, B\*beng\*h tərap, Anah Rais tərap, Biya tərap, Ser\*ban\*\*n tərap, Tr\*nggus Raya tərap, Tr\*nggus B\*reng t[a]\*rap, Bukar tərap, Sadung tərap, Sangk\*ng tərap, Tebakang tərap, Bunan tərap. (316)

\*kādab, \*kudob, \*kānab ‘(chicken) lice’ Singai kudob, Gumbang kudob, Serambu kudob, Bratak kudob, Serasot kudob, Stass kudob, Bistaang kādab, Benuk kādab, Pinyawa’ kādab, Bukar kānab, kanam, Bibengih kānab, Sangk\*ng kādab, Tebakang kānab, Bukar-Sadung kānab, Bunan kānab, Serian dictionary kānab. (127)
2.4.2.5 Developments in Bistaang and Tringgus

2.4.2.5.1 *ă + semivowels in Bistaang.

In Bistaang the reduced low vowel, *ă, followed by a semivowel in the following syllable becomes the corresponding high vowel in the penult, i.e., *ăw > u, *ăy > i.


*păyu ‘deer’ Biatah păyu, Bistaang piu, Benuk păyu, Sapug payu, Pinyawa’ payu, Bengoh payu, Anah Rais păyu, Biya păyu, Sembaan păyu, Tringgus Raya păyu, Tringgus Bireng păyu, Sadung păyu, Bibengih păyu, Sangking păyu, Tebakang păyu, Bukar-Sadung păyu, Bunan păyu. (57)


*dăyab ‘hill(side)’ Bratak dăyab, Biatah dăyab, Bistaang diab, Sapug dăyab, Anah Rais dăyab, Tringgus Bireng dăyab, Bukar dăyab, Sangking dăyab, Tebakang dăyab. (194)

2.4.2.5.2 Reduced high vowels in Tringgus.

In the two Tringgus dialects reduced high vowels *İ and *ü are sometimes replaced by ş in the penult, creating alternate forms. When ş occurs in the penult and a vowel other than a in the ultima, it is clear that the underlying penult vowel must be *İ or *ü since in Proto Bidayuh *ə occurs in the penult only when the vowel *a occurs in the ultima.

*dînən, *dîne? ‘friend’ Singai dînən, Gumbang dînən, Serambu dînən, Bratak dînən, Serasot dînən, Grogo dînən, Stass dînən, Biatah dînən, Bistaang dînən, Benuk dînən, Sapug dînən, Pinyawa’ dînən, Bengoh dînən, Anah Rais dînən, Biya dînən, Sembaan şənən, Tringgus Raya dînən,
dànæn, Tringgus Bireng dînæ?; dänæ?, Bukar dînæ, Sadung dînæn, Bibengih dînæn, Sangking dînæn, Tebakang dînæn, Bukar-Sadung dînæn, Bunæn dînæn. (258)

*kijat* ‘lightning’ Gumbang kijat, Serambu kijat, Bratak kijat, Serasot kijat, Grogo kijat, Stass kijat, Biatah kijat, Bistaang kăjat, Benuk kijat, Sapug kijat, Pinyawa’ kijat, Bengoh kijat, Anah Rais kijat, Biya kijat, Sembaan kijat, Tringgus Raya kijat, kijat Tringgus Bireng kijat. (16)


*tŭbi*/*tŭdu*, *tŭdu* ‘cooked rice’ Snga tŭbi, Gumbang tŭbi, Serambu tŭbi, Bratak tŭbi, Serasot tŭbi, Grogo tŭbi, Stass tŭbi, Biatah tŭbi, Bistaang tăbi, Benuk tŭbi, Sapug tŭbi, Pinyawa’ tūbi, Bengoh tūbi, Anah Rais tūbi, Biya tŭbi, Sembaan bi, Tringgus Raya tŭbi, tăbi, Tringgus Bireng tūbi, tăbi. (217)

*būda*/*būdu*, *būdu* ‘white’ Snga būda, Gumbang būda, Biatah būda, Bistaang băda, Benuk bda, bda, Sapug būda, Pinyawa’ būda, Bengoh būda, Anah Rais būda, Biya būdu, Sembaan da, Tringgus Raya băda, Tringgus Bireng būda, băda, Bukar būda, Sadung būda, Bibengih būda, Sangking būda, Tebakang būda, Bukar-Sadung būda. (329)

### 2.4.3 Coda of the penult

#### 2.4.3.1 Inventory

Three of the four nasals occur in the coda of the ultima, viz., *m*, *n* and *ŋ*. The palatal nasal *ŋ* occurs in the onset of the ultima but not in the coda.

Similarly, only those three nasals *m*, *n* and *ŋ* occur in the coda of the penult where they are always followed by a stop, either voiced or voiceless, or by *s*. The fricative *s* occupies the palatal position in the voiceless obstruent series just as *j* occupies the palatal position in the voiced obstruent series. The labial nasal precedes only a labial stop. The velar nasal precedes only a velar stop. The alveolar nasal precedes only an alveolar or palatal obstruent. Thus, in this context the point of articulation of the nasal is predictable, and only the nasality is distinctive.

#### 2.4.3.2 Nasal + voiceless stop clusters

The nasal is lost in clusters with a voiceless stop in western and central Bidayuh as well as in the Sembaan group but is preserved in eastern Bidayuh.

*şimpot*, *şumpot*, *şumpit* ‘blowpipe’ Singai sipot, Gumbang sipot, Serambu sipot, Bratak sipot, Serasot sipot, Grogo sipot, Stass supit, supet (?), Biatah sipot, Bistaang spot, Benuk spot, Sapug sipot, Pinyawa’ supot, Bengoh sipot, Anah Rais sipot, Biya sipot, Sembaan spot, Tringgus Raya sipot, Tringgus Bireng sipot, Bukar simpot, Sadung simpod, Bibengih simpot, Sangking simpot, Tebakang simpot, Bunæn simpot, sumpit (loan ?). (205)

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43The phrase “nasal + voiceless stop cluster” along with the voiced equivalent should be understood to include the clusters *ns* and *nj* even though s and j are not stops in articulatory terms.
*bŭntan* ‘coconut (palm)’ Singai butan, Gumbang butan, Serambu butan, Bratak butan, Serasot butan, Grogo butan, Stass butan, Biatah butan, Bistaang bātan, Benuk b[ā]tan, Sapug butan, Pinyawa’ butan, Bengoh butan, Anah Rais butan, Biya būtan, Sembaan tan, Tringgus Raya butan, Tringgus Bireng bātan, Bukar buntan, Sadung buntan, Bibengih buntan, Sangking buntan, Tebakang buntan, Bukar-Sadung buntan, Bunan buntan. (38)

*sinsiŋ, *sinsin, *kiŋkin* ‘ring’ Singai sisin, Gumbang sisin, Serambu sisin, Bratak sisin, Serasot sisin, Grogo jinjìn, Stass sisin, Biatah sisin, Bistaang sisin, Benuk sisin, Sapug sisin, Pinyawa’ sisin, Bengoh sisin, Anah Rais sisin, Biya sisin, Sembaan sisin, Tringgus Raya sisin, Tringgus Bireng sisin, Bukar cincin, Sadung cincin, Bibengih cincin, Sangking cincin, Tebakang kiŋkin, Bukar-Sadung kiŋkin, Bunan kiŋkin. (266)


A significant number of the sets that reflect a cluster of nasal plus a voiceless stop appear to be borrowings from Malay or perhaps another Malayic language.

<table>
<thead>
<tr>
<th>Proto Bidayuh</th>
<th>Malay</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pāmpi</em> ‘cheek’</td>
<td>pipi</td>
</tr>
<tr>
<td><em>tāmpar</em> ‘slap’</td>
<td>tampar</td>
</tr>
<tr>
<td><em>ŋum-pah</em> ‘(to) pound’</td>
<td>rempuh ?</td>
</tr>
<tr>
<td><em>sīmpot</em> ‘blowpipe’</td>
<td>sumpitan ?</td>
</tr>
<tr>
<td><em>ǔm-pa?</em> ‘betel chew’</td>
<td></td>
</tr>
<tr>
<td><em>ǔm-pat</em> ‘four’</td>
<td>empat</td>
</tr>
<tr>
<td><em>tūmpap</em> ‘hand width’</td>
<td></td>
</tr>
<tr>
<td><em>bīntaŋ</em> ‘star’</td>
<td>bintang</td>
</tr>
<tr>
<td><em>būntan</em> ‘coconut (palm)’</td>
<td></td>
</tr>
<tr>
<td><em>Rāntuŋ</em> ‘worm’</td>
<td></td>
</tr>
<tr>
<td><em>jāntoŋ</em> ‘heart’</td>
<td>jantung</td>
</tr>
<tr>
<td><em>lāntiŋ</em> ‘raft’</td>
<td>lanting</td>
</tr>
<tr>
<td><em>bāntal</em> ‘pillow’</td>
<td>bantal</td>
</tr>
<tr>
<td><em>lāntay</em> ‘floor’</td>
<td>lantai</td>
</tr>
<tr>
<td><em>pānsa?</em> ‘thunder clap’</td>
<td></td>
</tr>
</tbody>
</table>

44Only one reconstructed form is listed, even though for many sets more than one proto-form has been reconstructed.
It appears warranted to reconstruct a series of nasal + voiceless stop clusters for Proto Bidayuh. However, many examples of these clusters occur in vocabulary items that may have been borrowed. The source of these clusters needs to be investigated further to an extent that does not appear necessary for the nasal + voiced stop clusters.

### 2.4.3.3 Nasal + voiced stop clusters

In sets that reflect clusters of nasal plus voiced stop it is common for the cognate in some dialects to show the full cluster while others show only the nasal. Lenition of the voiced stops is more common in the western and central regions, less so in eastern Bidayuh. Even in the same dialect in some utterances the voiced stop is clearly heard while in others it is not, as shown in the sets by brackets around the stop. In some cases the presence of the stop is demonstrated by a pre-ploded nasal word finally. This suggests that lenis pronunciation of the voiced stop in such clusters, evident to varying extents in the contemporary dialects, was probably a feature of Proto Bidayuh as well.


2.5 The antepenult

The syllable that occurs in third position from the end (the antepenult) of the Proto Bidayuh word has a simple *CV structure.

2.5.1 Onset of the antepenult

2.5.1.1 Inventory

The set of consonants that occur in the onset of the antepenult is considerably more restricted than the set that occurs in the onset of either the penult or the ultima. The following consonants can be reconstructed for the Proto Bidayuh antepenult: *p, *t, *k, *b, */u, *r and *s.

It should be noted that *d has not been reconstructed in this position, and *g is attested in our corpus in only two sets. So, *b is the only voiced stop that can be solidly reconstructed. The evidence for *b is strengthened significantly by occurrences of the prefix *bi-. It is also true that the evidence for *p, *t and *s is strengthened by occurrences of the prefixes *pi-, *ti- and *si-. In fact, since Proto Bidayuh roots generally have two syllables, any evidence for Proto Bidayuh words of three or more syllables must rely heavily on forms which are morphologically complex.

Consonants other than these six occur in the antepenult of forms in the various dialect regions, but those do not appear to be warranted for Proto Bidayuh since they are not found in forms occurring in more than one of the regions.45

*p


*píriʔi ‘nine’ Singai priʔi, Gumbang siriʔi, Serambu priʔi, Bratak priʔi, Serasot p[i]riʔi, Grogo priʔi, Stass priʔi, Biatah priʔi, Bistaang priʔi, Benuk priʔi, Sapug priʔi, Pinyawa’ priʔi, Bengoh priʔi,

45Some eastern dialects have forms that begin with a nasal followed by a voiceless stop. It is possible that in some of these forms the nasal constitutes the initial syllable. However, such initial clusters do not seem to have played a role in Proto Bidayuh; the nasals may be the vestiges of earlier (C)V(N) pre-final syllables. Cf. C. M. Rensch on syllabic nasals (this volume).
Anah Rais príʔi, Biya príʔi, Sembaan piʔi, Tringgus Raya príʔi, Tringgus Bireng piʔi, Bukar p[i]riʔi, Sadung piriʔi, Bibengih piriʔi, Sangking príʔi, Tebakang príʔi, Bukar-Sadung p[i]riʔi, Bunan píʔi. (289)

*tibahiʔ 'secondary forest' Singai tiboʔi, Serambu tibiʔi, Bratak tibiʔi, Serasot tiboʔi, Grogo tiboiʔi, Stass tibiʔi, Biatah tibiʔi, Bistaang tibiʔi, Benuk tibäʔiʔ, Sapug tibäʔiʔ, Pinyawa' tibäʔiʔ, Bengoh ti/abäʔiʔ, Anah Rais ti/abäʔiʔ, Biya bäʔiʔ, Sembaan bäʔiʔ, Tringgus Raya bähiʔ. (27)

*tigáňan (often as a phrase *tuńaŋ tigáňan) 'side' Singai tigaʔaŋ, Gumbang sigaʔaŋ, Serambu tigaʔaŋ, Bratak tigaʔaŋ, Serasot tigaʔaŋ, Grogo tigaʔaŋ, Stass tigaʔaŋ, Bistaang tågaŋ, Sapug tågaŋ, Biya tågaŋ, Tringgus Raya gåhaŋ, Tringgus Bireng gãŋ, Bukar tigáňan. (96)

*ti/ăhaŋ (often as a phrase *túraŋ tı/ăhaŋ) 'de' Snga tı/ąaŋ, Gumbang s/ąaŋ, Serambu s/ąaŋ, Bratak s/ąaŋ, Serasot s/ąaŋ, Grogo s/ąaŋ, Stass s/ąaŋ, Bstaang t/un/ąaŋ, Sapug s/ąaŋ, B/ya s/ąaŋ, Tr/inggus Raya s/ąaŋ, Tr/inggus B/reng s/ąaŋ, Bukar tı/ăhaŋ. (3)

*kilăkar 'converse' Snga k/rakar, Serambu k/rakar, Serasot kraka, Bstaang krăkar, Ser/an dictionary k/lakar. (181)

*kirăsik 'sand' Sadung k/răs/k, Sangk/ŋg krăs/k, Tebakang k/răs/k, Bunan k/r/s/k (3). It should be noted that all of these forms are drawn from eastern B/daюh.

*birăsi 'oar' Serambu br/s, Serasot b/r/s, Benuk br/s, Bengoh br/s, Sembaan br/s, Tringgus Raya br/s, Sadung br/s, B/ya br/s, Tr/inggus B/reng br/s, Bukar br/s. (199) (apparently influenced by Malay(ic))

*bităwi 'taro, yam' Sapug kuduk b/taw/, Pnyawa' b/taw/, Bengoh b/taw/, Tr/inggus Raya kuduk taw/, Sadung b/taw/, B/ya b/taw/, Tr/inggus B/reng b/taw/, Bukar b/taw/. (44)

*Raɗak, *gilăgar 'floor' Singai g/iragar, Bratak g/iragak, Bau dictionary gragar, Benuk grădak, Bengoh gradak, Serian dictionary gilăgar 'under beam'. (276)

*gRăŋan 'rainbow' Singai giráŋan, Gumbang sit/daŋan, Serambu g/iRăŋan, Bratak giráŋan, Serasot giráŋan, Grogo giráŋan (17). It should be noted that all of these forms are drawn from western Bidayuh.

*răŋaŋ 'hungry' Snga s/b/ą/ąken, Serasot s/b/ą/ąken, B/atah s/b/ą/ąken, Bstaang s/b/ą/ąken, Benuk s/ą/ąken, Sapug s/ą/ąken, hŋaŋ, Pinyawa' s/ą/ąken, Bengoh s/ą/ąken, Anah Rais s/ą/ąken, Biya s/ą/ąken, Sembaan máhoŋ, s/ą/ąken, Tringgus Raya s/ą/ąken, Tringgus Bireng s/ą/ąken, Bukar s/ą/ąken, Sadung s/ą/ąken, Bibengih s/ą/ąken, Sangking s/ą/ąken, Tebakang s/ą/ąken, Bukar-Sadung s/į/mahąŋ, Tunan s/į/muhąŋ. (290)

*sibărak, *sibărak, *sibaray 'hungry' Singai sibărak, Serasot sibărak, Biatah sibărak, Bistaang sibărak, Benuk [s]bărak, Sapug [s]bărak, Pinyawa' sibărak, Bengoh sibărak, Anah Rais sibărak, Biya bărak, Bukar sibărak, Sadung sibărak, Bibengih sibărak, Sangking sibărak, Tebakang sibărak, Bukar-Sadung sibărak, Bunan sibărak, Bunan-Terbat sibărak, Serian dictionary sibărak, sibărak. (233)
2.5.1.2 Morphological sources of the antepenult

A large proportion of Proto Bidayuh words reconstructed with three syllables are the result of adding to the stem one of two types of affixes: (1) the *-ir- infix\textsuperscript{46} or (2) the *pi-, *ti-, *bi- and *si- prefixes.

(1) In at least a dozen sets some dialect forms reflect a form with the shape *CVCVC while others reflect the shape *CirVCVC. On the basis of these it is concluded that Proto Bidayuh had an inflex *-ir- which was preserved in some dialect forms of a given set but not in others. At this stage the grammatical function of the inflex is uncertain.


*birāmbaŋ, *bir-ibāmbaŋ, *Cir-ibāmbot ‘butterfly’ Biatah birāmbaŋ, Bistaang brāmbaŋ, Benuk brāmbaŋ, Sapug birambaŋ, Pinyawa’ birāmbaŋ, Bengoh brāmbaŋ, Anah Rais b[i]rāmbaŋ, Biya rambaŋ, Sembaan bāmbaŋ, Tringgus Raya rāmbaŋ, Tringgus Bireng māje?, Bukar tribāmbaŋ, Sadung tribām.bat, Bibengih tribambaŋ, Sangking sibambaŋ, Tekabang tribambaŋ, Bukar-Sadung sibambot, Bunan ribambaŋ (65). In this set the Sangking and Bukar-Sadung forms show no signs of the *-ir-infex; the Sembaan form is uncertain in this respect. The Tringgus Bireng form is anomalous.


*kāsaŋ, *k-ir-āsaŋ, *k-ir-āsaŋ ‘large rattan floor mat’ Singai kāsaŋ, Serambu kāsaŋ, Serasot kāsaŋ, Biatah kāsaŋ, Bistaang kāsaŋ, Sapug kāsaŋ, Pinyawa’ kāsaŋ, Biya kāsaŋ, Sembaan kāsaŋ,

\textsuperscript{46}At least one set suggests that there may have been a second inflex, *-ā-. However, this affix occurred only in eastern Bidayuh, so may not be a part of the Proto Bidayuh system.
Tringgus Raya kāsah, Tebakang kirāsāʔ, Bunan kirāsah, Serian dictionary kirāsah, kirāsah (280).

In this set only the eastern Bidayuh forms show evidence for the *-ir- infix.

(2) Other sets with three syllables reflect one of the *pi-, *ti-, *bi-, *si- prefix set before the stem.


*timiřib, *mūrib ‘(to) fly’ Singai timiřib, Gumbang simarim, Serambu timiřib, Bratak timiřib, Serasot timiřib, Grogo timiřib, Stass timiřib, Anah Rais tikurib (penult is anomalous), Biya mūrib, Sembaan hmrib, Tringgus Raya mārib, Tringgus Bireng mrib, Bibengiř murib, Sangking murib (141). The forms from western Bidayuh and probably Anah Rais and Sembaan reflect a form with the *ti- prefix while the others reflect one without the prefix.

*bikāduh ‘(to) run’ Singai bikāduh, Serambu bikāduh, Bratak bikāduh, Serasot bikāduh, Grogo bikāduh, Stass bikāduh, Biatah bikāduh, Bistaang bakāduh, Benuk bakāduh, kāduh, Sapug kāduh, bikāduh, Pinyawa’ bikāduh, Bengoh sikāduh, Anah Rais tikaduh, Biya kāduh, Sembaan kāduh, Tringgus Raya kāduh, Tringgus Bireng kāduh (153). The doublets in Benuk and Sapug show that the *bi- prefix is optional.

*sinjāŋi, *kāŋi ‘shadow’ Gumbang sinjāŋi, Biatah sinjāŋi, Bistaang si/ŋāŋi, Benuk [s]ŋāŋi, Sapug sinjāŋi, Pinyawa’ kraŋi, Anah Rais sinjāŋi, Biya ḥŋāŋi, Sembaan ḥŋāŋi, Tringgus Raya ḥŋāŋi, Tringgus Bireng sāŋi, Sadung sinjāŋi, Tebakang kāŋi, Bunan ŋkāŋi (18). The Pinyawa’, Tebakang and Bunau forms show the unprefixed stem, and the Pinyawa’ form may reflect the *-ir- infix. The other forms, reflecting the *si- prefix, show that the nasal-initial form of the stem occurs with the *si- prefix as well as with the *pi- prefix (cf. *piñadoŋ ‘liar’ above).

While most forms reconstructed with three syllables seem to include the *-ir- infix or one of the prefixes mentioned, there remain some trisyllabic forms which do not show evidence of either of these kinds of affixes. However, it appears not to be necessary to determine in each case whether a form with three syllables includes an affix or not since such morphologically complex forms exhibit essentially the same phonological characteristics as those that may be morphologically simple.

2.5.2 Nucleus of the antepenult

Just one vowel is found in the antepenult, the vowel *i. Occasionally, it sounds like ā, but there seems to be no consistent difference in vowel quality, and careful speech shows it to be i. Furthermore, the vowel of the antepenult is often deleted between a stop and a liquid, following the general deletion rules for reduced high vowels.

The great majority of sets with an antepenultimate vowel have reflexes that support the reconstruction of a reduced vowel.

*si-ŋār/uni0259m, *ŋārom, *ŋār/uni0259/uni0294, *kar/uni0259m ‘night’ Sŋa ŋarom, Gumbang ŋarom, Serambu ŋar/uni0259m, Bratak ŋar/uni0259m, Serasot ŋar/uni0259m, Grogo ŋarom, Stass ŋarom, Biatah siŋārom ‘at night’, Bistaang ŋārom, Benuk s[i]ŋārm, kārm ‘dark’, Sapug siŋārom, Pinyawa'[s]ŋarom, Bengoh siŋārom, Anah Rais siŋārom (varying to sāŋārom), Biya ŋārom, Sembaan kārom, Tringgus Raya siŋārom [sāŋārom], kārom, Tringgus Bireng kārom, Bukar biŋāra?, Bibengih biŋārom, Tebakang biŋāra?, Bukar-Sadung ķāra?, Bunan ŋāra?. (22)

If variation in vowel quality and deletion are to be taken as evidence of a reduced vowel in the antepenult, as they are in the penult, the Benuk, Anah Rais and Tringgus Raya forms seem clearly to reflect a reduced vowel.

However, at least some reconstructed forms that include the prefix *p- or *b- seem to reflect a full vowel in an antepenult. Note the following pairs of sets, which may show a contrast between *ī and *ī.

*piŋādoŋ ‘liar’ Bistaang piŋādoŋ, Benuk piŋadaŋ, Bengoh pi/ŋadaŋ. (173)

*piŋāyuh ‘paddle’ Singai piŋayoh, Serambu piŋayuh, Serasot piŋayuh, Stass piŋayuh, Biatah piŋāyuh, Pinyawa’ piŋayuh, Anah Rais pāŋāyuh, Tringgus Bireng njāyuh, Bukar piŋāyuh, Sadung paŋayuh, Bibengih piŋāyuh, Sangking piŋāyuh, Tebakang piŋāyuh [pi.ŋā.yuh], Bukar-Sadung piŋāyuh, Bunan piŋayuh. (199)

The Bistaang and Benuk forms of the first set and the Tebakang form of the second set seem clearly to reflect a full vowel through their unvarying vowel quality. However, the Bengoh form of the first set and the Anah Rais and Sadung forms of the second set seem to reflect a reduced vowel through their varying vowel quality.

The following set, which begins with the prefix *bi-, seems to reflect a full vowel in the antepenult in Benuk and Tebakang, but a reduced vowel in Bengoh:

*bikāyuh ‘(to) row’ Singai bikayoh, Bratak bikayuh, Benuk [bi]kāyuh, Bengoh bākayuh, Tebakang bikāyuh [bi.kā.yuh]. (199)

At this point we may observe that a contrast between full and reduced antepenultimate vowels is reflected in at least some dialect forms. However, some dialects consistently suggest a full vowel while others a reduced vowel, with little apparent contrast between forms in the same dialect. Furthermore, in the same set some dialects reflect a full vowel and other dialects a reduced vowel. At present the picture is confused, and clearly the matter merits further study.

### 2.6 Summary of the features of Proto Bidayuh

In the preceding sections the features that characterize Proto Bidayuh have been discussed and conclusions drawn. The features of Proto Bidayuh can now be summarized.
2.6.1 Consonants

Proto Bidayuh had the following inventory of consonants:

\[ \begin{array}{cccc}
*p & *t & *s & *k \\
*b & *d & *j & *g \\
*m & *n & *ŋ & *ŋ \\
*l & \\
*r & \\
*w & *y & \\
\end{array} \]

Each of the voiceless and voiced obstruents could be preceded by a homorganic nasal. The nasal was probably articulated rather weakly before a voiceless obstruent since the nasal in that position has been lost in the western, central and Sembaan groups of dialects.

By contrast, it appears that the voiced obstruent in a nasal + voiced-obstruent cluster was articulated weakly because the voiced obstruents are weakly articulated in many of the daughter languages. In some cases they are almost imperceptible and in others completely inaudible. However, in such cases the orality of the vowel is preserved, signaling the presence of the voiced obstruent that is blocking the forward spread of nasalization.

Neither the palatal nasal, *ŋ, nor the voiced palatal obstruent, *j, occurred in syllable-final position. Final nasals following a phonetically oral vowel almost certainly had preploded articulation since that is the general rule in all the daughter languages.

The semivowels *w and *y and laryngeals *h and *ʔ could not occur at the beginning of the penult or of any syllable earlier in the word. Only the consonants *p, *t, *k, *b, *g, *s and possibly *r could occur at the beginning of the antepenult.

The laryngeals *h and *ʔ could occur at both the beginning and end of the ultima in various combinations. The sequences *hVʔ, *ʔVh and *hVh were permitted, but apparently *ʔVʔ was not.

Proto Bidayuh stems were subject to four types of replacive that affected primarily the final consonant of the stem. They were (1) addition of final *-n, (2) deletion of final laryngeal, (3) addition of final *-ʔ and (4) addition of final *-y.

2.6.2 Vowels

Proto Bidayuh had six vowel qualities in the ultima.

\[ \begin{array}{ccc}
\text{high} & *i & *u \\
\text{mid} & *e & *o \\
\text{central} & *o & \\
\text{low} & *a & \\
\end{array} \]
All of these vowels could occur as lengthened or regular vowels in the ultima, but the lengthened mid and low vowels, *e, *o and *a, were considerably more frequent than the lengthened high and central vowels.

The high, central and low vowels occurred in the penult, but the mid vowels, *e and *o, did not. Each of the four vowel qualities occurred as either full or reduced: *ī, *ī; *ū, *ū; *ū, *ū; *ă, *ă.

In the antepenult just one vowel quality, *i, occurred.

2.7 Dialect similarities and differences

From this study of differences among the varieties of Bidayuh it is evident that some pairs of dialects are rather similar while other pairs are much less so. This is evident in various ways—in pronunciation differences, in differences in the inventory of sounds used and, especially, in differences of lexical items.

As we examine the more than 500 sets of cognate lexical items used in this study, we find that many sets have cognate terms in each of the dialects represented. For example, *bātu ‘stone’ (4) has an obvious cognate in every dialect represented. By contrast, *pi‘in ‘water’ (6) has cognates in the dialects of the western, central and Sembaan groups but not in the eastern group. Cognates of *[u]mo: (or *umo:?) ‘water’ (6) are found in the eastern dialects but not in dialects of the other three groups.

When we examine all the cognate sets, we are interested to know the percentage of possible matches (cognates) shared by each pair of dialects. For example, when we compare Singai and Biatah, we find that there are 446 possible matches, i.e., there are 446 lexical items for which we have a term in Singai or in Biatah or both. Out of this possible total of 446 matches, we observe that there are 311 cognate terms. In other words, 69.7% of the possible matches between Singai and Biatah are, in fact, cognate. By contrast, we note that Singai and Bukar have cognate terms in 232 sets out of a possible 474 sets; that is, only 48.9% of the possible matches between Singai and Bukar in this corpus are cognate. On the basis of these comparisons we conclude that the lexical items of Singai and Biatah are considerably more similar than those of Singai and Bukar.

When we compare Singai and Bratak, we find that these two western dialects have 308 matches out of a possible 391; that is, 78.8% of the possible matches are cognate. Comparisons of this type indicate that Singai and Bratak, a variety of Jagoi, are relatively similar in their lexicon, that Singai and Biatah are less similar and that Singai and Bukar are considerably less similar than that. The percentages of shared cognate items for pairs of dialects from a range of Bidayuh regions and from Rara are displayed in Table 9.

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[47] For present purposes these percentage figures should be taken as indicators of relative similarity. In all probability the percentages of cognate items would be somewhat higher if every apparent lack of a cognate item were probed to determine whether a non-cognate item is always used in that dialect or a cognate term exists but is simply lacking in our corpus or has a (somewhat) different meaning.
Table 9. Cognate percentages among varieties of Bidayuh and Rara

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<tr>
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<th>Sin</th>
<th>Bra</th>
<th>Bia</th>
<th>Ben</th>
<th>Pin</th>
<th>Ana</th>
<th>TrR</th>
<th>TrB</th>
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<td>Bukar</td>
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As we observe the figures in Table 9, we note that there are some pairs with cognate percentages in the high 70’s (76.7%-79.6%): Singai-Bratak, Biatah-Benuk, Biatah-Pinyawa’, Biatah-Anah Rais, Bukar-Tebakang and Tringgus Raya-Tringgus Bireng. From these we conclude that there are four clusters of rather similar varieties: Singai-Bratak (and presumably other Jagoi dialects), Biatah-Benuk-Pinyawa’-Anah Rais (and other Penrissen and Padawan dialects), Tringgus Raya-Tringgus Bireng (and presumably Sembaan), and Bukar-Tebakang (and other Sadung dialects).

When we compare Singai, Biatah and Tringgus Raya, as representatives of the first three clusters, we find that these pairs have cognate percentages in the high 60’s (68.0%-69.7%). This range of cognate percentages seems to define a larger western cluster as opposed to the eastern cluster consisting of Bukar-Sadung.

When we compare Bukar with Singai, Biatah and Tringgus-Raya, we find that these pairs have cognate percentages in the high 40’s and low 50’s (48.9%-50.4%). This lower range of cognate percentages brings together the larger western and eastern clusters into a single Bidayuh grouping.

Finally, when we compare Singai, Biatah, Tringgus-Raya and Bukar with Rara, we find slightly lower cognate percentages, in the upper 40’s (46.3%-49.5%). This even lower range of cognate percentages brings Rara, as a representative of the Bakati’ languages, and Bidayuh together into the Bidayuh-Bakati’ grouping.

When we compare Singai, Biatah and Bukar, as fairly uniform individual representatives of the western, central and eastern dialects, we note that Singai and Biatah are considerably closer to each other (69.7%) than either is to Bukar (48.9% and 50.4%). Of the three representative dialects Biatah shares a slightly higher percentage of cognates (ave. 60.1%) with the other two than does Singai (ave. 59.3%) or Bukar (ave. 49.7%).

Looking at the Sembaan group, we find that Tringgus Raya is lexically closer to Biatah (69.5%) than it is to either Singai (68.0%) or Bukar (49.8%). Nevertheless, it does not fit easily into the Biatah-Penrissen-Padawan group since the cognate percentages between Biatah and Tringgus-Raya are about
nine percentage points lower than those between Biatah and the Penrissen-Padawan dialects. So, we conclude that the Sembaan group stands somewhat apart from the Biatah-Penrissen-Padawan group.

It is sometimes said that Pinyawa’ is closer to Bukar than are the other Penrissen-Padawan dialects because of shared history. In the example Pinyawa’ tibuʔ, Bukar tibuʔ ‘body’ (69) Pinyawa’ is the only dialect outside of Bukar-Sadung showing such a form. Note also Pinyawa’ sisųŋ, Bukar sisųŋ ‘breast (milk)’ (94) in which the Pinyawa’ form, like the Bukar-Sadung forms, reflects *sisųŋ while the other Penrissen-Padawan dialects reflect *sisuh or *susut. Other lexical similarities could be cited. Nevertheless, when we compare cognate percentages of Pinyawa’ with Biatah and with Bukar, we readily see that Pinyawa’ is lexically much closer to Biatah (79.6%) than it is to Bukar (53.6%). Furthermore, Pinyawa’ has lost the nasals in clusters before voiceless stops and has just one liquid, r. These two sound changes show Pinyawa’ to be more like the other central dialects and less like the eastern dialects. So, we conclude that the lexical similarities there are between Pinyawa’ and Bukar reflect relatively recent contact and dialect borrowing, but fundamentally Pinyawa’ fits with the other central dialects.
Figure 1. Relationship diagram of Proto Bidayuh and related languages
3 Proto Bakati’

Rara, spoken in Sarawak and West Kalimantan, and Sara/Riok, Kendayan and Bekat’i, spoken in West Kalimantan, form a cluster of closely related languages. According to the information provided by Bryant, Kendayan is spoken near the town of Ledo in West Kalimantan and Sara/Riok in the valleys east of the town of Sanggau-Ledo. Rara (Bryant’s Lara’), which she estimates to have the largest number of speakers of the three, is spoken around Benkayang to the southwest of the others. It is unknown where in this region the Bekat’i reported by Hudson is spoken.

These Bakati’ languages seem to be cousins rather than sisters of Bidayuh. As a group they do not have the central vowel a that occurs commonly in the ultima of Bidayuh words. Neither do they have the distinction between å and ā (or a and a) as penultimate vowels that occur in all Bidayuh languages. The vowel in the Bakati’ antepenult is low, a, rather than high, i, as it is in Bidayuh.

The sound system of Proto Bakati’, the ancestor of these languages, is reconstructed on the basis of forms from Rara (both Sarawak and West Kalimantan), Sara/Riok, Kendayan and Bekat’i.

3.1 The ultima

The final syllable of the Proto Bakati’ stem consists usually of a consonant as onset, a vowel as nucleus and a consonant as coda.

3.1.1 Onset of the ultima

3.1.1.1 Inventory

The consonants of Proto Bakati’ are *p, *t, *k; *b, *d, *j; *m, *n, *ŋ; *l, *r; *w, *y; *s; *h and asterisk.

All of the following consonants can occur as onset of the ultima: *p, *t, *k; *b, *d, *j; *m, *n, *ŋ; *l, *r, *w, *y; *s and *h can occur as onset of the ultima. Only *? cannot.

*p

*kalapu,t51 ‘ashes’ Rara kalaput, Sara/Riok kalaput, Kendayan kalaput, Bekat’i kalaput. (226)

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48The Bekati’ material is drawn from a wordlist, published by Hudson (1970), which seems clearly to fit genetically with the other three dialects. However, the exact location represented by this wordlist is not known. The Rara material is drawn primarily from Bidayuh Project wordlists collected in Sarawak. To these have been added the valuable materials on Lara’, Sara/Riok and Kendayan provided by Bryant.


50Hudson uses the spelling Bekati’ while Bryant uses Bakatiq.

51For an explanation of subscript numbers in Bakati’ reconstructions, see §3.1.2.
*t
*rata,* ‘tongue’ Rara rata?, Sara/Riok rata?, Kendayan rata?, Bekati’ rata?. (83)

*k
*jike,t ‘near’ Rara jiket, Sara/Riok jiket, Kendayan jiket, Bekati’ jiket. (303)

*b
*kabi,s ‘die’ Rara kabis, Sara/Riok kabih, Kendayan kabis ‘dead’, Bekati’ kabis. (129)

*d
*badu,* ‘dry’ Rara badu?, Sara/Riok badû?, Kendayan badu?, Bekati’ badu?. (172)

*j
*raja,k ‘ear’ Rara raja?, Sara/Riok raja, Kendayan raja?, Bekati’ raja?. (87)

*g
*agu,n ‘stand’ Rara agutn, Sara/Riok agutn, Bekati’ agutn. (132)
*paga,n ‘brave, bold’ Rara pagatn, Sara/Riok pagatn, Kendayan pagat. (523)

*m
*ŋami,s ‘kill’ Rara ŋams, Sara/Riok ŋamh, Kendayan ŋams, Bekat’ ŋams. (201)

*n
*banu,n ‘husband’ Rara banun, Sara/Riok banun, Kendayan banun, Bekati’ banun. (250)

*j
*[m] uŋu,j ‘sit’ Rara muŋuŋ, Sara/Riok uŋuŋ, Kendayan uŋuŋ, Bekati’ muŋuŋ ‘sit’. (131)

*r
*raŋi,t ‘sky’ Rara raŋt, Sara/Riok raŋt, Kendayan raŋt, Bekati’ raŋt. (11)

*[m] ile,t ‘see’ Rara mile?, Sara/Riok ile?, Kendayan mile?, Bekati’ mili?. (115)

*w
*sawa,? ‘year’ Rara sawa?, Sara/Riok sawa?, Kendayan sawa?, Bekati’ sawa?. (20)

*y
*daya,? ‘blood’ Rara daya?, Sara/Riok daya?, Kendayan daya?, Bekati’ daya?. (68)

*s
*kasu,? ‘dog’ Rara kasu?, Sara/Riok kasu?, Kendayan kasu?, Bekati’ kasu?. (59)

*h
The fricative *h as onset of the ultima in Proto Bakati’ is retained in Rara and Kendayan but lost in Sara/Riok and Bekati’.

*baha,s ‘face’ Rara bahas, Sara/Riok baas, Kendayan baas (medial h expected). (77)
*baha,t ‘heavy’ Rara bhat, Sara/Riok baat, Kendayan bhat, Bekati’ baat. (313)
*bahu, ‘new’ Rara bahu, Sara/Riok bau, Kendayan bahu, Bekati’ bau. (323)
*batahi? ‘pregnant’ Rara batahi?, Sara/Riok batai?. (442)
*buho, ‘run away, flee’ Rara boho, Sara/Riok buû. (153)
*jahe,? ‘bad’ Rara jahe?, Sara/Riok jav, Kendayan jahe?, Bekati’ jait (<*jahe,t or *jah,t). (169)
*maha, ‘wind’ Rara Sarawak maha?, Sara/Riok maa?, Kendayan maha?. (13)

52The symbol ū occurs regularly in Sara/Riok and rarely in Kendayan. It appears to be a lax vowel, but its precise phonetic nature is uncertain.
3.1.1.2 No consonantal onset

Proto Bakati’ forms that have no consonant as onset of the ultima are in every case preceded by a penult with no coda. These forms have the shape *CVVC. The two adjacent vowels are in some cases the same and in some cases different.

*buus ‘sleep’ Rara buus, Sara/Riok buuh (buus expected), Kendayan buus, Bekati’ buus. (133)
*buut ‘afraid’ Rara buut, Sara/Riok buut, Kendayan buut, Bekati’ buut. (179)
*gaa, n ‘name’ Rara gaatn, Sara/Riok gaatn, Kendayan gaat, Bekati’ gaatn. (260)
*sa-maa,n *ma-maa,n ‘all’ Rara samaan, maan maan, Sara/Riok mamaan, Kendayan maan, maan maan, Bekati’ samaan. (293)
*mbeen ‘wash’ Rara meetn, bapeetn, Sara/Riok meetn. (166, 167)
*mbuu, n ‘tie (animal)’ Rara/Riok muu, Kendayan muuk. (159)
*ŋoo, t ‘bite’ Rara ŋoot, Sara/Riok ŋoot, Kendayan ŋoot. (147)
*peet ‘bitter’ Rara peet, Sara/Riok peet, Kendayan peet. (238)
*puu, n ‘tree’ Rara puutn, Sara/Riok puutn, Kendayan puut. (28)
*sanuut ‘remember’ Rara sanuut, Kendayan sanuut. (531)
*sook ‘person’ Rara sook, Kendayan sook. (257)
*ka teen ‘there’ Rara ka teetn, Kendayan ka teet. (475)
*bai, t ‘good’ Rara bait, Sara/Riok bait, Kendayan bait, Bekati’ bait. (170)
*baah ‘eagle’ Rara baah, Sara/Riok [manuk] baah. (323)
*baah,? ‘smell (bad)’ Rara baah? (jahe?), Sara/Riok baah?. (120)
*bae ‘parang’ Rara bae, Sara/Riok bae. (207)
*buaah ‘fruit’ Rara buah, Sara/Riok buah, Kendayan buah, Bekati’ buah. (35)
*dae Rara dae ‘upriver’, Sara/Riok dae ‘headwaters’. (185)
*dau, n ‘leaf’ Rara dauitetn, Sara/Riok dauitetn, Kendayan dauit, Bekati’ dauitn. (30)
*ka dia, h ‘here’ Rara ka diah, Sara/Riok ka diah, Kendayan ka diah. (411)
*dia? ‘turtle’ Rara dia?, Sara/Riok dia?, Kendayan dia?. (488)
3.1.1.3 Consonant clusters

Clusters of consonants occur when the penult is closed (by a nasal) and the onset of the ultima is a voiced or voiceless stop or *j or *s.

*ŋampo\textsubscript{2}h ‘(to) blow’ Rara ŋampoh, Sara/Riok ŋampûh, Kendayan ŋampoh, Bekati’ ŋampok (final h expected). (148)
*umpan ‘earthworm’ Rara umpatn, Kendayan umpat, Bekati’ umpakŋ (tn expected). (60)
*binta,ŋ ‘star’ Rara bintakŋ, Sara/Riok bintakŋ, Kendayan bintak, Bekati’ bintakŋ. (10)
*ŋanta,m ‘hit, crush’ Rara ŋantam, Sara/Riok ŋantam, Kendayan ŋantam. (178)
*ansij ‘urine’ Rara ansikŋ, Sara/Riok ansikŋ. (71)
*taransk ‘red’ Rara taransak, Bekati’ taransa?. (331)
*insi,n Sara/Riok insitn ‘flesh’, Kendayan insit ‘flesh, meat’. (505)
*unjke, ‘tail’ Rara ŋnke, Sara/Riok ŋnke, Kendayan ŋnke, Bekati’ ŋnki. (50)
*najka,p ‘take’ Rara naŋkap, Sara/Riok naŋkap, Kendayan naŋkap. (165)
*tumbu,ŋ ‘on top of’ Rara tumukŋ, Sara/Riok tumukŋ, Kendayan tumuk. (521)
*tumba,k ‘spear’ Rara tumbak, Sara/Riok tumbak. (204)
*ando\textsubscript{2} ‘day’ Rara ano, Sara/Riok anû, Kendayan anu, Bekati’ ando. (19)
*anda, m ‘sick’ Rara anapm, Sara/Riok anapm, Kendayan anap. (435, 458)

No set has been found to illustrate *nj in Bakati’, but the Rara form anokŋ ‘deer’ (57) suggests that it did occur.

*anga, ? ‘spider’ Rara anqa?, Sara/Riok anqa?, Kendayan anqa?. (63)

*tngu, *ningu Rara nıngu ‘(to)punch’, batıngu ‘fighting’, Sara/Riok nıngu ‘(to) hit with fist’. (178)

In the Bidayuh languages voiced stops following a nasal are frequently very lightly articulated and at times are difficult to detect, apart from effects of orality that follow such a cluster. A similar situation seems to obtain in the Bakati’ languages and, presumably, occurs in Proto Bakati’ as well. Evidence for this comes from Bakati’ sets in which one or two of the languages show evidence of a nasal + voiced stop cluster while the others show only the nasal. Cf. the following examples:

*ano ‘day’ Rara ano (orality of vowel noted), Sara/Riok anû, Kendayan anû, Bekati’ ano. (19)

*bandoŋ ‘cassava’ Rara banokŋ (orality of vowel noted), Sara/Riok banûkŋ, Kendayan banuk. (43)

*aŋga, ? ‘spider’ Rara anqa?, Sara/Riok anqa?, Kendayan anqa?. (63)

*sindo ‘mother’ Rara sino?, Sara/Riok sinû?, Kendayan sinû?, Bekati’ sindu?. (249)

*randaŋ ‘white’ Rara ranakŋ, Kendayan ranak, Bekati’ ranakŋ. (329)

*anda, m ‘sick’ Rara anapm, Sara/Riok anapm, Kendayan anap. (435, 458)

*tumbuŋ ‘on top of’ Rara tumukŋ, Sara/Riok tumukŋ, Kendayan tumuk. (521)

*tanduŋ ‘horn, antler’ Rara tanuk, Sara/Riok tandûk, Kendayan tanu?. (548)

*unde/aŋ ‘shrimp’ Rara unekŋ, Sara/Riok unekŋ, Kendayan undaŋ (final k expected). (554)

At least one other, quite unexpected cluster, *ŋh, occurs in Proto Bakati’.

*randaŋ ‘white’ Rara ranakŋ, Kendayan ranak, Bekati’ ranakŋ. (329)

*apa ‘shrimp’ Rara unaŋ, Sara/Riok unaŋ, Kendayan unaŋ. (135)

Note also *pan[n]o ‘full (container)’ Rara pan[ŋ]o?, Sara/Riok pano? (311), which seems to reflect *nh and the variant Rara forms, pimha? and paima? ‘dream’ (135), which seem to reflect *mh. It appears significant that in all of these sets the nasal + h cluster occurs in Rara and Kendayan but just the nasal occurs in Sara/Riok and Bekati’. This parallels exactly the reflexes of syllable-initial *h, discussed in §3.1.1.1.

The cluster, *ŋh, and perhaps a series of clusters including *mh and *nh seem to be features of Proto Bakati’. Further evidence for these clusters should be sought as well as a source of such clusters, which apparently are not found elsewhere in the Land Dayak languages.

### 3.1.2 Nucleus of the ultima

Five vowels occur in the nucleus of the ultima: *i, *u, *e, *o and *a. The central vowel, *a, quite common in Bidayuh, does not occur in Proto Bakati’.

However, data show more than five sets of vowel correspondences. In fact, there are two correspondence sets for each of the five qualities. The pairs of correspondence sets for each vowel are marked in the PBak reconstructions by subscript numerals. For example, the two sets of vowel
correspondences for the vowel *a are labeled *a₁ and *a₂. These pairs of correspondence sets are displayed in Table 10.

Table 10. Reflexes of Proto Bakati’ Vowels

<table>
<thead>
<tr>
<th></th>
<th>Rara</th>
<th>Sara/Riok</th>
<th>Kendayan</th>
<th>Bekati’</th>
</tr>
</thead>
<tbody>
<tr>
<td>*i₁</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>*i₂</td>
<td>i</td>
<td>e/i</td>
<td>e/i</td>
<td>e</td>
</tr>
<tr>
<td>*u₁</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
</tr>
<tr>
<td>*u₂</td>
<td>u</td>
<td>ŭ³³</td>
<td>u</td>
<td>u</td>
</tr>
<tr>
<td>*e₁</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>e</td>
</tr>
<tr>
<td>*e₂</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>i</td>
</tr>
<tr>
<td>*o₁</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>*o₂</td>
<td>o</td>
<td>ŭ</td>
<td>o/u</td>
<td>o/u</td>
</tr>
<tr>
<td>*a₁</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>*a₂</td>
<td>a</td>
<td>e</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

It is fortunate that the Sara/Riok data are based on extensive study of that language by Bryant because the differing vowel correspondence sets for at least four of the five vowels are distinguished primarily by the witness from Sara/Riok.

At present it is not clear whether these correspondence sets point back to just five vowel qualities of Proto Bakati’ or to a larger number of vowels. The pairs of correspondence sets are distinguished in the cognate sets with subscript numerals 1 and 2.

*ɪ₁/*ɪ₂
  *raŋɪ,t ‘sky’ Rara raŋit, Sara/Riok raŋit, Kendayan raŋit, Bekati’ raŋit. (11)
  *api, ‘fire’ Rara api, Sara/Riok api, Kendayan api, Bekati’ api. (225)
  *sunɪ₂ ‘river’ Rara suṇi, Sara/Riok suṇe, Kendayan suṇe, Bekati’ suṇe. (7)
  *bani₂ ‘seed’ Rara bani?, Sara/Riok bane?, Kendayan bane?. (502)

*ʊ₁/*ʊ₂
  *batu₂ ‘stone’ Rara batu?, Sara/Riok batu?, Kendayan batu?, Bekati’ batu?. (4)
  *nanu,k ‘cook’ Rara nanuk, Sara/Riok nanuk, Bekati’ nanuk. (222)
  *badu₂ ‘dry’ Rara budu?, Sara/Riok budû?, Kendayan budu?, Bekati’ budu?. (172)
  *manu,k ‘bird’ Rara manuk, Sara/Riok manûk, Kendayan manu?, Bekati’ manuk. (47)

*e₁/*e₂
  *pire ‘nine’ Rara pire, Sara/Riok [sa]pire, Kendayan pire, Bekati’ pire. (289)
  *sade₁ ‘younger sibling’ Rara sade?, Sara/Riok sade?, Bekati’ sade?. (247)
  *are₂ ‘man’ Rara are, Sara/Riok are, Kendayan are, Bekati’ arî. (252)
  *ite₂ ‘we (inclusive)’ Rara ite?, Sara/Riok ite?, Kendayan ite?, Bekati’ itî?. (343)

³³The symbol ŭ occurs regularly in Sara/Riok and rarely in Kendayan. It appears to be a lax vowel, but its precise phonetic nature is uncertain.
*o1/*o2

*abo,k ‘(head) hair’ Rara abok, Sara/Riok abok, Kendayan abo?, Bekati’ abo?. (79)

*ka dVko,h ‘over there’ Rara ka dikoh, Sara/Riok ka dikoh, Kendayan ka dikoh. (511)

*ŋampo2h ‘(to) blow’ Rara ŋampoh, Sara/Riok ŋampûh, Kendayan ŋampoh, Bekati’ ŋampok (h expected). (148)

*ijo2 ‘seven’ Rara ijo?, Sara/Riok ijû?, Kendayan ijo?, Bekati’ iju?. (287)

*a1/*a2

*asa2 ‘one’ Rara asa?, Sara/Riok asa?, Kendayan asa?, Bekati’ asa?. (281)

*tura,h ‘egg’ Rara turah, Sara/Riok turah, Kendayan turah, Bekati’ turah. (51)

*basa2 ‘wet’ Rara basa?, Sara/Riok base?, Kendayan basa?, Bekati’ basa?. (306)

*mata ‘throw out’ Rara matatn, Sara/Riok matetn, Kendayan matat. (155)

3.1.3 Coda of the ultima

The following consonants occur in the coda of the ultima in Proto Bakati’: *p, *t, *k; *b, *d, */un; *m, *n, *ŋ; *l, *r; *s; *h, *?. Those that do not are *ŋ, *j, *w and *y.

*p

*asu,p ‘smoke’ Rara asup, Sara/Riok asup, Kendayan asup, Bekati’ asup. (230)

*t

*raŋi,t ‘sky’ Rara raŋit, Sara/Riok raŋit, Kendayan raŋit, Bekati’ raŋit. (11)

*k

*raja,k ‘ear’ Rara rajak, Sara/Riok rajak, Kendayan raja?, Bekati’ raja?. (87)

*ine,k ‘small, a little bit’ Rara inik or inek, Sara/Riok inek, Kendayan ine?, Bekati’ ine?. (318)

*abo,k ‘(head) hair’ Rara abok, Sara/Riok abok, Kendayan abo?, Bekati’ abo?. (79)

*uno,k ‘short’ Rara unok, Sara/Riok unok, Kendayan uno?, Bekati’ uno?. (296, 309)

*bara,k ‘banana’ Rara barak, Sara/Riok barak, Kendayan bara?. (36)

The velar stop *k occurred freely in final position in Proto Bakati’. However, it has remained as k only in Rara and Sara/Riok. In Kendayan and Bekati’ it is recorded quite consistently as ?. It should be noted that Kendayan forms occasionally retain k; more rarely, Bekati’ forms do as well.

*jaŋo,k ‘neck’ Rara jaŋok, Sara/Riok jaŋok, Kendayan jaŋok (final ? more common), Bekati’ jaŋo? (medial й expected). (92)

*manu,k ‘bird’ Rara manuk, Sara/Riok manûk, Kendayan manu?, Bekati’ manuk (final ? more common). (47)

Voiced stops. Voiced stops are rather poorly attested in the coda: Seven sets show *d in final position, and one set shows *b. Although isolated forms with final g are found in Sara/Riok and Kendayan, no sets are reconstructed with final *g. Voiced stops do not occur finally in Rara, and the same seems to be true in the dialect represented by Hudson’s Bekati’ list. The Proto Bakati’ voiced stops in final position are regularly devoiced in Rara and Bekati’-Hudson.

*b

*Caŋka,b ‘tomorrow’ Rara jakap, Sara/Riok naŋkab. (26)

*d

*[n] uhu,d ‘two days after tomorrow’ Rara uhut, Sara/Riok nuud. (26)
*ara, d ‘wing’ Rara arat, Sara/Riok arad. (48)
*adu, d Rara Kalimantan adut raŋu ‘bluebottle fly’, Sara/Riok adud ‘fly’. (61)
*kaŋo, d Rara kaŋot ‘young people’, aŋot ‘very young’, Sara/Riok kaŋod, aŋod ‘young child’, Bekati kaŋot ‘child’. (255)
*pan[d]u, d ‘cold’ Rara panut, Sara/Riok panûd, Kendayan panûd, Bekati’ pandutn (final t expected). (315)
*tamu, d ‘straight’ Rara tamut, tamud (final d not expected), Sara/Riok tamud, Kendayan tamud. (319)
*saŋkuhu, d ‘cane, staff’ Rara saŋkuhut, Sara/Riok saŋkuud, Kendayan saŋkuhud. (520)

The nasals. In the Bidayuh languages there is basically no contrast between [m], [n], [ŋ] and [pm], [tn], [kŋ]. In word-final position the nasals generally occur after a phonetically nasalized vowel, initiated by an unblocked preceding nasal, while the preploded nasals generally occur after a phonetically oral vowel. Some virtual contrasts have developed in some dialects through nasality spreading forward in the word from a word-final nasal. Although there are some variations to this overall pattern in some dialects, complementation between nasals and preploded nasals is a characteristic of the Bidayuh languages. (See Carolyn Rensch, “Nasality in Bidayuh Phonology” in this volume.)

Although many examples of the same patterns are found in the Bakati’ languages, the latter exhibit some contrasts between nasals and preploded nasals finally in the word, or else between oral and nasalized vowels in certain contexts.54 Evidence of such a contrast is quite limited in Rara, and the nasality status of some words seems to vary among speakers and even within the speech of a single person. Bryant recognizes a contrast between the two sets of phones and records both in her transcriptions. Hudson also records both phone sets in his Bekati’ lists.

It is not possible in this present study to explore carefully the status of such a contrast. The contrast between preploded nasals and regular nasals is simply accepted for the contemporary Bakati’ languages although an investigation of nasality in Sarawak Rara has led to a somewhat different conclusion, as expressed elsewhere in this volume.

It seems clear that such a contrast was not a feature of Proto Bakati’. On the contrary, the overwhelming evidence points to a single set of nasal consonants in Proto Bekati’. They were preploded in final position in an oral environment, and regular nasals occurred elsewhere.

Apparently Kendayan underwent a two-step change, first developing preploded nasals in a word-final oral environment and then deleting the nasal element from it, resulting in a simple voiceless stop. For example, Proto Bakati’ *puun ‘tree’ presumably became puutn, as in the other Bakati’ languages, and then, by nasal-deletion, became puut.

54In this respect the Bakati’ languages are more like Salako than they are like Bidayuh. Some speakers of Rara and probably the other Bakati’ languages have considerable interaction with speakers of Salako, and many speakers of Rara also speak Salako to some extent.
*aku,m ‘you (more polite)’ Rara akupm, ayo kupm ‘you (pl.)’, Sara/Riok akupm, daŋkupm ‘you (pl.)’, Kendayan akup, ayo akup ‘you (pl.)’. (340)

*nulu,m ‘dive, dip’ Sara/Riok ńulupm, Kendayan ńulup. (546)

*anda,m ‘sick’ Rara anapm, Sara/Riok anapm, Kendayan anap. (435, 458)

*pai,n ‘water’ Rara paitn, Sara/Riok paitn, Kendayan pait, Bekati’ paitn. (6)

*uja,n ‘rain’ Rara üjatn, Sara/Riok üjatn, Kendayan üjat, Bekati’ üjatn. (14)

*puu,n ‘tree’ Rara puutn, Sara/Riok puutn, Kendayan puut. (28)

*tura,ŋ ‘bone’ Rara turakŋ, Sara/Riok turaŋ, Kendayan turak. (70)

*dudu,ŋ ‘nose’ Rara dudukŋ, Sara/Riok dudukŋ, Kendayan duduk, Bekati’ dudukŋ. (84)

*bare,ŋ ‘arm and hand’ Rara barekŋ, Sara/Riok barekŋ, Kendayan barek, Bekati’ barekŋ. (104)

*unu,n ‘six’ Rara unum, Sara/Riok unûm, Kendayan unum, Bekati’ unam (u expected in both syllables). (286)

*uma,n ‘eat’ Rara uman, Sara/Riok uman, Kendayan uman, Bekati’ uman. (232)

*mu[h]un ‘descend’ Rara mun (medial h expected), Sara/Riok mun. (143)

*[m]unu,ŋ ‘sit’ Rara munuŋ, Sara/Riok munuŋ, Kendayan munuŋ, Bekati’ munuŋ. (131)

As observed earlier, some Bakati’ sets have inconsistent evidence of a cluster of nasal with a voiced stop. Presumably in some Bakati’ dialects the voiced stop became very lightly articulated and then dropped out entirely. The following set is illustrative of this group:

*ando, ‘day’ Rara ano (orality of vowel noted), Sara/Riok anû, Kendayan anu, Bekati’ ando. (19)

This set shows the nd cluster only in Bekati’. However, we can conclude that at an earlier stage such a cluster occurred in this word because the vowel is oral in the instances where we have been able to observe it. This conclusion is reinforced by the fact that the Proto Bidayuh form is *āndu even though in many of the Bidayuh daughter dialects the voiced stop is either very lightly pronounced or imperceptible.

The following set shows the disturbance to the usual pattern of nasal-flow and -blockage through loss of a voiced stop following a nasal:

*bando,ŋ ‘cassava’ Rara banokŋ (orality of vowel noted), Sara/Riok banûkŋ, Kendayan banuk. (43)

The occurrence of [kŋ] finally shows that at an earlier stage the onset of the ultima was a blocking consonant, such as d, rather than a simple nasal, such as n. Now the simple nasal is all that remains.

Apparently, nasality could pass through medial ‘r in Proto Bakati’ or at least in some or all of the daughter languages. Note the following example:

*ŋaru,m ‘night’ Rara ńarum (the pronunciation ńarupm not accepted), Sara/Riok ńarûm, Kendayan ńarum, Bekati’ ńalom (u expected in ultima). (22)

However, consider also the following set with a problematical Sara/Riok form:

*joro,ŋ ‘push’ Rara joroŋ, Sara/Riok jurûkŋ, Kendayan joroŋ, Bekati’ jonoŋ (medial r expected). (152)

In these sets, although the consonant beginning the ultima is r, apparently the nasality of initial n/ŋ has passed through medial r to produce a nasal environment in the rime (final vowel-consonant sequence).
There is a small group of words that show a nasal environment in the rime even though there is no nasal consonant earlier in the word. Many of these can be identified as borrowings from Malay or other Malayic languages. It is presumed that these nasals after an oral environment developed in Proto Bakati' through borrowings. (Another possibility is that these are instances of reverse nasal spread, as operates in some dialects of Bidayuh.)

\*

- **siu,m** Rara sium ‘kiss’, Sara/Riok sium ‘smell, kiss’ (119). (Cf. B.M. cium ‘kiss, sniff’)
- **kabu/on** ‘garden’ Rara kabun, Sara/Riok kabon (196). (Cf. B.M. kebun ‘garden’)
- **ŋ/ŋrito,ŋ** ‘count’ Rara ŋitokŋ (shows orality), Sara/Riok ŋitoŋ, Kendayan ŋitoŋ (294). (Cf. B.M. hitung ‘(to) count’)
- **ŋanta,m** ‘hit, crush’ Rara ŋantam, Sara/Riok ŋantam, Kendayan ŋantam (178). This set and the following one may perhaps also be loans.
- **mada,m** ‘rotten’ Rara madam, Sara/Riok madam, Kendayan madam, Bekati’ madam. (305)

In the Bakati’ languages the usual flow/blockage of nasality seems to have been disturbed by three developments: 1) the loss of voiced stops in nasal clusters (see *bandoŋ ‘cassava’ (43) above), 2) borrowings from languages that tolerate nasal consonants after oral consonant-vowel sequences (see immediately preceding group of sets) and 3) the denasalization of the [pm], [tn] and [kŋ] sequences in Kendayan.

- **buru,n** ‘feather, body hair’ Rara burutn, Sara/Riok burutn, Kendayan burut, Bekati’ burutn. (49)

**Liquids.** Both *l and *r occur in final position in the PBak ultima.

-*l

- **baŋa,l** ‘deaf’ Rara baŋal, Sara/Riok baŋal, Kendayan baŋal. (118)
- **nua,l** ‘sell’ Rara nual, Sara/Riok nual. (262)

-*r

- **mibi,r** ‘fly’ Rara mibir, Kendayan mibir, Bekati’ mibir. (141)
- **baputa,r** ‘turn, revolve’ Rara baputar, Sara/Riok baputar, Kendayan baputar. (156)
- **pasi,r** ‘sand’ Rara pasir, Sara/Riok pasir, Kendayan pasir, Bekati’ pasir. (3)

**Fricatives *s and *h.** Both *s and *h occur in final position in the PBak ultima.

-*s

- **buus** ‘sleep’ Rara buus, Sara/Riok buih (buus expected), Kendayan buus, Bekati’ buus. (133)
- **naha,s** ‘husked rice’ Rara nahas, Sara/Riok naas, Kendayan nahas. (216)
- **para,s** ‘warm, hot’ Rara paras, Sara/Riok paras, Kendayan paras, Bekati’ paras. (314)

-*h

- **tura,h** ‘egg’ Rara turah, Sara/Riok turah, Kendayan turah, Bekati’ turah. (51)
- **daŋa,h** ‘hear’ Rara daŋah, Sara/Riok daŋah (a expected in first syllable), Kendayan daŋah, Bekati’ daŋah. (117)
- **ŋampo,h** ‘blow’ Rara ŋampoh, Sara/Riok ŋampûh, Kendayan ŋampoh, Bekati’ ŋampok (final h expected). (148)
- **saŋu/oh** Rara saŋuh ‘feel cold’, Sara/Riok saŋoh ‘fever’, Kendayan saŋoh ‘feel cold’. (315)
*s and *h following *i. In Proto Bakat’ both *s and *h occur following *i at the end of a word. However, the contrast is maintained consistently only in Rara. In Sara/Riok is and ih merge as ih word finally. In Bekat’ they merge as is. In Kendayan both *s and *h following *i are generally s, but there are variant forms with h as well.

*bibi, h ‘lip’ Rara bibih, Sara/Riok bibih, Kendayan bibis. (80)
*talih Rara tawatn talih ‘scar’, Kendayan talis, talih ‘wound’. (124)
*sai,h, *sauh ‘dirty (clothes)’ Rara Sarawak sauh ‘unpleasant’, (once pronounced as saus), Rara Kalimantan sauh, Sara/Riok saih, Kendayan saih, sais, Bekati’ sais. (171)
*kabi,s ‘dead’ Rara kabis, Sara/Riok kabih, Kendayan kabis ‘dead’, Bekati’ kabis ‘(to) die’. (129)
*ŋami,s ‘kill’ Rara ŋamis, Sara/Riok ŋamih, Kendayan ŋamis, Bekati’ ŋamis. (129, 201)
*tipi,s ‘thin (object)’ Rara nipis, Bekat’ tipis. (322)
*radih or *radis, *rade/uni0294 ‘thin’ Rara rade?, Sara/Riok radih, Kendayan radih, radis. (322)

The glottal stop *?. The *? contrasts finally with all other consonants except the four listed at the beginning of this section, and *V?# contrasts with *V#.

*nipa,?, *dipa,? ‘snake’ Rara nipa?, Sara/Riok dipa?, Kendayan nipa?, Bekati’ nipa?. (54)
*kapa, ‘thick’ Rara kapa, Sara/Riok kapa, Kendayan kapa, Bekati’ kapa. (321)
*sade,? ‘younger sibling’ Rara sade?, Sara/Riok sade?, Bekati’ sade?. (247)
*pade, ‘unhusked rice’ Rara pade, Sara/Riok pade, Kendayan pade. (215)
*sama,? ‘father’ Rara sama?, Sara/Riok sama?, Kendayan sama?, Bekati’ sama?. (248)
*[d] ama, ‘old (person)’ Rara dama, ama, Sara/Riok ama, Kendayan ama. (324, 325)

3.2 The penult

The penult consists of a consonant as onset plus a vowel as nucleus and, potentially, a final nasal consonant as coda.

3.2.1 Onset of the penult

3.2.1.1 Inventory

The following Proto Bakat’ consonants occur in the onset of the penult: *p, *t, *k; *b, *d, *j, *g; *m, *n, *ŋ, *ŋ; *l, *r and *s. Only *w, *y, *h and *? do not.

*p
*pade, ‘unhusked rice’ Rara pade, Sara/Riok pade, Kendayan pade. (215)
*t
*tura,h ‘egg’ Rara turah, Sara/Riok turah, Kendayan turah, Bekati’ turah. (51)
*k
*kuri,t ‘skin’ Rara kurit, Sara/Riok kurit, Kendayan kurit, Bekati’ kurit. (29, 66)
*b
*baba,? ‘mouth’ Rara baba?, Sara/Riok baba?, Kendayan baba?, Bekati’ baba?. (81)
*d
*dudu,ŋ ‘nose’ Rara dudukŋ, Sara/Riok dudukŋ, Kendayan duduk, Bekati’ dudukŋ. (84)
Typically, Proto Bakati’ words, or at least stems, have only two syllables, but some PBak words have more than two. Hence, some penults are initial and some are not. Word initial and non-initial penults have slightly different shapes.

### 3.2.1.2 Word-initial penults

Penults in word-initial position may or may not have an initial consonant, and the nucleus may or may not be followed by a nasal. Hence, the word-initial penult has the shape *(C)V(N). The following sets illustrate word-initial penults without an initial consonant:

- **ijo**
  - *ijo* ‘seven’ Rara ijo?, Sara/Riok ijú?, Kendayan ijo?, Bekati’ iju?. (287)
- **insi**
  - *insi* ‘flesh’, Kendayan insit ‘flesh, meat’. (505)
- **uja**
  - *uja* ‘rain’ Rara ujatn, Sara/Riok ujatn, Kendayan ujat, Bekati’ ujatn. (14)
- **uŋke**
  - *uŋke* ‘tail’ Rara uŋke, Sara/Riok uŋke, Kendayan uŋke, Bekati’ uŋki. (50)
- **ada**
  - *ada* ‘sweat’ Rara adas, Sara/Riok adas, Kendayan adas. (67)

The following sets illustrate word-initial penults that begin with a consonant:

- **badu**
  - *badu* ‘dry’ Rara badu?, Sara/Riok badú?, Kendayan badu?, Bekati’ badu?. (172)
- **mahī**
  - *mahī* ‘eight’ Rara mahī?, Sara/Riok mai?, Kendayan mahī?, Bekati’ mai?. (288)

At least one set with a word-initial penult and perhaps a second begin a word with the cluster *mb.

- **mbeen** ‘wash’ Rara meetn, bapeetn, Sara/Riok meetn. (166, 167)
*mbuuŋ ‘tie (animal)’ Sara/Riok muuŋ, Kendayan muuk. (159)
The Sara/Riok form could reflect *muuŋ, but the Kendayan form seems to show an oral environment at the end of the word, requiring a reconstruction like *mbuuŋ. Since the voiced stops so readily drop out after nasals, it is difficult to know whether other clusters of nasal plus voiced stop occur in word-initial penults.

3.2.1.3 Non-initial penults

Proto Bakati’ penults that are not initial in the word normally have the shape *CV(N). Non-initial penults regularly begin with a consonant.

*palâno, ‘neck’ Rara palâno, Sara/Riok palâno. (92)
*tanaŋ, ‘intestines’ Rara tanain, Sara/Riok tanain, nain Kendayan tanain, Bekati’ tanain. (102)
*karimu, ‘forget’ Rara karimut, Sara/Riok karimut, kalimpûtn, Kendayan karimut. (134)
*bajalâ, ‘(to) walk’ Rara bajalatn, Sara/Riok bajalatn, Kendayan bajalat. (138)
*بابوطة, ‘(to) turn, revolve’ Rara baputar, Sara/Riok baputar, Kendayan baputar. (156)
*sanuut, ‘remember’ Rara sanuut, Kendayan sanuut. (531)
*kalâpu, ‘ashes’ Rara kalapult, Sara/Riok kalapult, Kendayan kalapult, Bekati’ kalapult. (226)
*bajâra, ‘red’ Sara/Riok bajara?, Kendayan bajara?. (68, 331)
*pantujok ‘mosquito’ Rara pantujok, Kendayan pantujok. (62)
*sampareŋ ‘kidneys’ Rara samparekŋ, tamparekŋ, Sara/Riok samparekŋ, Bekati’ samparekŋ ‘heart’. (103, 97)
*saŋkiriŋ ‘left (hand)’ Rara saŋkiriŋ, Sara/Riok ṣaŋkiriŋ, Kendayan ṣaŋkiriŋ, Bekati’ ṣaŋkiriŋ. (183)
*saŋkuhd ‘cane, staff’ Rara saŋkuhd, Sara/Riok saŋkuhd, Kendayan saŋkuhd. (520)

A few dialect forms have been observed with the shape CV.V.CVC., i.e., with a non-initial penult that lacks an initial consonant. See, for example, Rara paima’ ‘dream’ (135). However, no Proto Bakati’ form of this shape has been reconstructed. It is doubtful whether this possibility existed in Proto Bakati’.

3.2.2 Nucleus of the penult

Three vowels occur in the Proto Bakati’ penult: *i, *u and *a; *e and *o do not.

*ile, ‘see’ Rara mile?, Sara/Riok ile?, Kendayan mile?, Bekati’ mili?. (115)
*bintaŋ, ‘star’ Rara bintakŋ, Sara/Riok bintakŋ, Kendayan bintak, Bekati’ bintakŋ. (10)
*turaŋ, ‘bone’ Rara turakŋ, Sara/Riok turakŋ, Kendayan turak, Bekati’ turakŋ. (70)
*taruŋ ‘forest’ Rara tarutŋ, Sara/Riok tarutŋ, Kendayan antut tarut, Bekati’ tarutŋ. (27)
*nantak, ‘cut (rope)’ Rara ṣantak, Sara/Riok ṣantak, Kendayan ṣanta? (u expected in ultima of each form). (378)
3.2.3 Coda of the penult

Only nasals occur in the coda of the penult. These are always homorganic with the obstruent that follows in the onset of the ultima, m preceding p or b; n preceding t, d, s or j; ɲ preceding k or g. See §3.1.1.3 “Consonant Clusters” for examples of the resulting clusters.

3.3 The antepenult

The antepenult, like the penult, consists of a consonant as onset and a vowel as nucleus with or without a nasal as coda.

3.3.1 Onset of the antepenult

In our corpus all antepenults begin with a consonant. There are no vowel-initial antepenults. This is because many, perhaps all, words of more than two syllables include one or more prefixes, which expectably begin with a consonant.

The voiceless obstruents, *p, *t, *k, *s, occur with great frequency in the onset of the antepenult. There are also many examples of the voiced stop *b, apparently due to the *ba- prefix, but no examples of other voiced stops in the antepenult. Examples of the nasals *m, *n, *ɲ appear to reflect nasal-initial prefixes. Perhaps *ɲ can occur in this position as well.

*p
*t
  *taransak ‘red’ Rara taransak, Bekati’ taransa?. (331)
*k
  karimu, t ‘forget’ Rara karimut, Sara/Riok karimut, Kendayan karimut. (134)
*s
  *santao, 2 ‘right (hand)’ Rara santao?, Sara/Riok ɲantau? (û expected), Kendayan santau?, Bekati’ santau?. (184)
*b
  *bajala, n ‘(to) walk’ Rara bajalatn, Sara/Riok bajalatn, Kendayan bajalat. (138)
*m
  *ma-maa, n, *sa-maa, n ‘all’ Rara samaan, maan maan, Sara/Riok mamaan, Kendayan maan maan, Bekati’ samaan. (293)
*n
  *narima, ‘receive’ Rara narima?, Sara/Riok narima?, Kendayan narima?. (551)
*ɲ
  *ɲamuhí/e ‘swim’ Sara/Riok ɲamui, Kendayan ɲamuhe. (472)

3.3.2 Nucleus of the antepenult

The only vowel that occurs in the nucleus of the antepenult is *a. In Rara, at least, the quality at times varies to ø and perhaps to other qualities, but no contrast has been found.

*pantujok ‘mosquito’ Rara pantujok, Kendayan pantujok. (62)
*tanai, n ‘intestines’ Rara tanain, Sara/Riok tanain, nain Kendayan tanain, Bekati’ tanain. (102)
3.3.3 Coda of the antepenult

Only nasals occur in the coda of the antepenult. They are always homorganic with the following stop in the onset of the penult. The resultant clusters only involve voiceless stops.

*<i>sampare</i>,ŋ ‘kidneys’ Rara sampareŋ, tampareŋ, Sara/Riok sampareŋ, Bekati’ sampareŋ ‘heart’. (97, 103)

*Rara *kalapu,ŋ ‘ashes’ Rara kalaput, Sara/Riok kalaput, Kendayan kalaput, Bekati’ kalaput. (226)

Rara kampawaŋ? (probably reflecting PBak antepenult *<i>kam</i>) ‘spider’. (63)

*<i>santao</i>,ŋ ‘right (hand)’ Rara santaoŋ, Sara/Riok santauŋ (û expected), Kendayan santauŋ, Bekati’ santauŋ. (184)

*pantujok ‘mosquito’ Rara pantujok, Kendayan pantujok. (62)

*<i>naŋkayu</i>,ŋ, *<i>daŋkayu</i>,ŋ ‘vegetables’ Rara naŋkayuŋ, Sara/Riok naŋkayuŋ, Kendayan daŋkayuŋ. (545)

*<i>saŋkuhu</i>,ŋ ‘cane, staff’ Rara saŋkuhut, Sara/Riok saŋkuud, Kendayan saŋkuhud. (520)
4 Proto Bidayuh-Bakati’

The Bidayuh and Bakati’ languages are clearly related. There are many obvious cognates, and in some lexical items the phonological match is complete or nearly complete. In fact, Rara, a variety of Bakati’, is usually viewed in Sarawak as a dialect of Bidayuh. Nevertheless, in some significant ways Proto Bakati’ differs from Proto Bidayuh as could be observed in the preceding section.

Within the larger grouping of Land Dayak languages Bidayuh and Bakati’ have some features in common. The commonalities shared by Bidayuh and Bakati’ will be described in this section and the common structure will be labeled as Proto Bidayuh-Bakati’ (PBB). It should be stated, however, that with our current level of understanding it is not possible to state with certainty that the Bidayuh and Bakati’ languages shared a period of development distinct from other Land Dayak languages. In other words, Proto Bidayuh-Bakati’ may be a statement of common phonological features rather than a description of a period of development.

4.1 The ultima

The typical ultima of Proto Bidayuh-Bakati’ consists of a consonant as onset, a vowel as nucleus and a consonant as coda.

4.1.1 Onset of the ultima

4.1.1.1 Inventory

The inventory of consonants for Proto Bidayuh-Bakati’ matches exactly the sets of consonants for Proto Bidayuh and Proto Bakati’: seven stops *p, *t, *k, *b, *d, *j, */un026155; four nasals *m, *n, */un0272, *ŋ; two liquids *l, *r; two semivowels *w, *y; fricative *s; and two laryngeals *h and */un0294. Any one of these consonants can occur in the onset of the Proto Bidayuh-Bakati’ ultima.

*p

*kāpa ‘thick’ PBid *kāpa, PBak *kapa,. (321)
*t

*bātuh ‘stone’ PBid *bātuh, PBak *batu,. (4)
*k

*īkan ‘fish’ PBid *īkan, PBak *īka,n. (53)

55This reconstructed language, Proto Bidayuh-Bakati’ (PBB), is itself based on two reconstructed languages, Proto Bidayuh and Proto Bakati’. Since this is a second-degree reconstruction, it might be expected that the elements of PBB would be marked with a double asterisk (*∗*). However, because the next section presents yet another reconstructed language, Proto Land Dayak, which is even more ancient than PBB, the use of the double asterisk will be reserved for Proto Land Dayak items. PBB items, like PBid and PBak items, will be marked with a single asterisk.
*b
*bibih ‘lip’ PBB *bibih, PBAk *bibi,h. (80)

*d
*pāde ‘unhusked rice’ PBB *pādi, PBAk *pade,r. (215)

*j
*ījoʔ ‘seven’ PBB *ījuʔ, PBAk *ījoʔ, (287)

*g
*ŋāgam ‘hold, grasp’ PBB *ŋāgam, PBAk *ŋagu,m. (165)

*m
*ŋāmuk ‘stab’ PBB *ŋāmuk, *ŋāmok, *ŋāmok, PBAk *ŋamo,k. (145)

*n
*tānaʔ ‘earth’ PBB *tānaʔ, PBAk *tanaʔ, (2)

*j
*bV̆nuh ‘lime’ PBB *bįnnh, *bųnh, *bųnh, PBAk *bųnuʔ. (245)

*ŋ
*rānjit ‘sky’ PBB *rānjit, PBAk *raŋj,t. (11)

*l and *r. The correspondences of the PBB liquids *l and *r are on the whole quite consistent, i.e., *l ~ *ł and *r ~ *r. It should be observed that there are many examples of PBB *r. However, our corpus includes only four examples of *l as onset of the ultima besides the one cited below and one example as onset of the penult:

* [t] ālIC PBB *ālit ‘scar’, PBAk *talih ‘wound’. (124)
*ba-jālan ‘(to) walk’ PBB *jālan, PBAk *bajala,n (138). Cf. B.M. jalan ‘road’, berjalan ‘walk’.


It is uncertain whether the items in the first set are directly cognate. The four that follow are similar to or the same as Malay forms and likely to have been derived from them. The example, *milaŋ ‘(to) count’ (294), cited below, seems all right, but on the whole evidence for PBB *l is rather shaky.

There is another set with mixed evidence that shows *l in Bakati but *r in Bidayuh:
PBB *kIrih, including Bibengih and Bunaw ṮkIrih, PBAk *[m]Ir,?q ‘see’. (115)

It is quite possible that these two Bidayuh and Bakati’ forms are not directly cognate and that the Bakati’ forms are related to Malay me-lihat ‘see’.

Five other sets show *l in Bidayuh but *r in Bakati’. The last two of these examples show the liquid in the penult rather than the onset of the ultima.

‘egg’ PBB *tuloʔ, *[n]tuloʔ, *tulo PBAk *tura,h. (51)
PBB *guluʔ ‘sit’, PBAk *gurιʔ ‘lie, recline’ (131). May not be directly cognate.
‘skinn’ PBB *kulus, PBAk *kurus. (317)
‘ginger’ PBB *lʔiʔh, Bakati’ Rara riaʔ. (241)
‘thin (object)’ PBB *lIdeʔ, lide, PBAk *radeʔ, *radiʔ. (322)
For the present we will posit PBB *l in addition to *r, based largely on the evidence from Bidayuh, and that drawn exclusively from the contrast between l and r found in eastern Bidayuh. It seems likely that further study will show that PBB had just one liquid, *r, and that examples that appear to support *l have developed from other sources primarily, it appears, from Malay.

*l

*milaŋ '(to) count' PBid *milaŋ, PBak *milaŋ. (294)

*r

*tărūn 'woods' PBid *tărūn, PBak *tarūn, n. (27)

*sawa? 'year' PBid *sawa?, PBak *sawa?. (20)

*y

*rāyaŋ 'spit' PBid *rāyaŋ, PBak *rayaŋ 'spittle'. (154)

*s

*kāsuh 'dog' PBid *kāsuh, *kāsūŋ, PBak *kusuŋ, ?. (59)

*h

*mahih 'eight' PBid *māhīh, *māhīh, PBak *mahī, . (288)

?q

*bā?as 'sleep' PBid *bā?as, PBak *buus. (133)

It should be noted that Proto Bidayuh-Bakati* */un/* at the beginning of the ultima (between vowels) is lost in Proto Bakati'. Thus, *CV?VC sequences have become *CVV(C) in Proto Bakati'.

*pēʔin 'water' PBid *pēʔin, PBak *pēʔin, n. (6)

*dāʔun 'leaf' PBid *dāʔun, *dāʔun, PBak *dau, n. (30)

*bēʔuh 'smell (intr.)' PBid *bēʔuh, PBak baʔu?, . (120)

*kūʔut 'bite' PBid *kūʔut, PBak *ŋoo, t. (147)

*m[b] aʔəŋ 'tie (animal)' PBid *mōʔəŋ, PBak *mbuu, n. (159)

*kāʔis, *sāʔih 'dirty' PBid *kāʔis, PBak *sai, h also *sauh. (171)

*tāʔoh 'right (hand)' PBid *tāʔuh, PBak *santaʔu?. (184)

*piʔet 'bitter' PBid *píʔet, *píʔet, PBak *peet. (238)

*RVʔVh 'ginger' PBid *lāʔiʔ, *lāʔiʔ, Bakati' Rara riaʔ?. (241)

*nāʔa66 'person' PBid *nāʔa, *jña, Bakati' Sara/Riok nāʔa. (257)

*rīʔaŋ 'hard' PBid *rīʔaŋ, Bakati' Sara/Riok riakŋ. (312)

*kāʔiʔh 'we (exclusive)' PBid *kāʔiʔh, PBak *kai, . (342)

4.1.1.2 No consonantal onset

The PBB ultima can begin without a consonant. However, a *VC ultima occurs only following a penult that is an open syllable. Thus, the two-syllable PBB form is *CVVC.

*siap 'chicken' PBid *siap, PBak *sia, p. (56)

*mbeʔen 'to wash' PBid *mbeʔen, PBak *mbeʔen. (166)

*main 'play (ball)' PBid *māin, PBak *mai, n. (139)

56N in this and other sets indicates that the place of articulation of the nasal is uncertain because the witnesses do not reflect a single place of articulation. In this set PBid reflects *n, but PBak reflects *n.
*pVriok*57 ‘cooking pot’ PBid *piriok, PBak *pariok. (223)
*jual ‘sell’ PBid *jua, *jua, PBak *jua,l. (262)
*sVluar, *sVlawar ‘trousers’ PBid *sliusar, PBak salawa,r. (269)
*duah ‘two’ PBid *duah, PBak *dua,?. (282)

The last five sets in the group of seven sets above are very similar to Malay terms and may be borrowed from Malay(ic). This *CVVC pattern is only poorly attested for PBB; it might, in fact, be a more recent development in both Bidayuh and Bakat’.

### 4.1.1.3 Clusters of nasal (in the penult) and stop: Nasal plus voiced stop

Proto Bidayuh-Bakati’ has clusters of nasal plus voiced stop: *mb, *nd, *nj and *ŋg.

In many Bidayuh dialects a voiced stop following a nasal has a lenis pronunciation. In some cases the only perceptible evidence that there is a voiced stop comes from the oral quality of the following vowel and/or preplosed of a nasal if one occurs at the end of the syllable.

This treatment of nasal plus voiced stop clusters was, apparently, characteristic of Proto Bidayuh-Bakati’ since there are words in the Bakati’ dialects in which the voiced stop has been lost in all of the dialects.

**puŋgu?, *muŋgu? ‘hill’ PBid *puŋgu?, PBak *muŋju?, Rara muŋju?, Sara/Riok muŋju?, Kendayan muŋju?. (1)**


**[k] undok ‘short (object)’ PBid *kundok, PBak *uno,k Rara unok, Sara/Riok unok, Kendayan uno?, Bekati’ uno?. (296, 309)**

**[d] ámba PBid *d ámba, * ámba, PBak *ama ‘old (object)’ Rara ama, Bekati’ ama, *[d]ama, ‘old (person)’ Rara dama, ama, Sara/Riok ama, Kendayan ama. (324, 325)**

**kămbat, *k-Vr-ĭmbat ‘forget’ PBid *kămbat, *kămbut, PBak *karimu,t Rara karimut, Sara/Riok karimut, Kendayan karimut (but cf. a second Sara/Riok form kalimpûtn) (134). The PBak form includes the *-Vr- infix, but the PBid form does not.**

In other cases the voiced stop is retained in some but not all the dialects.

**sĭndɔ? ‘mother’ PBid *sĭnda??, PBak *sindo?, Rara sino?, Sara/Riok sinů?, Kendayan sinů?, Bekati’ sindu?. (249)**

**ἀndo ‘day’ PBid *ándu, PBak *ando, Rara ano, Sara/Riok anû, Kendayan anu, Bekati’ ano. (19)**

**Cāka?:, *aŋga? ‘spider’ PBid *si-tāka?:, *kāka?:, PBak *aŋga?, Rara aŋa?, Sara/Riok aŋa?, Kendayan aŋga?. (63)**

In some cases the voiced stop following the nasal can be inferred because of a preploded nasal at the end of the syllable.

**bāndoŋ ‘cassava’ PBid *bāndoŋ, *bāndoŋ, PBak *bandoŋ Rara banokŋ, Sara/Riok banûkŋ, Kendayan banuk. (43)**

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57 For an explanation of the symbol V in the antepenult of Proto Bidayuh-Bakati’, see §4.3.2.
mbeen 'wash (hands)' PBid *ŋumbe:n, *mbeːʔ, PBak *mbeen Rara meetn, Sara/Riok meetn. (166)
[m] ʔandam 'sick, painful' PBid *[m]ʔandam, PBak *anda,m Rara anapm, Sara/Riok anapm,
Kendayan anap. (435, 458)

Loss of the voiced stop from clusters appears to be a major source of the emerging contrast between
final nasals and final preproled nasals in the Bakati' dialects.

4.1.1.4 Clusters of nasal (in the penult) and stop: Nasal plus voiceless stop
Proto Bidayuh-Bakati’ also has clusters of nasal plus voiceless obstruent: *mp, *nt, *ns and *ŋk. In the
western, central and Sembaan dialects of Bidayuh the nasal has been lost from such clusters. This is a
continuation of a process at work in Proto Bidayuh-Bakati’ in which the nasal had lenis articulation, with
the result that in some words the nasal has been lost entirely from the cluster. The nasal has been lost in
some words in Bidayuh and in others in Bakati’.58

*ŋVm-poh ‘blow’ PBid *ni-poh, *puhoh, *ŋumpo:, PBak *ŋampo,h. (148)
*ŋumpoh, *ampoh ‘(to) pound’ PBid *ŋum-pah, PBak *ampa,. (190)
*sVmput ‘blowpipe’ PBid *sǐmpo:, *sumpot, PBak *sumpot. (205)
*ūmpat, *apat ‘four’ PBid *ūmpat, PBak *apa,t. (284)
*bintaŋ ‘star’ PBid *bintaŋ, PBak *bintaŋ. (10)
*būntan ‘coconut (palm)’ PBid *būntan, PBak *bunta,n. (38)
*šntak ‘brain’ PBid *šntak, PBak *untuk. (91)
*jā[n]tu ‘(to) fall’ PBid *jātu?, PBak *jantu?. (144)
*lāntiŋ ‘raft’ PBid *lāntiŋ, Bakati’ Rara l/rantıŋ. (197)
*bāntal ‘pillow’ PBid *bāntal, Bakati’ Rara bantal (270). May be a loan from Malay.
*bāntaŋ ‘longhouse’ PBid *bātaŋ, Bakati’ Rara bantaŋ. (272)
*Nāntak ‘cut (rope)’ PBid nātak, PBak *nanta,k. (378)
*ānsiŋ ‘urine’ PBid *āsiŋ, PBak *ansiŋ. (71)
*pinsap ‘(to) suck’ PBid *pinsap, PBak *jusu,p. (146)
*Ninsa,p ‘(to) suck’ PBid *pinsap, PBak *ŋinsa,p. (146)
*risoŋ̱, *ransuŋ-an ‘mortar’ PBid *risoŋ̱, Bakati’ Rara ransuŋan. (191)
*insak ‘small, little bit’ PBid *insak, PBak *ine,k. (318)
*uŋkoy ‘tail’ PBid *uŋkoy, etc., PBak *uŋke, (50)
*nāŋko ‘(to) steal’ PBid *N-tāŋku, PBak *nāŋko,. (163)
*nāŋkap ‘hold’ PBid *naŋ/ŋa-kap, Bidayuh Sangking ŋakap, Bunan-Terbat naŋkap, PBak *naŋka,p
‘take’. (165)

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58Since the nasal was part of the penult, it might have been considered appropriate to defer discussing this
phenomenon until the section that deals with the penult. However, since it relates to the reduction of consonant
clusters that also involve the ultima, both types of consonant clusters are discussed here.
4.1.2 Nucleus of the ultima

4.1.2.1 Inventory

There are six vowels in Proto Bidayuh-Bakati: *i, *u, *ə, *e, *o and *a. The cardinal vowels *i, *u and *a continue unchanged in Proto Bidayuh and Proto Bakati. The mid vowels *e and *o and the central vowel *ə do not.

*i
*kūrit ‘skin’ PBid *kūrit, PBak *kuri,t. (29, 66)
*āsi ‘who?’ PBid *āsih, *āsi, PBak *asi. (338)

*u
*dāʔun ‘leaf’ PBid *dāʔun, *dāwan, PBak *dau,n. (30)
*mānuk ‘bird’ PBid mānuk, PBak *manu,k. (47)

*a
*būran ‘moon’ PBid *būran, PBak *bura,n. (9)
*rūjan ‘under, beneath’ PBid *rūjan, PBak *rūja,n. (304)

*e and *o. The PBB mid vowels are generally raised to *i and *u in Proto Bidayuh.

*e
*[d]āre ‘man, male’ PBid *dāri, PBak *are. (252)
*pīʔet ‘bitter’ PBid *pāʔit, *pāʔit, PBak *peet. (238)

*o
*buho ‘run’ PBid *buho, PBak *buho. (153)
*kūʔot ‘bite’ PBid *kūʔut, PBak *ŋoo,t. (147)

The central vowel *ə. The usual development of the PBB central vowel *ə in Proto Bakati’ was *u.

*ə
*ŋārəm ‘night’ PBid *ŋārəm, PBak *ŋaru,m. (22)
*jṿpəh ‘teeth’ PBid *jīpəh, PBak *japu,t. (82)
*mətəh ‘eye’ PBid *bətəh, *mətəh, PBak *matu,t. (88)
*əntək ‘brain’ PBid *əntək, PBak *untuk. (91)
*sirəh ‘fingernail’ PBid *sirəh, *siruh, PBak *siru,t. (108)
*kədək, *mədək ‘smell (trans.)’ PBid *kədək, PBak *maduk. (119)
*bəʔəs ‘sleep’ PBid *bəʔəs, PBak *buus. (133)
*kəmbət, *k-VR-imbat ‘forget’ PBid *kəmbət, *kəmbut, PBak *karimu,t. (134)
*jinsəp ‘suck’ PBid *jinsəp, PBak *jusu,p. (146)
*m[bp]əʔəj ‘tie (animal)’ PBid *məʔəj, PBak *mbuŋ. (159)
*ŋəgəm ‘hold’ PBid *ŋəgəm, PBak *ŋagu,m. (165)
*bədəh or possibly *bədəʔ ‘dry’ PBid *bədəh (but Bukar-Sadung dialects have *bədəʔ, PBak *badu,t. (172)
*dəyəh ‘(up)land’ PBid *dəyəh, PBak *dayu,t. (194)
*nənək ‘cook’ PBid *nənək, *tənək, PBak *nanu,k. (222)


*sVbarak ‘hungry’ PBB *sibəɾak, PBak *səburu,k. (233)
*āsən ‘breath, soul’ PBB *āsən, PBak *asən. (236)
*nərən ‘swallow’ PBB *tərən, *nərən, PBak *nəru,n. (237)
*masəm ‘sour’ PBB *masəm, Bakati’ Rara masupm. (239)
*bVnəh ‘lime’ PBB *buənəh, *biŋu, PBak *buŋuʔ. (245)
*bənən ‘husband’ PBB *bənən, *bənən, PBak *bənu,n. (250)
*āsəm ‘x’ PBB *āsəm, PBak *unu,m. (286)
*tarəp, *daron ‘deep’ PBB *təɾəp, PBak *duɾu,m. (316)
*sVnət ‘black’ PBB *səŋət, *səŋət, PBak *suŋu,t. (327)
*āsəm ‘mango’ PBB *āsəm, PBak *asum. (424, 239)
*āsəm ‘mango’ PBB *āsəm, PBak *asum. (424, 239)
Note also *səwən ‘wife’ PBB *səwən, PBak *səu,n. (251), in which PBB *ə > PBak *u.
*naŋkəp ‘hold’ PBB *naŋ/ŋa-kəp, Bidayuh Sangkəng ŋakəp, Bunat-Terbat naŋkəp, PBak *naŋka,p ‘take’. (165)
*p/murən ‘(to) plant’ PBB *purən, PBak *muraʔ. (187)
*ŋumən, *ampən ‘(to) pound’ PBB *ŋum-pən, PBak *ampa. (190)
*duən ‘two’ PBB *duən, PBak *duəʔ (282). The PBB form should perhaps be reconstructed as
*duən since it was after a labial consonant that *ə usually became *a in PBak.
*rəmən ‘five’ PBB *rəmən, PBak *rəmaʔ. (285)
*dəpən ‘fathom, armspan’ PBB *dəpən, PBak *dapaʔ. (297)
*Nəntək ‘cut (rope)’ PBB *nətək, PBak *nəntək. (378)
Four sets have been noted in which the PBak reflex is *i. In three of these sets, two of which are
probably related, the preceding consonant is *b, apparently another example in which the reflex of *ə is
dissimilated from the more common *u following a labial consonant.
*kəbəs, *kəbis ‘dead’ PBB *kəbəs, PBak *kabi,s. (129)

59It should be observed that in two of the sets in which the central vowel becomes *u in Proto Bakati’ the
preceding consonant is labial: PBB *japuʔ, ‘teeth’ (82) and PBak *karimu,t ‘forget’ (134).
*ŋābəs, *ŋami ‘kill’ PBid *ŋābəs, PBak *ŋami (201). This set is doubtless related to the preceding one.
*mābar, *mibir ‘(to) fly’ PBid *mābər, *mikābur, PBak *mibi,r (141). This set may reflect *a: in PBB.
*mānda, *māndiH ‘live, stay’ PBid *mānda[?], PBak *mädi(? (136, 524). These forms may not be directly cognate.

4.1.2.2 Lengthened vowels

There are correspondences in PBB that are not accounted for by just the six vowel qualities discussed in the preceding section. In examples already cited there is the correspondence PBid *i ~ PBak *e. However, there are other sets with the correspondence PBid *e ~ PBak *e. Similarly, in the examples cited above there is the correspondence PBid *u ~ PBak *o, but other sets show the correspondence PBid *o ~ PBak *o. In a high proportion of sets that show the latter in each of these pairs of correspondences, the PBid forms show a lengthened vowel. Therefore, it is concluded that there are three lengthened low vowels, *e, *o and *a; in Proto Bidayuh-Bakat’. These contrast with the equivalent short low vowels, *e, *o and *a. It is perhaps relevant to observe that in Proto Bidayuh the lengthened low vowels are significantly more frequent than the lengthened high vowels.

*e:
  *bāreŋ ‘hand’ Bidayuh Anah Rais bāreŋ, bireŋ, Biya bāreŋ ‘arm’, PBak *bareŋ. (104)
  *pi/adeʔ ‘salty’ PBid *pideʔ, PBak *padeʔ. (453)
  Also *Ri/adeʔ ‘thin (object)’ (322); *pi/ateʔ ‘trap’ (483).
*o:
  *abok ‘hair (of the head)’ PBid *aboŋk, PBak *abo̞k. (79)
  *sibonŋ ‘sheath of the parang’ PBid *sibonŋ, PBak *sīboŋ. (208)
  Also *unjkoj ‘tail’ (50); *CVŋoːk ‘(front of) neck’ (92); *sadoʔ ‘chest’ (93); *ŋVm-poh ‘blow’ (148); *sVmpoːt ‘blow pipe’ (205); *bVsoh ‘full (person)’ (234); *rVboʔ ‘space under house’ (304); *jūhoʔ ‘far’ (302).
*a:
  *āraŋ ‘wing’ PBid *ārəd, etc., PBak *ara̞d. (48)
  *N-bābaʔ? ‘call’ PBid *Nābaʔ?, PBak *mabaʔ. (81, 180)
  Also *[C]ākaʔ, *aŋgaʔ ‘spider’ (63); *ādəs ‘sweat’ (67); *dājaʔ ‘blood’ (68); *bābaʔ ‘mouth’ (81); *ŋVṛijaʔ ‘spit’ (154); *sūkaŋ ‘hide (self)’ 157; *sābaʔ ‘downriver’ (186); *tayaʔ ‘garden’ (195); *sVndaʔ ‘knife (for working rattan)’ (203); *[u] man ‘eat’ (232); *[b] ḣarya ‘areca nut’ (243); *paʔ/*peʔ ‘betel and areca nut chew’ (244); *sāmaʔ ‘father’ (248); *Vrama ‘roof’ (277); *mādam ‘rotten’ (305); *rVjaʔ ‘sharp’ (31, 307); *Vtaʔ/*iteʔ ‘we (inclusive)’ (343).

60There are a few sets that seem to reflect lengthened high vowels in PBB, but these are so infrequent that it seems appropriate to conclude that all PBB lengthened vowels were low. This seems to be the case in some of the Bukar-Sadung varieties of Bidayuh as well.
The usual correspondences for these nine vowels, lengthened and not, are given in the following chart:

Table 11. Reflexes of Proto Bidayuh-Bakati’ Vowels

<table>
<thead>
<tr>
<th>Proto Bidayuh-Bakati’</th>
<th>Proto Bidayuh</th>
<th>Proto Bakati’</th>
</tr>
</thead>
<tbody>
<tr>
<td>*i</td>
<td>*i</td>
<td>*i</td>
</tr>
<tr>
<td>*u</td>
<td>*u</td>
<td>*u (a after labials)</td>
</tr>
<tr>
<td>*ə</td>
<td>*ə</td>
<td>*ə</td>
</tr>
<tr>
<td>*e</td>
<td>*i</td>
<td>*e</td>
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<td>*e:</td>
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<td>*a</td>
<td>*a</td>
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<tr>
<td>*a:</td>
<td>*a:</td>
<td>*a</td>
</tr>
</tbody>
</table>

Sequences of vowel + semivowel in Proto Bidayuh-Bakati’ have special reflexes in Bakati’ since semivowels do not occur in final position in PBak. The sequence *Vy with a short vowel becomes PBak *i while the sequence with a lengthened vowel *V:y becomes PBak *e.

*pāpu ‘fire’ PBid *pāpu, PBak *api. (225)

*pānday, *pantay ‘wait’ PBid *pānday, Bakati’ Rara ɲant? (137). It is uncertain whether these are immediately cognate since the stops do not agree as to voicing and Bakati’ has a final ?.

*pāko ‘tail; PBid *pāko, etc. PBak *pāko. (50)

*pāhāy ‘areca nut’ PBid *pāhāy, Bak Rara uhe (243). It is unclear whether the PBid vowel is long.

The sequence *Vw, apparently whether short or lengthened, becomes PBak *o.

*pātaw ‘(to) call’ PBid *mātaw, PBak *Cato. (180)

*pāraw ‘roof’ PBid *[i]ra:wa, PBak *aro. (277)

4.1.3 Coda of the ultima

All of the Proto Bidayuh-Bakati’ consonants except *j and *ŋ occur in the coda of the ultima, i.e., in stem-final position. There are many examples of the voiceless stops, nasals and laryngeals *h and *. The continuants *r, *s, *w and *y are less frequent. Of the voiced stops there are several examples of *d, one example of *g. In our corpus there is no example of *b, but it is expected that examples will eventually be identified. There are few examples of the liquid *l and they bear considerable resemblance to forms in Malayic languages; so, *l in final position may not be original.

*p *ninsap ‘suck’ PBid *ninsap, PBak *nusup. (146)

*t *rāniy ‘sky’ PBid *rāniy, PBak *ranj, t. (11)

*k *mānu ‘bird’ PBid *mānu, PBak *manu, k. (47)
*d
  *ārad ‘wing’ PBid *ārad, etc., PBak *ara,d. (48)

*ğ
  *mijoқ, *ajog PBid *mijoқ ‘stand’, Bakati’ Sara/Riok ajog ‘stand still’. (132)

*m
  *ŋār ‘night’ PBid *ŋār, PBak *ŋaru. (22)

*n
  *tārun ‘woods’ PBid *tārun, PBak *tāru.n. (27)

*ŋ
  *ānsiŋ ‘urine’ PBid *[ŋ]āsiŋ, PBak *ansiŋ. (71)

*l
  *bāntal ‘pillow’ PBid *bāntal, Bakati’ Rara bantal. (270)
  Also *bānaC ‘deaf’ PBid bāŋam, PBak *baŋa l (118) and *jua[l], /uya, /uya, /uya, PBak *uya,l (262).

*r
  *māyar ‘pay’ PBid *māyar, *māyar, Bakati’ Rara mayar. (265)

*s
  *bāʔas ‘sleep’ PBid *bāʔas, PBak *buus. (133)

*w
  *Vraʔ ‘roof’ PBid *i-raʔ, PBak *aro. (277)

*y
  *uŋko ‘tail’ PBid *uŋko, etc. PBak *uŋke. (50)

*h
  See below.

*ʔ
  *bābaʔ ‘mouth’ PBid *bābaʔ, PBak *babaʔ. (81, 181)

*ŋ
  In final position PBB *ŋ becomes PBak *ʔ in the majority of sets.
  *bātuŋ ‘stone’ PBid *bātuŋ, PBak *batuʔ. (4)
  *mātah ‘eye’ PBid *mātah, *mātah, PBak *matuʔ. (88)
  *p-Vr-ăpah ‘palm (of hand)’ PBid *păpah, PBak *parapaʔ. (106)
  *tāriŋ ‘rope’ PBid *tāriŋ, PBak *tariʔ. (206)
  *măhiŋ ‘eight’ PBid *măhiŋ, PBak *mahiʔ. (288)
  However, there are two groups of sets that have PBid *ŋ that differ from the *ŋ ~ *ʔ correspondence
  illustrated above. In the first group of sets both PBid and PBak have *ŋ in final position. In the second
  group PBB *ŋ remains unaltered in PBid, but in PBak it is lost.

Final *ŋ remains *h in PBak in ten sets.

*tuloh, *(n)tuloh, *turaŋ ‘egg’ Proto Bidayuh *tuloh, *(n)tuloʔ, Proto Bakati’ *tura,h. (51)

*bibih ‘lip’ PBid *bibih, PBak *bibi,h. (80)

*diŋah, *daŋah ‘hear’ Proto Bidayuh *diŋah, *diŋeh Proto Bakati’ *daŋa,h. (117)

*ŋVm-poʔ ‘(to) blow’ PBid *ŋi-poʔ, *puhoh, *ŋumpo, PBak *ŋampo,h. (148)

*kāyuŋ ‘(to) row, (a) paddle’ PBid *bi-kāyuŋ, PBak *kayu,h. (199)

**bVsoh ‘full (person)’ Proto Bidayuh *bisoʔ, *būsoh, *biso: Proto Bakati’ *boso,h. (234)
*gāgah ‘strong (person)’ PBid *gāgah, Bakati’ Rara gāgah. (320)
Final PBB *h is lost in PBak in eight sets, yielding the correspondence *h ~ *a, in most instances after *u or *a.

*tāruh ‘three’ PBid *tāruh, PBak *taru₁. (283)
*dāpah ‘width of outstretched arms, a measure’ PBid *dāpah, PBak *dapa₁. (297)
*jāhuḥ ‘(to) burn’ PBid *jāhuḥ, PBak *jahu. (231)
*ŋum-pah, *ampah ‘(to) pound’ PBid *ŋum-pah, PBak *ampa₁. (190)

At present it is not possible to predict which of the three PBak reflexes will correspond to PBid *h in any given set. Therefore, the three correspondence sets are distinguished by subscript numerals, as in the following examples. However, different Proto Austronesian sources of *h₁ and *h₂ have been identified and will be shown in §6.1.7.3.

<table>
<thead>
<tr>
<th>PBB *h₁</th>
<th>PBid *h ~ PBak *?</th>
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<tbody>
<tr>
<td>*māroh₁ ‘eye’ PBid *bāroh, PBak *matu₁. (88)</td>
<td></td>
</tr>
<tr>
<td>PBB *h₂</td>
<td>PBid *h ~ PBak *h</td>
</tr>
<tr>
<td>*bībih₂ ‘lip’ PBid *bībih, PBak *bibi₁. (80)</td>
<td></td>
</tr>
<tr>
<td>PBB *h₃</td>
<td>PBid *h ~ PBak *a</td>
</tr>
<tr>
<td>*tāruh₃ ‘three’ PBid *tāruh, PBak *taru₁. (283)</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the many final syllables in Proto Bidayuh-Bakati’ that end in a consonant, there are some with no final consonant, i.e., they are open syllables. They continue as open syllables in both PBid and PBak.

*sūŋi ‘river’ PBid *sūŋi, PBak *suŋi₁. (7)
*āndo ‘day’ PBid *āndo, PBak *ando₂. (19)
* [d] āre ‘man, male’ PBid *dāri, PBak *are₂. (252)

4.2 The penult

The penult of Proto Bidayuh-Bakati’ consists, typically, of a consonant as onset, a vowel as nucleus and a consonant as coda.

4.2.1 Onset of the penult

4.2.1.1 Inventory

All Proto Bidayuh-Bakati’ consonants occur in the onset of the penult except *w, *y, *h and *ʔ.

*p
*pāras ‘hot’ PBid *pāras, PBak *para₁s. (314)
*t
*tāyaʔ ‘garden’ PBid *tāyaʔ, Bakati’ Rara tayaʔ. (195)
*k
*kāyuḥ ‘tree’ PBid *kāyuḥ, PBak *kayuʔ. (28)
In some sets PBB *b or *m > PBak *u in the penult.

*bărak ‘banana’ PBid *bărak, PBak *bara;k. (36)

In some sets PBB *bă or *mă > PBak *u in the penult.

*băzid ‘betel (leaf)’ PBid *băzid, PBid *uid. (242)

*băhary ‘areca nut’ PBid *bahary, Rara uhe. (243)

*măriž ‘return, go home’ PBid *măriž, PBak *ure?. (140)

*dăya/uni02D0/uni033Cy ‘areca nut’ PBid *dăya/un02D0y, Rara uhe. (243)

*mări/uni0294 ‘return, go home’ PBid *măr/un0294, PBak *ure/un0294. (140)

*jăha/uni02D0/uni033Cy ‘areca nut’ PBid *jăha/un02D0y, Rara uhe. (243)

*jăk ‘teeth’ PBid *jăk, PBak *japu,?. (82)

*găgah ‘strong (person)’ PBid *găgah, Bakati’ Rara gagah. (320)

*mătan ‘throw away’ PBid *mătan, PBak *mata,n. (155)

*năŋko ‘steal’ PBid *năŋku, PBak *naŋko,?. (163)

*nănuh ‘(to) burn’ PBid *nănuh, PBak *nahu. (231)

*năram ‘night’ PBid *năram, PBak *naru2,m. (22)

*lămak ‘fat’ PBid *lămak, PBak *lama,k. (220)

*rămin ‘house’ PBid *rămin, PBak *rami,n. (271)

*săs ‘breast’ PBid *săs, *săs, etc., PBak *susu,?. (94)

Some penults have no initial consonant. This is especially common where the penult vowel is a reduced vowel.

*ũmăh ‘(paddy) field’ PBid *ũmăh, *ũmăh, PBak *umă,?. (194)

*ădăs ‘sweat’ PBid *ădăs, PBak *ada,s. (67)

*ikăn ‘fish’ PBid *ikăn, PBak *ika1,n. (53)

*ănăm ‘six’ PBid *ănăm, PBak *unu2,m. (286)

However, there are a few examples of PBB penults that show a full vowel but no initial consonant.

*ăruh ‘pestle’ PBid *ăruh, PBak *aru,?. (192)

*ūbat ‘medicine’ PBid *ūbat, PBak *uba,t (214). This may be a Malay loan.

**Initial-consonant variation and deletion**

In some of the cognate sets the Bidayuh cognates reflect one consonant in the onset of the penult while the Bakati’ cognates reflect a different one. This happens especially where the penult vowel is a reduced vowel. In some sets the consonantal variation involves *k and a labial, usually *m.

*Ciri ‘see’ PBid *kiri, PBak *[m]le,?. (115)

*Căkap ‘blind’ PBid *băkap, PBak *kaka,p. (116)

*Cădăk ‘smell (trans.)’ PBid *kădăk, PBak *maduk. (119)
However, other alternations include *s with one of these consonants.

*Că/uni0294is/h ‘dirty’ PBid *kă/is, PBak *sai,h, also *sauh (171). In this set *h and *s seem to alternate in final position, i.e., PBid reflects *s while PBak reflects *h. This is not surprising in this context since the distinction between *s and *h is lost following *i in many dialects of Bidayuh and in three of the four Bakati’ dialect sources.

*Cūbur PBid *kūbur ‘bury’, Bakati’ Rara kubur ‘graveyard’, basubur ‘process to the graveyard’, jubur ‘bury’. (130)

*Că/uni0261/uni0259[h] Western Bidayuh m/uni0259/uni0261/uni0259 ‘doesn’t keep promises’, Bakati’ Sara/Riok sa/uni0261oh ‘a lie’. (173)

In addition, there are about 15 sets in which either PBid or PBak reflects an initial consonant while the other one reflects no consonant at all before a reduced vowel in the penult. That is, *Cū/CVC ~ *V/CVC. In our corpus the consonant is deleted three times as often in Proto Bakati’ as it is in Proto Bidayuh.

* [p]ăno ‘walk’ PBid *pănu, PBak *anu/o. (138)
* [d]ŭnduŋ ‘nose’ PBid *ŭnduŋ, *înduŋ, *nduŋ, PBak *duduŋ. (84)
* [m]ăndam ‘sick, painful’ PBid *[m]ăndam, PBak *anda,m. (435, 458)
* [m]ăyap ‘lose (something), lost’ PBid *măyap, Bakati’ Rara ayap. (161)
* [p]ăset ‘narrow’ PBid *păset, PBak *s-ar-set. (301, 318)
* [d]ăre ‘man, male’ PBid *dări, PBak *are. (252)

4.2.2 Nucleus of the penult

4.2.2.1 Inventory

Vowels of four qualities occur in the Proto Bidayuh-Bakati’ penult: *i, *u, *a and *ə. The vowel *ə occurs less frequently than the others. The mid vowels do not occur.

*bibih ‘lip’ PBid *bibih, PBak *bibi,h. (80)
*rimoh ‘five’ PBid *rimoh, PBak *rima,ʔ. (285)
*sūni ‘river’ PBid *sūni, PBak *sunį. (7)
*pirūŋaŋ ‘mosquito’ PBid *p-ir-ūŋaŋ, Bakait’ Sara/Riok paruŋaŋ. (62)
*bātuŋ ‘stone’ PBid *bātu, PBak *batu,ʔ. (4)
*āsaŋ ‘breath, soul’ PBid *āsaŋ, PBak *asuiŋ. (236)
*sVbarak ‘hungry’ PBid *sibarāk, PBak saburu,k. (233)

4.2.2.2 Full and reduced vowels

In Proto Bidayuh there is a contrast between full and reduced vowels in the penult. However, in Proto Bakati’ that contrast does not occur, nor does such a feature seem to exist in the Bakati’ daughter languages. So, the question arises whether there is evidence for such a contrast among the penult vowels of Proto Bidayuh-Bakati’.

There is, in fact, some evidence for such a distinction. In Proto Bidayuh the reduced vowels take part in vowel variation/alternation and vowel deletion. Furthermore, initial consonants are at times deleted
or alternate before a reduced vowel and generally not before full vowels. Both vowel alternation and initial-consonant variation seem to occur in Proto Bidayuh-Bakati’, suggesting that a contrast between full and reduced penult vowels probably occurred at that linguistic horizon as well.

4.2.2.3 Vowel alternation

In the examples cited in §4.2.2.1, all of the penult vowels are marked as full vowels (except for the central vowel *a). No alternation among penultimate vowels is found in any of these sets. However, when the Proto Bidayuh-Bakati’ penult vowel is reduced, as demonstrated by a reduced vowel in Proto Bidayuh, there is a vowel of a different quality in Proto Bakati’ in a significant minority of the sets. Note the following pairs of examples of each Proto Bidayuh-Bakati’ penultimate vowel. The first example in each pair has matching vowels in Proto Bidayuh and Proto Bakati’, and the next example(s) have differing vowels, which demonstrates the vowel alternation pattern:

*dihan ‘durian’ PBid *dīhan, *díhen, Bakati’ Rara dihatn. (37)
*bīsaʔ ‘wet’ PBid *bīsaʔ, PBak *basaʔ. (306)
*sǐmpot ‘blow pipe’ PBid *sǐmpot, *sumpot PBak *sumpot. (205)
*būran ‘moon’ PBid *būran, PBak *bura,n. (9)
*Rūpaʔ ‘palm (of hand)’ PBid *Rupaʔ, Bakati’ Rara lapaʔ [barekŋ]. (106)
*Vaʔ ‘head’ PBid *bak, *ūbak PBak *aba,k. (76)
*rāyaŋ ‘spit’ PBid *rāyaŋ, PBak *rayaŋ. (154)
*ākuʔ ‘I’ PBid *ākuʔ, PBak *ikoʔ. (339)
*rājaʔ ‘sharp (knife)’ PBid *rājaʔ, PBak *rujaʔ. (307, 31)
*āsŋ ‘brain’ PBid *āsŋ, PBak *ansŋ. (71)

4.2.3 Coda of the penult

The penult in Proto Bidayuh-Bakati’ is optionally closed by a nasal (*m, *n or *ŋ) of approximately the same point of articulation as the following voiceless or voiced stop in the onset of the ultima. In clusters of a nasal and a voiceless stop the nasal is sometimes lost in Proto Bakati’ and sometimes in Proto Bidayuh.

*Vm-poh ‘(to) blow’ PBid *ni-poh, *ŋumpor, PBak *ŋampo,h. (148)
*mpat ‘four’ PBid *üm-pat, PBak *apa,t. (284)
*būntan ‘coconut (palm)’ PBid *būntan, PBak *bunta,n. (38)
*jantuʔ ‘fall’ PBid *jatuʔ, PBak *jantuʔ. (144)
*jinsap ‘suck’ PBid *jinsap, PBak *ŋisma,p. (146)
*jimsap ‘suck’ PBid *jinsap, PBak *nusap, PBak *nusap. (146)
*āsŋ ‘urine’ PBid *āsŋ, PBak *ansŋ. (71)
*nąŋko 'steal' PBid *nąŋku, PBak *nąŋko. (163)
*Caŋkarp 'hold' Bidayuh Sangking ńakarp, Bunat-Terbat naŋkap, PBak *naŋka,p. (165)

In clusters of nasal and voiced stop the stop was sometimes lost, but apparently only in Proto Bakati'.

*kąmbat, *k-Vr-įmbat 'forget' PBid *kąmbut, *kąmbut, PBak *karimu,t. (134)
*bąndoŋ 'cassava' PBid *bąnduŋ, etc., PBak *bandoŋ Rara banokŋ (orality of vowel noted),
Sara/Riok banųkŋ, Kendayan banuk.61 (43)

*sVnda? PBid *usahaan? 'knife', PBak *suna,? ‘knife for working rattan, bamboo knife’. (203)
*t-Vr-injo PBid *t-ir-inju? ‘finger’, PBak tariŋo,? ‘middle three fingers, index finger’. (107)
*p-Vr-ųŋgan 'mosquito' PBid *p-ir-ųŋgan, etc., Bakati' Sara/Riok parųŋakŋ (<*parųŋgan). (62)
*pųngu?, *mųngu? 'hill' PBid *pųngu?, PBak *mųŋu,?. (1)

In a few sets the Bidayuh and Bakati' witnesses do not agree about the voicing of the stop in the cluster. In most such cases Bidayuh reflects a voiced stop while Bakati' reflects a voiceless stop. These sets suggest that in some cases a voiceless stop became voiced following a nasal.

*ńąnday, *ńąntay 'wait' PBid *ńąnday, Bakati' Rara ńantiti?. (137)
*[C]ąka?, *ąga? ‘spider’ PBid *si-ťaʔ?, *kāʔ?, PBak *ąga,?. (63)
*mVgan, *mVŋkan 'give' PBid *mągan, *kągan ‘lose’, *jugan, *mugan, *jugon ‘offer’, PBak
*marķa,n ‘give’. Semantics of this set obscure. (162)

4.3 The antepenult

It appears that all of the stems that can be reconstructed for Proto Bidayuh-Bakati' have two syllables with the exception of just two or three monosyllabic stems. Some forms with three syllables can be reconstructed, but in each case they seem to include an affix. Consider the following reconstruction, which has three syllables.

*kVrăsik 'sand' PBid *kirăsik, Bakati' Rara karasik. (3)

However, the first vowel-consonant sequence is *ir in PBid and *ar in PBak. These corresponding sequences occur in the first vowel-consonant position in many reconstructed forms with three syllables and appears to reflect an old *-Vir- infix. The following sets reflect this *-Vir- infix:

*p-Vr-ųŋgan 'mosquito' PBid *p-ir-ųŋgan, etc., Bakati' Sara/Riok parųŋakŋ (<*parųŋgan). (62)
*ņVrįjaʔ? (to) spit' PBid *ņirįjaʔ?, Bakati' Rara ńarujaʔ. This set may reflect *ņV-rųjaʔ rather than
*ņ-Vr-ųjaʔ. (154)

Note the following sets, which have an interior *Vr in Proto Bakati' but not in Proto Bidayuh:

*kąmbat, *k-Vr-įmbat 'forget' PBid *kąmbat, *kąmbut, PBak *karimu,t. (134)

61The dialect forms that lie behind PBak are provided for this set to show the various types of evidence (orality of the vowel, preplosion, oral stop in Kendayan) for *d in the reconstruction even though no dialect form is recorded with a voiced apical stop.
*p-Vr-ăpah ‘palm (of the hand)’ PBid *păpah, PBak *parapaʔ. (106)

In this set the existence of the *-Vr- infix is demonstrated by the Bakati’ forms having the infix and the Bidayuh forms not having it.

Apparently there is some form of vowel dissimilation or (dis)harmony operating in Proto Bidayuh-Bakati’. If the first vowel shows the correspondence PBid *i ~ PBak *a, a correspondence commonly found in antepenults, the penult vowel often shows the reverse correspondence, PBid *a ~ PBak *i. This dissimilation appears to be operating in the following set:

*piămah, *paimah ‘(to) dream’ PBid *piămah, *p-ir-imah, Bakati’ Rara paimaʔ. (135)

A variant of this dissimilation pattern may also explain the vowels in the following set:

*bVtihaʔ, *bVtahiʔ ‘pregnant’ PBid *bitihaʔ, PBak *batahiʔ. (442)

Returning to the set *piămoh, *paimah, cited above, we can observe that eastern Bidayuh dialects reflect *piămah, as cited, while the western and central Bidayuh dialects reflect *pimah. This suggests that there is an infix *-ă-, occurring in the first form but not in the second.62 It appears that there are at least two infixes, *-Vr- and *-ă-, which created three-syllable forms from two-syllable stems.

In addition, there were at least four PBB prefixes, *pV-, *bV-, *sV- and *gV-, which, when added to a stem, produced three-syllable forms.

*pVpăpu ‘broom’ PBid *piņăpu, Bakati’ Rara pănapu. (210)
*bV-jălan ‘(to) walk’ PBid *jălan, PBak *bajala,n. (138)
*bVtihaʔ, *bVtahiʔ ‘pregnant’ PBid *bitihaʔ, PBak *batahiʔ. (442)
*sV-rătus ‘(one) hundred’ PBid *si-rătus, PBak *saratu,s. (291)
*sVb/uni0259r/uni0259k ‘hungry’ PBid *să/unăr/unăk, PBak *saburu,k. (233)
*gVlădak ‘floor’ PBid *giRădak, Bakati’ Rara galadak. (276)

Finally, there is some evidence for a suffix *-an, which, when added to a stem, created three-syllable forms. If this suffix operated at the Proto Bidayuh-Bakati’ horizon, it may well have developed through contact with Salako and/or another Malayic language, perhaps Malay itself, that regularly uses such a suffix.63

*risoŋ, *ransuŋ-an ‘mortar’ PBid *risoŋ, Bakati’ Rara ransuŋan. (191)
*ga [ʔ] an-an ‘name’ PBid *gănan, PBak *gaa,n. (260)

62 Most eastern Bidayuh forms in the set *miyăyuh ‘rainbow’ (17) reflect something like miyayuh. This form, possibly reinterpreted as ‘miayuh, is likely to provide further evidence for an early *-a- infix.

63 The Rara form meaning ‘sea’ in Sarawak is lautan whereas in Kalimantan it is reported as laut, similar to Sara/Riok laût, Kendayan laut and Bekati’ laut. The Sarawak Rara form probably reflects the influence of Salako.
If the following Bidayuh and Bakati’ forms are directly cognate, the final *e/an of the PBid form may reflect such a PBB *-an suffix:

*munse?-an ‘(to) cry’ PBid *siʔen, *siʔan, PBak *munseʔ. (174)

### 4.3.1 Onset of the antepenult

The PBB antepenult consists of a consonant as onset and a vowel as nucleus. Apparently it is never closed by a consonant.

A limited set of consonants occurs in the onset of the antepenult of these apparently morphologically complex forms: *p, *t, *k, *b, *g, *ŋ, *r and *s. At this point it is not possible to state with certainty exactly which of these occur in the antepenult as a result of affixation and which occur in the beginning of the root.

*puŋgan ‘mosquito’ PBid *p-ir-ūŋŋaŋ, etc., Bakati’ Sara/Riok paruŋak ( < *paruŋŋaŋ). (62)
*t-ūŋjō ‘finger’, PBak tarjō, ‘middle three fingers, index finger’. (107)
*kVrāsik ‘sand’ PBid *kirāsik, Bakati’ Rara karasik. (3)
*bVtihaʔ, *bVtahiʔ ‘pregnant’ PBid *biṭihaʔ, PBak *batahɪʔ. (442)
*gVlādak ‘floor’ PBid *giRādak, Bakati’ Rara galadak. (276)
*nVrüjaʔ ‘(to) spit’ PBid *giɾujaʔ, Bakati’ Rara ērojaʔ. This set may reflect *ŋV-rüjaʔ rather than *ŋ-V-rüjaʔ. (154)
risoŋ, *ransuŋ-an ‘mortar’ PBid *risoŋ, Bakati’ Rara ransuŋan. (191)
*sVb/uni0272/uni0294 ‘hungry’ PBid *s/uni0272/uni0294, PBak *saburu. (233)

### 4.3.2 Nucleus of the antepenult

A single vowel occurs in the antepenult of Proto Bidayuh-Bakati’ forms. It has become *i in Proto Bidayuh and *a in Proto Bakati’. In the reconstructions it is generally written as *V.

*p-ūŋŋaŋ ‘broom’ PBid *p-ir-ūŋŋaŋ, Bakati’ Rara pāŋpu. (210)
*bV[n] tāndaʔ ‘(to) dance’ PBid *bitāndaʔ, Bakati’ Rara bantandaʔ. (379)
*sV-rātus ‘(one) hundred’ PBid *s-i-rātus, PBak *saratu. (291)
5 Proto Land Dayak

In his note on Salako64, Hudson (1970) distinguishes the “Land Dayak” languages from a “Malayic Dayak” group, in which he includes Salako. In that article he provides a wordlist of over 200 items in ten languages. Among these ten are Bekati’ from the Bakati’ group, Jagoi from the Bidayuh group and Kembayan, Ribun and Semandang from his “Land Dayak” group, which belongs to neither Bidayuh nor Bakati’.

In this section we will examine these three Southern varieties of Land Dayak (SLD)65, comparing them with Proto Bidayuh and Proto Bakati’ in an effort to reach an approximation of Proto Land Dayak (PLD). Kembayan is spoken in West Kalimantan, apparently just south of the Bukar-Sadung region in Serian District of Sarawak, Ribun is a bit farther south and Semandang considerably farther south, beyond the Kapuas River. For the purposes of this study we will assume that these varieties are representative of the varieties of Land Dayak spoken to the south of Bidayuh and southeast of Bakati’. However, at present we have no way to verify that assumption.

5.1 The ultima

The ultima of Proto Land Dayak consists in most cases of a consonant as onset, a vowel as nucleus and a consonant as coda.

5.1.1 Onset of the ultima

5.1.1.1 Inventory

A comparison of Proto Bidayuh and Proto Bakati’ with Kembayan, Ribun and Semandang shows that Proto Land Dayak has the following consonants: **p, **t, **k, **b, **d, **j, **/uni0261, **m, **n, **/uni0272, **ŋ, **l, **r, **w, **y, **s, **h and **?.66 All of these consonants occur in the onset of the ultima.

**p
  **jĭp/uni0259h, **jĭp/uni0259n, **jap/uni0259h
  Proto Bidayuh *jĭp/uni0259h, *jip/uni0259n, *jup/uni0259n, *jip/uni0259y, Proto Bakati’ *japu,
  Kembayan-H jip/uni0259tn, Kembayan-A jip/uni0259tn, Ribun-H jipun, Semandang jipun. (82)

**t
  **ăti
  Proto Bidayuh *ăti, *ătin, Proto Bakati’ *ate, Kembayan-H oti, Ribun-H oti, Ribun-A oti,
  Semandang oti. (103, 97)

64Hudson uses the spelling Selako. Some speakers of the language use Selako while others prefer Salako.
65The Southern Land Dayak languages, when mentioned collectively, are referred to by the abbreviation SLD.
66Proto Land Dayak sounds and reconstructions are marked with a double asterisk (**) so as to distinguish them from elements of Proto Bidayuh, Proto Bakati’ and Proto Bidayuh-Bakati’, all of which are marked with a single asterisk (*).
**k**


Apparently **k was palatalized to c in Kembayan and Ribun before **i, at least in some words. This may have been the case in Semandang as well, but among the comparatively few examples of c in Semandang none can be traced to **k.

**parañkis** ‘(a) boil’ Proto Bidayuh *pirañkis, Kembayan-A puroncis, Ribun-A pohonti(s). (123)

**tāki? ‘excrement’ Proto Bidayuh *tāki?, Proto Bakati’ *take?, Kembayan-A toci?, Ribun-A tike?. (73)

**[s]āŋkiŋ** ‘little finger’ Proto Bidayuh *[s]āŋkiŋ, Kembayan-A oncik (< *āŋkiŋ). (107)

The following set illustrates the same palatalization process in the penult:

**kilat** ‘lightning bolt’ Proto Bidayuh *kilat, PBak *kilat, Kembayan-A cilat, Ribun-A cila?. (16)

The following sets may provide further evidence for this development, but only in the first one is it clear that the following vowel is **i.


**kak kāwaŋ** ‘(a) crow’ Proto Bidayuh *ka: kawaŋ, Bakati’ Rara ka? gawaŋ, Kembayan-A kakoŋ, Ribun-A mono? kacoŋ. (52)

**sūŋkuh** ‘grandchild’ Proto Bidayuh *sūŋkuh, *sukun, Kembayan-A suŋkuh, Ribun-A co’? (< *...kuk ?). (105)

The following set suggests that **g is also palatalized before **i in Kembayan and Ribun (**g > j):


Two sets appear to provide counter-examples:


**pikir** ‘think’ PBid *pikir, Rara mikir, Kembayan-H pikir, Kembayan-A bupikir, bāpiker, Ribun-H pikeh, Ribun-A pikeh, Semandang piker. (555)

However, palatalization may well have been blocked in the first of the above two sets because of the association of **ākih with **āpih and may have not occurred in the second set because of the influence of the Malay term fikir.

**b**

**bāba?** ‘mouth’ Proto Bidayuh *bāba?, *bābə?:, Proto Bakati’ *baba?, Kembayan-A bobo?, Ribun-A bobo’say’. (81, 181)
**d**


Semandang odi?. (247)

**j**


**g**

**goŋ, **gĭn 'hold' Proto Bidayuh *kā/dī-ɡəŋ, Kembayan-H moɡa", Kembayan-A moɡa", Ribun-H niɡin, Ribun-A niɡikŋ. (165)

A few sets show (non-systematic) devoicing of Proto Land Dayak voiced stops in syllable-initial position in the Southern languages.

** N-kâbat, **N-kâpat ‘(to) tie’ Proto Bidayuh *kābat, *kābat, *Nabat, Semandang ṭopat. (159)

** [t] agon ‘(to) stand’ Proto Bakati’ *agun, Kembayan-H ntataktn, Kembayan-A ntakat, Ribun-H ntokut, Ribun-A tokut, Semandang tokit. (132)

**naroja? ‘(to) spit’ Proto Bidayuh *ŋ-ir-ūja?, Rara ŋaruja?, Kembayan-H nrucuh’h, Kembayan-A ricu’ (...jo? expected in both Kembayan forms), Ribun-H hucuh (...jo expected), Semandang ŋaruja. (154)

** [d] ŭnduŋ, **tănduŋ, **indoŋ ‘nose’ Proto Bidayuh *nduŋ, *īnduŋ, *ūnduŋ, Proto Bakati’ *dudu,y, Kembayan-H nu`, Ribun-H tonduŋ, Ribun-A tondu‘ŋ, Semandang idoŋ. (84)

**m**

**rimah ‘five’ Proto Bidayuh *rimah, Proto Bakati’ *rima,?, Kembayan-H rama, Ribun-H humuh, Ribun-A himu, Semandang lima? (from Malay(ic)?)?. (285)

**n**

**mānuk, **mănuk ‘bird’ Proto Bidayuh *mānuk, Proto Bakati’ *manuk, Kembayan-H monu”?, Ribun-H mono”, Ribun-A mono”?, Semandang mono”. (47)

**p**

**Vna ‘person’ Proto Bidayuh *iŋa, *aŋa, Kembayan-A ṭo, Ribun-H ọŋu, Ribun-A ọno, Semandang ṭoŋa. (257)

**j**

**sūni ‘river’ Proto Bidayuh *sūni, Proto Bakati’ *suni, Kembayan-H suŋi, Ribun-H suŋi. (7)

**l**


**r**

**nāram, **nārom ‘night’ Proto Bidayuh *nārom, *nārom, *nārəʔ, *karam, Proto Bakati’ *ŋaru,m, Kembayan-H nɔŋəm, Kembayan-A ŋarəp, ŋarəp, ŋarip, Ribun-H ŋohin, Ribun-A ŋohiŋ, Semandang ŋorum. (22)

The Proto Land Dayak **r is consistently represented by h in Ribun in the onset of the ultima (or earlier syllable). It is quite possible that there was an intermediate stage in which **r had a uvular pronunciation [ŋ], as it does for many speakers of the Bunad Sadung variety of Bidayuh.
It seems probable that only **r is original in Proto Land Dayak and that **l has been introduced via borrowings from Malay or related languages. Many PLD sets reconstructed with **r have similar terms in Malay; a large group of them have l in Malay, but a few have r. The following sets are representative of the two groups:

Table 12. Proto Land Dayak Sets with **r

<table>
<thead>
<tr>
<th>Proto Land Dayak</th>
<th>Bahasa Malaysia</th>
<th>Set number</th>
</tr>
</thead>
<tbody>
<tr>
<td>**būran ‘moon’</td>
<td>bulan</td>
<td>9</td>
</tr>
<tr>
<td>**kūrit ‘skin’</td>
<td>kulit</td>
<td>29</td>
</tr>
<tr>
<td>**risuŋ ‘mortar’</td>
<td>lesung</td>
<td>191</td>
</tr>
<tr>
<td>**bāri ‘house’</td>
<td>balai</td>
<td>196</td>
</tr>
<tr>
<td>**mirih, **birih ‘buy’</td>
<td>beli</td>
<td>263</td>
</tr>
<tr>
<td>**rimah ‘five’</td>
<td>lima</td>
<td>285</td>
</tr>
<tr>
<td>**jārum ‘needle’</td>
<td>jarum</td>
<td>213</td>
</tr>
<tr>
<td>*pVriok⁶⁷ ‘cooking pot’</td>
<td>periuk</td>
<td>223</td>
</tr>
<tr>
<td>*pVrāhu[?] ‘boat’</td>
<td>perahu</td>
<td>198</td>
</tr>
</tbody>
</table>

There are relatively few PLD sets that have been reconstructed with **l. All of them, with one exception, have similar forms in Malay. (Cf. Table 13.)

From the sets displayed in Table 12 we can see that PLD **r corresponds to both l and r in Malay. The sets displayed in Table 13 are those that have l in PLD and in Malay. They suggest that l was introduced in the initial and final positions of the PLD ultima and in the onset of the penult. It is interesting to note that a high proportion of these sets have full vowels in the penult even though reduced vowels outnumber full vowels in the total corpus by a considerable margin. The preponderance of full vowels may be an indicator that these are borrowings from Malay, in which the vowel a occurs frequently in the penult. For some consideration of PLD liquids from the perspective of their development from Proto Austronesian, see §6.1.5.

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⁶⁷The last two reconstructed forms in this table are from Proto Bidayuh-Bakati’ rather than from Proto Land Dayak; hence the single asterisk rather than two.
Table 13. Proto Land Dayak Sets with **l

<table>
<thead>
<tr>
<th>Proto Land Dayak</th>
<th>Bahasa Malaysia</th>
<th>Set number</th>
</tr>
</thead>
<tbody>
<tr>
<td>**lā?ut, **lāwat ‘sea’</td>
<td>laut</td>
<td>8</td>
</tr>
<tr>
<td>**kilat ‘lightning’</td>
<td>kilat</td>
<td>16</td>
</tr>
<tr>
<td>**jālan ‘(to) walk’</td>
<td>jalan</td>
<td>138</td>
</tr>
<tr>
<td>**ājāl ‘(to) play’</td>
<td></td>
<td>139</td>
</tr>
<tr>
<td>**tūlak ‘push’</td>
<td>tolak</td>
<td>152</td>
</tr>
<tr>
<td>**mīlih ‘choose’</td>
<td>pilih</td>
<td>164</td>
</tr>
<tr>
<td>**lāntiŋ ‘raft’</td>
<td>lanting (Perak Malay)</td>
<td>197</td>
</tr>
<tr>
<td>**lādiŋ ‘knife’</td>
<td>lading</td>
<td>203</td>
</tr>
<tr>
<td>**lāmak ‘fat (noun)’</td>
<td>lemak</td>
<td>220</td>
</tr>
<tr>
<td>**jual ‘sell’</td>
<td>jual</td>
<td>262</td>
</tr>
<tr>
<td>**lāntay ‘floor’</td>
<td>lantai</td>
<td>276</td>
</tr>
<tr>
<td>**mīlaŋ ‘count’</td>
<td>bilang</td>
<td>294</td>
</tr>
<tr>
<td>**tăbal ‘thick’</td>
<td>tebal</td>
<td>321</td>
</tr>
</tbody>
</table>

In addition, there are a few sets that have mixed r and l reflexes, i.e., r in some Land Dayak languages and l in others.

Table 14. Proto Land Dayak Sets with **l and **r

<table>
<thead>
<tr>
<th>Bidayuh</th>
<th>Bakati’</th>
<th>Southern Land Dayak</th>
<th>Set number</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bŭruh</td>
<td>*buru,n</td>
<td>Kem: buruh, bulu, Rib: buhuh, Sem: bulu</td>
<td>49</td>
</tr>
<tr>
<td>*gūluʔ?</td>
<td>----</td>
<td>Kem, Rib: ŋguruʔ?</td>
<td>131</td>
</tr>
</tbody>
</table>

These sets may indicate that some words originally had **r, but then l was introduced inconsistently only in certain languages.

**w

**sāwaʔ ‘year’ Proto Bidayuh *sāwaʔ, Proto Bakati’ *sawaʔ, Kembayan-H sowoʔ, Ribun-H sowo. (20)

**y

**dāyaʔ ‘blood’ Proto Bidayuh *dāyaʔ, Proto Bakati’ *dayaʔ, Kembayan-H doyoʔ, Ribun-H doyo, Semandang doya. (68)
**s**

**kăsuh** ‘dog’ Proto Bidayuh *kăsuh, etc., Proto Bakati’ *kasųʔ, Kembayan-H kosuh, Ribun-H osuh, Ribun-A kosuh. (59)

**h**

**măhih, **măḥi** ‘eight’ Proto Bidayuh *măhih, *māhi, Proto Bakati’ *mahiʔ, Kembayan-H may, Ribun-H mae Ribun-A maʔ. (288)

**māhĭt** ‘left (hand)’ Proto Bidayuh *māhĭt, *bāhĭt, Kembayan-H mojet, Kembayan-A moyiʔt, Ribun-H moyeʔ, Ribun-A moyiʔ?. (183)

**dīhan** ‘durian’ Proto Bidayuh *dīhan, *dīhen, *dīhaʔ, Rara dihatn, Kembayan-A diat, Ribun-A diąŋ, diaʔŋ. (37)

**ʔʔ ʔʔ**

**băhit** ‘left (hand)’ Proto Bidayuh *băhit, *băhĭt, Kembayan-H mojet, Kembayan-A moyiʔt, Ribun-H moyeʔ, Ribun-A moyiʔ?. (183)

**dīhan** ‘durian’ Proto Bidayuh *dīhan, *dīhen, *dīhaʔ, Rara dihatn, Kembayan-A diat, Ribun-A diąŋ, diaʔŋ. (37)

The laryngeals **h and **ʔʔ are consistently lost between vowels, i.e., in the onset of the final syllable, in the Southern Land Dayak languages, just as intervocalic **h is lost in almost all dialects of central and western Bidayuh and intervocalic **ʔʔ is lost in Bakati’.

The PLD forms of the shape **CVHVC become CV.VC in Southern Land Dayak. In addition, there are a few examples of PLD final syllables with no onset, i.e., they have the shape **CV.VC.

**sūat** ‘(tree) flower’ Proto Bidayuh *sūat, Kembayan-H suat, Ribun-A suʔ, Semandang suat. (34)

**tīuŋ, **tūyuŋ** ‘eggplant, brinjal’ Proto Bidayuh *tīuŋ, *tūyuŋ, Rara tuyukŋ or tarukŋ, Kembayan-A tiuŋ, Ribun-A tıuŋ. (40)

**ui** ‘rattan’ Proto Bidayuh *ui, Rara ue, Ribun-A ui. (45)

**sīap** ‘chicken’ Proto Bidayuh *sīap, Proto Bakati’ *siaʔp, Kembayan-A siap, Ribun-A sioʔ?. (56)

**diaʔ** ‘turtle, tortoise’ Proto Bakati’ *diaʔ, Kembayan-A dioʔ?. (488)

5.1.1.2 Metathesis of initial syllable in Southern Land Dayak

Some sets suggest that forms with the shape **CVʔ/ʔCV, which in the Southern Land Dayak languages became CVVC, metathesized the first CV of that sequence to become VCVC. Consider the following set:

**lāʔut, **lāw/uni0259t** ‘sea’ Proto Bidayuh *lāʔut, *lāut, *lāw/uni0259t, Proto Bakati’ *lauʔt, Kembayan-H lawat, Kembayan-A laut, lawoʔt, Ribun-H alut, Ribun-A alut, Semandang lawot. (8)

The first Proto Bidayuh form, the Proto Bakati’ form and the first Kembayan-A form suggest a Proto Land Dayak form **lāʔut. The second Proto Bidayuh form and the second Kembayan-A and Semandang forms suggest a Proto Land Dayak form **lāʔut. The Ribun-A form agrees with the first group, but the Ribun-H form does not fit completely with either of these reconstructions. However, if we hypothesize that in Ribun the first **CV of the first reconstruction has metathesized, we find that **lāʔut underwent the following derivation: lāʔut > lāut > ālut.
A similar development seems to have occurred in the following sets:

**ră/uni0294aŋ** 'chin' Proto Bidayuh *ră/uni0294aŋ, *ră/uni0294aŋ, *ră/uni0294an, Kembayan-A ra (< *ra/uni0294aŋ), Ribun-A ohoŋ (< *hooŋ < *ră/uni0294aŋ < *ra/uni0294aŋ). (86)

**jǔhu, **jăhu** 'far' Proto Bidayuh *jǔhoʔ, *jăhoʔ, Proto Bakati' *juhoʔ, *jauh, Kembayan-H ojuʔ, Ribun-H ojaw, Semandang oju (302). We assume here that lying behind all the Southern Land Dayak items is a form **jăhuʔ, which was metathesized to *ăjuʔ, although it must be admitted that the final aw in the Ribun-H form is puzzling.

**n//uni0272/uni0259h/uni0259p** 'drink, suck' Proto Bidayuh */uni0272/uni0259h/uni0259p, */uni0272ih/uni0259p, Kembayan-H /uni0272/uni0259n/uni0259p, Semandang inup (235). Here we assume that a form **nihap lies behind the Semandang form.

**năhi** 'house post' Proto Bakati' *nahi, Kembayan-A oni romin. (273)


There is one more set that may reflect metathesis:

**/uni0272a/uni0294a, **V/uni0272a** 'person' Proto Bidayuh */uni0272a/uni0294a, *n/uni0259/uni0294/uni0259h, *i/uni0272a, *a/uni0272a, Sara/Riok naa, nah, Kembayan-A no, Ribun-H ọpu, Ribun-A opo, Semandang ọna (257). The Southern Land Dayak forms may have developed from **ă/uni0272a, which is also reflected in central and Sembaan Bidayuh. However, it is also possible that the Southern Land Dayak forms developed from **/uni0272a/uni0294a, which is reflected in western Bidayuh. If we assume that **/uni0272a underlies at least the Ribun and Semandang forms, we might posit the following derivation: **/uni0272a > *n/uni0272a > *ă/uni0272a > o/uni0272a/uni0259/a.

### 5.1.1.3 Clusters of nasal and stop at the juncture of penult and ultima

As is the case in the daughter languages, Proto Land Dayak has clusters consisting of a nasal closing the penult followed by a voiceless or voiced stop (or **s or **j) as onset of the ultima.

**mp

**pămpi** 'cheek' Proto Bidayuh *pămpi, Kembayan-A pompi, Ribun-A pompi. (85)

**nt


**ns

The usual result of **ns in the Southern Land Dayak languages is c, as it is in the Bukan-Sadung varieties of Bidayuh.

**t-ar-ănsak, **ns-ar-ak** 'red' Proto Bidayuh *nsălak (this and the PBak form reflect the **-ar-infix), *nălak 'burn', Proto Bakati’ *taransak, Ribun-H ntocak, Ribun-A ntociʔ. (331)

**insak, **i[n][s] ik, **dnsik, **ănsak** 'small' Proto Bidayuh *insăk, Proto Bakati’ *ine,k, Kembayan-A dicik, Ribun-H naʔi, Semandang ocaʔ. (318)

The following Southern Land Dayak forms may be additional examples of the **ns cluster in Southern Land Dayak:

'dig' Kembayan-H ọnciθ, Ribun-H ọuceh, Ribun-A ọntē’s, Semandang ọuceh. (149)

'burn' Kembayan-H ọcu'l, Ribun-A ọncu', Semandang ọcol. (231)
These Southern Land Dayak forms seem to reflect **ŋu/ansih and **ni/ŋunsul, but no matches for these forms have been found in the Northern Land Dayak languages.

In Southern Land Dayak c has developed (1) from **k[i], as shown previously, (2) from **ns, as seen immediately above, and (3) also from hardening of **s, as seen in the following examples:


**sium Proto Bakati’ *siu,m ‘smell, kiss’, Kembayan-A bociup ‘smell’ (119). (Entire set may be borrowed from Malay.)

In addition, there are some examples of c in Southern Land Dayak that seem to have resulted from borrowing:

Ribun-A licoʔ ‘mud’ (5). Cf. B.M. lecah or lecak ‘muddy’.


**ŋk

**nāŋku ‘steal’ Proto Bidayuh *N-tāŋku, *tāŋku, Proto Bakati’ *naŋko, Kembayan-A noŋku, Ribun-A noŋku. (163)

In most varieties of central and western Bidayuh a nasal is systematically lost before a voiceless stop. In Proto Land Dayak there are many sets that show a nasal plus voiceless stop cluster in some languages but just the voiceless stop in others. This suggests that the PLD nasal was weakened in that position with the result that it was often lost.

**ümpat, **apat ‘four’ Proto Bidayuh *üm-pat, Proto Bakati’ *apaʔt, Kembayan-H mpat, Ribun-H mpat, Ribun-A mpaʔ, Semandang mpat. (284)

**simput, **sumput, **su[m] pit ‘blow pipe’ Proto Bidayuh *simpot, *sumpot, *sumpit, Proto Bakati’ *sumpot, Kembayan-A supiʔ, Ribun-A supiʔ. (205)

**kāntiʔ, **ratiʔ ‘(to) play’ Proto Bidayuh *bi-Catiʔ Bukar biratiʔ, Bunan bikatiʔ, Semandang ɳonti. (139)

**jāntuʔ ‘(to) fall’ Proto Bidayuh *jātuʔ, Proto Bakati’ *jantuʔ, Ribun-A joutuʔ, Semandang joutu. (144)

**ansiŋ, **kāsiŋ, **kāsiŋ ‘urine’ Proto Bidayuh *āsiŋ, *kāsiŋ, *kāset, Proto Bakati’ *ansiŋ, Kembayan-Ą ɳkosik, Ribun-Ą kosŋ. (71)

**pinsap, **pinəp, **nusap ‘suck’ PBid *pinsąp, *pinsąp, PBak *ŋinsąp, *ŋinsąp, *nusąp, *nusąp, Kembayan-Ą n/ŋinsąp. (146)
**bąŋkak** ‘(to) swell’ Proto Bakati’ *bঞkা, Kembayan-H boŋka?, Ribun-H boko?, Ribun-A boŋko?, Semandang boŋka?. (123)


**nāŋ-kap, **nāŋ-kap, **da-kup (to) hold’ Proto Bidayuh *nāŋkap, *ŋakap, Proto Bakati’ *naŋkap, Ribun-A noki?, Semandang nokop. (165)

Surprisingly, in one set there is an example in Ribun-H of the voiceless stop being lost, leaving only the nasal.


**mb**

**CVmbi, **mbin (to) wash’ Proto Bidayuh *m[b]e, *ŋumbe, Proto Bakati’ *mbeen, Kembayan-A t/nomi?, Ribun-H ɲumbe, Ribun-A ɲome?, bohome?. (166-67)

**nd**

**ându** ‘day’ Proto Bidayuh *ându, Proto Bakati’ *ando, Kembayan-H onu, Ribun-H onu, Ribun-A ondu, Semandang onu. (19)

**nj**

The following sets show **nj in Proto Bidayuh. Proto Bakati’ and the Southern Land Dayak dialects lack either the nasal or the stop/affricate:


**ānjjan** ‘ladder’ Proto Bidayuh *ānjjan, Kembayan-A ọpat, Ribun-A ọnąj. (274)

**ng**


**tìngu** ‘punch, hit with fist’ Proto Bakati’ *tìngu, *nìŋgu, Semandang butiju (in the transcription “ny” may have been substituted for “ng” ; might fit better with **t-ar-īnju? ‘finger’ (107)). (178)

Generally throughout the varieties of Bidayuh in clusters of nasal plus voiced stop the stop has a lenis pronunciation or else is marked not by a stop at all but by the orality of the following vowel. In many examples orality is further reflected in a final preploded nasal. Many sets that have a cluster with voiced stop in Bidayuh have just a nasal in the Bakati’ languages, showing that the process of lenition has progressed even further. That is also the case in some sets in Southern Land Dayak. In a very few reduction leaves simply a voiced stop, but in most cases it is the nasal that remains.

**āmbuh** ‘long (object)’ Proto Bidayuh *āmbu[h], Kembayan-H omuh, Ribun-H domauk, Ribun-A dombah (dombuh expected). (298)
**kămbot, **k-ar-īmbat, **k-an-āmbat** Proto Bidayuh *kămbot, *kămbut, Proto Bakati' *karimut, Kembayan-A komet, Ribun-A konombu? (134)

**sămbu** 'on top of' Proto Bidayuh *sămbu 'above', Proto Bakati' *samō, 'above', Kembayan-A no? somu, Ribun-A nti? sombu. (522)

**āndu** 'day' Proto Bidayuh *āndu, Proto Bakati' *ando, Kembayan-H onu, Ribun-H onu, Ribun-A ondu, Semandang onu. (19)

**sindaʔ, **āndaʔ, **indaʔ** 'mother' Proto Bidayuh *sindaʔ, *āndaʔ, Proto Bakati' *sindoʔ, Kembayan-A nāʔ 'thumb (mother-finger)', Ribun-H nduʔ, Ribun-A ndoʔ, Semandang inoʔ. (249)

**ānjān** 'ladder' Proto Bidayuh *ānjān, Kembayan-A oŋat, Ribun-A oŋañ. (274)

**pŭŋ/uni0261u, **puŋ/uni0261uŋ** Proto Bidayuh *pŭŋ/uni0261o/uni02D0/uni0294, *pŭŋ/uni0261o/uni02D0 'nape of neck', Proto Bakati' *pńō/uni0294 'buttocks, back', Kembayan-H poŋo/uni0294 (<*puŋu/uni0294) 'back', Kembayan-A poŋo/uni0294 (u expected in penult) 'nape', Ribun-H pńū/uni0294 (<*pńuʔ?) 'back', Ribun-A pündow (ŋ/uni0261 expected) 'nape'. (92, 99)

5.1.2 Nucleus of the ultima

5.1.2.1 Inventory

Four vowels clearly contrast in the nucleus of the Proto Land Dayak ultima: **i, **u, **a and **a. Reflexes of the first three are quite regular and unchanged in many environments. The reflexes of **a in Southern Land Dayak are commonly Kembayan a ~ Ribun u ~ Semandang u.

**i

**suni** 'river' Proto Bidayuh *sunjī, Proto Bakati' *sunji, Kembayan-H sujni, Ribun-H sujni. (7)

**tārih** 'rope' Proto Bidayuh *tārih, *tārin, Proto Bakati' *tariʔ, *tārin, Kembayan-H torih, Ribun-H tohis, Semandang torih. (206)

**u

**bātuh, **bātuh** 'stone' Proto Bidayuh *bātuh, Proto Bakati' *batuʔ, Kembayan-H botuh, Ribun-H botuh, Semandang botuh. (4)

**dābu** 'dust' Proto Bidayuh *dābu, Proto Bakati' *dabu, Kembayan-H dobu, Ribun-H dobu, Semandang debu (Malay spelling ?) (226). (Cf. B.M. debu 'dust, ash')

**a


**kāpa** 'thick' Proto Bidayuh *kāpa, Proto Bakati' *kapa, Kembayan-H kopa. (321)

**bāras** 'husked rice' Proto Bidayuh *bāraʔ, *bāraʔ, Proto Bakati' *nahaʔ, (unclear how this set is to be related to the others), Kembayan-A boras, Ribun-A bohah. (216)

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For a brief consideration of the **-an- infix, see §5.3.3.
5.1.2.2 Pronunciation of vowels before certain consonants

The reflexes in these examples have simple, non-gliding vocalic pronunciations in Southern Land Dayak. There are, however, two other types of reflexes: (1) those that glide toward a central or low vowel in Kembayan and Ribun, such as [i], [i], [a] or [u] and (2) those with a centralized vowel quality, [e], [o], [ɛ], [e] or [o]. The end point of a central/low glide is always written as a in sets in this study even though it is written in the wordlists with various central or low symbols. It appears that there is no contrast in the quality of the off-glides.

These gliding vowels, or diphthongs, may be somewhat parallel to the diphthongs found in the western, Penrissen and Padawan (except for Biya) regions of Bidayuh. In those Bidayuh varieties the glides are the manifestations of the two mid vowels, a centralizing glided front vowel /e/ and a centralizing glided back vowel /o/.

It is possible that a similar analysis could be applied to the gliding vowels of Kembayan and Ribun. However, in those languages the non-gliding and the gliding vowels contrast not just with the high vowels but with all four vowel qualities. That is, i, u, a and a contrast with i, u, a and o. This contrast operates only in certain environments. Plain and gliding vowels apparently contrast at least before glottal stop since final **k and **/ merged as / generally in Kembayan and at times in Ribun. The merger of other pairs of final consonants has led to other environments in which the two types of vowels contrast. The full analysis of the phonological status of the simple and gliding vowels in Kembayan and Ribun will require further investigation. For now the gliding vowels /i/, /u/, /a/ and /o/ will be regarded as distinct from the non-gliding vowels /i/, /u/, /a/ and /a/ in the phonological systems of Kembayan and Ribun.

The distribution of the three vowel types (non-gliding, gliding toward a central position and centralized vowels) is far from random in the Southern Land Dayak languages. It is closely related to the consonant that follows the vowel. The non-gliding vowels exemplified above usually occur before PLD (non-velar)69 nasals, the fricatives **s and usually **h or in an open syllable and also in the second vowel position of a *CVVC form, regardless of the following consonant. The vowels that glide toward a central

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69The somewhat more mixed vowel reflexes before **ŋ can be seen in Table 15.
position usually occur before voiceless stops. The vowels with a centralized quality usually occur before glottal stop and sometimes **k.

The distribution of the PLD vowel reflexes before each kind of coda and in open syllables is given in Table 15.\(^{70}\)

Table 15. Reflexes of PLD vowels in the ultima

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>t</th>
<th>k</th>
<th>b</th>
<th>d</th>
<th>g</th>
<th>?</th>
<th>m</th>
<th>n</th>
<th>ŋ</th>
<th>r</th>
<th>l</th>
<th>w</th>
<th>y</th>
<th>s</th>
<th>h</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>i</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PBid</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i,e</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td></td>
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</tr>
<tr>
<td>PBak</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
<td>i</td>
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| **u** |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| PBid | o   | u,o\(^{(7)}\) | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o | u,o |     |
| PBak | u,o | u,o | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u | u,u |     |
| Kem-H | u\(^{a}\) | u\(^{a}\) | u   | u   | u   | u   | [u\(^{a}\)] | u\(^{a}\) | u   | u   | u   | u   | u   | u   | u   | u   |     |
| Kem-A | u\(^{a}\) | u\(^{a}\) | u   | u   | u   | u   | [u\(^{a}\)] | u   | u   | u   | u   | u   | u   | u   | u   |     |
| Rib-H | u   | o   | u   | u   | o   | u   | u   | u   | o   | u   | u   | u   | u   | u   | u   |     |
| Rib-A | u\(^{a}\) | o\(^{w}\) | u   | u   | o\(^{w},u\) | u   | u\(^{a}\) | u   | [u\(^{a}\)] | u   | u   | u   | u   | u   | u   |     |
| Sem  | o   | o   | u   | u   | o   | u   | u   | o   | u   | o   | [o] | u   | u   | o   | u   |     |

\(^{70}\)Some seemingly irregular reflexes in some sets are not entirely accounted for in this chart. It is likely that some differences in reflexes would be clarified through further checking with speakers of Kembayan, Ribun and Semandang with the result that a simpler picture of the reflexes would emerge.
Table 15 (contd). Reflexes of PLD vowels in the ultima

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**a**

|       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| PBid  | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |
| PBak  | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a | a |
| Kem-H | a | a | a | ə | o | a | a | [a] | o | [e] | a | a |   |   |   |   |
| Kem-A | a | a | a | ə | o | a | a | [a] | a | o | a | a | a | a | a | a |
| Rib-H | a | a | o | a | o | a | a | [a] | a | a | o | o |   |   |   |   |
| Rib-A | o* | a | o,o*(13) | a | o,o*(13) | a | a | o* | i* | [a] | a | [a] | a | o* | u* | o |
| Sem   | a | a | a | a | a | a | a | a | a | a | a | o | [o] | [e] | a | a |

Note: Brackets enclosing a symbol indicate that it is the reflex of both the vowel and the following consonant.

Key to dialect symbols:
- PBid: Proto Bidayuh
- PBak: Proto Bakati'
- Kem-H: Kembayan (Hudson)
- Kem-A: Kembayan (Adelaar)
- Rib-H: Ribun (Hudson)
- Rib-A: Ribun (Adelaar)
- Sem: Semandang

Notes for Table 15:
1. In a nasal environment the reflex is i; elsewhere it is e.
2. In Kembayan-H the reflex immediately following a vowel is ye (e.g., **māhit ‘left (hand)’ (183)).
3. There are a few sets (e.g., **kidik ‘short’ (296/318)) in which ik, the less common reflex of **ik, occurs rather than the more common i*? in Kembayan and perhaps also in Ribun. Some of these may show the development in an ultima with no onset. In one case the set should perhaps be reconstructed as **Cig rather than **Cik.
4. In Kembayan following **r, **t or a vowel the reflex is i; following other consonants it is i*. In Ribun following **r or **t the reflex is i; following other consonants it is e*.
5. In one set with Proto Bidayuh *līde?: ‘thin’ (322) and in another with Bidayuh Bunir pinire:n ‘cemetery’ (130) Kem-A has i* rather than the expected i. This may suggest that a long vowel should
be reconstructed for these sets or even possibly **e rather than **i. At present, however, neither mid vowels nor long vowels are posited for PLD.

6. In Ribun-H the reflex immediately following a vowel is ye (e.g. **nähit ‘sew’ (212)).

7. Both u and o occur as reflexes in various environments in most of the languages. There are a few sets in which o-type reflexes predominate, others in which u-type reflexes predominate and many in which only u-type reflexes occur. Nevertheless, it would be difficult to identify unequivocally certain sets that reflect **o as distinct from those that reflect **u.

8. As with **ik there is a double reflex of **un in Kem-A: the rare reflex ok (e.g., **jäntuŋ ‘heart’ (97)) and the more common reflex u.’

9. After a labial consonant the reflex of **ə in Bakati’ is *a; elsewhere it is *u.

10. Many sets reflecting **ə in Northern Land Dayak have forms that reflect **i in Southern Land Dayak. At the same time i (or e) occurs in the Ribun-H form in a number of sets that seem to reflect only **ə, raising the possibility that i may be the reflex of **ə in Ribun in some environments.

11. Final **l is preserved in PBid *tăbal ‘thick’ (321).

12. In some words of the Kembayan-A wordlist final a is recorded as long. While the vocalic length has not been written here, it is possible that such a length difference in final vowels does exist. If so, long vowels in that dialect would be the fused reflex of **a plus **ŋ. It is possible that the fused reflex is nasalized in contemporary forms or perhaps was nasalized at an earlier stage.

Examples of the vowels before **p, **t or **k


**kūrit ‘skin’ Proto Bidayuh *kūrit, Proto Bakati’ *kuri,t, Kembayan-H kuri,t, Kembayan-A kuri,t, Ribun-H kuhe?, Ribun-A kuhi?, Semandang kuret, kurit. (29, 66)


**mānuk, **mānuk ‘bird’ Proto Bidayuh *mānuk, Proto Bakati’ *manu,k, Kembayan-H monu?, Ribun-H mon?, Ribun-A mon?, Semandang mono?. (47)


**ūmpat, **apat ‘four’ Proto Bidayuh *ūm-pat, Proto Bakati’ *apa,t, Kembayan-H mpat, Ribun-H mpat, Ribun-A mpa?, Semandang mpat. (284)

**N-tūlak ‘push’ Proto Bidayuh *tūlak, Kembayan-H nula?, Ribun-H nulo?, Semandang nula?. (152)
**n/ɲ appré ‘drink, suck’ Proto Bidayuh *ɲ appré, *ɲ appré, Kembayan-H ɲ apprép, Ribun-H ɲinde?, Ribun-A ɲindi?’ (d not expected in either Ribun form), Semandang inup. (235)

**kədək, **kidik ‘short (object)’ Proto Bidayuh *kədək, Kembayan-H kidik, Ribun-H kidit, Ribun-A kidik. (296, 318)

Examples of the vowels before **b, **d or **g

**bəʔid ‘betel (leaf)’ Proto Bidayuh *bəʔid, Proto Bakati’ *uʔid Kembayan-A boi, Ribun-A boiʔoʔ? (perhaps it is boiʔ). (242)

**ərud ‘boat’ Proto Bidayuh *ərəd, Kendayan arud, Kembayan-A orut, Ribun-A ohut. (198)


**kəpəq ‘cut’ Proto Bidayuh *kəpəq, Kembayan-H ḋọpət (perhaps should be ḋọpət; final k expected), Ribun-H ḋọpuk, Semandang ḋọpuʔ?. (378)

**dərəd, **dərəd ‘mountain’ Proto Bidayuh *dərəd, Kembayan-H dorir, Ribun-H dohir, Ribun-A dohir, Semandang doriʔ?. (1)

**məndəʔ, **məndiʔ ‘come, return’ Proto Bidayuh *məndəʔ, Kembayan-H monik, Ribun-H monik, Ribun-A mondik, Semandang moniʔ?. (140)

Examples of the vowels before **?


**əmuʔ, **imuʔ ‘you (sg.)’ Proto Bidayuh *əmuʔ, *muʔu, Proto Bakati’ *imuʔ?, Kembayan-H omuʔ?, Ribun-H oμu, Ribun-A oμu (omo expected), Semandang omo. (340)

**dəyaʔ ‘blood’ Proto Bidayuh *dəyaʔ?, Proto Bakati’ *dayəʔ?, Kembayan-H doyoʔ?, Ribun-H doyo, Semandang doya. (68)

**səndəʔ, **ənədəʔ, *indaʔ ‘mother’ Proto Bidayuh *səndəʔ?, *ənədəʔ?, Proto Bakati’ *sindoʔ?, Kembayan-A nəʔ ‘thumb (mother-finger)’, Ribun-H nduʔ? (? not expected in Ribun or Semandang forms), Ribun-A ndoʔ?, Semandang inoʔ?. (249)

Examples of the vowels before **ŋ

**N-kəpiŋ ‘hear’ Proto Bidayuh *ŋkəpiŋ, Kembayan-H ḋọpiŋ, Kembayan-A ḋọpiŋ, Semandang ḋọpiŋ. (87, 117)

**dəyuŋ ‘woman’ Proto Bidayuh *dəyuŋ, Kembayan-H dayuŋ, Ribun-H nayuŋ, Ribun-A dayuŋ, nayuŋ, Semandang dayuŋ. (253)

**milaŋ ‘(to) count’ Proto Bidayuh *milaŋ, Proto Bakati’ *milaŋ, Kembayan-H milaŋ, Ribun-H milaŋ, Ribun-A milaŋ, Semandang milaŋ. (294)

**saməhaŋ ‘ten’ Proto Bidayuh *siməhaŋ, *siməhoŋ, Kembayan-H simaŋa (perhaps should be simaŋ), Kembayan-A səmaŋ, Ribun-H simoŋ, Ribun-A simoŋ. (290)
As can be observed from the preceding cognate sets, some consonants in final position have undergone changes in some languages. For example, in Southern Land Dayak languages oral stop often becomes glottal stop. This is more often the case with velar stops than stops at other positions and more often with voiceless stops than voiced. For more details, please consult §5.1.3 that deals with consonants as coda of the PLD ultima.

5.1.2.3 Mid vowels

Thus far we have spoken of four vowel qualities in the Proto Land Dayak ultima, *i, *u, *ə and *a. One might wonder about the mid vowels, *e and *o, which are reconstructed for Proto Bidayuh and apparently are warranted for Proto Bakati’ and Proto Bidayuh-Bakati’ as well.

The contrast between /i/ and /e/ appears to be established for contemporary Kembayan, Ribun and Semandang. Cf. Kembayan-H nriddi ‘thin’ (322) and ode ‘younger sibling’ (247), kidik ‘short’ (296, 309) and bek ‘bad’ (169), kai ‘not’ (333) and mae ‘eight’ (288); Ribun-H goli ‘one’ (281) and ntile ‘see’ (115); Semandong dorì ‘mountain’ (1) and nore ‘pull’ (151), oti ‘liver’ (103) and je (181) ‘say’.

Similarly, /u/ and /o/ appear to contrast. Cf. Kembayan-H robu ‘(to) fall’ (144) and mopo ‘(to) wash’ (166), koyuh ‘tree’ (28) and bojok ‘straight’ (319); Ribun-H oku ‘I’ (339) and tuko ‘mouth’ (81), ŋuru ‘sit’ (131) and mono ‘bird’ (47); Semandang onu ‘day’ (19) and omo ‘you’ (340), bulu ‘feather’ (49) and turo ‘egg’ (51).

There are a few sets that quite consistently have e-type reflexes or o-type reflexes throughout. ‘bad’ Proto Bidayuh *bĭ/ək, Kembayan-H bek, Ribun-H bie?, Ribun-A bii’? (bie’? expected). (169)
‘(to) wash’ Proto Bidayuh *ŋumbe:n, *m[b]e:?, Proto Bakati’ *mbeen, Kembayan-A t/nomi?, Ribun-H nȳmbe, Ribun-A ŋome’?, bohome’?. (166)
‘lightning’ (?) Proto Bidayuh *jipite?, PBak *pate?. (15)
‘heart’ Proto Bidayuh *jăntoŋ, Bakati’ Rara jantoŋ, Kembayan-A jantok, Ribun-H jantunj, Ribun-A jantuŋ, Semandong jantoŋ. (97)
‘straight’ Proto Bidayuh *bújoŋ, Kembayan-H bojok, Ribun-H bujo?, Semandang bujur (final ? expected). (319)

There are many more sets with a mixture of i- and e-type reflexes or with u- and o-type reflexes. ‘younger sibling’ Proto Bidayuh *sudi?, *súde?, *síde?, *såde?, *ādi?, *āde?, Proto Bakati’ *sade?, Kembayan-H ode?, Kembayan-A odi?, Ribun-H odi?, Ribun-A ode’?, Semandang ode?. (247)
‘excrement’ Proto Bidayuh *tăki/ə, Proto Bakati’ *take/ə, Kembayan-A toci?, Ribun-A tike’?. (73)
At this point it seems warranted to recognize **i and **u for Proto Land Dayak with reflexes that vary in some cases to e and o, but not distinct mid vowels. In the future, further evidence may be found that justifies recognizing PLD mid vowels distinct from high vowels.

This raises the question of the origin of e and o in southern daughter languages and in Proto Bidayuh and Proto Bakati’. Was there an environment in which those mid vowels developed?

First, it may be noted that the mid vowels e and o in the Southern Land Dayak languages are found most commonly when the syllable is closed by **k, **/uni0294 or **ŋ. The higher vowels i and u are commonly found before other consonants or no consonant.

Similarly, the mid vowels, *e and *o, in Proto Bakati’ occur commonly in these same environments, i.e., before **k, **/, **ŋ, and when there is no consonant.

'Stab' Proto Bidayuh *ŋāmuk, *ŋāmok, *ŋām/uni0259k, Proto Bakati’ *ŋamo/uni02D0. (145)

'Thin' Proto Bidayuh *lĭde/uni02D0/uni0294, *lĭde/uni02D0, Proto Bakati’ *rade/uni0294, Kembayan-H nridi/uni0294 (e expected), Kembayan-A rido/uni0294, Ribun-H hidi. (322)

'Seven' Proto Bidayuh iju?, Proto Bakati’ ijo2, Kembayan-H iju?, Ribun-H iju, Ribun-A ju2 (ju expected), Semandang tujoh (final h not expected). (287)

'Hand, including arm' Proto Bidayuh *băre/uni02D0ŋ, Proto Bakati’ *bare/uni0294. (104)

'Man' Proto Bidayuh *dări, Proto Bakati’ *are2, Kembayan-H dari, Ribun-A dari, nahi, Semandang dari. (252)

'Scratch' Proto Bidayuh *gāyu, Proto Bakati’ *ŋayo2, Kembayan-H ɲoyu, Ribun-H ɲoyu, Ribun-A ɲoyu’ (u expected), Semandang bagoyu. (122)
Even in Proto Bidayuh in a high proportion of the sets that are reconstructed with mid vowels, *e and *o, these vowels occur before **k, **ʔ or **ŋ. In general neither *e nor *o occurs word finally in PBid.

‘bad’ Proto Bidayuh *bĭʔek, Kembayan-H bieʔ, Ribun-H bieʔ, Ribun-A bieʔ (bieʔ expected). (169)

‘(head) hair’ Proto Bidayuh *boʔ, *b̪oʔ, *aboʔ, Proto Bakati’ *aboʔ, Ribun-H buhbu (final ? expected), Semandang buromoʔ (b rather than m expected). (79)

‘hand, including arm’ Proto Bidayuh *băρeʔ, Proto Bakati’ *bareʔ. (104)

‘(to) count’ Proto Bidayuh *n̲/n̲ʔiʔtoʔ, Proto Bakati’ *n̲/n̲ʔiʔtoʔ, Kembayan-A n̲/n̲ʔiʔtoʔ. (16)

‘mortar’ Proto Bidayuh *risoŋ, *rusoŋ, Rara ransuŋan, Kembayan-A ros, Ribun-A osuŋ. (191)

‘sheath of a parang’ Proto Bidayuh *sibɔŋ, Proto Bakati’ *sibɔŋ. (208)

‘thin’ Proto Bidayuh *l̲i̲deʔ, *l̲i̲deʔ, Proto Bakati’ *radeʔ, Kembayan-H ridi (e expected), Kembayan-A ridiʔ, Ribun-H hidî. (322)

‘far’ Proto Bidayuh *j̲ūhoʔ, *j̲ăhoʔ, Proto Bakati’ *juhoʔ, *jayh, Kembayan-H ojuʔ, Ribun-H oja (something like oju expected), Semandang oju. (302)

In summary, then, it appears that Proto Land Dayak had a basic system of four vowels **i, **u, **a and **o. Perhaps even during the Proto Land Dayak period the pronunciation of the high vowels **i and **u came to be different before **k, **ʔ, **ŋ, possibly also in open syllables or elsewhere. With the merging of some final consonants the plain, lower and centralized-gliding pronunciations came to contrast with the plain, higher pronunciations. This process has continued and expanded in later periods. Today in about half the varieties of Bidayuh the mid vowels *e and *o are gliding vowels whereas the high vowels *i and *u are plain vowels. In the Bakati’ languages a large portion of the non-low vowels are mid (e or o) rather than high (i or u).

5.1.2.4 Alternation between **o and **i

The usual set of reflexes of **o in Southern Land Dayak is Kembayan o ~ Ribun u ~ Semandang u, as noted in §5.1.2.1. However, there are also split sets in which one Southern Land Dayak language has an i-type reflex while the others have reflexes farther back such as o or u. In Kembayan the reflex is o (or o'). In Ribun it is i (or e or i') before p or m but u elsewhere. In Semandang the reflex is i before h or t but u elsewhere. The following sets illustrate the regular development of **o in Southern Land Dayak in the environments mentioned:

**n̲aran ‘night’ Proto Bidayuh *n̲arəm, *n̲arəm, *n̲arəʔ, *karaʔ, Proto Bakati’ *n̲aruʔm, Kembayan-H n̲arəm, Kembayan-A n̲arəp, n̲arəp, n̲arip, Ribun-H n̲oʔiʔn̲, Ribun-A n̲oʔiʔn̲, Semandang n̲orəm. (22)

**tahap, **tahap ‘loincloth’ Proto Bidayuh *t̲ahəp, *t̲ahəp, Kembayan-A təʔap (ə’ expected), Ribun-A tiiʔ? (tiiʔ? expected). (267)

**mətəh ‘eye’ Proto Bidayuh *bətəh, *mətəh, Proto Bakati’ *matuʔ, Kembayan-H motah, Kembayan-A matah, Ribun-H motuh, Semandang motiθ. (88)
**băn/uni0259h, **băn/uni0259n ‘husband’ Proto Bidayuh *băn/uni0259h, *băn/uni0259n, *băn/uni0259/uni0294, Proto Bakati’ *banu, n, Kembayan-H băn̩, Kembayan-A băn̩, Ribun-H bonuh, Semandang bonihi. (250)

**[t] agon ‘stand’ Proto Bakati’ *agu, n, Kembayan-H ntatak̑atn, Kembayan-A ntak̑at, Ribun-H ntokut, Ribun-A tokut, Semandang tokit. (132)

However, there are several other sets with *a in Proto Bidayuh that have the correspondence set Kembayan i ~ Ribun i ~ Semandang i in Southern Land Dayak.

‘dead, die’ Proto Bidayuh *kăb/uni0259s, Proto Bakati’ *kabi1s, Kembayan-H kabis, Kembayan-A kobis, Ribun-H kobis. (129)

‘kill’ Proto Bidayuh *ŋāb/uni0259s, *k-in-ăb/uni0259s, Proto Bakati’ *ŋami1s, Kembayan-H ŋkomis, Ribun-H ŋkomis, Semandang āmis. (201)

‘sleep’ Proto Bidayuh *bă?as, Proto Bakati’ *buus, Kembayan-H biis, Ribun-H biis, Semandang biis. (133)

‘mountain’ Proto Bidayuh *dăr/uni0259d, Sara/Riok darud, Kembayan-H dorit, Ribun-H dohit, Ribun-A dohik, Semandang dori?. (1)

‘maggots, fly’ Proto Bidayuh *(ŋ)ăr/uni0259d, *uni0259r/uni0259d ‘maggots’ (60), Kembayan-A gunarit, Ribun-A nahik ‘fly’. (61)


The first three of the above sets have an ultima with the shape *b(ə?)as. The latter three sets have an ultima ending in a voiced stop. It is tempting to regard i ~ i ~ i as the reflexes of **a before **s or a voiced stop. However, the following three sets have the i ~ i ~ i correspondence occurring before **s in Southern Land Dayak where there is no sign of its being related to **a.

‘lower leg’ Proto Bidayuh *bĭte/uni02D0s, Rara batis, Kembayan-A bitis, Ribun-A bitis. (109)

‘(a) boil’ Proto Bidayuh *pĭrăŋkis, Kembayan-A purniิs, Ribun-A pohonti(s). (123)


The preceding sets probably could be labeled as **...is (rather than as **...as). However, there are two other sets with final voiced stops which exhibit the Southern Land Dayak ə ~ u ~ u correspondence rather than i ~ i ~ i, as in sets ‘mountain’ (1), ‘maggot, fly’(60, 61) and ‘return, arrive’ (140), displayed above. These following sets show the basic reflexes of *a before voiced stops:

**săŋad ‘honey bee’ Kembayan-A săŋə’d (final t expected), Ribun-A sɨŋu?. (240)

**kăpāg ‘(to) cut’ Proto Bidayuh *kăpəg, Kembayan-H ŋopwət (perhaps should be ŋopət; final k expected), Ribun-H ŋopuk, Semandang āpət. (378)

Thus, for now it seems best to regard the i ~ i ~ i correspondence set as the reflexes of **i, which in certain sets alternates with **a. Consider the following example:

**dăr/uni0259d, **dăr/uni0259d ‘mountain’ Proto Bidayuh *dăr/uni0259d, Sara/Riok darud, Kembayan-H dorit, Ribun-H dohit, Ribun-A dohik, Semandang dori?. (1)
5.1.2.5 Vocalic length

The data from Southern Land Dayak languages show no evidence for vowel length in the ultima. Therefore, it is concluded that length contrasts found in the Proto Bidayuh ultima and even also in Proto Bidayuh-Bakati’ have developed more recently and were not a feature of Proto Land Dayak.

5.1.3 Coda of the ultima

All of the consonants of Proto Land Dayak occur in the coda of the ultima except **j and **ŋ. However, a considerable number of the consonants in this position have special reflexes, particularly in the Southern Land Dayak languages. The reflexes of Proto Land Dayak consonants in final position are displayed in Table 16.

Table 16. Reflexes of PLD Final Consonants

<table>
<thead>
<tr>
<th>p</th>
<th>t</th>
<th>k</th>
<th>b</th>
<th>d</th>
<th>g</th>
<th>m</th>
<th>n</th>
<th>ŋ</th>
<th>r</th>
<th>l</th>
<th>[a]w</th>
<th>[a]y</th>
<th>s</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBid</td>
<td>p</td>
<td>t</td>
<td>k</td>
<td>d</td>
<td>g</td>
<td>?</td>
<td>m(1)</td>
<td>n</td>
<td>ŋ</td>
<td>r</td>
<td>l(2)</td>
<td>aw</td>
<td>ay</td>
<td>s</td>
</tr>
<tr>
<td>PBak</td>
<td>p</td>
<td>t</td>
<td>k</td>
<td>d</td>
<td>g</td>
<td>?</td>
<td>pm/m</td>
<td>tn/n</td>
<td>kn/ŋ</td>
<td>r</td>
<td>l</td>
<td>o</td>
<td>e</td>
<td>s</td>
</tr>
<tr>
<td>Kem-H</td>
<td>p</td>
<td>t</td>
<td>?(4)</td>
<td>t</td>
<td>k</td>
<td>?</td>
<td>pm/m</td>
<td>tn/n</td>
<td>kn/ŋ/a(5)</td>
<td>r</td>
<td>l</td>
<td>ow</td>
<td>ay/e(6)</td>
<td>s</td>
</tr>
<tr>
<td>Kem-A</td>
<td>p</td>
<td>t</td>
<td>?</td>
<td>t</td>
<td>k</td>
<td>?</td>
<td>p/m</td>
<td>t/n</td>
<td>kn/ŋ/a(5)</td>
<td>r</td>
<td>l</td>
<td>ow</td>
<td>ay/ŋy</td>
<td>s</td>
</tr>
<tr>
<td>Rib-H</td>
<td>?(7)</td>
<td>?(7)</td>
<td>?/t</td>
<td>?/k</td>
<td>Ø(8)</td>
<td>m/ŋ(9)</td>
<td>n/ŋ</td>
<td>ŋ</td>
<td>h</td>
<td>Ø</td>
<td>aw</td>
<td>ay</td>
<td>s/h</td>
<td>h/s</td>
</tr>
<tr>
<td>Rib-A</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>?/t(10)</td>
<td>?/k</td>
<td>Ø</td>
<td>m/ŋ(9)</td>
<td>n/ŋ</td>
<td>ŋ</td>
<td>h</td>
<td>Ø</td>
<td>aw</td>
<td>a</td>
<td>s/h</td>
</tr>
<tr>
<td>Sem</td>
<td>p</td>
<td>t</td>
<td>?</td>
<td>?</td>
<td>Ø</td>
<td>m/ŋ(9)</td>
<td>n/ŋ</td>
<td>ŋ</td>
<td>r</td>
<td>l</td>
<td>o</td>
<td>e</td>
<td>s</td>
<td>h</td>
</tr>
</tbody>
</table>

Note: Dialect abbreviations as for Table 15.

Notes for Table 16:

1. Regular nasals occur after a nasalized vowel, preploded nasals after an oral vowel. In Bidayuh the rule is quite regular; in the other languages this is a strong tendency, but some contrasts have developed.
2. The Bidayuh evidence for final *l is scanty—just two PLD sets. In *tăbal ‘thick’ (321) the PBid form has a final *l; in *jual ‘sell’ (262) the PBid form has no final *l.
3. PBak has three reflexes of final **h: 1) *h, 2) */ and 3) Ø (cf. discussion of **h below).
4. In Kembayan and Ribun ik/ek and uk are preserved in a small handful of sets instead of the more common e/ŋ and o/ŋ in Ribun-A and i/ŋ in the other varieties of Ribun and Kembayan.
5. In Kembayan the reflex of **ŋ after **i is k(ŋ). After other vowels the reflex of **ŋ is post-tonic a, as in u/ŋ or simply (a)a. Cf. Notes 4 and 12 to Table 15.
6. At least one set has a Kembayan form with ay while several other sets have Kembayan forms with ay. Possibly some sets should be reconstructed as **ay and others as **ay.
7. Although **p and **t generally become ? word finally in Ribun, they are often retained in Ribun-H as p and t following the vowel **a.
8. In Ribun final **? is preserved at times in monosyllabic forms or after a high vowel; otherwise, it is lost.
9. In Ribun-H and Semandang final **m and **n become ŋ after **i. Similarly, in Ribun-A final **m becomes ŋ after **i and final **n becomes ŋ after **i or **a.

10. In Ribun-A final **d becomes k rather than the usual t after **i.

11. In Ribun-A and Semandang final nasals after an oral vowel are sometimes recorded with prepalatalization even though they are usually recorded as plain nasals.

12. In Ribun the reflex of final **h after **i is usually s, but after other vowels is h. In Ribun-A the reflex of final **s after **a is h, but after other vowels is s. In Ribun-A final **h is lost in **ruh/rah (pre-Ribun *huh) and in **ʔ/huh or *ʔ/hah (pre-Ribun *uh).

**p

**āsap, **āsup, **āsuh ‘smoke’ Proto Bidayuh *āsap, *āsuh, Proto Bakati’ *asu,p, Kembayan-H asap, Ribun-H asap, Ribun-A aso’, Semandang asap. (230)


**t

**ūmpat, **apat ‘four’ Proto Bidayuh *ūm-pat, Proto Bakati’ *apa₂t, Kembayan-H mpat, Ribun-H mpat, Ribun-A mpa?, Semandang mpat. (284)

**kūrit ‘skin’ Proto Bidayuh *kūrit, Proto Bakati’ *kuri, Kembayan-H kuryat (or kuri’t), Kembayan-A kuri’t, Ribun-H kuhe?, Ribun-A kuhi?, Semandang kuret, kurtit. (29, 66)

**k

**N-tūlak ‘(to) push’ Proto Bidayuh *tūlak, Kembayan-H nula?, Ribun-H nulo?, Semandang nula?. (152)

**manuk ‘bird’ Proto Bidayuh *mānuk, Proto Bakati’ *manu,k, Kembayan-H monu’?, Ribun-H mono’?, Ribun-A mono’? (o”? expected), Semandang mono’?. (47)

**b

There are no PLD sets showing final **b.

**d

**därød, **dārid ‘mountain’ Proto Bidayuh *dărød, Sara/Riok darud, Kembayan-H dorit, Ribun-H dohit, Ribun-A dohik, Semandang dori?. (1)

**ărud ‘boat’ Proto Bidayuh *ărud, Bakati’ Kendayan arud, Kembayan-A orut, Ribun-A ohut. (198)

**g

**māndag, **māndig ‘arrive, come’ Proto Bidayuh *māndag ‘come, return’, Kembayan-H monik, Ribun-H monik, Ribun-A mondik, Semandang moni?. (140)

**büşjung ‘straight’ Proto Bidayuh *büjog, Bekati’ bujur (final ? expected), Kembayan-H bojok, Ribun-H bujo?, Semandang bujur (final ? expected). (319)

**m

**təɾəp, **t/daɾəm ‘deep’ Proto Bidayuh *təɾəp, *təɾəp, *tuɾəp, Proto Bakati’ *daɾu,m, Kembayan-H təɾəp (<*təɾəp), Ribun-H tohι (]<*təɾəm), Ribun-A tohιʔ (]<*təɾəm), Semandang dalam (loan ?). (316)

**n


**təɾəŋ ‘hand’ Proto Bidayuh *təɾəŋ, Kembayan-H təɾəŋ, Ribun-H təɾəŋ, Ribun-A təɾəŋ, Semandang təɾəŋ. (104)


**ŋ

**N-kəpiŋ ‘hear’ Proto Bidayuh *ŋkəpiŋ, Kembayan-H ŋopikŋ, Kembayan-A ŋopik, Ribun-H ŋopik, Semandang ŋopikŋ. (117, 87)

**dəɾəŋ ‘woman’ Proto Bidayuh *dəɾəŋ, Kembayan-H dayu’, Ribun-H nayuŋ, Ribun-A dayuŋ, Semandang dayuŋ. (253)

**saməɾaŋ ‘ten’ Proto Bidayuh *siməɾaŋ, *siməʔoŋ, Kembayan-H siməɾaŋ (perhaps should be simaʔ), Kembayan-A ɾəɾaŋ, Ribun-H simoŋ, Ribun-A simuŋ. (290)

**rəɾaŋ ‘cloud’ Proto Bidayuh *rəɾaŋ, Kembayan-H roma, Ribun-H homaŋ, Ribun-A homuŋ (o* expected), Semandang roməŋ. (12)

In word-final position nasals in Kembayan are preploded in an oral environment, as they are in Bidayuh and quite generally in Bakati’. In a nasal environment they are ordinary nasals.71 In Ribun and Semandang they are usually recorded as ordinary nasals but are sometimes recorded with prepllosion. That is to say, the conditioned alternation between preploded and regular nasals, so common in many Land Dayak languages, does not seem to be so regular in Ribun and Semandang.

**təɾəal ‘thick’ Proto Bidayuh *təɾəal, Kembayan-A tobal, Ribun-H toba, Semandang tobal (321). (Cf. B.M. tebal ‘thick’.)

**məɾə, **mibir ‘(to) fly’ Proto Bidayuh *məɾər, Proto Bakati’ *mibiri,r, Kembayan-H məɾər, Kembayan-A timəɾər. (141)

**piɾiɾ ‘(to) think’ Proto Bidayuh *piɾiɾ, Rara miɾiɾ, Kembayan-H piɾiɾ, Kembayan-A bupiɾiɾ, Ribun-H piɾeh, Ribun-A piɾiɾh, Semandang piɾiɾh. (555)

In general, the evidence for final liquids in Proto Land Dayak is weak, and most examples appear to be loans. Despite the sets presented above it appears likely that liquids did not occur in final position in PLD.

**nəɾə ‘(to) laugh’ Proto Bidayuh *nəɾə, *nəɾə, *təɾəwəʔ, Kembayan-H noto, Ribun-H notaw, Semandang noto. (176)

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71 Cf. §3.1.3 concerning nasals; also C. M. Rensch (this volume).
**ăsaw, **săw'uni0259n 'wife' Proto Bidayuh *ăsaw, *săw, Proto Bakati' *sau, Kembayan-H osaw, Ribun-H osaw, Semandang oso. (251)

**ijaw 'green' Proto Bakati' *ijo, Kembayan-H ijow, Ribun-H hijaw (B.M.), Ribun-A ijaw, Semandang ijo (328). (Cf. B.M. hijau 'green')

Kembayan, Ribun and Semandang distinguish between **aw and the two-syllable sequence **a.u.

Compare the correspondence Kembayan ow ~ Ribun aw ~ Semandang o, exemplified in the preceding sets, with the correspondence Kembayan au, ou ~ Ribun ou, au ~ Semandang au, shown in the following sets:


**tă?uh 'right (hand)' Proto Bidayuh *tă?uh, Proto Bakati' *santao/uni0294, Kembayan-H touh, Ribun-H taut (final h expected), Ribun-A tauh. (184)


**y

**ränkay 'dry' Proto Bidayuh *ränkay, Ribun-H han, Ribun-A haŋka, Semandang raŋke. (172)

**N-galay 'lie down' Kembayan-H ğule, Kembayan-A galay, Ribun-H ğalay, Ribun-A ğala, Semandang ğale. (131)72

**panday 'know' Proto Bidayuh *pänday 'can, know how', Proto Bakati' *pand[e] (519), Kembayan-A panay, Ribun-A panda (261). (Cf. B.M. pandai 'clever, intelligent')

Southern Land Dayak languages distinguish between **ay and the two-syllable sequence **a.i.

Compare the correspondence Kembayan-H e ~ Kembayan-A ay ~ Ribun-H ay ~ Ribun-A [a] ~ Semandang [e], exemplified in the preceding sets, with the correspondence Kembayan ai, oi ~ Ribun oi, ai ~ Semandang ai, ai, shown in the following sets:


**mahih 'eight' Proto Bidayuh *măhih, *māhih, Proto Bakati' *mah, Kembayan-H may, Kembayan-A may, may (perhaps both Kembayan forms should be mai), Ribun-H mae, Ribun-A ma? (perhaps all of these Southern Land Dayak forms reflect a single-syllable form such as *may). (288)

**bă?id 'betel (leaf)' Proto Bidayuh *bă?id, Proto Bakati' *uid, Kembayan-A boit, Ribun-A boö? (perhaps should be boi). (242)

The corpus includes two sets reflecting **uy, which have slightly different reflexes, perhaps reflecting a vocalic length difference:

**unkuy 'tail' Proto Bidayuh *unkuy, *unkuy, *unkon, Proto Bakati' *unkke, Kembayan-H uŋki, Ribun-H kuŋi?, Semandang ikoŋ. (50)

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72It is just possible that this set also should be reconstructed with **ay. That is, it is possible that PLD had no distinction between **ay and **a. Cf. note 6 attached to Table 16 earlier in this section.
“**ăpuy, **ăpi ‘fire’ Proto Bidayuh *ăpuy, Proto Bakati’ *api, Kembayan-H opi, Ribun-H opi, Semandang opi (225). (It may be that all forms except the one from Proto Bidayuh reflect **ăpi rather than **ăpuy.)

Reflexes of the vowel-plus-semivowel and two-vowel sequences in Southern Land Dayak languages are shown in the following chart:

Table 17. Reflexes of vowel-semivowel and two-vowel sequences in Southern Land Dayak

<table>
<thead>
<tr>
<th></th>
<th><strong>aw</strong></th>
<th><strong>a.u</strong></th>
<th><strong>ay</strong></th>
<th><strong>a.i</strong></th>
<th><strong>uy</strong></th>
<th><strong>u.i</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kembayan-H</td>
<td>ow</td>
<td>au,ou</td>
<td>e</td>
<td>ai,oi</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td>Kembayan-A</td>
<td>ow</td>
<td>au,ou</td>
<td>ay</td>
<td>ai,oi</td>
<td>uy</td>
<td></td>
</tr>
<tr>
<td>Ribun-H</td>
<td>aw</td>
<td>au,ou</td>
<td>ay</td>
<td>ai,oi</td>
<td>uy</td>
<td></td>
</tr>
<tr>
<td>Ribun-A</td>
<td>aw</td>
<td>au,ou</td>
<td>a</td>
<td>ai,oi</td>
<td>ui</td>
<td></td>
</tr>
<tr>
<td>Semandang</td>
<td>o</td>
<td>au,ou</td>
<td>e</td>
<td>ai,oi</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

Note: The single sounds i, e, a and o are reflexes of the entire vowel-semivowel sequence.

**s

**bă?es, **bîzis ‘sleep’ Proto Bidayuh *bă?es, Proto Bakati’ *buus, Kembayan-H biis, Ribun-H biis, Semandang biis. (133)

**băr/uni0294as ‘husked rice’ Proto Bidayuh *băr/uni0294as, *băr?asi, Proto Bakati’ *naha,s, Kembayan-A boras, Ribun-A bohah. (216)

**h

**tărih ‘rope’ Proto Bidayuh *tărih, *tărin, Proto Bakati’ *tari,?, Kembayan-H torih, Ribun-H tohis, Semandang torih. (206)

**bătu/uni0306h, **bătu/uni0294ht ‘stone’ Proto Bidayuh *bătu/uni0306h, Proto Bakati’ *batu,?, Kembayan-H botuh, Ribun-H botuh, Semandang botuh. (4)

As noted in footnote 12 of Table 16, final **h is lost in Ribun-A in the ultima sequences **ruh/raḥ and **ʔ/huh or **ʔ/həh, i.e., in situations in which the pre-Ribun ultima was *huh or *uh.

**tăr/uni0294uh3 ‘three’ Proto Bidayuh *tăr/uni0294uh, Proto Bakati’ *taru,?, Kembayan-H taru’h (tăruh expected), Ribun-H tarih, Ribun-A tahu, Semandang toruh. (283)

**siru/uni0259uh ‘fingernail’ Proto Bidayuh *sir/uni0259uh, *sir/uni0259uh, *sir/uni0259uh, Proto Bakati’ *siru,?, Kembayan-A suruh (i expected in penult), Ribun-A cihu. (108)

**pur/uni0294uh, **muru/uni0259h ‘(to) plant’ Proto Bidayuh *pur/uni0294uh, *puru, *puru, *pūrən, *pūru/uni0259h, Proto Bakati’ *muru,?, Kembayan-A muru (a expected in ultima), Ribun-A muhu. (187)

**pās/uni0294uh ‘thigh’ Proto Bidayuh *pās/uni0294uh, *pās/uni0294uh, Rara paa, Kembayan-A pah, Ribun-A puu”. (109, 110)

**bū/uni0294uh, **ba/uni0294uh ‘odor, (bad) smell’ Proto Bidayuh *bū/uni0294uh, *bū/uni0294uh, Proto Bakati’ *bau,?, Ribun-H bobuuh ‘rotten’, Ribun-A buu. (120, 305)
Most of the examples show the usual correspondence PBid *h ~ PBak */uni0294 ~ Kembayan, Ribun and Semandang h. For example, see above **tărih ‘rope’ Proto Bidayuh *tărih, Proto Bakati’ *tari,? (206) and **bătuh, **bătuh ‘stone’ Proto Bidayuh *bătuh, Proto Bakati’ *batu,? (4).

However, as noted in §4.1.3, where PBid and Southern Land Dayak have final *h, PBak has three reflexes, *?, *h and ø. These three correspondences are labeled Proto Land Dayak **h₁, **h₂ and **h₃.

PLD *h₃: PBid *h ~ PBak */uni0294 ~ SLD h

**măt/uni0259h₁ ‘eye’ PBid *băt/uni0259h, PBak *matu,?, Kembayan-H motah, Kembayan-A matah, Ribun-H motuh, Semandang motih. (88)

**bībih₂ ‘lip’ PBid *bibih, PBak *bibi,h, Kembayan-A bobi’h, Ribun-A sohombi’h. (80)

**tāruh₃ ‘three’ PBid *tăruh, PBak *taru[,] Kembayan-H taru’h, Ribun-H tahu, Ribun-A tahu, Semandang toruh. (283)

As will be observed in §6.1.7, PLD **h₁ developed from PAN *H73 and *h, but **h₂ developed from PAN *R.

At this point the source of PLD **h₃ is unclear. The small handful of examples seem to have developed from PAN *h, *S or no consonant.

**ʔʔ ʔʔ **kăja/uni0294 ‘leg’ Proto Bidayuh *kăja,?, Proto Bakati’ *kaja,?, Kembayan-H kojo?, Ribun-H kojo, Semandang koja. (109)

**dăya/uni0294 ‘blood’ Proto Bidayuh *dăya,?, Proto Bakati’ *daya,?, Kembayan-H doyo?, Ribun-H doyo, Semandang doya. (68)

**pŭnu/uni0294 ‘full (thing)’ Proto Bidayuh *pŭno,*, *puno, Proto Bakati’ *pan[h]u,o?, Kembayan-A punu?, Ribun-A pinu?. (311)

**tŭbi/uni0294 ‘cooked rice’ Proto Bidayuh *tŭbi,?, Kembayan-A tubi?, Ribun-A tubi?. (217)

5.2 The penult

The penult of Proto Land Dayak consists, typically, of a consonant as onset, a vowel as nucleus and a consonant as coda.

5.2.1 Onset of the penult

All Proto Land Dayak consonants except **w, **y, **h and **ʔ occur in the onset of the penult.

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73Proto Austronesian and other related early protolanguages have a number of reconstructed elements, each based on distinct correspondence sets. Some are labeled with symbols such as *q that are not used in the reconstruction of PLD, PBid, PBB, etc.; many are labeled with capital letters such as *H, *R, *S and *D. In some cases there is little agreement on their likely pronunciation.

For further discussion of some of these elements the reader is referred to Ross 1994.
**p**

**piʔin, **paʔin ‘water’ Proto Bidayuh *piʔin, Proto Bakati’ *pai, Kembayan-H piit, Kembayan-A pit, Ribun-H piŋ, Ribun-A pii[?]ŋ, Semandang piikŋ (the prelosion is unusual in Semandang).

(6)

**t**

**turaŋ ‘bone’ Proto Bidayuh *tūraŋ, Proto Bakati’ *toraŋ, Kembayan-H turaŋ, Ribun-H tuhaŋ, Ribun-A tuhoŋ, Semandang tuaran. (70)

**k**

**kăja ‘leg’ Proto Bidayuh *kăja:, Proto Bakati’ *kaja, Kembayan-H kojo, Ribun-H kojo, Semandang koja. (109)

**b**


**d**

**dayaŋ ‘blood’ Proto Bidayuh *daya:, Proto Bakati’ *daya, Kembayan-H doyo, Ribun-H doyo, Semandang doya. (68)

**j**


**g**

**garam ‘salt’ Proto Bidayuh *gala, Kembayan-H garap, Kembayan-A garap, Ribun-H gaham, Semandang garam. (219)

**m**

**mānuk, **mănuk ‘bird’ Proto Bidayuh *mānuk, Proto Bakati’ *manu, Kembayan-H monu, Ribun-H mono, Ribun-A monoh, Semandang mono. (47)

**n**


**ŋ**

**ŋ̣it, **j̣iʔit, **ṇ̣hīt ‘sew’ Proto Bidayuh *ŋ̣iʔit, *j̣iʔit, Proto Bakati’ *ŋa[h]i,t, Kembayan-A ŋi,t, Ribun-H ŋo, Semandang ᵙ̣ŋ̣əʔ. (212)

**ŋ̣**

**ŋ̣ṛam, **ŋ̣ṛam ‘night’ Proto Bidayuh *ŋ̣ṛam, *ŋ̣ram, *ŋ̣aʔ, *karam, Proto Bakati’ *ŋ̣aru,m, Kembayan-H ŋorap, Kembayan-A ŋarap, ŋarap, ŋarip, Ribun-H ŋohiŋ, Ribun-A ŋohiŋ, Semandang ŋorum. (22, 327)

**l**


**lā[?] ut, **lāwat ‘sea’ Proto Bidayuh *lāʔut, *lāut, *lāwat, Proto Bakati’ *lau,t, Kembayan-H lawat, Kembayan-A laut, lawo’t (a- and o-type vowels in Kembayan and Semandang may be special reflexes of **ə after **w), Ribun-H alut, Ribun-A laut (final ? expected in Ribun), Semandang lawot (8). Cf. B.M. laut.
5.2.2 Nucleus of the penult

5.2.2.1 Vowel quality

There are four vowels that occur repeatedly in the nucleus of the penult in Southern Land Dayak languages: [i], [u], [a] and [o]. This system is similar to the relatively simple systems of penultimate vowels found in the Bau District varieties of Bidayuh, viz., i, u, a and o. (In some dialects Western Bidayuh a is phonetically central [a] and in others back [a]). These Southern Land Dayak vowels form the following correspondences in the penult: i ~ i ~ i, u ~ u ~ u, a ~ a ~ a, and o ~ o ~ o. They correspond quite regularly to PBid *i, *u, *ā and *ă. The latter two correspond to PBak *a.


**turaŋ** 'bone' Proto Bidayuh *tŭraŋ, Proto Bakati' *tura[k, Kembayan-A tura, Ribun-H tuhaŋ, Ribun-A tuhoŋ, Semandang turaŋ. (70)


**dăya?** 'blood'Proto Bidayuh *dăya?, Proto Bakati' *daya?, Kembayan-H doyo?, Ribun-H doyo, Semandang doya. (68)

In addition, there are some sets that have a in Kembayan and generally have the correspondence set a ~ i ~ i in the penult. The penult vowel of such sets can be labeled **a.

**sabārak** 'hungry' Proto Bidayuh *sibārak, *sibārak, *sibārak, Proto Bakati' *saburu[k, Kembayan-A sibaru?, Ribun-A sabihò?. (233)

**tahəp, **tahəp** 'loincloth' Proto Bidayuh *tāhəp, *tāhəp, Kembayan-A təəp (ə° expected), Ribun-A tii°? (tii°? expected). (267)

**saməoŋ** 'ten' Proto Bidayuh *siməoŋ, *siməoŋ, Kembayan-H simoŋa (perhaps should be sim°), Kembayan-A sama°, Ribun-H simoŋ, Ribun-A simu°. (290)

**ŋumpah, **ŋampah, **ŋimpah, **ampah** '(to) pound' Proto Bidayuh *ŋum-pah, *pən, Proto Bakati’ *ampa[,] Kembayan-A ŋampah, Ribun-A ŋimpuh. (190)

**ŋəŋəŋ, **ŋəŋəŋ, **ŋəŋəŋ, **ŋəŋəŋ** '(to) drink' Proto Bidayuh *ŋəŋəŋ, *ŋəŋəŋ, Kembayan-H ŋəŋəŋp, Ribun-H ənəŋd (d not expected in either Ribun form), Ribun-A ənəŋd? , Semandang inup (<**ŋə/ŋəŋ)p. (235, 146)

'swallow' Kembayan-A naŋo?, Ribun-A niŋo?. (237)

'honey bee' Kembayan-A saŋo°, Ribun-A siŋu°. (240)
**m-i/ū/ādip ‘alive’ Proto Bidayuh *idip, *[si]m-ūdip, Proto Bakati’ *idip, Kembayan-H madi⁠p, Kembayan-A mādāp (the penult vowel may be mirroring the ə in the ultima), Ribun-H mideʔ, Ribun-A midīʔ, Semandang midup (Kembayan-A and Semandang forms reflect **ə in the ultima at least). (328)

**rim/uni0259h ‘five’ Proto Bidayuh *rimh, Proto Bakati’ *rima, Kembayan-H rəmah (the penult vowel may be mirroring the ə in the ultima), Ribun-H humuh, Ribun-A himu, Semandang lima? (loan ?). (285)

It should be noted that another group of sets has ə in Kembayan but does not have i ~ i in Ribun and Semandang. When most of these sets are compared with Bidayuh and/or Bakati’ forms, it can be seen that the Ribun and Semandang forms reflect the reconstructable Proto Land Dayak penult vowel, but the Kembayan form, instead, has mirrored the vowel ə in the ultima. These sets are labeled with the quality of the penult vowel that is not mirroring the ultima.

**kāmbut, **k-ar-imb/uni0259t, **k-an-āmb/uni0259t ‘forget’ Proto Bidayuh *kāmbut, *kāmb/uni0259t, Proto Bakati’ *karimu, Kembayan-A kāmāt, Ribun-A konombu?. (134)

**dāy/uni0259h ‘land’ Proto Bidayuh *dāyah, Proto Bakati’ *dayuʔ, Kembayan-A dajah, Ribun-A doo’[s] (perhaps doyi[s]). (194)

**ŋār/uni0259m, **ŋăr/uni0259m ‘night’ Proto Bidayuh *ŋāram, *ŋārom, *ŋārəʔ, *karam, Proto Bakati’ *ŋaru, Kembayan-H ŋor/uni0259pm, Kembayan-A ŋar/uni0259p, ŋarip, Ribun-H ŋohiŋ, Ribun-A ŋohiʔŋ, Semandang ŋorum. (22)

Furthermore, there are other sets that have both penultimate and ultimate i in the Southern Land Dayak languages and are cognate with Proto Bidayuh forms having */uni0259 in both the penult and the ultima. These may reflect **ə in some way that is not yet clear. Consider the following example:

**kadak, **kidik ‘short’ Proto Bidayuh *kâdak, *kâdaʔ, Kembayan-H kidik, Ribun-H kidit (final k expected), Ribun-A kidik. (296)

**bāʔas, **bēziʔis ‘sleep’ Proto Bidayuh *bāʔas, Proto Bakati’ *buus, Kembayan-H biis, Ribun-H biis, Semandang biis. (133)

**nāran, **tāran, **nirin ‘swallow’ Proto Bidayuh *tārən, *nāran, *nāraʔ, Proto Bakati’ *naru, Kembayan-A nirit. (237)

In an earlier section that deals with the vowels of the ultima of Proto Land Dayak (§5.1.2.4) it was observed that some sets have forms that reflect **ə and others that reflect **i. Such sets suggest that there was an alternation between **ə and **i in the PLD ultima. These sets, just above, that reflect both *ə and *i in the penult may be a manifestation of a parallel **ə ~ **i alternation.

Now let us return to the regular ə ~ i ~ i correspondence in the penult of Southern Land Dayak words, discussed earlier in this section. Interestingly enough, this correspondence in the penult, which we will label *ə, appears to occur only when *ə occurs in the ultima also. This is strongly reminiscent of the situation in the central and eastern Bidayuh languages in which an *ə in the penult can occur only when the vowel of the ultima is also *ə. This distributional limitation in both Bidayuh and Southern Land
Dayak suggests that Proto Land Dayak also had such a central vowel in the penult with a similarly restricted distribution.

These considerations yield the following five-vowel system for the PLD penult:

\[
\begin{array}{c}
\text{i} \\
\text{u} \\
\text{ă} \\
\text{ā} \\
\text{ā} \\
\end{array}
\]

5.2.2.2 Full vs. reduced vowels

The system shown above, with a full and a reduced low vowel, now raises the question of whether the contrast between full and reduced penult vowels operates only with the low vowel **a, as seems to be the case currently in Biatah and some of the Bukar-Sadung varieties of Bidayuh. Or, did this contrast once operate with all of the vowel qualities, as it does in some other varieties of central and eastern Bidayuh and is likely to have done in Proto Bidayuh?

The wordlists for Southern Land Dayak languages provide ample evidence for the contrast between full **a and reduced **ă as reflected in the contrast between a and o in the penult of the contemporary languages, but there seems not to be a similar vowel-quality difference to provide evidence for full vs. reduced contrasts in the other vowels.

However, it has been noted that in Proto Bidayuh there is considerable variation in vowel quality among the reflexes when the penult vowel is a reduced vowel, but almost never such variation of vowel quality when the penult vowel is a full vowel. This suggests that it may be fruitful to examine whether there is such variation among the Southern daughters of Proto Land Dayak.

In fact, there is ample evidence in many sets of variation in the quality of the penult vowel. In one group of sets the vowel quality in the Southern languages is different from that in the northern (Bidayuh and Bakati’) languages.

**bibih, **băbih ‘lip’ Proto Bidayuh *bibih, Proto Bakati’ *bibih, Kembayan-A bobi’h (< *băbih),
Ribun-A sohombi’h (< *sarămbih). (80)


**măbar, **mibir ‘(to) fly’Proto Bidayuh *măbər, *mikăbur, Proto Bakati’ *mibi,r, Kembayan-H mabar, Kembayan-A timabar. (141)

**i/uni0272a, **ă/uni0272a ‘person’ Proto Bidayuh *i/uni0272a, *a/uni0272a, Kembayan-A /uni0272a (/uni0272a expected), Ribun-H o/uni0272u (o/uni0272o expected), Ribun-A o, Semandang o. (257)

**băni, **băni ‘seed’Proto Bidayuh *bine (something like bini expected), Proto Bakati’ *bani, Kembayan-A bino (bini expected), Ribun-A bini, Ribun-A bida (bini expected). (502)

**rimah ‘five’Proto Bidayuh *rimah, Proto Bakati’ *rima?, Kembayan-H rama, Ribun-H humuh, Ribun-A himu, Semandang lima? (borrowed from Malay(ic) ?). (285)

**tŭbak, **tăbak ‘see’ Proto Bidayuh *tŭbak, *tăbak, Kembayan-A ntəba’?. (115)
**úduh, **iduh ‘grass’ Proto Bidayuh *u-duh, Proto Bekati’ *udu,?, Kembayan-A iduh, Ribun-A iduh. (416, 518)

**júhu?, **jáhu? ‘far’ Proto Bidayuh *júho?, *jáho?, Proto Bakati’ *juho,?, *jau,?, Kembayan-H oju? (< *jáhu?), Ribun-H ojau (something like oju expected), Semandang oju. (302)

**sańuh, **nsuńuh ‘cold’ Proto Bidayuh *suńoh, Proto Bakati’ *sańu/oh, Kembayan-A nsuńuh. (315)

**bátuñ, **bătuñ ‘stone’ Proto Bidayuh *bátuñ, Proto Bakati’ *batu,?, Kembayan-H botuh, Ribun-H botuh, Semandang botuh. (4)

**mánuk, **mănuk ‘bird’ Proto Bidayuh *mánuk, Proto Bakati’ *manu$k, Kembayan-H monu?, Ribun-H mono, Ribun-A mono? (o’? expected), Semandang mono?. (47)

There is, in fact, a second group of sets that shows variation in the vowel quality of the penult even within the Southern languages.


**pûnu/uni0294 ‘full’ Proto Bidayuh *pûno/uni02D0/uni0294, *puno/uni02D0, PBak *pan[h]u/o/uni0294, Kembayan-A punu?, Ribun-A pinu?. (311)

**[t] agon ‘(to) stand’ Proto Bakati’ *agu,n, Kembayan-H ntatakatn, Kembayan-A ntakat, Ribun-H ntokut, Ribun-A tokut (< *[n]täkud), Semandang tokit. (132)

**ăpak (?) ‘father’ Ribun-A apo’? (o expected), Semandang opa?. (248)

**ăman ‘father’ Eastern Bidayuh *ămaŋ, Kembayan-H oma, Ribun-H maŋ, Ribun-A moŋ. (248)

It should be observed that these sets with vowel alternations in Southern Land Dayak generally have a reduced vowel in the Proto Bidayuh form.

At the same time, there is a smaller group of sets that reflect the same penultimate vowel quality throughout the daughters of Proto Land Dayak, in both the northern languages and the southern.


**jántuŋ ‘heart’ Proto Bidayuh *jántoŋ, Rara jantoŋ, Kembayan-A jantok, Ribun-H jantuŋ, Ribun-A jantuŋ, Semandang jantoŋ. (97)

**râŋkay ‘dry’ Proto Bidayuh *râŋkay ‘dried in the sun’, Ribun-H hanjkay, Ribun-A hanka, Semandang ran̈ke. (172)

**tâmpar ‘(to) punch’ Proto Bidayuh *tâmpar, Ribun-A batampar. (178)

**gâram ‘salt’ Proto Bidayuh *gâlo?, *gülo?, *gålam, Kembayan-H garapm, Kembayan-A garap, Ribun-H gaham, Semandang garam. (219)

**ăsap, **asup ‘smoke’ Proto Bidayuh *ăsap, Proto Bakati’ *asu,p, Kembayan-H asap, Ribun-H asap, Ribun-A aso?, Semandang asap. (230)

**dâri ‘man’ Proto Bidayuh *dâri, Proto Bakati’ *are, Kembayan-H dari, Ribun-A daih’, nahí, Semandang dari. (252)

**dâyuŋ ‘woman’ Proto Bidayuh *dâyuŋ, Kembayan-H dayu, Ribun-H nayuŋ, Ribun-A dayuŋ, Semandang dayuŋ. (253)
**sa-rātus** ‘(one) hundred’ Proto Bidayuh *si-rātus, Proto Bakati’ *saratu, Kembayan-H siratus, Kembayan-A saratus, Ribun-H sahatus, Semandang sratus. (291)

**bāʔuh** ‘new’ Proto Bidayuh *bāʔuh, Kembayan-H bauh, Ribun-H bauh, Ribun-A baah. (323)

**sūŋi** ‘river’ Proto Bidayuh *sūŋi, Proto Bakati’ *suŋi, Kembayan-H suŋi, Ribun-H suŋi. (7)


**turuh, **turuh, **turuh, **turuh, **turuh, **turuh ‘egg’ Proto Bidayuh *tūloh, *ntūloʔ, *tuloc, Proto Bakati’ *turaʔ, Kembayan-H ntoru, Kembayan-A nturu, Ribun-H tuhu, Semandang turo. (51)

**N-tūlak** ‘(to) push’ Proto Bidayuh *tūlak, Kembayan-H nulaʔ, Ribun-H nuloʔ, Semandang nulaʔ. (152)

**ŋarūja** ‘spit’ Proto Bidayuh *ŋ-ir-ūjaʔ, Rara ŋarujaʔ, Kembayan-H nrucuʔh, Kembayan-A ricu (If the Kembayan forms reflect *rVjaʔ, …joʔ is expected), Ribun-H hucuh (hujo expected), Semandang ŋaruja. (154)

**sa-ribu** ‘(one) thousand’ Proto Bidayuh *si-riбу, Proto Bakati’ *saribu, Kembayan-A saribu, Ribun-A sihibu. (292)

In general, the sets with a consistent vowel quality in the penult are those that have a full vowel in the penult of the Proto Bidayuh form. The existence of two groups of correspondence sets—one with consistent penult vowel reflexes, the other with varying penult vowel reflexes—suggests that there were full and reduced penult vowels in Proto Land Dayak that impacted the development of penult vowels in the Southern languages.

In conclusion, then, it appears that Proto Land Dayak had a system of four vowel qualities in the penult, each having a full and a reduced vowel.

### Table 18. Proto Land Dayak penult vowels

<table>
<thead>
<tr>
<th></th>
<th>Full</th>
<th>Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td><strong>ɨ</strong></td>
<td><strong>ɨ</strong></td>
</tr>
<tr>
<td>Central</td>
<td><strong>ǔ</strong></td>
<td><strong>ǔ</strong></td>
</tr>
<tr>
<td>Low</td>
<td><strong>ā</strong></td>
<td><strong>ā</strong></td>
</tr>
</tbody>
</table>

**ɨ**

**milaŋ** ‘(to) count’ Proto Bidayuh *milaŋ, Proto Bakati’ *milaŋ, Kembayan-H mila, Ribun-H milaŋ, Ribun-A miloŋ, Semandang milaŋ. (294)

**ɨ**

**bīsaʔ, **basaʔ ‘wet’ Proto Bidayuh *bīsaʔ, Proto Bakati’ *basaʔ, Kembayan-H bisoʔ, Kembayan-A bisoʔ (reflects *bīsaʔ), bisoʔ, Ribun-H bisoʔ, Ribun-A bisuʔ (reflects *bisah), Semandang basah (loan ?). (306)

**ū**

**N-tūlak** P ‘(to) push’ Proto Bidayuh *tūlak, Kembayan-H nulaʔ, Ribun-H nuloʔ, Semandang nulaʔ. (152)
**ű**


**ă**

**daři** ‘man’ Proto Bidayuh *dāri, Proto Bakati’ *are₂, Kembayan-H dari, Ribun-A dahi’, nahi, Semandang dari. (252)

**ă**

**săwa?** ‘year’ Proto Bidayuh *săwa?, Proto Bakati’ *sawa,?, Kembayan-H sowo?, Ribun-H sowo. (20)

**a**

**n/naḥap** ‘drink’ Proto Bidayuh *naḥap, *niḥap, Kembayan naṇaŋ (< *ŋV-naḥep), Ribun-H ninde? (d not expected in either Ribun form), Ribun-A nindi?, Semandang inup (< *na/ihap). (235)

**dandaŋ** ‘thunder clap’ Proto Bidayuh *dandaŋ, Kembayan-A dana’. (15)

**sabaraŋ** ‘hungry’ Proto Bidayuh *sibaraŋ, *sibaraŋ, *sibaraŋ, Proto Bakati’ *saburu,k, Kembayan-A sibaraŋ?’, Ribun-A sabihow?. (233)

**šnam** ‘six’ Proto Bidayuh *šnam, *nom, Proto Bakati’ *unu₂m, Kembayan-H nam, Ribun-H niŋ, Semandang nam (num expected). (286)

**bādak** ‘mucus’ Proto Bidayuh *bādak, Sara/Riok buduk, Kembayan-A bādaŋ’. (431)

Examples of **a in the penult are not common (about 13 sets in our corpus), so it is not surprising that examples have not been found that clearly demonstrate the contrast between a full and reduced central vowel in the penult of Proto Land Dayak. Note a similar uncertainty concerning full and reduced *a in Proto Bidayuh.

**5.2.3 Coda of the penult**

The penult of Proto Land Dayak can be closed by a nasal, always of approximately the same point of articulation as a following voiceless or voiced stop or **s. The clusters of nasal plus stop/sibilant have been discussed and illustrated in the section dealing with the onset of the ultima.

**5.3 The antepenult**

There are some words with three syllables in our corpus of Southern Land Dayak forms. Consequently, there is a modest group of antepenults.

In many cases a word with three syllables in one southern language is cognate with a word of just two syllables in either or both of the other southern languages. Consequently, very few sets from the southern languages can be reconstructed with three syllables.

The antepenults that can be reconstructed for Proto Land Dayak consisted of an onset and a nucleus.

**5.3.1 Onset of the antepenult**

Examples having voiceless stops, **b, **ŋ and **s have been observed in the onset of the Proto Land Dayak antepenult.

**tahaŋ** ‘side’ Proto Bidayuh *tihaŋ, Sara/Riok [ta]hakŋ, Kembayan-A tura deco (o in the first syllable is puzzling, especially if it reflects a PLD antepenult) ‘rib’, Ribun-A togoŋ. (96)

**karasık** ‘sand’ Proto Bidayuh *kirasık, Rara karasik, Kembayan-H kurosiʔ, Ribun-H kohosiʔ, Ribun-A kohoseʔ. (3)


**ŋarūja** ‘spit’ Proto Bidayuh *ŋ-ir-ūjaʔ, Rara ŋaruja, Kembayan-H nrucuʔ, Kembayan-A ricu, Ribun-H hucu, Semandang ŋruja. (154)

**sab/ūr/k** ‘hungry’ Proto Bidayuh *sib/ūr/k, *sib/ūr/y, PBak *saburu;k, Kembayan-A sibèrʔ, Ribun-A sabihow. (233)

### 5.3.2 Nucleus of the antepenult

In Proto Bidayuh antepenults only *i occurs as the nucleus. In Proto Bakati’ antepenults only *a occurs. However, in Southern Land Dayak the vowel quality in the antepenult is less restricted. In the Kembayan material i, u, a, o and a are recorded in antepenultimate syllables. In Ribun all vowels but a have been observed, and in Semandang all but a and o have been observed.

It should be noted that there is considerable fluctuation in the quality of the antepenultimate vowel, especially in Kembayan. For example, the Kembayan word meaning ‘(to) walk’ was recorded by Hudson as bjalatn whereas Adelaar recorded it as bujalat or bojalat. Adelaar recorded the word for ‘mosquito’ as poruŋa.

Furthermore, the vowel of the antepenult often mirrors the vowel of the penult. For example, the only example in the corpus of the vowel a in a Kembayan antepenult occurs before a in the penult: Kembayan basaαʔ ‘smell’. In Ribun the only examples of i in the antepenult occur before i in the penult: Ribun-A tibintoŋ ‘star’ (10), mihindu(s) ‘yesterday’ (25), sibh ‘one thousand’ (292).

It appears that there is no contrast in the quality of the antepenultimate vowel in any of these three languages, but the distribution of vowel qualities varies somewhat among them.

In Kembayan the vowel u usually follows a labial or velar consonant (pu, bu, ku, gu, ŋu) while the vowel i usually follows an apical consonant (ti, ri, si).

‘(a) boil’ Kembayan-A puroncis. (123)
‘(to) cook’ Kembayan-A butanaʔ. (222)
‘sand’ Kembayan-H kurosiʔ. (3)
‘hungry’ Kembayan-A sibèrʔ. (233)
‘spider’ Kembayan-A rikokoʔ. (63)
‘(to) fly’ Kembayan-A timabær. (141)

74 A somewhat similar mirroring process is encountered in some Bidayuh regions in which the penult vowel matches the vowel of the ultima. Cf. Proto Bidayuh *sìkuH, *sìkuH ‘elbow’ (105); Proto Austronesian *sìkuH ‘elbow’.
Examples of sa, bo and po are found occasionally in the data, but these often vary to si, bu or pu, respectively. Interestingly, examples of a in the antepenult in Kembayan are missing almost entirely, with one exception, Kembayan-H natakətn ‘(to) stand’ (132), resulting apparently from reduplication of ta in the penult.

In Ribun the penult vowel o seems to be preceded only by o as vowel of the antepenult. The vowels a and o occur commonly in the antepenult before any of the other penult vowels. They appear to be free variants, but it would require access to speakers to verify this assumption. The vowels i and u do occur rarely in the antepenult but only if mirroring the vowel quality of the penult vowel. It may be that the occurrences of i and u in the antepenult can vary to o/a. Thus, in Ribun the antepenultimate vowel is o before penultimate o and is o/a before other vowels.

‘butterfly’ Ribun-A bohombo’y. (65)
‘sand’ Ribun-A kohose’y. (3)
‘one hundred’ Ribun-H sahatus. (291)
‘hungry’ Ribun-A sabihow?. (233)
‘fight’ Ribun-H boduhuh. (401)
‘mosquito’ Ribun-A puhungo’y. (62)
‘star’ Ribun-A tibinto’y. (10)

In Semandang the antepenultimate vowel is generally o/a. As in Ribun, apparently they do not contrast. The one example of u may perhaps vary to o/a, or it may not truly be an antepenultimate vowel.

‘scratch’ Semandang ba/uni0261oyu. (122)
‘spit’ Semandang ŋa/uni0272oit. (212)

In summary, then, it appears that there is no contrast in vowel quality in the antepenult in any of the Land Dayak languages investigated. In Bidayuh the antepenultimate vowel is *i; in Bakati’ *a; in Kembayan a predictable high vowel; in Ribun and Semandang o/a. Thus, it is a low vowel in Bakati’, Ribun and Semandang and a high vowel in Bidayuh and Kembayan. The penultimate vowel of Proto Land Dayak will be labeled as **a, but it could almost equally well be labeled as **i.

### 5.3.3 Sources of three-syllable words

Most of the three-syllable words in southern Land Dayak can be seen to have resulted from the addition of an affix: the **-ar- infix (or probably an **-an- infix)\(^\text{75}\) or one of at least three prefixes, **ba-, **sa- or **tanai,

\(^{75}\)Quite possibly this **-an- infix is related to the *-*ă- infix posited in two PBid sets, *miyāyuh (perhaps *<mi-a-yuh) ‘rainbow’ (17) and *p-i-ă-mah, *pi-ă-mah, *pimân ‘dream’ (135).

the **NV- prefix\textsuperscript{76} (which occurs before some consonant-initial stems). In some cognate sets an affix in one or more of the Southern Land Dayak languages is matched by an apparently cognate affix in Northern Land Dayak, but in many sets an affixed form in the southern languages is matched by an unaffixed form in Bidayuh or Bakati’.

**-ar- infix

This infix occurs after the consonants of the penult. In the first example Bidayuh, Rara (Bakati’) and the southern languages all reflect the **-ar- infix. In the second example the southern languages reflect the infix, but Bidayuh and Bakati’ do not. In the third example Bakati’ reflects the **-ar- infix, Ribun reflects the **-an- infix while Bidayuh and Kembayan reflect no affix.

**k-ar-äšik ‘sand’ Proto Bidayuh *kiräsik, Rara karasik, Kembayan kurosi’?, Ribun-H kohosi’?, Ribun-A kohose’?. (3)

**b-ar-ubuk ‘hair (head)’ Proto Bidayuh *bock, *ubock, *abock, Proto Bakati’ *abo,k, Ribun-H buhubo (final /u expected), Semandang borumo? (b rather than m expected). (79)

**kämبوت, *k-ar-imbat, *k-an-ämboot ‘forget’ Proto Bidayuh *kämبوت, *kämbut, Proto Bakati’ *karimu, t, Kembayan-A kämبوت, Ribun-A konombu’?. (134)

**ba-

In the first of the following sets the Bibengih, Bakati’, Kembayan and Semandang forms reflect the **ba- prefix. In the second set only the Semandang form reflects it.


**ba-gäyu, **ŋäyu ‘scratch’ Proto Bidayuh *gäyu, *gäyas, *ŋäyas, Proto Bakati’ *ŋayo, Kembayan-H ḡoyu, Ribun-H ḡoyu, Ribun-A ḡoyu’ (final u expected), Semandang bagoyu. (122)

**sa-

In this set all of the forms reflect the **sa- prefix.

**sa-råtus ‘one hundred’ Proto Bidayuh *si-råtus, Proto Bakati’ *sa-ratu,s, Kembayan-H siratus, Kembayan-A saratus, Ribun-H sahatus, Semandang sratus. (291)

**NV-

In the first of the following sets the Bidayuh, Rara and Semandang forms reflect the **NV- prefix. In the second set only the Semandang form reflects the **NV- prefix.

**Na-růja? ‘spit’ Proto Bidayuh *ŋirůja’?, Rara ḡaruja’?, Kembayan-H nruću’h, Kembayan-A ricu’ (…jo? expected in both Kembayan forms), Ribun-H hucuh (…jo expected), Semandang ḡaruja (154). Alternatively, this root could be reconstructed as **ŋůja? with the **-ar- infix, as **ŋ-ar-ůja’?

**ŋiʔiʔt, **jiʔiʔt, **Na-pähit ‘sew’ Proto Bidayuh *ŋiʔiʔt, *jiʔiʔt, Proto Bakati’ *ŋahi,t, Kembayan-H ữu,t, Kembayan-A ữu’t, ữu’t, Ribun-H noxious?, Semandang noxious. (212)

\textsuperscript{76}The symbol N in the context of the **NV- prefix means a nasal whose place of articulation is unstated, not in focus in this discussion. It does not imply that the place of articulation of the nasal can be inferred from the environment.
It is possible that Proto Land Dayak also employed a reduplicative prefix. The corpus includes a few examples, but they are largely found in Kembayan. It is uncertain whether the device can be dated back to earlier periods.

**sop, **səp ‘lungs’ Proto Bidayuh *sop, *səp, Kembayan-A səsəp. (98)

**[t]ən ‘(to) stand’ Proto Bakati’ *a, Kembayan-H nataktən, Kembayan-A natakət (< *təkən),
Ribun-H ntokut, Ribun-A tokut (< [n]təkud), Semandang tokit (< *təkət). (132)

5.4 Summary of the features of Proto Land Dayak

The conclusions drawn in the preceding discussion of the features of Proto Land Dayak can now be summarized as follows:

5.4.1 Consonants

Proto Land Dayak had the following inventory of consonants:

**p **t **s **k
**b **d **j **g
**m **n **ŋ **r
**w **y

**h

There was a full set of nasal-plus-obstruent clusters in PLD; that is, each of the voiceless and voiced obstruents could be preceded by a homorganic nasal. Probably the nasal was weakly articulated before a voiceless obstruent, and the voiced obstruent was weakly articulated following a nasal because those consonants are weakly articulated in many of the daughter languages, in some cases having almost imperceptible articulation and in other cases dropping out entirely.

In final position the stops may have been unreleased or had only a light release because in various languages the oral stops have merged with glottal stop. It is especially common for the voiceless velar stop, **k, to acquire glottal articulation.

The palatal nasal, **ŋ, occurred at the beginning of the syllable but not in syllable-final position. Final nasals following a phonetically oral vowel most likely had preploded articulation, i.e., they were pronounced with a stop separating the vowel from the following nasal, as is the case in most of the daughter languages.

The liquid **r did not occur in final position; possibly it did occur but only weakly articulated because it frequently was lost.

The semivowels **w and **y and laryngeals **h and **ʔ did not occur at the beginning of the penult or any syllable earlier in the word.
The laryngeals **h and **ʔ did occur medially, but one or both were lost in various of the daughter languages.

Three types of **h (labeled **h₁, **h₂ and **h₃) have been reconstructed for Proto Land Dayak on the basis of three different reflexes in Proto Bakati’ and apparently distinct sources in Proto Austronesian. Just how their pronunciation differed in PLD is not clear.

5.4.2 Vowels

Proto Land Dayak had four vowel qualities in the ultima.

<table>
<thead>
<tr>
<th>high</th>
<th>**i</th>
<th>**u</th>
</tr>
</thead>
<tbody>
<tr>
<td>central</td>
<td>**ə</td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>**a</td>
<td></td>
</tr>
</tbody>
</table>

Although some of the daughter languages have lengthened as well as regular vowels in the ultima, there seems to be insufficient evidence to reconstruct long vowels for PLD.

Those same four vowel qualities occurred in the penult, each one occurring as either full or reduced: **ɨ, **ɪ; **ʊ, **ʊ; **ɔ, **ɔ; **ʌ, **ʌ.

In the antepenult just one vowel quality occurred. It is labeled **a, but in some daughter languages it developed as a high vowel, *i.

The high vowels, **i and **u, were lowered before **k, **ʔ and **ŋ, perhaps also in open syllables. In some daughter languages those lowered high vowels became glided or diphthongs, such as iə or uə and in some situations they may have had glided pronunciations in PLD.

5.4.3 Affixes

Proto Land Dayak employed the nasal-replacive prefix {N-} common in Austronesian and a few other prefixes consisting of an oral consonant and a vowel. In addition, it had an infix **-ar-. Its function is not clear at this point.
6 Roots of the Land Dayak languages in early forms of Austronesian

At the beginning of this study we observed that the Bidayuh, Bakati, and Southern Land Dayak languages form a part of the large Austronesian family of languages. From a historical perspective we may say that they have descended from an early, reconstructed language called Proto Austronesian (PAN).

In the following sections we will show some of the ways in which the sounds of these contemporary languages have developed from Proto Austronesian. In some cases where PAN information is not accessible some developments can be traced by using information from Proto Malayo Polynesian (PMP), the ancestor language from which the Austronesian languages that are spoken south of Taiwan have developed or Proto Hesperonesian (PHN), the ancestor language of many of the Austronesian languages spoken in the western part of the Austronesian region. Occasionally reference is made to Proto Philippines (PPhil), the ancestor of most of the languages spoken in the Philippines. Proto Philippines is more likely an (elder) sister of Proto Land Dayak rather than an ancestor.

6.1 Consonants

6.1.1 Voiceless stops

The voiceless stops of PLD (and PBid and PBak) developed rather directly from the voiceless stops of PAN.

\[ \text{PAN} \ast p > \ast p^{77} \]

\[ \text{PMP} \ast paj^{78} > \text{PLD} \ast pădi 'rice in the husk'. (215) \]
\[ \text{PMP} \ast qapaju > \text{PBak} \ast păduh 'gall bladder'. (103) \]
\[ \text{PMP} \ast kapal > \text{PLD} \ast kăpa 'thick'. (321) \]
\[ \text{PMP} \ast i+s > \text{PLD} \ast jınsap, jınsap 'suck'. (146) \]

\[ \text{PAN} \ast t > \ast t^{79} \]

\[ \text{PMP} \ast tabuh > \text{PLD} \ast tăbuh 'sugar cane'. (39) \]
\[ \text{PAN} \ast bati^{79} > \text{PLD} \ast bătuh 'stone'. (4) \]

\[ ^{77}\text{In the statements of sound development, marked in bold, “PAN” refers to features of Proto Austronesian, if known. Otherwise, it refers to a lower-level protolanguage such as PMP (Proto Malayo-Polynesian), PHN (Proto Hesperonesian) or rarely PHF (Proto Hesperonesian-Formosan).} \]

\[ ^{78}\text{In the supporting sets that follow the statements of sound development, the source is sometimes PAN but at other times is PMP, PHN or PHF. Similarly, the derived form is sometimes PLD but at other times is Proto Bidayuh, Proto Bakati’ or Proto Bidayuh-Bakati’.} \]

\[ ^{79}\text{In this section PLD forms will not be marked with the double asterisk (***). Sources of reconstructed forms are marked as follows: A - Adelaar, B - Blust, H - Hudson, L - Lopez, Z - Zorc.} \]

\[ ^{80}\text{Some of the Austronesian and other reconstructed forms cited from various sources contain the symbol *e and others *a. No contrast is implied; they may be taken as equivalent symbols.} \]
6.1.2 Voiced stops

The voiced stops of PLD developed quite regularly from the voiced stops of PAN. However, there are exceptions. The voiced stops are poorly attested in final position. In some sets a final stop of a Land Dayak form shows mixed voiced and voiceless evidence. Of course, the reflexes in Rara, Bakat’, Kembayan and Ribun are regularly voiceless because voiced stops do not occur in stem-final position in those dialects.

In initial position in some words the PAN voiced stop is voiceless in LD. In other cases, however, the opposite is true, viz., an initial stop is voiceless in PAN but voiced in LD.

In medial position also the differences are in both directions. In some cases the PAN voiced stop is voiceless in LD while in other cases the PAN voiceless stop is voiced in LD.

The acute accent mark on certain PAN and PMP forms indicates the presumed placement of the accent in these reconstructed forms. Cf. sec. 6.2.4.

As noted at the head of this section, PPhil is regarded as a sister rather than an ancestor of the Land Dayak languages. Accordingly, when sets include elements from PPhil and Land Dayak, the elements are connected by a comma rather than by the sign “>”, which implies derivation.
PPhil *lapád, PLD *mābō, *mibir ‘(to) fly’. (141)

PPhil *ʔapá, *ʔatá ‘husk’, PBid *kābaŋ ‘coarse husk’, *bādan ‘fine husk’. (218)

PAN *pitá ‘seven’ > PLD *jú?. (287)

PAN *teRas ‘hard’ > PBid *dāras ‘strong’. (B.M. loan ?) (320)

PAN *d and *j seem to have merged as *d in PLD. In a few cases PAN *d (but not *j) was palatalized to *j in PLD, in at least two of those cases before or after *i.

PAN *b > *b

PMP *baláy > PLD *bāri ‘house, hut’. (196)

PHN *ba+baw > PLD *bābu ‘rat’. (58)

PMP *baq + baq > PLD *bāba ‘mouth’. (81)

PAN *[q]aleb > PBid *bak kār ‘knee’. (111)

PAN *d > *d

PMP *d,áya ‘inland (direction)’ > PLD *dāyah ‘(toward) land’. (194)

PMP *Duha > PLD *duah ‘two’. (282)

PMP *ma-qudip > PLD *m-i-/ādip ‘alive’. (328)

PMP *qelad > PLD *i̯rad, *ārad ‘wing’. (48)

PHN *bed + bed > PLD *N-kābat, *N-kāpat, but Bidayuh-Biya mābō, Bidayuh-Tringgus Bireng nābō ‘tie’. (159)

PMP *tuhad > PLD *tuad, *tuut ‘knee’. (111)

PAN *d > *j

PMP *dilaq > PLD *jīra ‘tongue’. (83)

PAN *Cudq ‘finger’, PPhil *tudq ‘point’ > PLD *t-ar-īnju ‘finger’. (107)

PAN *j > *d

No example of *j in initial position.

PMP *maja ‘dry up’ > PBB *bādāb ‘dry’. (172)

PMP *ajan > PLD *ādan ‘name’. (260)

PMP *qujā ‘worm’, *lajel ‘fly’ > PLD *[ŋ]/ārad, *nārid ‘maggot, fly’. (60)

PMP *kunij ‘yellow’ > PLD *kunij ‘yellow, turmeric’. (330)

PAN *g > *g

PMP *garus > PBid *gāyas ‘scratch’ (122); cf. also PAN *kaRaw > PLD *gāyu ‘scratch’. (122)

PHN *pagar > PBB *pāga ‘fence’. (279)

PMP *zeg ‘stand erect’ > PBid *mijog, *ajog ‘(to) stand’. (132)

PPhil *bilug ‘entire, complete’, PBid *pārog ‘all, entire’. (293)

**6.1.3 Sibilant**

The sibilant PLD *s developed straightforwardly from PAN *s. The few sets with PLD final *h and PAN *s may suggest that in such cases the final consonant was PAN *S, which developed as PMP *h.

PAN *s > *s

PHN *suŋay > PLD *sūŋi ‘river’. (7)

PAN *si + kuH > PBB *sikūh, ‘elbow’. (105)
6.1.4 Nasals

PLD nasals developed quite regularly from PAN nasals. Evidence for the development of *m, *n and *ŋ is strong. However, the evidence for */uni0272 is scanty. It is possible that */uni0272 is a secondary development in the Land Dayak languages. Some examples seem to be verbal forms that have developed from stems with initial *s or *j, while others seem to reflect Malay(ic) influence. Furthermore, *m is the only nasal with examples in initial position that are likely to be un-prefixed stems.

PAN *m > *m
- PAN *manúk > PLD *manuk ‘bird’. (47)
- PAN *maCá > PLD *mátał ‘eye’. (88)
- PAN *qumáH > PLD *úmah ‘(paddy) field’. (194)
- PAN *ʔeném > PLD *sənəm ‘six’. (286)

PAN *n > *n
- PAN *anipa > PLD *nəpəh ‘snake’. (54)
- PAN *ʔeném > PLD *sənəm ‘six’. (286)
- PAN *tanaq > PLD *tanaʔ ‘earth’. (2)
- PAN *búlan > PLD *búran ‘moon’. (9)

PAN *ŋ > *ŋ
- PAN *aŋam > PBid *əŋəm/ugsəm ‘weave’. (211)
- PAN *sapu > PBid *pəŋəpu ‘broom’. (210)
- PAN *kuŋj ‘yellow’ > PLD *kuŋit ‘yellow, turmeric’. (330)

PAN *ŋ > *ŋ
- PAN *taŋan > PLD *təŋan ‘hand’. (104)
- PAN *[t]ulaŋ > PLD *turaŋ ‘bone’. (70)
- PAN *i+júŋ, PMP *qu+júŋ > PLD *[d]ǔnduŋ, *tənduŋ, *induŋ ‘nose’. (84)

6.1.5 Liquids

Although some Land Dayak sets have been reconstructed with *l, it appears that such a lateral is the result of borrowing from Malay or another Malayic language. Consequently, just one liquid, *r, is reconstructed for Proto Land Dayak and its daughters, resulting from a merger of PAN *l and *r. This liquid appears to have been lost in final position.81

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81The loss of the final liquid is not quite complete in some parts of Western Bidayuh. Note the following forms: PBid *pəŋə ‘fence’ (279) Grogo, Stass pagar, Bau dictionary magar, Tringgus-Raya pāgar; PBid *təjo ‘dull’ (308) Gumbang sajal, Grogo tajal. The final r’s in the first set could have resulted from borrowing from Malay. The final
6.1.6 Semivowels
The semivowels *w and *y occur in medial and final positions in PLD. In medial position they developed unchanged from PAN semivowels. However, PAN sequences of vowel plus final semivowel developed as the corresponding high vowels in PLD while PLD final semivowels developed from another source (see below).

PAN *-w-* > *w
PMP *[q]away > PLD *jawi, probably also *jawa:/a:y ‘face’. (77)
PAN *láwaq > PLD **mpāwah ‘spider’. (63)

PAN *

y- > *y

PAN *káyuH > PLD *kāyuh ‘tree, wood’. (28, 229)
PAN *dáya ‘inland’ > PLD *dāyah ‘(up)land’. (194)

PPhil *dayaŋ, PLD *dāyuŋ ‘woman’. (253)

PAN *aw > *u

PAN *qa-[n]jáw > PLD *ându ‘day’. (19)

PHN *ba+baw > PLD *bābu ‘rat’. (58)

PHF *tálaw > PBid *târu ‘afraid’. (179)
PAN *Cákaw > PLD *nâŋku ‘steal’. (163)
PMP *pánaw > PBB *[p]âno ‘walk’. (138)

PAN *ay > *i

PHN *suŋay > PLD *sūŋi ‘river’. (7)
PMP *qatəy > PLD *âti ‘liver’. (103, 97)
PAN *quây > PLD *ui ‘rattan’. (45)
PMP *i-sai [say ??] > PLD *âsi[h] ‘who?’. (338)
PAN *Sapáy, PPhil *hapúy > PLD *âpi, *âpuy ‘fire’. (225)
PMP *[q]away > PLD *jâwi, probably also *jâwa/ay ‘face’. (77)

The PLD sequences *aw and *ay developed from PAN sequences *awa# and *aya#, respectively. In the two immediately preceding examples PLD forms with both *Vy and *i occur, suggesting that both *aya# and *ay# were present at the earlier stage. The same is probably also true of *awa# and *aw#.

*awa# > *aw

PAN *çasáwa ‘wife/husband’ > PLD *âsaw, *sâwən ‘wife’. (251)
PAN *Cáwa > PBid *nâtaw, *tâtaw, *tâwə < PLD *nâtaw ‘laugh’. (176)
PPhil *táwaR ‘call (out)’, PBB *pâtaw, PBak *Cato ‘call’ (180).

6.1.7 Laryngeals

The PLD laryngeals, *ʔ and *h, apparently come from multiple Austronesian sources. At the Proto Austronesian horizon at least some Austronesianists have included *q, *ʔ, *h, *H and *R in their lists of reconstructed elements83, and all of these elements have entered into developments that resulted in the

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82 The first two of these sets show alternating forms *saw and *sawə, *taw and *tawə in Bidayuh. Both alternating forms seem to have derived from PAN *Cáwa, but the alternates with the final ə may have developed from forms in which the accent shifted to the final vowel, perhaps because of the final consonant. Cf. also PHF *tálaw > PBid *târu and *tirəwə? ‘afraid’ (179).

PLD laryngeals. Since the developments vary from one environment to another, the development of the PLD laryngeals will be considered first in initial, then in medial and finally in final position.

6.1.7.1 Laryngeals in initial position

In initial position at least PAN *q, *h and *R have been reconstructed. However, all of those have disappeared in that position in the Land Dayak languages. Cf. the following examples:

- PMP *quZán ‘rain’ > PLD *ŭjan. (14)
- PMP *qat/uni0259y ‘liver’ > PLD *ăti. (103)
- PHN *hút/uni0259k ‘brain’ > PBB */uni0259/uni0306nt/uni0259k. (91)
- PPhil *hapúy ‘fire’, PLD *ăpi, *ăpuy. (225)
- PMP *Rábun ‘atmospheric obscurity’ > PLD *a[m]bun ‘cloud, mist’. (12)
- PMP *Raya ‘big’ > PBB *a[h]yoh₁. (295)

6.1.7.2 Laryngeals in medial position

In medial position, i.e., between vowels, *? has developed from *q, *h, and possibly *H.

- PAN *CináqiH ‘belly’ > PBid *n/tă/uni0294ih. (101)
- PMP *púqun ‘tree trunk’ > PLD ‘puʔun ‘tree’. (28)
- PLD *daʔan < PMP *daqan ‘branch’. (366)
- PMP *Dáhun ‘leaf’ > PLD *daʔun. (30)
- PMP *i-kahu ‘you’ > Central/Sembaan Bidayuh *kuʔu. (340)

The following set has interesting implications for the development of laryngeals:

- PMP *báhuq ‘(bad) smell’ > PLD *buʔuh, *baʔuh, PBid *buʔuh, PBak *bau,?, Ribun-H bobuuh, Ribun-A buu (120, 305). Bidayuh reflects PLD *…/uni0294Vh, PBak *…/uni0294/h, Ribun *…/hVh.

The straightforward development of the PMP form would be pre-Land Dayak *baʔuʔ. Apparently the sequence *…/uni0294V was not permitted in LD; this example suggests that it became *…/uni0294Vh instead. (Cf. the discussion in §2.3.3.1 of *hVh sequences in Bidayuh in which the modern varieties of Bidayuh have adjusted one or the other of the elements of this sequence of identical laryngeals.)

- PAN *laHúd (but PMP *lahud ‘toward the sea’) > PLD *lāʔut, *lăwát < ‘sea(ward)’. (8)

In medial position PLD *h has developed from *R.⁸⁴

- PAN *teRas ‘hardwood’ > PLD *tăhas ‘ironwood’. (33)
- PMP *ZuRúq ‘juice’ > PLD *juhu/uni0294 ‘tear, juice’. (175)

⁸⁴There are two unexplained examples of the development *R > *y: PAN *dáRaq > PLD *dăyaʔ ‘blood’ (68) (in this connection note PBak *bajaraʔ ‘red’ (331)); PAN *kaRaw > PLD *găyu, *N-găyu ‘scratch’ (122).
In medial position PAN *\text{?}\? seems to have dropped out. However, a few examples indicate a possibility that it may have given rise to some of the lengthened (and/or interrupted) vowels in the Bidayuh ultima.

PMP *baR?at > PLD *bāhat ‘heavy’. (313)
PMP *ba[n]ti?is > PLD *bitis, PBid *bītes ‘calf’. (109)
PAN *ká?ən > PLD *ūman, *ma?an, PBid *ma?an, *ma?ən ‘eat’. (232) (The development of PLD *m from PAN *k is problematical; in this connection notice the PHN *amaq.)

6.1.7.3 Laryngeals in final position

In final position PLD *? developed from both *q and *? in PAN.

PMP *tanaq > PLD *tana? ‘earth’. (2)
PAN *buáq ‘fruit, betel nut’ > PLD *bua? ‘fruit’. (35)
PMP *baRéq ‘abscess, swell(ing)’ > PBid *bāha? ‘carbuncle’. (123)
PMP *puésq ‘heart’ > PBak *pioz?. (97)
PHN *buká? ‘open’ > PLD *būka? ‘wide, open’. (300)
PAN *amá?, PHN *amáŋ ‘father (vocative)’ > PLD *śama?, *śaŋ ‘father’. (248)
PHF *takí? (but cf. PHF (Z) *CáqiH) > PLD *tāki? ‘excrement’. (73)

There is also a group of sets with a final open vowel in PAN that developed as PLD *CV? rather than the more common *CVh.

PHF *buCá > PLD *buta? ‘blind’. (116)
PAN *pitú > PLD *ju? ‘seven’. (287)
PAN *akú > PLD *āku? ‘I’. (339)
PAN *kamí > PLD *[C]āmi? ‘we (exclusive)’. (342)

In final position PLD *h\text{?}\? (with PBak *?) developed from PAN *H and *h. However, PLD *h\text{?} (with PBak *h) developed from PAN *R.

PAN *káyuH > PLD *kāyu, *kāyu ‘tree, wood’. (28)
PAN *límáH > PLD *līnaH ‘five’. (285)
PAN *kumáH > PLD *kumah ‘field’. (194)
PAN *kúCuh > PLD *gutih, *gVtuh ‘(head) lice’. (126)
PPhil *qabūl, PLD *ābuh ‘ash, fireplace’. (226)
PAN *qateluR > PLD *turuh, *turāh ‘egg’. (51)
PAN *bī + bīR > PLD *bibih ‘lip’. (80)
There remains one further important source of *h in final position: PAN final open vowels. When a PAN word ends with a vowel, the Land Dayak result is generally vowel plus *h. PAN*i > PLD *ih; *u > *uh, *a > *ah. Interestingly, no instances of PAN */uni0259 (or */uni0259h) seem to have occurred.

PMP *belí > PLD *mirih, *birih, *mari ‘buy’. (263)
PPhil *talí (but cf. PAN *Cális), PLD *tărih ‘rope’. (206)
PAN *batú > PLD *batuh ‘stone’. (4)
PMP *búlu > PLD *buruh ‘feather, body hair’. (49)
PMP *asu > PLD *kăsuh ‘dog’. (59)
PMP *qapaju > PBid *păduh ‘gall bladder’. (103)
PMP *taqú > PLD *tă?uh ‘right (hand)’. (184)
PAN *telú > PLD *tăruh ‘three’. (283)
PMP *maCá > PLD *măt/uni0259h ‘eye’. (88)
PMP *majá > PBB *băd/uni0259h ‘dry’. (172)
PMP *dáya > PLD *dăyăh, ‘(up)land’. (194)
PMP *anipa ‘large snake species’ > PLD *jîpeh, *dipăh, *nîpăh ‘snake’. (54)
PMP *múla > PLD *purăh, *murăh ‘(to) plant’. (187)
PMP *Duha > PLD *duăh ‘two’ (282). (The usual development of PMP medial *h is PLD */uni0294).

6.2 Vowels

6.2.1 Vowels in the ultima

The Land Dayak vowels *i, *u and *a have developed quite straightforwardly from the corresponding PAN vowels. This is especially so in the ultima.

PAN *lánit > PLD *răñit ‘sky’. (11)
PAN *kúliC > PLD *kŭrit ‘skin, bark’. (29)
PAN *kălih > PBB *kărih ‘dig’. (149)
PPhil *talí’, PLD *tărih ‘rope’. (206)
PHF *CăqiH > PLD *tăki/uni0294 ‘excrement’. (73)
PHN *e+mís > PBak *mami, s ‘sweet’. (240)

PMP *manúk > PLD *manuk ‘bird’. (47)
PMP *tubuq > PBid *tibu? ‘body’. (69)
PAN *i+júŋ, PMP *qu+júŋ > PLD *[d]ńduŋ, *tănduŋ, *induŋ ‘nose’. (84)
PHN *tuRún > PBB *muhun ‘descend’ . (143)
PHF *le+súŋ > PLD *risuŋ, *ră[r]să ‘mortar’. (191)
PAN *baq[e]Ruh > PLD *bă?uh ‘new’ . (323)
PAN *búlan > PLD *būran ‘moon’. (9)
PHF *uRát > PLD *ūhat ‘root’. (32, 75)
PMP *qelād > PLD *īrad, *ārad ‘wing’. (48)
PMP *baq+baq > PLD *băbaʔ ‘mouth’. (81)
PMP *babáq ‘below’ > PLD *sābaʔ ‘downriver, below’. (186)
PAN *teRas ‘hardwood’ > PLD *tāhas ‘ironwood’. (33)
PMP *kapal > PLD *kăpa ‘thick’. (321)

The Land Dayak vowel */a/ has often developed from the equivalent PAN central vowel, but */a[h] in many cases has developed from */a[h].

PMP */u[n]+dem ‘darkened’ > PLD *ŋar ‘night’. (22)
PHN *hút/uni0259k > PBB *//uni0306nt/uni0259k ‘brain’. (91)
PMP *baRéq ‘abscess’ > PBid *băhaʔ ‘carbuncle’. (123)
PMP *i+sep > PLD*/ins/uni0259p, */insap, */us/uni0259p ‘suck’. (146)
PHN *la-sem > PBid *masam ‘sour’. (239)
PHF *ilem > PLD *bărām ‘green’. (328)
PAN *teném > PLD *ānām ‘six’. (286)

PMP *anipa ‘large snake species’ > PLD *jiπäh, *dīpäh, *jīpäh ‘snake’. (54)
PMP *maCá > PLD *măt ‘eye’. (88)
PMP *majā ‘dry up’ > PBB *bădah ‘dry’. (172)
PAN *limáH > PLD *rim ‘five’. (285)
PMP *mūla > PLD *puräh, *murah ‘(to) plant’. (187)
PAN *qumáH > PLD *ūmah ‘(paddy) field’. (194)
PAN *băRaH ‘red hot embers’ > PBid *băhah ‘charcoal’. (226)
PAN *baNaš (PMP *banah ??) > PLD *bănäh, *băn ‘husband’. (250)

6.2.2 Penult vowels

In the penult the expected, regularly developed vowel usually occurs, but not so infrequently a vowel of a different quality occurs either as the only penultimate vowel or as a variant along with the expected vowel. These variants are common with the high vowels *i and *u, less so with the low vowel *a.

PAN *lipen, PMP *iπañ > PLD *jīpān, *jīpān, *jēpān ‘teeth’. (82)
PAN *pitú > PLD *jiʔu ‘seven’. (287)
PAN *limáH > PLD *rim ‘five’. (285)
PAN *bi+bíR > PLD *bēbih, *băbih ‘lip’. (80)
PMP *dilaq > PLD *jīraʔ > PBid *jūRaʔ, *jālaʔ, *jīle ‘tongue’. (83)
PAN *si+kuH > PLD *sĭkuh > PBid *sĭkuh, *sŭkuh ‘elbow’. (105)
The development of the penultimate vowel */uni0259 is more complex. In a few sets in which the vowels of both the ultima and the penult are */uni0259 the penult vowel remains */uni0259.

When the vowel of the ultima is a vowel other than */uni0259, */uni0259 in the penult often becomes *a, especially *ă.

When the vowel of the penult is */uni0259, there is variation in some sets among *i, *u and *a as vowel quality of the PLD penult.

When the vowel of the penult is *a, there is variation in some sets among *i, *u and *a as vowel quality of the PLD penult.
Finally, when the vowel of the penult is *a, the quality of the PLD penult sometimes mirrors the vowel quality of the ultima, i.e. > *u...u, *i...i.

Two issues relating to Land Dayak vowels remain to be addressed: (1) lengthened vowels in the PBid and PBB ultima, and (2) the full and reduced vowel contrast in the penult in PLD.

### 6.2.3 Long vowels

A large number of sets with a lengthened vowel in the ultima have been reconstructed for Proto Bidayuh and Proto Bidayuh-Bakati. In general, in the Bidayuh languages vowels tend to be long when final or when followed by a semivowel. In many words a vowel before glottal stop is long. Both lengthened and normal-length vowels have been reconstructed before glottal stop, and in some varieties of Bidayuh minimal pairs of length contrast occur when closed by glottal stop. Even though many sets have been reconstructed with lengthened vowels in the ultima, it is difficult to identify Austronesian sources for lengthened vowels.

Four sets that have been reconstructed with lengthened vowels suggest that vocalic length developed where an intervocalic laryngeal such as *h or */ was lost.85

To address the loss of PBid *h between vowels in the western, central and Sembaan groups of Bidayuh resulted in lengthened (or rearticulated) vowels in these regions but not, of course, in PBid.

Proto Bidayuh *tahas ‘ironwood’ Singai taناس, Gumbang taas, Serambu taas, Bratak taas, Serasot taas, Grogo taas, Stass taas, Biatah taas, Bistaang taas, Benuk taas, Sapug taas, Pinyawa’ taناس,
Bengoh tâs, Anah Rais tâs, Biya tâs, Sembaan tâhas, Tringgus Raya tâhas, Tringgus Bireng tâs, 
Bukar tâhas, Sadung tâhas, Bibengih tâhas, Sangking tâhas, Tebakang tâhas, Bukar-Sadung tâhas, 
Bunan tâhas. (33)

In addition, a few PBid sets are reconstructed with two variants from different regions, one with a 
medial glottal stop and the other with a lengthened vowel: PBid *bâʔak (in eastern region), *baʔak (in 
central and Sembaan regions) ‘head’ (76); PBid *maʔan, *maʔ ‘eat’ (232); PBid *naʔa, *iŋa ‘person’ 
(257). In addition, there are two PBid sets that are reconstructed with two regional variants, one with a 
medial h and the other with a lengthened vowel: PBid *kahak, *aŋkak ‘crow’ (52); PBid *puhoh, 
*aŋumpo: ‘blow’. (148)

Note that a similar development of long vowels from loss of intervocalic laryngeal seems to have 
taken place in Mbaloh of the Tamanic group of Austronesian languages: PAN (Z) *buS/ŋak, PPhil (Z) 
*buhak > Mbaloh buk ‘(head) hair’; PAN *taqu > Mbaloh kaʔo: ‘right (hand)’; PAN *laʔin > Mbaloh 
laʔ ‘other’; PAN (Z) *kâʔan > Mbaloh aŋkak ‘eat’; PMP *daʔan > Mbaloh daʔ ‘branch’. (Long vowels 
developed in Mbaloh through loss of intervocalic y as well, e.g., PAN *saʔap > Mbaloh saʔ ‘wing’. 
(Adelaar 1994:6.))

It appears quite reasonable to conclude that the loss of a medial laryngeal at an earlier stage gave 
rise to some instances of PBid and PBB lengthened vowels even though the number of examples showing 
this development are few. Nevertheless, it must be recognized that the origin of most examples of PBid 
and PBB lengthened vowels is still unclear.

6.2.4 Full and reduced penult vowels

Let us now turn to the matter of full and reduced vowel contrasts in the penult of Land Dayak words. 
From rather early in this exploration of the full/reduced contrast it seemed that such a contrast could 
have arisen from differences of accentual patterns at an earlier stage even though an accentual difference 
is not evident in the contemporary Land Dayak languages. They consistently accent the final syllable of 
the stem; this is especially evident in utterance-final position. Even though many neighboring language 
groupings have either final-syllable accent or penultimate accent (unless the vowel is ə), there are many 
other Austronesian, especially Philippine, groupings that have contrasting accentual patterns. In fact, 
Zorc (1983) and others have offered persuasive evidence that accent must be reconstructed not only for 
certain groupings within Austronesian but also for PAN itself.88

So, the question arises whether vowel differences in the penult of PLD, PBB and PBid reflect 
differences in placement of the PAN accent.

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87There are also a few sets that also have two forms, one with a medial glottal stop and the other with a normal-
length vowel: PBid *muʔu, *āmuʔ ‘you’ (340); PBid *kâʔam, *ākam ‘you (socially higher addressee)’ and possibly 
PBid *kuʔu ‘you (more informal)’ (340), *ākuʔ ‘I’ (339). Cf. also PBid *tūʔuh ‘old’ (324) and Ribun and 
Semandang (SLD) muntuh ‘old’. At present it is difficult to see that this group of sets offers any insight into the 
origin of PBid lengthened vowels.

6.2.4.1 **Pattern A**

There are, in fact, many examples in which the Land Dayak penult correlates with the accentual pattern posited for PAN, PMP or PHN. Initially, my expectation was that the full penult vowels would correlate with PAN forms with penultimate stress and the reduced penult vowels with PAN forms with final stress. However, a closer look at the data shows that the forms with full penult vowels correlate primarily with PAN forms with final stress, i.e., *CVCVC > *CV /uni0304CVC (Pattern A).

PAN *batú > PLD, PBid *bātuḥ ‘stone’. (4)
PHN *bawāŋ ‘creek’ > PBid *tāwaŋ ‘mud’. (5)
PAN *laHúd ‘toward the sea’ > PLD *lā[ʔ]ut, *lāwāt ‘sea’. (8)
PAN *qaNījūH (final ĕH is unexplained) > PBid *siŋāni, *kāni ‘shadow’. (18)
PAN (Z) *D₂₂m₂₂ ‘dark’ > PBid *ŋār /uni0259m ‘night’. (22)
PHF *uRāt > PLD *ūhat ‘root’. (32, 75)
PAN *buāq > PLD *buāʔ (penult is apparently full) ‘fruit’. (35)
PHN *terūŋ > PBid *tūn, *tūyuŋ ‘eggplant, brinjal’. (40)
PMP *sagūh > PLD *sāguʔ ‘sago’. (41)
PAN *quāy > PBid *ūi ‘rattan’. (45)
PMP *manūk > PBid *mānuk ‘bird’. (47)
PAN *telūR > PBid *tūloh ‘egg’. (51)
PMP *buqāya > PBid *būʔay ‘crocodile’. (55)
PAN *bi+bīR > PBid *bibih ‘lip’. (80)
PAN *Cudūq ‘finger’, PPhil *tudūq ‘point’ > PBid *t-iŋjuʔ ‘finger’. (107)
PAN (Z) *Halīq ‘go, move’ > PBid *pāri ‘return (home)’. (140)
PMP *luZāq > PLD *narūja ‘spit’. (154)
PMP *d₂₂a+kēp > PBid *nāŋ-kop, *dā-kop ‘hold’. (165)
PHF *le+sūŋ > PBid *rīsoŋ (but also *rīsoŋ) ‘mortar’. (191)
PHN *pariūk > PBid *pirīok ‘cooking pot’. (223)
PPhil *qabuh [h], PLD *ābuh ‘ashes’. (226)
PMP *pāk ‘powder’ > PBid *tī-kāp ‘ashes’. (226)
PMP *gasūh > PBid *āsh ‘smoke’. (230)
PAN *qal+sem ‘sour’ > PBB *mās/uni0259m (but also *măs/uni0259m) ‘sour’, PBB *ās/uni0259m ‘mango’. (239, 424)
PAN (Z) *amā/uni0294 ‘father (address)’ > PLD *sāma ‘father’. (248)
PAN *belī > PBid *mirih, *birih ‘buy’. (263)
PPhil *duhā, PLD *duah (penult is apparently full) ‘two’. (282)
PAN *telū > PLD *tāruh ‘three’. (283)
PAN (Z) *limáH > PBid *rīmah ‘five’. (285)
PMP *Ratūs > PLD *rātus ‘hundred’ (291). (loan from B.M.)
PPhil *huyāp, PBid *niap ‘(to) count’. (294)
294

PHN (Z) *ubú[q?] ‘short’ (296), PMP *babáq ‘below’ (304, 278) > PLD *ribu? (but also *rubu?, *rabu?) ‘under, space under house’ (304, 278)

PHN *buká? ‘open’ > PLD *búka? ‘wide, open’ (300)
PPhil *ŋud/[l], PBid *tāj/[l] ‘dull’ (308)

PHN (Z) *D/uni0259qák ‘phlegm’ > PLD *b/uni0259/uni0306d/uni0259k (accentual pattern fits PHN form, but the source of the PLD penult is unclear) ‘mucus’ (431)

6.2.4.2 Pattern B

The forms with reduced vowels correlate primarily with PAN forms with penultimate stress, i.e., *

*CVCVC > *CVCVC (Pattern B).

CVCVC > *CVCVC (Pattern B).

PAN *búlan > PLD *búran ‘moon’. (9)
PAN *láñit > PLD *ráñit ‘sky’. (11)
PMP (Z) *Rábu[n] ‘atmospheric obscurity’ > PLD *á[m]bun ‘cloud’. (12)

PPhil *tálun ‘undeveloped land’, PLD *tärun ‘forest’. (27)
PAN *káyuH > PLD *kăyuh ‘tree, wood’. (28)
PAN (Z) *kůlíC > PLD *kúrit ‘skin, bark’. (29, 66)

PPhil *gápas, *kápas ‘cotton’, PBid *kăpas ‘kapok (tree)’. (46)
PMP *búlu > PBid *búruh ‘feather, body hair’. (49)
PPhil *tásu, PLD *kásuh ‘dog’. (59)
PPhil *qúlaj ‘snake, worm’, PLD *[ŋ]ăr/uni0259d, *nărid ‘maggot, fly’ (60)
PPhil *lágaw ‘housefly’, PB *ráñu ‘large fly’. (61)
PAN *dáRaq > PLD *táki/uni0294 ‘excrement’. (73)
PMP *ípan > PLD *jípan, *jípan ‘teeth’. (82)

PMP *hútek, *qútek > PBB */uni0259/uni0306nt/uni0259k ‘brain’. (91)
PAN *CináqiH > PBid *nă/uni0294ih, *tă/uni0294in ‘belly’. (101)
PAN *sí+kuH > PBid *síkuh, ‘elbow’. (105)

PPhil *páqa, PBid *páq/uni0259h ‘thigh’. (110)
PMP *báhuq ‘odor’ > PLD *bû/uni0306uh, *ba/uni0294uh ‘(bad) smell’. (120)

PAN (Z) *útaq > PLD *núa? (penult vowel is probably reduced) ‘vomit’. (125)
PMP *pénuw > PBid *p[ŋ]ánu ‘walk’. (138)
PAN *túnd’aŋ > PBid *tándaŋ, *tindaŋ ‘kick’. (150)
6.2.4.3 Counterexamples

Alongside these numerous sets illustrating correspondences that involve the two accentual patterns there are numerous counter-examples, such as the following, sets in which the vowel of the Bid/LD penult is not of the expected type:

**Counter to Pattern A:**
- PAN *quZán > PLD *ūjan ‘rain’. (14)
- PMP *maCá > PLD *mātah ‘eye’. (88)
- PMP *baláy ‘meeting house’ > PLD *bāri ‘hut, house’. (196, 271)
- PAN *pitú > PLD *īju ‘seven’. (287)

**Counter to Pattern B:**
- PAN *súsu > PLD *sūsuh, *sīsuh. ‘breast’ (94)
6.2.4.4 Factors that affect penult vowel

There are at least four factors that can affect the type of penult vowel, changing it from an expected one: 1) phonotactic limitations, 2) */uni0259 in the penult, 3) grammatical marking and 4) borrowing, especially from Malay. Interestingly, the first three factors seem to produce alterations of only Pattern A. Borrowing seems to affect both patterns.

1) Phonotactic limitations. As noted earlier, in Proto Bidayuh there is neutralization of the full/reduced contrast in forms of the shape *CVVC and *CVhVC (except *CahaC). The former seems to be uniformly * CVVC and the latter *CVhVC.

In the group of sets illustrating Pattern A, shown above, there are a few that have the shape CVVC in Bidayuh. Note, for example, the set PHN *pariúk > PBid *pirīok ‘cooking pot’ (223). Note also the following set: PAN *laHúd ‘toward the sea’ > PLD *lā[uni0294]ut, *lāw/uni0259t ‘sea’ (8). The western Bidayuh forms support a reconstruction *lāut without the medial glottal stop. These western Bidayuh forms, all showing laut rather than laut, clearly indicate that the penultimate vowel is to be reconstructed as *ā, not *ă. There are two other sets, in which evidence for the full/reduced contrast is unclear, but if we assume that the penult vowel was full, they fit well with the examples of Pattern A and can be included with evidence for that pattern: PAN *buáq > PBid *bua/uni02D0/uni0294 ‘fruit’ (35); PAN *dũSá > PBid *du/uni0259h ‘two’ (282). Consider also the following set: PHF *túSud > PLD *tuad, *tuut ‘knee’ (111). Although the PHF form has penultimate accent, the PLD form does not show a reduced penult vowel (but the Tebakang form suggests it). The explanation probably lies with the phonotactic patterns of Bidayuh, which call for a full penultimate vowel in a form of the shape *CVVC.

Let us now consider the PBid *CVhVC forms, which, apart from the *CahaC sequence noted above, have a reduced vowel in the penult. Note, for example, the following set: PPhil *bũRaw ‘chase away’ > PBid *buhu > Tringgus Raya bũhu ‘run away’ (123). Since the PMP form exhibits accentual Pattern B, a reduced vowel in Land Dayak forms is the expected result.

However, there are several sets with accentual Pattern A that have a reduced vowel in Bidayuh rather than the expected full vowel. All of them have a *CVhVC shape. So, it appears that the phonotactic pattern of Bidayuh, requiring a reduced vowel before a medial *h, has caused a shift in Bidayuh from the expected full vowel to a reduced vowel. In the last of the following sets it is assumed that the Bid penultimate vowel (before *h) is reduced even though the dialect evidence is unclear: PMP *baRéq ‘abscess, swell(ing)’ > PBid *băh/uni0259/uni0294 ‘carbuncle’. (123)

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89See Zorc 1983 for a related discussion of some of these factors.
2) The vowel *ə in the penult. In essentially every example with *ə in the PAN/PMP/PHN penult, the Land Dayak form has a reduced penult.⁹⁰ Apparently at some point the accentual pattern was similar to that of Malay so that the accent always occurred on the ultima if the vowel of the PAN penult was *ə.

PAN *qal[e]jáw > PLD *āndu ‘day’. (19)
PMP *tenéR ‘mangrove tree’ > PBid *tōŋan (kāyuh) ‘tree, wood’. (28)
PAN *teRas ‘hardwood’, PPhil *tōRás ‘hard’, PLD *tāhas ‘ironwood’. (33)
PAN *tebúS > PLD *tăbuh ‘sugarcane’. (39)

PHF (Z) *qa[m]pajā > PBid *pūduh ‘gall bladder’. (103)
PAN *dē+ŋéR > PBid *dīnjah₂ (penult is probably reduced; cf. Bistaang form dāŋah) ‘hear’. (117)
PMP *tebek > PBid *tăbok ‘stab’. (145)
PAN *de+keC > PBB *lăkat ‘stick to’. (158)

PHN *te + kes ‘bind firmly’, PHN (Z) *hikot ‘tie’ > PBid *mākas, *mātas ‘tie (up)’. (159)

PHF *beRás > PLD *bāras ‘husked rice’. (216)

PHF *besúR > PLD *būsuh, *būsu, *bāsuh ‘full, sated’. (234)
PPhil *tālán, PBid *tārān ‘swallow’. (237)

PHF e + keC > PBB *lākat ‘stick to’. (158)

PHN *a[n]bék (a rather than ə in penult) > PBid *ām[b]āk, *ām[b]ok ‘mat’. (280)
PPhil *tōpāt, PLD *ōmpat, *āpat ‘four’. (284)

PAN e + keC > PLD *ānām ‘six’. (286)

PHN *tōpāh > PBB *dāpōh, ‘fathom, armspan’. (297)

PAN *penúq > PLD *pūnu? (full vowel expected in penult; cf. footnote 90) ‘full (thing)’. (311)
PMP *pejés ‘hot, spicy’ > PBB *pāras ‘hot’. (314)

3) Grammatical marking. As morphologically different forms are produced in Bidayuh from a single stem, not infrequently a part of the distinction involves the difference between a full penult vowel and a reduced one. Usually there is an associated change of initial consonant or the addition of a prefix, but at times the change of the penult vowel is the only marker. Note the following sets of forms from several varieties of Bidayuh:

Singai: nərik ‘pull’, narik ‘ask someone to pull’. (151)
Anah Rais: bīreh ‘red’, bīreh ‘name of a red animal’. (331)
Tebakang: kābōt ‘I tie (something)’, kābōt ‘tie it!’ (159)
Bunan: sahu ‘burned’, sahu ‘burn it!’ (231)

A few similar, morphologically related pairs are reconstructable for Proto Bidayuh:

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⁹⁰There are a few exceptional examples in which the Land Dayak penult has a high vowel, generally mirroring a high vowel in the ultima. In these examples the penultimate high vowel is full. PHN *terūŋ, PLD *tūyun, *tūŋ ‘eggplant, brinjal’ (40); PAN *telūR, PBid *tūloh, etc. ‘egg’ (51); PHF *le + sūŋ, PBid *risōŋ (but also *risōŋ) ‘mortar’ (191); PAN *belī, PBid *mirīh, *birīh ‘buy’ (263).

At least one Proto Land Dayak form has been reconstructed showing a reduced penult in one form and a full penult in the other:

**ba-jālan ‘(to) walk’ PBid *jālan, PBak *bajala, Kembayan-H bjalatn, Kembayan-A bu/ojalan, Ribun-H jalan, Ribun-A jalaŋ, Semandang bajala (final n expected). (138)


This difference in vowel types in the PBid and PLD penults may well be related to the affixes described by Zorc, especially for Philippine languages, which affect the placement of the affix.\(^91\) In some cases the addition of a segmental affix is accompanied by a shift in the placement of the accent; in others the change in placement of the accent is the only marker.

A second type of grammatical marking involves certain syntactic classes. Austronesian pronouns generally have final accent, i.e., Pattern A. This would lead us to expect a full vowel in the Land Dayak penult. However, in fact the LD pronouns have reduced penult vowels, which may be a kind of accentual marking of the class of pronouns.

PAN *akú > PLD *ăku/uni0294 ‘I’. (339)

PAN *kamú ‘you (plural)’ > PLD *ămu/uni0294 ‘you’. (340)

PAN *siá > PLD *ăy/uni0259h ‘he, she, it’. (341)

PAN *kamí > PLD *[C]ămi/uni0294, PBid *kămi/uni0294 ‘we (exclusive)’. (342)

PAN *kitá > PBB *kĭta/uni02D0/uni0294, etc. ‘we (inclusive)’. (343)

The class of numerals may also be marked accentually. The PAN numerals from ‘one’ through ‘nine’ are all reconstructed with final accent. (We will consider only ‘one’ through ‘seven’ since Land Dayak numerals ‘eight’ through ‘ten’ do not reflect recognized PAN roots.) The numerals ‘three’ and ‘five’ exhibit Pattern A:

PAN *telú > PLD *tāruh, ‘three’. (283)

PAN (Z) *limáH > PBid *rim/uni0259h ‘five’. (285)

As seen previously, the numeral ‘two’ shows the effect of the phonotactic limitation that the penult vowel is full in *CVVC forms:

PAN *d,uSá > PBid *du/uni0259h ‘two’. (282)

The numerals ‘one’, ‘four’ and ‘six’ have the vowel *a in the penult and, therefore, have a Land Dayak reduced vowel:

PMP (A) *са? > PLD *s/uni0259h, *ăsa? ‘one’. (281)

\(^91\)Zorc 1978:91–94.
The accentual pattern of all these forms can be understood as illustrating one of the two regular accentual patterns or as the result of the first two processes already described. However, the numeral ‘seven’ cannot be understood in any of these ways:

PAN *pitú > PLD *ĭju ‘seven’. (287)

It appears to follow Pattern A, but the PLD penult is reduced. It could be that this has happened because of paradigmatic pressure, i.e., because of accentual marking of the class of numerals.

4) Borrowing. Perhaps twenty counterexamples for Pattern A are unexplained by the preceding three factors. A few of them have probably come about through borrowing. Cf. the following examples:

PAN *quZán > PLD *ŭjan ‘rain’. (14)
PHF *kilát > PBid *kĭlat ‘lightning’. (16)

PAN *i+júŋ, PMP *qu+júŋ > PBid *ĭnduŋ, *ŭnduŋ, *nduŋ ‘nose’. (84)
PMP *baláy ‘meeting house’ > PLD *bări ‘hut, house’. (196, 271)
PPhil *ʔanák, PLD *ănak ‘child’. (256)

About ten counterexamples for Pattern B have been identified. Nearly all of those are likely loans from Malay, and their penult vowel may have come about through borrowing:

PMP *búŋah > PLD *būŋaʔ ‘flower’. (34)
PAN *kálih ‘dig (out)’ > PBB *kārih, ‘dig’. (149)
PPhil *sípaʔ, PBB *sipak ‘kick’. (150)
PPhil *túlak, PLD *N-túlak ‘push’. (152)
PAN *píliq > PLD *mīlih ‘choose’. (164)
PAN *Zárum > PLD *jārum ‘needle’. (213)
PPhil *[gR]úbat ‘woods’, PBB *ūbat ‘medicine’. (214)
PPhil *[R]ǐbu, PLD *ribu ‘thousand’. (292)
PHF *bīlaŋ > PLD *mīlaŋ ‘(to) count’. (294)

We conclude that the full/reduced contrast in the Land Dayak penult correlates rather well with differences in the accentual pattern of PAN and more recent horizons. However, several processes have been at work, primarily in those forms with final stress (Pattern A), that have effected changes in the penult vowel, obscuring somewhat the relationship with earlier accentual patterns.

6.3 Groupings within Land Dayak

In the preceding pages we have observed about two dozen sound changes that have affected PLD sounds in different regions/groupings of the Land Dayak languages. These changes are summarized in Table 19.
Table 19. Distribution of Sound Changes by Region

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<thead>
<tr>
<th></th>
<th>WBid</th>
<th>CBid</th>
<th>SBid</th>
<th>EBid</th>
<th>BRa</th>
<th>BSR</th>
<th>BKe</th>
<th>BBe</th>
<th>Kem</th>
<th>Rib</th>
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<td>A.</td>
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<td>1.</td>
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<td>2.</td>
<td>V &gt; V1, V2</td>
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<td>V?V &gt; VV</td>
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<td>5.</td>
<td>pm ~ m &gt; pm / m</td>
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<td>ay &gt; e, a; *aw &gt; o</td>
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<td>7.</td>
<td>V: / V &gt; V</td>
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<td>8.</td>
<td>b &gt; p, etc.</td>
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<td>9.</td>
<td>k# &gt; ?#</td>
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<td>10.</td>
<td>VhV &gt; VV</td>
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<td>11.</td>
<td>CVHVC &gt; VCVC</td>
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<td>12.</td>
<td>i &gt; i, e; u &gt; u, o</td>
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<td>13.</td>
<td>mp &gt; p, etc.</td>
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<td>14.</td>
<td>l, r &gt; r</td>
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<td>17.</td>
<td>ə &gt; u</td>
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<td>18.</td>
<td>SSS &gt; CV_{high}SS</td>
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<td>19.</td>
<td>ki &gt; ci</td>
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<td>20.</td>
<td>V &gt; V^a,V</td>
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<td>21.</td>
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<td>22.</td>
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<td>23.</td>
<td>r &gt; h</td>
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</table>
About half of these changes have impacted sounds in Bidayuh or Bakati’ or Southern Land Dayak or in two of the three groupings. The other half of the changes have impacted sounds in some but not all the languages in a single grouping.

### 6.3.1 Changes reflected in entire regions

First, we will examine those changes that are reflected in one or two regions but not the other(s).

The first group of these changes (Group A) has affected the Bakati’ languages but not Bidayuh or Southern Land Dayak.

1. **Final **h, becomes *ʔ.
   
   **măt/uni0259h** ‘eye’ Proto Bidayuh *băt/n, *măt/n, *bătan, *bătay, Proto Bakati’ *matu,ʔ, Kembeyan-H motah, Kembayan-A matah (o in the penult expected), Ribun-H motuh, Semandang motih. (88)
   

2. **The vowels except **a develop two sets of reflexes, labeled as sub-1 and sub-2, under obscure circumstances.**
   
   **buntan** ‘coconut (tree)’ Proto Bidayuh *bŭtan, Proto Bakati’ *bunta, Kembayan-A bota buntat, Ribun-A kajo buntaʔ. (38)
   
   **bătan, **mătan ‘(to) throw (away)’ Proto Bidayuh *bătan, *mătan, Proto Bakati’ *mataʔ, Kembeyan-A botat, batat. (155)
   
   **sămaʔ, **ămaŋ (v vocative form?) ‘father’ Proto Bidayuh *sămaʔ, *ămaŋ, Proto Bakati’ *samaʔ, Kembeyan-H oma, Ribun-H maŋ, Ribun-A maŋ. (248)
   
   **tănʔaʔ, **tānah ‘earth’ Proto Bidayuh *tănʔaʔ, *tănah, Proto Bakati’ *tanaʔ, Kembeyan-H tonoʔ, Semandang tonah (h not expected; perhaps reflects BM). (2)
   
   **sărību** ‘one thousand’ Proto Bidayuh *si-ribu, Proto Bakati’ *sărību, Kembayan-A sărību, Ribun-A sihibu (292). (Cf. B.M. ribu ‘thousand’)
   
   **băbu** ‘rat’ Proto Bidayuh *băbu, *băbon, Proto Bakati’ *babu, Kembayan-A babu, Ribun-A bōbūh (not directly cognate; babu expected). (58)
   
   **băjiʔ** ‘angry’ Proto Bidayuh *băjiʔ, Proto Bakati’ *bajij,ʔ ‘angry, hate’. (177)
   
   **băniʔ, **biniʔ ‘seed’ Proto Bidayuh *bini, Proto Bakati’ *baniʔ, Kembeyan-A binəʔ, Ribun-A biniʔ podiʔ (biniʔ expected). (502)
3. The contrast between full and reduced vowels in the penult is lost, apart from some variation in vowel quality among reduced vowels.

**tărun** ‘forest’ Proto Bidayuh *tărun, Proto Bakati’ *tăr, Kembayan-A torut, Ribun-A tohun. (27)

**tăruh** ‘three’ Proto Bidayuh *tăruh, Proto Bakati’ *taru, Kembayan-H taru’h (taruh expected),
Ribun-H tahuh, Ribun-A tahu, Semandang toruh (a expected in the penult). (283)

**bāba** ‘mouth’ Proto Bidayuh *bāba?, *bābə?, Proto Bakati’ *baba?, Kembayan-A bobo?, Ribun-
A bobo’ ‘say’. (81, 181)

**bābu** ‘rat’ Proto Bidayuh *babu, *bābon, Proto Bakati’ *babu, Kembayan-A babu, Ribun-A
boh’buh (not directly cognate; babu expected). (58)

**sĭruh** ‘fingernail’ Proto Bidayuh *sîrəh, *sîrah, *sîrəh, *sirən, *sirun, Proto Bakati’ *siru,?
Kembayan-A suruh (i expected in penult), Ribun-A cihu. (108)

**mīlih** ‘choose’ Proto Bidayuh *pīlih, *mīlih, Rara milih, Kembayan-A milîh, Ribun-A mile’s. (164)

**būro?** ‘bamboo’ Proto Bidayuh *būru?, Proto Bakati’ *buus, (Cf. B.M. buluh ‘bamboo’)

**būka?** ‘open’ Proto Bidayuh *būkə?, Proto Bakati’ *muka?, Kembayan-A buka?, muka? (o
expected in ultima), Ribun-A buko? (final ? not expected; both Kembayan and Ribun forms
might reflect *bukak) ‘open’. (300)

**kŭduk** ‘taro, yam’ Proto Bidayuh *kŭduk, Rara kuduk, Kembayan-A kuduʔ, Ribun-A kudoʔ. (44)

**tūruk, **nūruk ‘dibble (stick), (to) dibble’ Proto Bidayuh *tūruk, *nūruk, Rara turuk, nuruk,

**āmu?, **imu? ‘you’ Proto Bidayuh *āmu?, *muʔu, Proto Bakati’ *imu?, Kembayan-H omuʔ?
Ribun-H omu, Ribun-A omo (omo” expected), Semandang omo. (340)

The second group of changes (Group B) has affected the Bakati’ and Southern Land Dayak languages
but not Bidayuh.

4. **ʔʔ ʔʔ is lost between vowels.

**tăʔuh** ‘right (hand)’ Proto Bidayuh *tăʔuh, Proto Bakati’ *santaoʔ, Kembayan-H touh, Ribun-H
taut (final h expected), Ribun-A tauh. (184)

**băʔəs, **bĭʔis ‘sleep’ Proto Bidayuh *băʔəs, Proto Bakati’ *buus, Kembayan-H biis, Ribun-H biis,
Semandang biis. (133)

5. The complementation of preploded and regular nasals in final position is disturbed with the
result that contrasts are introduced.

**mădam** ‘rotten’ Proto Bidayuh *mădaʔm, *mădəʔm Rara madam, Sara/Riok
madam, Kendayan madam, Bekati’ madam, Kembayan-H modapm, Kembayan-A modap, Ribun-
A modam. (305)

*băndoŋ ‘cassava’ Proto Bidayuh *băndoŋ, *băndoŋ, *băndok, Proto Bakati’ *bandoŋ Rara banokŋ
(orality of vowel noted), Sara/Riok banûkŋ, Kendayan banuk ‘cassava’. (43)
**turaŋ 'bone'** Proto Bidayuh *tūraŋ, *tūrəŋ, Proto Bakati’ *turaŋ, Sara/Riok *turaŋ, Kendayan *turaŋ, Bekati’ *turaŋ; Kembayan-H *turaŋ, Ribun-H *turaŋ, Ribun-A *turoŋ, Semandang *turaŋ (70). (Cf. B.M. tulang ‘bone’)

*sīndeʔ, *ŋīn [d] aʔ ‘when?’ Proto Bidayuh *sīndeʔ, Proto Bakati’ *ŋīnaʔ, Rara/Riok *ŋīnaʔ, Kendayan *ŋīnaʔ, Bekati’ *ŋīnaʔ (initial ŋ expected) (Bakati’ forms may not be directly cognate), Kembayan-H *nətən, Ribun-H *ndən, Semandang *ntañ (336). These Southern Land Dayak forms seem to reflect *ndan/h and may be related to the Bidayuh and Bakati’ forms.

6. **Sequences of vowel + semivowel become single mid vowels, i.e., **ay > e, a; **aw > o.**

**bahay 'areca nut'** Proto Bidayuh *bāhəy, Rara *uhe, Ribun-A *ua (it may be that *bā > u in Ribun as it did in Bakati’). (243)

**rāŋkay ‘dry’** Proto Bidayuh *rāŋkay ‘dried in the sun’, Ribun-H *həŋkay, Ribun-A *həŋkə, Semandang *raŋkə. (172)

**lāntay ‘floor’** Proto Bidayuh *lāntəy, Sara/Riok *ləntəʔ, Ribun-A *ləntə. (276)


*pātaw Proto Bidayuh *mətaw ‘call from far away’, Proto Bakati’ *Cato *pato ‘call out name to ask spirit to cause harm’, Kendayan *nətən ‘call’. (180)

**nətaw ‘laugh’** Proto Bidayuh *nətaw, *tətaw, *təwəh, Kembayan-H *nətən, Ribun-H *nətən, Semandang *nətən. (176)

**ăsaw, **săw‘wife’ Proto Bidayuh *săw, *ăsaw, Proto Bakati’ *sauʔn Rara sautn, Sara/Riok sautn, Kendayan saut, Bekati’ sautn, Kembayan-H osow, Ribun-H osaw, Semandang oso. (251)

7. **Vocalic length (in the ultima) is lost.**

Since the source of the lengthened vowels of Proto Bidayuh is far from certain, we cannot rule out the possibility that the development of lengthened vowels was an innovation in Proto Bidayuh rather than the loss of vowel length being a feature of Bakati’ and Southern Land Dayak. In either case, this distinguishes one situation in Bakati’ and Southern Land Dayak from a different one in Bidayuh. Each group of examples contrasts one set with a PBid lengthened vowel with another with a PBid normal-length vowel.

**mădam ‘rotten’** Proto Bidayuh *mădəm, *mădoʔ, Proto Bakati’ *mədəm, Kembayan-H modəm, Kembayan-A modəm, Ribun-A modəm. (305)

**[m] āndam ‘sick’** Proto Bidayuh *[m]āndəm, Proto Bakati’ *andaʔ, Kendayan-A monəp (nd expected), Ribun-A mondəm. (458)

**ărud ‘boat’** Proto Bidayuh *ărəd, Kendayan arud, Kembayan-H orut, Ribun-A ohut. (198)

**āruh ‘pestle’** Proto Bidayuh *āruh, Proto Bakati’ *aruʔ, Kendayan-A aruh, Ribun-A ahu. (192)

92 The development of mid vowels from vowel + semivowel sequences is more evident in Semandang than in the other two southern Land Dayak languages.
**kăja** 'leg' Proto Bidayuh *kāja?, Proto Bakati' *kaj?, Kembayan-H koja?, Ribun-H kojo, Semandang koja. (109)

**bīsa**, **basa** 'wet' Proto Bidayuh *bīsa?, Proto Bakati' *basa?, Kembayan-H biso?, Kembayan-A biso?, biso* (first form reflects *bīsa?), Ribun-H biso? (final ? not expected), Ribun-A bisu*h (reflects *bisas), Semandang basah (borrowing from B.M.?). (306)

**āti** 'liver' Proto Bidayuh *āti, *āti*, Proto Bakati' *ate*, Kembayan-H oti, Ribun-H oti, Ribun-A oti* (final i expected), Semandang oti. (103, 97)

*ka[w]e* 'shoulder' Proto Bidayuh *kāw, *kāw, Rara kae. (100)

**jāwi** 'face' Proto Bidayuh *jāw, *jāwin, etc., Ribun-A jowi. (77)

There is an additional group of changes (Group C) that have affected the Southern Land Dayak languages and have moved part way through the Bakati’ languages.

8. Final voiced stops are devoiced in Southern Land Dayak and in Rara and Bekati’.


**pandud**, **mâdud** ‘cold’ Proto Bidayuh *mâdud, Proto Bakati’ *pan[d]u, Rara panut, Sara/Riok panûd, Bakati’ pandutn (final t expected), Kembayan-H modut. (315)

**bă?id** ‘betel (leaf)’ Proto Bidayuh *bă?id, Proto Bakati’ *uid Rara uît, Sara/Riok uid, Kembayan-A boît, Ribun-A boît? (perhaps it is boît?). (242)

Proto Bakati’ *kano,d Rara kanjôt ‘young people’, anjôt ‘very young’, Sara/Riok kanjod, anjod ‘young child’, Bekati’ kanjôt ‘child’. (255)

9. Final **k > ? in Southern Land Dayak and in Kendayan and Bekati’.

**lāmak** ‘fat (noun)’ Proto Bidayuh *lāmak, Proto Bakati’ *lama,k Rara lamak, Sara/Riok lamak, Bekati’ lama?, Kembayan-H lomo?, Kembayan-A lomo?, lomo*? (loma? expected in all Kembayan forms), Ribun-H lomu (lomo? expected), Semandang loma?. (220)

**bărak** ‘banana’ Proto Bidayuh *bărak, Proto Bakati’ *bara,k Rara barak, Sara/Riok barak, Kendayan bara?, Kembayan-A bora?. (36)


**t-ar-ănsak**, **ns-ar-ak** ‘red’ Proto Bidayuh *nsălak ‘red’, *nălak ‘burn’ (231), Proto Bakati’ *taransak Rara taransak, Bekati’ taransa?, Ribun-H ntocak, Ribun-A ntoci*? (…co? expected in both Ribun forms). (331)
**ubuk, **abuk, **bubuk ‘(head) hair’ Proto Bidayuh *bok, *ubok, *abok, Proto Bakati’ *abo, k Rara abok, Sara/Riok abok, Kendayan abo?, Bekati’ abo?, Ribun-H buhubo (final ? expected), Semandang bərumo? (b rather than m expected). (79)

10. The glottal fricative, **h, is lost between vowels in Southern Land Dayak and in Sara/Riok and Bekati’.93
**băhat ‘heavy’ Proto Bidayuh *băhat, Proto Bakati’ *baha, t Rara bahan, Sara/Riok baat, Kendayan bahan, Bekati’ baat, Kembayan-H obat, Ribun-H boha? (loan ?), Semandang borat (loan?). (313)
**ūhat ‘root’ Proto Bidayuh *ūhat, *ūhat, *ahat, Proto Bakati’ *uhat Rara uhat, Sara/Riok uût (apparently *uha > uû), Kendayan uhat, Bekati’ uwat, Kembayan-H uwat, Ribun-A ua?, Semandang urat (loan?). (32, 75)
**mahih ‘eight’ Proto Bidayuh *măhih, *māhih, Proto Bakati’ *mahi, Rara mahi?, Sara/Riok mai?, Kendayan mahi?, Bekati’ mai?, Kembayan-H may (perhaps Kembayan forms are mai), Kembayan-A may, may, Ribun-H mae, Ribun-A ma? (final h expected in all these forms; perhaps all the southern forms reflect a single-syllable form such as *may). (288)
*tiehe ‘itchy’ Proto Bidayuh *tihi?, Proto Bakati’ *the? Rara the?, Sara/Riok tee?. (121)
**năhi ‘house post’ Proto Bakati’ *nahi, Kembayan-A oni romin. (273)

The final group in this set of changes (Group D) distinguishes Bidayuh and Bakati’ from the Southern Land Dayak.

11. In Southern Land Dayak a penultimate vowel preceding a laryngeal metathesizes with the preceding consonant after the laryngeal is lost, i.e., **CVHVC > CVVC > VCVC.
**naʔa ‘person’ Proto Bidayuh *naʔa, Sara/Riok naa, Ribun-H oju (ojø expected), Ribun-A ojø, Semandang oja. (257)
**nāhi ‘house post’ Proto Bakati’ *nāhi, Kembayan-A oni romin. (273)

12. In Bidayuh and Bakati’ high vowels split into high and mid vowels, i.e., **i > *i, *e; **u > *u, *o
**āti ‘liver’ Proto Bidayuh *āti, *āt̥in, Proto Bakati’ *ate, Kembayan-H oti, Ribun-H oti, Ribun-A oti’ (final i expected), Semandang oti. (103, 97)
**kāsiŋ, **kăsiŋ, **ansiŋ ‘urine’ Proto Bidayuh *kāsiŋ, *āsiŋ, *kāsiŋ, Proto Bakati’ *ansiŋ, Kembayan-A ǹkosik, Ribun-A kosiŋ. (71)

93This change also took place in the western, central and Tringgus Bireng varieties of Bidayuh.
**ridi?**, **radi?** ‘thin’ Proto Bidayuh *lĭde?, *lide, Proto Bakati’ *rade?, *radih/s Kembayan-H nridi? (e expected), Kembayan-A ridi?*, Ribun-H hidi. (322)

**sūni** ‘river’ Proto Bidayuh *sūni, Proto Bakati’ *sunj, Kembayan-H suņi, Ribun-H suņi. (7)

**ându** ‘day’ Proto Bidayuh *ându, Proto Bakati’ *ando, Kembayan-H onu, Ribun-H onu, Ribun-A ondu, Semandang onu. (19)


**bătuh, **bătuh ‘stone’ Proto Bidayuh *bātuh, Proto Bakati’ *batu, Kembayan-H botuh, Ribun-H botuh, Semandang botuh. (4)

### 6.3.2 Changes that divide languages within regions

Now we will examine those changes that divide languages within the larger groupings, i.e., are reflected in one part of a region (Bidayuh, Bakati’, Southern Land Dayak) but not in other(s).

The first group of these changes (Group E) affects the **western, central and Sembaan groups of Bidayuh** but not the eastern group.94

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94See footnote 8 for identification of the dialect groups within Bidayuh.
**nāŋku** 'steal' Proto Bidayuh *N-tăŋku Singai n/uni0259ku, sit/uni0259ku 'thief', Gumbang n/uni0259ku, Serambu n/uni0259ku, Bratak n/uni0259ku, Serasot n/uni0259ku, Grogo n/uni0259ku, Stass n/uni0259ku, Biatah n/uni0259ku, Bistaang n/uni0259ku, Benuk n/uni0259ku, Sapug n/uni0259ku, Pinyawa' n/uni0259ku, Bengoh n/uni0259ku, Anah Rais n/uni0259ku, Biya n/uni0259ku, Sembaan n/uni0259ku, Tringgus Raya n/uni0259ku, Tringgus Bireng n/uni0259ku, tăku, Bukar n/uni0259ku, Sadung n/uni0259ku, Bibengih n/uni0259ku, Sangking n/uni0259ku, Tebakang n/uni0259ku, tăŋku (imperative), pinăŋku 'thief', Bukar-Sadung n/uni0259ku, Bunan n/uni0259ku, Proto Bakati' *nāŋko, Kembayan-A nōŋku, Ribun-A nōŋku. (163)

14. The liquids, **l and **r, merge, usually as *r.**

* [t]ăliC 'scar' Proto Bidayuh *ălit Singai /uni0259rit, Serambu /uni0259rit, Bratak /uni0259rit, Serasot /uni0259rit, Grogo /uni0259rit, Stass /uni0259rit, Biatah ărit, Bistaang ārit, Benuk ērit, Sapug ērit, Pinyawa' ērit, Bengoh ērit, Anah Rais ērit, Biya ērit, Sembaan ērit, Tringgus Raya ērit, Tringgus Bireng ērit, Bukar ēlit, Sadung ēlit, Bibengih ēlit, Sangking ēlit, Tebakang ēlit, Bukar-Sadung ēlit, Bunan ēlit, Proto Bakati' *talih Rara tawatn talih, Kendayan talih, talis 'wound'. (124)

**milan** 'to count' Proto Bidayuh *milaŋ, *mila Singai miraŋ 'divide up', Bau dictionary biraŋ, Benuk miraŋ, Bengoh miraŋ, Bukar milaŋ, Sangking milaŋ?, Proto Bakati' *milaŋ Rara milaŋ, Kendayan milaŋ, Bekati' miraŋ, Kembayan-H milaŋ, Ribun-H milaŋ, Ribun-A milaŋ, Semandang milaŋ (294). (Cf. B.M. bilang 'count')

*kūRus* 'skinny' Proto Bidayuh 'kulus Sapug kurus, Pinyawa' kurus, Bukar kulus, Sadung kulus, Bibengih kulus, Sangking kulus, Tebakang kulus, Bukar-Sadung kulus, Bunan kulus, Proto Bakati' *kurus Rara kurus, Kendayan kurus. (317)

**Ră/uni0294ih** 'ginger' Proto Bidayuh *lă/uni0294ih, *lă/uni0294i Singai r/uni0259/uni0294i, Gumbang r/uni0259/uni0294i, Serambu r/uni0259/uni0294i, Bratak r/uni0259/uni0294i, Serasot r/uni0259/uni0294i, Grogo r/uni0259/uni0294i, Stass r/uni0259/uni0294i, Biatah ră/uni0294i, Bistaang ră/uni0294i, Benuk ră/uni0294i, Sapug ră/uni0294i, Pinyawa' r/uni0259/uni0294i, Bengoh r/uni0259/uni0294i, Anah Rais ră/uni0294i, Biya ră/uni0294i, Sembaan ri/uni0294i, Tringgus Raya ră/uni0294i, Tringgus Bireng a/uni0294i, Bukar lă/uni0294ih, Sadung lă/uni0294ih, Bibengih lă/uni0294ih, Sangking lă/uni0294ih, Tebakang lă/uni0294ih, Bukar-Sadung lă/uni0294ih, Bunan lă/uni0294ih, Rara ră/uni0294ih? (assuming that this form is directly cognate, it seems to have undergone a metathesis of the vowels), Kembayan-A roih. (241)

**kürit** 'skin, (tree) bark' Proto Bidayuh *kürit Singai kurit, Gumbang kurit, Serambu kurit, Bratak kurit, Serasot kurit, Grogo kurit, Stass kurit, Biatah kurit, Bistaang kurit, Benuk kurit, Sapug kurit, Pinyawa' kurit, Bengoh kurit, Anah Rais kurit, Biya kurit, Sembaan hrit, Tringgus Raya hrit, Tringgus Bireng kurit, Bukar kurit, Sadung kurit, Bibengih kurit, Bunan kurit, Proto Bakati' *kürit Rara kurit, Sara/Riok kurit, Kendayan kurit, Bekati' kurit, Kembayan-H kurit 'skin', korít koyuh 'bark', Kembayan-A kuri, Ribun-H kuhe? 'skin', kohe? koyuh 'bark', Ribun-A kuhe??, Semandang kure, kurit. (29, 66)

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95It should be pointed out here that [l] occurs in certain words in the Western, Central and Sembaan regions of Bidayuh, and in Sembaan, at least, it is the usual pronunciation of the liquid. However, there is no consistent contrast among the liquids in those three regions.
Another change (Group F) has affected **eastern Bidayuh** and **Southern Land Dayak**, further distinguishing eastern Bidayuh from the other varieties of Bidayuh.

15. The cluster **ns is fused as the affricate [n]c.**
In the Bidayuh area this development is seen only in the eastern region. Of course, a development that involves the cluster **ns is possible only in the eastern region since that is the only region in which the nasal is retained before a voiceless obstruent.

**nçinsap, **nçins/ncpy’suck’ Proto Bidayuh *nçinsap, *nçinsap Singai sop ‘lick’, Gumbang sop ‘lick’, Bau
dictionary sop ‘sip’, Serasot ńisap, Sapug ńisap, Bukar ńicąp, Sadung ńąćap, Sangking ńicąp,
Tebakang ńąćap, Bukar-Sadung cicąp, Bunan ńćąap, Serian dictionary ńicąp, Proto Bakati’
*ńisąp, Kembayan-A ń/ńisap ‘suck’. (146)

**ńsak, **ńs/s/ik, **ńs/sik, **ńs/sak ‘small’ Proto Bidayuh *ńsak Serasot isak ‘small quantity’,
Benuk ndak ‘so small, tiny’, Sapug ńak, Bukar ńcąk, Sadung ńcąk, Bibengih ńcąk, Sangking ńcąk,
Bukar-Sadung ńcąk, Proto Bakati’ *ine, Kembayan-H dicăk, Ribun-H nai? (< *naik ?),
Semandang ńąc. (318).

**ń-t-ar-ńsak, **ńs-ar-ąk Proto Bidayuh *ńsălak ‘red’ Sangking ńcălak, Tebakang ńcălak, Bukar-
Sadung ńcălak, Bunan ńcălak, Proto Bakati’ *țaransak Rara țaransak, Bekati’ taransă?,
Kembayan-H nsiyo? (this form might be interpreted as nsi? and derived from **nsik, but the
vowel **i is difficult; cf. the Ribun-A form), Ribun-H ntićă, Ribun-H ntići? (…co? expected in
both Ribun forms) (331). Cf. also Proto Bidayuh *ńălak ‘burn’ Sadung ńalak, Bibengih ńalak,
Sangking ńalak, Tebakang ńălak, Bukar-Sadung ńălak. (231)

Proto Bidayuh *ścińiń, *ścińin, *ćińkin ‘ring’ Singai sisiń, Gumbang sisiń, Serambu sisiń, Bratak
sisiń, Serasot sisiń, Grogo jinjin, Stass sisiń, Biatah sisiń, Bistaang sisiń, Benuk sisiń, Sapug sisiń,
Pinyawa’ sisiń, Bengoh siiń, Anah Rais sisiń, Biya sisiń, Semban sisiń, Tringgus Raya sisiń,
Tringgus Bireng sisiń, Bukar cincin, Sadung cincin, Bibengih cincin, Sangking cincin, Tebakang
ćińkin, Bukar-Sadung căńkin, Bunan căńkin. (266)

The next group of changes (Group G) affects **Ribun** and **Semandang** but not Kembayan, the other
Southern Land Dayak language.

16. The glottal stop **ʔʔ was lost in final position.**

**ńdąya? ‘blood’ Proto Bidayuh ńdąya?:, Proto Bakati’ ńdaya?:, Kembayan-H doyo:, Ribun-H doyo,
Semandang doya. (68)

**ńąku? ‘I’ Proto Bidayuh *ńųk?, Proto Bakati’ *iko?:, Kembayan-H ko?:, Kembayan-A ko?: (oko?
expected), Ribun-H oko, Ribun-A oko*, Semandang oko. (339)

**ńrido?, **ńradi? ‘thin’ Proto Bidayuh *lido?:, *lide:, Proto Bakati’ *rade?:, *radih/s, Kembayan-H
nridi? (e expected in ultima), Kembayan-A ridi?*, Ribun-H hidi. (322)

**ńutura? ‘vomit’ Proto Bidayuh *ńu-ta?:, *ńute?:, Kembayan-H ńuto?, Ribun-H ĭuto, Ribun-A ĭuto,
Semandang ńuta. (125)
Two other changes (Group H) affect the Bakati’ languages and Ribun and Semandang but not Kembayan.

17. The central vowel **ə becomes *u in most environments, but in the Bakati’ languages after a labial consonant it is usually *a.

**ŋāram, **ŋàram ‘night’ Proto Bidayuh *ŋāram, *ŋàrom, *ŋàrəʔ, *kàrom, Proto Bakati’ *ŋaru, m, Kembayan-H ongə̃m, marə̃m ‘black’, Kembayan-A njə̃rap, njə̃rap, nə̃rip, marə̃p, mə̃rə̃p ‘black’, Ribun-H ə̃noi̇n, Ribun-A ə̃noi̇n, Semandang ə̃orum. (22, 327)

**māŋəh, **māŋən ‘shy’ Proto Bidayuh *māŋəh ‘lazy, shy’, Sara/Riok maŋun, Kembayan-A mə̃nə̃n, Ribun-A moŋun. (456)

**ūməh ‘(paddy) field’ Proto Bidayuh *ūməh, *əməh, Proto Bakati’ *umaʔ, Kembayan-A məh ‘field’. (194)


**jipəh, **jipən ‘teeth’ Proto Bidayuh *jipəh, *jipən, *jupən, *jipəy, Proto Bakati’ japaʔ, ( *a is the expected reflex of *ə in PBak ultima following a labial consonant), Kembayan-H jipə̃n, Kembayan-A jipə̃t, Ribun-H jipun, Semandang jipun. (82)

**ŋuməh, **ŋuməp, **ŋimpəh, **nampəh ‘(to) pound’ Proto Bidayuh *ŋum-pəh, *pən, Proto Bakati’ *ampa, Kembayan-A ŋampəh, Ribun-A gimpuh. (190)

**poʔəh ‘thigh’ Proto Bidayuh *pəʔəh, *pəʔən, *pəʔay, Rara paaʔ, Kembayan-A pəh, Ribun-A puu”. (109, 110)

18. The vowel of the antepenult is always a non-high vowel in the Bakati’ languages, Ribun and Semandang.

**karəšik ‘sand’ Proto Bidayuh *kərəšik, Rara karəšik, Kembayan-H kurosiʔ, Ribun-H kohosiʔ. (e expected in ultima), Ribun-A kohoseʔ. (3)

**bə-jaʔən ‘(to) walk’ Proto Bidayuh *jaʔən Bibengih bijəʔən, Proto Bakati’ *bəjaləʔən, Kembayan-H bajalanən, Kembayan-A bu/ojalat, Semandang bajala (final n expected). (138)

**sarətəs ‘one hundred’ Proto Bidayuh *si-rətəs, Proto Bakati’ *sarətəsəs, Kembayan-H saratəsəs, Ribun-H sahatusəs, Semandang sratəs. (291)

**ŋəɾəɾıaʔ ‘(to) spit’ Proto Bidayuh *ŋ-ir-əɾıaʔ, Rara əɾuɾaʔ, Semandang əɾuɾaʔ. (154)

The next group of changes (Group I) affects Kembayan and Ribun but not Semandang, the other Southern Land Dayak language.

19. The voiceless velar stop, **k, was palatalized to *c before **i.

**parəŋkis ‘(a) boil’ Proto Bidayuh *pirəŋkis, Kembayan-A puroncis, Ribun-A pohont'ı(s). (123)
**tăkiʔ** ‘excrement’ Proto Bidayuh *tăkiʔ*, Proto Bakati’ *takeʔ, Kembayan-A tociʔ, Ribun-A tikeʔ.

(73)

**[s]ăŋkiŋ** ‘little finger’ Proto Bidayuh *[s]ăŋkiŋ, Rara kueŋ (uncertain whether this can be related directly to the others), Kembayan-A oncik (<*ăŋkiŋ). (107)

**kilat** ‘lightning’ Proto Bidayuh *kilat, Proto Bakati’ *kilat, Kembayan-A cilat, Ribun-A cilaʔ. (16)

20. All four PLD vowels are diphthongized before certain final consonants.⁹⁶

(For the specific developments, cf. §5.1.2.2, Table 15.)


**mānuk, **mănuk** bird’ Proto Bidayuh *mānuk, Proto Bakati’ *manuʔk, Kembayan-H monuʔ?, Ribun-H monoʔ?, Ribun-A monoʔ? (οʔ? expected), Semandang monoʔ?. (47)

**n/nahap’ drink’ Proto Bidayuh *n̥ahap, *n̥hōp, Kembayan-H n̥n̥aʔp (<*n̥V-n̥hōp), Ribun-H n̥indeʔ (d not expected in either Ribun form), Ribun-A n̥indiʔ?, Semandang inupʔ (<*n̥a/ihōp). (235, 146)

**turaŋ** ‘bone’ Proto Bidayuh *tūraŋ, *tūr̥aŋ, Proto Bakati’ *turaŋ, Kembayan-H tura, Ribun-H tuhaŋ, Ribun-A tuhoʔŋ, Semandang turaŋ. (70)

The final group of changes (Group J) affected Ribun but not the other Southern Land Dayak languages, Kembayan and Semandang.

21. The voiceless stops **p and **t became ʔ in final position in Ribun.

**m-i/ū/ādip’ alive’ Proto Bidayuh *idip, *m-ūdip, Proto Bakati’ *idip, Kembayan-H madiʔp, Kembayan-A maḏiʔp, Ribun-H mideʔ?, Ribun-A miḏiʔ?, Semandang midup (Kembayan-A and Semandang forms reflect **a in the ultima at least). (328)

**āsap, **āsup, **āsuh’ smoke’ Proto Bidayuh *āsuh, *āsap, Proto Bakati’ *asu̥p, Kembayan-H asap, Ribun-H asap, Ribun-A asoʔ?, Semandang asap. (230)


**sūat’ (tree) flower’ Proto Bidayuh *sūat, Kembayan-H suat, Ribun-A suaʔ, Semandang suat. (34)

22. The liquid **l is lost in final position in Ribun.

**tăbal’ thick’ Proto Bidayuh *tăbal, Kembayan-A tobal, Ribun-H toba, Semandang tobal. (321)

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⁹⁶The diphthongs in the SLD languages are currently considered to contrast with the corresponding plain vowels pending further study. Cf. third paragraph of §5.1.2.2.
**jual** ‘sell’ Proto Bidayuh *jua, *ɲua, Proto Bakati’ *ɲua,l, Kembayan-A ɲual, jual, Ribun-A ɲua.

(262)

23. The liquid **r** becomes **h** in Ribun.

**raŋit** ‘sky’ Proto Bidayuh *raŋi, Proto Bakati’ *raŋi,t, Kembayan-H roŋi²n, Kembayan-A roŋi²d, roŋ³ad (t expected in all Kembayan forms), Ribun-H hoŋe?, Ribun-A hoŋi²?, Semandang roŋot (i expected in ultima). (11)

**turaŋ** ‘bone’ Proto Bidayuh *tūraŋ, *tūrəŋ, Proto Bakati’ *turaŋ, Kembayan-H tura, Ribun-H tuhaŋ, Ribun-A tuhoŋ, Semandang turang. (70)

**pikir** ‘think’ Proto Bidayuh *pikir, Rara mikir, Kembayan-H pikir, Kembayan-A bupikir, bapiker, Ribun-H pikeh, Ribun-A piki³h, Semandang piker. (555) (Cf. B.M. fikir ‘think’)
7 A final word

In these pages we have examined some features and historical developments of the sound system of Bidayuh and, less extensively, the Bakati’ and Southern Land Dayak languages. Finally, we have traced some of the developments of the sounds of the Land Dayak languages from early forms of Austronesian. Very much more remains to be explored and explained. It is my hope that other researchers, especially those who speak these languages as their mother tongue, will be motivated to continue this task and to contribute their insights to our common understanding of these important and interesting languages.
Appendix III A—Cognate sets

Proto Bidayuh, Proto Bakati’, Proto Bidayuh-Bakati’ and Proto Land Dayak
(Key to sources: A-Adelaar, B-Blust, H-Hudson, L-Lopez, Z-Zorc)
(Language abbreviations: SLD – Southern Land Dayak, PAN – Proto Austronesian,
PMP – Proto Malayo Polynesian, PHN – Proto Hesperonesian, PPhil – Proto Philippines)

Proto Land Dayak **dăr/uni0259d, **dărid
Proto Bidayuh *dăr/uni0259d ‘mountain’ Singai dăr/uni0259d, Gumbar dăr/uni0259d, Serambu dăr/uni0259d, Bratak dăr/uni0259d, Serasot dăr/uni0259d, Grogo dăr/uni0259d, Stass dăr/uni0259d, Biatah dăr/uni0259d, Bistaang dăr/uni0259d, Benuk dăr/uni0259d, Sapug dăr/uni0259d, Pinyawa’ dăr/uni0259d, Bengoh dăr/uni0259d, Anah Rais dăr/uni0259d, Biya dăr/uni0259d, Sembaan dăr/uni0259d, Tringgus Raya dăr/uni0259d, Tringgus Bireng dăr/uni0259d, Bukar dăr/uni0259d, Sadong dăr/uni0259d, Bibengih dăr/uni0259d, Sangking dăr/uni0259d, Tebakang dăr/uni0259d, Bukar-Sadong dăr/uni0259d, Bunak dăr/uni0259d.

Proto Land Dayak **tāna/uni0294, **tăna/uni0294

Proto Land Dayak **bātuh, **bătuh
Proto Bidayuh *bātuh ‘stone’ Singai bātuh, Gumbar bātuh, Serambu bātuh, Bratak bātuh,
Serasot batuh, Grogo batuh, Stass batuh, Biatah bãtu, Bistaang bãtu, Benuk bãtu, Pinyawa' batuh, Anah Rais bãtu, Biya bãtu, Sembaan bãtu, Tringgus Rayã bãtu, Tringgus Bireng bãtu, Buku bãtu, Sadong batuh, Bibengi bãtu, Sangking bãtu, Tebakang bãtu, Bukar-Sadong batuh, Bunan batuh.

Proto Bakati' *batu. 'stone' Rara batu, Sara/Riok batu?, Kendayan batu?, Bekati’ batu?.

SLD 'stone' Kemayan-H batu, Riun-H batu, Semandang batu. (4) (cf. B.M. batu 'stone')

PAN *batú

Proto Land Dayak **páya, **páya?

Proto Bidayuh *páya: 'slippery' Singai paya?,
Rara paya? 'mud (for padi)'.
Ribun-H poyo 'mud'. (5) (cf. B.M. paya 'swamp')

PAN *payah

Proto Bidayuh *táwâŋ 'mud' Biatah táwâŋ, Bistaang táwâŋ, Benuk táwâŋ, Pinyawa' táwâŋ, Tringgus Rayã táwâŋ, Sadong táwâŋ, Sangking táwâŋ, Bukar-Sadong táwâŋ, Bunan táwâŋ. (5)

PHN *bawâŋ 'creek, ravine' (cognate?)

Proto Bidayuh *run [j]a? 'mud' Singai runja?,
Gumbang runja?, Serambu runja?, Rambu runja?, Grogo runja?, Bau dictionary tana? runak 'muddy ground'. (5)
PPhil *lútaq 'earth' (cognate?)

Proto Land Dayak **pi?ín, **pa?ín


Proto Bakati' *pai,n 'water' Rara paitn, Sara/Riok paitn, Kendayan pait, Bekati’ paitn.

SLD 'water' Kembayan-H piitn, Kembayan-A pit, Ribun-H piît, Ribun-A piì(th) Semandang piikŋ (the preplosion is unusual in Sem). (6)
PMP (Z) *wáhiR


Proto Bidayuh *gumon, *gumo? 'bathe' Bukar gumo?, Bibengi gumon, Bukar-Sadong gumon, Bunan gumon. (168)

Proto Land Dayak **súŋi

Proto Bidayuh *súŋi 'river' Singai suŋi, Serambu suŋi, Bratak suŋi, Serasot pí?ín suŋi, Grogo suŋi, Stass suŋi, Biatah suŋi, Bistaang suŋi, sji, Benuk sji, Sapug suŋi, Pinyawa' suŋi, Bengoh suŋi, Anah Rais suŋi, Biya suŋi, Sembaan suŋi, Bukar suŋi, Sadong suŋi, Bibengi suŋi, Sangking suŋi, Tebakang suŋi, Bukar-Sadong suŋi, Bunan suŋi.

Proto Bakati' *suŋi,2 'river' Rara suŋi, Sara/Riok suŋe, Kendayan suŋe, Bekati’ suŋe.

SLD 'river' Kembayan-H suŋi, Ribun-H suŋi. (7) (cf. B.M. sungai 'river')

PHN *suŋay

Proto Bidayuh *bátaŋ, *bátaŋ 'river main stream'
Serambu bátaŋ pí?ín, Tringgus Bireng bátaŋ pí?ín. (7)

Proto Bidayuh *bátaŋ, *bátaŋ 'tree' Gumbang bátaŋ 'felled log', Benuk bátaŋ 'log', Anah Rais bátaŋ 'trunk', Tringgus Rayã bátaŋ kájuh, Sadong bátaŋ kájuh, Bibengi bátaŋ kájuh, Bunan bátaŋ kájuh. (28)

Proto Bidayuh * [bi] bátaŋ 'longhouse' Singai bátaŋ rãmin, Serambu bátaŋ pí?ín, Tringgus Bireng bátaŋ pí?ín. (7)

Proto Bidayuh *bátaŋ, *bátaŋ 'tree' Gumbang bátaŋ 'felled log', Benuk bátaŋ 'log', Anah Rais bátaŋ 'trunk', Tringgus Rayã bátaŋ kájuh, Sadong bátaŋ kájuh, Bibengi bátaŋ kájuh, Bunan bátaŋ kájuh. (28)

Proto Bidayuh *bátaŋ 'longhouse' Singai bátaŋ rãmin, Serambu bátaŋ pí?ín, Tringgus Bireng bátaŋ pí?ín. (7)

Proto Bakati' *bataŋ, 'stick' Rara bataŋ kaju?
'tree', batakŋ, Sáara/Riok batakŋ 'stalk', Bakati’ batakŋ. (7, 28)

Semandang botaŋ 'river'. (7)
SLD ‘stick’ Kembayan-H beta, Ribun-H butaŋ (o expected in penult), Semandang botaŋ. (28) (cf. B.M. batang ‘tree trunk, stalk, long object’)

Proto Land Dayak **lā [ʔ] ut, **lāwat


Proto Bakati’ *bintaŋ ‘star’ Rara bantaŋ, Sara/Riok bintaŋ, Kendayan bintaŋ, Bekati’ bintaŋ.


PAN *laHúd, PMP *lahud ‘toward the sea’

Proto Land Dayak **būran

Proto Bidayuh *būran ‘moon’ Singai buran, Gumbang buran, Serambu buran, Bratak buran, Serasot buran, Grogo buran, Stass buran, Biatah buran, Bistaang bran, Benuk bran, Sapug buran, Pinyawa’ buran, Bengoh buran, Anah Rais buran, Biya buran, Sembaan bran, Tringgus Raya bran, Tringgus Bireng bran, Bukar buran, Sadong buran, Bibengih buran, Sangking buran, Tebakang būran, Bukar-Sadong buran, Bunang buran.

Proto Bakati’ *buraŋ ‘moon’ Rara ŭt, Sara/Riok ŭt, Kendayan ŭt, Bekati’ ŭt.

SLD ‘moon’ Kembayan-H lawat, Kembayan-A laut, lawoʔ (a- and o-type vowels in Kembayan and Semandang may be special reflexes of **o after **w), Ribun-H alut, Ribun-A laut (final ? expected in Ribun), Semandang lawot. (8) (cf. B.M. laut ‘sea’)

PAN *laHúd, PMP *lahud ‘toward the sea’

Proto Land Dayak **rājít

Proto Bidayuh *rājít ‘sky’ Singai rājít, Gumbang rājít, Serambu rājít, Bratak rājít, Serasot rājít, Grogo rājít, Stass rājít, Biatah rājít, Bistaang rājít, Benuk rājít, Sapug rājít, Pinyawa’ rājít, Bengoh rājít, Anah Rais rājít, Biya rājít, Sembaan rājít, Tringgus Raya rājít, Tringgus Bireng rājít, Bukar rājít, Sadong rājít, Bibengih rājít, Sangking rājít, Tebakang rājít, Bukar-Sadong rājít, Bunang rājít.

Proto Bakati’ *raŋiñana, *raŋi t ‘sky’ Rara rājít, Sara/Riok rājít, Kendayan rājít, Bekati’ rājít.

SLD ‘sky’ Kembayan-H roñi’n, Kembayan-A roñi’d, roñ’ad (t expected in all Kembayan forms), Ribun-H hoñeʔ, Ribun-A hoñiʔ, Semandang roñot (i expected in ultima). (11) (cf. B.M. langit ‘sky’)

PAN *láŋit

Proto Land Dayak **āmbun, **ampun, **ān̂un, **ān̄un

Proto Bakati’ *ampun ‘cloud’ Rara amputn ‘mist, haze’, Bekati’ amputn.
SLD ‘fog, mist’ Kebayan-H obutn, Kebayan-A omut, Ribun-H ombun, Ribun-A abudn, Semandang omutn. (12)
PMP (Z) *Rá̱un ‘atmospheric obscurity’

Proto Land Dayak **rămaŋ
Proto Bidayuh *rămaŋ ‘cloud’ Bukar rămaŋ, Sadong rămaŋ, Tebakang rămaŋ, Bukar-Sadong rămaŋ, Bunan rămaŋ.
SLD ‘cloud’ Kebayan-H roma, Ribun-H homaŋ, Ribun-A hōmaŋ (o° expected), Semandang romaŋ. (12)

Proto Bidayuh *kiRŭman ‘(heavy) cloud’ Biatah kiruman, Bistaang krman, Benuk krăman, Sapug kiraman, Pinyawa’ k[i]ruman. (12)

Proto Bakati’ *rahu/uni0294 ‘cloud’ Rara Kalimantan rahu/uni0294, Kendayan rahu/uni0294. (12)

Proto Bidayuh *karu ‘mist, haze’ Sara/Riok kararuh (a reduplicated form ?), Kendayan karuh. (12)

Proto Bidayuh *săbak ‘wind’ Singai s/uni0259ăk, Gumang s/uni0259ăk, Seramū s/uni0259ăk, Bratak s/uni0259ăk, Serasot s/uni0259ăk, Grogo s/uni0259ăk, Stass s/uni0259ăk, Biatah sābak, Bistaang sābak, Benuk sābak, Sapug sābak, Pinyawa’ s/uni0259ăk, Bengoh sābak, Anah Rais sābak, Biya sābak, Tringgus Raya sābak, Tringgus Bireng sābak. (13)

Proto Bidayuh-Bakati’ *măhu, *măha ‘wind’ Singai măhu, Sangking măhu, Bistaang măhu, Seramu măha, Kendayan măha. (12)

Proto Bidayuh *măhu ‘wind’ Bibengīh măhu, Sangking măhu, Buka-Sadong măhu, Bunan măhu.
Proto Bakati’ *maha ‘wind’ Rara Sarawak maha?, Sara/Riok māa?, Kendayan māha?. (13)

Proto Land Dayak **ūjan

Proto Bakati’ *ujan ‘rain’ Rara ujatn, Sara/Riok ujatn, Kendayan ujatn, Bekati’ ujatn.
PAN *quZán

Proto Bidayuh *dandaŋ ‘thunder’ Bukar dandaŋ, Sangking dandaŋ, Tebakang dindan. (15) Kembayan-A dana ‘thunder’. (15)

Proto Bidayuh *guntur/h Serian Bidayuh dictionary guntur ‘thunder’.
Rara guntur ‘rolling thunder’.
Ribun-A guntuh ‘thunder’. (15) (cf. B.M. guntur ‘thunder’)
PHN *duR + duR

PMP *du + du (probably a variant of the immediately preceding set)

Proto Bidayuh-Bakati’ *pVte?

Proto Bakati’ *pate? ‘lightning’ Rara pate?, Sara/Riok pate?. (15) (this set may be related to the following one)
PHN *lentiq ‘lightning bolt, thunderstorm’ (cognate?)
Proto Bidayuh *pānsa? ‘thunder clap’ Bibengih paca?, Tebakang paca?, Bunak paca?. (15)

Proto Land Dayak **kilat
Proto Bidayuh *kilat ‘lightning’ Bukar kilat, Bibengih kilat, Tebakang kilat, Bukar-Sadong kilat, Bunak kilat.
Proto Bakati’ *kilat ‘lightning bolt’ Rara kilat, Sara/Riok kilat.
SLD ‘lightning’ Kembayan-A cilat, Ribun-A cila?. (16) (cf. B.M. kilat ‘lightning bolt’)
PHF *kilát, *qu-silaq

Proto Bidayuh *kĭla/uni0294t ‘lightning’ Gumang kijat, Seramū kijat, Bratak kijat, Serasot kijat, Grogo kijat, Stass kijat, Benuk [kĭ]jat, Sapug kijat, Pinyawa’ kijat, Bengoh kijat, Anah Rais kijat, Biya kijat, Sembaan jat, Tringgus Raya kijat, kājat Tringgus Bireng kājat. (16)

Proto Bidayuh *kundiŋ ‘distant lightning’ Singai kundiŋ, Seramū kuniŋ, Sembaan hndiŋ. (16)

Proto Bidayuh *miyāyuh (perhaps *<mi-a-yuh) ‘rainow’ Bukar miayuh, Sadong miayuh, Biangih mi/uni0272a/uni0272uh, Bukar-Sadong mi/uni0272ayuh, Bunak miayuh. (17)

Proto Bidayuh */uni0261iRăŋan ‘rainow’ Singai /uni0261ir/uni0259ŋan, Gumang sit/d/uni0259ŋan, Seramū /uni0261[ι]r/uni0259ŋan, Bratak /uni0261ir/uni0259ŋan, Serasot /uni0261ir/uni0259ŋan, Grogo /uni0261ir/uni0259ŋan. (17)


PAN *qaNíŋuH

Proto Bidayuh *sādu ‘shadow’ Bibengih sādu, Sangking sādu, Bunak sādu. (18)

Proto Bidayuh *sibändera- or *sibämbe ‘shadow’ Singai sibambia, Serambu sibam[b]ia, Bratak sibambia, Serasot sibam[b]ia, Grogo sibambia, Stass sibambia, Bau dictionary sibambie (this form suggests that all the forms of this set should perhaps be recorded as /e/ rather than /ia/), Bengoh sibäbi[a]. (18)

PAN *RabíziH ‘night, evening’

Proto Bidayuh *t-i-g-āma ‘shadow’ Bukar tiĝama, Tebakang täma, Serian dictionary sigama. (19)

Proto Land Dayak **āndu
Proto Bakati’ *ando ‘day’ Rara anu, Sara/Riok anû, Kendayan anu, Bekati’ ando.
SLD ‘day’ Kembayan-H onu, Ribun-H onu, Ribun-A ondu, Semandang onu. (19)
PAN *qa-[n]jāw, *qal[el]jāw

Proto Land Dayak **sāwa?
Proto Bakati’ *sawa,? ‘year’ Rara sawa?, Sara/Riok sawa?, Kendayan sawa?, Bekati’ sawa?.
SLD ‘year’ Kembayan-H sowo?, Ribun-H sowo. (20)

Proto Land Dayak **pāgi, **māji
Proto Bidayuh *pāgi ‘morning’ Singai pāgi,
Gumbang pāgi, Serambu sipāgi, Bratak pāgi,
Serasot pāgi, Grogo pāgi, Stass pāgi, Pinyawa’ pāgi,
Bengoh pāgi, Anah Rais pāgi ŋu, Biya pāgi,
Sembaan pāgi, Tringgus Raya pāgi āndu
‘early morning’, Bukar buru pāgi, Sadong buru pāgi,
Bibengih buru pāgi, Sangking bru pāgi,
Tebakang buru pāgi, Bukar-Sadong buru pāgi,
Bunan buru pāgi.

Proto Bidayuh *san, *sen, *isan ‘morning’ Biatah isan,
Bistaang sansan, Benuk isan, sansan, Sapug sensen,
Tringgus Bireng āndu? sen. (21)

Proto Bakati’ *Cam, Rara rami ‘afternoon’,
Sara/Riok ŋame ‘yesterday’. (25)

Proto Bidayuh *nāraŋ, *durang ‘noon’ Pinayawa’
durang, Bukar naraŋ, Sadong naraŋ, Bibengih naraŋ,
Sangking naraŋ, Tebakang naraŋ, Bukar-
Sadong naraŋ, Bunan naraŋ. (23)

Proto Bidayuh-Bakati’ *Cvmi
Proto Bidayuh *siŋumi ‘afternoon’ Singai siŋumi,
Gumbang ŋum, Bratak ŋum, Serasot āndu
ŋumi ‘evening’, Grogo ŋum ‘evening’, Stass siŋumi, Biatah siŋumi āndu ‘early evening’,
Benuk siŋumi āndu, Sapug siŋumi ‘evening’,
Pinyawa’ siŋumi ‘evening’, Bengoh sumi āntu
‘evening’, Anah Rais siŋumi ānu ‘evening’, Biya
ś[i]ŋumi ān[d]u ‘evening’, Sembaan ĥumi ānu,
Tringgus Raya ŋum āndu, Tringgus Bireng ŋe? mi. (24)

Proto Bakati’ *Cam, Rara rami ‘afternoon’,
Sara/Riok ŋame ‘yesterday’. (25)

Proto Bidayuh *mi-jah ‘yesterday’ Biatah mijah,
Bistaang mijah, Benuk mijah, Sapug mijah,
Anah Rais mijah, Biya mijah, Tringgus Raya
ŋumi jah, Tringgus Bireng mija. (25)

Proto Bidayuh *sându ‘daylight’ Biatah săndu,
Biatah săndu, Bistaang săndu, Benuk săndu,
Anah Rais săndu, Biya săndu, Tåinggus Raya
ŋumi jah, Tringgus Bireng mija. (25)

Proto Bidayuh *te? ‘afterward’ Singai te?, Gumbang
tele?, Serambu te?, Bratak te, Serasot te?, Grogo
tele?, Stass te?, Biatah te?, Bistaang te?, Tringgus
Raya te? pāgi ‘tomorrow’. (26)
Proto Bakati’ *Caŋka, b ‘tomorrow’ Rara jakap, Sara/Riok nangkab. (26)
Proto Bakati’ *[n] ari ‘day after tomorrow’ Rara ari, Sara/Riok nari. (26)
Proto Bakati’ *[n] uhu,d ‘two days after tomorrow’ Rara uhut, Sara/Riok nuud. (26)
Proto Land Dayak **tărən ‘forest’ Singai tărən, Gumbang tărən, Bratak tărən, Serasot tărən, Stass tărən, Biatah tărən, Benuk tărən, Sapug tărən, Pinyawa’ tărən, Bengoh tărən, Anah Rais tărən, Biya tărən, Tringgus Bireŋ tărən, Bukar tărən, Tebakang tărən, Bunan tărən.
Proto Bakati’ *taru,n ‘forest’ Rara tatrən, Sara/Riok tatrən, Kendayan antut tatrən, Bekati’ tatrən.
SLD ‘forest’ Kembayan-A torut, Ribun-A tohan. (27)
Proto Land Dayak **kăyuh1
Proto Bidayuh *tărun ‘forest’ Singai tărun, Gumbang tărun, Bratak tărun, Serasot tărun, Stass tărun, Biatah tărun, Benuk tărun, Sapug tărun, Pinyawa’ tărun, Bengoh tărun, Anah Rais tărun, Biya tărun, Tringgus Bireŋ tărun, Bukar tărun, Tebakang tărun, Bunan tărun.
Proto Bakati’ *kăyuh ‘tree, wood’ Rara kăyuh, Sara/Riok kăyuh, Bekati’ kăyuh.
Proto Bidayuh *dăman ‘older secondary forest’ Singai daman, Serambu daman, Bratak daman, Serasot daman, Ggrogo daman. (27)
Proto Bidayuh *băunj ‘secondary forest’ Bistaang băunj, Bengoh băunj, Anah Rais băunj, Sembaan băunj. (27)
Proto Bidayuh *(di) anj ‘in(side)’ Singai anj, Bratak anj, Bau dictionary anj bori ‘inside the house’, Benuk di yaŋ, Sembaan haŋ, Serian dictionary anj ‘at’. (27)
Proto Bidayuh *(tăn) kăyuh ‘tree, wood’ Singai kăyuh, Gumbang kăyuh, Serambu kăyuh, Bratak kăyuh, Serasot kăyuh, Grogo kăyuh, Stass kăyuh, Biatah kăyuh, Biya kăyuh, Sembaan kăyuh, Tringgus Raya kăyuh, Tringgus Bireŋ kăyuh, Bukar kăyuh, Sadong kăyuh, Bibengih kăyuh, Sangking kăyuh, Tebakang kăyuh, Bukar-Sadong kăyuh, Bunan kăyuh. (28)
Proto Bidayuh *kăyuh ‘wood’ Singai kăyuh, Gumbang kăyuh, Serambu kăyuh, Bratak kăyuh, Serasot kăyuh, Grogo kăyuh, Stass kăyuh, Biatah kăyuh, Biya kăyuh, Sembaan kăyuh, Tringgus Raya kăyuh, Tringgus Bireŋ kăyuh, Bukar kăyuh, Sadong kăyuh, Bibengih kăyuh, Sangking kăyuh, Tebakang kăyuh, Bukar-Sadong kăyuh, Bunan kăyuh. (28)
Proto Bidayuh *kăyuh ‘wood’ Singai kăyuh, Gumbang kăyuh, Serambu kăyuh, Bratak kăyuh, Serasot kăyuh, Grogo kăyuh, Stass kăyuh, Biatah kăyuh, Biya kăyuh, Sembaan kăyuh, Tringgus Raya kăyuh, Tringgus Bireŋ kăyuh, Bukar kăyuh, Sadong kăyuh, Bibengih kăyuh, Sangking kăyuh, Tebakang kăyuh, Bukar-Sadong kăyuh, Bunan kăyuh. (28)
Proto Bidayuh *tăn ‘secondary forest’ Singai tăn, Serambu tăn, Bratak tăn, Serasot tăn, Stass tăn, Biatah tăn, Benuk tăn, Sapug tăn, Pinyawa’ tăn, Bengoh tăn, Anah Rais tăn, Biya tăn, Tringgus Raya tăn, Tringgus Bireŋ tăn, Bukar tăn, Tebakang tăn, Bunan tăn.
Proto Bidayuh *mălay, mălăo ‘secondary forest’ Biya mălay, Bukar mălay, Sadong mălay.
Proto Bidayuh *mălăo, mălăo ‘secondary forest’ Biya mălay, Bukar mălay, Sadong mălay, Bibengih mălay, Sangking mălay, Bukar-Sadong mălay, Bunan mălay. (27)
Proto Bakati’ *kau,? ‘tree, wood’ Rara kau?, Sara/Riok kau?, Bekati’ kau?.
PAN *kăyuH
Proto Bidayuh *(tăn) (kăyuh) ‘tree, wood’ Singai tăn kăyuh, Gumbang tăn kăyuh, Serambu
tanjn (kayuh), tanjy, Bratak tanjn kayuh, Serasot tanjn kayuh, Grogo tanjn kayuh, Biaath tanjn kàyuh, Bistaang [tàn]n kiuw, Benuk tanjn kàyuh, Sapug tanjn kayuh, kàyu?, Pinyawa' tanjn kayuh, Bengoh tanjn kayuh, Anah Rais [tàn]n kàyuh, Biya tàn jn kàyuh, Sembaan hùn kàyuh, Tringgus Raya tanjn kàyuh, Tringgus Bireng tanjn kàyuh, Bukar tanjn kàyuh, Bibengih tanjn kayuh, Sangkng tanjn kàyuh, Tebakang tanjn kàyuh, Bukar- Sadong tìnjan kàyuh, Bunàn tìnjan kayuh. (28)
PMP *teŋéR 'mangrove tree'

Proto Land Dayak **puŋun 'tree' Rara puutn, Sara/Riok puutn, Kendayan puut.

Semandang puutn 'tree'. (28) (cf. B.M. pohon 'tree')
PMP *púqun 'tree trunk'

Proto Land Dayak **kürit
Proto Bidayuh *kürit 'skin, (tree) bark' Singai kurit, Gumbang kurit, Serambu kurit, Bratak kurit, Serasot kurit, Grogo kurit, Stass kurit, Biaath kurit, Bistaang kurit, Benuk kurit, Sapug kurit, Pinyawa' kurit, Bengoh kurit, Anah Rais kūrit, Biya kūrit, Sembaan hrit, Tringgus Raya krit, Tringgus Bireng kūrit, Bukar kurit, Sadong kurit, Bibengih kūrit, Bunàn kūrit. (29, 66)

Proto Bakati’ *kuri, t 'skin' Rara kurit, Sara/Riok kurit, Kendayan kurit, Bekati' kurit.

SLD 'skin' Kemayan-H kouri, Kemayan-A kouri, Riun-H kuhe, kohe koyuh 'ark', Riun-A kuhi, Semandang kureit, kurit 'skin,UIS']. (29, 66) (cf. B.M. kulit 'skin, ark')
PAN (Z) *kuC 'skin, ark'

Proto Bidayuh-Bakati’ *küpak
Proto Bidayuh *küpak '(tree) bark' Anah Rais pak kayuh, Biya pak kayuh, kūpak 'peel the bark', Bukar kupak kàyuh, Sangkng kupak kàyuh, Tebakang kupak, Bukar-Sadong kupak.

Rara kupak kayu? 'tree bark'. (29)
PAN *bakbak 'peel, skin', PPhil *?úpak 'bark'

Proto Land Dayak **dà?un, **dà?un
Proto Land Dayak **ūhat
Proto Bidayuh *ūhat, *ahat, *hat ‘root, vein’
Singai at, Gumbang aat, Serambu aat, Bratak aat, Serasot aat, Grogo aat, Stass aat, Biatah uat,
Bistaang uat, Benuk uat, Sapug wat, Pinyawa’ uat, Bengoh uat, Anah Rais wat, Biya uat,
Semban hat, Tringgus Raya uat, Tringgus Bireng uat, Bukar uhat, Sadong uhat, Bibengih uhat, Sangking uhat, Tebakang ūhat, Bukar-Sadong uhat, Bunan uhat.
Proto Bakati’ *ūhat ‘root’ Rara ūhat, Sara/Riok uût (apparently *uha > uû), Kendayan uhat, Bekati’ uhat.
SLD ‘root’ Kemayan-H utat, Riun-A way, Semandang urat (loan ?). (32, 75) (cf. B.M. urat ‘root’)
PAN *uRát ‘vein’, PHF *uRát ‘root’

Proto Land Dayak **tahas
Proto Bidayuh *tahas ‘ironwood’ Singai ta/ani, Gumang taas, Seram u taas, Bratak taas,
Serasot taas, Grogo taas, Stass taas, Biatah tas, Bistaang tas, Benuk tas, Sapug ta[:s], Pinyawa’ ta/as, Bengoh tas, Anah Rais tas, Biya tas, Semban tahas, Tringgus Raya tahas, Tringgus Bireng tas, Bukar tahas, Sadong tahas, Bibengih tahas, Sangking tahas, Tebakang tahas, Bukar-Sadong tahas, Bunan tahas.
Ribun-A tazh ‘ironwood’. (33)
PAN *teRas ‘hardwood’, PPhil *t/aniRás ‘hard’

Proto Land Dayak **būŋa [?] 
Proto Bidayuh *būŋa, *buŋa/ani ‘flower’ Singai buŋa, Gumang buŋa, Serambu buŋa, Bratak buŋa,
Serasot buŋa, Grogo buŋa, Stass buŋa, Biatah buŋa, Bistaang buŋa, Benuk buŋa, Sapug buŋa,
Pinyawa’ buŋa, Bengoh buŋa, Anah Rais buŋa, Biya buŋa, Tringgus Bireng buŋa, Bukar buŋa?,
Sadong buŋa?, Bibengih buŋa, Tebakang buŋa?, Bukar-Sadong buŋa, Bunan buŋa.
Proto Bakati’ *būŋa,? ‘flower’ Rara buŋa?, Sara/Riok buŋa?, Kendayan buŋe (final a expected), Bekati’ buŋa?.
SLD ‘flower’ Kembayan-A buŋa, Ribun-H buŋo. (34) (cf. B.M. buŋa ‘flower’)
PAN *buāq ‘fruit, betel nut’

Proto Land Dayak **bărak
Proto Bidayuh *bărak ‘banana’ Singai bărak,
Gumbang bărak, Serambu bărak, Bratak bărak, Serasot bărak, Grogo bărak, Stass bărak, Biatah bărak, Bistaang bărak, Benuk bărak, Sapug bărak, Inday bărak, Pinyawa’ bărak, Bengoh bărak, Anah Rais bărak,
Biya bărak, Tringgus Bireng bărak, Bukar bărak?, Sadong bărak?, Bibengih bărak, Tebakang bărak?, Bukar-Sadong bărak, Bunan bărak.
Proto Bakati’ *bara,? ‘banana’ Rara bărak, Sara/Riok bărak, Kendayan bara?.
Kembayan-A bora? ‘banana’. (36)
**PHN *balat ‘banana species’ (cognate?)**

**Proto Bidayuh ** *pisah, *pised ‘banana’** Semaan pisah, Bibengih pisah, Sangking piseh, Bukar-Sadong pisah, Bunah pisah. (36) (cf. B.M. pisah ‘banana’)**

**Proto Land Dayak ** *dihan ( < *jv-h-an??)**

**Proto Bidayuh ** *dihan, *dihen, *dihah ‘durian’**

Singai dienen, Gumang dienen, Seramhu dienen, Bratak dienen, Serasah dienen, Grogo dienen, Stass dienen, Bistahang dienen, Benuk dienen, Sapug dienen, Pinyawah diten, Bengoh dienen, Anah Rais dienen, Biya dienen, Semaan dihan, Tringgus Raya dihan, Tringgus Bireng reh, Bukar dihan, Sadong dihan, Bibengih diha?, Tebakang dihan, Bukar-Sadong dihan, Bunah dihan.

Rara dihan ‘durian’.

SLD ‘durian’ Kemayan-A diat, Ribun-A diat, diat. (37)

**PAN *túRiH, PMP *zúRi ‘thorn’**

**Proto Bidayuh ** *búntan ‘coconut (palm)’**

Singai butan, Gumang butan, Seramhu butan, Bratak butan, Serasah butan, Grogo butan, Stass butan, Bistahang butan, Benuk butan, Sapug butan, Pinyawah butan, Bengoh butan, Anah Rais butan, Biya butan, Semaan tahan, Tringgus Raya butan, Tringgus Bireng butan, Bukar butan, Sadong butan, Bibengih butan, Sangking butan, Tebakang butan, Bukar-Sadong butan, Bunah butan.

**Proto Bakati ** *buna ‘coconut tree’ Rara butan, Sara/Riok butan, Kendayan butan. (38)

**Proto Land Dayak ** *bunah ‘coconut (tree)’ Kembayan-A bota butan, Ribun-A kayo butan. (38)

**SLD ‘coconut (tree)’ Kembayan-A bota butan, Ribun-A kayo butan.**

**PAN (B) *bu(q)(CfT)a(nN), Proto Central Phil *bátâŋ ‘young coconut’**

**Proto Land Dayak ** *tábuh3, *tábuh ‘sugar cane’ Semaan tabuh, Gumbang tabuh, Seramhu tabuh, Bratak tabuh, Serasah tabuh, Grogo tabuh, Stass tabuh, Biyah tabuh, Bistahang tabuh, Benuk tabuh, Sangking tabuh, Bukar-Sadong tabuh. (39) (cf. B.M. teu ‘sugar cane’) **

Rara tábuh or taruk ‘eggplant’.

**Proto Land Dayak ** *sā ‘sago palm’**

**Proto Bidayuh ** *sá/uni0261u ‘sago palm’ Semaan sá/uni0261u, Gumbang sá/uni0261u, Seramhu sá/uni0261u, Bratak sá/uni0261u, Serasah sá/uni0261u, Grogo sá/uni0261u, Stass sá/uni0261u, Biyah sá/uni0261u, Bistahang sá/uni0261u, Benuk sá/uni0261u, Sapug sá/uni0261u, Pinyawah sá/uni0261u, Bengoh sá/uni0261u, Anah Rais sá/uni0261u, Biya sá/uni0261u, Semaan sá/uni0261u, Tringgus Raya sá/uni0261u, Tringgus Bireng sá/uni0261u, Bukar sá/uni0261u, Sadong sá/uni0261u, Bibengih sá/uni0261u, Sangking sá/uni0261u, Tebakang sá/uni0261u, Bukar-Sadong sá/uni0261u, Bunah sá/uni0261u.

Rara sá/uni0261u ‘sago’.
SLD ‘sago palm’ Kembayan-A sago?, Ribun-A sago”. (41) (cf. B.M. sagu ‘sago’)
PMP *sagúh

Proto Bidayuh-Bakati’ *bāndon

Proto Bakati’ *bandoŋ ‘cassava’ Rara anokŋ (orality of vowel noted), Sara/RIok anûkŋ, Kendayan banuk. (43)

Proto Land Dayak **kūduk

Rara kuduk ‘taro, yam’.
SLD ‘taro, yam’ Kembayan-A kuduk?, Ribun-A kuduk”. (44)

Proto Bidayuh *Rākud ‘taro, yam’ Biya rākud, Sembaan rākud. (44)

Proto Land Dayak **CVla
Kembayan-A ‘tubercous root’ gala, Ribun-A Ḇalo (o is more common reflex in ultima). (44)
Proto Manobo *kasīla ‘sweet potato’

Proto Bidayuh *bitāwī ‘taro, yam’ Sapug kuduk bitawī, Pinyawa’ bitawī, Bengoh bitawī, Tringgus Raya kuduk tawī, Sadong bitawī. (44) This set may be related to the following one.
PPhil *qūbi ‘yam’ (cognate?)

Proto Land Dayak **ui
Proto Bidayuh *ūi ‘rattan’ Singai ui, Gumbang ui, Serambu ui, Bratak ui, Serasot ui, Grogo ui, Stass ui, Biatah ui, Bistaang ui, Benuk ui, Sapug ui, Pinyawa’ ui, Bengoh ui, Anah Rais ui, Biya ūi, Sembaaui, Tringgus Raya ui, Tringga Bireng ui, Bukar ui, Sadong ui, Bibengih ui, Sangking ui, Tebakang ūi, Bukar-Sadong ūi, Bunau ui.
Rara ue ‘rattan’. Ribun-A ui ‘rattan’. (45)
PAN *quay, PAN (A) *quay

PMP *kābu ‘kapok tree’, PPhil */kāpas, */kapok ‘cotton’

Proto Bidayuh **mānuk, **mānuk
Proto Bidayuh *mānuk ‘bird’ Singai manuk, Gumbang manuk, Serambu manuk, Bratak manuk, Serasot manuk, Grogo manuk, Stass manuk, Biatah mānuk, Bistaang mānuk, Benuk mānuk, Sapug mānuk, Pinyawa’ manuk, Bengoh manuk, Anah Rais mānuk, Biya mānuk, Sembān mānuk, Tringgus Raya mānuk, Tringga Bireng manuk, Bukar mānuk, Sadong manuk, Tebakang mānuk, Bunau manuk.
Proto Bakati’ *manu ‘bird’ Rara manuk, Sara/RIok manū, Kendayan manu?, Bekati’
manuk (is the more common reflex of final *k).


PMP *manuk

Proto Bidayuh *kito ‘bird’ Bibengih kito, Sangking kito, Bukar-Sadong kito. (47)

Proto Land Dayak **irad, **ărad

Proto Bakati’ *ara, d ‘wing’ Rara arad, Sara/Riok arad.

SLD ‘wing’ Kembayan-H irat (irat ??), Ribun-H iha?, Ribun-A ha?. (48)

PMP *qelad

Proto Land Dayak **sāyap
Proto Bakati’ *sayap ‘wing’ Rara sayap, Kendayan sayap, Bekati’ sayap.

Semandang sayap ‘wing’. (48) (cf. B.M. sayap ‘wing’)

PHN *sayap

Proto Land Dayak **buruh

Proto Bakati’ *buru, n ‘feather, body hair’ Rara burutn, Sara/Riok burutn, Kendayan burut, Bekati’ burutn.

SLD ‘feather’ Kembayan-H bulu, Kembayan-A buruh, Ribun-H huwu? (perhaps a typo), Ribun-A buhuh (final h usually deleted), Semandang bulu. (49) (cf. B.M. bulu ‘feather’)

PMP *bulu

Proto Land Dayak **unjkuy

Proto Bakati’ *unjke, ‘tail’ Rara ukje, Sara/Riok ukje, Kendayan ukje, Bekati’ ukje.

SLD ‘tail’ Kembayan-H unjki, Ribun-H ku?, Semandang iko? (? not expected in Ribun and Semandang forms). (50)

PAN */i.Dotlesś́kuR, PMP *ikuŋ

Proto Land Dayak **turuh, **tulu?, **turu, **turah
Proto Bidayuh *tūloh, *(n)tulo?, *tuloc ‘egg’ Singai turoh, Gumbang turoh, Serambu turoh, Bratak turoh, Serasot turoh, Grogo turoh, Stass turoh, Biatah turoh, Bistaang turoh, Benuk tūroh, Sapug turoh, Pinyawa’ turoh, Bengoh turoh, Anah Rais turoh, Biya tūroh, Sembaan tūroh, Tringgus Raya turoh, Tringgus Bireng troh, Bukar tuloc, Sadong ntulo?, Bibengih ntulo?, Sangking ntulo?, Tekabang tūlo?, Bukar-Sadong ntulo?, Bunan ntulo?.

Proto Bakati’ *tura, h ‘egg’ Rara turah, Sara/Riok turah, Kendayan turah, Bekati’ turah.

SLD ‘egg’ Kembayan-H ntoru (u expected in penult), Kembayan-A nturu, Ribun-H tuhu, Semandang turo. (51)

PAN *qatelúR, *telúR
Proto Land Dayak **ăkak
SLD ‘snake’ Ribun-H niphah, Semandang niphah. (55) (appears to be related to **jipah, **jipah ‘teeth’ (82))
PMP *anipa ‘large snake species’, PMP *nipay ‘snake’

Proto Land Dayak **kak kǎwaŋ
Proto Bidayuh *kakǎwaŋ, *ka/uni02D0kǎwaŋ Bratak [kak“aŋ], Serasot [ka(k)kwaŋ] These three forms refer to a bird found in the wild and may be /kak kǎwaŋ/ or /ka/uni02D0k k/uni0259waŋ/ or /ka/uni02D0k koŋ/ phonologically.
Rara ka/uni0294 /uni0261awaŋ ‘crow’.
SLD Kemayan-A kakoaŋ (final ŋ not expected) ‘crow’, Ribun-A kaco ŋ (may not be cognate) ‘urung layang’.

Proto Land Dayak **îkan
Proto Bidayuh *îkan, *iken, *ikeʔ ‘fish’ Singai ken, Gumbang ken, Serambu iken, Bratak iken, Serasot iken, Grogo iken, Stass iken, Biatah iken, Bistaang iken, Benuk [i]ken, Sapug ken, Pinyawa’ [i]ken, Bengoh ken, Anah Rais ken, Biya ken, Sembaan ken, Tringgus Raya ken, Tringgus Bireng ken, Bukar iken, Sadong iken, Bibengih iken, Sangking iken, Tekabang îkeʔ, Bukar-Sadong iken.
SLD ‘crocodile’ Kemayan-A bui (probably something like buay expected), Ribun-A bayo? (apparently not directly cognate).
PMP *buqâya

Proto Land Dayak **bu/uni0294ay

Proto Bakati’ *ika, *iwa ‘fish’ Rara ikatn, Sara/Riok ikatn, Kendayan ikat, Bekati’ ikatn.
PMP *siok ‘chicken’ Singai siok [siwək], Gumbang siok [siwək], Serambu siok [siwək], Bratak siok [siwək], Serasot siok [siwək], Grogo siok [siwək], Stass siok [siwək], Biatah siok, Pinyawa’ siok [siwək], Bengoh siok [siwək], Anah Rais siok [siwək], Biya siok, Sembaan siok, Tringgus Raya siok, Tringgus Bireng siok, Bukar siok [siwək], Bibengih siok [siwək], Sangking siok [siwək], Tekabang siok,
Bukar-Sadong siok [siyôk], Bunan siok [siyôk].
(56)

PAN (B) *piak ‘domestic fowl’ (cognate?)

Proto Land Dayak **siap
Proto Bidayuh *siap ‘chicken’ Bistaang siap, Benuk siap, Sapug siap.
Proto Bakati’ *siap ‘chicken’ Rara siap, Sara/Riok siap, Kendayan siap.
SLD ‘chicken’ Kembayan-A siap, Ribun-A siap. (56)

Proto Land Dayak **pąyu
Proto Bidayuh *pąyu ‘deer’ Biatah pąyu, Bistaang pąyu, Benuk pąyu, Sapug pąyu, Pinyawa’ pąyu, Bengoh pąyu, Anah Rais pąyu, Biya pąyu, Sembaan pąyu, Tringgus Raya pąyu, Tringgus Bireng pąyu, Sadong pąyu, Bibengih pąyu, Sangking pąyu, Tebakang pąyu, Bukar-Sadong pąyu, Bunan pąyu.
Kembayan-A pąyu ‘deer’. (57)

PMP *Rusa

Proto Bidayuh *pāah ‘deer’ Bukar pāah, Bukar-Sadong pāah, Serian dictionary pāah. (57)

Proto Land Dayak **bābu
Proto Bidayuh *bābu, *bābon ‘rat’ Gumbang babu, Serambu babu, Grogo babu, Biatah babu, Bistaang babu, Benuk babu, Sapug babu, Pinyawa’ babu, Bengoh babu, Anah Rais babu, Biya babu, Tringgus Raya babu, Tringgus Bireng babu, Bukar babu, bābon, Bukar-Sadong babu, Bunan babu.

Proto Bakati’ *babu2 ‘rat’ Sara/Riok babû, Kendayan babu.
SLD ‘rat’ Kembayan-A babu, Ribun-A boh’buh (not directly cognate; babu expected). (58)
PHN *ba + baw ‘rat, mouse’

Proto Bidayuh *jigôn, *jugôn ‘rat’ Serasot jigôn, Stass jigôn, Bau dictionary jigôn, Sadong jugôn, Sangking jugôn. (58)

Proto Bidayuh *jupoy, *jupor ‘rat’ Sembaan jupoy, Bibengih jupoy, Tebakang jupor, Serian dictionary jupoy. (58)

Proto Land Dayak **kāsuh,
Proto Bidayuh *kāson, *kāsun, *kāsuh ‘dog’ Singai kāson, Gumbang kāson, Serambu kāson, Bratak kāson, Serasot kāson, Grogo kāson, Stass kāson, Biatah kāson, Bistaang kāson, Benuk kāson, Sapug kāson, Pinyawa’ kāson, Bengoh kāson, Anah Rais kāson, Biya kāson, Sembaan kāson, Tringgus Raya kāson, Bukar kāsun, Sadong kāsun, Bibengih kāsun, Sangking kāsun, Tebakang kāsun, Bukar-Sadong kāsun, Bunan kāsuh. (59)

SLD ‘dog’ Kembayan-H kōsuh, Ribun-H osuh, Ribun-A kōsuh. (59)
PMP *asu, PPhil */ašu

Also related are the following:
Proto Land Dayak **ṇāsuh
Biatah ṇasuh (final h expected) ‘hunt with dogs’.
Proto Bakati’ *ṇasu? ‘hunt with dogs’ Rara ṇasu?, Sara/Riok ṇasu?
Ribun-A ṇosuh ‘hunt with dogs’. (414)

Proto Bidayuh *kūyuk
Proto Land Dayak **kūyuk
Proto Bidayuh *kūyuk Bau dictionary kūyuk ‘puppy’, Tringgus Bireng kūyuk ‘dog’.
Semandang kūyuk? ‘dog’. (59)

Proto Bidayuh *tām, *tāmah ‘worm’ Singai tāmah, Gumbang tāmah, Bratak tāmah, Serasot tāmah, Grogo tāmah, Stass tāmah, Biatah ritāmah, Bistaang tāmah, Bengoh tāmah, Anah Rais tāmah, Biya tāmah, Sembaan tāmah, Tringgus Raya tāmah, Bunan ntimah (cognate?).

Ribun-H ntamuh ‘worm’. (60)
Proto Bidayuh-Bakati’ *rāntuŋ
Proto Bidayuh *Rāntuŋ ‘worm’ Serambu rātuŋ,
Sapug rātuŋ, Pinyawa’ rātuŋ, Semban rātuŋ,
Bukar rātuŋ, Sadong rātuŋ, Bibengih ĭātuŋ,
Sangking ĭātuŋ, Tebakang rātuŋ, Bukar-Sadong ĭātuŋ, Bunau rātuŋ.
Sara/Riok ĭantukŋ ‘worm’. (60)

Proto Land Dayak **[ŋ] ĭārd, **nārid
Proto Bidayuh *[ŋ] ĭārd, */uni0259r/uni0259d ‘maggots’ Bistaang ĭūrd, Benuk ĭārd, Teātāng /uni0259r/uni0259d, Bunan ŋūrd.
Bukar-Sadong dictionary ŋārd. (60)

Proto Land Dayak **[ŋ] ĭārd, **nārid
Proto Bidayuh *[ŋ] ĭārd, */uni0259r/uni0259d ‘maggots’ Bistaang ĭūrd, Benuk ĭārd, Teātāng /uni0259r/uni0259d, Bunan ŋūrd.
Bukar-Sadong dictionary ŋārd. (60)

SLD ‘fly’ Kemayany-A /uni0261unarit, Rīun-A nahik. (61)

Proto Bakati’ *umpan ‘earthworm’ Rara umpātŋ, Kendayan umpāt, Bekati’ umpakŋ (tn expected).

Proto Bidayuh *tūra/uni02D0/uni0294 ‘fly’ Singai tūra/uni0294, Gumang turat, Serambu tūra/uni0294, Bratak tūra/uni0294, Serasot tūra/uni0294, Grogo tūra/uni0294, Anah Rais tūra/uni0294, Biya tūra/uni0294, Semban tūrat, Tringgus Raya tūra/uni0294, Tringgus Bireng tūra/uni0294, Bukar tūra/uni0294, Sadong tūak, Biēngih tūra/uni0294, Sangking tūra/uni0294, Tebakang tūra/uni0294, Bukar-Sadong tūra/uni0294.

PMP *lálej (cognate?)
Proto Bakati’ *umpan ‘earthworm’ Rara umpātŋ, Kendayan umpāt, Bekati’ umpakŋ (tn expected).

Proto Land Dayak **kāka?

PHN *a(m)tuŋaŋ ‘beetle’ (cognate?)
Proto Bakati’ *chantuŋ ‘mosquito’ Rara chantuŋ, Kendayan chantuŋ.

Proto Land Dayak **mpāwah
Rara kampawa? ‘spider’. (63)

PAN *láwaq, PHN *kawá?

Proto Bidayuh *pōd ‘termite’ Singai t[i]rupod, Gumbang s[i]rupod, Serambu subi trupon, Bratak tirupod, Serasot t[i]rupod, Grogo tirupod, Stass mapod, Biatah riŋupod, Bistaang riŋəpod, Benuk riŋupod, mpod, Sapug kirupod, Pinyawa’ tripod, Bengoh ñupod, Anah Rais t[a]ripod, Biya kupod, Tringgus Bireng tůpod. (64)

Proto Bidayuh *riŋa, *riŋə ‘termite’ Bukar riŋə, Sadong riŋə, Biengih riŋə, Sangking riŋə, Tebakang riŋa, Bukar-Sadong riŋə?, Bunan riŋə?. (64)

Proto Bidayuh *ruh ‘termite’ Sembaan ruh, Tringgus Raya ruh. (64)

Proto Bidayuh *bubuk, *bubo ‘termite’ Bau dictionary bubuk ‘weevil’, Bengoh bubuk, Tebakang bubok, Bunan-Terbat bubok. (64)


SLD ‘butterfly’ Kembayan-A kriboma, Ribun-A bohomboŋ. (65)

PAN *qaLi-baŋ + baŋ


Proto Bidayuh *ănit ‘skin’ Bukar ānit, Tebakang ānit, Bukar-Sadong ānit. (66)

Proto Bidayuh-Bakati’ *ădas

Proto Bidayuh *ădas, *udas ‘sweat’ Singai das, Gumbang [mu]das, Serambu das, Bratak das, Serasot das, Grogo das, Stass madas, Biatah udas, Bistaang das, Benuk das, Sapuk udas, Pinyawa’ das, Bengoh das, Anah Rais das, Biya udas, Sembaan udas, Tringgus Raya udas, Tringgus Bireng udas, Bukar ādas, Sadong ādas, Bibengih ādas, Sangking das, Tebakang ādas, Bukar-Sadong ādas, Bunan ādas. (67)

Proto Bakati’ *adas ‘sweat’ Rara adas, Sara/Riok adas, Kendayan adas. (67)

PPhil (Zorc and Charles) *hulas (cognate?)

Proto Land Dayak **dăya?


SLD ‘blood’ Kembayan-H doyo?, Ribun-H doyo, Semandang doya. (68)

Bidayuh Bukar and Bibengih bidăya? ‘red’. (331)

Proto Bakati’ *bajara? ‘red’ Sara/Riok bajara?, Kendayan bajara?. (331) This set seems to follow the semantic pattern of the Bukar and Bibengih forms, but it is not easy to relate the consonants of the antepenult and penult directly.

PAN *dáRaq


PMP (A) *tubuq
Proto Bidayuh *gănan ‘body’ Singai gănăn, Gumbang gănăn, Serambu gănăn, Bratak gănăn, Serasot gănăn, Grogo gănăn, Stass gănăn, Biatah pără gănăn (used to count fruits), Bengoh bărăg gănăn, Anah Rais gănăn, Biya pără gănăn. (69) Cf. also *gănăn ‘name’ (260).

Proto Bidayuh *părăg, *păran ‘body’ Singai tipărăn ‘one finger width’ (cognate?), Biatah pără gănăn (used to count fruits), Bistaang trărăŋ, Benuk trărăŋ, Sapug bărăŋ, bărăŋ (the initial consonant suggests this may belong to the following set), Bengoh părăg gănăn, Biya părăg gănăn, Semban gărăg (cognate?), Tringgus Raya gărăg, Tringgus Bireang gărăg, Bukar gărăg, Sadong gărăg, Bibengih gărăg, Sangking gărăg, Tebakang gărăg, Bukar-Sadong gărăg, Bunan koset.

Proto Bakati’ *anšiŋ ‘urine’ Rara aŋisikŋ, Sara/Riok aŋisikŋ.

SLD ‘urine’ Kembayan-A ŋkosik, Ribun-A kosiŋ. (71) (cf. B.M. kencin ‘urine’)

Proto Bakati’ *ansiŋ ‘urine’ Rara aŋisikŋ, Sara/Riok aŋisikŋ.

SLD ‘urine’ Kembayan-A ŋkosik, Ribun-A kosiŋ. (71) (cf. B.M. kencin ‘urine’)


Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A tocik, Ribun-A tike. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *taka ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **kăsiŋ, **kăsiŋ, **ansiŋ ‘urine, urinate’ Singai ĭsiŋ, Gumbang masiŋ, Serambu ĭsiŋ, Bratak ĭsiŋ, Serasot ĭsiŋ, Grogo ĭsiŋ, Stass ĭsiŋ, Biatah ĭsiŋ, Bistaang ĭsiŋ, Benuk ĭsiŋ, Sapug ĭsiŋ, Pinyawa’ ĭsiŋ, Bengoh ĭsiŋ, Anah Rais ĭsiŋ, Biya ĭsiŋ, Semban ĭsiŋ, Tringgus Raya ĭsiŋ, Tringgus Bireang ĭsiŋ, Bukar ĭsiŋ, Sadong ĭsiŋ, Bibengih ĭsiŋ, Sangking ĭsiŋ, Tebakang ĭsiŋ, Bukar-Sadong ĭsiŋ, Bunan ĭsiŋ.

Proto Bakati’ *ansiŋ ‘urine’ Rara ĭsiŋ, Sara/Riok ĭsiŋ.

SLD ‘urine’ Kembayan-A ŋkosik, Ribun-A kosiŋ. (71) (cf. B.M. kencin ‘urine’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.

Proto Bakati’ *take/uni0294 ‘excrement’ Rara taka, Sara/Riok taka.

SLD ‘excrement’ Kembayan-A toci, Ribun-A tike’. (73) (cf. B.M. tahi ‘excrement’)

Proto Land Dayak **tăki? ‘excrement’ Singai taki, Gumbang taki, Serambu taki, Bratak taki, Serasot teki, Grogo taki, Stass taki, Biatah ĭtaŋ, Bistaang ĭtaŋ, Benuk ĭtaŋ, Sapug ĭtaŋ, Pinyawa’ ĭtaŋ, Bengoh ĭtaŋ, Anah Rais ĭtaŋ, Biya ĭtaŋ, Semban ĭtaŋ, Tringgus Raya ĭtaŋ, Tringgus Bireang ĭtaŋ, Bukar ĭtaŋ, Sadong ĭtaŋ, Bibengih ĭtaŋ, Sangking ĭtaŋ, Tebakang ĭtaŋ, Bukar-Sadong ĭtaŋ, Bunan ĭtaŋ.
mbak, Biatah ubak, Bistaang bāk, Benuk bāk, Sapug bāk, Pinyawa' bāk, Bengoh bāk, Anah Rais bāk, Biya bāk, Sembaan bāk, Tringgus Raya bāk, Tringgus Bireng bāk, Bukar bāʔak, Sadong bāʔak, Bibengih bāʔak, Sangking bāʔak, Tebakang bāʔak, Bukar-Sadong bāʔak, Bunuan bāʔak.

Proto Bakati’ *aba, k ‘head’ Rara abak, Sara/Riok abak, Kendayan abāʔ.

SLD ‘head’ Kemlayan-H māʔ, Kemlayan-A māʔ, Ribun-H boʔ, Semandang baʔaʔ. (76)

Proto Land Dayak **jāwi, probably also **jāwaʔ/āʔy

Ribun-A jowi ‘face’. (77)

PMP (A) *[q]away

Proto Bakati’ *baʔa, s ‘face’ Rara bahas, Sara/Riok baas, Kendayan baas (medial h expected). (77)

PMP (A) *paras (medial *Rʔ).


Proto Bidayuh *dāʔih ‘forehead’ Bukar dāʔih, Sadong dāʔih, Bibengih dāʔih, Sangking dāʔih, Tebakang dāʔih, Bukar-Sadong dāʔih, Bunuan dāʔih. (78) (cf. B.M. dahi ‘forehead’)

PAN *daqɨS

Proto Land Dayak **ubuk, **abuk, **bubuk

Proto Bidayuh *bok, *ubok, *abok ‘(head) hair’ Singai bok, Gumbang bok, Serambu bok, Bratak bok, Serasot bok, Grogo bok, Stass bok, Biatah ubok, Bistaang bok, Benuk bok, Sapug bok, buʔak, Pinyawa’ bok, Bengoh bok, Anah Rais bok, Biya abok, Sembaan bok, Tringgus Raya bok, Tringgus Bireng bok.

Proto Bakati’ *abo, k (head) hair’ Rara abok, Sara/Riok abok, Kendayan aboʔ, Bekati’ aboʔ.

SLD ‘(head) hair’ Ribun-H buhubo (final ʔ expected), Semandang barumoʔ (b rather than m expected). (Ribun and Semandang may both reflect **-ar-ubuk or perhaps **buluh bak)

(79)

PAN (Z) *buSek, PPhil *buʔak

Proto Land Dayak **b̥iʔiʔ, **b̥aʔiʔ
Proto Bidayuh *b̥iʔiʔ, *b̥ibiy ‘lip’ Singai bibiʔ, Gumbang bibiʔ, Serambu bibiy, Bratak bibiʔ, Serasot bibiʔ, Grogo bibiʔ, Stass bibiʔ, Biatah bibis, Bistaang bibiʔ, Benuk bibiʔ, bibiʔ, Sapug bibiʔ, Pinyawa’ bibiʔ, bibis, Bengoh bibisibis, Sembaan bibiʔ, Tringgus Raya bibiʔ, Tringgus Bireng bibiʔ, Bukar bibiʔ, Sadong bibiʔ, Bibengih bibiʔ, Sangking bibiʔ, Teakang bibiʔ, Bukar-Sadong bibiʔ, Bunuan bibiʔ.

Proto Bakati’ *b̥ibiy, h ‘lip’ Rara bibiʔ, Sara/Riok bibiʔ, Kendayan ibiʔ.

SLD ‘lip’ Kemlayan-A boʔiʔ (>*b̥aʔiʔ), Ribun-A sohomboʔiʔ (>*sarəm̥b̥iʔiʔ; may not be cognate since be’s is expected in ultima). (80) (cf. B.M. bibir ‘lips’)

PAN *bi + bIR

Proto Land Dayak **b̥aʔaʔ
Proto Bidayuh *b̥aʔaʔ, *b̥aʔaʔ ‘mouth’ Singai b̥aʔaʔ, Gumbang b̥aʔaʔ, Serambu b̥aʔaʔ, Bratak b̥aʔaʔ, Serasot b̥aʔaʔ, Grogo b̥aʔaʔ, Stass b̥aʔaʔ, Biatah b̥aʔaʔ, Bistaang b̥aʔaʔ, Benuk b̥aʔaʔ, Sapug b̥aʔaʔ, Pinyawa’ b̥aʔaʔ, Bengoh b̥aʔaʔ, Anah Rais b̥aʔaʔ, Biya b̥aʔaʔ, Sembaan b̥aʔaʔ, Tringgus Raya b̥aʔaʔ, Tringgus Bireng b̥aʔaʔ, Bukar b̥aʔaʔ, Sadong b̥aʔaʔ, Bibengih b̥aʔaʔ, Sangking b̥aʔaʔ, Tebakang b̥aʔaʔ, Bukar-Sadong b̥aʔaʔ, Bunuan b̥aʔaʔ.
Proto Bakati’ *baba,2 ‘mouth’ Rara baba?, Sara/Riok baba?, Kendayan baba?, Bekati’ baba?.


(81, 181)

PMP *baq + baq, PPhil *baqbaq
Proto Bidayuh-Bakati’ *N-baba?

Proto Bakati’ *maba,1 ‘call’ Rara maba?, Sara/Riok maba?. (180)

Proto Land Dayak **tukuk

SLD ‘mouth’ Kembayan-H tuku?, Ribun-H tuko (final / expected), Ribun-A tuko*?, Semandang tuko?. (81)

Proto Land Dayak **jipoh, **jipan, **japah
Proto Bidayuh *jipoh, *jipan, *jipan ‘teeth’ teeth’ Singai jupan, Gumbang jupan, Serambu jipan, Bratak jupan, Serasot jupan, Grogo jupan, Stass jupan, Biatah jipoh, Bistaang jipan, Benuk jipan, Sapug jipan, Pinyawa’ jipah, Bengoh jipan, Anah Rais jipan, Biya giipan, Sembaan poh, Tringgus Raya jipan, Tringgus Bireng jipan, Bukar jipan, Sadong jipan, Bibengih jipan, Sangking jipan, Tebakang jipan, Bukar-Sadong jipan, Bunun dziipan (jipan ?).

Proto Bakati’ *japu,1 ‘teeth’ Rara japu?, Sara/Riok japu?, Kendayan japu?, Bekati’ japu? (*a is the expected reflex of *a in PBak ultima following a labial consonant).

SLD ‘teeth’ Kembayan-H jipan, Kembayan-A japat, jipit, Ribun-H jipun, Semandang jipun. (82) (this set appears to be related to **jipah, **dipah, **nipah ‘snake’ (54))

PAN *lipen, PMP *ipan

Proto Land Dayak **jira?

Proto Bakati’ *ratā,1 ‘tongue’ Rara rata?, Sara/Riok rata?, Kendayan rata?, Bekati’ rata?. (may not be directly cognate)

SLD ‘tongue’ Kembayan-H jiro?, Ribun-H jiho, Semandang jira. (83)

PHF *dilaq ‘lick’, PMP (A) *dilaq

Proto Land Dayak **[d] ūnduŋ, **tánduŋ, **induŋ

Proto Bakati’ *duduŋ, ‘nose’ Rara duduŋ, Sara/Riok duduŋ, Kendayan duduŋ, Bekati’ duduŋ.

SLD ‘nose’ Kembayan-H nu, Ribun-H tonduŋ, Ribun-A tonduŋ, Semandang idoŋ. (84) (cf. B.M. hidun/uni0261 ‘nose’)

PAN *i+jůŋ, PMP *qu+júŋ

Proto Land Dayak **pampi
Proto Bidayuh *pampi ‘cheek’ Bukar pampi, Sadong pampi, Bibengih pampi, Sangking pampi,
Tebakang pāmpi, Bukar-Sadong pāmpi, Bunau pāmpi.
SLD 'cheek' Kembayan-A pāmpi, Ribun-A pāmpi. (85) (cf. B.M. pipi 'cheek')
PAN (D) *pipi

Proto Bidayuh *pā?əp 'cheek' Biatah pā?əp, Anah Rais pā?əp, Biya pā?əp, Tringgus Raya pā?əp, Tringgus Bireng pā?əp. (85) (This set may be related to the preceding one.)

Proto Bidayuh *pāndiŋ, *pāndiŋ 'cheek' Singai pāndiŋ, Gumang pāndiŋ, Seramū pāndiŋ, Bratak pāndiŋ, Serasot pāndiŋ, Grogo pāndiŋ, Stass pāndiŋ, Bistaang pāndiŋ, Benuk pāndiŋ, Pinyawa' pāndiŋ, Bengoh pāndiŋ, Sembaan pāndiŋ. (85)
PMP (A) *ajy 'chin' (cognate?)

Proto Bidayuh *rajaj 'chin' Benuk rajaj, Bengoh rajaj, Sadong rajaj, Biāngh rajaj, Sangking rajaj, Teākang rajaj, Bukar-Sadong rajaj, Bunan rajaj. SLD 'chin' Kemāyan-A raj (<*rajaj), Ribun-A ohoaj (<*rajaj). (86) (cf. B.M. rahang 'jaw')

Proto Bidayuh *s-ir-āka 'jaw, chin' Singai siraka, Bratak siraka, Serasot siraka, Grogo sirakak, Stass siraka, Sapug siraka, Tringgus Raya raka, Tringgus Bireng sāka. (86)

Proto Bidayuh *kāpīŋ
Proto Bidayuh *kāpīŋ 'ear' Sapug kāpīŋ, Bukar kāpīŋ, Sadong kāpīŋ, Bibengī kāpīŋ, Tebakang kāpīŋ, Bukar-Sadong kāpīŋ, Bunau kāpīŋ.
SLD 'ear' Kembayan-H kopikŋ, Kembayan-A kopik, Ribun-H kopik, Sembaan kopik. (87)

Proto Bidayuh *N-kāpīŋ
Proto Bidayuh *ŋkāpīŋ 'hear' Bukar ŋkāpīŋ, Bibengī ŋkāpīŋ, Bistaang ŋkāpīŋ, Sembau ŋkāpīŋ.
SLD 'hear' Kembayan-H ņopikŋ, Kembayan-A ņopik, Ribun-H ņopik, Sembaan ņopik. (117)

Proto Bidayuh *mātah*
Proto Bidayuh *bātōn, *bātōn, *bātay 'eye' Singai bātān, Gumbang bātān, Serambu bātaj, Bratak bātān, Serasot bātān, Grogo bātān, Stass bātān, Bistaang bātān, Benuk bātān, Pinyawa' bātān, Bengoh bātān, Anah Rais bātān, Biya bātāṣ, Sembaan bātān, Tringgus Raya bātān, Tringgus Bireng bātān, Bukar bātāŋ, Sadong bātāŋ, Sangking bātāṣ, Tebakang bātāŋ, Bukar-Sadong bātāŋ, Bunau mātah.
Proto Bakati' *matu, *mē'eye' Rara matu, Sara/Riok matu, Kendayan matu, Bekati' matu.
SLD 'eye' Kembayan-H mōtah, Kembayan-A mōtah (o in the penult expected), Ribun-H motuh, Sembaan motih. (88) (cf. B.M. mata 'eye')
PMP *maCā

Proto Bidayuh *kānīŋ, *kūnīŋ, *kūnīŋ, *kānāŋ 'eyebrow' Singai būrun kānīŋ, Gumbang būrun kānīŋ, Serambu būrun kānīŋ, Bratak kānīŋ, Serasot kānīŋ, Grogo kānīŋ, Stass kānīŋ, Biātah būru kānīŋ, Bistaang būru kānīŋ, Sapug būru kānīŋ, Pinyawa' kānīŋ, Bibengih būru kānāŋ, Sangking būru kānāŋ, Bunau būru kānāŋ. (89) (cf. B.M. bulu kēng 'eyebrows')
PPhil *kīday

Proto Bidayuh *m[j]āsu 'eyebrow' Benuk bruh māsu, Bengoh bruh masu, Sadong bruh
miasu, Tebakang buruh miasu, Bukar-Sadong buruh miasu. (89)

Proto Bidayuh *sākan ‘eyebrow’ Anah Rais s[ā]kan bātah, Sembaan sākan bātah. (89)

Proto Bidayuh *kīlet, *kīlat ‘eyelashes’ Singai kīlet, Gumang burun kīlet, Bratak burun kīlet, Stass kīlet, Biatah burun kīlet, Bistaang bruh krat, Bengoh buruh kīlet, Anah Rais buruh kīlet, Biya b[u]ruh kīlet, Tringgus Raya buruh kīlet, Tringgus Bireng burun kret, Bukar buruh kilat ‘eyebrow’, Serian dictionary buruh kilat ‘eyebrow’. (90) (may be related to *kīlat ‘lightning’ (16))

Proto Bidayuh-Bakati’ */uni0259/uni0306nt/uni0259k Proto Bidayuh *ăt/uni0259k, */uni0259/uni0306nt/uni0259k ‘rain’ Singai /uni0259t/uni0259k, Gumang /uni0259t/uni0259k, Seram/ü /uni0259t/uni0259k, Bratak /uni0259t/uni0259k, Serasot /uni0259t/uni0259k, Grogo /uni0259t/uni0259k, Stass /uni0259tak, Biatah ăt/uni0259k, Bistaang t/uni0259k, Benuk t/uni0259k, Sapug at/uni0259k, Pinyawa’ t/uni0259k, Bengoh tujo?, Biya tūjo?, Sembaa hŋo? ‘front of neck’, Tringgus Raya tūjo? ‘front of neck’, Tringgus Bireng tujo? ‘front of neck’.

Proto Bakati’ *jaŋo, k ‘neck’ Rara jaŋok, Sara/Riok jaŋok, Kendayan jaŋok (final ŋ expected), Bekati’ jaŋo (medial ŋ expected). (92) (cf. B.M. ten/uni0261kuk ‘nape’)


Proto Bakati’ *palaŋo, ‘neck’ Rara palaŋo, Sara/Riok palaŋo. (92) (possibly related to the preceding set as PBid-Bak *p-al-āŋo[7])


Proto Bidayuh *gor, *kākor ‘throat’ Singai gor, Gumbang kakor. (92)

Proto Bidayuh *gāgon, *gungon ‘inner throat’ Singai gāgon, Gumbang gāgon, Bengoh gunçoŋ, Anah Rais gungon, Biya gungon. (92) (cf. B.M. kerongkong ‘throat’)


Proto Bakati’ *sado? ‘chest’ Rara sado?, Sara/Riok sadû? (93) (cf. B.M. dada ‘chest’)

Proto Bidayuh *adag, *adag ‘chest’ Sapug ādag, Pinyawa’ adag, Bukar ādag, Sadong ādag, Bibengih ādag, Tebakang ādag, Bukar-Sadong ādag. (93) (This set may be related to the preceding one.)
Proto Land Dayak **isuk
Proto Bidayuh *isuk 'chest' Sangking isuk, Bunau isuk, Serian dictionary isuk.
SLD 'chest' Kemayan-A isuk?, Ribun-A usow? (initial i expected). (93)
PMP *Rúsuk 'chest'

Proto Land Dayak **s/i.Dotless/uni0304/uni0304suh, **sūsuh
'Second' Singai sisun, Gumung sisun, Serambu sisun, Bratak sisun, Serasot sisun, Grogo sisun, Stass sisun, Biatah sisuh, susuh, Bistaang susuh, Benuk sisuh, Sapug sūsoq (anomalous form), ğuṣuŋ, Pinyawa' sisuŋ, Bengoh suh, Anah Rais susut, Biya sūsut, Sembaan sūsut, Tringgus Raya susut, Tringgus Bireng susut, Bukar susoŋ, Sadong susoŋ, Bibengih susoŋ, Sangking susoŋ, Tebakang susoŋ, Bukar-Sadong susoŋ, Bunau susoŋ.

Proto Bakati' *susu, *'breast' Rara susu/uni0294, Sara/Riok susu? Kendayan susu? Bekati' ğuṣu?

SLD 'breast milk' Kemayan-A icok (<*insuŋ; or <*insu/uni0261 ?, possibly related to the anomalous form from Sapug), Ribun-A tisu/uni0294 (initial s and final h expected; <*tisu/uni0261 ?). (94-95) (cf. B.M. susu 'breast')
PMP *súsu

Proto Land Dayak **ta/uni0261ăhaŋ
Proto Bidayuh *ti/uni0261ăhaŋ 'side'
Singai ti/uni0261a/uni0294aŋ, Gumung ti/uni0261aaŋ, Serambu ti/uni0261aaŋ, Bratak ti/uni0261aaŋ, Serasot ti/uni0261aaŋ, Grogo ti/uni0261aaŋ, Stass ti/uni0261aaŋ, Bistaang tă/uni0261a/uni02D0ŋ, Sapug ti/uni0261a/uni02D0ŋ, Biya ti/uni0261a/uni02D0ŋ, Tringgus Raya /uni0261ăhaŋ, Tringgus Bireng /uni0261/uni0259/uni02D0/uni0261, Bukar ti/uni0261ăhaŋ.
Sara/Riok (ta)/uni0261aakŋ 'side (of body)'.

Kemayan-A tura to/uni0261a (o in the first syllable is puzzling, especially if it reflects a PLD antepenult) 'ri', Ribun-A togo/ı̞ 'side'. (96)
PAN *tak(e)Raŋ


Proto Land Dayak **jāntuŋ
Proto Bidayuh *jāntuŋ, *jāntoŋ, *sāntuŋ, *sintuŋ 'heart' Singai jantuŋ, Bratak jantuŋ, dictionary jantuŋ, Semandang jantoŋ. (97) (cf. B.M. jantun 'heart')
PAN (D) *d’antuŋ

Proto Bakati' *piso, *'heart' Sara/Riok pisu?, Kendayan piso?. (97)
PMP *pusuq

Proto Land Dayak **sop, **sap

Kemayan-A sasap 'lungs'. (98)

Proto Bidayuh *puaw, *puan 'lungs' Singai puaw, Serasot muaw 'spongy', atin uaw, Bukar mpuaŋ, Sadong mpuaŋ, Bibengih mpuaŋ, Sangking mpuaŋ, Tebakang puan, Bukar-Sadong mpuaŋ, Bunau mpuaŋ. (98)
PAN *báRaŋ (cognate?)

Proto Land Dayak *pūnok 'back' Singai punok, Bratak punok, Serasot punok, Grogo puno?, Stass puno?, Biatah punok, Bistaang pānok, Benuk pnu, Sapug pānok, Pinyawa' punok, Bengoh...
punok, Anah Rais punok, Biya pūnock,
Sembaan hnock, Tringgus Bireng pūnock. (99)

Proto Land Dayak **rutu (It is not clear whether
PBid *dug can be directly related to the other
forms.)
Proto Bidayuh *dug 'back' Gumbang dug, Serambu
dug, Serasot dug, Benuk dug, Tringgus Raya
dug.
Rara rutuk (*rutu) 'back'.
Ribun-A hutuk (*rutug) 'back'. (99)

Proto Bidayuh-Bakati' *ka [w] e
Proto Bidayuh *kăwi, *kăwin 'shoulder, clavicle'
Singai kăwin, Gumbang kăwin, Serambu kăwin,
Biatah kăwin, Bistaang kăwin, Sapug kăwin,
Pinyawa' kăwin, Bengoh kăwin, Anah Rais
kăwin, Biya kăwin, Sembaan kăwin, Tringgus
Raya kăwin, Tringgus Bireng kăwin, Bukar
kăwi, Sadong kăwi, Bibengih kăwi, Sangking
kăwi, Tebakang kăwi, Bukar-Sadong kăwi,
Bunan kăwi.
Rara kae 'shoulder'. (100)

Proto Land Dayak **păpi, **tăpi
Proto Bidayuh *păpi 'shoulder' Singai păpi, Bratak
păpi, Serasot păpi, Grogo păpi, Stass păpi,
Benuk păpi.
Kembayan-A tura tapi 'shoulder blade'. (100)

Proto Land Dayak **putuŋ
Proto Bidayuh *putuŋ 'belly' Bibengih putuŋ,
Bunan putuŋ.
Proto Bakati' *putuŋ 'belly' Rara putukŋ, Kendayan
putukŋ, Bekati' butukŋ (initial p expected).
Kembayan-H putu 'belly'. (101)
PMP *bataŋ

Proto Bidayuh *tăi, *năi, *tăiy 'belly' Singai
tăi, Gumbang tăi, Serambu tăi, tăiy,
Bratak tăi, Serasot tăi, Grogo tăi, Stass
tăi, Biatah tăi, Bistaang tăi, Benuk tăi,
Sapug tăi, Pinyawa' tăi, Bengoh tăi, Anah
Rais tăi, Biya tăi, Sembaan tăi, Tringgus
Raya tăi, Tringgus Bireng tăi, Bukar năi,
Sadong năi, Sangking tinăi, Tebakang
năi, Bukar-Sadong năi. (101)
PAN *CináqiH

Proto Bidayuh *kuboy, *kubuy, *kubon
‘intestines’ Gumbang kubon 'stomach', Stass
tăin kubon, Bau dictionary kuboy 'stomach',
Biatah kuboy, Bistaang kuboy, Benuk kuboy,
Sapug kuboy, Bengoh kuboy, Biya kŭboy,
Sembaan kboy, Tringgus Raya kuboy 'stomach',
Tringgus Bireng tumboŋ 'stomach', Bunau
kuboy 'colon', Serian dictionary kubuy
'stomach'. (102)
PMP *kempuŋ 'stomach of animal'

Proto Land Dayak **tăni
Proto Bidayuh *tăni 'intestines' Bibengih tăni,
Sangking tăni, Tebakang tăni, Bunau tăni.
Proto Bakati' *tanai, tense 'intestines' Rara tanain,
Sara/Riok tanain, nain Kendayan tanain, Bekati'
tanain. (It is unclear how to relate this form
directly to the other two. Possibly it fits better
with PBid *tăiin 'belly' (101) assuming *-an-
infix.)
SLD 'intestines' Kembayan-H touni, Ribun-H isi?
toniŋ (final ŋ unexpected), Ribun-A ali'h toni?
(final ? not expected), Semandang toni 'belly'.
(102)

Proto Land Dayak **ăti
Proto Bidayuh *ăti/uni02D0, *ăti/uni02D0n 'liver, heart (often
figurative)' Singai /uni02D0tin, Gumang /uni02D0tin, Seramũ
/uni02D0tin, Bratak /uni02D0tin, Serasot /uni02D0tin, Grogo /uni02D0tin, Stass
/uni02D0tin, Biatah ăti/uni02D0n, Bistaang ti/uni02D0n, Benuk ti/uni02D0n,
Sapug ăti/uni02D0, Bengoh /uni02D0ti/uni02D0n, Anah
Rais ăti/uni02D0n, Biya ăti/uni02D0n, Semau ăti/uni02D0n, Tringgus
Raya ăti/uni02D0n, Tringgus Bireng ăti/uni02D0n, Bukar ăti,
Sadong ă, Bibengih ă, Sangking ă, Tebakang
ă, Bukar-Sadong ā, Bunau /uni0261 (final e/uni0261
unexplained).
Proto Bakati' *ate, ate 'liver' Rara ate, Sara/Riok ate,
Kendayan ate, Bekati' ati.
SLD 'liver' Kembayan-H oti, Ribun-H oti, Ribun-A
oti (final i expected), Semandang oti. (103, 97)
PAN *aCéy, PMP (A) *qatay
Proto Bidayuh *puduh, *pudun 'gall bladder' Bau
dictionary pudun 'bile', Biatah puduh, Bistaang
puduh, Bukar puduh, Bibengih mpuduh, Serian
dictionary mpuduh. (103)

PHF (Z) *qa[m]p/uni0259jú, PMP (A) *qap/uni0259ju

Proto Bakati’ *sampare,ŋ ‘kidneys’ Rara
samperekŋ, tamperekŋ, Sara/Riok sampareŋ,
Bekati’ sampareŋ ‘heart’. (97, 103)

Proto Land Dayak **tăŋan
Proto Bidayuh *tăŋan, *tăŋe/uni0294, *tăŋ/uni0259/uni0294, *tăŋay
‘hand’ Singai t/uni0259ŋan, Gumang t/uni0259ŋan, Seram t/uni0259ŋan,
Bekati’ t/uni0259ŋay, Serasot t/uni0259ŋan, Grogo t/uni0259ŋan,
Stass t/uni0259nan, Biatah tăŋan, Bistaang
tăŋan, Benuk tăŋan, Sapug tăŋan, Pinyawa’
tăŋan, Bengoh tănąn, Anah Rais tănąn, Biya
tănąn, Sembaan tăŋan, Tringgus Raya tăŋan,
Tringgus Bireng tănę́, Bukar tăŋan, Sadong
tăŋa, Bibengih tăŋan, Sangking tăŋan,
Tebakang tăną[n]:n, Bukar-Sadong tăŋan, Bunan
tăŋan. (104)

Proto Bidayuh *tănąn, *tăną́ ‘longhouse’ Sapug
rămin bitănąn, Pinyawa’ rămin bitănąn, Bukar
rămin bitănąn, rămin ntańan, Sadong rămin
ntańan, Bibengih ntańan, Sangking ntańan,
Tebakang ntańan, Bukar-Sadong ntańan, Bunan
ntańan. (272) (related to *tănąn ‘hand ?’)

SLD ‘hand’ Kembayan-A tonaŋ, Ribun-H tonaŋ,
Ribun-A tonaŋ, Semandang tonaŋ. (104)

PAN (D) *tanaŋ

Proto Bidayuh-Bakati’ *băreŋ
Bidayuh Anah Rais băreŋ, băreŋ, Biya băreŋ ‘arm’.
Proto Bakati’ *bareŋ,ŋ ‘arm and hand’ Rara bareŋ,ŋ,
Sara/Riok bareŋ, Kendayan bareŋ, Bekati’
bareŋ,ŋ. (104)

Proto Bidayuh-Bakati’ *sĭkuh
Proto Bidayuh *sĭkuh, *săkuh, *sukun, *sükun
‘elbow’ Singai siku (final n expected), Gumbang
sukun, Serambu sukun, Bratak sukun, Serasot
sukun, Grogo sukun, Stass sukun, Biatah sukun,
sukun, Bistaang s[ă]küh, Benuk sukun, Sapug
suku[h], Pinyawa’ siku, Bengoh sukun, Anah
Rais sukun, sukun, Biya sükun, Sembaan sukun,
Tringgus Raya sukun, Tringgus Bireng sükun,
sükun, Bukar sukun, Sadong sukun, Bibengih
sükun, Sangking sukun, Tebakang sukun, Bukar-
Sadong sukun, Bunan sukun.

Proto Bakati’ *siku,ʔ ‘elbow’ Rara sukun?, Sara/Riok
sükun?. (105) (cf. B.M. siku ‘elbow’)

PAN *si+kuH

Proto Land Dayak **sünkhu
Proto Bidayuh *sünkhu, *sukun ‘grandchild’ Singai
sukun, Gumbang sukun, Biatah sukun, Bistaang
sukun, năkuh ‘look after grandchildren (verb),’
Pinyawa’ sukun, Bengoh sukun, Biya sükun,
Tebakang sünkhu.

SLD ‘grandchild’ Kembayan-A sunkhù, Ribun-A co”?
(< *...kuK). (105)

Proto Land Dayak **C-ar-ăpah, **C-ar-Vpa? (The
first reconstruction is supported by the first
PBid set and the Kembayan form. The second
reconstruction is supported by the second PBid
set. The PBak form could support either
reconstruction.)

Proto Bidayuh *păpah ‘palm (of hand)’ Bukar
păpah, Sadong păpah, Bibengih păpah,
Sangking păpah, Tebakang păpah, Bukar-
Sadong păpah, Bunan păpah.

Proto Bidayuh *Rupa/uni0294 ‘palm (of hand)’ Singai
rupa?, Gumbang rupa?, Serambu rupa?, Bratak
rupa?, Serasot rupa?, Grogo rupa?, Stass rupa.

Proto Bakati’ *parapaha/uni0294 <*p-ar-ăpaha/uni0294
arekŋ, lapa/uni0294 (arekŋ) ‘palm (of hand),’
Sara/Riok parapa/uni0294 ‘palm, sole’.

SLD ‘palm (of hand)’ Kembayan-A kułopaḥ
(< *k-ar-ăpaha), Ribun-A tapo? (< *tăpaka; cf.
B.M. tapak). (106)

PAN (D) *tapak, PHF (Z) *dapáH

Proto Bidayuh *pūra/uni02D0/uni0294 ‘palm (hand), sole (foot)’
Biatah pura:?, Biataang pra?:, Benuk prạ?:,
Sapug pura?:, Pinyawa’ pura:?, Bengoh pura:?,
Anah Rais pūra?, Biya pūra?:, Sembaan pra?:,
Tringgus Raya pra?:, Tringgus Bireng pra?:.
(106, 114)

PAN (D) *palag
Proto Land Dayak **t-ar-īnju?
SLD ‘index finger’ Kembayan-A tju?, Rib un-A tonćan juk (both Southern Land Dayak forms may suggest a final **k). (107)
PAN *Cudūq ‘finger’, PPhil *tudūq ‘point’

Proto Land Dayak **[s] āŋkiŋ
Rara kuekŋ (uncertain whether this can be related directly to the others) ‘little finger’.
Kembayan-A oncik (< *āŋkiŋ) ‘little finger’. (107)

Proto Land Dayak **sīruh
Proto Bakati’ *siru?, ‘fingernail’ Rara siru?, Sara/Riok siru?, Kendayan siru?.
SLD ‘fingernail’ Kembayan-A suruh (i expected in penult), Ribun-A cihu. (108)
PMP *ku + kúH (cognate?)

Proto Land Dayak **kāja?
Proto Bakati’ *kajaj,u? ‘leg and foot’ Rara kajaj,u?, Sara/Riok kajaj,u?, Kendayan kajaj,u?, Bekati’ kajaj,u?.
SLD ‘leg’ Kembayan-H kojo?, Ribun-H kojo, Semandang koja. (109)

Proto Land Dayak **bitis
Rara batis ‘calf (of leg)’. (perhaps a borrowing from B.M.)
Kembayan-A bitis ‘lower leg’, Ribun-A bitis ‘shin’. (109, 368) (cf. B.M. betis ‘lower leg’)
PMP (A) *b[ŋ]i[tis]

Proto Land Dayak **păz̃ah,
Rara paa? ‘thigh’.
SLD ‘thigh’ Kembayan-A pāh, Ribun-A puu”. (109, 110) (cf. B.M. paha ‘thigh’)
PAN *pāqaS, PPhil *pāqa

Proto Land Dayak **tuad, **tuut
unclear whether these forms reflecting *t[u]ut can be related to the PBid *tuad.)

PHF *tútSud, PMP (A) *tuhád


PAN (B) *q]aleb

Proto Bakati’ *tuku,ŋ ‘knee’ Rara [a] tukukŋ, Sara/Riok tukukŋ, Kendayan tukuk. (111)

Proto Bidayuh-Bakati’ *ti/uni0261a/uni02D0/uni0294 Proto Bidayuh *ti/uni0261a/uni02D0/uni0294, *ti/uni0261u/uni02D0y ‘heel’ Singai ti/uni0261a/uni0294, Gumang ti/uni0261a/uni0294, Seramú ti/uni0261a/uni0294, Bratak ti/uni0261a/uni0294, Serasot ti/uni0261a/uni0294, Grogo ti/uni0261a/uni0294, Biatah ti/uni0261a/uni0294, Bistaang ti/uni0261a/uni0294, Benuk [tă]/uni0261a/uni02D0/uni0294, Sapug ti/uni0261a/uni0294, Bengoh ti/uni0261a/uni0294, Anah Rais ti/uni0261a/uni0294, Biya ti/uni0261a/uni0294, Sembaan ti/uni0261a/uni0294, Tringgus Raya ti/uni0261a/uni0294, Tringgus Bireng ti/uni0261a/uni0294, Bukar ti/uni0261a/uni0294, Sadong ti/uni0261uy, Biengan ti/uni0261uy, Sangking ti/uni0261uy, Teakang tĭ/uni0261u/uni02D0y, Bukar-Sadong tu/uni0261uy, Bunan ti/uni0261a/uni0294. Rara ti/uni0261a/uni0294 ‘heel’. (113)

Proto Land Dayak **kiriñ, **[m] ili?

Proto Bidayuh *kíriñ, *kírin ‘see’ Singai kinir, Gumbang kinir, Grogo kinir, Biatah kiriñ, Bistaang kiriñ, Benuk kiriñ, kiriñ, Sapug kiriñ, Pinyawa’ kiriñ, Bengoh kiriñ, Anah Rais kiriñ, Biya kiriñ, Sembaan kiriñ, Tringgus Raya kiriñ, Tringgus Bireng kiriñ, Bibengiñ kíriñ, Buñan níkíriñ.

Proto Bakati’ *[m] ile,2 ‘see’ Rara mile?, Sara/Riok ile?, Kendayan mile?, Bekati’ mile?.

SLD ‘see’ Kembayan-H ńkíriñ, Ribun-A ntile? (may not be directly cognate). (115)

PAN *kíta?

Proto Land Dayak **túbak, **tóbak

Proto Bidayuh *túbak, *tóbak ‘see’ Bukur tubak, Sadong tubak, Bibengiñ ntubak, Tebakang tóbak, Bukur-Sadong tóbak, Buñan ntubak.

Kembayan-A nteba? ‘see’. (115)


Proto Bidayuh-Bakati’ *Căkap

Proto Bidayuh *băkap ‘blind’ Pinyawa’ băkap, Bukur băkap, Sadong băkap, Bibengiñ băkap, Sangking băkap, Tebakang băkap, Bukur-Sadong băkap, Buñan băkap.

Proto Bakati’ *kaka,p Rara bakakap ‘work in darkness’, Sara/Riok kăkap ‘blind’. (116)


Proto Bidayuh-Bakati’ *buta?


PHF *buCá

Proto Bidayuh-Bakati’ *diñah2, *dañah2

Proto Bakati’ *daŋa.h ‘hear’ Rara daŋa.h, Sara/Riok
diŋa. (a expected in first syllable), Kendayan
daŋa.h, Bekati’ daŋa.h. (117) (cf. B.M. dengar
‘hear’)

PAN *dɔŋiŋaŋ

Proto Bidayuh-Bakati’ *băŋaC
Proto Bidayuh *bāŋaC ‘deaf’ Singai bāŋaC, Gumbang bāŋaC,
Gumang bāŋaC, Seramun bāŋaC, Bratak bāŋaC, Serasot bāŋaC,
Grogom bāŋaC, Stass bāŋaC, Biatah bāŋaC, Bistaang bāŋaC,
Benuk bāŋaC, Sapug bāŋaC, Pinyawa’ bāŋaC, Bengoh bāŋaC,
Anah Rais bāŋaC, Biya bāŋaC, Sembaan bāŋaC, Tringgus Raya bāŋaC,
Tringgus Bireng bāŋaC, Bukar bāŋaC, Sadong bāŋaC, Bibengih bāŋaC,
Sangking bāŋaC, Tebakang bāŋaC, Bukar-Sadong bāŋaC.

Proto Bakati’ *baŋa.1 ‘deaf’ Rara aŋa1, Sara/Riok
aŋa1, Kendayan aŋa1. (118) (cf. B.M. aŋa1 ‘slightly deaf’,
aŋa1 ‘momentarily deaf’)

PHF (Z) *Sarum ‘smell, sniff’

Proto Land Dayak **buʔuh, **baʔuh,
Proto Bidayuh *buʔuh, *buʔuh, *buʔun ‘odor,
(bad) smell’ Singai buʔuh, Gumbang buʔuh,
Serambu buʔun, Bratak buʔuh, Serasot bəʔun,
buʔuh, Biatah buʔuh, Bistaang buʔuh, Benuk
buʔuh, Sapug buʔuh, Pinyawa’ buʔuh, Anah
Rais buʔuh, Biya buʔuh, Sembaan buʔun,
Tringgus Raya buʔuh, Bukar buʔuh.

Proto Bakati’ *bau,ʔ ‘smell (bad)’ Rara bau? (jahe?),
Sara/Riok bau?.

Ribun-H boubuuh ‘rotten’, Ribun-A buu ‘smell (intr.)’.
(120, 305) (cf. B.M. baa ‘smell’)

PMP *báhuq ‘smell, odor’

Proto Land Dayak **sêkah
Proto Bidayuh *sêkah ‘smell (intr.)’ Bukar sêkah,
Sadong sêkah, Bibengih sêkah, Sangking sêkah,
Tebakang sêkah, Bukar-Sadong sêkah, Bunun
sêkah.

Kemban-A sêkah ‘smell’. (120)

Proto Land Dayak **CV-dak
Proto Bidayuh *kādak, *tādak, *nādak ‘smell
(trans.)’ Singai kādak, Gumbang kādak,
Serambu kādak, Bratak kādak, Serasot kādak,
Grogom kādak, Stass kādak, Biatah kādak,
Bistaang kādak, Benuk kādak, Sapug kādak,
Pinyawa’ kādak, Bengoh kādak, Anah Rais
kādak, Biya kādak, Sembaan kādak, Tringgus
Raya kādak, Tringgus Bireng qādak, Bukar
nādak, Sadong nādak, Bibengih tādak, Sangking
nādak, Tebakang tādak, nādak Bukar-Sadong
nādak, Bunun nādak.

Proto Bakati’ *maduk ‘smell’ Rara maduk, Bekati’
maduk.

SLF ‘smell’ Kemban-A bādak’, Ribun-A noduk
(do’? is the more common development; it
might reflect *dug), Semandang ndu?. (119)

PAN *Sajék

Proto Land Dayak **siu
Proto Bakati’ *siu, m Rara siu ‘kiss’, Sara/Riok
siu ‘smell, kiss’ (loan).

Kemban-A boiciu ‘smell’. (119) (cf. B.M. cium
‘kiss, sniff’)

Proto Land Dayak **gāyu, **N-gāyu
Proto Bidayuh *gāyu, *gāyas, *nāyas ‘scratch’
Singai gāyu, Gumbang gāyu, Serambu gāyu,
Bratak gāyu, Serasot gāyu, Grogom gāyu, Stass
gāyu, Biatah gāyu, Bistaang gāyu, Benuk gāyu,
Sapug gāyu, Pinyawa’ gāyu, Bengoh gāyu, Anah
Rais gāyu, Biya gāyu, Sembaan gāyu, Tringgus
Raya gāyu, Tringgus Bireng gāyu, Sadong
nāyas, Sangking nāyas, Tebakang nāyas, nāyas
Bukar-Sadong nāyas, Bunun nāyas, gāyas.
Proto Bakati' *ŋayɔ, 'scratch' Rara ŋayɔ, Sara/Riok ŋayu, Kendayan ŋayu, Bekati' ŋayot (final t unexpected).

SLD 'scratch' Kembayan-H ŋoyu, Ribun-H ŋoyu, Ribun-A goyu" (final u expected), Semandang bagoyu. (122)

PAN *kaRaw, PMP *gurus

Proto Land Dayak **parankis
Proto Bidayuh *pirankis '(a) boil' Singai pirakis, Gumbang s[i][r]okih, Serambu pirakis, Bratak pirakis, Serasot pirakis, Grogog pirakis, Stass pirakis, Biatah pirakis, Bistaang pirakis, Sarong prakis, Sapug piraki[h], Pinyawa' prakis, Bengoh prakis, Anah Rais prakis, Biya prakis, Sembaan hrakis, Tringgus Raya rakis, Tringgus Bireng prakis, Bukar pirankis, Sadong prankis, Bibenghi'alit, Sangking alit, Tekakang alit, Bukar-Sadong alit, Bunan alit. (124)

 Proto Bakati' *[k] aτan 'wound' Bukar akit aτan, Sangking alit tany, Tekakang aτan, Bunan akit kata, Serian dictionary atan 'a wound', ṣkata 'make a wound'.
Sara/Riok katak 'wound'. (124)

Proto Bidayuh-Bakati' *[t] alic

Proto Bakati' *talih Rara tawatn talih 'scar', Kendayan talih, talis 'wound'. (124)
PHN *palis 'wound, scar' (cognate?)

Proto Land Dayak **ŋuta?

PAN (Z) *ūtaq

Proto Bakati' *rama, 'vomit' Rara rama, Sara/Riok [ŋa]rama, Kendayan rama, Bekati' rama. (125)

Proto Land Dayak **guthî, **gVtuh
Proto Bidayuh *gūthî, *gūthî, *gūth, *gũtu '(head) lice' Singai gūth, Gumbang gūth, Serambu gūth, Bratak gūth, Serasot gūth, Grogog ŋgūth, Stass gūth, Biatah gūth, Bistaang gūth, Benuk gūth, ŋth, Sapug gūth, gūth, Pinyawa' gūth, gūth, Bengoh gūth, Anah Rais gūth, Biya gūth, Sembaan gūth, Tringgus Raya gūth, Tringgus Bireng gūth, Bukar gūth,
Sadong /un0261utih, Bi̱engih /un0261utih, Sangking /un0261u, Te̱akang /un0261ūtu, Bukar-Sadong /un0261utu, Bunan /un0261utu.

Proto Bakati' /un0294

lice' Rara /un0261utu/un0294, Sara/Riok /un0261utu/un0294, Kendayan /un0261utu/un0294 'mite', Bekati' /un0261utu/un0294.

SLD 'lice' Keṃayan-H /un0261itih, Keṃayan-A /un0261utih, Ri̱un-A kutis, Semandang /un0261uti (final h expected). (126) (cf. B.M. kutu 'lice')

PAN *kúCuh

Proto Bidayuh-Bakati' *k/un0259d/um/ un0294 Proto Bidayuh *k/um/ un0306d/um Proto Bidayuh *kudob, *kăna/um 'chicken'

lice' Singai kudo̱, Guṃang kudo̱, Seraṃu kudom, Bratak kudo̱, Serasot kudo̱, Stass kudo̱, Bi̱atah k/um Proto Bidayuh-Bakati' *kad/um Proto Bidayuh-Bakati' *kabi/um 'dead' Rara ka̱is, Sara/Riok ka̱ih, Kendayan ka̱is, Bekati' ka̱is '(to) die'.

SLD '(to) die' Keṃayan-H ka̱is (o expected in first syllable), Keṃayan-A ko̱is, Ri̱un-H ko̱is. (127) (cf. B.M. ha̱is 'finished')

Proto Land Dayak **kăb/um, **kăbis Proto Bidayuh-Bakati' *kăb/um 'dead' Singai k/um, Guṃang k/um, Seraṃu k/um, Bratak k/um, Serasot k/um, Grogo k/um, Stass k/um, Bi̱atah k/um, Bistaang kă/um, Benuk kă/um, Pinyawa' k/um, Bengoh k/um, Anah Rais kă/um, Bi̱ya kă/um, Seṃaan kă/um, Tringgus Raya kă/um, Tringgus Bireng kă/um, Bi̱engih kă/um, Sangking kă/um, Te̱akang kă/um, Bukar-Sadong kă/um, Bunan k/um, Bunan-Tarat k/um. (128)

Proto Land Dayak **ŋāb/um, **ŋāmis, **k-in-ăb/um Proto Bidayuh-Bakati' *ŋāb/um, *k-in-ăb/um 'kill' Singai ŋa̱, Guṃang ŋa̱, Seraṃu ŋa̱, Bratak ŋa̱, Serasot ŋa̱, Grogo ŋa̱, Stass ŋa̱, Bi̱atah ŋa̱, Bistaang ŋa̱, Benuk ŋa̱/um, Sapug ŋa̱, Pinyawa' ŋa̱, Bengoh ŋa̱, Anah Rais ŋa̱, Bi̱ya ŋa̱, Seṃaan ŋa̱, Tringgus Raya ŋa̱, Tringgus Bireng ŋa̱, Bukar ŋa̱, Sadong ŋa̱, Bi̱engih ŋa̱, Sangking ŋa̱, Te̱akang ŋa̱, Bukar-Sadong ŋa̱, Bunan ŋa̱, Bunan-Tarat ŋa̱.

Proto Bakati' *ŋami Proto Land Dayak **N-kămis Proto Bidayuh-Bakati' *ŋami 'kill' Rara ŋamis, Sara/Riok ŋamis, Kendayan ŋamis, Bekati' ŋamis.

SLD 'kill' Keṃayan-H ŋkomis, Ri̱un-H ŋkomis, Semandang ŋo̱is. (201) (cf. B.M. kūur 'grave')


Proto Bakati' *kūdoh Proto Land Dayak **kūdoh, *kūdō 'grave', *kūdh 'chicken'

Proto Bidayuh-Bakati' *kūdh 'chicken', Kendayan *kūdh, Bekati' *kūdh. (129) (cf. B.M. hā 'finished')

It's uncertain whether these are related.
Proto Bakati’ *[m] ūnu,ŋ ‘sit’ Rara [m]uŋuŋ, Sara/Riok ūnuŋ, Kendayan ūnuŋ, Bekati’ ūnuŋ. (131)

Proto Land Dayak **N-guru?

SLD ‘sit’ Kemayan-H nulu? , Kemayan-A gorun?, nulu?, Ribun-H nulu?. (131) (perhaps the set *guriŋ ‘lying down’, presented below, is related to this set)
PMP *d₂uk + d₂uk (cognate?)

Proto Bidayuh-Bakati’ *guriŋ
Proto Bidayuh *guriŋ ‘lying down’ Jagoi-H guriŋ, Bau dinary guriŋ, Bengoh guriŋ, Tringgus Raya guriŋ.
Proto Bakati’ *guriŋ,ŋ ‘lie, recline’ Rara gurikŋ, Sara/Riok gurikŋ, Kendayan gurik, Bekati’ gurin (ŋ expected). (131) (cf. B.M. ter-baring ‘lying down’)

The following forms, reflecting *N-gäläy, may be related to the preceding ones:
SLD ‘lying down’ Kemayan-H nule (a expected in first syllable), Kemayan-A galay, Ribun-H nala, Ribun-A nala, Semandang nala.

Proto Land Dayak **[t] agan
Proto Bakati’ *agu,n ‘stand’ Rara agutn, Sara/Riok agutn, Bekati’ agutn.

SLD ‘stand’ Kemayan-H natakan, Kemayan-A naktok (<*tāk), Ribun-H ntokut, Ribun-A tokut (<*nāk) , Semandaag tokut (<*tāk). (132) (This set has an unusual level of variation with differences in onset of penult, differences in voicing in the onset of the ultima and differing underlying vowel-consonant sequences in the ultima in the Southern languages.)
PMP *tuqd₂

Proto Bidayuh-Bakati’ *mijog, *ajog
Proto Bidayuh *mijog, *mujog ‘stand’ Singai mijog, Gumbang mijog, Serambu mijog, Bratak mijog, Serasot mijog, Grogo mijog, Stass mijog, Biatah mijog, Bistang maj[o:]jg, Benuk mijog, Sapug mijog, Pinyawa’ mijog, Bengoh mijog, Anah Raiss mijog, Biya mijog, Sembaan mijog, Tringgus Raya mijog, Tringgus Bireng mijog, Bibengih mijog, Sangking mijog, Tubaingi mijog, Bukar-Sadong mijog, Bunun mijog. (132)
Sara/Riok ajo/ ‘stand still’, (132) (may be related to **bijaŋ ‘straight’ (319))
PMP *ze ‘stand erect’

Proto Land Dayak **bázas, **bīlis
Proto Bakati’ *buus ‘sleep’ Rara buus, Sara/Riok buu (buus expected), Kendayan buus, Bekati’ buus.

SLD ‘sleep’ Kemayan-H biis, Ribun-H biis, Semandang biis. (133)

Proto Land Dayak **kāmbat, **k-ar-īmbat, **k-an-āmbat
Proto Bidayuh *kāmbat, *kambah ‘forget’ Singai kambat, Gumbang kambat, Serambu kambat, Bratak kambat, Serasot kambat, Grogo kambat, Stass kambat, Biatah kāmbat, Bistang kāmbat/kəmbad, Benuk kāmbat, Sapug kambat, Pinyawa’ kambah, Bengoh kampat, Anah Raiss kāmbat, Biya kambat, Sembaan
kâmbat, Tringgus Raya kâmbat, Tringgus Bireng kâmbat, Bukar kâmbat, Sadong kâmat, Bibengih nkâmbat, Sangking nkâmbat, Tebakang kâmbat, Bukar-Sadong kâmbat, Bunan kâmat.

Proto Bakati’ karimu, t ‘forget’ Rara karimut, Sara/Riok karimut, kalimpûtn (<*kalimpun ?), Kendayan karimut (a is expected PBak reflex of **a following a labial).

SLD ‘forget’ Kembayan-A kamut (a* expected in ultima), Ribun-A konomu?. (134)

Proto Land Dayak **pimah, **N-pama

Rara paima? (reverse of the vowels of eastern Bidayuh forms), pimha ‘dream’.

SLD ‘dream’ Kembayan-A pama, mpama, Ribun-A mpumu (i expected in penult). (135)

Proto Land Dayak **manda, **mändih, **mânda  
Proto Bidayuh *manda ‘live, stay’ Bukar manda, Tebakang munda, manda?, Serian dictionary manda.

Proto Bakati’ *madi, ? ‘live, stay, stop’ Rara madi?, Sara/Riok madi?, Kendayan madi?. May not be directly cognate.

Ribun-A monda ‘live, stay’. (136, 524)


Proto Land Dayak **nãday, **nãday
Proto Bidayuh *nãday ‘wait’ Bukar nãday, Sadong nãday, Bibengih nãday, Tebakang nãday, Bukar-Sadong nãday.

Rara nánti? ‘wait’ (may not be directly cognate) Kembayan-A nãnay ‘live, stay’. (136-7) PAN (L) *hantay ‘wait’

Proto Bidayuh *kãjan ‘wait’ Singai kajan, Gumbang kajan, Serambu kajan, Bratak kajan, Serasot kajan, Grogo kajan, Stass kajan, Biatah kajan, Bistaang kajan, Benuk kajan, Sapug kajan, Pinyawa’ kajan, Bengoh kajan, Anah Rais kajan, Biya kajan, Sembaan nánjan, Tringgus Raya kajan, Tringgus Bireng kajan. (137)

Proto Bidayuh-Bakati’ *[p]áo
Proto Bidayuh *pânu ‘walk’ Singai pânu, Gumbang pânu, Serambu pânu, Bratak pânu, Serasot pânu, Grogo pânu, Stass pânu, Biatah pânu, Bistaang pânu, Benuk pânù, Sapug pânù, Pinyawa’ pânù, Bengoh pânù, Anah Rais pânù, Biya pânù, Sembaan kânu, Tringgus Raya pânù, Tringgus Bireng pânù, Bukar pânù, Sadong pânù, Tebakang pânù, Bukar-Sadong pânù. (138)

Proto Bakati’ *anu/o ‘go, walk’ Rara anu, Sara/Riok anu, Kendayan anu, Bekati’ ando (d not expected). (138)

PMP *pánaw

Proto Land Dayak **ba-jâlan
Proto Bidayuh *jâlan ‘walk’ Bibengih bijâlan, Sangking jâlan, Bukar-Sadong jâlan, Bunan jâlan.

Proto Bakati’ *bajala,n ‘walk’ Rara bajalatn, Sara/Riok bajalatn, Kendayan bajalat.


Proto Land Dayak *jâran
Proto Bidayuh *jâran, *âran ‘trail, footpath’ Singai âran, Gumbang âran, Serambu âran, Bratak âran, Serasot âran, Grogo âran, Stass âran,
Biatah aran, Bistaang ran, Benuk (a)ran, Sapug āran, Pinyawa' āran, Bengoh āran, Anah Rais āran, Biya āran, Sembaan āran, Tringgus Raya āran, Tringgus Bireng āran, Bukar jāran, Sadong jāran, Bibengih jāran, Sangking jāran, Bukar-Sadong jāran, Bunan jōran.

Proto Bakati’ *pa-galaʔ ‘trail’ Rara pa/ala, Sara/Riok galeʔ, Kendayan galaʔ, Bekati’ pagalaʔ. (It is unclear whether this indicates that the entire set was derived from an earlier *gaRaC)

SLD ‘trail, footpath’ Kemayan-H joratn, Kemayan-A jorat, Riun-H johan, Riun-A johaŋ, Semandang joran. (202)

Proto Land Dayak **mândag, **mândig

SLD ‘arrive, come’ Kembayan-H monik, Ribun-H monik, Ribun-A monik, Semandang joran. (140)

Proto Bidayuh-Bakati’ *māri?

Proto Bakati’ *ureʔ ‘return, go home’ Rara oreʔ, Sara/Riok ureʔ. (apparently *ma > u).

Proto Bakati’ *b/mali ‘come back’ Rara malik, balik, Sara/Riok balik, Kendayan malik (final ? expected). (140) (this set may not be directly related) (cf. B.M. mari ‘come here!’)

PAN (Z) *Halîq ‘go, move’

Proto Bidayuh-Bakati’ *ka/a
Proto Bidayuh *ka/a ‘to’ Gumbang ka, Bratak ka, Serasot ka, Anah Rais ka, Sembaan ka, Tringgus Raya ka, Tringgus Bireng ka.

Proto Bakati’ *ka, ‘at’ Rara ka, Sara/Riok ka, Kendayan ka. (140) (cf. B.M. ke ‘to’)

Proto Land Dayak **mābar, **mibîr
Proto Bidayuh *mābar, *mikâbur ‘fly’ Singai mikâbur, Biatah mikâbur, Bistaang mikâbur, Benuk kâbur, Sapug bikâbur, Pinyawa’ bikâbur,
Bengoh mikəbur, Bukar måber, Sadong måber, Tebakang måber, Bukar-Sadong måber.

Proto Bakati’ *mibi, r ‘fly’ Rara mibir, Kendayan mibir, Bekati’ mibir.

SLD ‘fly’ Kembayan-Η måber, Kembayan-A timåber (o expected in penult of both forms; a may be a result of mirroring). (141)

PPhil *lapád

Proto Bidayuh *timirib, *múrib ‘fly’ Singai timirib, Gumbang simarim, Serambu timirib, Bratak timirib, Serasot timirib, Grogo timirib, Stass timirib, Anah Rais tikurib (penult is anomalous), Biya mûrib, Sembaan hmrrib, Tringgus Raya mûrib, Tringgus Bireng mrib, Bibengih murib, Sangking murib. (141)


Proto Land Dayak **måŋkat

Proto Bidayuh *måŋkat ‘raise’ Bau dictionary måkat, Biatah makat, Serian dictionary måŋkat.

Proto Bakati’ *makat ‘arise’ Rara umpat (something like makat expected; perhaps another example of PBB *må- > Bak u-), Sara/Riok makat.

SLD ‘arise’ Kembayan-A måŋkat, Ribun-A måŋka?. (142)

Proto Bakati’ *maka, ? ‘go up’ Rara maka?, Sara/Riok maka?, Kendayan maka?. (142)

(Perhaps this and the preceding set should be combined with the reconstruction **må[ŋ]kat/? . It is possible that these two sets, the one immediately preceding them and the two immediately following them can all be related in some way that is not yet clear.)

Proto Bidayuh-Bakati’ *jvkan

Proto Land Dayak **gåtu

Proto Bidayuh *gåtu ‘climb’ Bukar gåtu, Sadong gåtu, Bunun-TERAT gåtu.

Kembayan-A gåtu ‘ascend’. (142)

Proto Land Dayak **sVmak

Proto Bidayuh *nûmak ‘climb’ Bibengih nûmak, Tebakang nûmak, Bukar-Sadong nûmak, Bunun nûmak.

Ribun-A simo? ‘climb’. (142)

Proto Bidayuh-Bakati’ *muhun

Proto Bidayuh *muhun ‘descend’ Singai mu?un, Gumbang muun, Serambu muun, Bratak muun, Serasot muun, Grogo muun, Stass muun, Biatah muun, Bistaang muun, Benuk muun, Sapug muun, Pinyawa’ mu?un, Bengoh muun, Biya muun, Sembaan muun, Tringgus Raya mûhun, Tringgus Bireng muun, Bukar muhun, Sadong muhun, Bibengih muhun, Sangking muhun, Tebakang muhun, Bukar-Sadong muhun, Bunun muhun.

Proto Bakati’ *mu[h] u, n ‘descend’ Rara muun (medial h expected), Sara/Riok muun. (143)

PHN (Z) *tuRún

Proto Bakati’ *disa, h ‘descend’ Rara disah, Sara/Riok disah, Kendayan gisah (initial d expected). (143)

Proto Land Dayak **jà[n] tu?
Proto Bidayuh *jåtu? 'fall' Jagoi-H bijåtu?, Biatah jåtu?, Bukar jåtu?, Sadong jåtu?, Tebakang jåtu? (human subject), Bukar-Sadong jåtu?, Bunau jåtu?.

Proto Bakati' *jantu? 'fall' Rara Sarawak jantu?, Rara Kalimantan jantuh, Kendayan jantu?, Bekati' jantu?.

SLD 'fall' Ribun-A jotu?, Semandang jotu. (144) (cf. B.M. jatuh 'fall down')

Proto Land Dayak **răbu/uni0294 'fall' Singai rau/uni0294, Gumang r/uni0259u/uni0294, Seramu rau/uni0294, Bratak rau/uni0294, Serasot rau/uni0294, Grogo rau/uni0294, Stass rau/uni0294, Biatah rău/uni0294, Bistaang rău/uni0294, Benuk rău/uni02D0/uni0294, Sapug rău/uni0294, Pinyawa' r/uni0259u/uni0294, Bengoh r/uni0259u/uni02D0/uni0294, Anah Rais rau/uni0294, Biya rău/uni0294, Semaan rău/uni0294, Tringgus Raya rău/uni0294, Tringgus Bireng âbu?, Bukar rău?:, Bibengih rău?, Sangking rău?, Tebakang rău?:, Bukar-Sadong rău?, Bunau rău?.

Kemayan-H rou/uni0294 'fall'. (144)

Proto Land Dayak **răbu?

Proto Bidayuh *rābu/uni02D0/uni0294, *rābu/uni02D0/uni0294 'fall' Singai rau/uni0294, Gumang r/uni0259u/uni0294, Seramu r/uni0259u/uni0294, Bratak rajar, Serasot rajar, Grogo rajar, Stass rajar, Biatah rajar?, Bistaang rajar, Benuk rajar?:, Sapug rajar?, Pinyawa' rajar?, Bengoh rajar?:, Anah Rais rajar?, Biya rajar?:, Semaan rajar?, Tringgus Raya rajar, Tringgus Bireng âbu?, Bukar rajar?:, Bibengih rajar?, Sangking rajar?, Tebakang rajar?:, Bukar-Sadong rajar?, Bunau rajar?.

Proto Bidayuh-Bakati' *ŋām/uni0259k, *ŋāmuk, *ŋāmok 'sta'

Proto Bakati' *ŋamo 'sta' Rara ŋamok, Sara/Riok ŋamok, Kendayan ŋamo/uni0294 or ŋamok, Bekati' ŋamok (final /uni0294 expected). (145)

Proto Bidayuh *tăb/uni0259k 'sta' Gumang n/uni0259/uni0259k, Biatah tă/uni0259k, Bistaang tă/uni0259k, Benuk tă/uni0259k, Bengoh nă/uni0259k, Biya tă/uni0259k, Tringgus Raya tă/uni0259k, Tringgus Bireng âbu?, Bukar tă/uni0259k, Sadong nă/uni0259k. (145) (may be related to the immediately preceding set)

PMP *tebék

Proto Bidayuh *CVjab 'to(spe)ar' Singai njob, Gumbang njob, Bau dictionary njob 'pierce', njob 'pierced', Tringgus Raya jajob. (145)

Proto Bidayuh *jăkad 'throw (especially a spear)' Singai Ṽak (final d expected in Singai and Serasot forms), Gumbang nkad, Serasot njak, Anah Rais jăkad, Biya jăkad, Semaan jăkad, Tringgus Raya jăkad. (145, 155)

Proto Land Dayak **ninsap, **ninsap, **nusap

Proto Bidayuh *ninsap, *ninsap 'suck' Singai sop, Gumbang sop 'lick', Bau dictionary sop 'sip', Serasot nisap, Sapug nisap, Bukar njacap, Sadong njacap, Sangking nicap, Tebakang njacap, Bukar-Sadong cicap, Bunau njacap, Serian dictionary nicap.

Proto Bakati' *njinsap 'suck' Rara ninsap, Sara/Riok njinsap.

Proto Bakati' *nusap 'suck' Rara nusap, Sara/Riok nusap (initial n expected), Kendayan nusap. Kembayan-A n/ŋinsap 'suck'. (146)

PMP *i+sep 'suck'

Proto Land Dayak **N-ku?ut


Proto Bakati' *ŋoo 'bite' Rara ŋoot, Sara/Riok ŋoot, Kendayan ŋamo? or ŋamok, Bekati' ŋamok (final ? expected). (145)

PMP *kut+kut

Proto Bidayuh-Bakati' *N-gigit

Proto Bidayuh *N-gigit 'bite' Serambu njigit (by human), Grogo njigit, Stass njigit, Bistaang njigit 'chew off, tear', Sapug njigit, Bukar njigit, gigit, Tebakang njigit, gigit, Bunau njigit.

Proto Land Dayak **N-gigit 'bite'. (147)

PHN *kut+kut

Proto Bidayuh-Bakati' *N-gigit

Proto Bidayuh *N-gigit 'bite' Serambu njigit (by human), Grogo njigit, Stass njigit, Bistaang njigit 'chew off, tear', Sapug njigit, Bukar njigit, gigit, Tebakang njigit, gigit, Bunau njigit.

Bekati' njigit 'bite'. (147)

PMP *kit+kit 'bite, chew'

Proto Land Dayak **ŋVm-puh (some sources reflect initial **n or **ŋ)
Proto Bidayuh *ni-poh, *puhoh, *ŋumpo: ‘blow’
Singai pu(?)oh, ni-poh Gumbang puoh, Grogo puoh, Stass puoh, Biatah poh, Bistaang poh, Benuk poh, Sapug puoh, Pinyawa’ pu?oh, Bengoh ni-poh, Anah Rais poh, Biya poh, Tringgus Bireng poh, Bukar ŋ/numpoh, Sadong ŋumpo; Segengi ŋumpo, Sangking ŋumpo; Tebakang numpo, Bukar-Sadong ŋumpo.

Proto Bakati’ *ŋampo: ‘blow’
Rara ŋampoh, Sara/Riok ŋampûh, Kendayan ŋampoh, Bekati’ ŋampok (final h expected).

SLD ‘low’ Kemayan-H ŋupuh, Kemayan-A nopuh, Riun-H ŋomus (puh expected in ultima), Semandang ni-poh. (148)

Proto Bidayuh *yup, *yap: ‘blow on fire’
Singai yup, Gumbang yup, Serambu yup, Bratak yup, Serasot yup, Sembaan iyap, Tringgus Raya yup. (148)

PAN *Sìúp ‘low on’, PHF (Z) *S/uni0259yup ‘low’

Proto Bidayuh-Bakati’ *sipak
Proto Bidayuh *sipak, *nipak ‘kick’
Singai sipak, Gumbang s[i]pak, Serambu nipak, Biatah nipak, Bistaang nipak, sipak, Benuk nipak, sipak, Sapug sipak, Bengoh s[i]pak, Anah Rais sipak, Biya sipak, Sembaan sipak, Tringgus Raya sipak, Tringgus Bireng tapak, Bukar nipak, Sadong nipak, Segengi pipak, Sangking pipak, Tebakang nipak, Bukar-Sadong sipak, Bunau nipak.

Rara ni-pak ‘kick’. (150)

PAN (L) *sipak, PPhil *sípa?

Proto Bidayuh-Bakati’ *sīpak
Proto Bidayuh *sīpak, */uni0272īpak ‘kick’
Singai sipak, Gumbang s[i]pak, Biatah /uni0272ipak, Stass /uni0272ipak, Pinyawa’ sipak, Bengoh sipak, Anah Rais sipak, Biya sipak, Sembaan sipak, Tringgus Raya sipak, Tringgus Bireng tīpak, Bukar /uni0272ipak, Sadong /uni0272ipak.

Proto Land Dayak **ruбан
Proto Bidayuh *ruбан: ‘hole’
Singai ruban, Serambu ruh (final ŋ expected), Bau dictionary ruban, Benuk ruban, Sapug uban/n (initial r expected), Bukar ruban, Segengi ruban, Bunau ruban.

Rara rubakŋ ‘hole’.

SLD ‘hole’ Kemayan-A ruba, Ribun-A hubuŋ (o* expected in ultima). (149) (cf. B.M. lubang ‘hole’)

Proto Bidayuh-Bakati’ *sīpak
Proto Bidayuh *sīpak, *nipak ‘kick’
Singai sipak, Gumbang s[i]pak, Serambu nipak, Biatah nipak, Bistaang nipak, sipak, Benuk nipak, sipak, Sapug sipak, Bengoh s[i]pak, Anah Rais sipak, Biya sipak, Sembaan sipak, Tringgus Raya sipak, Tringgus Bireng tapak, Bukar nipak, Sadong nipak, Segengi pipak, Sangking pipak, Tebakang sipak, Bukar-Sadong sipak, Bunau sipak.

Rara ni-pak ‘kick’. (150)

PAN (L) *sipak, PPhil *sípa?

Proto Bidayuh *tāndaŋ, *tindaŋ: ‘kick’
Singai tāndaŋ, Bratak tāndaŋ, Serasot tindaŋ, Grogo tindaŋ, Stass tinaŋ, Pinyawa’ tāndaŋ, Anah Rais tän[d]aŋ. (150)

PAN *túnd’aŋ

Proto Land Dayak **nārik
Proto Bidayuh *tārik, *tārik, *nārik, *nārik ‘pull’
Singai narik, narik, Gumbang narik, Serambu narik, Bratak narik, Serasot narik, Grogo narik, Stass narik, Biatah tārik, Bistaang tārik, Benuk tārik, Sapug tarik, Pinyawa’ tarik, Bengoh tarik, Anah Rais narik, Biya narik, Tringgus Raya nārik, Bukar tārik, nārik, Segengi nārik, Sangking nārik, Tebakang tārik, Bukar-Sadong tarik, Bunau tarik, narik.

Proto Bakati’ *nari,k: ‘pull’


PAN (D) *talik

Proto Land Dayak **ruбан
Proto Bidayuh *ruбан: ‘hole’
Singai ruban, Serambu ruh (final ŋ expected), Bau dictionary ruban, Benuk ruban, Sapug uban/n (initial r expected), Bukar ruban, Segengi ruban, Bunau ruban.

Rara rubakŋ ‘hole’.

SLD ‘hole’ Kemayan-A ruba, Ribun-A hubuŋ (o* expected in ultima). (149) (cf. B.M. lubang ‘hole’)

SLD 'push' Kemban-H nula?/uni0294, Rim-H nulo/uni0294, Semandang nula?. (152)
PAN (D) *tulak 'push away', PPhil *tulak 'push'

Proto Bidayuh *tumbuk 'push' Bukar numuk, Sadong numuk, Bibengih numbuk, Saking numuk, Tekakang tumbuk 'push from behind', Bukar-Sadong tumuk. (152)

Proto Bidayuh-Bakati' *suroŋ
Proto Bidayuh *suruŋ 'push' Bratak suruŋ (cf. also Hudson's Jagoi form culoŋ), Serian dictionary /uni0272uroŋ.

Proto Bakati' /uni0272uroŋ 'push' Rara /uni0272oroŋ, Sara/Riok /uni0272urûkŋ, Kendayan /uni0272oroŋ, Bekati' /uni0272onoŋ (medial r expected). (152)

Proto Bidayuh *bikăduh 'run' Singai ik/uni0259duh, Seramu ik/uni0259duh, Bratak ik/uni0259duh, Serasot ik/uni0259duh, Grogo ik/uni0259duh, Stass ik/uni0259duh, Biatah ikăduh, Bistaang akăduh, Benuk kăduh, Sapug kăduh, ikăduh, Pinyawa' ik/uni0259duh, Bengoh sik/uni0259duh, Anah Rais tikăduh, Biya kăduh, Sembaan kăduh, Tringgus Raya kăduh, Tringgus Bireng kăduh. (153)

Proto Bidayuh-Bakati' *buho
Proto Bidayuh *buhu 'run away' Singai buu?u, Gumbang buu, Serasot buu, Anah Rais bu, Sembaan buhu, Tringgus Raya bûhu, Tringgus Bireng bu, Bunan-Terbat buhu. (153)

Proto Bakati' *buho 'run away, flee' Rara boho, Sara/Riok bûû. (153)
PAN (D) *bulu 'run after', PPhil *bûRaw 'chase away'
Proto Bakati' *mata, n 'throw out' Rara matan, Sara/Riok maten, Kendayan matat.
Kembayan-A botat, batat 'throw'. (155)

Proto Bakati' *muno, ? 'throw' Rara muno, munu, Kendayan muno, Bekati' mono. (155)

Proto Bidayuh-Bakati' *na [ŋ] ka [ʔa] n
Proto Bidayuh *pahkan Singai ṣankan 'throw far away', Serasot ṣankan 'throw spear', Bau dictionary ṣankan 'throw away', Serian dictionary ṣankan 'throw'. (155)

Proto Bidayuh-Bakati' *baputa, r 'turn, revolve' Rara aputar, Sara/Riok aputar, Kendayan aputar. (156) (cf. B.M. erputar 'rotate, spin')

Proto Land Dayak **N-sukan
Proto Bidayuh *suan 'hide something' Serambu suan, Bratak suan, Stass suan.
Rara basukatn 'hide'.
Kembayan-A ɲukan 'hide'. (157)

Proto Bidayuh-Bakati' *lākat
Proto Bidayuh *lākat 'stick to' Serambu prakat, Serasot pirākat, Grogo rākat, Stass rākat, Biatah pirākat, Bistaang rākat, Benuk rākat, Sapug pirikat, Pinyawa' pirakat, Bengoh prākat, Anah Rais prākat, Biya hракat, Sembaan rākat, Tringgus Raya rākat, Tringgus Bireng atak, Bukar milakat.
Rara ɲalakat 'stick to'. (158) (cf. B.M. lekat 'stick to')

PHA *de+kéC, PMP *da[ŋ]+ket
Proto Bidayuh-Bakati' *lakat
Proto Bidayuh *lakat 'stick to' Serambu prakat, Serasot pirākat, Grogo rākat, Stass rākat, Biatah pirākat, Bistaang rākat, Benuk rākat, Sapug pirikat, Pinyawa' pirakat, Bengoh prākat, Anah Rais prākat, Biya hракat, Sembaan rākat, Tringgus Raya rākat, Tringgus Bireng atak, Bukar milakat.
Rara ɲalakat 'stick to'. (158) (cf. B.M. lekat 'stick to')

PAN *de+kéC, PMP *da[ŋ]+ket
Proto Land Dayak ** N-kabat, **N-kapat
Semandang ṣəpat 'tie'. (159) (cf. B.M. bebat 'band, ligature')

PHN *bed + bed 'wind around, tie'

Proto Bidayuh-Bakati' *m[b] ōʔan
Proto Bidayuh *moʔan 'tie (something)' Biatah maʔan, Bizada məʔan, Benuk maʔan, Sapug muʔan, Pinyawa' maʔan, Bengoh maʔan, Anah Rais maʔan, Biya maʔan.
Proto Bakati' *mbuʔan 'tie (animal)' Sara/Riok muqan, Kendayan muqan. (159) The Sara/Riok form could reflect *muqan, but the Kendayan form seems to reflect an oral environment at the end of the word, requiring a reconstruction like *mbuqan.

Proto Bidayuh *mākas, *mātas 'tie (up)' Singai məkas, Gumbang məkas, Serambu məkas, Bratak məkas, Serasot məkas, Grogo məkas, Stass məkas, Pinyawa' matas, Sembaan mətas, Tringgus Raya mətas. (159)

PHN *te+kes 'bind firmly', PHN (Z) *hikat

Proto Bidayuh-Bakati' *niʔo, ʔi 'tie (animal)' Sara niʔo, Bekati' niʔu. (159)

Proto Land Dayak **N-kusə, **kisə

Proto Bakati’ *unjuso? ‘rub’ Rara ŋusuo?, Kendayan magusu?, Bekati’ ṭosok (final / expected, but the Bekati’ form may be affected by B.M.).

SLD ‘wash’ Kemayan-H ŋisu, Ribun-H ṭosok, Semandang ṭosok ‘rub’ (the Ribun and Semandang forms may be loans). (160, 166) (cf. B.M. ṭosok ‘rub’)

Proto Bidayuh *kūtu/uni02D0s, *ŋādus ‘wipe’ Singai ʔos, Biatah ʔutos, ŋuto/uni02D0s, Bistaang ŋatos, Benuk ʔutos/h, Sapug tos, Pinyawa’ kutos, Bengoh kutos, Biya ṭos, Ńangking ŋādus, Tekabang ŋādus, Bukar-Sadong ŋādus, Bunan ŋādus. (160)

Proto Land Dayak **năŋku
Proto Bidayuh *năŋku, *tăŋku ‘steal’ Singai ʔıku, sitaku ‘thief’ Gumbang ʔıku, Serambu ʔıku, Bratak ʔıku, Serasot ʔıku, Grogo ʔıku, Stass ʔıku, Biyah ʔıgen, Bistaang ʔıgen, Ńen, Sapug ʔıgen, Pinyawa’ ʔıgen, Bengoh ʔıken, Anah Rais ʔıgen, Biya ʔıgen, Semaan ʔıgen, Tringgus Raya ʔıgen. (162)

Proto Land Dayak **mīlih
Proto Bidayuh *pīlih, *mīlih ‘choose’ Singai piri, Gumbang piri, Serambu piri, Bratak piri, Serasot piri, Grogo piri, Stass piri, Pinyawa’ piri, Anah Rais piri, Biya piri, Tringgus Raya piri, Bukar milih, pilih, Sadong milih, Bibengih milih, milih, Sangking milih, Tekabang milih, pilih, Bukar-Sadong pilih, Bunan milih, pilih. (164)
Rara milih ‘choose’.
SLD ‘choose’ Kemban-A milih, Ribun-A milih.
(164) (cf. B.M. pilih ‘choose’)
PAN *piliq

Proto Bidayuh *Niʔen ‘choose’ Biatah miʔen,
Bistaang miʔen, Benuk miʔen, Sapug niʔin, Pinyawa’ niʔen, Bengoh miʔen, Tringgus Raya
miʔen, Tringgus Bireng niʔen. (164)

Proto Bidayuh *di-ken, *di-gen ‘hold in hand’
Singai [ka]gen ‘hold’, Gumbang gen ‘hold’,
Serambu gen ‘hold’, Biatah digen ‘carry hanging
down’, Bistaang đagën, Benuk gen, Sapug
digen, Bengoh tigen, Anah Rais diken, Tringgus
Raya diken, Tringgus Bireng riken. (165)

Proto Bidayuh-Bakati’ *ŋągąm
Proto Bidayuh *ŋągąm ‘grasp’ Singai ŋągąm,
Gumbang ŋągąm, Serambu ŋągąm, Stass
ŋągąm, Biatah ŋągąm, Bistaang ŋągąm, Benuk
ŋągąm, Pinyawa’ ŋągąm, Bengoh ŋągąm, Anah
Rais ŋągąm, Biya ŋągąm, Tebakang ŋągąm.
Proto Bakati’ *ŋąg, *giŋ
Proto Bidayuh *kă/di-giŋ, *takaŋ ‘hold’ Gumbang
dįgaŋ, Bratak takaŋ, Serasot giŋ, Grogo kaŋγ, Biatah
dįgaŋ, Bistaang dįgaŋ, Sapug dįgaŋ, Pinyawa’
dįgaŋ, Semaan dįgaŋ. (165)
SLD ‘hold’ Kemban-H möga’, Kemban-H möga’,
Ribun-H nįgin (final ŋ expected), Ribun-A
nįginŋ. (165)

Proto Land Dayak **gaŋ, **giŋ
Proto Bidayuh *kă/di-giŋ, *takaŋ ‘hold’ Gumbang
dįgaŋ, Bratak takaŋ, Serasot giŋ, Grogo kaŋγ, Biatah
dįgaŋ, Bistaang dįgaŋ, Sapug dįgaŋ, Pinyawa’
dįgaŋ, Semaan dįgaŋ. (165)

SLD ‘hold’ Kemban-H möga’, Kemban-H möga’,
Ribun-H nįgin (final ŋ expected), Ribun-A
nįginŋ. (165)

Proto Land Dayak **nāŋ-kap, **da-kup
Proto Bidayuh *nāŋ/ŋa-kap, *da-kap ‘hold’ Singai
dakop ‘embrace’, Sangking ṇąkəp, Bunun-Terbat
nąkəp.
Proto Bakati’ *nążka, p ‘take’ Rara nąkəp,
Sara/Riok nąkəp, Kendayan nąkəp.

Proto Land Dayak **nāŋ-kap, **da-kup
Proto Bidayuh *nāŋ/ŋa-kap, *da-kap ‘hold’ Singai
dakop ‘embrace’, Sangking ṇąkəp, Bunun-Terbat
nąkəp.
Proto Bakati’ *nążka, p ‘take’ Rara nąkəp,
Sara/Riok nąkəp, Kendayan nąkəp.

SLD ‘hold’ Kemban-A tuku’t (final p expected),
Ribun-A nıkį? (u expected), Semandang
nokop. It is possible that these SLD forms
somehow reflect **kap in the ultima. If so, the
second PLD reconstruction may not be
necessary. (165)
PMP *də-a+kęp, PHN (Z) *há[ŋ]kup ‘take with
hands’

Proto Land Dayak **kit
Proto Bidayuh *diken (t?) ‘hold’ Anah Rais diken,
Tringgus Raya diken, Tringgus Bireng riken.
Ribun-A nokį? ‘hold’. (165)

Proto Land Dayak **m/ŋupu?
Proto Bidayuh *m/ŋupu? ‘wash’ Sapug mupu?
(clothes), Bukar ŋupu? (clothes), Serian
dictionary ŋupu?.
Kemban-H mopo? ‘wash’. (166)

Proto Land Dayak **CVmbi?, **mbin
Proto Bidayuh *mebe?:, *ŋumbe: ‘wash’ Singai
mambě?, Gumbang mambé?, Serambu
mambē?, Bratak mambe?, Serasot mambe?,
Stass mambe?, Biatah mbe?, Bistaang mbe?,
Sapug mbe?, Pinyawa’ mbe?, Seemaan mimmbē?,
Tringgus Bireng ámbi?, Tebakang mibér?,
Bukar-Sadong mibér?, Bunun mibér.
Proto Bakati’ *mebeen ‘wash’ Rara meetn, bapeetn,
Sara/Riok meetn. (may reflect PLD **mibin)
SLD ‘wash’ Kemban-A t/nomi?, Ribun-H ŋumbe,
Ribun-A ŋumbe?, bohome?. (166-67)
PMP *buRiq

Proto Bidayuh-Bakati’ *kuhū?
Proto Bidayuh *N-kuhū? ‘wash’ Grogo ŋu?, Biatah
ŋu?, Bistaang ŋu?, Benuk ŋu?, Pinyawa’
ku?u, Bengoh ku?u, Anah Rais ŋu?, Biya ŋu?,
Seemaan kuhū?, Tringgus Bireng ŋu?.
Sara/Riok ŋu? (< *ŋuhi? ?) ‘wash (wound)’. (166,
167)

Proto Land Dayak **māmuh₁
Proto Bidayuh *māmuh ‘bathe’ Singai mamuh,
Gumbang mamuh, Serambu mamuh, Bratak
mamuh, Serasot mamuh, Grogo mamuh, Stass
mamuh, Biatah māmuh, Bistaang māmuh, Benuk māmuh, Sapug māmuh, Pinyawa’ mamuh, Bengoh mamuh, Anah Rais māmuh, Biya māmuh, Semea māmuh, Tringgus Raya māmuh, Tringgus Bireng māmuh, Bukar māmuh, Sadong māmuh, Tebakang māmuh, Bukar-Sadong māmuh.

Rara mamu? ‘bathe’.
Kembayan-A mamu ‘bathe’. (168)

Proto Land Dayak **bi̱ekek
Proto Bidayuh *bi̱ekek ‘bad (person)’ Bukar bi̱ekek, Sadong bi̱ekek, Bibengih bi̱ekek, Sangking bi̱ekek, Tebakang bi̱ekek, Bukar-Sadong bi̱ekek, Bunan bi̱ekek.


Proto Bakati’ *kăis, *săi̱h2
Proto Bidayuh *kăis ‘dirty (clothes)’ Singai kăis, Gumbang kăi̱h, Serambu kaʔis/ kaʔi, Bratak kaʔis, Serasot kaʔis, Ggro̱k kaʔis, Stass kăis, Biatah kăi̱is, Bistaang kăi̱is, Benuk kăi̱is, kăi̱ih, Sapug kăi̱is, Pinyawa’ kăi̱is, Bengoh kăi̱is, Anah Rais kăi̱is, Biya kăi̱is, Sembea kisi̱is, Tringgus Raya kăi̱is, Tringgus Bireng kăi̱is.

Proto Bakati’ *sai̱h, *sauh ‘dirty (clothes)’ Rara Sarawak sau (pronounced once as saus) ‘unpleasant’, Rara Kalimantan saih, Sara/Riok saih, Kendayan saih, bais, Bekati’ sais. In this set *h and *s seem to alternate in final position, i.e., PBid reflects *s while PBak reflects *h. This is not surprising in this context since the distinction between *s and *h is lost following *i in many dialects of Bidayuh and in three of the four Bakati’ dialect sources. (171)

PAN (D) *d’ahat

Proto Land Dayak **păguh, **bagas (unclear whether these two can be directly related)

Proto Bidayuh *păguh ‘good’ Singai paguh, Gumbang paguh, Serambu paguh, Bratak paguh, Serasot paguh, Ggro̱k paguh, Stass paguh, Bukar paguh, Sadong paguh, Bibengih paguh, Tebakang paguh, Bukar-Sadong paguh, Bunan paguh.

SLD ‘good’ Ribun-H baɡah, Semandang bagas. (170)

PAN (D) *bagut ‘beautiful’

Proto Bidayuh *kănaʔ? ‘good’ Stass kanaʔ, Bau dictionary kanaʔ, Biatah kanaʔ?, Bistaang kanaʔ?,
SLD ‘dry’ Ribun-H haŋkay, Ribun-A haŋka, Semandang ranjk. (172)
PHN *de+ Ráng (cognate?)

Proto Bidayuh-Bakati’ *bádah, or possibly *báda?
Proto Bakati’ *baðu?: ‘dry’ Rara baðu, Sara/Riok baðu?, Kendayan baðu?, Bekati’ baðu?. (172)
PMP *majá ‘dry up’

Proto Bidayuh *bádah ‘tortoise’ Gumbang báda, Pinyawa’ báda, Anah Rais báda, Bunah báda. (172)
Proto Bidayuh *pisak, *pásak ‘dried up’ Singai pisak, Serambu pisak, Bratak pisak, Benuk psak, Anah Rais pásak, Tringgus Raya psak. (172, 236)
Proto Bidayuh *b/ruhoh ‘(to) lie’ Tringgus Raya ruhoh, Tringgus Bireng boh. (173)
Proto Bidayuh *nákal ‘lie (to someone)’ Singai nákal, Bibengih nákal, Sangking nákal, Tekang nákal, Bukar-Sadong nákal, Bunah nákal. (173)
Proto Bidayuh-Bakati’ *síže

Proto Bidayuh *sízen, *sízan ‘cry’ Singai sien, Gumbang síen, Serambu síen, Bratak síen, Serasot síen, Grogo síen, Stass síen, Biatah síen, Bistaang s[á]íen, Benuk síen, Sapug síen, Pinyawa’ síen, Bengoh síen, Anah Rais síen, Biya síen, Sembaan síen, Tringgus Raya saíen (cf. also pííen ‘keeps on crying’), Tringgus Bireng síen, Tekang sían ‘wail’.
Proto Bakati’ *munse?, ‘cry’ Rara munse?, Sara/Riok munse?, Bekati’ munsie?. (174) These sets may not be directly cognate.

Proto Bidayuh *mū/as ‘mourn’ Singai muas, mu/as, Gumbang mu/as, Serambu mu/as, Bistaang mu/as, Bengoh mu/as, Anah Rais mu/as, Bukar mu/as, Sadong muas, Bibengih mu/as, Bukar-Sadong muas. (174)

Proto Land Dayak **nāñis
Bidayuh Bunah nāñis ‘cry’.

SLD ‘cry’ Kembayan-H noñis, Ribun-H noñis, Semandang noñis. (174) (cf. B.M. tan/uni0261is, menangis ‘cry’)
PAN *Cáñis, PMP (A) *tanis

Proto Land Dayak **juhu?
Ribun-A ju? tonj(s) ‘tear (liquid + cry)’. (175)
PMP (Z) *ZuRúq ‘juice’

Proto Land Dayak **nātaw
Proto Bidayuh *nātaw, *tātaw, *táwah ‘laugh’
Singai táwah, Gumbang táwah, Serambu táwah, Bratak táwah, Serasot táwah, Grogo táwah, Stass táwah, Biatah táwah, Bistaang táwah, Benuk táwah, Sapug nätaw, Pinyawa’ táwah, Bengoh táwah, Anah Rais táwah, Biya táwah, Sembaan táwah, Tringgus Raya táwah, Tringgus Bireng táwah, Bukar nätaw, tätaw, Sadong nätaw, Bibengih nätaw, Sangking nataw, Tekang nätaw, Bukar-Sadong nätaw, Bunah nataw.
SLD ‘laugh’ Kembayan-H notow, Ribun-H notaw, Semandang noto. (176)
PAN * Cáwa
Proto Bakati’ *gulu,k ‘laugh’ Rara guluk, Sara/Riok guluk, Kendayan gulu?, Bekati’ gulut (? expected). (176)

Proto Bidayuh *tiwas, *tuas ‘angry’ Singai tiwas, Bratak tiwas, Serasot tiwas, Grogo tiwas, Stass tiwas, Biatah tuas, Bistaang tuas, Benuk tiwas/h, Sapug tuas, Pinyawa’ tuas, Biya tiwas, Sembaan tiwas, Serian dictionary tuas ‘jealous’. (177)


Proto Bakati’ *baji,? Rara baji ‘angry’, Sara/Riok baji ‘hate’. (177) (cf. B.M. benci ‘hate’)


Proto Land Dayak **tāmpar
Ribun-A batampar (probably borrowed since usual Ribun reflex is h) ‘punch’. (178) (cf. B.M. tampar ‘slap’)

Proto Land Dayak **tīnj[gu]u

Semandang butiŋu (in the transcription “ny” may have been substituted for “ng”; or might fit better with **t-ar-inju ‘finger’ (107)) ‘punch’. (178)

Proto Bakati’ *njanta,m ‘hit, crush’ Rara ñantam, Sara/Riok ñantam, Kendayan ñantam (loan). (178)


PHF *tālaw ‘fear, fearful’

Proto Bakati’ *buu,t ‘afraid’ Rara buut, Sara/Riok buut, Kendayan buut, Bekati’ buut. (179)

Proto Bidayuh *băgan ‘call’ Singai măgan, Gumbang măgan, Serambu măgan, Bratak măgan, Serasot măgan, Grogo măgan, Stass măgan, Biatah băgan, Bistaang băgan, Benuk băgan, Bengoh băgan, Sembaan băgan, Tringgus Raya băgan ‘shout’, Serian dictionary măgan, măgăn ‘shout’. (180)

Proto Bidayuh-Bakati’ *pătaw
Proto Bidayuh *mătaw ‘call from far away’ Singai mataw, Serambu mataw, Biatah mataw, Bistaang mătaw, Bengoh mataw.
Proto Bakati’ *Cato Rara pato ‘call out name to ask spirit to cause harm’, Kendayan nato ‘call’. (180)
PPhil *táwaR ‘call (out)’

Proto Land Dayak **sinda?
Proto Bidayuh *săndaʔ, *sinda ‘say’ Singai sin[d]a, Gumbang sīnda, Serambu sīnda, Bratak sīnda, Serasot sin[d]a, Grogo sīna, Stass sīnda, Bukar sāndaʔ, Sadong nāndaʔ, Bibengih nāndaʔ,
Sangking janda?, Tebakang janda?, Bukar-Sadong janda?, Bunau janda?.

Proto Bakati' *saraʔ/n Rara basaran 'say', Sara/Riok ba-saraʔ 'say, talk'. (The form *saraʔ may be related to at least the first PBid form, but it is difficult to see just how)

Kembayan-A jido 'say'. (181)

Proto Land Dayak **jī?

Proto Bakati' *muji/uni0294 'say', Sara/Riok muji (final /uni0294 expected), Bekati' muji/uni0294.

Semandang je 'say, tell'. (181)

Proto Bidayuh-Bakati' *kiri?

Proto Bidayuh *kiriʔ, *kireʔ 'left (hand)' Singai kiriʔ, Stass kiriʔ, Benuk kereh (directly cognate?), Sapug kireʔ, Pinyawa' kireʔ. (183)

Proto Bakati' *saŋkiri, *saŋkiriʔ 'left (hand)' Rara saŋkiriʔ, Sara/Riok paŋkiriʔ, Kendayan saŋkiriʔ, Bekati’ saŋkiriʔ. (183) (cf. B.M. kiri 'left')

Proto Land Dayak **tāʔuh,

Proto Bidayuh *tāʔuh 'right (hand)' Singai tāʔuh, Gumbang tāʔuh, Serambu tāʔuh, Bratak tāʔuh, Serasot tāʔuh, Grogo tāʔuh, Stass tāʔuh, Biatah tāʔuh, Bistaang tāʔuh, Benuk tāʔuh, Sapug tāʔuh, Pinyawa’ tāʔuh, Bengoh tāʔuh, Anah Rais tāʔuh, Biya tāʔuh, Sembaan tu tāʔuh, Tringgus Raya tāʔuh, Tringgus Bireng tāʔuh, Bukar tāʔuh, Sadong ntāʔuh, Bibengih ntāʔuh, Sangking ntāʔuh, Tebakang tāʔuh, Bukar-Sadong ntāʔuh, Bunau ntāʔuh.

Proto Bakati' *santao, *santau 'right (hand)' Rara santaoʔ, Sara/Riok paŋtauʔ (û expected), Kendayan santauʔ, Bekati' santauʔ.

SLD 'right (hand)' Kembayan-H touh, Ribun-H taut (final h expected), Ribun-A tauh. (184)

PMP *taqú

Proto Land Dayak **dīʔu or **dāʔu?

Proto Bakati' *[d]iuʔ, 'true' Rara diyuʔ, Sara/Riok iyūʔ.

SLD 'true' Kembayan-A odok, Ribun-A oduʔ. (The Ribun-A form seems to reflect *dāʔu? > *dàuʔ? > *dàuʔ; the Kembayan form may suggest something similar). (This set may be related to the preceding one.) (184)

Proto Bidayuh *midek, *müdek 'go upriver'

Singai midek, Gumbang midek, Biatah müdek, Bistaang müdek, Sapug midek, Pinyawa' midek, Anah Rais midek, Sembaan midek, Tringgus Bireng müdek, Tebakang müdek, Bunau midek. (185)
Proto Bakati’ *dae Rara dae ‘upriver’, Sara/Riok dae ‘headwaters’. (185) (May be related to the preceding set.)

Proto Land Dayak **săaju?

SLD ‘upriver’ Kembayan-A soju?, Ribun-A soju. (185)


SLD ‘downriver’ Kembayan-A sobo?, Ribun-A sobo’. (186)

Proto Bidayuh *ăman, *ăme?, *măman ‘go downstream’ Biatah āman, Bistaang man, Benuk man, Sapug aman, Pinyawa’ man, Anah Rais āman, Sembaan āman, Tringgus Bireng āme?:, Tebakang măman, Bunan maman. (186)

Proto Land Dayak **purah, **murah,
Proto Bidayuh *purah, *puru, *puroh, *pūran, *pūrum ‘(to) plant’ Singai puruh, Gumbang puruh, Serambu puroh, Bratak puroh, Serasot puruh, Grogo puruh, Stass puruh, Biatah puruhn, Bistaang pruhn, Benuk pruhn, Sapug puruh,

Pinyawa’ purum, Bengoh purun, Anah Rais pūrun, Biya pūrun, Sembaan puran, Tringgus Roya pūrun, Tringgus Bireng pūrun, Bukar puruh, Sadong mpuroh, Bibengih mpuruh, Sangking mpuruh, Tebakang puruh, Bukar-Sadong mpuruh, Bunan mpuruh.

Proto Bakati’ *mura?, *(to) plant’ Rara mura?, Sara/Riok mura?, Kendayan mura?.

SLD ‘plant’ Kembayan-A muruh (a expected in ultima), Ribun-A muhu. (187)

Proto Land Dayak **tūruk, **nūruk
Proto Bidayuh *tūruk, *nūruk ‘dibble stick, to dibble’ Singai turuk, nuruk, Gumbang turuk, nuruk, Serambu turuk, nuruk, Serasot turuk, nuruk, Grogo turuk, Stass turuk, Biatah turuk, nuruk, Bistaang turuk, nuruk, Benuk turuk, Sapug turuk, nuruk, Pinyawa’ turuk, Bengoh turuk, Anah Rais turuk, nuruk, Biya nuruk, Sembaan turuk, nuruk, Tringgus Roya tūruk, Bukar turuk, Sadong turuk, Bibengih turuk, Tebakang turuk, Bukar-Sadong turuk, Bunan turuk, nuruk.

Rara turuk, nuruk ‘dibble stick, to dibble’.

SLD ‘dibble stick’ Kembayan-A turu”, nuru?, Ribun-A tuho” (final /uni0294 expected). (188)


Proto Land Dayak **ŋumpah, **ŋampah,
Proto Bidayuh *ŋum-pah, *paŋ ‘pound’ Singai paŋ, Gumbang paŋ, Serambu paŋ, Bratak paŋ, Serasot paŋ, Grogo paŋ, Stass paŋ, Biatah paŋ,
Proto Bakati' *ampa, 'pound' Rara ampa, Sara/Riok ampa.
SLD 'pound' Kemayan-A ŋamp/uni0259h, Ribun-A ŋimp/uni0259h.

Proto Land Dayak **risuŋ, *rå[n] suŋ

Rara ransuŋan 'mortar'.
SLD 'mortar' Kemayan-A rosuŋ, Ribun-A osuŋ (initial h expected). (191) (cf. B.M. le+súŋ)
PHF *le+súŋ Proto Land Dayak **āruh, *āruh
Proto Bidayuh *āruh 'pestle' Singai aruh, Gumbang aruh, Serambu aruh, Bratak aruh, Serasot aruh, Grogo aruh, Stass aruh, Biatah āruh, Bistaang āruh, Benuk āruh, Sapug āruh, Pinyawa’ aruh, Bengoh aruh, Anah Rais āruh, Biya āruh, Semaan āruh, Tringgus Raya āruh, Tringgus Bireng āruh, Bukar āruh, Sadong āruh, Biatah āruh, Bistaang āruh, Benuk āruh, Sapug nāpan, Pinyawa’ nāpan, Bengoh nāpan, Anah Rais āruh, Biya nāpan, Semaan nāpan, Tringgus Raya nāpan, Tringgus Bireng nāpe?: (193)

Proto Bakati' *uma, 'paddy field' Rara uma?, Sara/Riok uma?, Kendayan uma?, Kemayan-A mah 'field'. (194) (cf. B.M. huma ‘hill paddy')
PAN *qumáH Proto Land Dayak **dāyah, Proto Bidayuh *dāyah, *dāyah 'hill(side)' Bratak dayah, Biatah dayah, Bistaang dayah, Sapug dayah, Anah dayah.
Rais dāyah, Tringgus Bireng dāyah, Bukar dāyah, Sangking dāyah, Tebakang dāyah.

Proto Bakati’ *dayu,? (up)land’ Rara dayu, Sara/Riok dayu, Kendayan dayu.

SLD ‘land’ Kembayan-A dayuh, Ribun-A dood (doyuh expected). (194)

PAN *d,āya ‘inland’

Proto Bidayuh-Bakati’ *tāya ‘field, garden’ Singai tay, Gumbang tay, Serambu tay, Bratak tay, Serasot tay, Biatah tay, Bistaang tia, Benuk tay, Sapug tay, Pinyawa’ tay, Bengoh tay, Anah Rais tay, Biya tay, Tringgus Raya tay, Tringgus Bireng tay, Bukar tay, Bibengih tay, Sangking tay, Tebakang tay, Bunun tay.

Rara tay ‘garden’. (195)


Proto Bidayuh *sāwah ‘(corn) field’ Serasot sawah, Biatah sawah ‘irrigated padi field’, Semään sawah, Bukar-Sadong sawah. (195) (cf. B.M. sawah ‘wet rice field’)

Proto Bidayuh-Bakati’ *jā/ŋ ‘maize’ Serambu jagun, Bratak jagun, Serasot jagun, Bau dictionary jagum, Biatah jagun, Sapug jagun, Bengoh jagun, Biya jagun, Semaan jagun, Tringgus Raya jagun, Tringgus Bireng jagun, Bukar jagun, Sadong jagun, Sangking jagun, Tebakang jagun, Bunun jagun.

Proto Bakati’ *jag, ŋ ‘maize’ Rara jag, Sara/Riok jag, Kendayan jagok. (195) (cf. B.M. jagun ‘maize, corn’)

Proto Land Dayak **bāri

Proto Bidayuh *bāri, *bāla? ‘hut’ Singai bari, Gumbang bari, Serambu bari, Bratak bari, Serasot bari, Grogo bari, Stass bari ‘house, hut’, Biatah bari, Bistaang bri, Benuk bari, Sapug bāri, Pinyawa’ bari, Bengoh bari, Anah Rais bāri, Biya bāri, Semaan bāri, Tringgus Raya bāri, Tringgus Bireng bāri, Bukar bāri, Sadong bāl? (I is not expected), Bibengih bāri, Sangking bāri, Tebakang bāri, Bukar-Sadong bāri, Bunun bāri.

Kembayan-A bori ‘hut’. (196, 271)

PMP *balay ‘meeting house’

Proto Bakati’ *kabu/on ‘garden’ Rara kabun, Sara/Riok kabon. (196) (cf. B.M. kebun ‘garden’)

Proto Land Dayak ** läntiŋ

Proto Bidayuh *läntiŋ ‘raft’ Singai ratiŋ, Gumbang ratiŋ, Serambu ratiŋ, Bratak ratiŋ, Serasot ratiŋ, Grogo ratiŋ, Stass ratiŋ, Biatah ratiŋ, Bistaang ratiŋ, Benuk ratiŋ, Sapug ratiŋ, Pinyawa’ ratiŋ, Bengoh ratiŋ, Anah Rais ratiŋ, Biya ratiŋ, Semaan ratiŋ, Tringgus Raya ratiŋ, Tringgus Bireng atiŋ, Bukar lantiŋ, Sadong lantiŋ, Bibengih lantiŋ, Sangking lāntiŋ, Tebakang lāntiŋ, Bukar-Sadong lāntiŋ, Bunun lantiŋ.

Rara lantiŋ, rantiŋ ‘raft’.

SLD ‘raft’ Kembayan-A lantik, Ribun-A lantiŋ. (197) (cf. Perak Malay lantin ‘small raft’)

Proto Land Dayak **ărud

Proto Bidayuh *ărud ‘boat’ Singai arud, Gumbang arud, Serambu arud, Bratak arud, Serasot arud, Grogo arud, Stass arud, Biatah arud, Bistaang arud, Benuk [ă]rud, Sapug arud, Pinyawa’ arud, Bengoh arud, Anah Rais arud, Biya arud, Semaan arud, Tringgus Raya arud, Tringgus Bireng arud, Bukar ārud[:], Sadong arud, Bibengih arud, Sangking arud, Tebakang arud, Bukar-Sadong arud, Bunun arud[:].

Kendayan arud ‘boat’.

SLD ‘boat’ Kembayan-A orut, Ribun-A ohut. (198)

PPhil (Charles) *[0q]alu[dj]


Proto Bakati’ *para, ‘boat’ Rara para, Sara/Riok parau. (198) (cf. B.M. perahu ‘boat’).

PMP *para[qh]u
Proto Bidayuh *sū/uni0294ah ‘pole for poling raft’
Gumbang [bi]sū/uni0294ah, Serambu su/uni0294ah, Biatah su/uni0294ah, Bistaang su/uni0294ah, Benuk sū/uni0294ah, Sapug su/uni0294ah, Anah Rais su/uni0294ah, Biya su/uni0294ah, Sembaan sū/uni0294ah, Tringgus Raya s[u]ā/uni0294h, Tringgus Bireng sa/uni0294ah, Tebakang su/uni0294ah. (199)

Proto Bidayuh *birăsi ‘oar’ Seram su/uni0294uh, Serasot su/uni0294uh, Biatah su/uni0294uh, Bistaang su/uni0294uh, Benuk sū/uni0294uh, Sapug su/uni0294uh, Anah Rais su/uni0294uh, Biya su/uni0294uh, Sembaan sū/uni0294uh, Tringgus Raya s[u]ā/uni0294h, Tringgus Bireng sa/uni0294uh, Tebakang su/uni0294uh. (199) (apparently influenced by Malay(ic))

Proto Bidayuh-Bakati’ *kāyuh2
Proto Bidayuh *bikāyuh ‘row (v.)’ Singai ākayuh, Bratak ākayuh, Benuk īkāyuh, Bengoh īkāyuh, Tebakang ākayuh.

Proto Bakati’ *kayu1h
Proto Bidayuh-Bakati’ *kāyuh2
Proto Bidayuh *bikāyuh ‘row (v.)’ Singai ākayuh, Bratak ākayuh, Benuk īkāyuh, Bengoh īkāyuh, Tebakang ākayuh.

Proto Bidayuh *pirāmbut ‘spear’ Gumang s[ə]ramut, Grogo pirambut, Bau dictionary piramut, Biatah pirambut, Bistaang prām[ə]nut, Benuk prāmbut, Bengoh pramput, Sembaan hrāmut. (204)

Proto Bidayuh *gāsor, *āsor ‘spear’ Singai gasor, Gumang asor, Serambu asor, Bratak asor, Sersot asor ‘metal-tipped spear’, Stass asor, Bau dictionary asər. (204)

Proto Bidayuh *tumba wheels’ Bantu dictionary tumbak, Sara/Riok tumbak. (204) (Cf. B.M. tombak ‘spear’.)

Proto Land Dayak **simput, **sumput, **su[m] pit
Proto Bidayuh *sīmpot, *sumpot, *sumpit ‘blowpipe’ Singai sipot, Gumang sipot,
Proto Bakati *sumpot 'blowpipe' Rara sumpot, Sara/Riok sumpot.
SLD 'blowpipe' Kembayan-A supi't, Ribun-A supi't.
(205) (cf. B.M. sumpit 'blowpipe')

Proto Land Dayak **tarih
Proto Bidayuh *tarih, *tarin 'rope' Singai tarih, Serambu tarih, Bratak tarih, Serasot tarih, Grogo tarih, Stass tarih, Bistaang tarih, Biatah tarih, Benuk tarih, Sapug tarih, Pinyawa' tarih, Bengoh tarih, Anah Rais tarih, Biya tarih, Sembaan tarih, Tringgus Raya tarih, Tringgus Bireng tarih, Bukar tarih, Sadong tarih, Sangking tarih, Tebakang tarih, Bunun tarih, sumpit (loan?).

Proto Bakati *tari,? 'rope' Rara tari?, Sara/Riok tari?, Kendayan tari?, Bekati' tari?.
SLD 'rope' Kembayan-H toarih, Ribun-H tohais, Semandang toarih. (206) (cf. B.M. tali 'string')
PAN Cáulis ('S ???), PPhil *tali

(207)

Proto Bakati *bae 'parang' Rara bae, Sara/Riok bae. (207)

Proto Bidayah-Bakati *sibōŋ
Proto Bidayuh *sibōŋ 'sheath for parang' Singai sibōŋ, Gumbang sibōŋ, Biatah sibōŋ, Bistaang sāboŋ, Benuk si/āboŋ, Sapug sibōŋ, Pinyawa' sibōŋ, Bengoh suboŋ, Anah Rais sibōŋ, Biya sibōŋ, Sembaan si bölōŋ, Tringgus Bireng sibōŋ, Bukar sibōŋ, Sadong sibōŋ, Bibengih sibōŋ, Sangking sibōŋ, Tebakang sibōŋ, Bukar-Sadong sibōŋ, Bunun sibōŋ.

Proto Bakati *sibōŋ 'sheath of the parang' Rara sibōŋ, Sara/Riok sibūŋ. (208)

Proto Bidayuh *duoŋ 'sheath for parang' Serambu duoŋ, Bratak duoŋ, Serasot duoŋ, Grogo duoŋ, Stass duoŋ. (208)

Proto Bidayuh *sinod 'comb' Singai sinod, Gumbang sinod, Serambu sinod, Bratak sinod, Serasot sinod, Grogo sino?, Stass sinod, Biatah sinod, Bistaang sinod, Benjak sinod, hnozd, Sapug sinod, Pinyawa' sinod, Bengoh sinod, Anah Rais sinod, Biya sinod, Sembaan hnozd, Tringgus Raya sinod, Bukar sinod, Sadong sinod, Bibengih sinod, Sangking sinod, Tebakang sinod, Bukar-Sadong sinod, Bunun sinod. (209)
PPhil *sújud 'fine-tooth comb'


Proto Bidayah-Bakati *pVnāpu
Proto Bidayuh *pINāpu 'broom' Singai pīnāpu, Stass pīnāpu, Bukar pīnāpu, Bibengih pīnāpu, Sangking pīnāpu?, Tebakang pīnāpu, Bukar-Sadong pīnāpu, Bunun pīnāpu.
Rara pānāpu 'broom'. (210) (cf. B.M. penyapu 'broom')
PMP *sapu
Proto Bidayuh-Bakati' *

Proto Bidayuh *ɲāyam or *ɲāgam 'weave' Biatah ɲāgam, Bistaang ɲāgam, Benuk ɲāgam, Pinyawa'ayam, ɲāgam Bengoh ɲāgam, Anah Rais ɲāgam, Biya ɲayam, Tringgus Raya ɲāyam, Bukar ɲāgam. (211)

Rara barayapm 'weave'. (211) (cf. B.M. anyam 'plait'.)

PMP *a/uni0272am 'weave, raid'

Proto Bidayuh *ŋu-ndah, *ŋunda, *nday 'make, weave, do' Singai nday, Gumang nday, Serasot nday, Stass nday, Bau dictionary nday, Biatah nday, Sapug nday, Biya nday, Sembaan nday, Tringgus Raya ndah, Tringgus Bireng nah, Sadong ŋunah, Sangking ŋunda, Bukar-Sadong ŋundah, Bunan ŋundah. (211)

PHN *laja, PPhil *lája

Proto Bidayuh *pā/uni0294an, *nipan 'weave' Seram pā/uni0294an, Bratak pā/uni0294an, Serasot pā/uni0294an, Grogo pā/uni0294an, Serian dictionary nipan. (211)

Proto Bidayuh *nāsa, *ŋasi, */uni0272uso 'weave'

Singai n/uni0259sa, Serasot n/uni0259sa, Sem̂aan ŋasi, Bukar /uni0272uso. (211)

Proto Land Dayak **/uni0272i/uni0294it, **jī/uni0294it, **/uni0272ăhit

Proto Bidayuh */uni0272ī/uni0294it, *jī/uni0294it 'sew'

Singai /uni0272i/uni0294it, Gumang ni/uni0294it, Seram̂u /uni0272i/uni0294it, Bratak /uni0272i/uni0294it, Serasot /uni0272i/uni0294it, Grogo /uni0272i/uni0294it, Stass /uni0272i/uni0294it, Biatah /uni0272i/uni0294it, Bistaang /uni0272i/uni0294it, Benuk /uni0272ī/uni0294it, Sapug /uni0272i/uni0294it, Bengoh /uni0272i/uni0294it, Anah Rais /uni0272i/uni0294it, Biya /uni0272ī/uni0294it, Sem̂aan /uni0272ī/uni0294it, Tringgus Raya /uni0272ī/uni0294it, Tringgus Bireng /uni0272i/uni0294it, Bukar /uni0272i/uni0294it, Sadong /uni0272i/uni0294it, Bîengih /uni0272i/uni0294it, Sangking /uni0272i/uni0294it, Têakang /uni0272ī/uni0294it, jī/uni0294it, Bukar-Sadong /uni0272i/uni0294it, Bunan /uni0272i/uni0294it.

Proto Bakati' */uni0272ahi

1t 'sew' Rara /uni0272ait (medial h expected), Sara/Riok /uni0272ait, Kendayan /uni0272ahit, Bekati' nait. (cf. Salako /uni0272ahit 'sew')

SLD 'sew' Kem̂ayan-H ni't, Kem̂ayan-A ni't, jī/t, Ribun-H noye?, Semandang /n̂a/uni0272oit. (212)

PMP *záqit

Proto Land Dayak **n̂i̍t, **ji̍t, **p̂áhit

Proto Bidayuh *n̂i̍t, *ji̍t 'sew' Singai n̂i̍t, Gumbang n̂i̍t, Serambu n̂i̍t, Bratak n̂i̍t, Serasot n̂i̍t, Grogo n̂i̍t, Stass n̂i̍t, Biatah n̂i̍t, Bistaang n̂i̍t, Benuk n̂i̍t, Sapug n̂i̍t, Pinyawa' n̂i̍t, Bengoh n̂i̍t, Anah Rais n̂i̍t, Biya n̂i̍t, Sembaan n̂i̍t, Tringgus Raya n̂i̍t, Bukar n̂i̍t, Sadong n̂i̍t, Bibengih n̂i̍t, Sangking n̂i̍t, Têbakang n̂i̍t, Bukar-Sadong n̂i̍t, Bunan n̂i̍t.

Propto Bakati' *n̂ahi/t 'sew' Rara n̂a/t (medial h expected), Sara/Riok n̂a/t, Kendayan n̂ahit, Bekati' n̂ait. (cf. Salako /uni0272ahit 'sew')

SLD 'sew' Kem̂ayan-H ni't, Kem̂ayan-A ni't, jī/t, Ribun-H noye?, Semandang /n̂a/uni0272oit. (212)

PMP *záqit

Proto Land Dayak **jārum 'needle' Bukar jārum, Sadong jārum, Bibengih jārum, Têbakang jārum, Bukar-Sadong jārum, Bunan jārum.

Rara jarupm 'needle'.

SLD 'needle' Kem̂ayan-A jarup, Ribun-A jahi/uni0261ŋ (<*jārim ?). (213) (cf. B.M. jarum 'needle')

PAN *Zárum

Proto Bidayuh *u-tos, *ā-tos 'needle' Singai tos, Gumbang tos, Serambu tos, Bratak tos, Serasot tos, Grogo tos, Stass tos, Biatah utos, Bistaang tos, Benuk tos, toh, Sapug tos, Pinyawa' tos, Bengoh tos, Anah Rais tos, Biya ātos, Sennam tos, Tringgus Raya tos, Tringgus Bireng tos, Songking tos. (213)

Proto Land Dayak **uri?


SLD 'medicine' Kem̂ayan-A uri?, Ribun-A uhi'.

(214)

Proto Bidayuh-Bakati' *ūbat

Proto Bidayuh *ūbat 'medicine' Singai ubat, Gumbang ubat, Serambu ubat, Bratak ubat, Serasot ubat, Grogo ubat, Stass ubat, Biya ubat, Sennam ubat, Tringgus Raya ubat, Tringgus Bireng ubat.

Proto Bakati' *ub̂at 'medicine' Rara ubat, Sara/Riok ubat.

Kem̂ayan-A obat (initial u expected) 'medicine'. (214) (cf. B.M. ubat 'medicine')

PPhil *[gR]úb̂at 'woods'

Proto Land Dayak **p̂ādi

Proto Bidayuh *p̂ādi 'unhusked rice' Singai pādi, Gumbang pādi, Serambu pādi, Bratak pādi, Serasot pādi, Grogo pādi, Stass pādi, Biatah pādi, Bistaang p[ā]di, Benuk pādi, Sapug pādi, Pinyawa' pādi, Bengoh pādi, Anah Rais pādi, Biya pādi, Sennam pādi, Tringgus Raya pādi, Tringgus Bireng pādi, Bukar pādi, Sadong pādi,
Proto Bakati’ *pade, ‘unhusked rice’ Rara pade, Sara/Riok pade, Kendayan pade.
SLD ‘unhusked rice’ Kemayan-A podi, Ribun-A podi. (215) (cf. B.M. padi ‘rice in the husk’)

Proto Bakati’ *nasi?, ‘cooked rice’ Rara nasi?, Sara/Riok nasi?. (217) (cf. B.M. nasi ‘cooked rice’)


Proto Bakati’ *naha, ‘husked rice’ Rara naha, Sara/Riok naha, Kendayan naha. (The PBak forms appear to relate more directly to PHF whereas the others seem to be influenced by Malayic.)
SLD ‘husked rice’ Kemayan-A oras, Ribun-A ohah. (216) (cf. B.M. oras ‘rice without husk’)

Proto Bidayuh *kabaŋ ‘coarse rice husk’ Bukar kabaŋ, Bunun-Terbat kabaŋ, Serian dictionary kabaŋ ntulo ‘egg shells’. (218)

Proto Land Dayak **tūbi?
SLD ‘cooked rice’ Kemayan-A tūbi?, Ribun-A tūbi?. (217)

Proto Bidayuh *sunķoy ‘cooked rice’ Gumbang suŋkoy ‘rice cooked in leaves’, Bengoh suŋkoy ‘rice offering’, Bukar suŋkoy, Sadong suŋkoy, Bibengih suŋkoy, Sangking suŋkoy, Tebakanç suŋkoy, Bukar-Sadong suŋkoy, Bunun suŋkoy.

(217)

Proto Bidayuh-Bakati’ *siha?
Proto Bakati’ *sia, ‘salt’ Rara sia, Sara/Riok sia, Kendayan sia, Bekati’ sia. These sets appear to be cognate in spite of the semantic difference.

Proto Land Dayak **nănuk, **tanak
Proto Bidayuh *nănuk, *tanak ‘cook’ Singai tan(d)ak (a voiced stop following the nasal in Singai and Grogo is not supported elsewhere), Gumbang tanak, Serambu tanak, Bratak tanak, Serasot tanak, Grogo tando?, Stass tanak, Biatah tănak, Bistaang tănak, Sapug tanak, Pinyawa’ tănak, Bengoh tănak, Anah Rais tanak, Biya tănak, Sembaan tănak, Tringgus Raya tănak, Tringgus Bireng nănak, Bukar nănak, Sadong nănak, Bibengih nănak, Sangking nănak, Tebakang nănak, tănak, Bukar-Sadong nănak, Bunak nănak.

Proto Bakati’ *nanu,k ‘cook’ Rara nanuk, Sara/Riok nanuk, Bekati’ nanuk.

S LD ‘cook’ Kembayan-A nana?, butana?, Ribun-A nono?. (222)

Proto Bidayuh-Bakati’ *pVriok

Proto Bakati’ *pariok ‘cooking pot’ Rara pariok, Sara/Riok pariok. (223) (cf. B.M. periuk ‘cooking pot’)


Proto Bidayuh-Bakati’ *sândok
Proto Bidayuh *sânduk ‘dipper’ Singai sanuk, Serambu sănduk, Biatah sănduk, Anah Rais san[d]uk, Tringgus Raya săn[d]uk, Bukar

Proto Land Dayak **lănâk
Proto Bidayuh *lănâk ‘fat (noun)’ Gumbang rănâk, Serambu rănâk, Bratak rănâk, Serasot rănâk, Grogo rănâk, Stass rănâk, Biatah (pi)rănâk, Bistaang rănâk, Benuk rănâk, Sapug rănâk, Pinyawa’ rănâk, Bengoh rănâk, Biya rănâk, Sembaan rănâk, Tringgus Bireng rănâk, Bukar lănâk, Sadong lănâk, Sangking lănâk, Tebakang lănâk, Bukar-Sadong lănâk, Bunak lănâk. (220)

Proto Bakati’ *lama,k ‘fat’ Rara lama/k, Sara/Riok lama/k, Bekati’ lama/k.


PHN *tabé?, PPhil *tabáq

Proto Bidayuh *i-jo[?] ‘oil, fat’, Singai jo?, Gumbang jo?, Biatah ijo, Sapug jo?, Sembaan jo, Serian dictionary ijo. (220)

PMP *mjiak, PPhil *lâna ‘(vegetable) oil’

Rara jinok ‘dip(per)’. (224) (cf. B.M. senduk ‘ladle’)

Proto Land Dayak **ăpi, **ăpuy
Proto Bidayuh *ăpuy ‘fire’ Singai ăpuy, Gumbang ăpuy, Serambu ăpuy, Bratak ăpuy, Serasot ăpuy, Grogo ăpuy, Stass ăpuy, Biatah ăpuy, Bistaang ăpuy, Bunan ăpuy.

Proto Bakati’ *api, ‘fire’ Rara api, Sara/Riok api, Kendayan api, Bekati’ api.

SLD ‘fire’ Kemayan-H opi, Riun-H opi, Riun-A opi. (225) (cf. B.M. a ‘ashes, dust’)

PAN *qa[h] ‘dust’, PMP *dapúR ‘hearth’

Proto Bidayuh *bâhah, *baha ‘charcoal’ Singai bâah, Serambu bâah, Serasot bâah, Stass bâah, Bau dictionary bâah, Biatah bâah, Benuk bâah, Sapug bâah, Tringgus Raya bâah, Tringgus Bireng bâah, Sangking bâaha, Serian dictionary bâaha. (226)

PAN (Z) *bâRaH ‘red hot embers’

Proto Bidayuh *bâtap ‘spark’ Sapug bâtap, Pinyawa’ bâtap, Bengoh bâtap, Bukar bâtap, Tebakang bâtap. (226)


Proto Bidayuh *úhaŋ, *uh/uni294 ‘firewood’ Biatah úhaŋ, Bistaang úhaŋ, Benuk úhaŋ, Sapug úhaŋ, Pinyawa’ úhaŋ, Bengoh úhaŋ, Biya úhaŋ, Semaan úhaŋ, Trangkung úhaŋ, Tebakang úhaŋ, Bukar-Sadong úhaŋ, Bunau úhaŋ. (227)

Proto Land Dayak **tûŋku?, **tâŋku?
Sara/Riok tûŋku? ‘hearth stones’.
SLD ‘cooking stones’ Kemayan-A tûŋko?, Ribun-A tûŋkow. (228) (cf. B.M. tûŋku dapur ‘stones for a simple stove’)

Proto Land Dayak **āsap, **āsup, **āsu[h]

Proto Land Dayak **dâbu
Proto Bidayuh *dâbu ‘dust’ Singai dâbu, Bukar dâbu, Sadong dâbu, Serian dictionary dâbu.
Proto Bidayuh *āsuh, *āsap ‘smoke’ Singai asuh, Gumbang asuh, Serambu asuh, Bratak asuh, Serasot asuh, Grogo asuh, Stass asuh, Biatah āsuh, Bistaang āsuh, Benuk āsuh, Sapug asuh, Pinyawa’ āsuh, Bengoh asuh, Anah Rais āsuh, Biya asuh, Sembaan āsuh, Tringgus Raya āsuh, Tringgus Bireng āsuh, Bukar āsuh, Sadong āsap, Bibengih āsap, āsap, Sangking asuh, Tebakang āsap, Bukar-Sadong asap, Bunan āsap.

Proto Bakatī’ *asu ‘smoke’ Rara asup, Sara/Riok asup, Kendayan asup, Bekati’ asup.


PMP *qasúh

Proto Land Dayak **/uni0272ăhu[h], **săhu[h], **sāhu[h] ‘urn’ Singai /uni0272/uni0259/uni0294uh, s/uni0259/uni0294uh ‘urned’, Gumang /uni0272/uni0259/uni0294uh, s/uni0259/uni0294uh, Seram/uni0272/uni0259uh, s/uni0259uh, Bratak /uni0272/uni0259/uni0294uh, s/uni0259/uni0294uh, Serasot /uni0272/uni0259/uni0294uh, s/uni0259/uni0294uh, Grogo /uni0272/uni0259/uni0294uh, Stass /uni0272/uni0259/uni0294uh, Biatah /uni0272au, Bistaang sau, Sapug sau, Anah Rais /uni0272au, Biya /uni0272au, Semaan /uni0272uhu, /uni0272ăhu, Tringgus Raya /uni0272ăhu, Tringgus Bireng /uni0272ău, Bunan /uni0272/uni0259hu, s/uni0259hu, sahu.

Proto Bakatī’ *ahuv /uni0272ahu ‘urn’ Rara /uni0272ahu, Sara/Riok /uni0272au, Kendayan /uni0272aho, Bekati’ /uni0272auŋ (ŋ unexpected).

Kemayan-A sou, sau ‘urn’. (231)

PPhil *pásuq ‘hot, urned’ (cognate?)

Proto Bidayuh *ālak ‘urn’ Sadong /uni0272alak, Biengih /uni0272alak, Sangking /uni0272alak, Teakang /uni0272ālak, Bukar-Sadong /uni0272ālak. (231) Cf. also *nsălak ‘red’ (331).

Proto Bakatī’ *asoh, *āsuh2 ‘full (person)’ Singai man, Gumbang man, Serambu man, Bratak man, Serasot man, Grogo man, Stass man, Biatah man, Bistaang man, Benuk man, Sapug man, Pinyawa’ man, Bengoh man, Anah Rais man, Biya man, Semaan man, Tringgus Raya meŋ, Tringgus Bireng meŋ?, Bukar maʔan, Sadong maʔan, Bibengih maʔan, Sangking maʔan, Tebakang maʔan, Bukar-Sadong maʔan, Bunan maʔan.

Proto Bakatī’ *una, *maʔan ‘eat’ Rara uman, Sara/Riok uman, Kendayan uman, Bekatī’ uman.

Kembayan-H man ‘eat’. (232)

PAN (Z) *káʔan, PHN *amaq

Proto Land Dayak **saburuk ‘hungry’ Rara saburuk, Sara/Riok saburuk.

SLD ‘hungry’ Kemayan-A si/uni0259r/uni0294a, Riun–A si/uni0259iho. (233)

Proto Bidayuh *biwa/uni02D0n ‘hungry’ Semaan biwa, Tringgus Raya biwa, Tringgus Bireng biwa. (233)

Proto Land Dayak **bisuh, **būsuh, **băsuh2 ‘full’ (person)’ Singai busoh, Gumbang busoh, Serambu busoh, Bratak busoh, Serasot busoh, Grogo busoh, Stass busoh, Biatah busoh, Bistaang b[ā]soh, Benuk b[i]soh, Sapug busoh, Pinyawa’ busoh, Bengoh busoh, Anah Rais busoh, Biya busoh, Semaan soh, Tringgus Raya būsoh, Tringgus Bireng būsoh, Bukar busoh, Sadong busoh, Bibengih busoh, Sangking busoh, Tebakang busoh, Bukar-Sadong busoh, Bunan busoh.


Proto Land Dayak **n/nahap

Proto Bidayuh *nahap, *nihɒp ‘suck’ Singai ŋuop, Gumbang ŋuop, Serambu ŋuop, Bratak ŋuop,

SLD ‘drink’ Kemayan-H ɲaŋp (< *ŋaŋp-), Ribun-H ninde? (d not expected in either Ribun form), Ribun-A ɲindi?, Semandang inup (< *na/ihap). (235, 146)

PPhil *hiRup ‘sip (noisily)’

Proto Bidayuh *noŋk ‘drink’ Singai nok, Gumbang nok, Serambu nok, Bratak nok, Serasot nok, Grogo nok, Stass nok, Biatah nok, Bistaang nok, Benuk nok, Sapug nok, Pinyawa’ nok, Bengoh nok, Anah Rais nuŋok, Biya nok, Sembaan nok, Tringgus Raya nok, Tringgus Bireng moŋ? (form unexplained). (235)

Proto Land Dayak **āsəŋ
Proto Bidayuh *āsəŋ ‘feeling, soul’ Singai asəŋ, Bratak asəŋ, Serasot asəŋ, Grogo asəŋ, Stass asəŋ, Biatah asəŋ, Benuk asəŋ, Sapug asəŋ, Pinyawa’ asəŋ, Bengoh asəŋ, Biya asəŋ, Tringgus Raya āsəŋ, Tringgus Bireng āsəŋ, Serian dictionary asəŋ ‘breath, mind’.

Proto Bakati’ *asəŋ ‘breath, inside’ Rara asukŋ, Sara/Riok pamasukŋ.

SLD ‘breathe’ Kemayan-A ɲaŋp, Ribun-H ɲaŋp, Ribun-A asəŋ (perhaps uŋ would be a better fit in both Ribun forms) ‘voice’. (236, 181)

Proto Bidayuh *āsə ‘thirsty’ Singai aus, Biatah āus, Bistaang āus, Sapug āwus, Pinyawa’ aus, Bunun aus. (236) (cf. B.M. haus ‘thirsty’)

Proto Land Dayak **badəŋ
Proto Bidayuh *badəŋ or *bədəŋ ‘land turtle’ Serasot badəŋ, Bau dictionary badəŋ, Biatah badəŋ, Serian dictionary bədəŋ or bədəŋ.

Kemayan-A badəŋ ‘turtle’. (236)

Proto Land Dayak **nəran, **təran, **nirin

Proto Bakati’ *naraŋ ‘swallow’ Rara narutn, Sara/Riok narun.

Kemayan-A niriŋ ‘swallow’. (237)

PAN (D) *təlæn

Proto Bidayuh-Bakati’ *pətʃet
Proto Bidayuh *pətʃet ‘bitter’ Singai paŋit, piŋit, Gumbang paŋit, Serambu paŋit, Bratak paŋit, Serasot paŋit, Grogo paŋit, Stass paŋit, Biatah paŋit, Bistaang paŋit, Benuk paŋit, Sapug paŋit, Pinyawa’ paŋit, Bengoh paŋit, Anah Rais paŋit, Biya paŋit, Sembaan paŋit, Tringgus Raya paŋit, Tringgus Bireng paŋit, Bukar paŋit, Sadong paŋit, Bibengih paŋit, Sangking paŋit, Tebakang paŋit, Bukar-Sadong paŋit, Bunun paŋit.

Proto Bakati’ *peet ‘bitter’ Rara peet, Sara/Riok peet, Kendayan peet. (238)

PPhil *paŋit ‘bitter, sour’

Proto Bidayuh-Bakati’ *masam
Proto Bidayuh *masam, *məsam ‘sour’ Singai masom, Gumbang masom, masəŋ, Serambu masom, Bratak masom, Serasot masom, Grogo masom, Stass masom, Biatah məsam, Bistaang məsam, Benuk məsam, Sapug məsam, Pinyawa’ məsam, Bengoh məsam, masəm, Anah Rais məsam, Biya məsam, Sembaan məsam, Tringgus Raya məsam, Tringgus Bireng məsam, Bukar məsam, Sadong məsam, Bibengih məsam, Sangking məsam, Tebakang məsam, Bukar-Sadong məsam, Bunun masom.

Rara masom ‘sour’. (239) (cf. B.M. masam ‘sour’.)

Proto Bidayuh-Bakati’ *āsəŋ
Proto Bidayuh *āsəm* ‘mango’ Singai asəm, Stass asəm, Biatah āsəm, Bengoh asəm, Tringgus Raya āsəm, Tringgus Bireng āsəm.

Proto Bakati’ *asum* ‘mango (buah asam)’ Rara asum, Sara/Riok asum. (424) (cf. B.M. asam ‘sour’)

PAN *qal+sem*, PHN *la-sem*

Proto Bidayuh-Bakati’ *bă/mih/s*

Proto Bidayuh *bănih* ‘sweet’ Bau dictionary a/uni0272ih ‘honey bee’, Biatah /uni0272i/uni0272is, Bistaang /uni0272i/uni0272is, /uni0272i/uni0259/uni0272is/h, Pinyawa’ /uni0272i/uni0259/uni0272is, Serian dictionary a/uni0272ih ‘bee’.

Proto Bakati’ *mami* 1 s ‘sweet’ Rara mamis, Sara/Riok mamih. (240) It is not certain that the Bidayuh and Bakati’ forms are related; the Bidayuh may have developed from the PMP form * below and the Bakati’ from the PHN form. (cf. B.M. manis ‘sweet’)

PAN *aŋSiS* ‘fragrant’, PHN *e+mís* ‘sweet’, PMP (A) *wani* ‘bee’

Proto Bidayuh *sĭdi/uni02D0/uni0294* ‘sweet’ Singai sidi/uni0294, Biatah sidi/uni0294/uni0272ih ‘honey bee’, Bistaang /uni0272i/uni0272is, /uni0294/uni0272is ‘honey bee’, Benuk /uni0272i/uni0259/uni0272is, Sapug /uni0272i/uni0259/uni0272is, Seruan /uni0294/uni0272is, Tringgus Raya sidi/uni0294, Tringgus Bireng sidi/uni0294, Bukar sidi/uni0294, Sadong sidi/uni0294, Biangih sidi/uni0294, Sangking sidi/uni0294, Tebakang sidi/uni0294, Bukar-Sadong sidi/uni0294, Bunan sidi/uni0294. (240)

Proto Land Dayak **Ră/uni0294ih** 1 Proto Bidayuh *lă/uni0294ih, *lă/uni0294i* ‘ginger’ Singai r/uni0259/uni0294i, Gumang r/uni0259/uni0294i, Seramū r/uni0259/uni0294i, Bratak r/uni0259/uni0294i, Serasot r/uni0259/uni0294i, Grogo r/uni0259/uni0294i, Stass r/uni0259/uni0294i, Biatah ră/uni0294i, Bistaang ră/uni0294i, Benuk ră/uni0294i, Sapug ră/uni0294i, Bengoh ră/uni0294i, Anah Rais ra/uni0294i, Biya ră/uni0294i, Sembaan bă/uni0294i, Tringgus Raya bă/uni0294i, Tringgus Bireng bă/uni0294i, Bukar bă/uni0294i, Sadong bă/uni0294i, Bibengih bă/uni0294i, Sangking bă/uni0294i, Tebakang bă/uni0294i, Bukar-Sadong bă/uni0294i, Bunan bă/uni0294i.

Rara ria/uni0294 (assuming that this form is directly cognate, it seems to have undergone a metathesis of the vowels) ‘ginger’.

Kemayan-A roih ‘ginger’. (241)

PMP *laquya, PPhil *ləqíya, *laqúya*
PAN (D) *musipa ‘chew betel’, PPhil *mamâq ‘chew (betel)’

Proto Land Dayak **bijnuh, **bunuh,

Proto Bidayuh *bijnuh, *bunuh, *bunoh ‘lime’
Singai bunuh, Gumbang bunuh, Serambu bunuh, Bratak bunuh, Serasot bunuh, Grogo bunuh, Stass bunuh, Biatah bunuh, Bistaang bunuh, Benuk b[i]nuh, Sapug bunuh, Pinyawa’ bunuh, Bengoh bunuh, Anah Rais bunuh, Biya bunuh, Sembaan bunuh, Tringgus Raya bunuh, Tringgus Bireng bunuh, Bukar bunuh, Sadong bunuh, Bibengih bunuh, Sangkings bunuh, Tebakang bunuh, Bukar-Sadong bunuh, Bunau bunuh.

Proto Bakati’ *buju ? ‘lime’ Rara buju?, Sara/Riok buju?.

SLD ‘lime’ Kembayan-A bunuh, Ribun-A bunuh (bunuh expected). (245)

Proto Land Dayak **bāram
Proto Bidayuh *bāram ‘wine’ Bistaang bāram, Benuk bāram, Bengoh bāram, Anah Rais bāram, Biya bāram, Sembaan bāram, Tringgus Raya bāram, Tringgus Bireng bāram, Bukar bāram, Bibengih bāram.

Rara bāram ‘wine’.
Kembayan-A bōrap ‘wine’. (246) (cf. B.M. beram ‘liquor made from fermented rice’)

Proto Land Dayak **sūdi?, **sādi?, **ădi?

Proto Bakati’ *sade, ? ‘younger sibling’ Rara sade?, Sara/Riok sade?, Bekati’ sade?.


Semandang ode? (? not expected; it may be that this form and perhaps others from the Southern dialects reflect a final *k, as in B.M.). (247) (cf. B.M. adik ‘younger sibling’)

PAN (Z) *Sâji?

Proto Land Dayak **sāma?, **ămaŋ (vocative form?)


SLD ‘father’ Kembayan-H oma, Ribun-H maŋ, Ribun-A maŋ. (248)

PAN (Z) *amá ‘father (vocative)’, PHN *amâŋ ‘father (vocative)’

Proto Bidayuh *bābay ‘grandfather’ Gumbang bābay, Tringgus Raya babay ‘great grandfather/grandmother’, Bunau babay.

Ribun-A babay (baba expected if *babay) ‘grandfather’. (248)

Proto Land Dayak **sinda?, **ănda?, **ĩnda?
Proto Bakati' *sindo, 'mother' Rara sino, Sara/Riok sinû, Kendayan sinû, Bekati' sindu.

SLD 'mother' Kembayan-A na, 'thumb (mother-finger)', Ribun-H ndu, Ribun-A ndo, Semandang ino (? not expected in the Ribun and Semandang forms). (249)

Proto Land Dayak **āyaŋ
Proto Bidayuh *[C]āyaŋ Bau dictionary mayaŋ 'grandparent', Bunun syaŋ 'mother', Serian dictionary (one form) tayaŋ 'grandmother'. This set may be related to the one immediately following.

Kembayan-A oya 'mother'. (249)

Proto Land Dayak **tăyuŋ
Proto Bidayuh *tăyuŋ 'grandmother' Biatah tayuŋ 'great grandmother', Pinyawa' tayuŋ, Bunan tayuŋ, Serian dictionary (one form) tayuŋ.

Kembayan-A toyu 'grandmother'. (249)

Proto Land Dayak **băn, **băn

Proto Bakati’ *banu,n 'husband' Rara banun, Sara/Riok banun, Kendayan banun, Bekati’ banun.
Proto Land Dayak **dāyuŋ
Proto Bidayuh *dāyuŋ 'woman' Singai dayuŋ, Gumbang dayuŋ, Serambu dayuŋ, Bratak dayuŋ, Serasot dayuŋ, Grogo dayuŋ, Stass dayuŋ, Biatah dāyuŋ, Bistaang dayuŋ, Benuk dāyuŋ, Sapug dayuŋ, Pinyawa' dayuŋ, Bengoh dayuŋ, Anah Rais dayuŋ, Biya dayuŋ, Sembaan dāyuŋ, Tringgus Raya dayuŋ, Tringgus Bireng dāyuŋ, Bukar dāyuŋ, Sadong dayuŋ, Bibengih dayuŋ, Sangking dāyuŋ, Tebakang dāyuŋ, Bukar-Sadong dāyuŋ, Bunan dayuŋ.
SLD 'woman' Kembayan-H dayuŋ, Ribun-H nayuŋ, Ribun-A dayuŋ, nayuŋ, Semandang dayuŋ. (253)
PPhil *dayaŋ
Proto Bakati' *mahu, [ŋ] 'woman' Rara mahu, Sara/Riok mau, mauŋ, Kendayan mahû, Bekati’ mauŋ. (253)
Proto Bidayuh *ūban ‘widow’ Biatah uban, Bistaang ban, nak ban ‘son/daughter-in-law’, Sapug uban, Pinyawa’ uban, Bengoh uban, Anah Rais ban, Tringgus Bireng ban. (254)
Proto Land Dayak **ānak
Proto Bidayuh *ānak ‘child’ Singai anak, Gumbang anak, Serambu anak, Bratak anak, Serasot anak, Grogo anak, Stass anak, Biatah anak, Bistaang ānak, Benuk nak, Sapug anak, Pinyawa’ (a)nak, Bengoh anak, Anah Rais ānak, Biya ānak, Sembaan ānak, Tringgus Raya ānak, Tringgus Bireng ānak, Bukar ānak, Sadong ānak, Bibengih ānak, Sangking ānak, Tebakang ānak, Bukar-Sadong ānak, Bunan ānak.
Proto Bakati’ *ana, k ‘child’ Rara anak, Sara/Riok anak, Kendayan anak.
Proto Bidayuh-Bakati’ *sook Sapug anak so: ‘child’. (256)
Proto Bakati’ *sook Rara sook, Kendayan sook ‘person’. (257)

Proto Bidayuh-Bakati’ *sook Sapug anak so: ‘child’. (256)
Proto Bakati’ *sook Rara sook, Kendayan sook ‘person’. (257)
Proto Bidayuh *diŋan, *diŋe? ‘friend’ Singai diŋan, Gumbang diŋan, Serambu diŋan, Bratak diŋan, Serasot diŋan, Grogo diŋan, Stass diŋan, Biatah diŋan, Bistaang diŋan, Benuk diŋan, Sapug diŋan, Pinyawa’ diŋan, Bengoh diŋan, Anah Rais diŋan, Biya diŋan, Sembaan gŋan,
Tringgus Raya dijang, dànan, Tringgus Bireng dijè?, dàne?, Bukar dijang, Sadong dijang, Bibengih dijang, Sangking dijang, Tekabang dijang, Bukar-Sadong dijang, Bunan dijang.

(258) (cf. B.M. 'dengan 'friend')
PAN (D) *[dd]ànan 'companion, friend'

Proto Bidayuh-Bakati' *ulun
Proto Bidayuh *úlun 'slave' Singai urun, Seramú urun, Bratak urun, Serasot urun, Biatah urun, Serasot úrun, Sapug úrun, Tringgus Raya útan, Tringgus Bireng útan, Bukar útan, Sadong útan, Biengih útan, Sangking útan, Teakang útan, Bukar-Sadong útan, Bunan útan.

Rara ulun 'slave'. (259) (cf. B.M. ulun 'slave')


Proto Land Dayak **ădan, **ga?an-an
Proto Bidayuh *ădan, *dan, *gànan ‘name’ Singai adan, Gumbang adan, Serambu adan, Bratak adan, Serasot adan, Grogo adan, Stass adan, Biatah dan, Bistaang dan, Benuk dan, Sapug dan, Pinyawa’ gànân, Bengoh dan, Anah Rais gànân, Biya gànân, Serasot gánan, Grogo gánan, Sangking gânan, Tekabang gânân, Bukar-Sadong gânan, Bunan gânan. Cf. also *gànan ‘body’ (69).

Proto Bakati’ *gaa,n ‘name’ Rara gatn, Sara/Riok gazn, Kendayan gat, Bekati’ gatn.


(260)
PMP *ájan

Proto Land Dayak **panday
Proto Bidayuh *pânday ‘can’ Singai panyay ‘know how’, Tringgus Raya pânday, Serian dictionary panday.

Proto Bakati’ *pan[d]e ‘know’ Rara panane (repeated form ?), Sara/Riok pane, Kendayan pane, Bekati’ pande. (519)

SLD ‘know’ Kembayan-A panay (panay expected), Ribun-A panda. (261) (cf. B.M. pandai ‘clever, intelligent’)


Proto Bakati’ *jua,l ‘sell’ Rara jual, Sara/Riok jual.

SLD ‘sell’ Kembayan-A jual, jual, Ribun-A jua. (262) (cf. B.M. jual ‘sell’)

Proto Land Dayak **mīrih, **bīrih, **mirīh
Proto Bidayuh *mīrih, *bīrih, *mirīh ‘buy’ Singai miris, Gumbang mirih, Serambu mirih, Bratak mirih, Serasot mirih, Grogo mirih, Stass mirih, Biatah miris, Bistaang miris, Benuk miris, Sapug miris, Pinyawa’ miris, Bengoh miris, Anah Rais mirih, Biya mirih, Semban mlîh,
Proto Bakati' *mari 'buy' Rara mari, Sara/Riok mari.

SLD 'buy' Kembayan-A mirih, birih, Ribun-A mihi[s]. (263) (cf. B.M. beli 'buy')

PAN *beli

Proto Land Dayak **ūtaŋ

Proto Bakati’ *utaŋ 'debt, owe' Rara utakŋ, arutakŋ, ŋutakŋ, Sara/Riok utakŋ, autakŋ. SLD 'debt, owe' Kembayan-A uuta, Riūn-A toaŋ, ŋutoaŋ. (264) (cf. B.M. hutan/uni0261 'debt')

PHN *qutaŋ

Proto Land Dayak **bāyar, **māyar
Proto Bidayuh *bāyar, *māyar 'pay' Singai bayar, Gumbang bayar, Serambu bayar, Serasot bayar, Grogo bayar, Stass bayar, Biatah bāyar, Bistaang bayar, Benuk bāyar, Sapug bayar, Pinyawa' bayar, Bengoh bayar, Anah Rais bayar, Biya bayar, Semaan bayar, Tringgus Raya bayar, Tringgus Bireng bayar, Bukar māyar, Sadong māyar, Bibengih māyar, Sangking māyar, Tebakang māyar, Bukar-Sadong māyar, Bunau bayar, mayar.

Rara mayar 'pay'.

SLD 'pay' Kembayan-A mayar, bayar, Ribun-A mayiŋh. (265) (cf. B.M. bayar 'pay')

PHN *bāyad₂, PPhil *bāyad 'pay', *bāyād 'paid'

Proto Bidayuh *sinsin, *sinsin, *kiŋkin 'ring'
Singai sisiŋ, Gumbang sisiŋ, Serambu sisiŋ, Bratak sisiŋ, Serasot sisiŋ, Grogo jinjin, Stass sisiŋ, Biatah sisiŋ, Bistaang sisiŋ, Benuk sisiŋ, Sapug sisiŋ, Pinyawa' sisiŋ, Bengoh sisiŋ, Anah Rais sisiŋ, Biya sisiŋ, Semaan sisiŋ, Tringgus Raya sisiŋ, Tringgus Bireng sisiŋ, Bukar cincin, Sadong cincin, Bibengih cincin, Sangking cincin, Tebakang kiŋkin, Bukar-Sadong kiŋkin, Bunau kiŋkin. (266) (cf. B.M. cincin 'ring'; probably ultimately from Chinese.)

PHN *cij + cin

Proto Land Dayak **tahap, **tahap
Proto Bidayuh *tahap, *tāhop 'loincloth' Singai taop, Gumbang taop, Serambu taop, Bratak taop, Serasot taop, Grogo taub, (...ap expected), Stass taop, Bau dictionary taap, Biatah tāap, Bistaang taop, Benuk taop, Sapug taop, Pinyawa' taap, Bengoh taap, Anah Rais tāap, Biya tāap, Semaan tāhap, Tringgus Raya tāhap, Tringgus Bireng tāap, Bukar tahap, Sadong tahab, Bibengih tahap, Sangking tahap, Tebakang tahap, Bukar-Sadong tahap, Bunau tahap.

SLD 'loincloth' Kembayan-A tāhy (a expected in ultima), Ribun-A tii/i? (tii? expected). (267)

Proto Bidayuh *sābok, *sābok 'sarong (in some dialects only for a man)' Singai sabok, Serambu sabok, Bratak sabok, Serasot sabok, Grogo sabok, Stass sabok, Benuk sābok, Sapug sābok, Pinyawa' sabok, Bengoh sabok, Anah Rais sābok, Bukar sabok. (268)

Proto Bidayuh-Bakati' *jāmuh,
Proto Bidayuh *jāmuh 'sarong (usually for a woman)' Singai jumuh, Gumbang jumuh, Serambu jumuh, Serasot jumuh, Biatah jumuh, Bistaang jumuh, Benuk jumuh, Sapug jumuh, Bengoh jumuh, Biya jumuh, Semaan jāmuh, Tringgus Raya jāmuh, Tringgus Bireng jāmuh, Bibengih jumuh, Sangking jāmuh, Bunau jumuh.

Proto Bakati’ *jamu, ?'sarong' Rara jumu?, Sara/Riok jumu?. (268)

Proto Bidayuh *tājoŋ, *tāŋ 'sarong (for man)'
Stass tāŋ for man or woman, Biya tāŋ, Semaan tāŋ, Sangking tāŋ, Tebakang tāŋ, Bukar-Sadong tāŋ, Bunau tāŋ. (268)
Proto Bidayuh *tāpeh ‘(woman’s) sarong’ Bukar tāpeh, Sadong tapeh, Tebakang tāpeh. (268)
PMP *tapis ‘sarong’

Proto Bidayuh-Bakati’ *sVluar, *sVlawar
Proto Bidayuh *siluar ‘trousers’ Singai siruar, Gumang siruar, Serambu siruar, Bratak siruar, Sarasot siruar, Grogo sarua, Stass siruar, Benuk sruar, Bengoh s[ə]ruar, Sembaan hruar, Tringgus Raya ruar, Tringgus Bireng suar, Sadong siluar, Bibengih sluar, Sangking sluar, Tebakang siluar, Bukar-Sadong s[i]luar, Bunan siluar.

Proto Bakati’ *salawa ‘trousers’ Rara salawar, Sara/Riok salawar. (269) (cf. B.M. seluar ‘trousers’)

Proto Bidayuh-Bakati’ *bāntal
Proto Bidayuh *bāntal ‘pillow’ Singai ār/uni0259n, Gumang ār/uni0259n ‘floor’, Biatah ār/uni0259n, Benuk ār/uni0259n, Sapug ār/uni0259n, Pinyawa’ ār/uni0259n, Anah Rais ār/uni0259n, Biya ār/uni0259n ‘floor’, Tringgus Raya ār/uni0259n. (271)

Proto Bidayuh-Bakati’ *bantaŋ
Rara bantaŋ ‘longhouse’. (272)

Proto Bidayuh *nāhi, *tāŋ ‘longhouse’
PMP (Z) *hadiri ‘post, pillar’ (cognate?)

Proto Bidayuh *uros ‘house post’ Biatah uros, Bistaang ros, Sapug ros/h, Tringgus Bireng ros, Serian dictionary uros ‘hard inner part of tree’. (273) (cf. B.M. turus ‘pillar, post’)
PMP *turos


Proto Bidayuh *tian ‘house post’ Singai tian, Gumbang tian, Serambu tian, Bratak tian, Sarasot tian, Grogo tian, Stass tian, Tringgus Raya tian. (273) (cf. B.M. tian ‘post’)
PMP *tiqian

Proto Land Dayak **ānjan
Proto Bidayuh *ănjan 'ladder' Bukar ănjan, Sadong ănjan, Bibengih ănjan, Sangking ănjan, Tebakang ănjan, Bukar-Sadong ănjan, Bunan [ę]njan.

SLD 'ladder' Kembayan-A oŋat, Ribun-A oŋan. (274)
PAN (D) *had’an, PMP *haRedán

Proto Land Dayak **tuŋuh
Proto Bidayuh *tūŋoh 'ladder' Singai tuṅoh, Gumvang tuṅoh, Serambu tuṅoh, Bratak tuṅoh, Serasot tuṅoh, Grogo tuṅoh?, Stass tuṅoh, Biatah tuṅoh, Bistaang tuṅoh, Benuk [tā]ŋoh, Sapug tāŋoh, Pinyawa’ tūŋoh, Bengoh tuṅoh, Biya tūŋoh. (274)

SLD 'ridge' Kembayan-A tuŋuh, Ribun-A tuŋoh. (367)

Proto Bidayuh *tăŋ/a/uni02D0/uni0294 'ladder' Benuk tăŋ/a/uni02D0/uni0294, Bengoh tūŋka/a/uni02D0/uni0294, Anah Rais tāŋa/uni0294, Biya tăŋ/a/uni02D0/uni0294, Semaan tăŋ/a/uni0294, Tringgus Raya tăŋa/uni0294. (274) (cf. B.M. tan/uni0261/uni0261a 'ladder, stairs')

PHN *d2iŋ+d2iŋ

Proto Bidayuh-Bakati’ *turad
Proto Bidayuh *turad 'wall (of house)' Bukar turad, Sadong turad, Bibengih turad, Tebakang turad, Bunan turad.

Proto Bakati’ *aro2 Rara aro, Sara/Riok arû 'roofing'.

SLD 'roof' Kembayan-A roat, Ribun-A hoaŋ. (277) (unclear whether these forms, apparently reflecting *ăran, can be related to the others)

Proto Polynesian *rau 'thatch'

Proto Land Dayak **buŋ
Proto Bidayuh *būŋan, *muŋan, *muŋ/uni0259/uni0294 'peak of the roof' Singai buŋan [rămın], Serambu buŋan [iraw], Bratak buŋan, Serasot buŋan, Grogo buŋan, Stass buŋan, Biatah buŋan, Bistaang buŋan, Benuk buŋan, Sangking muŋa/uni0259 [rămin], Bunan muŋan, Serian dictionary muŋan.

Proto Bidayuh *bubun 'top' Biatah tibun, bubun, Sadong bubun, Bunan bubun.

Sara/Riok bubukŋ 'top (mountain, head)'.

Ribun-A bubuŋ 'roofing'. (277) (cf. B.M. umbun 'roof of a house')
PMP *bubűŋ 'ridge, ridgepole'

Proto Bidayuh-Bakati’ *pāga

Ribun-A lanta ‘floor’. (276) (cf. B.M. lantai ‘floor’)
PMP (A) *lantay

Proto Bakati’ *paga Rara paga, Sara/Riok page ‘fence’. (279) (cf. B.M. pagar ‘fence’)

PHN *pager


Proto Land Dayak **buhaŋ

Proto Bidayuh *búhaŋ ‘bear’ Serasot uňh, Biatah uňh, Bistaang uňh, Pinyawa’ uňh, Bengoh uňh, Anah Rais uňh, Biya uňh, Sembua uňh, bahaa, Tringgus Bireng buňh, Bukar buňh, Bibengih buňh, Sangking buňh, Tebakang buňh, Bunau buňh. (279)

Proto Land Dayak **buhaŋ

Proto Bidayuh *búhaŋ ‘bear’ Serasot buňh, Biatah buňh, Bistaang buňh, Pinyawa’ buňh, Bengoh buňh, Anah Rais buňh, Biya buňh, Sembua buňh, bahaa, Tringgus Bireng buňh, Bukar buňh, Bibengih buňh, Sangking buňh, Tebakang buňh, Bunau buňh. (279)

Proto Land Dayak **buhaŋ


PHN *a[n]bék

Proto Bidayuh *ámak ‘mat’ Bukar amak, Sadong amak, Bibengih amak, Tebakang amak, Bukar-Sadong amak, Bunau [a]mak. (280) This set is probably related to the preceding one.


Proto Bakati’ *bido, *bidó ‘(pandan) sleeping mat’ Rara bido, Sara/Riok bidû. (280)

Proto Land Dayak **ndi?


Kembanayan-H pe? (the n rather than n is perhaps related to the initial **s of the following set) ‘one’. (281)

Proto Land Dayak **sah, **aśa?


PMP (A) *aśa?

Proto Land Dayak **duh, **dukah

Proto Bidayuh *duh ‘two’ Singai duh, Gumbang duh, Serambu duh, Bratak duh, Serasot duh, Grogo duh, Stass duh, Biatah duh, Bistaang duh, Benuk duh, Sapug duh, Pinyawa’ duh, Bengoh duh, Anah Rais duh, Biya duh, Sembua duh, Tringgus Raya duh, Tringgus Bireng duh, duh, uah, ta? ruah ‘we (dual)’, Bukar duh, Sadong duh, Bibengih duh, Sangking duh, Tebakang duh, Bukar-Sadong duh, Bunau duh.

Proto Bakati’ *dua, *dua? ‘two’ Rara du?, Sara/Riok du?, Kendayan du?, Bekati’ du?. The Proto Bidayuh-Bakati’ form should perhaps be reconstructed as *duwəh since it was after a labial consonant that *ə usually became *a in PBak.

SLD ‘two’ Kembanayan-H idu (Kembanayan forms seem to reflect *du), Kembanayan-A du, Ribun-H
dukoh, Ribun-A duku’h, Semandang dukah.
(282)
PAN *d₃uSά, PMP (A) *Duha

Proto Land Dayak **tāruh₁
Proto Bidayuh *tāruh ‘three’ Singai taruh, Gumbang taruh, Serambu taruh, Bratak taruh, Serasot taruh, Grogo taruh, Stass taruh, Biatah tāruh, Bistaang tāruh, Benuk tāruh, Sapug tāruh, Pinyawa’ taruh, Bengoh taruh, Anah Rais tāruh, Biya tāruh, Sembaan tāruh, Tringgus Raya tāruh, Tringgus Bireng tāruh, Bukar tāruh, Sadong tāruh, Bibengih tāruh, Sangking tāruh, Tebakang tāruh, Bukar-Sadong tāruh, Bunan tāruh.

Proto Bakati’ *taru₁ ‘three’ Rara taru, Sara/Riok taru, Kendayan taru, Bekati’ taru.

SLD ‘three’ Kemayan-H tāruh (tāruh expected), Ribun-H tahu, Ribun-A tahu, Semandang toruh (a expected in the penult). (283)
PAN *telú

Proto Land Dayak **ŭmpat, **apat
Proto Bidayuh *ŭmpat ‘four’ Singai pat, Gumbang pat, Serambu pat, Bratak pat, Serasot pat, Grogo pat, Stass pat, Biatah pat, Bistaang pat, Benuk pat, Sapug pat, Pinyawa’ pat, Bengoh mpat, Anah Rais pat, Biya pat, Sembaan pat, Tringgus Raya pat, Tringgus Bireng pat, Bukar umpat, Sadong umpat, Bibengih ĭmpat, Sangking mpat, Tebakang umpat, Bukar-Sadong mpat, Bunan mpat.

Proto Bakati’ *apat ‘four’ Rara apat, Sara/Riok apat, apat, Kendayan apat, Bekati’ apat.

PAN *Se[m]pát, PPhil */uni0294/uni0259pát

Proto Land Dayak **rimah₁
Proto Bidayuh *rimah ‘five’ Singai rimah, Gumbang rimah, Serambu rimah, Bratak rimah, Serasot rimah, Grogo rimah, Stass rimah, Biatah rimah, Bistaang rimah, Benuk rimah, Sapug rimah, Pinyawa’ rimah, Bengoh rimah, Anah Rais rimah, Biya rimah, Sembaan rimoh, Tringgus Raya rimah, Tringgus Bireng imañ, Bukar rimah, Sadong rimah, Bibengih rimah, Sangking rimah, Tebakang rimah, Bukar-Sadong rimah, Bunan rimah.

Proto Bakati’ *rima, ‘five’ Rara rima, Sara/Riok rima?, Kendayan rima, lima (final ? expected; perhaps a borrowing from B.M.), Bekati’ rima?.

SLD ‘five’ Kembayan-H ŭmass (the penult vowel may be mirroring the a in the ultima), Ribun-H humuh, Ribun-A himu (perhaps example of the rule that pre-Ribun *huh drops the final h), Semandang lima? (may reflect influence from Malay(ic)). (285) (cf. B.M. lima ‘five’)
PAN (Z) *limáH

Proto Land Dayak **ánam
Proto Bidayuh *ánam, *nom ‘six’ Singai nam, Gumbang nam, Serambu nam, Bratak nam, Serasot nam, Grogo nam, Stass nam, Biatah nam, Bistaang nam, Benuk nam, Sapug nam, Pinyawa’ nam, Bengoh nam, Anah Rais nam, Biya nam, Sembaan nam, Tringgus Raya nam, Tringgus Bireng nam, Bukar anam, Sadong anam, Bibengih inam, Sangking nam, Tebakang anam, Bukar-Sadong anam, Bunan nam, inam.

Proto Bakati’ *unam ‘six’ Rara unam, Sara/Riok unûm, Kendayan unam, Bekati’ anam (u expected in both syllables).

SLD ‘six’ Kembayan-H nam, Ribun-H niŋ, Semandang nam (num expected). (286) (cf. enam ‘six’)
PAN *?eném

Proto Land Dayak **aju?

Proto Bakati’ *aju, ‘seven’ Rara iju?, Sara/Riok ijû, Kendayan ijo?, Bekati’ iju?.

Proto Land Dayak **ijú?

Proto Bakati’ *ijo, ‘seven’ Rara ijo?, Sara/Riok ijû, Kendayan ijo?, Bekati’ iju?.
SLD ‘seven’ Kembanay-H ijuʔ, Ribun-H iju, Ribun-A ju’ (ju expected), Semandang tujoh (no final consonant expected). (287) (cf. B.M. tujuh ‘seven’)

PAN *pitú

Proto Land Dayak **mahih;

SLD ‘eight’ Kemayan-H may (perhaps Kemayan forms are mai), Kemayan-A may, m/uni0259y, Riun-H mae, Riun-A ma/uni0294 (final h expected in all these forms; perhaps all the southern forms reflect a single-syllable form such as *may).

Proto Land Dayak **pariʔi

Proto Bakati’ *mahi; ‘eight’ Rara mahiʔ, Sara/Riok maʔiʔ, Kendayan maḥiʔ, Bekati’ maʔiʔ.

SLD ‘eight’ Kembayan-H may (perhaps Kembayan forms are ma), Kembayan-A may, may, Ribun-H mae, Ribun-A maʔ (final h expected in all these forms; perhaps all the southern forms reflect a single-syllable form such as *may).

(288)

Proto Land Dayak **samaʔan

Proto Land Dayak **saratus

Proto Bakati’ *saraʔus ‘hundred’ Rara [sa]ratus, Sara/Riok ratus, Kendayan ratus, Bekati’ saraʔus.


PMP *Ratús

Proto Land Dayak **sariбу
Proto Bidayuh *si-rìbu ‘one thousand’ Singai niʔ rìbu, Gumbang sìrìbu, Serambu sìrìbu, Bratak sribu, Serasot sìrìbu, Grogo sərìbu, Stass sìrìbu, Biatah sìrìbu, Bistaang sỉrìbu, Benuk sìrìbu, Sapug sìrìbu, Pinyawa’ sìrìbu, Bengoh sərìbu, Anah Rais s[i]rìbu, Biya sìrìbu, Sembaa hìrìbu, Tringgus Raya sìrìbu, Tringgus Bireng sibu, Bukar sìrìbu, Sadong sərìbu, Bibengih sìrìbu, Sangking sìrìbu, Tekang sìrìbu, Bukar-Sadong s[i]rìbu, Bunan sìrìbu.
Proto Bakati' *saribu, 'one thousand' Rara [s]ribu, Sara/Riok ribu, Kendayan ribu.
SLD 'one thousand' Kembayan-A saribu, Ribun-A shibu. (292) (cf. B.M. ribu 'thousand')
PHN *Ribu, PPhil *[R]íbu

Proto Bidayuh *soʔ 'all' Singai soʔ soʔah, soʔ pəɾəg 'absolutely all', Gumbang soʔah, Serasambu soʔ,
Bratok soʔ, Serasot soʔ soʔ, Grogo soʔ, Stass soʔ, Biatat soʔ pəɾəg, Bistaang soʔ pəɾəg, Benuk soʔ pəɾəg, Sapug so pəɾəg (final ? expected),
Pinyawa’ soʔ pəɾəg, Bengoh soʔ pəɾəg, Anah Rais sipəɾəg, Biya soʔ pəɾəg, Sembaan soʔ pəɾəg, Tringgus Raya soʔ pəɾəg, Tringgus Bireng soʔ pəɾəg. (293)

Proto Bidayuh *pəɾəg 'all, entirely' Singai soʔ soʔah, soʔ pəɾəg 'absolutely all', Biatat soʔ pəɾəg, Bistaang soʔ pəɾəg, Benuk soʔ pəɾəg, Sapug so pəɾəg, Pinyawa’ soʔ pəɾəg, Bengoh soʔ pəɾəg, Anah Rais sipəɾəg, Biya soʔ pəɾəg, Sembaan soʔ pəɾəg, Tringgus Raya soʔ pəɾəg, Tringgus Bireng soʔ pəɾəg. (293)

Proto Bidayuh *pəɾəg 'all' Singai soʔ soʔah, soʔ pəɾəg 'absolutely all', Biatat soʔ pəɾəg, Bistaang soʔ pəɾəg, Benuk soʔ pəɾəg, Sapug so pəɾəg, Pinyawa’ soʔ pəɾəg, Bengoh soʔ pəɾəg, Anah Rais sipəɾəg, Biya soʔ pəɾəg, Sembaan soʔ pəɾəg, Tringgus Raya soʔ pəɾəg, Tringgus Bireng soʔ pəɾəg. (293)

Proto Bidayuh *ŋ//uni0272ito kŋ 'count' Rara /uni0272itokŋ, Kendayan ŋitoŋ (loan).

Proto Land Dayak **mīlaŋ, *mīlaŋ, *mil/uni0259/uni0294 'count' Singai miraŋ 'divide up', Bau dictionary īraŋ, Benuk mīraŋ, Bengoh miraŋ, Sangking miraŋ.
Proto Bakati' *milaŋ 'count' Rara milakŋ, Kendayan milak, Bekati' mirakŋ.

Proto Bidayuh *niap 'count' Singai niap (once recorded as niʔap), Gumbang niap, Serambu niap ("old term"), Serasot niap, Biatah niap, Bistaang niap, Sapug niʔap, Pinyawa’ niap, Anah Rais niap, Biya niap, Sembaan niap, Tringgus Raya niap. (294)

Proto Bidayuh-Bakati' *a[h] yoh,

Proto Bidayuh *āyuh 'big' Singai ayuh, Gumbang ayuh, Serambu ayuh, Bratok ayuh, Serasot ayuh.

Proto Bakati' *a[h] yoʔ, *asoʔ 'big, wide' Rara Sarawak asoʔ, Rara Kalimantan ahyoʔ, Sara/Riok ayuʔ, Kendayan asuʔ, Bekati’ ayuʔ. (295) It is possible that this set and the preceding one can be combined with the PLD reconstruction **ahiyuh.

Proto Bidayuh-Bakati' *a[h] yoh,
pimahas ‘wide (thing)’, Sangking bahas, Tebakang bahas, Bukar-Sadong bahas, Bunah bahas ‘grown up (person)’. (295)


Proto Land Dayak **kadak, **kidik, **[k] un [d] uk


Proto Bakati’ *uno,k ‘short’ Rara unok, Sara/Riok unok, Kendayan uno?, Bekati’ uno. (296, 309)

Cf. also *ine,k ‘small’ (318).

SLD ‘short, small’ Kemlayan-H kidik, Ribun-H kidit (final k expected), Ribun-A kidik. (296, 318)

Proto Bidayuh *rubak? ‘short’ Sapug rubak, Bengoh rubak, Anah Rais rūba?, Biya ruba?:. (296)

PHN (Z) *ubú[ŋ]?

Proto Bidayuh *kādit, *kübit ‘short (thing or person)’ Gumbang kādit, Serambu kādit, Bratak kādit, Serasot kādit, Benuk bīt, Tringgus Raya kūbit, Tringgus Bireng kādit. (296, 309)

Proto Bidayuh *rāpat ‘short’ Serambu rāpat, Grogo rāpat, Biatah rāpat, Bistaang rāpat, Benuk rāpat, Sapug rāpat, Bengoh rāpat, Anah Rais rāpat, Biya rāpat. (296, 309)

Proto Bidayuh *pulok ‘short’ Biatah purok, Bistaang prok, Anah Rais pūrok, Sembaan purok, Bukar pulok. (296, 309)

Proto Bidayuh *garañ, *narañ, *narañ ‘span from thumb to middle finger (some say index finger)’

Singai tigarañ, Gumbang siqarañ, Serambu tigarañ, Bratak tigarañ, Serasot tigarañ, Grogo tigarañ, Stass tigarañ, Biatah tigarañ, Benuk tigarañ, garañ, Pinyawa’ piqarañ, Bengoh garañ, Anah Rais tigarañ, Biya garañ, Sembaan garañ, Tringgus Raya garañ, Tringgus Bireng narañ, Bukar narañ, Sadong narañ, Bibengih narañ, Sangking narañ, Tekangang narañ, Bukar-Sadong narañ, Bunah narañ. (297)

Proto Bidayuh-Bakati’ *dāpah

Proto Bidayuh *dāpah ‘fathom, armspan’ Singai dāpah, Benuk dāpah, Tekabang dāpah.

Proto Bakati’ *dapa, ‘distance between outstretched arms’ Rara dapa, Sara/Riok dapa. (297)

PMP (Z) *Dāpāh


Proto Bakati’ *kila,n Rara kilatn ‘distance from elbow to middle finger’, Sara/Riok kilan ‘distance from middle finger to thumb’. (297)

Proto Bidayuh *āmbuh

Proto Bakati’ *anho, ‘long’ Rara anho, Sara/Riok anû, Kendayan anho? (? not expected), Bekati’ anu. (may not be cognate)

SLD ‘long’ Kemayan-H omuh, Ribun-H domauk, Ribun-A dombah (dombuh expected in Ribun forms). (298)

PAN (D) *labu ‘long’


Proto Bidayuh *si/uni0259n, *siu/uni02D0n ‘many (people, animals)’ Gumang si/uni0259n, Anah Rais si/uni0259n, Biya si/uni0259/uni02D0n, Semaan si/uni0259n, siun, Tringgus Bireng si/uni0259/uni02D0n, siu/uni02D0n. (299)

Proto Bakati’ *raya, ‘many’ Sara/Riok raya, Kendayan raya. (299)

PAN *Raya ‘ig’

Proto Bakati’ *kara, ‘many’ Rara karah, Sara/Riok karah, Bekati’ karah. (299)


Proto Bakati’ *piset, *s-ar-iset ‘narrow’ Rara piset, Sara/Riok sariset, Kendayan siset. (301, 318)


Proto Bidayuh *jūhu?, *jāhu?


Proto Bidayuh *pindak ‘near’ Singai sin[d]ak, Gumbang sinak, Serambu sin[d]ak, Bratak sindak, Serasot sinak, Grogo sindak, Stass sindak, Biatah sindak, Bistaang sindak, Benuk sindak, Sapug sindak, Pinyawa’ sindak, Bengoh sindak, Anah Rais sindak, Biya sin[d]ak, Sembaan sin[d]ak, Tringgus Raya sindak, Tringgus Bireng sindak, Sadong sindak, Bibengih sindak, Tebakang sindak, Bukar-Sadong sindak, Bunan sindak. (303)

Proto Bakati’ *jike, *t ‘near’ Rara jike, Sara/Riok jike, Kendayan jike, Bekati’ jike.

Kemayan-H dik’i ‘near’. (303)
Proto Bidayuh *sasak, *sasay 'near' Bukar sasak, Sangking sasay, Serian dictionary sasak. (303)

Proto Land Dayak **riba?, **rubu?, **rābu?

Proto Bakati’ *rabo? ‘space under house’ Rara ra$o/uni0294 ramin, Sara/Riok ra$o/uni0294.
Kemayan-A no/uni0294 ro$u/uni0294 ‘under’. (304, 278)

PHN (Z) *u$ú[q/uni0294] ‘short’ (296), PMP *a$áq ‘elow’ (278)

Proto Land Dayak **să/uni0261an, **si/uni0261an
Proto Bidayuh *să/uni0261an
Proto Bakati’ *saro
Proto Bidayuh-Bakati’ *ruŋan
Proto Bidayuh *ruŋan ‘under, space under the house’ Bukar ruŋan, Sadong ruŋan, Bi$$engih ruŋan, Sangking ruŋan, Te$$akang ruŋan, Bukar-Sadong ruŋan, Bunan ruŋan.
Proto Bakati’ *ruŋa
Proto Bidayuh *ruŋan
Proto Bakati’ *saro, $h ‘below’ Rara saroh, Sara/Riok saroh. (304)

Proto Land Dayak **mădam
Proto Bakati’ *mada$m, *mădam ‘rotten’ Rara mădam, Sara/Riok mădam, Kendayan mădam, Bekati’ mădam (loan?).

SLD ‘rotten’ Kemayan-H modapm, Kemayan-A modap, Ribun-A modam. (305)

Proto Bidayuh *bisa?, **basa?
Proto Bakati’ *bas$a, **basa?’ ‘wet’ Rara basa?, Sara/Riok base?, Kendayan basa?, Bekati’ basa?.


Proto Bidayuh *bisa? ‘can, is able’ Biatah bisa?, Bistaang bisa?, Pinyawa’ bisa?, Anah Rais bisa?, Biya bisa?. (306)

Proto Bidayuh *bisa ‘venom’ Biatah bisa, Bunan bisa. (306)

Proto Bidayuh *tājo[l] ‘dull’ Singai tāja, Gumbang sajal, Serambu tāja, Bratak tāja, Serasot tāja, Grogo tajal, Stass tāja, Biatah tāja, Bistaang tāja, Benuk tājo, Sapug tāja, Pinyawa’ tāja, Bengoh tāja, Anah Rais tāja, Biya tāja, Sembaan tāja, Tringgus Raya tāja, Tringgus Bireng tāja, Bukar tāja, Sadong tāja, Bibengih tājo$h, Sangking tāja, Te$$akang tāja, Bukar-Sadong tāja, Bunan tāja. (308)
PAN (B) *ŋa[zZ]el, PPhil *ŋudál
Proto Bakati’ *sunu, ‘dull’ Rara sunu, Sara/Riok sunu, Kendayan sunu, Bekati’ sunu? (final ? not expected). (308)


Proto Bidayuh *simbat, *simba/uni0259/uni0294 ‘fat (person)’ Bukar simat, Sadong simat, Biengih simat, Sangking simat, Teakang simat, Bukar-Sadong simat, Bunan simat. (310, 220)

Proto Bakati’ *manu/o/uni0294 ‘fat (person)’ Rara manu/uni0294, Sara/Riok mano/uni0294, Kendayan mano/. (310)

Proto Land Dayak **punu/uni0294 Proto Bidayuh *puno/uni0294, *punoh/uni0294 ‘full (thing)’ Singai puno/uni0294, Gumang puno/uni0294, Seramun puno/uni0294, Bratak puno/uni0294, Serasot puno/uni0294, Grogo puno/uni0294, Stass puno/uni0294, Biatah puno/uni0294, Bistaang puno/uni0294, Benuk puno/uni0294, Sapug puno/uni0294, Pinyawa’ puno/uni0294, Bengoh puno/uni0294, Anah Rais puno/uni0294, Biya puno/uni0294, Sembaan puno/uni0294, Tringgus Raya puno/uni0294, Tringgus Bireng puno/uni0294, Bukar puno/uni0294, Sadong puno/uni0294, Bibengih puno/uni0294, Sangking puno/uni0294, Tebakang puno/uni0294, Bukar-Sadong puno/uni0294, Bunun puno/uni0294.

Proto Bakati’ *panu/o/uni0294 ‘full (container)’ Rara panu/uni0294, Sara/Riok panu/uni0294. *u expected in penult.

SLD ‘full’ Kemayan-A punu/uni0294, Ribun-A puno/uni0294. (u expected in penult). (311)
PAN *penuq

Proto Land Dayak **riʔaŋ

Sara/Riok riakŋ ‘hard’.
SLD ‘hard’ Kemayan-A ria, Ribun-A hioŋ. (312)

Proto Land Dayak **bâhat
Proto Bidayuh *bâhat ‘heavy’ Singai baʔat (casual speech), baʔat (careful speech), Gumbang baʔat, Serambu baʔat, Bratak baʔat, Serasot baʔat, Grogo baʔat, Stass baʔat, Biatah baʔat, Bistaang baʔat, Benuk baʔat, Sapug baʔat, Pinyawa’ baʔat, Bengoh baʔat, Anah Rais baʔat, Biya baʔat, Sembaa baʔat, Tringgus Raya bâhat, Tringgus Bireng baʔat, Bukar bâhat, Sadong bâhad, Bibengih bâhat, Sangking bâhat, Tebakang bâhat, Bukar-Sadong bâhat, Bunun bâhat.

Proto Bakati’ *baha, t ‘heavy’ Rara bahat, Sara/Riok baʔat, Kendayan baʔat, Bekati’ baʔat.

SLD ‘heavy’ Kemayan-H oba, Ribun-H boaʔat (loan ?), Semandang borat (loan ?). (313) (cf. B.M. berat ‘heavy’)
PMP *bâRat

Proto Bidayuh-Bakati’ *baʔat
Proto Bidayuh *baʔat ‘boundary’ Singai baʔat, Bratak baʔat, Serasot baʔat, Biatah bâʔat, Pinyawa’ baʔat, Tebakang bâʔat, Bunun baʔat.

Proto Bakati’ *bat ‘boundary’ Rara bat (baat expected), Sara/Riok batas (final as unexplained). (313)

Proto Bidayuh-Bakati’ *pâras
Proto Bakati' *para, s 'warm, hot' Rara paras, Sara/Riok paras, Kendayan paras, Bekati' paras. (314)
PMP *pa'jas 'hot, spicy'

Proto Land Dayak **bāŋah
Proto Bidayuh *bāŋah 'feel hot' Singai bāŋah, Gumbang bāŋah, Serambu bāŋah, Bratak bāŋah, Sarasot bāŋah, Stass bāŋah.
SLD 'fever' Kemayan-A maŋ (ah expected in final syllable), Ribun-A mōŋgo (may not be directly cognate). (314) Possibly related to **saŋuh, etc. 'cold' (315).

Proto Bakati' *jara, h Sara/Riok jarah 'hot', Kendayan waktu jarah 'hot season'. (314)

Proto Land Dayak **pandud, **mādud
Proto Bidayuh *mādud 'cold, also feverish' Singai mādud, Gumbang mādud, Serambu mādud, Bratak mādud, Sarasot mādud, Grogo mādud, Stass mādud, Biatah mādud, Bistaang mādud, Benuh mādud, Sapug mādud, Pinyawa' mādud, Bengoh mādud, Anah Rais mādud, Biya mādud, Tringgus Raya mādud, Tringgus Bireng mādud, Serian dictionary mādud.

Proto Bakati' *pan[d]ud 'cold' Rara panut, Sara/Riok panûd, Kendayan panûd (final t expected).
Kembayan-H modut 'cold'. (315)

Proto Land Dayak **saŋuh, **nsuŋuh, **ŋuʔun
Proto Bidayuh *suŋoh 'fever' Bau dictionary suŋoh (o expected in ultima), Biatah suŋoh, Tringgus Bireng suŋuh 'feel cold' (cognate ?), Serian dictionary suŋuh.
Proto Bakati' *saŋu/oh Rara saŋuh 'feel cold', Sara/Riok saŋoh 'fever', Kendayan saŋoh 'feel cold'.
Kembayan-A nsuŋuh 'cold'. (315)

Proto Bidayuh *ābaw 'cooled off' Singai ăbaw, Serambu ăbaw, Sapug ăbaw, Sembaan ăbaw. (315)
PPhil *bāhaw 'to cool (food)'

Proto Bidayuh *bābi 'cold' Tringgus Bireng mābus (cognate ?) 'cold (water)', Bukar bābi, Sadong bābi, Bibengih bābi, Sangking bābi, Tebakang bābi, Bukar-Sadong bābi, Bunun bābi. (315) (This set is perhaps related to the immediately preceding one.)

Proto Land Dayak **tarp, **t/dāram

Proto Bakati' *daɾum 'deep' Rara darum, Sara/Riok darum.
SLD 'deep' Kemayan-H tär (≪ *tarp), Ribun-H tohiŋ (≪ *tār), Ribun-A tohiŋ (≪ *tār), Semandang dalam (loan ?). (316) (cf. B.M. dalam 'deep')
PMP (A) *DALom, PPhil *dālam

Proto Bidayuh *jājap 'deep' Bibengih jījap, Tebakang jījap (valley), Bukar-Sadong jījap, Bunun jījap, Serian dictionary jajap. (316)

Proto Bidayuh-Bakati' *māyuh₂
Proto Bidayuh *māyuh or *māpuh 'skinny' Singai māyuh, Gumbang mayuh, Serambu mayuh, Bratak mayuh, Sarasot mayuh, majuh, Grogo mayuh, Stass mayuh, Biatah māpuh, Bistaang māpuh, Benuh māpuh, Bengoh mayuh, Anah Rais māpuh, Biya māyuh, Sembaan mījeg (cognate ?), Tringgus Bireng māyuh.
Sara/Riok mayuh 'skinny'. (317)

Proto Bidayuh-Bakati' *kūRus
Proto Bidayuh *kūlus 'skinny' Sapug kūrus, Pinyawa' kūrus, Bukar kulus, Sadong kulu, Bibengih kulu, Sangking kulu, Tebakang kulu, Bukar-Sadong kulu, Bunun kulus.
Proto Bakati' *kurus 'skinny' Rara kurus, Kendayan kurus. (317) (Cf. B.M. kulus 'skinny')
Proto Land Dayak **insak, **in [s] ik, **dinsik, **ănsak
Proto Bidayuh *insak ‘small’ Serasot isak ‘small quantity’, Benuk ndak ‘so small, tiny’, Sapug sak, Bukar icak, Sadong icak, Bibengih icak, Sangking icak, Bukar-Sadong icak.

Proto Bakati’ *ine, k ‘small, a little bit’ Rara inik or inek, Sara/Riok inek, Kendayan ine?, Bekati’ ine?. Cf. similar form *uno, k ‘small’ (296, 309).

SLD ‘small’ Kemayan-H dicik, Riun-H nai/uni259k (<*naik ?), Semandang ocak. (318) Cf. also *is/uni259k ‘small’ (301).

PMP *pandak ‘short’ (cognate?)
Proto Bidayuh *p/uni259k ‘small (object)’ Bau dictionary ipit (/uni259k expected in ultima), Tebakang ipit, Bunan ipit. (318)

Proto Bidayuh *tængan ‘straight’ Singai tængan, Gumbang tængan, Bratak tængan, Serasot tængan, Grogo tængan, Stass tængan, Bistang tængan, Benuk tængan, Sapug tængan, Pinyawa’ tængan, Bengoh tængan, Anah Rais tængan, Biya tængan, Sembaan hŋ/uni261/uni259n, Tringgus Raya tængan, Tringgus Bireng tængan. (319)

PMP (A) *tængan

Proto Land Dayak **bujug
Proto Bidayuh *bujug ‘straight’ Bau dictionary bujur tængan ‘very straight’, Bukar bujog, Sadong bujog, Bibengih bujog, Sangking bujog, Tebakang bujog, Bukar-Sadong bujog, Bunan bujog.

Bekati’ bujur (final ? expected) ‘straight’. This form, the first part of the Bau dictionary form and the Semandang form may suggest a second PLD reconstruction, **bujur.

SLD ‘straight’ Kembayan-H bojok, Ribun-H bujo?, Semandang bujur (final ? expected). (319) (may be related to PBB *mjog, *ajog ‘stand’ (132))

Proto Bakati’ *tamud, d ‘straight’ Rara tamut, tamud, Sara/Riok tamud, Kendayan tamud. (319)

Proto Bidayuh *dæras ‘strong’ Singai daras, Serambu daras, Bratak daras, Grogo daras, Stass daras, Benuk daras, Sapug daras, Pinyawa’ daras, Tringgus Raya daras, Bibengih daras, Tebakang daras, Bunan daras. (320) (cf. B.M. deras ‘fast’)

PAN *teRas ‘hard’
Proto Bidayuh *bægaq ‘strong’ Gumbang bægaq, Bengoh bægaq, Anah Rais bægaq, Biya bægaq, Sembaan bægaq, Tringgus Raya bægaq, Tringgus Bireng bægaq, Bukar bægaq. (320)

PPhil *baskeG ‘strong’
Proto Bidayuh-Bakati’ *gæghah
Proto Bidayuh *gæghah ‘strong’ Bau dictionary gæghah, Bukar gæghah, Sadong gæghah, Sangking gæghah, Bukar-Sadong gæghah, Bunan gæghah.

Rara gæghah ‘strong (person)’. (320) (cf. B.M. gæghah ‘strong’)

Proto Land Dayak **kæpaha
Proto Bidayuh *kæpaha ‘thick’ Tringgus Bireng kæpaha ‘wide’, kæpaha?, Bukar kæpaha, Sadong kæpaha, Bibengih kæpaha, Sangking kæpaha, Tebakang kæpaha, Bukar-Sadong kæpaha.

Proto Bakati’ *kapa, d ‘thick’ Rara kapa, Sara/Riok kapa, Kendayan kapa, Bekati’ kapa.

Kembayan-H kopa ‘thick’. (321, 300)

PMP *kapal

Proto Land Dayak **ridi/uni294, radi/uni294

PHF *damel
Proto Bakati’ *rāde, *radih/s ‘thin’ Rara rāde, Sara/Riok radih, Kendayan radih, radis.

SLD ‘thin’ Kembayan-H nridi (e expected), Kembayan-A ridi. (322)

Proto Bakati’ *tīpi, tīpis ‘thin (object)’ Rara nipis, Bekati’ tīpis. (322) (cf. B.M. nipis ‘thin’)

PAN *ni+pīs

Proto Land Dayak **bā/uni0294uh, **bahu

Proto Bidayuh *bā/uni0294uh ‘new’ Singai bāuh (casual speech), bā/uni0294uh (careful speech), Gumbang bā/uni0294uh, Serambu bā/uni0294uh, Bratak bā/uni0294uh, Serasot bā/uni0294uh, Grogo bā/uni0294uh, Stass bā/uni0294uh, Biatah bā/uni0294uh, Bistaang bā/uni0294uh, Benuk bā/uni0294uh, Sapug bā/uni0294uh, Pinyawa’ bā/uni0294uh, Bengoh bā/uni0294uh, Anah Rais bā/uni0294uh, Biya bā/uni0294uh, Sembaan bā/uni0294uh, Tringgus Raya bā/uni0294uh, Tringgus Bireng bā/uni0294uh, Buka bā/uni0294uh, Sadong bā/uni0294uh, Biengih bā/uni0294uh, Sangking bā/uni0294uh, Tebakang bā/uni0294uh, Bukar-Sadong bā/uni0294uh, Bunan bā/uni0294uh. (323)

Proto Bakati’ *bahu ‘new’ Rara bahu, Sara/Riok bahu, Kendayan bahu, Sadong bahu, Biengih bahu, Sangking bahu, Tebakang bahu, Bukar-Sadong bahu, Bunan bahu. (323)

Proto Land Dayak **tū/uni0294uh


Proto Bakati’ *tuhi ‘long time (ago)’ Rara tuhi, Sara/Riok tuhi, Kendayan tuhi? (may not be directly related to the other forms). (534)

SLD ‘old’ Kembayan-H tuh, Ribun-H muntuh, Semandang muntuh. (324, 325) (cf. B.M. tua ‘old’)

PAN *tuqāS

Proto Bidayuh-Bakati’ *[d] ām [b] a

Proto Bidayuh *dāamba, *āamba ‘old (object)’ Sayai ām[a]a, Gumbang āma, Serambu āma, Bratak āma, Serasot āma, Grogo āma, Stass āma, Biatah āamba, Bistaang mba, Benuk mba, Sapug āamba, Pinyawa’ āamba, Bengoh ām[a], Anah Rais ām[a], Biya ām[a], Sembaan āma, Tringgus Raya āma, Tringgus Bireng ām[a], Buka āamba, Sadong āamba, Biengih āamba, Sangking āamba, Tebakang āamba, Bukar-Sadong āamba.

Proto Bidayuh *nāamba, *nāamba ‘old (person)’ Sayai nāamba, Gumbang nāamba, Serambu nāamba, Bratak nāamba, Serasot nāamba, Grogo nāamba, Stass nāamba, Biatah [daja?j] nāamba, Bistaang nāamba, Benuk nāamba, Sapug mīnāamba, Pinyawa’ nāamba, Bengoh nām[a], Anah Rais nām[a], Biya nām[a], Sembaan [daya? mah] nām[a],
Tringgus Raya ḏama, Tringgus Bireng ḏamba, Bukar ḏamba.
Proto Bakati’ *ama ‘old (object)’ Rara ḏama, Bekati’ ama.
Proto Bakati’ *[d] ama, ‘old (person)’ Rara ḏama, ama, Sara/Riok ama, Kendayan ama. (324, 325) (cf. B.M. lama ‘old, ancient’)
Proto Bakati’ *saka,t ‘fast, quick’ Sara/Riok sakat, Kendayan sakat. (326)
Proto Bidayuh-Bakati’ *sṇat
Proto Bidayuh *sṇat, *sņat ‘black’ Singai sṇat, Gumbang sṇat, Serambu sṇat, Bratak sṇat, Serasot sṇat, Grogo sṇad, Stass sṇat, Bistah sņat, Bistaang sŋat, Benuk sŋat, Pinyawa’ sŋat, Bengoh sŋat, Anah Rais sŋat, Biya sŋat, Sembaan ḏat, Tringgus Raya sŋat, Tringgus Bireng sŋat, Sangking s magmaðat (this form and the next one may not be cognate with the others), Tebakang s magmaðat.
Proto Bakati’ *sṇut, ‘black’ Rara sṇut, Sara/Riok sṇut, Kendayan sṇut, Bekati’ sṇut. (327)
Proto Bidayuh *bhiṣ ‘black’ Sapug bīḥ, bis, Bukar bīḥis, Sadong bīḥis, Bibengih bīḥis, Sangking bīḥis, Tebakang bīḥis, Bunai bīḥis. (327)
PPhil *Rābi’iḥ ‘night’
Proto Land Dayak **bārām
Proto Bidayuh *bārām ‘green’ Bau dictionary bārām ‘dark blue’, Biatāh bārām, Bistaaŋ bārām, Benuk bārām, Sapug bārām, Anah Rais bārām. (328)
SLD ‘black’ Kembayan-H marām, Kembayan-A marap. (327) (cf. PLD **naram ‘night, (darkened)’ (22))
PHF *ilem
Proto Land Dayak **m-i/ū/ādip
Proto Bakati’ *idip ‘alive’ Rara idup (influence from Malay-ic ?), Sara/Riok idip, Kendayan idip.
SLD ‘alive’ Kembayan-H madip, Kembayan-A madip, Ribun-H midip?, Ribun-A midir?2, Semandang midup (Kembayan-A and Semandang forms reflect **o in the ultima at least). (328)
PMP *ma-qudip, PPhil *qūdip ‘alive’
Proto Bidayuh *māraʔ ‘young (light) [green]’ Serambu marat, Serasot maraʔ, Bau dictionary maraʔ, Bukar māraʔ, Sangking māraʔ, Tebakang māraʔ, Bukar-Sadong māraʔ, Bunai māraʔ. (328)
PMP (Z) *muda ‘young, unripe’
Proto Land Dayak **ijaw
Proto Bakati’ *ijo ‘green’ Rara ijo, Sara/Riok ijau (influence from B.M. ?), Bekati’ ijo.
SLD ‘green’ Kembayan-H ijaw, Ribun-H hijaw (B.M.), Ribun-A ijaw, Semandang ijo. (328) (cf. B.M. hijau ‘green’)
Proto Bidayuh *siha?, *siha: ‘yellow’ Singai siā?,
Gumbang siā?, Serambu siā?, Bratak siā?,
Serasot siā?, Grogo siā?, Stass siā?, Biatah siā?,
Bistaang siā?, Benuk siā?, Sapug siā?,
Pinyawa’ siā?, Bengoh siā?, Anah Rais siā?,
Biya siā?, Sembaan siha?, Tringgus Raya siā?,
Tringgus Bireng siā?, Bukar sihā; Sadong
sihā; Bibengih sihā?, Sangking sihā?,
Tebakang sihā?, Bukar-Sadong sihā?, Bunau
sihā?. (330)

Proto Land Dayak **kuniŋ
Proto Bakati’ *kuniŋ ‘yellow’ Rara Sarawak kuniŋ,
Bekati’ kuniŋ.
SLD ‘yellow’ Ribun-H kuniŋ, Semandang kuniŋ.
(330) (cf. B.M. kuniŋ ‘yellow’)
Proto Land Dayak **ku/uni0272i
Proto Bakati’ *ku/uni0272i ‘yellow’ Rara Kalimantan
ku/uni0272i, Sara/Riok ku/uni0272i ‘yellow, turmeric’,
Kendayan ku/uni0272i.
SLD ‘turmeric’ Kembayan-A ku/uni0272a, Ri/uni0272un-A ku/uni0272a
(cf. B.M. kunyit ‘turmeric, saffron’. These two
sets seem to be interrelated semantically.)
PMP *kunij ‘yellow’

Proto Land Dayak **bĭrih, **mirah
Proto Bidayuh *bĭreh ‘red’ Singai bĭreh, Gumbang
bīreh, Serambu bīreh, Bratak bīreh, Serasot
bīreh, Grogo bīreh, Stass bīreh, Biatah bīreh,
Bistaang bīreh, Benuk b[i]reh, Sapug b[i]reh,
Pinyawa’ bīreh, Bengoh bīreh, Anah Rais bīreh,
Biya bīreh, Sembaan bīreh, Tringgus Raya bīreh,
Tringgus Bireng bīreh.
Semandang mirah ‘red’. (331)
PMP *purā[h]

Proto Land Dayak **t-ar-ăṉak, **ns-ar-ak
Proto Bidayuh *nsālak ‘red’ Sadong ṉcālak,
Sangking ṉcālak, Tebakang cālak, Bukar-Sadong
ṉcālak, Bunau ṉcālak. Cf. the following set,
which is probably related:
Proto Bidayuh *nālak ‘burn’ Sadong nālak,
Bibengih nālak, Sangking nālak, Tebakang
nālak, Bukar-Sadong nālak. (231)
Proto Bakati’ *taransak ‘red’ Rara taransak, Bekati’
taransa?.
SLD ‘red’ Kembayan-H nsiyo? (this form might be
analyzed as nsi? and derived from **nsik, but
the vowel **i is difficult; cf. the Ribun-A form),
Ribun-H ntokak, Ribun-A ntoći? (…co?
expected in both Ribun forms). (331)
PHN *baRaq, *de + Rāŋ ‘red’ (Is either cognate?)

Proto Bidayuh *i-dāh ‘it is not’ Singai idāh,
Gumbang dāh nah, Serambu idāh, Bratak idāh,
Serasot idāh, Grogo idāh, Stass idāh, Biatah dāh,
Bistaang dāh, Benuk dāh, Bengoh dāh, Anah
Rais dāh, Biya dāh, Sembaan dāh, Tringgus
Raya dāh, Tringgus Bireng dāh. (332)

Proto Bidayuh *bakan ‘it is not’ Benuk kan, Sapug
kan, Pinyawa’ bakan, Bukar bakan, Sadong
bakan, Bibengih bakan, Sangking bakan,
Tebakang bākan, Bukar-Sadong bākan, Bunau
bukan. (332) (cf. B.M. bakan ‘it is not’) Ribun-A kiŋ ‘it is not’. This form may reflect **kin
and be related to PBid *bakan ‘it is not’.
PPhil *bākān ‘not (so)’

Proto Bakati’ *iŋa, ‘it is not’ Rara iŋa, Sara/Riok
ŋa. (332)

Proto Land Dayak **kaʔ, **katiʔ
Proto Bidayuh *kāʔ ‘not’ Sapug kāʔ, Bukar kāʔ,
Sadong kāʔ, Bibengih kāʔ, Sangking kāʔ,
Tebakang kāʔ, Bukar-Sadong kāʔ, Bunau kāʔ
(the Sapug and Bunau forms are difficult). (333)
This is not, strictly speaking, a PBid set since it
draws cognates from only one region (apart
from the Sapug form), the Bukar-Sadong
varieties.

Proto Bakati’ *katiʔ ‘not’ Rara katiʔ, Sara/Riok
katiʔ (but cf. also kayaʔ, kaaʔ ‘don’t’), Kendayan
katiʔ, Bekati’ katiʔ.
SLD ‘not’ Kembayan-H kai (final ? expected),
Ribun-H kai, Ribun-A ka (seems to reflect
**kay). (333)
PAN *qazi, PPhil *hadī ‘not’ (cognate?)

Proto Bidayuh *kūdūh, *kūdu ‘how many
(people)?’ Singai kūdu, Serambu kūdu, Bratak
kūdu, Serasot kūdu [nāʔan], Grogo kūdu, Stass
kudu, Biatah kudu, Bistaang kădu, Benuk kudu, Sapug kuduh, Pinyawa’ kudu, Bengoh kuduh, Anah Rais kădu, Tringgus Raya kuduh, Tringgus Bireng kădu, Bukar kuduh, Sadong kuduh, Bibengih kuduh, Sangking kădu?, Tebakang kăduh, Bukar-Sadong kuduh, Bunan kuduh.

Proto Bidayuh *kihaŋ, *kihoŋ ‘how many?’ Gumbang nay kian, Serasot anį kian, Bau dictionary kian eh ‘quantity’, Bistaang kian ki, Benuk kian ki, Bukar kihaŋ (or kihon ?), Sangking kūdu? kihon (or kihoŋ ?) ‘how many (things)?’, Serian dictionary kihon ‘quantity’.

Proto Land Dayak **ăni[h]

Proto Bidayuh *ănih, *ăni, *ănin ‘what?’ Singai anį, Serambu anį, Bratak anį, Serasot anį, Grogo anį, Stass anį, Bistaang ni, Benuk [ā]n[di], Sapug anį, Pinyawa’ anį, Bengoh anį, Anah Rais anį, Biya anį, Sembaan ānin, Tringgus Raya ni[ŋ], Tringgus Bireng ye[ŋ], Bukar āni, Sadong ānih, Bibengih ānih, Sangking āndih (apparently the forms with nd are the result of hypercorrection), Tebakang ānih, Bukar-Sadong ānih, Bunan anįh. (In this and some other interrogative words the Sembaan form has a final n and the forms from the Bukan-Sadong and Southern languages have a final h, perhaps as a mark of interrogation.)

SLD ‘what?’ Kembayan-H oni’h, Ribun-H oneh, Semandang onih. (335)

PHN (Z) *ńūh ‘what(ever)’

Proto Bakati’ *jaį, ‘what?’ Rara jai, Sara/Riok jai, Kendayan jai, Bekati’ jai. (335)

Proto Bidayuh-Bakati’ *sjin[a] ‘when?’ Singai sjin[a], Serambu sjina, Gumbang sa[ŋ]in[a], Serasot sjin[a], Grogo sjine, Stass sjende, Biatah sjinde, Bistaang sjinde, Benuk sjinde, Sapug sjinde, Pinyawa’ sjinde, Bengoh sjin[a], Anah Rais sjin[a], Sembaan hn[di]e, Tringgus Raya sjinde.


SLD ‘when’ Kembayan-H natn neh, Ribun-H ndah, Semandang natn. These forms seem to reflect *ndan/h and may be related to the Bidayuh and Bakati’ forms.

PAN *įján (cognate?)

Proto Bidayuh-Bakati’ *mānih,

Proto Bidayuh *waŋ mā[n] dih ‘when?’ Bukar waŋ mā[n] dih, Sadong waŋ mānih, Bibengih waŋ mānih, Sangking waŋ mānih, Tebakang waŋ mānih, Bukar-Sadong waŋ mānih, Bunan waŋ mānih. (336)

Proto Bakati’ *mani ‘how many, how much?’ Rara ja-manį, Sara/Riok mane? (? not expected), Kendayan manihut ‘several’. (334)

Proto Land Dayak **āki[h], **āpi[h], **umi


Proto Bakati’ *ka [d] ume, ‘where?’ Rara k[a] ume, Sara/Riok ka ume, Kendayan ka ume, Bekati’ kadume. (337)

SLD ‘where?’ Kembayan-H no? oki’h, Kembayan-A no? ki’h, Ribun-H niŋ ndef, Ribun-A ndef, ndef’s, Semandang dṇopih (337)

Proto Land Dayak **āsi[h],

Proto Bidayuh *āsih, *āsi, *āsin ‘who?’ Singai āsi, Gumbang sa[ŋ]i (informal), si?u (polite), Serambu āsi, Bratak āsi, Serasot āsi, Grogo āsi, Stass āsi, Biatah āsi, Bistaang si, Benuk (a)si, Sapug asih, Pinyawa’ āsi, Bengoh āsi, Anah Rais āsi, Biya āsi, Sembaan āsin, Tringgus Raya [ā]si,
Proto Bidayuh-Bakati’ *ākam, *akum
Proto Bidayuh *ākam, *kāʔam 'you (socially higher addressee)' Bistaang am, Sapug kaʔam, Bengoh kaʔam, Anah Rais kāʔam, Biya kāʔam, Bukar akam, Sangking ākam, Tekabang ākam, Bunak akam. (340)
Proto Bakati’ *aku,m 'you (more polite)' Rara akupm, ayo kupm 'you (pl.)', Sara/Riok akupm, daŋkupm 'you (pl.)', Kendayan akup, ayo akup 'you (pl.)'. (340)

Proto Bidayuh *kuʔu 'you (more informal)' Biatah kuʔu, Bistaang u, Benuk u, ku?, Sapug kuʔu, Pinyawa’ kuʔu, Anah Rais kuʔu, Biya kuʔu, Sembaan u, kuʔu, Tringgus Raya kuʔu, Tringgus Bireng kuʔu. (340)

Proto Bidayuh *iako 'you (more formal)' Rara iako, Sara/Riok iako.

Proto Bakati’ *ikin 'I (more polite)' Rara ikitn, Kendayan ikit, Bekati’ ikitn. May not be directly related to the other sets.

Proto Bidayuh *iako 'you (more formal)' Rara iako, Sara/Riok iako.

Proto Land Dayak **āku, **āmu, **imu
Proto Bidayuh *āku, *mutu 'you' Singai muʔu, Gumbang akuʔu, Serambu akuʔu, Bratak akuʔu, Serasot akuʔu, Grogo akuʔu, Stass akuʔu, Biatah akuʔu, Bistaang akuʔu, Benuk [a]kuʔu, Sapug akuʔu, ku, Pinyawa’ akuʔu, Bengoh akuʔu, Anah Rais akuʔu, Biya akuʔu, Sembaan akuʔu, Tringgus Raya akuʔu, Tringgus Bireng kuʔu, Bukar akuʔu, Sadong akuʔu, Bibengih akuʔu, Sangking akuʔu, Tekabang akuʔu, Bukar-Sadong akuʔu, Bunak akuʔu. (339)

Proto Land Dayak **āku, **āmu
Proto Bidayuh *āku, *mutu 'you' Singai akuʔu, Gumbang akuʔu, Serambu akuʔu, Bratak akuʔu, Serasot akuʔu, Grogo akuʔu, Stass akuʔu, Biatah akuʔu, Bistaang akuʔu, Benuk [a]kuʔu, Sapug akuʔu, ku, Pinyawa’ akuʔu, Bengoh akuʔu, Anah Rais akuʔu, Biya akuʔu, Sembaan akuʔu, Tringgus Raya akuʔu, Tringgus Bireng kuʔu. (340)

Proto Land Dayak *ānu, *āmu, *imu
Proto Bidayuh *ānu, *mumu 'you' Singai muʔu, Gumbang [a]ʔu, Serambu muʔu, Bratak muʔu, Serasot muʔu, Grogo muʔu, Stass muʔu, Bistaang u, Benuk u, Sapug u, Bengoh jamu? 'your', Sembaan u, Tringgus Raya muʔu, Bukar āmuʔu, Sadong āmuʔu, Bibengih āmuʔu, Sangking āmuʔu, Tekabang āmuʔu, Bukar-Sadong āmuʔu, Bunak āmuʔu. (339)

Proto Bidayuh *iako 'you (more informal)' Rara iako, Sara/Riok iako.

Proto Land Dayak *imu, *imu
Proto Bidayuh *imu, *muʔu 'you' Singai muʔu, Gumbang [a]ʔu, Serambu muʔu, Bratak muʔu, Serasot muʔu, Grogo muʔu, Stass muʔu, Bistaang u, Benuk u, Sapug u, Bengoh jamu? 'your', Sembaan u, Tringgus Raya muʔu, Bukar āmuʔu, Sadong āmuʔu, Bibengih āmuʔu, Sangking āmuʔu, Tekabang āmuʔu, Bukar-Sadong āmuʔu, Bunak āmuʔu. (340)

Proto Bakati’ *imu, 'you (more informal)' Rara īmum, daŋkum 'you (pl.)', Kendayan īmum, ayo īmum 'you (pl.)'. (340)

Proto Bidayuh *iako 'you (more formal)' Rara iako, Sara/Riok iako.

Proto Bidayuh *iako, *iako 'they' Rara ayo-aʔ, ayo inǐʔ, Kendayan (k)ayu ëʔ, Bekati’ ayu. (345)

Proto Bidayuh *iako 'he, she, it' Singai iʔah, Gumbang siʔu, Serambu iʔah, Bratak iʔah, Serasot iʔah, Grogo iʔah, Stass iʔah, Bau dictionary yah, Biatah ayah, Bistaang yah, Benuk iʔah, ayah, Sapug ayah, Pinyawa’ ayah, Bengoh ayah, Anah Rais ayah, Biya ayah, Sembaan iʔah, Tringgus Raya iʔah, Tringgus Bireng iaʔam, Serian dictionary siʔeh (cognate ?). (341)

Proto Bidayuh *iako 'he, she, it' Singai iʔah, Gumbang siʔu, Serambu iʔah, Bratak iʔah, Serasot iʔah, Grogo iʔah, Stass iʔah, Bau dictionary yah, Biatah ayah, Bistaang yah, Benuk iʔah, ayah, Sapug ayah, Pinyawa’ ayah, Bengoh ayah, Anah Rais ayah, Biya ayah, Sembaan iʔah, Tringgus Raya iʔah, Tringgus Bireng iaʔam, Serian dictionary siʔeh (cognate ?). (341)

Proto Bakati’ *iʔam 'he, she it' Kendayan iʔam, Bekati’ iʔam. (341)

Proto Bidayuh *iako 'he, she, it' Singai iʔah, Gumbang siʔu, Serambu iʔah, Bratak iʔah, Serasot iʔah, Grogo iʔah, Stass iʔah, Bau dictionary yah, Biatah ayah, Bistaang yah, Benuk iʔah, ayah, Sapug ayah, Pinyawa’ ayah, Bengoh ayah, Anah Rais ayah, Biya ayah, Sembaan iʔah, Tringgus Raya iʔah, Tringgus Bireng iaʔam, Serian dictionary siʔeh (cognate ?). (341)

Proto Bakati’ *iʔam 'he, she it' Kendayan iʔam, Bekati’ iʔam. (341)

Proto Bidayuh *kami, *jami, *AMI 'we (exclusive)' Sapug kamiʔi, Tringgus Bireng pamiʔi, Bukar amiʔi, Sadong amiʔi, Bibengih amiʔi, Sangking amiʔi, Tekabang amiʔi, Bukar-Sadong amiʔi, Bunak amiʔi.

Proto Bidayuh *kami, *jami, *AMI 'we (exclusive)' Sapug kamiʔi, Tringgus Bireng pamiʔi, Bukar amiʔi, Sadong amiʔi, Bibengih amiʔi, Sangking amiʔi, Tekabang amiʔi, Bukar-Sadong amiʔi, Bunak amiʔi.

Proto Bidayuh *kami, *jami, *AMI 'we (exclusive)' Sapug kamiʔi, Tringgus Bireng pamiʔi, Bukar amiʔi, Sadong amiʔi, Bibengih amiʔi, Sangking amiʔi, Tekabang amiʔi, Bukar-Sadong amiʔi, Bunak amiʔi.

Proto Bidayuh *kami, *jami, *AMI 'we (exclusive)' Sapug kamiʔi, Tringgus Bireng pamiʔi, Bukar amiʔi, Sadong amiʔi, Bibengih amiʔi, Sangking amiʔi, Tekabang amiʔi, Bukar-Sadong amiʔi, Bunak amiʔi.
Proto Bidayuh-Bakati’ *kā?ih, Proto Bidayuh *kā?ih, *kī?eh ‘we (exclusive)’
Simgai kā?is, Gumbang kā?ih (inclusive ?), Serambu kā?ih, Bratak kā?ih, Serasot kā?ih,
Proto Bakati’ *kai,? ‘we (exclusive)’ Rara kai,?, Sara/Riok kai,?, Kendayan kai,?. (342)
Proto Bidayuh-Bakati’ *ata/uni0294, *kîta/uni0294, *ăt/uni0259/uni0294, *ite/uni0294
Proto Bidayuh *kînde, *kinden ‘you (plural)’ Bukar
kînde, Sadong kînên, Bibengih kînên, Sangking
kînde, Tebakang kînede?, kînde, kinden, Bukar-
Sadong kînde, Bunak kînden. (344)
PMP *si + d’a ‘they’ (cognate?)
Proto Bidayuh *băla ‘plural (often used with
pronoun)’ Gumbang bara dīanj, Serambu bara,
Biatah nāra, Bistaang nāra, Bunuk nāra, bāra,
Sapug bara anu?, Pinyawa’ bara ‘you (pl)’, nāra
‘they’, Bengoh nāra, Anah Rais nāra, Biya nāra,
Sembaan bara nān ‘you (pl)’, bara, nāra āti?
‘they’, Bukar bara kawa?, Sadong bala, Bibengih
bala sî?en, Sangking bala nāh, Tebakang bālā
nā?, Bukar-Sadong bala nā?, Bunak bala nī?ah
sî?en. (344, 345)
Proto Bidayuh *ādih ‘we (dual)’ Bukar ādih, Sadong
ādih, Bibengih ādih, Sangking ādih, Tebakang
ādih, Bukar-Sadong ādih, Bunak ādih. (346)
Proto Bidayuh-Bakati’ *bŭro/uni0294
Proto Bidayuh *bŭru/uni0294 ‘am’oo’ Gumang
bŭru/uni0294, Serambu bŭru/uni0294, Biatah bŭru/uni0294,
Pinyawa’ bŭru/uni0294, Tebakang bŭru/uni0294, Bunak-Terbat
bŭru/uni0294.
Proto Bakati’ *buro ‘am’oo’ Rara bŭro/uni0294,
Sara/Riok bŭru/uni0294, bŭro/uni0294, Kendayan bŭru/uni0294. (359)
(cf. B.M. buluh ‘am’oo’)
PAN (Z) *būluq
Proto Bidayuh *daʔah ‘tapang, bee tree’ Singai
daʔah, Gumbang daʔah, Serambu daʔah, Stass
daʔah, Biatah daʔah, Bunuk daʔah, Sapug
daʔah, Pinyawa’ daʔah, Bengoh daʔah, Tringgus
Raya daʔah, Tringgus Bireng raʔah. (361)
Proto Bidayuh *dāʔan ‘branch’ Bau dictionary
daʔan, Bunuk daʔan kāuyeh, Tebakang daʔan,
Serian dictionary daʔan.
Sara/Riok daʔan ‘branch’.
SLD ‘branch’ Kembayan-A dat, Ribun-A daʔan. (366)
(cf. B.M. dahan ‘branch’)
PMP *daqan
Proto Bidayuh *t/riko/uni0261 'crooked' Gumbang tikog, Bau dictionary tikog 'curved', Biatah tikok, Sembaan rikog. (377) (cf. B.M. bengkok ‘bent, crooked’)

PHN (Z) *tikú/uni0294 'end'

Proto Land Dayak **kăp/uni0259/uni0261 'cut in pieces' Gumbang k/uni0259p/uni0259/uni0261 'cut in small pieces', Jagoi-Hudson k/uni0259p/uni0259/uni0261, Biatah kăp/uni0259/uni0261, Sapug kăp/uni0259/uni0261, Semaan kăpe/uni0261, Serian dictionary ŋkăp/uni0259/uni0261 'cut'.

SLD ‘cut’ Kemayan-H ŋopw/uni0259t (perhaps should be ŋop/uni0259; final k expected), Riun-H ŋopuk, Semandang ŋopu/uni0294. (378)

Proto Bidayuh-Bakati’ *Nănt/uni0259k 'cut (rope)' Rara /uni0272antak, Sara/Riok /uni0272antak, Kendayan /uni0272anta/uni0294 (u expected in ultima of each form). (378)

Proto Bakati’ *mu/uni0261o 'cut (rope)' Rara mu/uni0261ot, Sara/Riok mu/uni0261ot. (378)

Proto Bidayuh-Bakati’ *bV[n]tanda/uni0294 'dance' Gumang itanda/uni0294, Biatah itanda/uni0294, Pinyawa’ tanda/uni0294, Serian dictionary itanda.

Rara antanda/uni0294 'dance'. (379)

Proto Land Dayak **bV-dăruh, Serian dictionary bidaruh 'fight'.

Proto Bakati’ *Cadaru,2 'fight (verbally)' Rara ba-daaru?, Sara/Riok badaru?, Kendayan sadaru?.

SLD ‘fight’ Kembayan-H budoruh, Ribun-H baduhuh (h usually lost in this environ-ment), Semandang bako (may not be related). (401)

Proto Bakati’ *ka dia,h 'here' Rara ka diah, Sara/Riok ka diah, Kendayan ka diah. (411)

Proto Bidayuh-Bakati’ *pădanj

Proto Bidayuh *pădan ‘lalang (Imperata) grass’ Biatah pădan, Sapug padaŋ, Pinyawa’ padaŋ, Sembaan padaŋ, Tringgus Raya padaŋ, Serian dictionary uduh padaŋ.

Proto Bakati’ *padaŋ ‘lalang grass’ Rara padakŋ, Sara/Riok padangk. (416) (cf. B.M. pedan/uni0261 'sword')

Proto Land Dayak **Vu/uni0294duh,

Proto Bidayuh *uduh ‘grass’ Jagoi-H duh, Bau dictionary duh, Biatah uduh, Sapug duh, Pinyawa’ duh, Serian dictionary uduh.

Proto Bekati’ *udu?, ‘grass’ Rara udu?, Sara/Riok udu?, Kendayan udu?, Bekati’ udu?. (518)

SLD ‘grass’ Kembayan-A iduh, Ribun-A iduh. (416)

Proto Land Dayak **nănjan


Proto Bakati’ *na(n)(h)a ‘light (adj.) Rara Ḿanan, Sara/Riok Ḿanan, Kendayan Ḿanan. (418)

PPhil *Raqán (cognate?)


Proto Land Dayak **bădak

Proto Bidayuh *bădak ‘mucus’ Bau dictionary badak, Biatah badak, bădak, Benuk badak, Bengoh badak, Tringgus Raya bădak, Tringgus Bireng bădak, Bunang pusak, Serian dictionary păsak (cognate?).

Sara/Riok buduk ‘mucus from the nose’.

Kembayan-A băda? ‘mucus’. (431)

PHN (Z) *Daqák ‘phlegm’

Proto Land Dayak **[m]ănđam

Proto Bidayuh * [m]ănđam ‘sick’ Bau dictionary manam, jagin anam ‘cause to be sick’, Gumbang
mändam, Biatah birándam, Sapug mandam, Pinyawa' mandam, Sembaan mandam, Bunau kandam 'a sickness', mändam 'in pain, sick', Serian dictionary mandam. 

Proto Bakati' *anda, *sick' Rara anapm, Sara/Riok anapm, Kendayan anap. (435, 458) 

Kendayan-A monap (nd expected), Ribun-A mondam 'sick'. (458)


Macro Proto Bidayuh *giheŋ, *mihanaŋ 'sago beetle' Singai gi[i]eŋ, Gumbang giŋ, Bau dictionary giŋ girayaŋ, Tebakang mihaŋ, Bunau mihaŋ, Serian dictionary [ri]mihaŋ 'flying beetle'. (451)


Proto Bakati' *pade? 'salty' Rara pade?, Sara/Riok pade?. 

Kembayan-A pidi? 'salty'. (453)

Proto Land Dayak **mbu/ 'lazy' Biatah mbaŋ, Bistaang mbaŋ, Serambu mbaŋ, Sembaan mbaŋ, Tebakang mbaŋ, Bunau mbaŋ. 

Proto Bidayuh *batahi? 'pregnant' Rara batahi?, Sara/Riok batai?. 

SLD 'pregnant' Kembayan-A biti?, Ribun-A biti. (442)

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)

Proto Bidayuh *batahi? 'pregnant' Rara batahi?, Sara/Riok batai?. 

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)


Proto Bidayuh *batahi? 'pregnant' Rara batahi?, Sara/Riok batai?. 

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)

Proto Bidayuh *pātak 'latex' Singai pātak, Biatah pātak, Bistaang pātak, Sapug pātak, Pinyawa' pātak, Sembaan pātak, Tringgus Raya pātak, Tebakang pātak, Bunau pātak, Serian dictionary pātak. (450)
Proto Bidayuh *umbu? 'older sibling' Tebakang unbu?, Bunau unbu?, Serian dictionary umbu[?].
SLD 'older sibling' Kembayan-H mbo?, Kembayan-A mbo?, Ribun-H møj (< *muj), Ribun-A mbo?, Semandang muj (final g not expected). (457)

Proto Bakati' *ŋado 'sing' Rara ŋado, Kendayan ŋado. (459)

Proto Land Dayak **muhi
Proto Lango-Bakati' *ŋado 'sing' Rara ŋado, Kendayan ŋado. (459)

Proto Bidayuh-Bakati' *pate 'trap with dart' Rara pate, Sara/Riok pate, Kendayan pate. (483)

Proto Land Dayak **mātah, **mutu?
Proto Bidayuh *Cųtah Bau dictionary mātah 'break something', tana? bōtah 'cracked earth', Serian dictionary njitah, jutah 'split'.
Proto Bakati' *mata, *h 'split' Rara matah, Sara/Riok matah, Kendayan matah.
SLD 'split' Kembayan-A muto?, Ribun-A mio? (may not be related). (501)

Proto Land Dayak **bāni?, **bini?
Proto Bidayuh *bine 'seed' Bau dictionary bine, Biatah bine, Serian dictionary bine (something like bini? expected).
Proto Bakati' *bani, *h 'seed' Rara bani?, Sara/Riok bane?, Kendayan bane?.

Proto Bakati' *jărat 'trap' Gumbang jărat, Stass jărat, Bistaaŋ jărat. (482) (cf. B.M. jerat 'trap')

Proto Land Dayak **insin, **isi
Proto Bidayuh *isin, *isih 'flesh' Bau dictionary isin, Biatah isin, Serian dictionary isih.
Proto Bakati' *insi, *n Sara/Riok insin 'flesh', Kendayan insit 'flesh, meat'.
Ribun-A ise? (isi expected) 'meat'. (505) (cf. B.M. isi 'meat')
PAN (Z) *S/i/Si 'contents'

Proto Bakati' *ge? 'with' Rara (ni)ge?, Sara/Riok (i)ge?, Kendayan ge? (i) expected). (507)

Proto Bakati' *ato 'lake' Rara ato, Sara/Riok atû 'flood', Kendayan ato. (508)

Proto Bakati' *utu, ŋ 'come' Rara utukŋ, Sara/Riok utukŋ, Kendayan utukŋ. (509)
Proto Bakati' *ka sada, n 'inside' Rara ka sadatn,
Sara/Riok ka sadatn, Kendayan ka sadat. (510)

Proto Bakati' *ka dVko, h 'over there' Rara ka
dakoh, Sara/Riok ka dikoh, Kendayan ka dakoh.
(511)

Proto Bakati' *lain 'different' Rara laitn, Sara/Riok
laitn, Kendayan lait. (515) (cf. B.M. lain
'different')

Proto Bakati' *lusu,n 'slippery' Rara lucutn,
Sara/Riok lusutn, Kendayan lusut. (516) (cf.
B.M. lucut 'slip off')

Proto Bidayuh-Bakati' *sVŋkuhud
Proto Bidayuh *siŋkuhud 'walking stick' Bau
dictionary sikuud, Biatah sikud, Serian
dictionary siŋkuhud.
Proto Bakati' *saŋkuhu,d 'cane, staff' Rara
saŋkuhut, Sara/Riok saŋkuud, Kendayan
saŋkuhud. (520)

Proto Bakati' *tumbu,ŋ 'on top of' Rara tumukŋ,
Sara/Riok tumukŋ, Kendayan tumuk. (521)

Proto Bidayuh-Bakati' *pă/uni0261an
Proto Bidayuh *pă/uni0261an 'courage' Bau
dictionary pa/uni0261an rani, Biatah pă/uni0261an, Serian
dictionary pa/uni0261an.
Proto Bakati' *pa/uni0261a 1 n 'rave, old' Rara pa/uni0261atn,
Sara/Riok pa/uni0261atn, Kendayan pa/uni0261at. (523) (cf.
B.M. pa/uni0261an 'strong')

Proto Bakati' *ba/uni0261a 'stupid' Rara a/uni0261a, Kendayan
a/uni0261a. (527)

Proto Bakati' *ka sato, 2 'outside' Rara ka sato,
Sara/Riok ka satû, Kendayan ka sato. (528)

Proto Bakati' *sanuut 'remember' Rara sanuut,
Kendayan sanuut. (531)

Proto Bakati' *sawe 'slow' Rara sawe, Sara/Riok
sawe, Kendayan sawe. (536)

Proto Land Dayak **pândan
Proto Bakati' *pana,n 'pandan' Rara dautn
panatn, Sara/Riok dautn panatn, Kendayan daut
panat.
SLD 'pandanu' Kembayan-A panaat, Ribun-A
panan. (541) (cf. B.M. pandan)
PAN (Z) *paŋuDáN

Proto Bakati' *jaba,ŋ 'shield' Rara jabakŋ,
Sara/Riok habakŋ, Kendayan jabak. (542)

Proto Bakati' *naŋkayu, /uni0294, *daŋkayu, /uni0294 'vegetables'
Rara naŋkayu, /uni0294, Sara/Riok naŋkayu, Kendayan
daŋkayu, /uni0294. (545)

Proto Bakati' *nulu,m 'dive, dip' Sara/Riok
julupm, Kendayan julup. (546) (possibly
related to B.M. selam 'dive')

Proto Bidayuh-Bakati' *jah, 2
Proto Bidayuh *mi-jah 'yesterday' Biatah mijah,
Bistaang miajah, Benuk mijah, Sapug mijah,
Anah Rais mijah, Biya mijah, Tringgus Raya
mijah, Tringgus Bireng mijah. (25)
Proto Bakati' *ija, h 'just now' Rara ijah, Sara/Riok
ijah, Kendayan ijah. (547)

Proto Bidayuh-Bakati' *tanduk
Proto Bidayuh *tanduk 'horn' Bau dictionary
tanduk, Biatah tanduk, Serian dictionary
tanduk.
Proto Bakati' *tandu,k 'horn, antler' Rara tanuk,
Sara/Riok tandûk, Kendayan tanuk?. (548) (cf.
B.M. tanduk 'horn')
Proto Bakati’ *uru, s ‘nit, lice egg’ Rara ruus gutu?, Sara/Riok urus gutu?, Kendayan urus guru? (medial t expected in second word). (549)

Proto Land Dayak **tVrima [2]
Proto Bakati’ *narima, ‘receive’ Rara narima?, Sara/Riok narima?, Kendayan narima?.
SLD ‘receive’ Kembayan-A tirima, tirama, Ribun-A himo. (551) (cf. B.M. terima ‘receive’)

Proto Land Dayak **tobaH, **tubah1
Proto Bidayuh *tubah, *tubah ‘tuba’ Bau dictionary tubah, Biatah tubah, Serian dictionary tubah ‘tuba fruit’.
Proto Bakati’ *tuba [2] ‘tuba, a plant (derris elliptica) with poison used for stupefying fish)
Rara tuba, Sara/Riok tuba?, Kendayan tuba?.
SLD ‘tuba plant’ Kembayan-A tabah, Ribun-A tibuh. (553) (cf. B.M. ‘tuba derris elliptica’)
PAN (Z) *tubaH, PPhil *tuba

Proto Bakati’ *unde/aŋ ‘shrimp’ Rara unekŋ, Sara/Riok unekŋ, Kendayan undaŋ (final k expected). (554) (cf. B.M. udan/uni0261 ‘shrimp, prawn’)

Proto Land Dayak **pikir
Proto Bidayuh *pikir ‘think’ Bau dictionary pikir, Biatah pikir, Serian dictionary pikir.
Rara mikir ‘think’.
PPhil *tudaj

Proto Bidayuh-Bakati’ *njatam
Proto Bidayuh *njatam ‘harvest’ Bau dictionary njotom, njotam, Biatah njatam, Tringgus Raya njatam, Serian dictionary njatam.
Sara/Riok njutupm ‘harvest’. (556) (cf. B.M. mengetam ‘harvest’)

Proto Bidayuh-Bakati’ *nābu ‘(to) weed’ Bau dictionary nābu, Biatah nābu, Tringgus Raya nābu, sābu ‘weeds’, Serian dictionary nābu. (557)

Proto Bidayuh-Bakati’ *nāhuH

Proto Bidayuh-Bakati’ *jāman
Proto Bidayuh *jāman ‘generation’ Bau dictionary jaman, Biatah jāman ‘past time’, Tringgus Raya jāman.
Sara/Riok jaman ‘generation’. (559)

Proto Bidayuh-Bakati’ *jāra [2]
Sara/Riok jara ‘difficulty’. (560)


Proto Bidayuh *ŋāwah Bau dictionary ŋawah ‘survey of land’, Biatah ŋawah ‘spot land for farming’, Tringgus Raya ŋāwah ‘search for (land)’, Serian dictionary ŋawah ‘ceremony to claim ownership of farm land’. (562)

Proto Bidayuh *kijam ‘feel, sense’ Biatah kijam, Tringgus Raya kijam, Serian dictionary kijam. (563)

Proto Bidayuh-Bakati’ *rāti
Proto Bidayuh *rāti ‘meaning’ Bau dictionary rati, Biatah rāti, Tringgus Raya rāti, Serian dictionary rati. (cf. B.M. erti ‘meaning’)
Sara/Riok rati ‘meaning’. (564)

Proto Bidayuh *ādi ‘go’ Bau dictionary ādi ‘go, move’, Biatah ādi, Tringgus Raya ādi. (565)
Proto Bidayuh-Bakati’ *bāda?
Proto Bidayuh *bāda[?] Biatah bāda ‘ask, instruct’,
Tringgus Raya bāda? ‘ask, request’.
Sara/Riok bada? ‘omen, sign’. (566)

Proto Biatah-Bakati’ *mākat
Proto Bidayuh *mākat Bau dictionary makat ‘wake, get up’, Biatah mākat ‘get up’, Tringgus Raya mākat ‘wake up’, Serian dictionary makat ‘rise’.
Sara/Riok makat ‘get up’. (567)

Proto Bidayuh *tāban ‘bring’ Bau dictionary taban, Biatah tāban, Tringgus Raya tāban, Serian dictionary taban. (568)
Appendix III B—Index of reconstructions

B.1 Proto Bidayuh

*ābaw cooled off (315)
*ašok, *bšok, *ubšok (head) hair (79)
*ābuh ash (226, 228)
*ābun, *ābun, *āmbun cloud (12)
*ādag, *ādag chest (93)
*āda/uni0261, *ād/uni0259/uni0261 chest (93)
*āda/uni02D0s, *uda/uni02D0s sweat (67)
*ad/uni0259d or *adud fly (61)
*ād/uni0259/uni0261, *āda/uni0261 chest (93)
*ād/uni0259n, *d/uni0259n, *dan, */uni0261ănan name (260)
*ăd/uni0259p (one)self (342)
*ădi go (565)
*ādih we (dual) (346)
*ădi?, *ăde?, *sudi?, *săde?, *side?, *sūde? younger sibling (247)
*ăhi, *āhi many (uncountable) (295, 299)
*ăkam, *kă/uni0294am you (socially higher addressee) (340)
*āk/uni0259p, *dăk/uni0259p two arm spans, two handfuls (297)
*ākŭ? I (339)
*ălit scar (124)
*ānak mat (280)
*āman, *ăme?, *măman go downstream (186)
*ămăn, *săma?: father (248)
*ēm, *dēm old (object) (324, 325)
*ēm[b]ok, *ām[b]ok mat (280)
*ēmbo, *ēmbo long (object) (298)
*ēmah, *ēmah (paddy) field (194)
*ēmi?, *kămi?, *nămi? we (exclusive) (342)
*ēmu?, *mu? u you (340)
*ēnak child (256)
*ēn[t]ăndam in pain, sick (435, 458)
*ēnda?, *sīnda?: mother (249)
*ēndu day (19)
*ēnīh, *ānī, *ānīn what? (335)
*ēnjan ladder (274)
*ēņit skin (66)
*(di) āņ in(side) (27)
*ēņ-kak, *kăhak crow or another large black bird (52)
*ēņkįn, *sāņ[k]įnį little finger (107)
*tik-ăpak, *tik-ăpak ash (226)
*ēpăt, *kăpăt, *dipăt/d, *ipăt (young) child (255)
*tik-ăpak, *tik-ăpak ash (226)
*ēpūy fire (225)
*ērăd, *ērăd, *ūrăd, *răd wing (48)
*ēran, *ērăn trail, footpath (202, 138)
*ērap, ārep bad (169)
*ērăm home (271)
*ēră? forehead (78)
*ērăd boat (198)
*ēruh pestle (192)
*ēsaw, *ēsaw wife (251)
*ēsów mango (424, 239)
*ēsăŋ feeling, soul (236, 181)
*ēsīh, *ēsi, *ēsin who? (338)
*ēsīn, *ēsīn, *kăsīn, *kăsēt urine, urinate (71)
*ēsor, *ēsor spear (204)
*ēsuh, *ēsapat smoke (230)
*ētă?*, *ētă?, *kīta? we (inclusive) (343)
*ētak, *ēntak brain (91)
*ētii, *ētiin liver, heart (103)
*ēti: bōrą heart (97)
*ē-tos, *u-tos needle (213)
*ēus thirsty (236)
*ēwah verandah (441)
*[C]ēyaŋ mother (249)
*ēyăh, *ēiha he, she, it (341)
*ēyo?, *ēpąra?: *pāpaŋ pig (437)
*ēyu big (295)
*ēbăy grandfather (248)
*ēbăa?: *băba?: mouth (81, 181)
*ēbij cold (315)
*ēbău, *ēbăon rat (58)
*ēbăıs, *ēbăıs, *ēbăıs, *ēbăıs rice husk (218)
*ēbăa? ask (566)
*ēbăa? băba?: dry (172)
*ēbăa? băda?: land turtle' (172)
*ēbăn call (180)
*ēba? big (thing) (295)
*ēbăg strong (320)
B.2 Proto Bakati’

*aba,k head (76)
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PART IV

A Classification of the Land Dayak (Bidayuhic) Languages

Calvin R. Rensch

1 Introduction
2 Major sound changes that have impacted the Land Dayak languages
3 Sub-grouping of the varieties of Land Dayak
4 The mid vowels
5 Another vowel contrast?
6 Full set of sound changes that have impacted the Land Dayak languages

Appendix IV—Cognate sets
1 Introduction

The Land Dayak languages, also called Bidayuhic languages, are spoken by people who traditionally live in a north-south belt in the interior of Western Borneo in the Malaysian state of Sarawak and the Indonesian province of West Kalimantan (Kalimantan Barat). Their traditional homelands—true to their name of Land Dayak\(^1\)—are never, it seems, very near the coast. They extend from the hilly regions south of the mouth of the Sarawak River southward across the Kapuas River toward the south coast of Borneo.

A set of sound changes has impacted the Land Dayak languages in a variety of ways with the result that comparable lexical items are pronounced differently from one variety to another. In this study we will explore relationships among the various varieties of Land Dayak and suggest a sub-grouping scheme based on distribution of the major sound changes and lexical differences.

Data from the varieties of Land Dayak considered in this study come from a variety of sources. The Bidayuh, Bakati', Kembayan, Ribun and Semandang materials are drawn from Part III of this volume. The Bidayuh data are drawn from wordlists gathered under the auspices of the Bidayuh Language Development Project. The Bakati’ wordlists, gathered and kindly provided by Carmen Bryant, are supplemented by a Rara wordlist gathered under the auspices of the Bidayuh Language Development Project and a wordlist labeled “Bekati’”, drawn from Hudson (1970). The Kembayan, Ribun and Semandang wordlists are also drawn from Hudson (1970). However, Sander Adelaar collected wordlists in varieties of Kembayan and Ribun somewhat different from those sampled by Hudson and kindly made those available to us for the Rensch et al 2006 study.

The “new” materials that provided the impetus for this study come from two sources, both provided by Karl Anderbeck. The first is a set of 13 wordlists of Land Dayak languages included in a database of the Pusat Bahasa. These varieties are labeled according to the name of the village where the wordlist was gathered. This is followed by a colon and the name by which the language is known locally; finally in parentheses are given the sub-district (kecamatan) and district (kabupaten) where the variety is spoken. The second source is a set of six wordlists of Land Dayak languages gathered by Chong and Collins; all these varieties are spoken in the Sekadau Valley.

The varieties included in the study, arranged in alphabetical order, are the following:

- Ambawang Satu: Benyuatu (Kubu, Pontianak)
- Bidayuh: Western group, Central group, Highland (Sembaan) group, Eastern group (Sarawak)
- Bakati’: Rara (Sarawak and Sambas?), Sara/Riok, Kendayan, “Bekati’” (Sambas?)
- Canayan: Sekadau Valley (Ketapang?)
- Empodis: Muduk (Bonti, Sanggau)
- Engkahan: Karamei (Sekayam/n, Sanggau)

\(^1\)Cf. ProtoLand Dayak *dāyah\(^1\), Proto Bidayuh *dāyah, Proto Bakati’ *dayu, * ‘upland, hill(side)’; PAN *d̲áya ‘inland’.
Gunam: Dayak Ribun (Parindu, Sanggau)
Kasro Mego: Galik (Beduwai, Sanggau)
Kembayan (Kembayan, Sanggau)
Leminang: Sekadau Valley (Ketapang?)
Lubuk Tajau: Sekadau Valley (Ketapang?)
Mandong: Dayak Peruan (Jayan/Tayan Hulu, Sanggau)
Moro Betung: Benyadu (Banyadu, Pontianak)
Nanga Rakan: Sekadau Valley (Ketapang?)
Nangka Mongkok: Sekadau Valley (Ketapang?)
Ribun
Saham: Kanayan (Sengah Temilah, Pontianak)
Selampong: Sekadau Valley (Ketapang?)
Semandang
Semirau: Dayak Tebuas (Jangkang, Sanggau)
Semongan: Bisomu (Noyah, Sanggau)
Tanap: Tanap (Kembayan, Sanggau)
Tanggung: Dayak Jongkang (Jangkang, Sanggau)
Upe: Mayan (Bonti, Sanggau)

Keremoi. In the list of Kalimantan languages Keremoi also attracted attention because it exhibits the
sound change *l > r that is so characteristic of Land Dayak languages. It also shows the change of final *h
> ? that is typical of the Mandong, Bakati’, Moro Betung and Saham group.²

However, it does not seem to show evidence of other Land Dayak sound changes. Furthermore, it does
not include lexical items that are characteristic of Land Dayak such as the following:
  Land Dayak *kăbas, *kăbis, *kabe/uni0294 ‘dead’ but Keremoi mahtoy
  Land Dayak *b/uni0259/uni0294/uni0259s ‘sleep’ but Keremoi tiruh
  Land Dayak *ndi/uni0294, *s/uni0259h, *asa/uni0294 ‘one’ but Keremoi ico?

It seems significant that Keremoi items show the lenition of medial voiced stops, i.e., *b > v, *d > r,
common in the languages of central Sarawak but not in Land Dayak languages. Cf. Keremoi havun ‘fog’;
Land Dayak *a(m)bun ‘cloud’; Keremoi iveʔ ‘short’, Bidayuh *rub/uni0259:, *kŭbi:t; Keremoi kəɾəvuʔ ‘dust’, Land
Dayak *dăbu; Keremoi urun ‘nose’, Land Dayak *V(n)duŋ; Keremoi uruʔ ‘grass’, Land Dayak *uduh.

At this point it seems best to conclude that Keremoi is not a Land Dayak language but leave open the
question of how it does relate to other groupings.

²See major sound change f) in §2.
2. Major sound changes that have impacted the Land Dayak languages

A number of sound changes have impacted the Land Dayak languages. Nine major sound changes will be described in this section. These are considered major because they have had broad impact on the sound system of the languages and have affected the pronunciation of many lexical items. These major sound changes form the criteria for sub-dividing the varieties of Land Dayak. Later in the paper (§6) a fuller set of sound changes will be discussed.

It is characteristic of the Land Dayak languages that the changes focus on the final rime of the word, i.e., the final vowel and the following consonant. Most changes affect the final consonant.

Each sound change will be illustrated by one or more cognate sets. Each set will include examples from the languages in which the sound change has taken place. In most cases it will also include the corresponding form from Proto Bidayuh, a conservative source, which generally reflects the situation before the sound change took place.


*baʔak, *(ă)bak ‘head’ Tanap baʔ, Semongan baʔ, Kembayan mbaʔ, Ribun (Hudson) booʔ, Gunam boʔ, Semandang baaʔ, Nanga Rakan mbaʔ, Lubuk Tajau baʔ, Leminang baaʔ/baʔ, Nangka Mongkok baʔ, Selampong baaʔ/baʔaʔ, Canayan mbaʔ/baʔaʔ; Proto Bidayuh *ūbak, *ba:k, *băʔak. (76)

*idip (or *idęp) ‘alive’ Ribun (Hudson) mideʔ (Adelaar) midiʔ, Gunam midiyeʔ; Proto Bidayuh *idip. (328)

*răŋŋ ‘sky’ Ribun (Hudson) hoŋeʔ (Adelaar) hoŋiʔ, Gunam hoŋiyеʔ; Proto Bidayuh *răŋj. (11)

*i-rad ‘wing’ Ribun (Hudson) ihaʔ (Adelaar) haʔ, Gunam ihaʔ; Proto Bidayuh *ira:d. (48)

b) Loss of final glottal stop. Glottal stop in final position is lost in Ambawang Satu, Semirau,⁴ Tanggung, Upe, Ribun, Gunam and Semandang. Also, it is often found in the languages of the Sekadau Valley.

*dăyaʔ ‘blood’ Ambawang Satu daya, Semirau doya, Tanggung doya, Upe doyah, Ribun (Hudson) doyo, Gunam doyo, Semandang doya, Nanga Rakan doya, Lubuk Tajau doya, Leminang doyah, Nangka Mongkok doya:, Selampong doyah; Proto Bidayuh *dăyaʔ:ʔ. (68)

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²The velar nasal in the languages cited here is written as ŋ. Other sources write it as ng. The symbols used in the various sources are, in general, retained in this paper. However, symbols such as t with a superimposed tilde, which are difficult to reproduce, have been changed to a more common transcription, in this case ‘n.

⁴Following the frequently occurring vowel *a final *ʔ is lost in Semirau and Tanggung. However, following the high and mid vowels it becomes k in those languages.
c) Denasalization of final nasals. The final nasal consonants *m, *n, *ŋ become voiceless stops p, t, k, respectively, in Saham\(^5\), Kasro Mego, Engkahan, Tanap, Semongan and Kembayan. However, in Tanap,\(^6\) Semongan and Kembayan (Adelaar but not Hudson) final *ŋ becomes k following *i or *o but not after *u, *ə or *a.\(^7\) In Moro Betung the final nasals, indicated as “m̃”, “ñ” and “ŋ̃”, may be pre-nasalized stops, but this is far from certain.

\*ñar\(^8\), *ñar ‘night’ Engkahan b̃aR̃ap, Tanap ṣ̃rap, Semongan ṣ̃rap, Kembayan (Adelaar) ṣ̃rap, ṣ̃rap, ṣ̃rap; Proto Bidayuh *ñar, *ñar, *karam. (22)

\*piʔin, *paʔin ‘water’ Saham payit, Kasro Mego pit, Engkahan p̃it, Tanap p̃it, Semongan pit, Kembayan (Adelaar) pit; Moro Betung p̃aʔin; Proto Bidayuh *piʔin. (6)

\*k̃aʔin ‘ear’ Kasro Mego kapik, Tanap kopik, Semongan kopik, Kembayan (Adelaar) kopik; Proto Bidayuh *k̃aʔin. (87)

d) Loss of final *ŋ. Final *ŋ is lost following *i, *ə or *a in Tanap, Semongan, Kembayan and Empodis.

\*C̃vndut\(^9\) ‘nose’ Tanap nuwah, Semongan nuwah, Kembayan (Hudson) nu', Empodis nuwa; Proto Bidayuh *ñduŋ, *ñduŋ, *ñduŋ. (84)

\*aʔan ‘breathe’ Tanap puŋasə̃yah, Semongan ʔ̃asə̃hay (<*N-ās/uni0259h), Empodis ʔ̃asiya (<*N-āsi); Proto Bidayuh *N-aʔan. (569)

\*t̃ura ‘bone’ Tanap tura:, Semongan tura, Kembayan (Hudson) tura, Empodis tuha:; Proto Bidayuh *t̃uraŋ. (70)

e) Devoicing/spirantization of *r. The continuant *r becomes h in Empodis, Ribun, Gunam and Canayan.

\*r̃ək̃ay ‘dry’ Empodis hakkay, Ribun (Hudson) hənjkə (Adelaar) hənka, Gunam hənjkae, Canayan hənjkeː; Proto Bidayuh *r̃əŋkəy ‘sun-dried’. (172)

\*k̃uʔit ‘skin’ Empodis kuuhiyat, Ribun (Hudson) kuحةʔ, (Adelaar) kuhiʔʔ, Gunam kuuhiʔʔʔ, Canayan kuheʔʔ; Proto Bidayuh *k̃uʔit. (66)

f) Hardening of final *h. Final *h becomes ñ in Mandong, Bakati’, Moro Betung and Saham.

\*b̃aʔə, *m̃aʔə ‘eye’ Mandong bəʔə?, Bakati’ *muʔə?, Moro Betung muʔə?, Saham maʔə?; Proto Bidayuh *m̃aʔə, *b̃aʔə. (88)

\(^5\)The change does not take place with *m in Saham.

\(^6\)In Tanap *ŋ following *i generally becomes t rather than the expected k. Cf. *k̃aʔin ‘hear’ Tanap ṣ̃opit (117); *caciŋ ‘worm’ Tanap cacit (60); *dagin ‘meat’ Tanap dagit (505).

\(^7\)The development of *ŋ following *u, *ə or *a in Tanap, Semongan and Kembayan is quite different and will be described in the next sound change.

\(^8\)In reconstructed Proto Land Dayak forms the penult vowel may be marked with a macron, e.g., ā, or a breve, e.g., ā. The former marks a full vowel and the latter a reduced vowel. For a discussion of this contrast, cf. Part III, §5.2.2.2.

\(^9\)In this formulation and in other reconstructions the symbol C stands for an unspecified consonant.
g) Diphthongization of high and central vowels. The vowels *i, *u and *ə before *p, *t, *k or *ŋ become i,10 u and a in Tanap, Semongan, Kembayan, Empodis, Ribun and Gunam.11

*kūrit (‘skin’) Tanap kuri’t, Semongan kuri’t, Kembayan (Hudson) kuri’t, Empodis kuhiyat, Ribun (Adelaar) kuhiʔ?, Gunam kuhiyoʔ; Proto Bidayuh *kūrit. (66)

*mānuk, *mānuk (‘bird’) Tanap monuwaʔk, Semongan monuwaʔk, Kembayan (Hudson) monuʔʔʔ, Empodis monuwaʔk, Ribun (Adelaar) monoʔʔʔ; Proto Bidayuh *mānuk. (47)


h) Redistribution of *ə. The central vowel *ə is lost from the vowel system in Bakati’, Moro Betung, Saham, Ambawang Satu, Semirau, Tanggung, Upe, Tanap, Empodis, Ribun, Gunam, Semandang, Nanga Rakan, Lubuk Tajau, Leminang, Nangka Mongkok, Selampong and Canayan. It merges with i, u or a under various circumstances.

*jīp (‘teeth’) Bakati’ *japuʔ, Moro Betung japu, Semirau jiput, Tanggung jiput, Upe jipit, Tanap jiput, Empodis jipit, Ribun jipun, Gunam jipun, Semandang jipun, Nanga Rakan jipun, Lubuk Tajau jipun, Leminang jipun, Nangka Mongkok jipun, Selampong jipun, Canayan jipun; Proto Bidayuh *jīp, (82)

*rīm (‘five’) Bakati’ *rimaʔ, Moro Betung rimaʔ, Saham rimaʔ, Ambawang Satu Rima, Semirau Rimuh, Tanggung Rimuh, Upe rimih, Empodis himih, Ribun (Hudson) himuh (Adelaar) himu, Gunam himuh, Semandang limaʔ, Nanga Rakan limaʔ, Lubuk Tajau limaʔ, Leminang limaʔ, Nangka Mongkok limaʔ, Selampong limaʔ, Canayan limaʔ; Proto Bidayuh *rīm. (285)

i) Backing of *a before glottal stop. The low vowel *a is backed to o before glottal stop in Tanap, Semongan, Kembayan, Empodis, Ribun and Gunam.

*sāwa (‘year’) Tanap sowoʔ, Semongan sowoʔ, Kembayan sowo’, Empodis sowok, Ribun sowo, Gunam sowo; Proto Bidayuh *sāwaʔ. (20)

*rāja (‘sharp’) Tanap rojoʔ, Semongan rojoʔ, Kembayan (Hudson) rojoʔ (Adelaar) rojoʔ, Empodis hojok, Ribun (Hudson) hojo, Gunam hojo; Proto Bidayuh *rājaʔ. (307)

10The diphthongization results in a vocalic sequence falling from a high vowel to a central or low vowel. It is symbolized here as i, u and a, but the sounds are written variously in the sources as ia, iya, iya, etc.

11It should be noted that a partially similar sound change took place in some of the varieties of Bidayuh. The Bidayuh mid vowels /e/ and /o/ are pronounced as centralizing diphthongs [ia] and [ua] in Western Bidayuh and in the Penrissen, Lower Padawan and Anah Rais varieties of Central Bidayuh. As in the languages under attention here this situation in Bidayuh involves diphthongization of certain vowels, but the distribution is rather different from sound change g). Diphthongization in these southern Land Dayak languages is somewhat similar to the phenomenon that Blust calls ‘breaking’ in Mukah Melanau (Blust 1988:180-181).
3 Sub-grouping of the varieties of Land Dayak

The varieties of Land Dayak are sub-grouped according to the major sound changes that occur with each group. In other words, varieties that have undergone the same set of major sound changes are grouped together.

Ten sub-groups of Land Dayak languages are recognized on the basis of the distribution of the major sound changes.

Figure 1 Distribution of major sound changes among the varieties of Land Dayak

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</table>
Sub-group I, Bidayuh, has not undergone any of the major sound changes.\textsuperscript{12}

Sub-group II, Mandong, has undergone sound change f).

Sub-group III, Bakati’, has undergone sound changes f) and h).

\textsuperscript{12}Adelaar (1995:87) cites Sungkung, “a language spoken in the West Kalimantan regencies of Sambas and Sanggau in a chain of six villages along the Sarawak border.” He cites some fourteen words from Sungkung. From these it appears that Sungkung, like Bidayuh, has not undergone any of the major sound changes cited in this section. However, it did not undergo the PAN *l > PLD *r sound change found in all other Land Dayak languages with a few exceptions in some languages. In initial position *l/r is lost in the word amin ‘house’, the only word in the sample with the sound in that position.
Sub-group IV, Moro Betung and Saham, has undergone sound changes c), f) and h).
Sub-group V, Ambawang Satu, Semirau, Tanggung and Upe, has undergone sound changes b) and h).
Sub-group VI, Kasro Mego and Engkahan, has undergone sound change c).
Sub-group VII, Tanap, Semongan and Kembayan, has undergone sound changes a), c), d), g), h)\textsuperscript{13} and i).
Sub-group VIII, Empodis, has undergone sound changes d), e), g), h) and i).
Sub-group IX, Ribun and Gunam, has undergone sound changes a), b), e), g), h) and i).
Sub-group X, Semandang, Nanga Rakan, Lubuk Tajau, Leminang, Nangka Mongkok, Selampong and Canayan has undergone sound changes a), b) and h).\textsuperscript{14}

<table>
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<th>Sub-group</th>
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From the chart in Figure 3 we can observe that the boundary between sub-group VI and sub-group VII is quite significant. Sound change f) occurs only in the first six sub-groups while sound changes a), d), e), g) and i) occur only in the latter four. Sound changes b), c) and h) are the only ones that occur in both the first six and the latter four sub-groups.

If we were to shift the boundary between sub-group IV and sub-group V, sound change b) would occur only in the latter six sub-groups and not in the former four sub-groups. In that case only sound changes c) and h) would occur in both the former group and the latter group.

### 3.1 Innovating and conservative sub-groups

From Figure 3 we observe that the latter sub-groups (those in the lower part of the chart), especially sub-groups VII, VIII and IX, are more innovating—with five or six sound changes each—as compared with the

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\textsuperscript{13}Sound change h) takes place in Tanap but not in Semongan and Kembayan within sub-group VII.

\textsuperscript{14}Sound change e) takes place in Canayan but not in any other variety in sub-group X.
earlier sub-groups. By contrast, sub-group I is very conservative since no major sound change is reflected in Bidayuh.

### 3.2 Lexical evidence for sub-grouping

In some sets all or most of the Land Dayak languages exhibit forms that are cognate. For example, in the following set every form is cognate:


In the following set every form is cognate as well (apart from the penult vowel):


However, in many sets a lexical cluster is found in one group of languages while one or more different clusters occur in the others. Note, for example, the following set with at least three distinct lexical clusters:


*ˈmulut* (?) Ambawang Satu molout;

*ˈtʊkʊk* Semirau tukok, Tanggung tukok, Upe tukok, Kembayan (Hudson) tukuʔ?, Empodis tukuwak, Ribun (Hudson) tuko (Adelaar) tuko”ʔ?, Gunam tukoʔ?, Semandang tukoʔ’, Nanga Rakan tukoʔ, Lubuk Tajau tukoʔ, tukoʔ, Leminang tukoʔ, Nangka Mongkok tukoʔ, Selampong tukoʔ, Canayan tokoʔ. (81)

These differing, in most cases non-cognate, lexical sets provide two kinds of evidence for sub-grouping. The first kind provides evidence to link members of individual sub-groups, in most cases reinforcing the evidence from shared sound changes. The second kind provides evidence that two or more sub-groups share a common lexical heritage.

### 3.3 Lexical evidence linking members of a sub-group: Sub-group VII

In some cases the distribution of lexical clusters reinforces the existence of a sub-group established on the basis of sound changes. For example, Tanap, Semongan and Kembayan are designated as a sub-group of Land Dayak languages because they have undergone sound changes a), c), d), g), h) and i) and no other language has undergone just that set of sound changes. In addition, some lexical items occur uniquely in those three languages.
*băna? 'wind' Tanap bono?, Semongan bono?, Kembayan bono’ whereas the forms in other languages are reflexes of *Căba/ak, *măhu, *buak, *Caru, *aŋin, etc. (13)

*ŋkukus 'dull' Tanap ŋkukus, Semongan ŋkukus, Kembayan ngkukus whereas the forms in other languages are reflexes of *tāja, *săna, *tumpul, etc. (308)

*dikat 'near' Tanap dikiy, Semongan diki, Kembayan (Hudson) diki’t. Note Mandong jeket, Bakati’ *jike,t, Moro Betung jeket, Saham jeket, Ambawang Satu jeket, which reflect *jiket, probably cognate but with a different initial consonant. Other languages reflect *sămak, *sasak, etc. (303)

*īdu 'two' Tanap du:, Semongan idu, Kembayan (Hudson) idu (Adelaar) du. Note that Empodis, a neighboring sub-group, also has du: in this set. Forms in other languages reflect *duah, *dukah. (282)

So, we conclude that the unique occurrence of certain lexical items in Tanap, Semongan and Kembayan reinforces the status of these three languages as a single sub-group of Land Dayak.

Sub-group IX. Ribun and Gunam also are designated as a sub-group of Land Dayak languages because they have undergone sound changes a), b), e), g), h) and i) and because no other language has undergone just those sound changes. The fact that Ribun and Gunam share a unique lexical item in the set labeled ‘one’ provides further evidence for the existence of this sub-group.

*găli 'one' Ribun goli’, Gunam gole? whereas the forms in other languages reflect *ndi?, *săh, *asa?, *k/sitek, etc. (281)

Sub-group X. Semandang and the languages of the Sekadau Valley are designated as a single sub-group because only they have undergone sound changes a), b) and h). In addition, they share certain unique lexical clusters.

*ŋănti 'play' Semandang ngonti, Lubuk Tajau ŋ/nti, Nangka Mongkok ŋontiy, Canayan gonti (but Nanga Rakan marjah, Lemintang main, Selampong ma’in) whereas other languages reflect *rūbi, *ăjal, *main, etc. (139)

*rima 'woods' Semandang rima, Nanga Rakan rima, Lubuk Tajau ima:, Lemintang rima, Selampong *ima, Canayan hima:. These forms are presumably cognate with or borrowed from Malay rimba whereas forms in other languages reflect *tărun, *tu’an, *liop, etc. (27)

Sub-group V. Semirau and Tanggung are designated as part of sub-group V along with Ambawang Satu and Upe, based on their all having uniquely undergone sound changes b) and h). However, it is interesting to note that Semirau and Tanggung share a number of lexical clusters. Some of these are also shared by Upe, but in few cases are they also shared by Ambawang Satu, which much more frequently shares lexical material with sub-groups III and IV.


*lion 'woods' Semirau liop, Tanggung liop, Upe iyok (probably cognate) but Ambawang Satu utan. Other languages reflect *tărun, *tu’an, *rima, *utan, etc. (27)

*nay 'mother' Semirau nay, Tanggung nay but Upe mak and Ambawang Satu sino. Other languages reflect *sindo/a? or *ăyaŋ. (249)
*malāji? 'sharp' Semirau molojik, Tanggung molojik but Upe ngoja and Ambawang Satu tajam. Other languages reflect variations of *rāja? or *tajam. (307)

*malātuŋ 'black' Semirau malatukŋ, Tanggung malatukŋ but Upe ḳabok and Ambawang Satu itam. Other languages reflect *bārəm, *sənət, *bəbis, etc. (327)

*puntul ‘dull’ Semirau puntul, Tanggung puntul but Upe modot and Ambawang Satu tumpul. The form underlying Semirau and Tanggung appears to be a unique metathesis of *tumpul, which underlies the forms in Ambawang Satu and elsewhere. Other languages reflect *tăja, *sana, *ŋkukus, etc. (308)

*gāgap 'cloud' Semirau gagap, Tanggung gagap but Upe oənə and Ambawang Satu awan. The form galap ‘dark cloud’ in Bakati’-Rara might be cognate. Other languages reflect *ambun, *rāmaŋ, *karūman, etc. (12)

So, in this case the lexical evidence strongly reinforces the sub-grouping of Semirau with Tanggung, weakly reinforces the sub-grouping of these with Upe but provides considerable counter-evidence to the inclusion of Ambawang Satu in this sub-group V.

Lexical evidence linking two or more sub-groups. Now we turn to the second type of lexical evidence, that which suggests linkages among two or more sub-groups established on the basis of shared sound changes. Thus far lexical evidence has been observed that suggests three such linkages among sub-groups.

Northern Land Dayak lexical area. Many sets contain lexical material that is shared only by Mandong, Bakati’, Moro Betung, Saham, Ambawang Satu and in some cases Bidayuh. This distribution pattern shows a linkage of sub-groups II, III, IV, the first member of sub-group V and in some cases sub-group I. This lexical distribution pattern suggests what could be called a Northern Land Dayak lexical area.

*ābok ‘(head) hair’ Bidayuh *abo:k, Mandong abuk, Bakati’ *abo:k, Moro Betung abok, Saham abok, Ambawang Satu abak?e. By contrast, note that Semirau boRubak, Empodis buhuh bak (and apparently all others) reflect *buruh (*ābak) ‘feather (head)’ (79)

*(d)amba ‘old’ Bidayuh *(d)əmba, Mandong ama?, Bakati’ *ama, *dama, Moro Betung ama, Saham ama. (It is possible that Nanga Rakan ome lamat ‘long time’, Lubuk Tajau ome lamat ‘long time’ are related.) By contrast, note Semirau muntuh (and apparently all others), which reflects *muntuh and related forms (324)

*bāreŋ ‘hand’ Bidayuh-Upper Padawan bāreŋ ‘arm’, Mandong bareŋ, Bakati’ *bareŋ, Moro Betung bareŋ, Saham barek, Ambawang Satu bareŋ. By contrast, note Semirau təŋan and others, including Bidayuh *təŋan ‘hand’ that reflect *təŋan (104)

*buut ‘afraid’ Mandong bɔ:t, Bakati’ buu:t, Moro Betung but, Saham buwut, Ambawang Satu but. By contrast, note Bidayuh *təru and others that reflect *təru or *gəlak. (179)

*siaʔ ‘salt’ Mandong siyaʔ, Bakati’ *siaʔ, Moro Betung siyaʔ, Saham siyaʔ, Ambawang Satu sia. By contrast, note Bidayuh *gələm and others reflecting *gələm, *gəram. (219)

*jiket ‘near’ Mandong jekeʔ, Bakati’ *jikeʔ, Moro Betung jekeʔ, Saham jekeʔ, Ambawang Satu jekeʔ. By contrast, note Bidayuh *səmək and others that reflect *səmək, *dikət. (303)

There is another, more surprising, pattern of shared lexical material that links Kasro Mego and Engkahan with Bidayuh, i.e., sub-group VI with sub-group I.
*tāja 'dull' Bidayuh *tāja, Kasro Mego tāja?, Engkahan tāja. By contrast, other forms reflect *sāna, *tumpul, *ŋkuku, etc. (308)

*rūbi 'play' Bidayuh *birūbi, Kasro Mego Rubi, Engkahan baRubi. By contrast, other forms reflect *ājal, *main, *ŋāanti, etc. (139)

*bātah 'eye' Bidayuh *bātah, *bātan, Mandong bāta?, Kasro Mego bāta, Engkahan bāta. By contrast, all other forms reflect *mātah with initial *m rather than initial *b. (88)

Interestingly, some sets exhibit both the first and the second lexical distribution pattern. In these cases, of course, Bidayuh does not participate in the first pattern, where it is optional, because Bidayuh participates in the second pattern, where it is obligatory.

*buut 'afraid' Mandong bu:xt, Bakati' buu:t, Moro Betung but, Saham buwut, Ambawang Satu; but *tāru Bidayuh *tāru, Kasro Mego toRu:, Engkahan tāRu. By contrast, other forms reflect *gālak. (179)

*sāna 'dull' Mandong sina, Bakati' *sunu, Moro Betung sunu, Saham sāna; but *tāja Bidayuh *tāja, Kasro Mego tāja?, Engkahan tāja. By contrast, other forms reflect *tumpul, *puntul, *buŋkul or *ŋkuku. (308)

*manuk 'fat (adj.)' Bakati' *manu/o, Moro Betung manuk, Saham mano?, Ambawang Satu mano; but *simbat Bidayuh *simbat, *simba?, Kasro Mego simat:, Engkahan simat. By contrast, other forms reflect *lāmu?. (310)

Together, these two lexical distribution patterns seem to establish a Northern Land Dayak lexical area, distinct from a Southern lexical area. This area includes Sub-groups I, II, III, IV and VI. 15

Southern Land Dayak lexical area. Many sets have similar lexical material in Semirau, Tanggung, Upe, Empodis, Ribun, Gunam, Semandang, Nanga Rakan, Lubuk Rajau, Leminang, Nangka Mongkok, Selampong, Canayan. This group includes Sub-groups V except for Ambawang Satu, VIII, IX and X. In a number of these sets the shared lexical material occurs in only those languages.

*kūyuk 'dog' Semirau kuyuk, Tanggung kuyuk, Upe kuyuk, Empodis yuk, Semandang kuyu', Nanga Rakan kuyu?, Lubuk Rajau kuyu?, Leminang kuyu?, Nangka Mongkok kuyu?, Selampong kuyu?, Canayan kuyu?. By contrast, other forms reflect *kāsuh (59)

*dudak or *dudok 'sit' Semirau dudaik 16, Tanggung dudaik, Upe dudok, Gunam dudo?, Semandang dudo', Nanga Rakan dudo?, Lubuk Rajau dudo?, Leminang dudok, Nangka Mongkok dudok, Selampong dudok, Canayan dudo?. By contrast, other forms reflect *gulu?, *guru?, etc. (131)

*pitat 'bite' Semirau pitat/ 16 (Semirau and Tanggung <*pitan), Tanggung pitat, Upe pitat, Empodis mitat, Ribun mitak, Gunam mita?, Semandang mitat, Leminang mitat, Selampong mitat, Canayan mitat. By contrast, other forms reflect *ku?ut, *gigit. (147)

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15Ambawang Satu, which is a part of Sub-group V, participates often in the first of these lexical patterns. However, the other three languages in Sub-group V, Semirau, Tanggung and Upe, seem clearly to participate in the third lexical pattern, which distinguishes a Southern lexical area.

16The presence of i between the vowel and k in the forms from Semirau and Tanggung is unexplained. However, something similar occurs in the Semirau and Tanggung forms in at least two other sets. *duak 'eat' > Semirau and Tanggung duwaik (232) and *gālak 'afraid' > Semirau and Tanggung goloik (179).

*dukah ‘two’ Semirau dukah, Tanggung dukah, Upe dukah, Ribun (Hudson) dukoh (Adelaar) duka’h, Gunam dukoh, Semandang dukah, Lubuk Rajau dukah, Leminang dukah, Selampong dukah, Canayan duka. By contrast, other forms reflect *duah, *ïdu. (282)

*k/sitek ‘one’ Ambawang Satu sete, Semirau kitek, Tanggung kitek, Upe te?, Leminang kate?, Selampong kite?, Canayan site??. Although several of the usual languages are missing from this set, it does include Ambawang Satu along with the others in Sub-group V. By contrast, other forms reflect *ndi?, *sah, *asa?, *gali?, etc. (281)

In addition to the sets in which lexical material is shared by this core group there are some sets that also include Tanap, Semongan and Kembayan, i.e. Sub-group VII.

*lätap ‘hot’ Semirau lotup, Tanggung lotup, Upe lotip, Tanap latuwap, Semongan lataap, Kembayan lotigap (cognate?), Empodis lotiyap, Ribun (Hudson) ootik (cognate?), Gunam lotik. (314)

Furthermore, there are sets that in addition to the languages listed above also include Kasro Mego and Engkahan. However, these two languages are included as well apparently only if Tanap, Semongan and Kembayan are included.

*galay ‘lying down’ Upe ngalay, Tanap galai17, Kembayan (Adelaar) galay, Ribun (Hudson) ñalay (Adelaar) ñala, Gunam ñala, Semandang ñale, Nanga Rakan ñalay, Lubuk Rajau ñalay, Selampong ñaley, Canayan ñale; *ñalay Kasso Mego ñula, Semongan ñule, Kembayan (Hudson) ñule; *ñura? Engkahan ñura? *galik Semirau galik, Tanggung galik. By contrast, other forms reflect *guriñ. (415)

*ämî? ‘we (exclusive)’ Semirau omi, Tanggung omi, Kasro Mego omi?, Engkahan omi?, Tanap ome?, Semongan ome?, Kembayan (Hudson) ome? (Adelaar) ome?, Empodis mi?, Ribun (Hudson) ome, Gunam më, Nanga Rakan balome, Lubuk Rajau (ba)lome, Leminang me, Nangka Mongkok me, Selampong ome, Canayan omi; cf. also Bidayuh *ami?, *kami?, *nami?. By contrast, other forms reflect *kâmîh. (342)


17Several forms in this set have a or ay in the ultima. It is possible that this indicates that the form should be reconstructed as *galay and that the vowel-semivowel sequence *ay should be recognized for Proto Land Dayak along with *ay and *uy. See references to this issue in Rensch et al, §5.1.3.
It is this third lexical pattern that regularly includes Semirau, Tanggung, Upe, Empodis, Ribun, Gunam, Semandang, Nanga Rakan, Lubuk Rajau, Lemínang, Nangka Mongkok, Selampong, Canayan. This group includes Sub-groups V except for Ambawang Satu, VIII, IX and X. There are a few additional sets that enlarge this pattern to include Tanap, Semongan and Kembayan, i.e., Sub-group VII. There are still a few other sets that enlarge this pattern further to include Kasro Mego and Engkahan, i.e., Sub-group VI, but only if Tanap, Semongan and Kembayan are included. In its largest form this third lexical pattern includes Sub-groups V except for Ambawang Satu, VI, VII, VIII, IX and X. This pattern defines a Southern Land Dayak lexical area, which contrasts with the Northern Land Dayak lexical area. Apart from Kasro Mego and Engkahan the two lexical areas do not overlap.

Sub-groups with special internal similarity. Early in the time of working with these data it became evident that some pairs or triples of wordlists stood out as being consistently similar, often identical. The similarity observed was both lexical and phonological. The conspicuously similar groups are as follows:

- Semirau and Tanggung, which form a core of sub-group V;
- Tanap, Semongan and Kembayan, which constitute sub-group VII; and
- Ribun and Gunam, which comprise sub-group IX.

Forms in some languages of the Sekadau Valley are often very similar to each other or identical, but at this point it is not possible to identify a grouping of these languages that is consistently more similar than the others.
4 The mid vowels

Four vowels, *i, *u, *ə and *a are well attested for Proto Land Dayak, most obviously in the prominent final syllable.¹⁸

In addition, the vowel inventories of the Bidayuh and Bakati’ languages also include mid vowels e and o (Part III, §§2.3.2.3 and 3.1.2). Those same mid vowels can be reconstructed for Proto Bidayuh-Bakati’ (Part III, §4.1.2.1). At the time of writing Part III there was uncertainty as to whether mid vowels should be reconstructed for the ancestor language, Proto Land Dayak. Note the following statement that reflects that uncertainty (xxx): “At this point it seems warranted to recognize **i and **u for Proto Land Dayak with reflexes that vary in some cases to e and o, but not distinct mid vowels. In the future, further evidence may be found that justifies recognizing PLD mid vowels distinct from high vowels.”

Since that time and especially now with the availability of the data on which this present study is based, it seems increasingly likely that mid vowels *e and *o should be reconstructed for Proto Land Dayak. However, it should be stated that the contrasts between the high and mid vowels are not nearly as clear and consistent as are the contrasts between the high, central and low vowels.

4.1 *i/*e and *u/*o in open syllables

The front vowels *i and *e and the back vowels *u and *o contrast in open syllables in most Land Dayak languages. Note the following examples:

*sūni ‘river’ Bidayuh *sūni, Mandong suŋi, Bakati’ *suŋi, Moro Betung suŋe, Ambawang Satu suŋa?i, Semirau suŋi, Tanggun suŋi, Upe suŋi, Engkahan suŋi, Tanap suŋi, Semongan suŋi, Kembayan suŋi, Empodis suŋi, Ribun suŋi, Gunam suŋi, Lubuk Tajau suŋi, Leminang suŋey, Nangka Mongkoko suŋey, Selampong suŋi, Canayan suŋiy. (7)


*ka ume ‘where’ Bakati’ *ka (d)ume, Moro Betung ka? ome, Saham me, Ambawang Satu kome. (337)

*dābu ‘dust’ Bidayuh *dābu, Mandong debu, Semirau dobu, Tanggun dobu, Kasro Mego dobu, Engkahan dābu, Tanap dobu, Semongan dobu, Kembayan dobu, Empodis dobu, Ribun dobu, Gunam dobu, Semandang debu, Nanga Rakan dobu, Lubuk Tajau dobu, Canayan dobu; *dābu Bakati’ *dabu, Moro Betung dabu, Ambawang Satu dabu. (226)

¹⁸These four also occur in the pre-final syllable, the penult, of the Proto Land Dayak word. In that position there is a contrast between full and reduced vowels with the resultant inventory of not only the common *ā (full) and *a (reduced) but also *i and *I, *ū and * ŭ, *ē and *ẽ. For a fuller discussion of this phenomenon in Land Dayak see Part III, § 5.2.2.2.

In the syllables preceding the penult of the Proto Land Dayak word just one vowel quality occurs. In some languages it is pronounced as i, in others as a or yet another quality. In reconstructed forms it is written as *a.
*Vnto ‘this’ Semirau anto, Tanggung anto, Upe to, Gunam Nto, Nanga Rakan to, Lubuk Tajau to, Leminang ntoh, Nangka Mongkok nto, Selampong nto, Canayan nto (512); *ŋoto ‘here’ Semirau wah ŋoto, Tanggung wah ŋoto, Upe wah to, Ribun nting ngotu, Gunam ŋoto, Semandang ngoto.

(404)

*jVlo ‘give’ Mandong jolo, Semirau julo, Tanggung julo, Upe jilo, Empodis jiluwa, Gunam jilo, Canayan julo: (162)

However, not infrequently *i becomes e and *u becomes o, especially in Mandong, Bakati’, Moro Betung and Saham.

*āti ‘liver’ Bidayuh *ati, *ati:n, Mandong ate, Bakati’ *ate, Moro Betung ate?, Saham aTc, Ambawang Satu ate, Semirau oti, Tanggung oti, Upe oti, Kasro Mego oti, Engkahan atəŋk (cognate?), Semongan oti, Kembayan oti, Empodis oti, Ribun (Hudson) oti (Adelaar) oti\(^a\), Gunam oti, Semandang oti, Nanga Rakan oti, Lubuk Tajau ŋiy, Leminang otiy, Nangka Mongkok otiy, Selampong otiy, Canayan oti. (103)

*gāyu ‘scratch’ Bidayuh *gāyu, Mandong gayo, Bakati’ *ŋayo, Moro Betung ŋayo, Saham ŋayo, Semirau gayu, Tanggung gayu, Upe gayu, Kasro Mego ŋuh, Tanap ŋuyu:, Semongan ŋuyuh, Kembayan ŋuyu, Empodis ŋuyu, Ribun (Hudson) ŋuyu (Adelaar) ŋuyu\(^a\), Gunam gayu, Semandang bagoyu, Nanga Rakan gayu, Lubuk Tajau gayu, bagoyu, Leminang gayu, ŋuyu, Nangka Mongkok bagoyu, Selampong ŋuyu. (122)

The high vowels *i and *u become iy and uw, respectively, in at least some of the languages of the Sekadau Valley.

*dāri ‘man’ Bidayuh *dāri, Semirau daRi, Tanggung daRi, Engkahan daRi, Tanap dari, Semongan dari, Kembayan dari, Empodis dari, Ribun (Adelaar) dari\(^a\), Semandang dari, Nanga Rakan dari, Lubuk Tajau daiy, Leminang dariy, Nangka Mongkok dariy, Selampong daywi, Canayan daih. (252)

Cf. also *sūŋi ‘river’ (7) and *āti ‘liver (103) above.

*dābu ‘dust’ Bidayuh *dābu, Mandong debu, Semirau dobu, Tanggung dobu, Kasro Mego dobu, Engkahan dabe, Tanap dobu, Semongan dobu, Kembayan dobu, Empodis dobu, Ribun dobu, Gunam dobu, Semandang dobu, Nanga Rakan dobu, Lubuk Tajau dobu, Leminang dobuw, Nangka Mongkok dobuw, Selampong dobuw, Canayan dobu. (226)

With this understanding of these changes to the high vowels *i and *u in open syllables in certain languages we are now prepared to examine a larger number of full sets that reflect *i vs. *e and *u vs. *o in open syllables in the Land Dayak languages.

\(^{19}\)In this formulation and in other reconstructions the symbol V stands for a vowel of uncertain quality.
Table 4. Evidence for *i vs. *e and *u vs. *o in open syllables

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<th>*suŋi (7)</th>
<th>*tăni (102)</th>
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<table>
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<tr>
<th>*...u</th>
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<th>*dābu (226)</th>
<th>*ǎndu (19)</th>
<th>*kudu</th>
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*…o *jVlo (162) *aŋo (298) *ŋoto (404), *ŋoto (512)

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<td>‘give’ ‘long’ ‘here, this’</td>
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<td>Julo</td>
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<td>jilo</td>
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<tr>
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</table>
4.2 *i/*e and *u/*o before *k and *ŋ

The front vowels *i and *e and the back vowels *u and *o contrast before *k and *ŋ in most Land Dayak languages. Note the following examples:

*bāriŋ ‘hit with a stick’ Semirau boRik, Tanggung boRik, Upe boRik, Empodis bohik, Gunam br?.

(178)

*k/sītek ‘one’ Ambawang Satu scte, Semirau kitek, Tanggung kitek, Upe te? Leminang Kate?, Selampong kite?, Canayan site?. (281)

*mānuk, *mānuk ‘bird’ Bidayuh *mānuk, Mandong manuk, Bakati *manu,k, Moro Betung manuk, Saham manuk, Ambawang Satu manuk, Semirau monok, Tanggung monok, Upe monok, Kasro Mego manuk, Engkahan manuk, Gunam monu?. (47)

*ŋamok ‘stab’ Bidayuh *ŋāmok, Bakati *ŋamok, Moro Betung tamok, Saham ŋamok, Engkahan namok, Nanga Rakan numo? ‘stab from below’, Lubuk Tajau tumo? ‘stab from above’. (145)

*guriŋ ‘lying down’ Bidayuh *gurĩ, Mandong guriŋ, Bakati *guriŋ, Moro Betung guriŋ, Saham gurik, Ambawang Satu gurik, Empodis guhiŋ, Leminang guyikŋ, Nangka Mongok guuŋk. (415)

*bāreŋ ‘arm’ Bidayuh-Upper Padawan bareŋ ‘arm’, Mandong bareŋ, Bakati *bareŋ ‘arm and hand’, Moro Betung bareŋ, Saham barek, Ambawang Satu bareŋ. (104)

*dāyuŋ ‘woman’ Bidayuh *dāyuŋ, Semirau dayuŋ, Tanggung dayuŋ, Upe Ndayuuŋ, Kasro Mego jindayok, Engkahan dayuŋ, Semandang dayung. (253)

*putuŋ ‘belly’ Bidayuh *putuŋ, Mandong putuŋ, Bakati *putuŋ, Moro Betung putuŋ, Ambawang Satu putuŋ, Kasro Mego putuŋ, Engkahan putuŋ. (101)


However, the high vowel *i becomes i before *k in Tanap, Semongan, Kembayan (Hudson), Empodis and Ribun (Hudson) and becomes e in Semandang and the languages of the Sekadau Valley.

*karašik ‘sand’ Bidayuh *kirašik, Mandong karašik, Moro Betung karasık, Semirau koRosik, Tanggung koRik, Upe koRik, Kasro Mego koRosik, Engkahan Karasık, Tanap kurosiŋ, Semongan kurosiŋ?, Kembayan (Hudson) kurosiŋ?, Empodis kohosiŋ, Ribun (Hudson) kohosiŋ? (Adelaar) kohoseŋ?, Gunam kohoseŋ, Nanga Rakan kayoseŋ, Lubuk Tajau kayoseŋ, Leminang koyoseŋ, Nangka Mongok kayoiset, Selampong kaseŋ, Canayan kahoseŋ. (3)

*tāriŋ, *tāriŋ ‘pull’ Bidayuh *tāriŋ, *nāriŋ, *nāriŋ, *nāriŋ, Mandong narik, Bakati *nari,k, Moro Betung narik, Ambawang Satu narik, Upe narik, Tanap nariaŋ, Semongan ganik (cognate?),
The high vowel *u becomes u/uni1D43 before *k and *ŋ in Tanap, Semongan, Kembayan (Hudson), Empodis and Gunam20 and becomes o in Ribun (Hudson), Semandang and the languages of the Sekadau Valley.


*induŋ, *unduŋ ‘nose’ Bidayuh *induŋ, Moro Betung iduŋk, Ambawang Satu idon, Semandang idong, Lemingan idon, Nangka Mongkok don, Selampong don, Canayan don; *unduŋ Bidayuh *unduŋ, Kasro Mego unuk; *nduŋ Bidayuh *nduŋ, Semirau don, Tanggung don, Engkahan nun, Tanap nuwah, Semongan nuwah, Kembayan nu, Empodis nuwa, *duduŋ Mandong duduŋ, Bakati’ *duduŋ, Saham duduk; *(an)tanduŋ Upe antano, Ribun (Hudson) tonduŋ (Adelaar) tonduŋ, Gunam tonuŋ; *sunduŋ Nanga Rakan sino, Lubuk Tajau suno. (84)

With this understanding of these changes to the high vowels *i and *u before *k and *ŋ in certain languages we are now prepared to examine some full sets that reflect *i vs. *e and *u vs. *o before the velar consonants *k and *ŋ in the Land Dayak languages.

Table 2. Evidence for *i vs. *e and *u vs. *o before velar consonants

<table>
<thead>
<tr>
<th>*...ik</th>
<th>*kirāsik (3)</th>
<th>*tarik (151)</th>
<th>*bārik (178)</th>
<th>*balik (140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘sand’</td>
<td>‘pull’</td>
<td>‘hit with stick’</td>
<td>‘return’</td>
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<tr>
<td>Bidayuh</td>
<td>*kirāsik</td>
<td>*tarik</td>
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<td>balik</td>
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<td>Bakati’</td>
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<td>*b/mali, k</td>
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<td>narik</td>
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20 The diphthong develops in Gunam before *ŋ but not before *k.
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<td>*setek (281)</td>
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### 4.3 *i/*e and *u/*o before *ʔ and *h

The front vowels *i and *e and the back vowels *u and *o contrast before *ʔ and *h in most Land Dayak languages. Note the following examples:

- *kiriʔ* 'left (hand)' Bidayuh *kiriʔ, Bakati’ *sǎŋkiriʔ, Saham ɲeŋkiri, Ambawang Satu kiri. (183)
- *baniʔ* ‘seed’ Mandong baniʔ, Bakati’ *baniʔ. (502)
- *lideʔ* ~ *rideʔ* ‘thin’ Bidayuh *lideʔ?, Mandong radeʔ?, Bakati’ *radeʔ?. (322)
- *tarih* ‘rope’ Semirau toRis, Tanggung toRis, Upe toRih, Ribun tohis, Gunam tohis, Semandang toRih. (206)
- *kuceh* ‘dig’ Semirau kuc/uh, Tanggung kuc/uh, Upe kuc/uh, Ribun nguceh, Gunam nuceh, Semandang nguceh. (149)
- *guruʔ* ‘sit’ Kasro Mego ɲuRu, Engkahan ɲuRuʔ, Tanap ɲuruʔ, Semongan ɲuruʔ, Kembayan (Hudson) ɲuruʔ (Adelaar) Ḉoroʔ, ɲuruʔ, Empodis guhuk, Ribun Ḉuruʔ; *guluʔ Bidayuh *ḡuluʔ. (131)
- *akuʔ* ‘I’ Bidayuh *akoʔ, Kasro Mego okuʔ, Engkahan əku. (339)
- *kukoʔ* ‘neck’ Bidayuh *kūkoʔ, Kasro Mego kokʔ, Engkahan kukoʔ. (92)
- *(d)əmbuh* ‘long’ Bidayuh *əmbu, *əmbuh, Mandong amuh, Semirau domuh, Tanggung domuh, Kasro Mego domuh, Engkahan amuh, Tanap omuh, Semongan amuh, Kembayan omuh, Empodis omuh. (298)
- *(num)poh₂* ‘blow’ Bidayuh *ni-poh, *puhoh, Mandong mpoh, Bakati’ *ŋampo₂h, Saham ampoh,
  Semirau tipoh, Tanggung tipoh, Upe sipoh, Kasro Mego ɲumpoh, Engkahan ɲampo, Tanap tupuh,
  Semongan tupuh, Kembayan (Hudson) ɲupuh (Adelaar) nɔpuh, Gunam sipoh, Semandang nɔipoh,
  Nanga Rakan nɔpoh, Lubuk Tajau sipoh, Nangka Mongkok sipoh, Selampong numpu, Canayan
  sipoh. (148)
In open syllables and before the velar consonants *k and *ŋ it is the high vowels *i and *u that are modified in certain languages. However, before the laryngeal consonants *h and *ʔ it is the mid vowels *e and *o that are modified.

The mid vowel *e becomes i before *h in Tanap, Semongan, Kembayan (Hudson) and Empodis. It becomes i before *ʔ in Kembayan (Adelaar) in one set (*ride > Kembayan (A) ridi?) (322).

*ăseh ‘who’ Tanap osiyah, Semongan osiyah, Kembayan (Hudson) osiḥ, Empodis osiyah; Proto Bidayuh *āsīh, *āsī, *āsīn but Upe osch, Ribun (Adelaar) ose’s. (338)

*kuceh ‘dig’ Tanap tanciyah, Semongan nonciyah, Kembayan ngonchiah, Empodis nuciyah, Semirau kuceh, Tanggung kuceh, Upe kuceh, Ribun ngucheh, Gunam nuceh, Semandang ngucheh, Nanga Rakan țoceh, Lubuk Tajau țaceh, Leminang țuceh, Nangka Mongkok țuceh, Selampong țuceh, Canayan țuçih. (149)

The mid vowel *o becomes u before the laryngeal consonant *h in Kembayan and Empodis. It continues as o before *ʔ.

*Cucoh ‘spit’ Kembayan (Hudson) nrucu’h (Adelaar) ricu’, Upe ngucuh, Ribun (Hudson) hucuh, Selampong țucuh. (154)

*n-sîŋoh ‘cold’ Empodis siŋuah, Bakati’ *saŋu/oh, Upe siŋoh, Kasro Mego suŋah, Kembayan (Adelaar) nsuŋuh, Gunam Nsiŋuh, Lubuk Tajau nsiŋoh. (314)

With this understanding of these changes to the mid vowels *e and *o before */uni0294 and *h in certain languages we are now prepared to examine some full sets that reflect *i vs. *e and *u vs. *o before the laryngeal consonants *ʔ and *h in the Land Dayak languages.

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21The set labeled *tăruh ‘three’ (283) is puzzling because of the following forms: Tanap taruah, Semongan taruwah, Kembayan (Hudson) taru’h and Empodis takuwa. It is possible that this set should be reconstructed with *o in the final syllable, but nearly all the cognate forms have the vowel u.

22The set *ăku/uni0294 ‘I’ (339) is puzzling because of the Kembayan (Adelaar) form okoʔ, where diphthongization is not expected.
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<th>Kasro Mego</th>
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**Semandang**

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<td>Omu</td>
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- ‘mother’
- ‘neck’
- ‘say, talk’
- ‘neck’

Bidayuh (*sinda?:) *kūko?:
Mandong (na?)
Bakati’ *sindo:,?
Moro Betung sino?
Saham indo?
A. Satu sino
Semirau
Tanggung
Upe
Kasro Mego koko?
Engkahan kuko? ḃana? (cog.)
Tanap nido?
Semongan nido?
Kembayan(H) ponjo?
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*…uh  *batuh₂ (4)  *āmbuh (298)  *kasuh₁ (59)  *ābu(h) (226)

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<td>*(num)poh₂ (148)</td>
<td>*Cucoh (154)</td>
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5. Another vowel contrast?

There are a few other variables occurring in the rime of the ultima that are not fully accounted for in the reconstructions for Proto Land Dayak. They may simply be the result of inconsistent recording of the wordlists, or they might reflect some sort of morphophonemic alternation that is not yet understood.

On the other hand, they may point to yet another contrast, such as vocalic length, which is a feature of Proto Bidayuh and Proto Bidayuh-Bakati’ but does not seem to be consistently recorded for the other Land Dayak languages.

The variables here considered are

- indications of vocalic length and final iy and uw alongside short vowels;
- occurrences of diphthongs and plain vowels in similar environments;
- occurrences of k where ? is expected and vice versa;
- occurrences of ? where zero is expected and vice versa.

Length and vowel-semivowel sequences. In most sets all forms include only short vowels. However, in quite a few sets there are one or more forms with long vowels and/or sequences of vowel and semivowel, which may be taken as indications of duration.

*jătu* ‘fall’ Bidayuh *jătuː?, Lemining jotu, Nangka Mongkok jotuw, Canayan jato:. (144)
*ŋumbe? ‘wash’ Bidayuh *mbeː?, Ribun (Adelaar) ŋombeʔ?, bohomeʔ?; *mbe Bidayuh *ŋumbe:n, Bakati’ *mbeen. (166-7)
*jăhu* ‘far’ Kasro Mego jo:, Engkahan joo; *jauh Saham joo; *ăju? (< *jahu?) Upe ojaw, Ribun (Hudson) ojaw, Gunam ojaw, Canayan oju:. (302)
*dăya? ‘blood’ Bidayuh *dăyaː?, Nangka Mongkok doyaː: (68)
*jĭra? ‘tongue’ Bidayuh *jersistent, Nanga Rakan jiaː; *jila? Bidayuh *jalaʔ. (83)
*ăti ‘liver’ Bidayuh *atiː, *atiː:n, Lubuk Tajau otiy, Lemining otiy, Nangka Mongkok otiy, Selampong otiy. (103)

These and similar examples provide what is perhaps the strongest evidence for vocalic length in Land Dayak.

Occurrences of diphthongs and plain vowels in similar environments. In the discussion of sound change g) in §2 it was stated that “the vowels *i, *u and *ə before *p, *t, *k or *ŋ become i, 23 u and a in Tanap, Semongan, Kembayan, Empodis, Ribun and Gunam”.

The following example illustrates this diphthongization in Tanap, Semongan, Kembayan (Hudson), Empodis and Ribun (Hudson).

*karăsik ‘sand’ Tanap kurasiʔ, Semongan kurosiʔ?, Kembayan (Hudson) kurosiʔ?, Empodis kohosiyak, Ribun (Hudson) kohosiʔ? (Adelaar) kohoseʔ?, Gunam kohoseʔ. (3)

However, this next example exhibits plain vowels in Tanap, Semongan, Kembayan and Empodis even though both sets seem to illustrate final *ik.

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23The diphthongization results in a vocalic sequence falling from a high vowel to a central or low vowel. It is symbolized here as i, u and a, but the sounds are written variously in the sources as ia, iya, iya, etc.
*baik* ‘good’ Tanap baek, Semongan baek, Kembayan baik, Empodis baek, Gunam baek. (170)

Similarly, one or both of the following sets illustrate diphthongization in Tanap, Semongan, Kembayan and Empodis.

*mānuk, *mănuk* ‘bird’ Tanap monuwak, Semongan monuak, Kembayan (Hudson) monuʔ?, Empodis monuwak, Ribun (Hudson) monoʔ? (Adelaar) monoʔ?, Gunam monuʔ. (47)

*tukuk* Kembayan (Hudson) tukuʔ?, Empodis tukuwak, Ribun (Hudson) tuko (Adelaar) tukoʔʔ, Gunam tukoʔ. (81)

By contrast, the following two sets exhibit plain vowels in Empodis even though both sets seem to reflect *uk.

*buruk* ‘rotten, bad’ Empodis buhuh ‘rotten’, Ribun (Hudson) bobuuh ‘rotten’, Semandang burok ‘rotten’. (169, 305)

*kūyuk* ‘dog’ Empodis yuk, Semandang kuyu’. (59)

One might suggest that in the set *baik* the ultima vowel is not diphthongized because it follows immediately after another vowel. Furthermore, it is possible that at least some forms in the sets *baik* and *buruk* are borrowed from Malay, and for this reason diphthongization did not occur, but that does not seem to explain the plain vowel in the Empodis form of *kūyuk*. Overall, there seems to be a residue of sets in which diphthongization does not occur in places where it does occur in other similar sets.

Occurrences of k where ʔ is expected and vice versa. Now we turn to some variables in post-vocalic consonants. It is possible that these differences reflect some variation in the preceding vowel.

In the previous section the sets *karāsik* ‘sand’ and *baik* ‘good’ were cited. It should be noted that in those sets not only was the vowel diphthongized in the first set but not in the second, but also in Semongan and Kembayan the final *k* in the first set becomes /u/, as happens regularly in those languages, but remains as k in the second set. Cf. *karāsik, Semongan kurosiʔ?, Kembayan kurosiʔ?* but *baik, Semongan baek, Kembayan baik.*

Similarly, note the presence of /u/ in Semongan and Kembayan in the first of the following sets but k in those languages in the second set. The third set illustrates final /u/ in Empodis, which contrasts with final k in Empodis in the second set.

*ŋi̍ nuk, *mu̍ nuk* ‘give’ Tanap tjuwaʔ?, Semongan ŋnuʔ?. (162)

*mānu̍ k, *mānuk* ‘bird’ Tanap monuwak, Semongan monuak, Empodis monuwak. (47)

*māmu̍ k* ‘split’ Empodis pamuaʔ?. (501)

In Empodis the reflex of final */u/? is usually k. However, the following sets show that in some sets it remains as ʔ.

*ride* ‘thin’ Empodis hidik (322)

*ŋumbe* ‘wash’ Empodis tumiʔ (166-7)

*lămu* ‘fat’ Empodis lomuk (310)

*āmu* ‘you (sg.) (also pl. in some languages)’ Empodis múʔ (340)

In Semirau and Tanggung the reflex of final */u/? following a high or mid vowel is usually k but in some sets it is zero (as it is when following the low vowel *a*).

*iku? ‘tail’ Mandong iko?, Semirau iko, Tanggung ikuk, Selampong iku”. (50)

*tahu? ‘know’ Semirau tawk, Tanggung tawk, Selampong ta”o?. (261)

*jatu? ‘fall’ Bidayuh *jatu?, Semirau jotuk, Tanggung jotuk. (144)

*ami? ‘we (exclusive)’ Bidayuh *ami?, *kami?, *nami?, Semirau omi, Tanggung omi. (342)

*oku? ‘I’ Bidayuh *oku?, Semirau oko, Tanggungoko. (339)

*jau? ‘far’ (<*jahu?) Semirau oju, Tanggung oju, Tanap oju?, Semongan oju?. (302)

Occurrences of ? where zero is expected and vice versa. In Ribun, Gunam, Semandang and the languages of the Sekadau valley final *? is generally lost. However, in some sets the final glottal stop is retained in at least some of those languages.


*tile? ‘see’ Bakati’ *[m]ile?, Semirau tilik, Tanggung tilik, Upe tile?, Ribun (Hudson) ntile’ (Adelaar) ntile?, Gunam tile?, Selampong nte?. (115)


In Kasro Mego and Engkahan final *? is usually retained. However, in some sets the final glottal stop is lost in the Kasro Mego form.

*baba? Bidayuh ‘baba’?, Kasro Mego boba?, Engkahan baba?, Tanap bobo?. (81)


*daya? ‘blood’ Bidayuh *daya?, Bakati’ *daya?, Kasro Mego doya, Engkahan daya?, Tanap doyo?. (68)


At this point it is not possible to conclude firmly that another contrast, perhaps vocalic length, should be reconstructed for Proto Land Dayak. However, some of the data that demonstrate certain inconsistent reflexes are presented to illustrate these phenomena that merit further study.
6 Sound changes that have impacted the Land Dayak languages

In §2 we discussed the major sound changes that have impacted the Land Dayak languages and that provide the basis for the sub-grouping of languages presented in this study. However, there are details of those major sound changes that have not yet been discussed fully. Furthermore, there are some additional minor sound changes that will be treated in this section. As in §2, the Proto Bidayuh form, usually unaffected by the sound change, is added to illustrative sets in this section along with forms from the languages that have undergone the change.

6.1. Glottalization of oral stops. The oral stops *p, *t, *d and *k become glottal stop

a. The anterior oral stops *p, *t and *d become ? in Ribun and Gunam.

*idip ‘alive’ Ribun (Hudson) midi?, (Adelaar) midi?, Gunam midedi?; Bidayuh *idip. (328)
*āsap ‘smoke’ Ribun (Adelaar) aso?, (but Ribun (Hudson) asap), Gunam aso?; Bidayuh *āsap. (230)
*bāhit ‘left (hand)’ Ribun (Hudson) moye?, (Adelaar) moyi?, Gunam moye?; Bidayuh *bāhit, *māhit. (183)
*īrad ‘wing’ Ribun (Hudson) iha?, (Adelaar) ha?, Gunam iha?; Bidayuh *īra:đ. (48)

b. The velar stop *k becomes glottal stop in Tanap, Semongan, Kembayan, Ribun, Gunam, Semandang, Nanga Rakan, Lubuk Tajau, Leminang, Nangka Mongkok, Selampong and Canayan.


6.2. Loss of final glottal stop

Final glottal stop is lost in Ambawang Satu, Semirau, Tanggung, Upe, and often in Ribun, Gunam, Semandang and the languages of the Sekadau Valley. Final glottal stop becomes k in Empodis. It becomes k in Semirau and Tanggung only following high and mid vowels.

*dayaʔ ‘blood’ Ambawang Satu daya, Semirau doya, Tanggung doya, Upe doyah, Ribun (Hudson)

doyo, Gunam doyo, Semandang doya, Nanga Rakan doya, Lubuk Tajau doya, Nangka Mongkok
doya; Empodis dook; Bidayuh *dāyaʔ. (68)
6. 3. Changes to final nasals, primarily denasalization or loss of the nasal

a. *m > p, *n > t, *ŋ > k in Saham (*n and *ŋ only), Kasro Mego, Engkahan, Tanap, Semongan and Kembayan (Adelaar but not Hudson). In Moro Betung the final nasals, indicated as “m̃”, “ñ” and “ŋ̃”, may be pre-nasalized stops, but this is far from certain.

*bāram ‘night’ Engkahan bōaR̄p, Tanap qoR̄p, Semongan qoR̄p, Kembayan (Adelaar) qoR̄p, qoR̄p, qoR̄p; Bidayuh *bār̄am, *bārom, *bāram. (22)

*bāram ‘salt’ Tanap garap, Semongan garap, Kembayan (Adelaar) garap; *gālam Kasro Mego galop, Bidayuh *gāl̄am. (219)

*mādam ‘bad, rotten’ Engkahan mād̄ap, Semongan modap, Kembayan (Adelaar) modap; Moro Betung mād̄ap (mād̄ap); Bidayuh *mādam. (169, 305)

*pīzin, *pāzin ‘water’ Saham payit, Kasro Mego pit, Engkahan piit, Tanap pui:t, Semongan pit, Kembayan (Adelaar) pit; Moro Betung piñ̄j; Bidayuh *pīzin. (6)

*dāz̄un, *dāz̄un ‘leaf’ Saham dawut, Kasro Mego dout, Tanap dout, Semongan dout and Kembayan (Adelaar) dout; Moro Betung daWu; Bidayuh *dāz̄un, *dāw̄an, *dāw̄a?. (30)

*undu, *indu ‘nose’ Kasro Mego unuk, Engkahan nuk; Moro Betung i đu (idu)k; Bidayuh *indu, *indu, *ndo, *dudu Saham duduk. (84)

*tūrāŋ ‘bone’ Saham torak, Kasro Mego tuR̄aŋ, Engkahan tuR̄ak; Moro Betung turaŋ (tu)R̄ak; Bidayuh *tūrāŋ. (70)

*kāpiŋ ‘ear’ Kasro Mego kapik, Engkahan kāpiŋ, Tanap kopik, Semongan kopik, Kembayan (Adelaar) kopik; Bidayuh *kāpiŋ. (87)

b. *n > ŋ after the vowel *i in Ambawang Satu (two examples) and in Upe, Empodis, Ribun (Hudson and Adelaar)24, Gunam, Semandang, Nanga Rakan, Lubuk Tajau, Leminang, Nangka Mongkok, Selampong, Canayan (one example).

24The development of final *n as ŋ in Ribun (Adelaar) occurs after *a or *e as well as *i. Cf. *būran ‘moon’ Ribun (A) buhaː; *ikan ‘fish’ Ribun (A) ikaː; *adan ‘name’ Ribun odaː; *bukan ‘it is not’ Ribun (A) kiŋ. In Ribun final *m also develops as ŋ after *i. Cf. *nāram ‘night’ Ribun (Hudson) ŋohiŋ (Adelaar) ŋohiŋ; *tāram ‘in’ Ribun (Hudson) tohiŋ.
*pižin, *pažin ‘water’ Ambawang Satu paikŋ, Upe piŋŋ, Empodis piŋŋ, Ribun (Hudson) piŋŋ (Adelaar)
pii(ʔ)ŋ, Gunam piŋŋ, Semandang piink, Nanga Rakan piŋŋ, Lubuk Tajau piŋŋ, Leminang piŋŋ,
Nangka Mongkok piŋŋŋ, Selampong piinŋ, Canayan piŋŋ, Bidayuh *pižin. (6)

*lain ‘other’ Ambawang Satu lain; Mandong layin. (332, 581)
c. *ŋ > ø after the vowels *u, *a or *a in Tanap, Semongan, Kembayan and Empodis.25

*induŋ, *unduŋ ‘nose’ Tanap nuwah, Semongan nuwah, Kembayan (Hudson) nun, Empodis nuwa;
Bidayuh *induŋ, *unduŋ, *nduŋ. (84)

*dāyuŋ ‘woman’ Tanap dayuwa, Semongan dayuwa, Kembayan (Hudson) dayun, Empodis dayuwa;
Bidayuh *dāyuŋ. (253)

*gāŋ ‘hold’ Tanap tagyah, Semongan tagaya, Kembayan (Hudson) moga (Adelaar) moga; Bidayuh
*kā/dī-gāŋ. (165)

*N-ās/ŋ ‘breathe’ Tanap puŋas/ŋ, Semongan ŋas/ŋ, Empodis ŋasiya; Bidayuh *N-ās/ŋ. (569)

*turaŋ ‘bone’ Tanap tura:, Semongan tura, Kembayan (Hudson) tura, Empodis tuha; Bidayuh *turaŋ.
(70)

*bintang ‘star’ Semongan cibinta, Kembayan (Hudson) cibinta (Adelaar) kribinta, tribinta, Empodis bita;
Bidayuh *bintan. (10)

*milaŋ ‘count’ Tanap bubila, Semongan mila, Kembayan (Hudson) mila, Empodis bila; Bidayuh
*milaŋ. (294)

6. 4. Devoicing of *r

The liquid *r is devoiced to h in initial and medial positions in Empodis, Ribun, Gunam and Canayan.26
Devoicing is attested in final position in only one set in Ribun and Gunam.

*rāŋkay ‘dry’ Empodis hakkay, Ribun (Hudson) hāŋkay (Adelaar) hanka, Gunam hanka, Canayan
hanka; Bidayuh *rāŋkay ‘dried in the sun’. (172)

*rājt ‘sky’ Empodis hōniyā (hōniyā), Ribun (Hudson) hōne (Adelaar) hōne, Gunam hōnīye, Canayan hōnī’t; Bidayuh *rājt. (11)

*karāsik ‘sand’ Empodis kohosiyā, Ribun (Hudson) kohosi? (Adelaar) kohose? Gunam kohose?, Canayan kahose?; Bidayuh *kirāsik. (3)

*tūraŋ ‘bone’ Empodis tuha, Ribun (Hudson) tuhāŋ (Adelaar) tohoŋ, Gunam tuhāŋ (tuhāŋ), Canayan
tuhaŋ; Bidayuh *tūraŋ. (70)

*piker ‘think’ Ribun (Hudson) pikeh (Adelaar) piki’h, Gunam pikiyeh; cf. Canayan pikey; Bidayuh
*pikir. (555)

25An alternate analysis would state that *ŋ > a following *u > *a. Some vowels are marked as long, e.g., Tanap
usaha: ‘bone’, in which the “extra” a might have developed from *ŋ. However, it seems more reasonable to regard the
development as a two-step process: (1) *V > V/*ŋ; (2) *ŋ > Ø */u/*a.

26 *r becomes y in Nanga Rakan, Lubuk Tajau, Leminang and Nangka Mongkok; it usually becomes w in Selampong,
but in a few sets it becomes ɣ.
6. 5. Loss of final lateral

Final *l > ʁ in Ribun and Gunam. (There are few examples.)
*tabal 'thick' Ribun toba but Gunam tobal; Bidayuh *tabal. (321)
*ājal 'play' Gunam aja; Bakati'-Sara/Riok baajal. (139)

6. 6. Lenition of final *s

Final *s > h after *ŋ in Saham.
*kabīs 'dead' Saham kabih; Bakati' *kabih, *kabeschäft Bidayuh *kabīs (129); *n-kāmis 'kill' Saham
māmih; Bakati' *māmih; *n-kabīs Bidayuh *n-kabīs (201)
*bōsas 'sleep' Saham buwih; Proto Bidayuh *bōsas. (133)

6. 7. Constriction of final *h

a. Final *h > ʔ in Mandong, Bakati', Moro Betung, Saham.
*bātah 'eye' Mandong botaʔ; Bidayuh *bātah; *mātah Bakati' *matuʔ, Moro Betung matuʔ, Saham
matuʔ; Bidayuh *mātah. (88)
*nipah 'snake' Mandong nipah; Bidayuh *nipah; *nipah Bakati' *nipaʔ, Saham nepah; *dipah Moro
Betung dipah, Bidayuh *dipah. (54)
*bātu 'stone' Mandong batuʔ, Bakati' batuʔ, Moro Betung batuʔ, Saham batuʔ; Bidayuh *bātu. (4)
*udu 'grass' Mandong uduʔ, Bakati' uduʔ, Moro Betung uduʔ, Saham uduʔ; Bidayuh *udu. (518)

b. Final *h > s after *i in Ribun. It also becomes s in Semirau, Tanggung (after *t and *r but not after
*k or *s ?) and in Gunam (after *t ?).
*tārih 'rope' Ribun tohis; Semirau toRis, Tanggung toRis, Gunam tohis; Bidayuh *tārih. (206)
*kutih 'head' Mandong kutis; *gutih Semirau gutis, Tanggung gutis but Gunam gutih; Bidayuh
*gutih, *gūtih. (126)
*aših 27 'who' Ribun (Adelaar) oseʔ, but Semirau osh, Tanggung osh, Gunam osh; Bidayuh-Eastern
*aših. (383)
*aših 'where' Ribun (Adelaar) ntiʔ, ṃokeʔ (Hudson) ntiŋ mokih, Semirau wak mokih, Gunam ṃokih; *C-
āki/e Bidayuh-Western, Central and Highland *daki, *diki. (337)

6. 8. Diphthongization of high and central vowels

The vowels *i, *u and *o are diphthongized before *p, *t and *k in Tanap, Semongan, Kembayan, Empodis,
Ribun, Gunam. The vowels *u and *o are diphthongized before final *ŋ 28, but the vowel *i remains
unchanged before *ŋ.

27This form should probably be reconstructed as *âseh and the immediately following one as *âkeh. However, rule
6.7.b says that *h > Ribun s after *i. This is but one of the uncertainties regarding the *i/*e contrast.
28In Tanap, Semongan, Kembayan and Empodis the final *ŋ is lost. (Cf. §2d.) However, in Ribun and Gunam it is
retained. In Gunam it is not yet possible to state whether the vowel *o is diphthongized.
*m-ədq* ‘alive, green’ Tanap məọp, Semongan məọp, Kembayan (Adelaar) məọp, Empodis məiọp, *m-idip Ribun (Adelaar) məiọp, Gunam məiọp; Bidayuh *idip. (328)

*sɨ-nəh* ‘drink’ Tanap nenuwap, Semongan ɲinəp, Kembayan (Hudson) ɲaŋəp, Empodis ɲiŋiəp, Ribun (Adelaar) ɲiŋiəp, Gunam ɲiŋiəp; *nəh* Bidayuh *ɲəhəp, ɲiŋep ‘suck’. (146, 235)

*kʊ̱rɨt* ‘skin’ Tanap kurięt, Semongan kurięt, Kembayan (Hudson) kurięt, Empodis kurięt, Ribun (Adelaar) kurięt, Gunam kurięt; Bidayuh *kʊ̱rɨt*. (29, 66)

*kʊ̱zʊt* ‘bite’ Semongan kust [kʊ́t ?], Kembayan (Hudson) ɲkʊ́t; Bidayuh *kʊ̱zʊt. (147)

*s-əɾ-ək* ‘narrow’ Tanap səkət, Semongan sakət, Kembayan (Hudson) sokət, Empodis səkət, Ribun (Hudson) səkət, Gunam səkət; Saham səkət. (301)

*kəɾäšik* ‘sand’ Tanap kəɾäšik, Semongan kəɾäšik, Kembayan (Hudson) kəɾäšik, Empodis kəɾäšik, Ribun (Adelaar) kəɾäšik, Gunam kəɾäšik; Proto Bidayuh *kəɾäšik. (3)

*mānʊk* ‘bird’ Tanap monwək, Semongan monwək, Kembayan (Hudson) monwək, Empodis monwək, Ribun (Adelaar) monwək, Gunam monwək; *mānuk Bidayuh *mānuk. (47)

*ŋi/uni0272uk, *mu/uni0272uk* ‘give’ Tanap tɨuwa, Semongan ŋi/uni0272u, Kembayan (Hudson) nginyua’, Ribun (Hudson) mu/uni0272u/uni0294. (162)


*tub* ‘see’ Tanap Ntəbə, Semongan Ntəbə, Kembayan (Adelaar) Ntəbə, Bidayuh *tūbək, *təbək. (115)

*induŋ, *unduŋ* ‘nose’ Tanap nuwaʔ, Semongan nuwaʔ, Kembayan (Hudson) nuwaʔ, Empodis nuwa; Bidayuh *induŋ, *unduŋ; *an(t)anduŋ Ribun (Adelaar) tonuəŋ, Gunam tonuəŋ. (84)

*dāyuŋ* ‘woman’ Tanap dayuwa, Semongan dayuwa, Kembayan (Hudson) dayuə, Empodis dayuwa, Ribun (Adelaar) dayuə, nayuə, Gunam dayuwok; Bidayuh *dāyuŋ. (253)

*gəŋ* ‘hold’ Tanap tagəŋ, Semongan tagəŋ, Kembayan (Hudson) tagəŋ, Empodis tagəŋ; Bidayuh *kə﷖gəŋ. (165)

*ās* ‘breathe’ Tanap puŋasə, Semongan ɲasə, Empodis ɲasiə, Gunam gasəŋ; Bidayuh *N-ās. (569)

*kăpiŋ* ‘ear’ Tanap kopik, Semongan kopik, Kembayan (Hudson) kopik, Empodis kopik, Ribun (Hudson) kopik, Gunam kopik; Bidayuh *kăpiŋ. (87)

### 6. 9. Loss of schwa from the vowel inventory

Schwa (*ə*) is backed to u in Semirau, Tanggung, Tanap, Ribun, Gunam, Nanga Rakan, Lubuk Tajau, Leminang, Nangka Mongkok, Selampong, Canayan.
It is lowered to the vowel following a labial consonant\(^{29}\) in Bakati', Moro Betung, Saham, Ambawang Satu and Semandang. In other environments in Bakati', Moro Betung, Ambawang Satu and Semandang\(^{30}\) it is backed to u, but in Saham it continues as a.

It is fronted to i in Upe and Empodis.

\*jipan 'teeth' Semirau jiput, Tanggung jiput, Ribun jipun, Gunam jipu'n, Nanga Rakan jipun', Lubuk Tajau jipu'n, Leminang jipu'n, Nanga Mongkok jipu'n, Selampong jipu'n, Canayan jipu'n; Bidayuh *jipan; *jupan Tanap juput. (82)

\*bānah 'husband' Semirau bonuh, Tanggung bonuh, Tanap bonuh, Ribun bonuh, Gunam bonūh, Nanga Rakan bonuh, Lubuk Tajau bonuh, Selampong bonuh; Bidayuh *bānah. (250)

\*mātah, 'eye' Semirau motuh, Tanggung motuh, Ribun motuh, Gunam motuñ, Nanga Rakan motuh, Lubuk Tajau motuñ, Selampong motuñ; Bidayuh-Bunan mātah. (88)

\*dipah 'snake' Bakati' *dipa/, Moro Betung dipa?, Ambawang Satu difa; Bidayuh *dipah; *nipah Saham nepa?. (54)

\*rimah, 'five' Bakati' *rima?, Saham rima?, Ambawang Satu Rima; Bidayuh *rimah; *limah Semandang lima' (may be a borrowing). (285)

\*duah 'two' Bakati' *dua?, Moro Betung duWa, Ambawang Satu dua ete; Bidayuh *duah. (282)

\*nārām 'night' Bakati' *nāruᴍ, Moro Betung nārum, Saham nārām, Ambawang Satu nārum, Semandang ngorum; Bidayuh *nārām. (22)

\*mātah, 'eye' Bakati' *matu?, Saham matu?, Ambawang Satu matu; Bidayuh-Bunan mātah. (88)

\*kadak 'smell' Bakati' *maduk, Saham madak, Semandang ngidu'; Bidayuh *kādak, *tādak, *nādak. (119)

\*atak 'come' Bakati' *utuŋ, Moro Betung utuŋ, Saham atäk, Ambawang Satu otuŋ; *māndag Bidayuh *māndag. (140, 509)

\*bānah 'husband' Upe bonih, Empodis bonih; Bidayuh *bānah. (250)

\*rimah, 'five' Upe rimih, Empodis himih; Bidayu *rimah. (285)

\*paras 'squeeze' Upe piRis, Empodis tihis (initial consonant unexplained); Bidayuh *paras. (575)

\[6.10.\] **Backing of *a**

The vowel *a* is backed to o before *ʔ* in Tanap, Semongon, Kembayan, Empodis, Ribun, Gunam.

\*sāwaʔ 'year' Tanap sowoʔ, Semongon sowoʔ, Kembayan sowo', Empodis sowok, Ribun sowo, Gunam sowo; Bidayuh *sāwaʔ. (20)

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\(^{29}\)In one example *CVnsp (146) the labial consonant is final, and in another example, *pəras (575), it is initial in the word. Other examples of the *a > u development are given for Bakati on page xxx of this volume.

\(^{30}\)The reflexes of Semandang are rather inconsistent. The reflex in *jipah 'snake' (54), Semandang nyipuh is u rather than the expected a. The reflex in *mātoh, 'eye', Semandang motiuh is i rather than the expected u. The reflex in *māndag 'come', Semandang moni? is i rather than the expected u.
6.11. Monophthongization of rising glides

The vowel-semivowel sequences *aw, *ay become the monophthongs o, e, respectively, in Bakati’, Saham, Semandang. There is some evidence that *aw was simplified in Moro Betung, Selampong and that *ay was simplified in Kembayan (Hudson), Ribun (Adelaar), Canayan.

*ijaw ‘green’ Bakati’ *ijo, Moro Betung ijo, Saham ijo, Semandang ijo; Ambawang Satu ijaw. (328)
*tataw ‘laugh’ Semandang nto, Selampong nto; Bidayuh *tätaw. (176)
*ąsaw ‘wife’ Semandang oso, Selampong oso; Bidayuh *ąsaw. (251)
*vraw ‘roof’ Bakati’ *aro; Bidayuh *i-rą:w. (277)
*panday ‘know’ Bakati’ *pan[d]e, Saham pane, Ribun (Adelaar) panda; Mandong panae. (261)
*raŋkay ‘dry’ Ribun (Adelaar) haŋka, Semandang rangke, Canayan haŋke; Bidayuh *rāŋkay ‘dried in the sun’. (172)
*N-galay ‘lying down’ Ribun (Adelaar) ŋala, Semandang ŋale, Canayan ŋale; Upe ngalay; *ŋulay Semongan ŋule, Kembayan (Hudson) ŋule. (415)
*bahay ‘areca nut’ Bakati’-Rara uhe, Ribun (Adelaar) ua; Bidayuh *băha:y. (243)

6.12 Metathesis of initial CV of *CVHVC sequences

In most southern Land Dayak languages medial laryngeals *ʔ and *h were lost resulting in CVVC sequences. These CVVC sequences were apparently unstable with the result that the initial CV was often metathesized, yielding the sequence VCVC. This metathesis is found in Semirau, Tanggung, Upe, Tanap, Semongan, Kembayan, Empodis, Ribun, Gunam, Semandang and the languages of the Sekadau Valley. In other words, metathesis is found in sub-groups V, VII, VIII, IX and X.

*jăhu? Bidayuh *jăhu?. (302)
*ąbat (<*băhat) ‘heavy’ Tanap obat, Semongan obat, Kembayan obat, Empodis obat; *băhat Proto Bidayuh *băhat. (313)
*ąni (<*năhi) ‘house post’ Kembayan (Adelaar) oni romin; *năhi Proto Bakati’ *năhi’. (273)
*ąna (<*ja?a) ‘person’ Semirau oña, Tanggung oña, Ribun (Hudson) oña (Adelaar) oño, Gunam oño, Semandang onya, Selampong oña; *ja?a Proto Bidayuh *ja?a. (257)
*alut (<*lā?ut) ‘sea’ Ribun (Hudson) alut; *laut Proto Bidayuh *lă?ut, etc. (8)

See note attached to this set in the cognate sets for a discussion of the possibility that this set should be reconstructed with the sequence *ay.
*rāʔan ‘chin’ Ribun (Adelaar) ohoŋ; *raʔaŋ Bidayuh *raʔaŋ, Kembayan (Adelaar) ra32. (86)

*si-nāhap ‘suck, suck’ Semandang inup, Nanga Rakan ɲinup, Lubuk Tajau ɲinup, Leminaŋ inup, Nangka Mongkok ɲupm, Selampang inup, Canayan inup;33 *nāhap Bidayuh *nəhəp *nəhəp. (146, 235)

32Medial */uni0294 is lost in Kembayan, as it is in most Land Dayak languages. When the vowels of the resultant vowel sequence are identical, they are reduced in Kembayan, especially Adelaar, to a single vowel, e.g., *pi/uni0294in ‘water’ Kembayan (Adelaar) pit.

33The penult vowel(s) i may reflect the vowel *i of a prefix rather than the penult vowel of the unprefixed CVCVC stem.
Appendix IV—Cognate sets

*dăr* 'mountain' Bidayuh *dăr, Mandong darat, Bakati’-Sara/Riok darud, Semirau dorik, Tanggung dorik, Upe dopik, Kasro Mego doRi, Engkahan darat, Tanap dorit, Semongan dorit, Kembayan dorit, Empodis dohik, Ribun (Hudson) dohit (Adelaar) dohik, Gunam dohik, Semandang dori’ (1)

*puŋgu* 'mountain' Bidayuh *puŋgu, Bakati’ *muŋu (1)

*tana* 'earth' Bidayuh *tāna, Mandong tana, Bakati’ tana/uni2082, Moro Betung tana?, Saham tane, Ambawang Satu tana, Kasro Mego tana?, Engkahan tana?, Tanap tono?, Semongan tono?, Kembayan tono’, Semandang tonah (2)

*păya* 'earth' Semirau poya, Tanggung poya, Upe ppoay, Empodis poyok, Ribun poyo, Gunam poyo (2)

*karāsik* 'sand' Bidayuh *kiraśik, Mandong karasik, Moro Betung karasik, Semirau koRosik, Tanggung koRosik, Upe koRsik, Kasro Mego koRosik, Engkahan kaRasik, Tanap kurasi’k, Semongan kurosi’?, Kembayan (Hudson) kurosi’?, Empodis kohosiyak, Ribun (Hudson) kohosi’? (Adelaar) kohose’?, Gunam kohose?, Nanga Rakan kayose?, Lubuk Tajau kayose?, Leminang koyose?, Nangka Mongkok kayoset, Selampong kase’?, Canayan kahose? (3)

*pāsir* 'sand' Bidayuh *pasir, Bakati’ *pasí, Saham pasir, Ambawang Satu paser, Semandang paser. Cf. Malay pasir. (3)


*piʔin, *paʔin* 'water' Bidayuh *piʔin, Mandong pit, Bakati’ *pai,n, Moro Betung paɲi, Saham payit, Ambawang Satu paikŋ, Upe piŋ, Kasro Mego pit, Engkahan piit, Tanap pii:t, Semongan pit, Kembayan (Hudson) piin (Adelaar) pit, Empodis piŋ, Ribun (Hudson) piŋ (Adelaar) pii(?)ŋ, Gunam piŋ, Semandang piikn, Nanga Rakan piŋ, Lubuk Tajau piŋ, Leminang piŋ, Nangka Mongkok piŋ, Selampong piŋ, Canayan piŋ. Perhaps a single reconstruction, *piʔin, is warranted with the varying vowel quality in the penult a result of the reduced vowel. (6)

*ak* 'water' Semirau aik, Tanggung aik. Cf. Iban ai’. (6)

*sūŋi* 'river' Bidayuh *sūŋi, Mandong suŋi, Bakati’ *suŋi, Moro Betung suŋe, Ambawang Satu suŋa/uni0294i, Semirau suŋi, Kembayan suŋi, Upe suŋi, Engkahan suŋe, Tanap suŋi, Semongan suŋi, Kembayan suŋe, Empodis suŋi, Ribun suŋe, Gunam suŋi, Lubuk Tajau suŋi, Leminang suŋe, Nangka Mongkok suŋey, Selampong suŋiy, Canayan suŋiy (7)

*bătaŋ* 'mainstream' Bidayuh *bătaŋ, *băt/uni0259g, Bakati’ *bat/uni2081ŋ, Saham batak payi, Semandang botang. Cf. Malay batang ‘numerical coefficient for long objects’. (7)

*laut* 'sea' Bidayuh *laut, *lāʔut, *lāwut, Mandong lawut, Bakati’ *lau/uni2082t, Moro Betung laWut, Saham lawut, Ambawang Satu laut, Semirau laot, Tanggung laot, Upe laot, Kasro Mego laut, Engkahan laut, Tanap lawat, Kembayan (Hudson) lawat (Adelaar) laut, lawo’t, Empodis lauwat, Ribun (Hudson) alut (Adelaar) laut, Gunam laot, Semandang lawot, Nanga Rakan laut, Lubuk Tajau laut,
Leminang laot, Nangka Mongkok laot, Selampong laot, Canayan laut (8)

*būran* 'moon' Bidayuh *būran, Mandong burat, Bakati* *būra*, *Moro Betung buraŋ, Saham bār, Ambawang Satu bulan, Semirau buRa'n, Tanggung buRa'n, Upe buha'n, Kasro Mega buRot, Engkahan buRan, Tanap burat, Semongan burat, Kem beyan (Adelaar) burat, Empodis buha'n, Ribun (Adelaar) buhaŋ, Gunam buha'n, Nanga Rakan buyan, Lubuk Tajau buyatn, Lem inang buyatn, Nangka Mongkok buyatn, Selampong bu"atn, Canayan buhatn (9)

*bintaŋ* 'star' Bidayuh *bintaŋ, *bint, *bint/uni0259g, *bintak, Bakati* *bintaŋ, Moro Betung bintaŋ, Saham bintak, Ambawang Satu bintaŋ, Semirau bintaŋ, Tanggung bintaŋ, Upe bintaŋ, Kasro Mega bintaŋ, Engkahan bintaŋ, Tanap bintaŋ, Semongan cibinta, Kem beyan (Hudson) cibinta (Adelaar) kribinta, tribinta, Empodis bita, Ribun (Hudson) bintaŋ (Adelaar) tibintəŋ, Gunam bintaŋ, Semandang bintang, Nanga Rakan bintaŋ, Lubuk Tajau bintak, Lem inang bintak, Nangka Mongkok bintak, Selampong, bintaŋ, Canayan bintaŋ (10)

*răŋit* 'sky' Bidayuh *răŋit, Mandong rawo, Bakati* *răni*, *Moro Betung rānit, Saham rānit, Ambawang Satu lanjit, Semirau Rōnet, Tanggung Rōnet, Upe oŋn, Kasro Mego Ronjit, Engkahan Ronjit, Tanap rōni𝑎ŋ, Semongan rōniat, Kem beyan (Hudson) rōni'n (Adelaar) rōni'd, rōni'ad, Empodis hojni'ən, Ribun (Hudson) hojni? (Adelaar) hojni', Gunam hojniye?, Semandang ronyot, Nanga Rakan yojen', Lubuk Tajau yojen't, Lem inang yojit, Nangka Mongkok yojie'n, Selampong ojni't, Canayan hojni' (11)

*ambun* 'cloud' Bidayuh *āmbun, *āmbun, Bakati* *ampun, Moro Betung amun 'fog', Semirau abu'n 'fog', Tanggung abu'n 'fog', Upe abu'n'fog', Kasro Mega omun 'fog', Tanap omu'n, Semongan abut 'fog', Kem beyan (Hudson) obutn (Adelaar) omun 'fog, mist', Empodis obu'n 'fog', Ribun (Hudson) ombun (Adelaar) abudn 'fog, mist', Semandang omun 'fog', Nanga Rakan omu'n 'mist, fog', Lubuk Tajau omu'n 'mist, fog', Lem inang omu'n 'mist, fog', Nangka Mongkok omu'n 'mist, fog', Selampong omu'n 'mist, fog', Canayan omu'n 'mist, fog' (12)

*gāgap* 'cloud' Semirau gagap, Tanggung gagap. The Bakati'-Rara form galap 'dark cloud' might be cognate. (12)

*rāmaj* 'cloud' Bidayuh *rānaŋ, Moro Betung ramaŋ, Kasro Mego Ramaŋ, Eng kahan Ramaŋ, Tanap roma, Kem beyan (Hudson) roma, Empodis homa, Ribun (Hudson) homaŋ (Adelaar) homuŋ, Gunam homaŋ, Semandang romang, Lem inang 'omaŋ, Selampong oma'n, Canayan homaŋ (12)

*kabut* 'fog' Mandong kabut, Saham rabut, Ambawang Satu kabot, Gunam kabut (12)

*karūman* 'cloud' Bidayuh *kiRūman, Bakati* *karu*, (12)

*Cāba/ak* 'wind' Bidayuh *sābak, Mandong ābak, Bakati'-Sara/Riok karabûkŋ (?), Saham karabak (?) (12)

*māhu* 'wind' Bidayuh *māhu, Bakati* *maha, Kasro Mego Rumou (?), Engkahan məu (12)

*Caru* 'wind' Bakati'-Rara-S *aru 'strong wind', Moro Betung Taru, Lubuk Tajau cay o, Nangka Mongkok cayo, Selampong ca'o (12)

*buak* 'wind' Semirau buak, Tanggung buak, Upe buwa, Ribun buo', Gunam buwo? (12)

*bāna* 'wind' Tanap bono?, Semongan bono?, Kem beyan bono' (13)

*ŭjan* 'rain' Bidayuh *ŭjan, *ijan, *ăjan, *ujen, etc., Mandong uja'n, Bakati* *uja*, *Moro Betung ujaŋ, Saham ujat, Ambawang Satu ujaŋ, Semirau uja'n, Tanggung uja'n, Upe huja'n, Kasro Mego ujoŋ, Engkahan uja'n, Tanap uja'n, Semongan ujat, Kem beyan (Hudson) ujatn (Adelaar) ujat, Empodis uja'n, Ribun (Hudson) ujan (Adelaar) jan, Gunam uja'n, Semandang ujatn, Nanga Rakan uja'n, Lubuk Tajau uja'n, Lem inang uja'n, Nangka Mongkok uja'n, Selampong uja'n, Canayan uja'n (14)
*săwa* ‘year’ Bidayuh *săwa*, Bakati *sawa*, Moro Betung sawa, Saham sawa, Semirau sawa, Tanggung sawa, Upe sawa, Kasro Mego sawa, Engkahan sawa, Tanap sawo, Semongan sawo, Kembayan sawo, Empodis sawok, Ribun sawo, Gunam sawo, Nanga Rakan sawa, Lubuk Tajau sawa, Leminang sawa, Nangka Mongkok sawa, Selampong sawa (20)

*taʔun* ‘year’ Mandong tawun, Ambawang Satu taun, Semandang tautn, Canayan taut (20)

*ŋar* ‘night’ Bidayuh *siŋār*, *ŋarum*, *kăr*, Mandong ŋari, Bakati *ŋaru*, Moro Betung ŋarum, Saham ŋar, Ambawang Satu ŋarum, Semirau ŋaru, Tanggung ŋarp, Upe ŋarip, Kasro Mego ŋarip, Engkahan ŋarip, Tanap ŋarip, Semongan ŋarip, Kembayan (Hudson) ŋarip (Adelaar) ŋap, Ribun (Hudson) ŋap, Gunam ŋap, Semandang ngorum, Nanga Rakan ŋuyu, Lubuk Tajau ŋuyu, Leminang ŋuyu, Nangka Mongkok ŋuyu, Selampong ŋuyu (22)

*tărun* ‘woods’ Bidayuh *tărun*, Mandong turu, Bakati *taru*, Kasro Mego toRut, Engkahan taRu, Tanap toru, Semongan torut, Kembayan (Adelaar) torut, Empodis tohu, Ribun tohu, Gunam tohu (27)

*tuʔan* ‘woods’ Bidayuh *tőʔa:n*, Kembayan (Hudson) tuat (Adelaar) tuat maguk (27)

*rima* ‘woods’ Semandang rima, Nanga Rakan rima, Lubuk Tajau ima, Leminang rima, Selampong ima, Canayan ima: Cf. Malay rimba. (27)

*liop* ‘woods’ Semirau liop, Tanggung liop, Upe iyok (?) (27)

*kăyuh-n* ‘tree’ Bidayuh *kăyuh*, Bakati *kayu*, Semirau kayon, Tanggung kayon, Upe kayoya, Kembayan koyuh, Empodis kayuuh, Ribun koyuh, Gunam kayo, Nanga Rakan koyuh, kayuh, Lubuk Tajau koyuh, Leminang koyuh, Nangka Mongkok koyuh, Selampong koyuh, kayo?, Canayan koyuh, kayoh (28)

*puʔun* ‘tree’ Saham puut, Ambawang Satu pun, Engkahan puuʃ, Semandang puutn, Nangka Mongkok pu:un (28)

*atu* ‘tree’ Mandong atu, Tanap atuh (28)


*kūрит* ‘bark (tree)’ Bidayuh *kūrit*, Kembayan koryet koyuh, Ribun kohe ‘koyuh’, Semandang kurit koyuh (29); *kūрит* ‘skin (person)’ Bidayuh *kūrit*, Mandong kurit, Bakati *kuri*, Moro Betung kurit, Saham kurit, Ambawang Satu kurt, Semirau kurt, Tanggung kurt, Upe kurt, Kasro Mego kurt, Engkahan kurt, Tanap kurt, Semongan kurt, Kembayan (Hudson) kurt, Empodis kuhiyat, Ribun (Hudson) kuir, Semandang kuhe, Kembayan kuhe, Nanga Rakan kuhe, Lubuk Tajau kuhe, Leminang kuhe, Nangka Mongkok kuhe, Selampong kuhe, Canayan kuhe? (66)

*dāʔun* ‘leaf’ Bidayuh *dāʔun*, *dāw*, *daw*, *dāwa*, Mandong duwat, Bakati *dau*, Moro Betung daw, Saham dawut, Ambawang Satu dau, Semirau daw, Tanggung dau, Upe dau, Kasro Mego daw, Engkahan dau, Tanap daw, Semongan daw, Kembayan (Hudson) daw (Adelaar) daw, Empodis daw, Ribun (Hudson) daw (Adelaar) daw, Gunam dawut, Semandang daun, Nanga Rakan daun, Lubuk Tajau daun, Leminang daun, Nangka Mongkok do, Selampong da, Canayan do (30)

*uhat* ‘root’ Bidayuh *ūhat*, Mandong wat, Bakati *uhat*, Moro Betung uhat, Saham uwat, Semirau uwat, Tanggung uwat, Upe uwat, Kasro Mego uwat, Tanap uwat, Semongan wat, Kembayan uwat, Empodis uwat, Ribun (Adelaar) ua, Gunam wa,
Semandang urat (cf. Malay urat), Lubuk Tajau uat, Leminang uat, Selampong u"at (32)
*akah 'root' Ambawang Satu akar (cf. Malay akar), Engkahan kukah, Ribun (Hudson) ongkoh, Nanga Rakan aka', Leminang akay, Nangka Mongkok akay, Canayan aka: (32)
*suat 'flower' Bidayuh *suat, Upe suwat, Engkahan suwat, Semongan suwat buña, Kembayan (Hudson) suat, Empodis suwat, Ribun (Adelaar) sau?, Gunam suwa?, Semandang suat, Lubuk Tajau suat diatn 'durian flower', Nangka Mongkok su"at diatn 'durian flower' (34)
*bua?, (*buah (loan?)) 'fruit' Bidayuh *bua?:, Mandong buwa?, Bakati *bua,h, Moro Betung buWah, Saham biwaj, Ambawang Satu buah, Semirau buwah, Tanggung buwah, Upe buah, Kasro Mega bua?, Engkahan bua?, Tanap buwo?, Semongan buwo, Kembayan buo', Empodis buwok, Ribun (Hudson) buoh (Adelaar) buuh, Gunam buwah, Semandang buah, Nanga Rakan buah, Lubuk Tajau bua, Leminang buah, Nangka Mongkok buwa, Selampong buah, Canayan buah (35)
*îrad 'wing' Bidayuh *îrad, Samirau îRa'n, Tanggung îRa'n, Kembayan irat, Tanap irat, Semongan irat, Engkahan iRan, Ribun (Hudson) iha? (Adelaar) ha?, Gunam iha?, Lubuk Tajau iat, Nangka Mongkok iyant, Selampong i"atn; *ûrad Bidayuh *ûra:d, Kasro Mego uRat; *ûrad Bidayuh *ûra:d, Mandong arat, Bakati *arad, Saham arâ (?), Empodis ohat (48)
*buruh 'feather' Bidayuh *bûruh, *bûru, Mandong buru?, Semirau buRh, Tanggung buRuh, Upe buhu, Kasro Mega buRu, Engkahan buRuh, Tanap buru, Semongan buruh, Kembayan (Hudson) bulu (Adelaar) buruh, Empodis buhu, Ribun (Hudson) huhu? (typo?) (Adelaar) buuhu, Gunam buhu, Semandang bulu, Nanga Rakan buyu, Lubuk Tajau buyu, Leminang bu'u, Nangka Mongkok buyu, Selampong bu"uh, Canayan buhu; *burun Bidayuh *burun, Bakati *buru,n, Moro Betung burun, Saham burut, Ambawang Satu burun (49)
*unjuy 'tail' Bidayuh *unjko:y, *unjku:y, Upe kuwi, Kasro Mega unjku, Engkahan ŋkuwi, Nanga Rakan ŋku:i, Lubuk Tajau unjkuy, unjkwy, Leminang ku yi, Nangka Mongkok ku yi; *unjki Bakati *unjke, Moro Betung ŋke, Saham ŋke, Ambawang Satu ŋke, Tanap ŋki, Semongan ŋki, Kembayan ŋngki; *unjkui/uni0294 Empodis kuwi?, Ribun ku'i, Gunam kuwi?, Semandang uji? (?); *iku? Mandong iko?, Semirau ikuk, Tanggung ikuk, Selampong ik"u?", Canayan iko; *unjkon Bidayuh *unjkon (50)
*turuh 'egg' Bidayuh *tūloh, Ambawang Satu talo?; *turu Bidayuh *tulo:, Semirau tuRo, Tanggung tuRo, Upe tuRu Empodis tuhu:, Ribun tuhu, Gunam tuhu, Semandang turo, Nanga Rakan tuyo, Lubuk Tajau tuyo, Leminang tuyo, Nangka Mongkok tuyo si'ap; *nturu Tanap Nturu, Semongan Nturu, Kembayan (Hudson) ntoru (Adelaar) nturu; *tulu? Bidayuh *(n)túlu?:, Kasro Mega
Ntolo?, Engkahan Ntulo?, Selampong tulu?, Canayan tulu?, *turah, Bakati? *tura,h, Moro Betung turah, Saham turah; *turay Mandong tary (51)

*ikan ‘fish’ Bidayuh *ikan, *iken, *ike:?, Mandong ika’n, Bakati’ *ika,n, Moro Betung ika?, Saham e=k(?, Ambawang Satu ikawu (?), Kaso Mego ikan, Tanap ika’n, Semongan ikan, Kembayan (Hudson) ikatn (Adelaar) ikat, Empodis ka’n, Ribun (Hudson) ikan (Adelaar) ikan, Gunam ika’n, Semandang ikan, Selampong ikatn, Canayan ikatn; *ikay Semirau ikan, Tanggung ikay; *ano Nanga Rakan ano?, Lubuk Tajau ano?, Lemintang ano?, Nangka Mongkok ano? (53)

*dipah ‘snake’ Bidayuh *dipah, *dupah, Bakati’ *dipa?, Moro Betung dipa?, Ambawang Satu dina; *jipah Bidayuh *jipah, *jupeh; *nipah Bakati’ *nipa?, Saham nepa?, Upe nipih; *nipah Bidayuh *nipa, Mandong nipa?, Semirau nipuh, Tanggung nipuh, Keso Mego napah, Engkahan nipah, Empodis nipah, Ribun nipuh, Gunam nipuh, Semandang nipuh, Nanga Rakan nipuh, Lubuk Tajau nipuh, Lemintang nipuh, Nangka Mongkok nipuh, Selampong nipuh, Canayan nipuh; *ular (loan ?) Tanap ular, Semongan ular, Kembayan ular (54)

*kasu ‘dog’ Bidayuh *kasu, Mandong kasu?, Bakati’ *kasu?, Moro Betung kasu, Saham kasu?, Ambawang Satu kasu?, Kaso Mego kosu, Engkahan kasuh, Tanap kosuh, Semongan kosuh, Kembayan kosuh, Ribun (Hudson) osuh (Adelaar) kosuh, Gunam kosuh (59)


*rantuk ‘worm’ Bidayuh *rantuk, *lantuk, Bakati’-Sara/Riok rantukgu, Kaso Mego Rontuŋ, Engkahan Rantuk (60)

*tamah ‘worm’ Bidayuh *tamah, *tambah, Ribun (Hudson) ntamuh, Lubuk Tajau tamaw(?) (60)

*(nj)arad ‘maggot, fly’ Bidayuh *(nj)arad, *(nj)arad ‘maggot’, *(nj)rard ‘fly’ Kembayan (Adelaar) gunariit, Ribun (Adelaar) nahik (60)

*ampan ‘worm’ Bakati’ *umpan, Saham umpat, Moro Betung umpan (60)

*cacin (loan?) ‘worm’ Mandong cacin, Ambawang Satu cacin, Semirau tacitŋ, Tanggung tacitŋ, Upe cacin, Tanap cacit, Semongan cacik, Kembayan (Hudson) chachikn, Empodis tacitŋ, Gunam tacitŋ, Semandang chaching, Nanga Rakan cacin, Lubuk Tajau tacitŋ, Lemintang cacitŋ, Nangka Mongkok cacitŋ, Selampong cacitŋ, Canayan cacitŋ (60)


*turan ‘bone’ Bidayuh *turang, *turang, Mandong turanŋ, Bakati’ *turaŋ, Moro Betung turang, Saham torak, Ambawang Satu tulang, Semirau turang, Tanggung turang, Upe tuRaŋ, Keso Mego tuRaŋ, Engkahan tuRak, Tanap tuRak; Semongan turang, Kembayan tuRang, Empodis tuRang, Ribun (Hudson) tuRang (Adelaar) tuRang, Gunam tuRang, Nanga Rakan tuRang, Lubuk Tajau tuRang, Lemintang tuRang, Nangka Mongkok tuRang, Selampong tuRang, Canayan tuRang (70)

*bak ‘head’ Bidayuh*(ŭ)bak, Semirau bak, Tanggung bak, Upe bak, Keso Mego bak, Tanap ba’, Semongan ba’, Kembayan mba’, Empodis bak, Gunam bo¿, Nangka Mongkok ba’; *(ă)bak Mandong abak, Bakati’ *aba,k, Moro Betung abak, Saham abak, Ambawang Satu abaka; *(ă)bak Mandong abak, Bakati’ *aba,k, Moro Betung abak, Saham abak, Ambawang Satu abaka; *(ă)bak Mandong abak, Bakati’ *aba,k, Moro Betung abak, Saham abak, Ambawang Satu abaka; *(ă)bak Bidayuh *bak, *ba?ak, Engkahan baak, Ribun (Hudson) boò, Semandang baa’, Nanga Rakan mba’a, Lubuk Tajau baa’, Lemintang baa’a/ba’, Selampong baa’a/ba’a, Canayan mba’a/ba’? (76)

*būba* ‘mouth’ Bidayuh ‘bāba/uni02D0/uni032B/uni0294’, Mandong baba/uni0294, Batati’ *baba/uni2081/uni0294*, Moro Betung baba/uni0294, Saham baba/uni0294, Kasro Mego boba/uni0294, Engkahan b/uni01DDba/uni0294, Tanap bobo/uni0294, Semongan bobo/uni0294, Kembayan (Adelaar) bobo/uni0294 (81)

*muli* ‘mouth’ (?) Ambawang Satu molout (81)


*jīp* ‘teeth’ Bidayuh *jīpāh*, Mandong jīpāh?, Kasro Mego jupāh, Engkahan jīpāh; *jap* Bakati’ *japū*, Moro Betung japo, Saham japo?; *jīpān* Bidayuh *jīpān*, Semirau jīpūt, Tanggung jīpūt, Upe jīpūt, Semongan jāpt, Kembayan (Hudson) jīpān (Adelaar) jāpt, jīpt, Empodis jīpīt, Ribun (Hudson) jīpūn, Gunam jīpūn, Semandang jīpūn, Nanga Rakan jīpūn?, Lubuk Tajau jīpūn, Leminang jīpūn, Nangka Mongkok jīpūn, Selampong jīpūn; *jīpāy* Bidayuh *jīpāy* (82)

*jīra* ‘tongue’ Bidayuh *jūRa:?, Semirau ciRa, Tanggung ciRa, Upe jiRa, Tanap jīro?, Semongan jīro?, Kembayan jīro’, Empodis jīhok, Ribun jīhok, Gunam jīhok, Semandang jīra, Nanga Rakan jīa:, Lubuk Tajau jīya, Leminang jīra, Nangka Mongkok jīrah, Selampong tutu? jīwa, Canayan jījah; *jīla* Bidayuh *jīlaː?, *jīleh, Kasro Mego jūla?, Engkahan jīla?. These languages seem not to have undergone the usual PAN *l > Proto Land Dayak *r sound change; *lidah* Ambawang Satu lidah. This form is apparently borrowed from Malay lidah, which appears to present a case of $C_{1}VC_{2}V(C_{3}) > C_{2}VC_{1}V(C_{3})$, i.e., PAN *dīlaq > lidah. (83)

*rata*? Mandong rata?, Bakati’ *rata?, Moro Betung rata?, Saham rata?. It is unclear whether this form can be related to the previous one. (83)

*induŋ, *unduŋ* ‘nose’ Bidayuh *induŋ*, Moro Betung idu/k, Ambawang Satu idog, Semandang idong, Leminang idoŋ, Nangka Mongkok idoŋ, Selampong idoŋ, Canayan idoŋ; *unduŋ* Bidayuh *unduŋ*, Kasro Mego unuk; *nduŋ* Bidayuh *nduŋ*, Semirau noŋ, Tanggung noŋ, Engkahan nuk, Tanap nuwah, Semongan nuwah, Kembayan nu’, Empodis nuwa; *duduŋ* Mandong duduŋ, Bakati’ *duduŋ*, Saham duduk; *(an)taṇduŋ* Upe antanoŋ, Ribun (Hudson) tonduŋ (Adelaar) tonduŋ, Gunam tonuoŋ; *sunduŋ* Nanga Rakan sinoŋ, Lubuk Tajau sunoŋ (84)

*kăpiŋ* ‘ear’ Bidayuh *kăpiŋ*, Semirau kopik, Tanggung kopik, Upe kopi, Kasro Mego kopik, Engkahan kopi, Moro Betung kopik, Semongan kopik, Kembayan kopik, Empodis kopik, Ribun (Hudson) kopik, Gunam kopik, Semandang kopik, Nanga Rakan kopik, Lubuk Tajau kopik, Leminang kopik, Nangka Mongkok kopik, Selampong kopik, Canayan kopik (87)

*jāpiŋ* ‘ear’ Bakati’ *raja/uni2081k*, Moro Betung rajak, Saham rajak (87)

*māt* ‘eye’ Bidayuh-Bunan māt, Bakati’ *matu?, Moro Betung matu?, Saham mata?, Ambawang Satu matu, Semirau motuh, Tanggung motuh, Upe motik, Tanap matah, Semongan matah, Kembayan (Hudson) motah (Adelaar) matah, Empodis motah,
Ribun (Hudson) motuh, Gunam motuh, Semandang motih, Nanga Rakan motuh, Lubuk Tajau motuh, Leminang motih, Nangka Mongkok motih, Selampong motuh, Canayan motih;  *bâtšì* Bidayuh *bāt̊ah, *bāt̊ən, Mandong bətə, Kasro Mego bətah, Engkahan bətən (88)

*kuko* 'neck' Bidayuh *kūko:, Kasro Mego koko?, Engkahan kuko? (92)

*jāŋok* 'neck' Bakati *jāŋo,k, Moro Betung jaŋək, Saham jaŋok, Ambawang Satu jaŋok (92)

*rasan* 'neck' Semirau Rasâŋ, Tanggung Rasâŋ, Upe kasûŋ, Ribun tahasau (?), Gunam tahasûŋ, Nanga Rakan ansaŋ, Lubuk Tajau ansâŋ, Selampong asaŋ (92)

*riṇan* 'neck' Mandong karan, Tanap tirnan, Semongan rinan, Kembayan (Hudson) rinan, Empodis hinan, Semandang tirrinan, Leminang rinan, Nangka Mongkok te rinan (92)

*pungo* 'neck' *pungo:, Kembayan (Hudson and Adelaar) puŋgo, *puŋgoŋ* Bidayuh *gùŋgoŋ, *gāgoŋ, Bakati *puŋgoŋ* 'buttocks, back' (92)

*sūsuŋ* 'breast' Bidayuh *sūsuŋ, *sūsuŋ, Mandong susuŋ, Bakati *susuŋ, Saham susu, Lubuk Tajau susu, Nangka Mongkok te sušuŋ, Nanga Rakan susuŋ, Lubuk Tajau susuŋ, Selampong sušuŋ, Canayan susu; *tisuk* Upe tisuk, Ribun (Adelaar) tisu?, Gunam tisuk, Selampong tisuw; *susuŋ* Bidayuh *susuŋ, *sosoŋ, Moro Betung noŋok, Enghkahan susok; *insuŋ, *insuŋ* Semirau ancuk, Tanggung ancuk, Kasro Mego icok, Tanap icok, Semongan icok, Kembayan (Adelaar) icok, Empodis cuŋ (94)

*piso* 'heart' Bakali *piso, Saham piso, Kasro Mego pisu?, Engkahan pisu? (97)


*pungo* 'back' Bidayuh *pūnok (cognate?), Bakati *puŋgoŋ, Moro Betung poŋok, *puŋ(g)ɔ*? Mandong poŋo?, Upe puŋjaw, Tanap poŋo, Semongan poŋo, Kembayan (Hudson and Adelaar) poŋo?, Empodis puŋuk, Ribun (Hudson) puŋgu, Gunam puŋo (99)

*kupuŋ* 'back, waist' Semirau kopoŋ, Tanggung kopoŋ, Semandang kopung, Lubuk Tajau kopoŋ, Leminang kopoŋ, Nangka Mongkok kopoŋ, Selampong kopoŋ, Canayan kopoŋ (99)

*jāju* 'back' Bidayuh *jāju, Kasro Mego jaju?, Engkahan jaju, Nanga Rakan jaju, Lubuk Tajau jaju, Leminang jaju, Nangka Mongkok jaju, Canayan jaju (99)

*rutuk* 'back' Bidayuh *dug, Bakati'-Rara rutuk, Saham rutuk, Ribun hutuk, Selampong tutu? (99)

*putuŋ* 'belly' Bidayuh *putuŋ, Mandong putuŋ, Bakati *putuŋ, Moro Betung putuŋ, Ambawang Satu putuŋ, Kasro Mego putuk, Engkahan putuŋ, Tanap putuwa, Semongan putuwa, Kembayan (Hudson) putu (101)

*tōni* 'intestines' Bidayuh *tānī, Mandong tīnī, Semirau anjah ko 'intestines', tonik 'belly', Tanggung anjah ko 'intestines', tonik 'belly', Upe tonik 'belly', aliye h toni 'intestines', Kasro Mego tanowih, Tanap toni, Semongan toni, Kembayan (Hudson) toni, Empodis toni 'belly', okah toni 'intestines', Ribun (Hudson) toni 'belly', isi? toni 'intestines' (Adelaar) ali'h toni?, Gunam aliye ton, Semandang toni 'belly', karang toni 'intestines', Nanga Rakan toni, Lubuk Tajau toni, Leminang toni, Nangka Mongkok toni, Selampong toni, Canayan toni.;  *tanain* 'intestines' Bidayuh *tā'īn, *nā'īn, Bidayuh-Sangking tinā'īn, Bakati *tanai, Moro Betung tanaṇin (101, 103)

*ati ‘liver’ Bidayuh *ati:, *ati:n, Mandong ate, Bakati’ *ate/uni2082, Moro Betung ate/uni0294, Saham aT/uni025B, Ambawang Satu at/uni025B, Semirau oti, Tanggung oti, Upe oti, Kastro Mego oti, Engkahan oti (cognate?), Semongan oti, Kembayan oti, Empodis oti, Ribun (Hudson) oti (Adelaar) oti, Gunam oti, Semandang oti, Nanga Rakan oti, Lubuk Tajau oti, Leminang otiy, Nangka Mongkok o?tiy, Selampong otiy, Canayan oti (103)

*puduh ‘gall bladder’ Bidayuh *pŭduh, *pudun, Lubuk Tajau pudo, Leminang padow, Nangka Mongkok padow, Selampong padow (103)

*tājan ‘hand’ Bidayuh *tājan, etc., Semirau tonjan, Tanggung tonjan, Upe tonjan, Kastro Mego tonjan, Engkahan tonjan, Tanap tonjan, Semongan tonjt, Kembayan tonjan, Empodis tonjan, Ribun tonjan, Gunam tonjān, Semandang tonjan, Nanga Rakan tonjan, Lubuk Tajau tonjan, Leminang tonjan, Nangka Mongkok tonjan, Selampong tonjan, Canayan tonjan (104)

*bāreŋ ‘arm’ Bidayuh-Upper Padawan bāreŋ ‘arm’, Mandong bareŋ, Bakati’ *bareŋ ‘arm and hand’, Moro Betung bareŋk, Saham barek, Ambawang Satu bareŋ (104)


*bak kārāb ‘knee’ Bidayuh *bak kārāb, *bak kārob, Mandong bakarap (111)


*tukuŋ ‘knee’ Bakati’ *tukuŋ, Moro Betung abak takuŋ, Saham abak tukuk, Upe ŋaŋku (111)

*tub ‘see’ Bidayuh *tŭb ‘see’, *t/uni0259/uni0259/uni0259/uni0259k, Kasro Mego t/uni0259/uni0259n, Engkahan Nt/uni0259/uni0259, Tanap Nt/uni0259, Semongan Ntbo”, Kembayan (Adelaar) ntbo? (115)


*kirih ‘see’ Bidayuh *kirih, *kirin, Kembayan (Hudson) ńkirih (115)
*niŋa? 'look, watch' Bidayuh *niŋa?, *tiŋa?
Mandong niŋa? (115)

*manto 'see' Semandang manto, Nanka
Mongkok mantaw, Selampong matiy,
Canayan mahati: (cognate?) (115)

*diŋah₂ 'hear' Bidayuh *diŋah, *dĭŋe:n,
Mandong ŋ/uni0259riŋah, Bakati'-Sara/Riok diŋah,
Saham diŋah; *daŋah, Bakati' *daŋa,
Moro Betung daŋah (117)

*kăpiŋ, *ŋăpiŋ 'hear' Bidayuh-Bukar and some
Sadung *kăpiŋ, Semirau kapi/uni1D4Fŋ, Tanggung
kapi/uni1D4Fŋ, Upe kapi/uni1D4Fŋ, Kasro Mego ŋopi/uni1D4Fŋ,
Engkahan ŋopi/uni1D4Fŋ, Tanap ŋopi/uni1D4Fŋ, Semandang
ŋopi/uni1D4Fŋ, Leminaŋ ŋopi/uni1D4Fŋ, Nangka
Mongkok kapikŋ, Selampong ŋopikŋ, Canayan ŋopikŋ
(117)

*sium 'smell, kiss' Bakati' *siu/uni2081m, Moro Betung
/sium, Ambawang Satu ŋium, Kembayan
(Adelaar) bociup (119)

*gāyu 'scratch' Bidayuh *gāyu, Mandong gayo,
Bakati' *ŋayo/uni2082, Moro Betung ŋay/uni0254,
Saham ŋayo, Semirau gayu, Tanggung gayu, Upe
gayu, Kasro Mego ŋoyuh, Tanap ŋoyu:, Semongan ŋoyuh,
Kembayan ŋoyuh, Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
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Empodis ŋoyu, Ribun (Hudson) ŋoyu
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Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis ŋoyu, Ribun (Hudson) ŋoyu
(Adelaar) ŋoyu, Gunam ŋoyu, Kasro Mego ŋoyuh, Tanap
ŋoyuh, Semongan ŋoyuh, Kembayan ŋoyuh,
Empodis �íliau kobek, Tanggung kobek,
Upe kobe, Empodis kobe? (129); *n-țăbăs
'kill' Bidayuh *țăbas, *kăbăs, Mandong
țubăs, Kasro Mego řubăs, Engkahan țubăs;
Bakati' *kăbi,s, Moro Betung kăbi, Saham kăbih,
Ambawang Satu kăbi, Tanap kăbi, Semongan
kăbi, Kembayan (Hudson) kăbi (Adelaar) kăbi, Ribun kăbi,
Gunam kăbi, Nanga Rakan kăbi, Lubuk Tajau
kăbi, Leminaŋ kăbi, Nangka Mongkok
kăbi, Selampong kăbi, Canayan kăbi;
Bakati' *ŋami,s, Moro Betung tamis,
Saham țamih, Ambawang Satu namis,
Semongan țkomis, Kembayan ngkomis,
Ribun ngkomis, Gunam ŋkomis, Lubuk Tajau ŋkomis, Leminang nkomis, Nangka Mongkok komis, Selampong nkomis; *kābe? Semirau kabek, Tanggung kabek, Upe kābe?, Empodis kābe? (201)


*dudak ‘sit’ Semirau dudaik, Tanggung dudaik, Upe dudok, Gunam dudo?, Semandang dudo’, Nanga Rakan dudo?, Lubuk Rajau dudo?, Leminang dudok, Nangka Mongkok dudok, Selampong dudok, Canayan dudo’. It is possible that some forms reflect *dudok. (131)

*ntăk/uni0259t ‘stand’ Semirau tokuut, Tanggung tokit, Upe tokit, Tanap Nt/uni0259kut, Semongan Ntakat, Kembayan (Hudson) ntataktn (Adelaar) ntakot, Empodis tokit, Ribun (Hudson) ntokut (Adelaar) tokut, Gunam tokut, Semandang tokit, Lubuk Tajau mankat (cognate?), Leminang tokit, Nangka Mongkok tokit, Selampong tokot; *tagat Mandong tagot; *agan Bakati *agu, Moro Betung agun, Saham agat (132)

*mijog ‘stand’ Bidayuh *mijo,g, *mijo:g, Engkahan mijo’k; *mijo? Kasro Mego mio? (132)

*bās ‘sleep’ Bidayuh *bāʔas, Mandong bās, Bakati *buus, Moro Betung bu:s, Saham buwih, Ambawang Satu bus, Upe bis, Kasro Mego bās, Engkahan bās, Tanap bis, Semongan bis, Kembayan biis, Empodis bis, Ribun biis, Gunam bis, Semandang biis, Nanga Rakan biis, Lubuk Tajau biis, bis, Leminang biis, Nangka Mongkok biis, Selampong biis, Canayan biis; *bīzik Semirau bik, Tanggung bik (133)

*(ba)jālan ‘walk’ Bidayuh *jālan, Bakati *bajala,n, Moro Betung bajala’n, Saham bajalat, Upe jalo’n, Kasro Mego bajalat, Engkahan bajalat, Tanap bajalat, Semongan bajalat, Kembayan (Hudson) bajalatn (Adelaar) bu/ojalat, Empodis bajala’n, Ribun (Hudson) jalan (Adelaar) jalaŋ, Gunam jala’n, Semandang bajala, Nanga Rakan bajalan’, Lubuk Tajau bajal’a,n, Leminang bajala’n, Nangka Mongkok bajalatl, Selampong bajalatn, Canayan bajala’n. Note that all forms have I rather than the usual LD r. This form appears to be a borrowing; cf. Malay jalan (138)

*aŋal ‘play’ Bakati’-Sara/Riok baŋal, Semirau ajal, Tanggung ajal, Upe ajolo, Tanap ajal, Semongan ajal, Kembayan ajal, Empodis ajal, Gunam aja (139)

*rūbi ‘play’ Bidayuh *birūbi, Kasro Mego Rubi, Engkahan boRubi (139)


*main ‘play’ Bidayuh *main, Bakati *mai,n, Moro Betung bamanjın, Ambawang Satu baman, Ribun main, Leminang main, Selampong ma’ın. Cf. Malay main (139)

*māndag ‘come, arrive’ Bidayuh *māndag, Kasro Mego manāk, Engkahan manāk; *atak Mandong ŋtak, Bakati’ *utu, Moro Betung utuʔk, Saham atak, Ambawang Satu utuŋ; *mān(d)ik Semirau monik, Tanggung monik, Upe monik, Tanap monik, Semongan monik, Kembayan (Hudson) monik, Empodis moni?, Ribun (Hudson) monik (Adelaar) mondik, Gunam monik, Semandang moni? (140, 509)

*(p/m)ari ‘return’ Bidayuh *pāri?, *māri?, Upe mori ‘go home’, Lubuk Tajau mi; Nangka Mongkok muyi, Canayan muhi; *uriri ‘go home’ Bakati’ *ureʔ, Moro Betung oreʔ, Ambawang Satu oreʔ. In some sets PLD *bā > *u in Bakati’ and related languages; cf. PLD *bāʔid ‘betel’ > Bakati’ *uid (242) and PLD *bāhaw ‘areca nut’ > Bakati’-Rara uhe (243). The same process may be operating in this set. The form pulay ‘go home’ in Semirau, Tanggung and Selampong may also be related. (140)

*baliik ‘go home’ Mandong balik, Bakati’ *b/mali,k, Saham malik, Kasro Mego balik,
*mabar* ‘fly’ Bidayuh *mabdr, *mikābur, Bakati’ *mibi, r, Upe nkabiR, Engkahan tamābaR, Tanap timāb, Semongan mabar, Kemlayan mabar, Empodis mabar, Ribun (Adelaar) timāb, Selampong tānibu“; *ntabar (?)
Semirau Ntibo, Tanggung Ntibo; *mabdr, *mikăbur, Bakati’ *mibdr, Upe ŋkabīR, Engkahan t/uni0259m/uni0259b/uni0259R, Tanap tim/uni0259b/uni0259r, Semongan m/uni0259b/uni0259r, Kembayan m/uni0259b/uni0259r, Empodis m/uni0259b/uni0259r, Ribun (Adelaar) tim/uni0259b/uni0259r, Selampong t/uni0259m/uni0259b/uni0259r. Cf. Malay mabar ‘fly’ (140)

*mırīb* Bidayuh *mırīb, *timiriş, Saham, mirīb, Nanga Rakan tamuyup, Lubuk Tajau tamuyup, Leminang tomiyup, Nangka Mongkok tamiyub, Canayan tāniju. The stem underlying these forms, *mırīb, seems to be a metathesis of the stem, *CVb/uni0259r, presented earlier in this set. (141)

*tarabaŋ* ‘fly’ Mandong t/uni0259r/uni0259b/uni0259/uni1D4Fŋ, Bakati’-Sara/Riok narabakng, Ambawang Satu tarabaŋ, Semandang t/uni0259robang. Cf. Malay terbang ‘fly’ (141)

*jătu/uni0294* ‘fall’ Bidayuh *jătu:/uni0294, Bakati’ *jantu/uni0294, Moro Betung jantu/uni0294, Ambawang Satu jantu, Upe jotuk, Semirau jotuk, Tanggung jotuk, Ribun jotu/uni0294, Gunam jotuk, Semandang jotu, Nanga Rakan jato, Lubuk Tajau jotu, Leminang jotuw, Nangka Mongkok jotuw, Selampong jotu?, Canayan jato: (144)

*răbu/uni0294* ‘fall’ Bidayuh *răbu:/uni0294, *rābu:/uni0294, Kasro Mego Robu/uni0294, Engkahan R/uni0259bu/uni0294, Tanap robu/uni0294, Semongan robu/uni0294, Kembayan (Hudson) robu/uni0294, Empodis robu/uni0294 (144)

*man/uni0259h* ‘fall’ Mandong man/uni028Ch, Saham man/uni0259h (144)

*ŋamok* ‘stab’ Bidayuh *ŋāmok, Bakati’ *ŋamok, Moro Betung tam/uni0254k, Saham ŋamok, Engkahan namok, Tanap ŋamuwa/uni0294, Nanga Rakan numo/uni0294 ‘stab from below’, Lubuk Tajau tumo/uni0254 ‘stab from above’ (145)

*tikam* ‘stab’ Mandong nikām, Ambawang Satu nikam, Semirau tika’am, Tanggung tika’am, Ribun manikam, Semandang nikam, Nanga Rakan nikām ‘stab from below’, Leminang nika’am, Nangka Mongkok nika’am,

Selampong tika’am, Canayan tika’am. Cf. Malay tikam. Cf. Malay tikam ‘stab’ (145)

*CVjo?* ‘stab’ Bidayuh *kā/ujak, Bakati’-Sara/Riok pasuq ‘puncture’, Kasro Mego ticuk, Gunam nicuk? (145)

*jab* ‘stab’ Bidayuh *nijob, *ni/jajob, Semongan tincap (145)


*ku/uni0241ut* ‘bite’ Bidayuh *ku/uni0294ut, Bakati’ *ŋoo/uni2081t, Saham ŋ/uni0254/uni0254t, Engkahan ŋ/uni0259t, Kembayan (Hudson) ŋku/uni0259t (147)

*gigit* ‘bite’ Bidayuh *N-gīgit, Mandong ŋigit, Bakati’-Bekati’-ŋigit, Moro Betung ŋigit, Ambawang Satu ŋigit, Kasro Mego ŋigit, Nanga Rakan ŋogat (cognate?), Lubuk Tajau
jijet, njiet (cognate?), Nangka Mongkok ŋigit (147)

*pitat 'bite' Upe pitat, Tanap ŋatap (cognate?), Empodis mitat, Ribun mitak, Gunam mita?, Semandang mitat, Leminang mitat, Selampong mitat, Canayan mitat; *pitan (147)

*(num)poh 'blow' Bidayuh *pi-h, *puhoh, Mandong mpoh, Bakati' *ŋamopo,h, Saham ampoh, Semirau tipoh, Tanggung tipoh, Upe sipoh, Kastro Mego ŋumpoh, Engkahan ŋumpo, Tanap tumpuh, Semongan tumpuh, Kembayan (Hudson) ŋupuh (Adelaar) nopuh, Empodis sipuwah, Gunam sipoh, Semandang nyipoh, Nanga Rakan ŋipoh, Lubuk Tajau sipoh, Nangka Mongkok sipoh, Selampong numpu, Canayan sipoh; *pitan Semirau pit, Tanggung pit (147)

*(num)poh 'blow' Bidayuh */uni0272i-poh, *puhoh, Mandong mpoh, Bakati' *ŋamopo,h, Saham ampoh, Semirau tipoh, Tanggung tipoh, Upe sipoh, Kastro Mego ŋumpoh, Engkahan ŋumpo, Tanap tumpuh, Semongan tumpuh, Kembayan (Hudson) ŋupuh (Adelaar) nopuh, Empodis sipuwah, Gunam sipoh, Semandang nyipoh, Nanga Rakan ŋipoh, Lubuk Tajau sipoh, Nangka Mongkok sipoh, Selampong numpu, Canayan sipoh; *pitan Semirau pit, Tanggung pit (147)

*(num)poh 'blow' Bidayuh *pi-h, *puhoh, Mandong mpoh, Bakati' *ŋamopo,h, Saham ampoh, Semirau tipoh, Tanggung tipoh, Upe sipoh, Kastro Mego ŋumpoh, Engkahan ŋumpo, Tanap tumpuh, Semongan tumpuh, Kembayan (Hudson) ŋupuh (Adelaar) nopuh, Empodis sipuwah, Gunam sipoh, Semandang nyipoh, Nanga Rakan ŋipoh, Lubuk Tajau sipoh, Nangka Mongkok sipoh, Selampong numpu, Canayan sipoh; *pitan Semirau pit, Tanggung pit (147)

*(num)poh 'blow' Bidayuh */uni0272i-poh, *puhoh, Mandong mpoh, Bakati' *ŋamopo,h, Saham ampoh, Semirau tipoh, Tanggung tipoh, Upe sipoh, Kastro Mego ŋumpoh, Engkahan ŋumpo, Tanap tumpuh, Semongan tumpuh, Kembayan (Hudson) ŋupuh (Adelaar) nopuh, Empodis sipuwah, Gunam sipoh, Semandang nyipoh, Nanga Rakan ŋipoh, Lubuk Tajau sipoh, Nangka Mongkok sipoh, Selampong numpu, Canayan sipoh; *pitan Semirau pit, Tanggung pit (147)
*tikam* ‘throw’ Ribun nikam, Nanga Rakan neka’m, Lubuk Tajau nika’m, Lemingang nika’m, Nangka Mongkok tika’m, Selampong nika’m, Canayan nika’m (155)

*tampoh* ‘throw’ Upe tampoh, Gunam tamp/uni0254h;

*Campuk* Bidayuh *sǎpok, Bakati‘-Kendayan mampuuk (155)

*kābat* ‘tie’ Bidayuh *kābat, Mandong ṭi, Kembayan ngkat, Ambawang Satu ṭi, Kasro Mego kāt, Kasro Mego taga’t, Kembayan ṭa; it is possible that Bidayuh *ṭa* is related to this group. (159)

*mbo2aŋ* ‘tie’ Bidayuh *mā2aŋ, Bakati‘ *mbuŋ, Saham ma2aŋ (159)

*Cisit* ‘tie’ Upe iset, Tanap ṭisat, Semongan ṭisat, Kembayan ṭisat, Empodis ṭisiyat, Ribun nisaya’t, Gunam nisaya’t; it is possible that Bidayuh *ṭi* is related to this group. (159)

*nī2oʔ* ‘tie’ Bakati‘ *nī2oʔ, Moro Betung nep’a (159)


*njuk, *mupuk ‘give’ Tanap tinunga’t, Semongan njuk’t, Kembayan (Hudson) nginyua’, Ribun (Hudson) munu’t, Semandang munyo’, Nanga Rakan mun’a, Lubuk Tajau muna’t, Lemingang munu’t, Nangka Mongkok munu’t, Selampong muya’t (162)

*jVlo ‘give’ Mandong polo, Semirau julu, Tanggung julu, Upe jul, Empodis jiluwa, Gunam julu, Canayan julu: (162)


*gau ‘hold’ Bidayuh *kā/ŋ/sad/gaŋ, *tāk/ŋ, Mandong ma2g, Moro Betung miga’h, Ambawang Satu migaŋ, Tanggung toga’h, Kasro Mego taga’h, Engkahan mag, Tanap tasya, Semongan tagsya, Kembayan (Hudson) moga’h (Adelaar) moga’h, Lubuk Tajau tugo’h ‘grasps’; *gem* *ṇagam, *ṇom ‘grasp, Bakati‘ *ṇagu, *gir* Upe ŋir, Empodis ŋir, Ribun (Hudson) ŋing (Adelaar) ŋing,linebreak

*k/ŋupu ‘wash’ Bidayuh *k/ŋupu, Kasro Mego burupu, Moro Betung mupu, Ambawang Satu mupu, Kasro Mego pni, Kasro Mego taga’h, Engkahan mag, Tanap tasya, Semongan tagsya, Kembayan (Hudson) moga’h (Adelaar) moga’h, Lubuk Tajau tugo’h ‘grasps’, *kunbe* *mbe:*, Mandong mume’, Moro Betung mome’, Semirau tume, Tanggung tume, Upe tumik, Tanap nomi, Kembayan (Adelaar) t/nomi’, Empodis tumi’, Ribun (Hudson) jumbe (Adelaar) jumbe’, bohome’, Gunam jume’, *mbe: Bidayuh *mjang, Bakati‘ mjan (166-7)

*nj/pupu ‘wash’ Bidayuh *m/jupu, Kasro Mego buRupu, Engkahan ŋkupok, Semongan mopo, Kembayan (Hudson) mopo’, Lubuk Tajau mamp, Selampong mopu’ boju; possibly related is *kihu? Bidayuh *kih, *ju’, Bakati‘-Rara/Riok jju’, Saham jwu (166-7)
*ja?at, *jahet 'bad' Bidayuh *ja?at, Bakati' *jahe,?, Bakati'-Bekati' jait (< *jahe,t or *jahit), Ambawang Satu jahat, Semandang jakat, Nanga Rakan jact, Lubuk Tajau jact, Leminang jact, Nangka Mongkok jact, Selampong ja?at, Canayan jahat; cf. Malay jahat (169)

*biz?ek 'bad' Bidayuh *biz?ek, Kasro Mego bak, Tanap bek, Semongan baek, Kembayan bek, Ribun (Hudson) bie? (Adelaar) bii?, Gunam bae? (169)

*m?adam 'rotten' Bidayuh *m?ada:m, *m?ado:, Mandong mada:m 'bad', Bakati' *mada:m, Moro Betung mada:p 'bad, rotten', Saham madam 'bad, rotten', Ambawang Satu madam, Upe lodam 'bad', moda'm 'rotten', Engkahan madap 'bad, Semongan modap, Kembayan (Hudson) modapm (Adelaar) modap, Empodis moda'm 'bad, Ribun (Adelaar) modam, Gunam moda'm (169, 305)


*paguh 'good' Bidayuh *pa?uh, Kasro Mego pagu, Engkahan paguh; *bagah/s Ribun bagah, Semandang bagas (170)


*saih 'dirty' Bidayuh *ka?is, Bakati' *sai,h, *sah, Saham saih (171)

*kotor 'dirty' Moro Betung kotor, Ambawang Satu kotor, Ribun kotor, Semandang kotor, Nanga Rakan koto: kotoy, Leminang cepeh kotor; cf. Malay kotor (171)


*kari?n 'dry' Moro Betung kari?k, Ambawang Satu kare, Tanap kori?, Semongan korik, Kembayan korikn, Nanga Rakan koi?n, Canayan kohi? (172)

*tataw 'laugh' Bidayuh *tataw, Semirau nota, Tanggung nota, Upe nota, Tanap notow, Kembayan notoy, Empodis motaw, Ribun notau, Semandang noto, Leminang notaw, Selampong noto; *n-Vtawah Bidayuh *tawah, Ambawang Satu katawa (cf. Malay ketawa), Kasro Mego notowu, Engkahan natawu, Semongan notowu, Gunam natowo; *n-tawah Nanga Rakan ntowan, Lubuk Tajau ntawa?n, Nangka Mongkok tawatn, Canayan ntawa?n (176)

*b?rik 'hit with a stick' Semirau boRik, Tanggung boRik, Upe boRik, Empodis bohik, Gunam brc? (178)

*palasah 'hit with a stick' Engkahan plasa, Lubuk Tajau palasah, Leminang balasah, Nangka Mongkok balasah (178)

*gantam 'hit with a stick' Mandong gantam, Bakati' *njanta,m, Saham njantam (178)

*nucoh 'hit with a stick' Tanap ?ocoh, Kembayan ngochoah (178)

*tampar 'slap' Bidayuh *tampar, Ribun (Adelaar) batampar (loan?), Lubuk Tajau tampay,
Leminang nampar, Nangka Mongkok tampar, Selampong nampaw, Canayan tampa; cf. Malay tampar ‘slap’ (178)


*buut ‘afraid’ Mandong bu:t, Bakati’ buu/t, Moro Betung bu:t, Saham buwut, Ambawang Satu but (179)

*tāru ‘afraid’ Bidayuh *tāru, *tirāw?, Kasro Mego toRu; Engkahan tuRu (179)


*bāba ‘say, talk’ Semirau bobo, Tanggung bobo, Upe, Gunam bobobo (181)

*mihu ‘say, talk’ Bidayuh *mihu, *muhu, Kembayan (Adelaar) ihu ‘voice, sound’ (181)

*bahit ‘left (hand)’ Bidayuh *bāhit, *māhit, Semirau moet, Tanggung moet, Upe ŋamit (cognate?), Kasro Mego moit, Engkahan mōit, Tanap moiyet, Semogan moiyet, Kembayan (Hudson) moit (Adelaar) moi?t, Empodis kamiyat, Ribun (Hudson) moey? (Adelaar) moi?’, Gunam moye?, Nanga Rakan omit, Lubuk Tajau omet, Selampong moiyit (183)

*kiri? ‘left (hand)’ Bidayuh *kiri?, *kire?, Bakati’ *sanjiri?, Saham ṣenjiri, Ambawang Satu kiri (183)


Semongan towuh, Kembayan touh, Empodis towuh, Ribun taut, Gunam tawuh, Nanga Rakan tuoh, Lubuk Tajau tən, Selampong tən (184)

*(d)uman ‘correct, true’ Semirau doma’n, Tanggung doma’n, Upe ma’n, Tanap omat, Semongan omat, Empodis omant, Gunam doma’n, Leminang oma’t, Nangka Mongkok oma’t, Selampong oma’t, Canayan oma’t (184)

*banar ‘correct’ Mandong banar, Ambawang Satu banar, Kasro Mego mana?, Engkahan mana?, Nanga Rakan bonay ‘true’ (184)

*jārən ‘trail, footpath’ Bidayuh *jāra, *āran, Mandong mara’n (cognate?), Semirau joRa’n, Tanggung joRa’n, Upe joRa, Kembayan joratn, Ribun johan, Semandang joratn;

*jālan Moro Betung bajalən, Saham bejalən, Kembayan bajala, Semongan bajalə, Empodis bajala’n, Gunam jale’n;

*jala? Kasro Mego bajala? (202)

*tārih ‘rope’ Bidayuh *tārih, *nārih, *tārin, Mandong tiri?, Bakati’ *tari?, Moro Betung tari, Saham tari?, Ambawang Satu tari, Semirau toRis, Tanggung toRis, Upe toRih, Kasro Mego toRih, Engkahan toRih, Tanap torih, Semongan torih, Kembayan torih, Empodis tohī, Ribun tohīs, Gunam tohīs, Semandang torih, Leminang toRih, Nangka Mongkok toRih, Selampong toRih; *tāli Nanga Rakan toIl, Lubuk Tajau toli, Canayan toli (206)

*n-jāhīt ‘sew’ Bidayuh, Mandong jahit, Bakati’ *naih,t, Moro Betung nəpit, Saham nəpit, Ambawang Satu jait, Upe joyet, Kasro Mego njit, Engkahan njit, Tanap njat, Semongan njat, Kembayan (Hudson) ni’t (Adelaar) ni’t, ji’t, Empodis bojhiyet, Ribun nyoye’, Semandang nganyoit, Nanga Rakan jait, Lubuk Tajau baijak, Lenimang noet, Nangka Mongkok jayit, Selampong jo’it, Canayan baijoit; *n-ji/uni0294it Bidayuh *nji/uni0294it (212)

* gaRām ‘salt’ Semirau gaRā’m, Tanggung gaRā’m, Upe gorō’m, Tanap garap, Semongan garap, Kembayan (Hudson) garapm (Adelaar) garap, Empodis gaha’m,
Ribun gaham, Gunam gaham, Semandang garam, Nanga Rakan gaya’m, Lubuk Tajau gaya’m, Lemianang ga’a’m, Nangka Mongkok gaya’m, Selampong gawa’m, Canayan gaha’m; *gālam, *gālo? Bidayuh *gālam, *gālo?, *gūlo?, Kastro Mego galop, Engkahan galo? (219)
*sia? ‘salt’ Mandong siya?, Bakati’ sia?, Moro Betung siya?, Saham siya?, Ambawang Satu sia (219)
*āpi ‘fire’ Mandong api, Bakati’ *api, Moro Betung api, Saham api, Ambawang Satu api, Semirau opi, Tanggung opi, Upe opi, Tanap opi, Semongan opi, Kembayan opi, Empodis opi, Rubun opi, Gunam opi, Semandang opi, Selampong opiy, Canayan opi; *āpuy Bidayuh *āpuy, *puy, Kastro Mego opui, Engkahan āpui, Nanga Rakan opuy, Lubuk Tajau op’y, Lemianang opuy, Nanka Mongkok opuy (225)
*ābuh ‘ash’ Bidayuh *ābuh, Mandong abu?, Bakati’ *abu?, Moro Betung abu?, Ambawang Satu abu, Semirau abuh, Tanggung abuh, Upe abuh, Kastro Mego abuh, Engkahan abuh, Tanap abuh, Semongan abuwa? (cognate?), Kembayan abuh, Empodis abuh, Rubun abuh, Gunam abuh, Semandang abuh, Nanga Rakan abu, Lemianang abuw, Nangka Mongkok abu’, Selampong abuh, Canayan abu; *āpa(C) Bidayuh *tikąp, *tikąpok, Bakati’ *kalapu, Saham kalaput, Upe abok, Lubuk Tajau sopo” (Bidayuh and Upe reflect final *k, Bakati’ and Saham reflect final *t; Lubuk Tajau, if cognate, reflects no final consonant.) (226)
*dābu ‘dust’ Bidayuh *dābu, Mandong debu, Semirau dobu, Tanggung dobu, Kastro Mego dobu, Engkahan dobu, Tanap dobu, Semongan dobu, Kembayan dobu, Empodis dobu, Rubun dobu, Gunam dobu, Semandang debu, Nanga Rakan dobu, Lubuk Tajau dobu, Lemianang dobow, Nangka Mongkok dobow, Selampong dobow, Canayan dobu; *dābu Bakati’ *dabu, Moro Betung dabu, Ambawang Satu dabu (226)
*āsap ‘smoke’ Bidayuh *āsap, Mandong asap, Bakati’ *asu, Moro Betung asap, Saham asap, Ambawang Satu asap, Semirau asap, Tanggung asap, Upe asap, Kastro Mego asap, Tanap asap, Semongan asap, Kembayan asap, Empodis asa:p, Ribun (Hudson) asap (Adelaar) aso?, Gunam aso?, Semandang asap, Nanga Rakan asap, Lubuk Tajau asap, Lemianang asap, Nangka Mongkok asap, Selampong asap, Canayan asap (the forms with the final vowel a may be loans from Malay asap); *āsuh Bidayuh *āsuh, Engkahan asuh (230)
*nicul ‘burn’ Semirau nicul, Tanggung nicul, Upe nicolo, Kembayan (Adelaar) nichual, Ribun nichoi, Gunam nicuwa, Semandang nguchol, Lemianang ḋuchol, Nangka Mongkok ḋuchol, Selampong ḋucul (231)
*ninu? ‘burn’ Mandong ninu?, Moro Betung ninu?, Saham ninu?, Lubuk Tajau mano? (cognate?), Canayan mano? (cognate?) (231)
*ma’an ‘eat’ Bidayuh *ma:n, *ma’an, *men, *me:, Mandong man, Kastro Mego mantas (cognate?), Engkahan maan, Tanap man, Semongan man, Kembayan man/makatn; *uman Bakati’ *uma:n, Moro Betung uman, Saham uman, Ambawang Satu uman (232)
*bahay ‘areca nut’ Bidayuh *băha:y, Bakati’-Rara uhe, Ribun (Adelaar) ua (243)
*āma-ŋ ‘father (vocative?)’ Bidayuh *āmaŋ, Upe maŋ, Kastro Mego maŋ, Engkahan maŋ, Tanap oma, Semongan oma, Kembayan oma, Empodis meh, Ribun (Hudson) maŋ (Adelaar) moŋ, Gunam ma’k, Nanga Rakan kuma:, Lubuk Tajau kuma:, ma; *sāma?
Bidayuh *sāmaː?, Mandong maʔ, Bakati’ *samaːʔ, Saham amaʔ, Ambawang Satu samaʔ (248)

*āpak ‘father’ Semirau opay (cognate?),
   Tanggung opay (cognate?), Semandang opa’,
   Leminang opaʔ, Nangka Mongkok opaʔ,
   Selampong opaʔ, Canayan apaʔ (248)

*sindoʔ, *sindoʔ ‘mother’ Bidayuh *sindaːʔ,
   *āndaʔ, Mandong naʔ, Bakati’ *sindoʔ,
   Moro Betung sinoʔ, Saham indoʔ, Ambawang Satu sino, Semirau nay (cognate?),
   Tanggung nay (cognate?), Kembayan (Adelaar) naʔ,
   Empodis noʔη (cognate?), Ribun (Hudson) nduʔ (Adelaar) ndoʔ, Gunam noʔ,
   Semandang inoʔ, Leminang inoʔ, Nangka Mongkok inoʔ, Selampong inuʔ, Canayan iyoʔ (249)

*āya-ŋ ‘mother’ Bidayuh *āyan, Kasro Mego oyaŋ, Engkahan ayâŋ, Tanap oya:, Semongan oya, Kembayan (Hudson) oya (249)

*tāyuŋ ‘grandmother’ Bidayuh *tăyuŋ,
   Kembayan (Adelaar) toyuʔ, Nanga Rakan dayuŋ (253)

*băn/uni0259h ‘husband’ Bidayuh *băn/uni0259h, Mandong b/uni0259/uni0294, Semirau bonuh, Tanggung bonuh, Upe bonih, Kasro Mego banah, Engkahan banah, Tanap banuŋ, Semongan banah, Kembayan (Hudson) bonah (Adelaar) bana, Empodis bonih, Ribun bonuh, Gunam bonuh, Semandang bonih, Nanga Rakan bonuh, Lembang bonuh, Nangka Mongkok boniŋ, Selampong bonuh, Canayan bonih; *bânən Bidayuh *bänən, Bakati’ *bun/uni0294n, Moro Betung banuŋ, Saham banan, Ambawang Satu banun (250)

*āsaw ‘wife’ Bidayuh *āsaw, Semirau osaw, Tanggung osaw, Upe osao, Engkahan øsaw, Tanap osow, Kembayan osow, Empodis saw, Ribun osu, Gunam osau, Semandang oso, Nanga Rakan osaw, Lembang osawa, Leminang onsaw, Nangka Mongkok onsaw, Selampong oso, Canayan oso; *sāweh Mandong suwaʔ, Kasro Mego osowu, Semongan osowu; *sawon Bidayuh *sawon, Bakati’ *sauʔ,n, Moro Betung sawut, Saham sawut, Ambawang Satu saun (251)

*dāri ‘man’ Bidayuh*dāri, Semirau daRi, Tanggung daRi, Engkahan daRi, Tanap dari, Semongan dari, Kembayan dari, Empodis dahi, Ribun (Adelaar) dahi’, Semandang dari, Nanga Rakan dai, Lubuk Tajau daiy, Leminang dariy, Nangka Mongkok dariy, Selampong daywi, Canayan dahi; *daʔari
   Moro Betung daʔare, Ambawang Satu daʔare;

*ari Bakati’ *areʔ, Saham are; *n-dāri
   Mandong nay, Upe NdaRi, Kasro Mego ŋndaRi, Ribun (Adelaar) nahi, Gunam nahi (252)

*dāyuŋ ‘woman’ Bidayuh *dāyuŋ, Semirau dayu′ŋ, Tanggung dayu′ŋ, Upe Ndayuu′ŋ, Kasro Mego ŋndayok, Engkahan dayu′k, Tanap duwu, Semongan dayuwa, Kembayan dayu*, Empodis duwu, Ribun (Hudson) nayuŋ (Adelaar) dayuy’ŋ, nayuŋ, Gunam dayuwo’ŋ, Semandang dayung, Nanga Rakan dayu′ŋ, Lubuk Tajau dayo′ŋ, Leminang dayuy’ŋ, Nangka Mongkok dayo′ŋ, Selampong dayo′ŋ, Canayan dayuŋ (253)

*mahu ‘woman’ Bakati’ *mahu, Moro Betung damahu, Saham mawu, Ambawang Satu demahu (253)

*ānak ‘child’ Bidayuh *ānak, Saham anak, Ambawang Satu anakŋ, Semirau anak, Tanggung anak, Upe anak, Kasro Mego onaʔ, Engkahan anak, Tanap onaʔ, Semongan onaʔ, Kembayan (Adelaar) onaʔ, Empodis nak, Ribun (Adelaar) onoʔ, Gunam onoʔ, Semandang onaʔ, Leminang onak, Selampong onak (256)

*kanod ‘child’ Mandong ŋaŋat, Bakati’ *kaŋo,d, *aŋo,d, Moro Betung daŋat (256)

*āja ‘person’ Bidayuh *iŋa, Mandong naŋ, Saham naŋ ʯmpuʔ, Semirau ŏa, Tanggung ŏa, Upe ŏa, Kasro Mego ŏaː, Engkahan ʯno, Tanap ʯno, Semongan ŏo, Kembayan ŏo, Empodis ŏoː, Ribun (Hudson) ŏu (Adelaar) oŋo, Gunam oŋo, Semandang onaʔ, Selampong onaʔ, Canayan ŏa; *naʔa Bidayuh *naʔ,a, *naʔo,h, Bakati’-Sara/Riok naa, nah (257)

*sook ‘person’ Bakati’ *sook, Moro Betung so:k, Ambawang Satu so:k (257)
*gănan* ‘name’ Bidayuh *gănan, *găne?,
Mandong ginan, Kasro Mego gănăn,
Engkahan gonam; *ga?an* Bakati’ *gaa,n,
Moro Betung gaŋ, Saham gaat, Ambawang
Satu gănən (260)

*ā-dan* ‘name’ Bidayuh *dän, Semirau oda’n,
Tanggung oda’n, Upe oda’n, Tanap odat,
Semongan odat, Kembayan (Hudson) odatn
(Adelaar) odat, Empodis oda’n, Ribun
(Hudson) odan (Adelaar) odaq, Gunam
oda’n, Semandang odan, Nanga Rakan oda’n,
Lubuk Tajau oda’n, Lemingang oda’n, Nangka
Mongkok oda’n, Selampong oda’n, Canayan
oda’n; *ă-dan* Bidayuh *ā-dän (260)

*tahu* ‘know’ Semirau tauk, Tanggung tauk,
Upe taw, Kasro Mego taũ, Tanap tawok,
Semongan tauʔ, Kembayan (Hudson) tau’,
Empodis tauk, Ribun (Hudson) tau’, Gunam
tawoʔ, Semandang tauʔ, Nanga Rakan tau,
Lubuk Tajau tauʔ, Lemingang tauʔ, Nangka
Mongkok tauʔ, Selampong ta’oʔ, Canayan
tauʔ; (261)

*pandan* ‘know’ Mandong panane, Bakati’
*pan[d]e, Saham pane, Kembayan (Adelaar)
panay, Ribun (Adelaar) panda (261)

*pūan* ‘know’ Bidayuh *pūan, Engkahan
mpuaʔ (261)

*āran* ‘house(?)’ Bidayuh *āran b’home’,
Kembayan (Adelaar) roat, Ribun (Adelaar)
hoaŋ (271, 278)

*ndiʔ* ‘one’ Bidayuh *indiiʔ, Kasro Mego niʔ?,
Engkahan noiʔ? (281)

*sah* ‘one’ Bidayuh-Tringgus Bireng səːh, siah;
*jəʔ Mandong jəʔ, Tanap jəʔ, Semongan
jəʔ?, Kembayan jəʔ?, Empodis nik, Lubuk
Tajau jîʔ. (It is possible that this stem is
relatable to the one immediately preceding.)
(281)

*asaʔ* ‘one’ Bakati’ *asaʔ?, Moro Betung asaʔ,
Saham asaʔn, Semandang sa’. (It is possible
that this stem also is relatable to the one
immediately preceding.) (281)

*găliʔ* ‘one’ Ribun goli’, Gunam goleʔ? (281)

*k/sitek* ‘one’ Ambawang Satu sete, Semirau
kitek, Tanggung kitek, Upe teʔ, Lemingang
kateʔ, Selampong kiteʔ, Canayan siteʔ? (281)

*duah* ‘two’ Bidayuh *duah, Mandong duwaʔ?,
Bakati’ *duaʔ?, Moro Betung duWa,
Ambawang Satu dua ete, Kasro Mego duwaʔ,
Engkahan dua, Nanga Rakan duaʔ?, Lubuk
Tajau duaʔ?, Nangka Mongkok duaʔ? (the final
three forms seem to reflect something like
*duak*); *idu* ‘two’ Tanap du:, Semongan idu,
Kembayan (Hudson) idu (Adelaar) du,
Empodis du; *dukah* ‘two’ Semirau dukah,
Tanggung dukah, Upe dukah, Ribun
(Hudson) dukoh (Adelaar) duk’h, Gunam
dukoh, Semandang dukah, Lubuk Rajau
dukah, Lemingang dukah, Selampong dukah,
Canayan duka (282)

*tāruh* ‘three’ Bidayuh *tāruh, Mandong taru,
Bakati’ *taruʔ, Moro Betung taru, Saham
taru, Ambawang Satu taru, Kasro Mego
taRuh, Engkahan taRu, Tanap taruah,
Semongan taruwah, Kembayan (Hudson)
taru’h, Empodis takuwah, Ribun (Hudson)
tahu (Adelaar) tahu, Gunam tahuh; *tāruh
Semirau toRuh, Tanggung toRuh, Upe toRuh,
Semandang toruh, Lubuk Tajau təyoʔ,
Selampong to’uh, Canayan toho (283)

*ampat* ‘four’ Bidayuh *um-pat, Mandong mpat,
Bakati’ *apaʔt, Moro Betung ampat, Saham
apit, Ambawang Satu empat, Semirau āmpat,
Tanggung āmpat, Upe āmpat, Kasro Mego
mpat, Engkahan mpat, Tanap mpat,
Semongan mpat, Kembayan mpat, Empodis
pat, Ribun (Hudson) mpat (Adelaar) mpaʔ?,
Gunam mpaʔ?, Semandang mpat, Nanga
Rakan mpat, Lubuk Tajau mpat, Lemingang
mpat, Nangka Mongkok mpat, Selampong
mpat, Canayan mpat (284)

*rimah* ‘five’ Bidayuh *rimah, *rimoh, Mandong
rimaʔ?, Bakati’ *rimaʔ?, Moro Betung rimaʔ?,
Saham rimaʔ?, Ambawang Satu Rima,
Semirau Rimuh, Tanggung Rimuh, Upe
rimih, Kasro Mego Ramah, Engkahan Rimah,
Tanap ramah, Semongan ramah, Kembayan
(Hudson) ramah, Empodis himih, Ribun
(Hudson) humuh (Adelaar) himu, Gunam
himuh, Semandang lima’, Nanga Rakan
limaʔ?, Lubuk Tajau limaʔ?, Lemingang limaʔ,
Nangka Mongkok lima?, Selampong lima?, Canayan lima? (285)

*šam* ‘six’ Bidayuh *šam*, *nom, Bakati*
  *unu, Ribun (Hudson) niŋ, Kembayan (Hudson) niŋ, Semandang nam, Nanga
  Rakan nam, Lubuk Tajau nam, Leiminang nam, Nangka Mongkok nam, Selampong
  nam, Canayan nam (286)

*iwu* ‘seven’ Bidayuh *iwu*, Bakati *iwo?,
  Kembayan (Hudson) iwu, Ribun (Hudson) iwu (Adelaar) iwu, Semandang iwu (287)

*mahi, ‘eight’ Bidayuh *mahi, *mahih, Bakati’
  *mahi, Kembayan (Hudson) may, Ribun (Hudson) mae (Adelaar) may (288)

*pariži* ‘nine’ Bidayuh *piriži, Bakati’ piriži,
  Kembayan (Hudson) pariži, Ribun (Hudson) pariži (Adelaar) pariži (289)

*sarátus* ‘(one) hundred’ Bidayuh *si-rátus,
  Bakati’ *saratu, Kembayan (Hudson) siratus
  (Adelaar) siratus, Ribun (Hudson) sahatus,
  Semandang sara (290)

*saribu* ‘(one) thousand’ Bidayuh *si-ribu,
  Bakati’ *saribu, Kembayan (Adelaar) saribu
  Ribun (Adelaar) sibibu (291)

*sa/*ma-maan ‘all’ Bakati’ *sa-maan,
  Kembayan (Hudson) sama, Moro Betung sa-maan (292)

*sadi?ih* ‘all’ Semirau sadi?ih, Tanggung sadi?ih,
  Upe sadiyi (293)

*sado?, *nado? ‘all’ Bidayuh *so?: (cognate?),
  Semongan nado?, Kembayan nadotin, Ribun
  sado, Gunam sado (293)

*bilaŋ* ‘count’ Bidayuh *milaŋ, *milo?, Mandong
  *bilaŋ, Bakati’ *milaŋ, Semirau bilaŋ, Tanggung bilaŋ,
  Upe bilaŋ, Kasro Megoh milaŋ, Ribun (Hudson) milaŋ, Empodis bila;
  Ribun (Hudson) milaŋ (Adelaar) milaŋ, Semandang milang; cf. Malay bilang ‘count’
  (294)

*nitoŋ* ‘count’ Bidayuh *nitoŋ, *nitoŋ, *nitoŋ,
  Bakati’ *nitoŋ, Moro Betung nitoŋ,
  Kembayan (Adelaar) nitoŋ, Nanga Rakan
  nitoŋ, Lubuk Tajau baitoŋ, Leiminang
  bortoŋ, Nangka Mongkok nitoŋ, Selampong
  nitoŋ, Canayan itoŋ (294)

*niap* ‘count’ Bidayuh *niap, Saham niyaŋ,
  Engkahan niap (294)

*(d)ahih* ‘big, wide’ Bidayuh *ahi, *ahi, Semirau
  dais, Tanggung dais, Upe day ‘big’, dalk
  ‘wide’, Kasro Megoh oy: ‘many’, Engkahan ai
  ‘many’, Tanap doli ‘big’, owi ‘many’,
  Kembayan (Hudson) doy ‘big’, oi ‘many
  (Adelaar) doi ‘big, wide’, Empodis doi, Ribun
  (Hudson) dayi? (Adelaar) dais, Gunam dais,
  Semandang aih, Nanga Rakan aih, Lubuk
  Tajau aie, Leiminang dayih, Nangka Mongkok
  aiyh, Selampong dayih, Canayan aih (295)

*āyu* ‘big, wide’ Bidayuh *āyu, Mandong ayu?,
  Bakati’ *a(h)yo?, Saham ayo?: *asū? Bakati’
  aso?, Moro Betung aso?, Ambawang Satu
  aso (295)

*bāhas* ‘big’ Bidayuh *bāhas, Kasro Megoh ba?,
  Engkahan baas ‘big, wide’ (295)

*ka(n)doq* ‘short’ Bidayuh *kaq, *kaq,
  Kada?, Bakati’ *uno, Moro Betung otok,
  Saham onok, Kasro Megoh kada?, Engkahan
  kidak, Tanap kidiŋ, Semongan kidik,
  Kembayan kidik, Ribun (Adelaar) kidik,
  Gunam kidik; *kVdit Bidayuh *kádit, *kubit,
  Ribun (Hudson) kidit; *pandak Ambawang
  Satu pendek (cf. Malay dendek), Upe panak,
  Semandang panak (296)

*rubāC* ‘short’ Bidayuh *rubo?, *kübi:t,
  Mandong ibaŋ, Semirau ibuk, Tanggung
  ibuk, Empodis ib, Upe panak (296)

*(d)āmboh* ‘long’ Bidayuh *āmbo, *āmboh,
  Mandong amuh, Semirau amuh, Tanggung
  amuh, Upe domak, Kasro Megoh domuh,
  Engkahan amuh, Tanap omuh, Semongan
  omuh, Kembayan omuh, Empodis omuh,
  Ribun (Hudson) domauk (Adelaar) dombah,
  Gunam domah, Leiminang domuh, Nangka
  Mongkok omuh, Selampong omuh, Canayan
  omuh; *aŋho Bakati’ *aŋho, Moro Betung
  aŋo, Saham aŋo (298)
*ābeŋ ‘many’ Upe obeŋ, Empodis obiya, Ribun obeing, Gunam obiyęŋ (299)
*bākah ‘many’ Bidayuh *bāgaʔ (cognate?), Semirau bokkah, Tanggung bokkah, Semandang bokkah (299)
*baŋat ‘many’ Moro Betung baŋat, Ambawang Satu baŋat (299)
*karah ‘many’ Bakati *karaʔ, Saham karah (299)
*būkaʔ ‘wide’ Bidayuh *būkaʔ, Bakati *mukaʔ, Kembayan (Adelaar) bukaʔ, mukaʔ, Ribun (Adelaar) bukoʔ (300)
*s-ar-ăk/uni0259t ‘narrow’ Saham sr/uni0259k/uni0259t, Semirau soRokoʔ, Tanggung soRokoʔ, Kasro Mego sok/uni0259t, Engkahan s/uni0259k/uni0259t; *t-ar-āpet Upe tRap/uni025Bt, Ribun tahape’. (This set may be related to the following set rather than to the previous one.) (301)
*sampet ‘narrow’ Bidayuh *sampit, Mandong sampet, Ambawang Satu sampet, Semandang sampet; cf. Malay sempit (301)
*jăhu/uni0294, *jŭhu/uni0294 ‘far’ Bidayuh *jăhu/uni0294, *jŭhu/uni0294, Mandong joy, Bakati *juhōʔ, Kembahan *juhōʔ (cf. Malay jauh); *jauh Bidayuh *jauh, Kasro Mego jo; Engkahan joo; *jauh Bakati *jauh, Moro Betung jaWuŋ, Saham joo, Ambawang Satu jauh; cf. Malay jauh; *āju? (< *jauh?) Semirau oju, Tanggung oju, Upe ojaw, Tanap ojuʔ, Semongan ojuʔ, Kembayan oju’, Empodis ojuk, Ribun (Hudson) ojaw, Gunam ojaw, Semandang oju, Nanga Rakan oju, ōju, Lubuk Tajau ōju, Leminang oju, Nangka Mongkok oju, Selampong oju, Canayan oju: (302)
*jiket ‘near’ Mandong jeket, Bakati *jikeʔ, Moro Betung jeket, Saham jeket, Ambawang Satu jeket; *diket Tanap dikiyat, Semongan dikét, Kembayan (Hudson) dikét; cf. also Bidayuh *sindok (formed by metathesis of *diket) (303)
*sāmak ‘near’ Semirau somak, Tanggung somak, Upe somak, Empodis somak, Ribun somoʔ, Gunam somoʔ, Semandang somaʔ, Nanga Rakan somaʔ, Lubuk Tajau somak, Lemining somak, Nangka Mongkok somak, Selampong somak, Canayan somaʔ (303)
*sasak ‘near’ Bidayuh *sasak, Kasro Mego sasak, Engkahan sāsat (303)
*mādam ‘rotten’ Bidayuh *māda:m, *mādoʔ, Mandong muʔ (cognate?), Bakati *māda:m, Moro Betung mada’m, Saham madam, Ambawang Satu madam, Upe modəʔm, Semongan modap, Kembayan (Hudson) modapm (Adelaar) modap, Ribun (Adelaar) modam, Gunam modəʔm (305)
*būra ‘rotten’ (169, 305)
*buntuʔ ‘rotten’ Semirau buntaw, Tanggung buntaw, Kasro Mego buntuʔ, Engkahan butut (305)
*bisaʔ ‘wet’ Bidayuh *bisaʔ, Kasro Mego bisaʔ, Engkahan bisaʔ, Tanap bisaʔ, Semongan bisaʔ, Kembayan bisaʔ, bisaʔ, Empodis bisaʔ, Ribun (Hudson) bisaʔ; *bisah Semirau bisah, Tanggung bissah, Upe bisah, Ribun (Adelaar) bisuʔh, Gunam bisah, Leminang bisah, Nangka Mongkok bisah, Selampong bisah; *bāsah Mandong basaʔ, Bakati *basaʔ, Moro Betung basaʔ, Saham basaʔ, Ambawang Satu basaʔ, Semandang basaʔ, Nanga Rakan basah, Lubuk Tajau basah, Canayan basah (305)
*rājaʔ ‘sharp’ Bidayuh *rājaʔ, *rājaʔ ‘sharp, thorn; *rājaʔ ‘dart’ Upe ngoja, Kasro Mego Rojak, Engkahan Rajaʔ, Tanap rojoʔ, Semongan rojoʔ, Kembayan (Hudson) nrojoʔ (Adelaar) rojoʔ, Empodis hojok, Ribun (Hudson) hojo (Adelaar) hojoʔ, Gunam hojo; *rijaʔ Mandong rijaʔ, *rujaʔ Bakati *rujaʔ, Saham rujaʔ; *lajij Semirau molojik, Tanggung molojik (307, 31)
*tājam ‘sharp’ Moro Betung tajam, Semirau tajam, Nanga Rakan tajaʔm, Lubuk Tajau tajam, Lemining tajam, Nangka Mongkok tajaʔm, Selampong tajaʔm, Canayan tajaʔm (cf. Malay tajam) (307)
*tumpul* ‘dull’ Ambawang Satu tumpul, Semandang tumpol, Nanga Rakan tumpol, Lubuk Tajau tumpul, Leminang tumpol, Nangka Mongkok tumpol, Selampong tumpol, Canayan tumpul (cf. Malay tumpul); *puntul* Semirau puntul, Tanggung puntul (appears to be a metathesis of the preceding set); Upe modot (also appears to be a metathesis but actually may not be cognate) (308)

*sana* ‘dull’ Mandong sina, Bakati *sunu/., Moro Betung sunu

*tāja* ‘dull’ Bidayuh *tāja, Kasro Mego tāja?*, Engkahan tāja (308)

*njukus* ‘dull’ Tanap njukus, Semongan njukus, Kembayan njukus (308)

*bunkul* ‘dull’ Empodis bakkal, Ribun bangka;
Gunam njukiyah is possibly cognate (308)

*lāmu* ‘fat’ Mandong lumu?, Semirau lomo, Tanggung lomo, Tanap lomo?, Semongan lomo?, Empodis lomuk, Gunam lumu (310)

*manuk* ‘fat (adj.)’ Bakati *manu/o/., Moro Betung manuk, Saham mano?, Ambawang Satu mano (310)

*simbat* ‘fat’ Bidayuh *simbat, simbā, Kasro Mego simbat:, Engkahan simbat (310)

*bāhat* ‘heavy’ Bidayuh *bāhat, Mandong bāt, Bakati *baha/, Moro Betung bāhat, Saham baat, Ambawang Satu baat,.; *ābat* (< *bāhat*) Tanap obat, Semongan obat, Kembayan obat, Empodis obat; *bārat* Semirau boRat, Tanggung boRat, Upe borat, Ribun boha?, Gunam boha?, Semandang borat, Nanga Rakan boyat, Lubuk Tajau boyat, Leminang boRat, Nangka Mongkok boyat, Selampong boRat, Canayan boyat;

*banā?/k Kasro Mego banā?, Engkahan banak (313)

*lātāp* ‘hot’ Semirau lotup, Tanggung lotup, Upe lotip, Tanap latuwap, Semongan lataap, Kembayan lotigap (cognate?), Empodis lotiyap, Ribun (Hudson) astik (cognate?), Gunam lotik (314)

*ānat* ‘hot’ Mandong ānat, Moro Betung āyat, Ambawang Satu ānat, Semandang angat, Nanga Rakan āṇa?t, Lubuk Tajau āṇa?t,
Leminang āṇa?t, Nangka Mongkok āṇa’n, Selampong āṇa?t, Canayan āṇa?t (314)

*pāras* ‘hot’ Bidayuh *pāras, pāra?, Kasro Mego pāRes, Engkahan pāRes (314)

*bānjāh* ‘feel hot’ Bidayuh *bānjāh, Kembayan (Adelaar) manjāh, Ribun (Adelaar) mongo (314)

*cālap* ‘cold’ Semirau colap, Tanggung colap, Ribun chala’, Semandang chalap, Nanga Rakan colap, Lubuk Tajau colap, Leminang colap, Nangka Mongkok colap, Selampong colap, Canayan colap (314)

*n-sījoh* ‘cold’ Bakati *sānu/oh, Upe sījoh, Kasro Mego sūjah, Kembayan (Adelaar) nsūjuh, Empodis sījūah, Gunam Nsījūh, Lubuk Tajau nsījoh (314)

*pā(n)dud* ‘cold’ Bidayuh *mādud, Bakati ’*pan(d)u,d, Saham panut, Engkahan mādut, Kembayan (Hudson) modut (314)

*dadam* ‘cold’ Mandong dada’m, Moro Betung dadu”p (314)


*bujur* ‘straight’ Mandong bujur, Bakati’-Bekati’ bujur, Moro Betung bujur, Semirau bujur, Tanggung bujur, Upe bujor, Empodis bujor, Semandang bujor, Lubuk Tajau bujor, Leminang bujor, Nangka Mongkok bujor, Selampong bujor, Canayan bujor;

*bujug* Bidayuh *būjog, Kasro Mego bojok, Tanap bojo’ṇ, Semongan bojok, Kembayan
bojok, Ribun bujo’, Gunam bujuwok; *bujoŋ
Engkahan bujoŋ (319)
*tamad ‘straight’ Bakati’ *tamud, Saham tamad
(319)
*tābal ‘thick’ Bidayuh *tābal, Mandong tabal,
Ambawang Satu tabal, Semirau tabal,
Tanggung tabal, Upe tabal, Kasko Mego
tabal, Tanap tabal, Kembayan (Adelaar)
tabal, Empodis tabal, Ribun taba, Gunam
tabal, Semandang tabal, Nanga Rakan tabal,
Lubuk Tajau tabal, Leminaŋ tabal, Nangka
Mongkok tabal, Selampong tabal, Canayan
tabal (321)
*kāpa ‘thick’ Bidayuh *kāpa, Bakati’ *kapa,
Moro Betung kapa, Saham kapa, Engkahan
kapa?, Semongan kopa, Kembayan (Hudson)
kopa (321)
*ride ‘thin’ Mandong rade?, Bakati’ *rade,
*radih/s, Saham radih, Tanap radi?,
Semongan radi?, Kembayan (Hudson) ridi?
(Adelaar) ridi?, Empodis hidik, Ribun hid,
Gunam hid; *lide? Bidayuh *lide?, *lide,
Kasko Mego lide?, Engkahan lida? (322)
*Cipis Bakati’ *tipis, Saham Betung tipis,
Ambawang Satu tipis, Semirau lipis,
Tanggung lipis, Upe noppis, Semandang lipis,
Nanga Rakan lipis, Lubuk Tajau dapis,
Leminaŋ lipis, Nangka Mongkok lipis,
Selampong lipis, Canayan tipis (322)
*bāʔuh ‘new’ Bidayuh *bāʔuh, Kasko Mego bauw
(or < *bāhu), Engkahan bauw, Tanap bauw,
Semongan bauw, Kembayan bauw, Ribun
baw, Gunam baw, Lubuk Tajau baw,
Leminaŋ bawoh, Nangka Mongkok bawo?,
Selampong bawoh, Canayan bawoh; *bāhu
Mandong bauw, Bakati’ *bahu, Saham
bauw, Ambawang Satu bahu, Upe bauw,
Empodis bauwu; *baru Moro Betung baru
(323)
*(d)āmba ‘old’ Bidayuh *dāmba, *āmba, *mba,
Mandong ama?, Bakati’ *ama, *dama, Moro
Betung ama, Saham ama, Nanga Rakan ome
lama ‘long time’, Lubuk Tajau ome lama
‘long time’ (324)
*muntuh ‘old’ Semirau muntuh, Tanggung
muntuh, Upe muntuh, Empodis mutuh,
Ribun muntuh, Gunam muntuh, Semandang
muntuh, Nanga Rakan muntuh, Lubuk Tajau
muntuh, Leminaŋ muntuh, Nangka
Mongkok muntuh, Selampong muntuh,
Canayan muntuh; *tuhay (?) Bidayuh
*tuhay, *tuhy, Bakati’ *tuhi, ?; *tuʔuh
Bidayuh *tuʔuh, Kasko Mego tuh, Engkahan
tuh, Tanap tuh, Semongan tuh, Kembayan
tuh (324)
*bārəm ‘black’ Bidayuh *bārəm ‘green’,
Mandong barəm; *mārep Tanap marəp,
Semongan marəp, Kembayan (Hudson)
marəp (Adelaar) marəp, Empodis maʔəp;
*māraʔ Bidayuh *maraʔ ‘light (green)’,
Engkahan maRaʔ ‘green’. Cf. *njāram ‘night,
dark’ (22). (327, 328)
*saŋat ‘black’ Bidayuh *saŋat, *siŋat, Bakati’
*suŋu, Saham saŋat; *saŋat Bidayuh
*seŋat, Kasko Mego saŋat (327)
*itam ‘black’ Moro Betung itaʔp, Ambawang
Satu itam, Semandang itam, Canayan itaʔm
(327)
*nabok ‘black’ Upe ŋŋabok, Ribun nyabu’,
Gunam ŋabo? (326)
*bihis ‘black’ Bidayuh *bihis, Engkahan biiḥ
(327)
*ijaw ‘green’ Mandong iao, Bakati’ *iyo, Moro
Betung iyo, Saham iyo, Ambawang Satu ijaw,
Semirau ijaw, Tanggung ijaw, Upe ijaw,
Kasko Mego iowu, Tanap ikow, Semongan
ijow, Kembayan (Hudson) iow, Empodis
ijaw, Ribun (Hudson) hijaw (Adelaar) ijaw,
Gunam ijaw, Semandang ijo, Nanga Rakan
ijaw, Lubuk Tajau ijaw, Leminaŋ ijaw,
Nangka Mongkok ijaw, Selampong ijaw,
Canayan ijav (328)
*idip ‘alive, green’ Bidayuh *idip, Bakati’ *idip,
Saham idip, Kembayan (Hudson) midiʔp,
Empodis midiyap, Ribun (Hudson) midip;
*udip Bidayuh *m-udip, Mandong udip, Kasko
Mego mudip, Engkahan mudip; *idup Moro
Betung idup, Semirau midip, Tanggung
midup, Upe midup, Semandang midup,
Leminaŋ midup, Nangka Mongkok midup,
Selampong midup, Canayan midup;
*m-udup* Nanga Rakan mudup, Lubuk Tajau mudup; *m-adap* Tanap madaap, Semongan madaap, Kembayan (Adelaar) madaap (328)

*mápu* 'white' Bidayuh *mápu?, Bidayuh-Bunan mup?, Empodis mopuk; *mápaw* Upe mopaw, Tanap mopow, Semongan mopowu, Kembayan mopou, Ribun mopau, Gunam mopaw (329)

*puteh* 'white' Moro Betung putih, Ambawang Satu putih, Semirau puteh, Tanggung puteh, Semandang puteh, Nanga Rakan puteh, Lubuk Tajau puteh, Leminang puteh, Nangka Mongkok puteh, Selampong puteh, Canayan puteh (329)

*búda* 'white' Bidayuh *búda?:; Kasro Me go buda?, Engkahan buda? (329)

*kuniŋ* 'yellow' Mandong kuniŋ, Bakati' *kuniŋ, Moro Betung kuniŋ?; Ambawang Satu kuniŋ, Semirau kuniŋ, Tanggung kuniŋ, Upe kuniŋ?, Ribun (Hudson) kuning, Semandang kuning, Nanga Rakan kuniŋ, Lubuk Tajau kuniŋ, Leminang kuniŋ, Nangka Mongkok kuniŋ, Selampong kuniŋ, Canayan kuniŋ (330)

*kuní t* 'turmeric' (sometimes also 'yellow')

Bakati’ *kuní t* 'yellow', Saham kunit, Kembayan (Adelaar) kunit?, Ribun (Adelaar) kunit?, Lubuk Tajau kuní t, Leminang kuní t, Nangka Mongkok kuní t, Selampong kuní t, Canayan kuní t; cf. Malay kunyit (330)

*mantis* 'yellow' Kasro Me go mantís, Tanap mantís, Semongan mantís, Kembayan (Hudson) mantís, Empodis motís (330)

*siCa* 'yellow' Bidayuh *siha?:, *siha:; Engkahan samia? (330)

*bírah* 'red' Bidayuh *bíreh, Mandong merah (Malay?), Semandang mirah, Selampong mawah, Canayan miah (331)

*nsak* 'red' Bidayuh *nsälak (< *ns-ar-ak ?) 'red', *ñañak 'burn', Bakati’ *tsaransak (< *tara-nsak ?), Moro Betung ansa?, Ambawang Satu ansakáme (< *nsak-?), Semirau bajílak (< *ba-ns-ar-ak ?), Tanggung bajílak, Upe tocaŋ (< *tánsak ?, Ribun (Hudson) ntocak (< *tánsak ?) (Adelaar) ntocia?, Gunam Ntocak (< *tánsak ?); *nsiak* Tanap Nsio?, Semongan Nsio?, Kembayan (Hudson) nsiyo?, Empodis siyok, Nanga Rakan nsia, Lubuk Tajau ncia?, Leminang ciá?, Nangka Mongkok ceyak (331)

*bálayan* 'red' Kasro Me go bodayah, Engkahan badaya? (331)

*i-diə* '(is) not' Bidayuh *(i)dah, Nanga Rakan ideh, Lubuk Tajau ideh (332, 333)

*bakan* '(is) not, other' Bidayuh *bakan, *kán, Semirau buku'n, Tanggung buku'n, Upe díkkí'n, Kasro Me go bakat, Engkahan baka'n, Tanap bakat, Semongan bakat, Ribun (Adelaar) kiñ, Gunam bíkí'n, Lubuk Tajau iku'n, Leminang uka'n, Nangka Mongkok buka'n (332)

*lain* 'other' Mandong layin, Bakati’ *iña, (cognate?), Moro Betung laiñ, Saham layit, Ambawang Satu lañ, Nanga Rakan loin, Lubuk Tajau laí'n, Leminang loí'n, Nangka Mongkok loï'n, Selampong loï'n, Canayan loin (332, 581)

*kái?* 'not' Bidayuh *kái?, Mandong kae, Ambawang Satu aya (cognate?), Upe kay, Engkahan haya?, Tanay kayí:, Semongan kai, Kembayan (Hudson) kai, Empodis kai 'other', Ribun (Hudson) kai (Adelaar) ka (< *kay ?), Gunam ñkae; *kati? Bakati’ *kati?, Saham kati?; Kasro Me go kade? (333)

*may* 'not' Bidayuh *ma?, *āba? (cognate?), Semirau mae, Tanggung mae, Semandang mae, Leminang mai, Nangka Mongkok mai, Selampong me; Canayan me (333)

*kuduh* 'how many?' Bidayuh-Western, Central and Highland *kúdu, Mandong bakidu 'some', Upe kudu 'some', Kasro Me go kuduhxudu 'some', Tanap kuduhxudu 'some', Empodis kuduhxudu 'some', Lubuk Tajau kuduh, Selampong kuduh, Canayan kuduh; *kuduh* Bidayuh- Eastern *kúduh, Leminang kuduh, Nangka Mongkok kuduh (334)

*ŋkobeŋ* 'how many?' Semirau ŋkob?η, Tanggung ŋkob?η, Selampong nkob?η (334)

*ani* 'what' Bidayuh-Western, Central and Highland *ani, *ni, Mandong anu, Kasro...
Mego oni; *aneh Bidayuh-Eastern *ani-h, Semirau onih, Tanggung onih, Upe oneh, Engkahan onih, Tanap oniyah, Semongan oniyah, Kembayan (Hudson) oni’h, Empodis oniyah, Ribun (Hudson) oneh, Gunam oneh, Semandang onih, Nanga Rakan onih, Lubuk Tajau onih, Lemianang onih, Nangka Mongkok onih, Selampong onih, Canayan onih. Since the form with final *h seems best reconstructed with the vowel *e, it seems likely that the first reconstruction should be *ane. (335)


*jai ‘what’ Bakati’ *jai, Moro Betung jaŋi, Saham jaŋi, Ambawang Satu jaŋi? (335)

*n(d)an ‘when’ Semirau nan seh, Tanggung nan seh, Upe nant, Tanap sondat, Kembayan natn neh, Empodis nan, Semandang natn, Lubuk Tajau ina’n, Nangka Mongkok na’n; *n(d)ah Ribun ndah, Gunam na’h; *nde Bidayuh *sindes? (336)

*C-inâ ‘when’ Mandong ina?, Bakati’ *nina, Moro Betung mina?, Saham ñina?. This set may be related to some or all of the preceding set. (336)

*C-âki/e ‘where’ Bidayuh-Western, Central and Highland *daki, *diki, Selampong ñokik boŋkah; *âkeh Semirau ñokik, Upe wah keh, Tanap nö?kiyah, Semongan nö?kiyah, Kembayan (Hudson) ñoki+h (Adelaar) no?ki’h, Empodis nok kiyah, Ribun (Hudson) nöñ’ñokeh (Adelaar) nöñ’ñoke’s, Gunam ñokik, Nangka Mongkok ñokeh, Canayan ñokik boŋkah (337)

*api ‘where’ Mandong ka?pe; *apih Bidayuh *âpih, *dâpih, Kasro Mego de? opih, Engkahan wapih, Semandang dingopih, Nanga Rakan ñapih, Lubuk Tajau ñapih boŋkah, Lemianang ñopih boŋka’, Nangka Mongkok ñopih boŋkah, Canayan ñopih. This set may be related to the preceding one. (337)

*ume ‘where’ Bakati’ *ka (d)ume., Moro Betung ka? ome, Saham me, Ambawang Satu kome (337)

*âsi/e ‘who’ Bidayuh-Western, Central and Highland *âsi, Mandong asi;, Bakati’ *âsi, Moro Betung asi, Saham asi, Ambawang Satu asi; *âseh Bidayuh- Eastern *âsih, Semirau osih, Tanggung osih, Upe oṣeḥ, Kasro Mego osih, Engkahan osih, Tanap osiyah, Semongan osiyah, Kembayan (Hudson) osi’h, Empodis osiyah, Ribun (Adelaar) os’es, Gunam osiyeh, Semandang osih, Nanga Rakan osih, Lubuk Tajau osih, Lemianang osih, Nangka Mongkok osih, Selampong osih, Canayan osih. Since the form with final *h seems best reconstructed with the vowel *e, it seems likely that the first reconstruction should be *âse. (338)


*âmu? ‘you (sg.) (also pl. in some languages)’ Bidayuh *âmu?, Bakati’ *imu?, Moro Betung imu?, Saham imu?, Semirau imo, Tanggung imo, Upe mo:, Kasro Mego imu?, Engkahan a.mu?, Tanap amu?, Semongan amu?, Kembayan amu’, Empodis mi’û, Ribun (Hudson) amu (Adelaar) amo”, Gunam omu, Semandang amo, Nanga Rakan amo, Lubuk Tajau îmo, îmo, Lemianang îmo; Nangka Mongkok mo, Selampong amo, Canayan amu (340)

*kuʔu ‘you (more informal)’ Bidayuh *kuʔu, Mandong ko (340, 344)

*âkum, *âkam ‘you (higher addressee)’ Bidayuh *âkam, *kâʔam, Bakati’ *aku,m. This set
may be related to the immediately preceding one. (340)

*āyəh* ‘he, she, it’ Bidayuh *āyəh, *iəh,
Mandong yə?, Bakati *aəyə, Moro Betung imu? (cognate ?), Engkahan ıya?, Semongan øi?, Empodis øi?, Gunam ø?, Semandang ø,
Lubuk Tajau øup øh, Lemining øa ‘we
(inclusive)’, Nangka Mongkok yəh ‘we
(inclusive)’, Selampong ia ‘we (inclusive)’;
*ək (?) Semirau ik, Tanggung ik, Upe ik
(341)

*ādəp ‘pronoun, perhaps reflexive’ Bidayuh
*ādəp ‘self’, Mandong ādəp ‘we (exclusive)’,
Bakati *ādu, ‘we (exclusive)’, Saham ādə ‘he, she, it’, Upe edop ‘we (exclusive)’, Kasro Mego ādəp ‘he, she, it’, Tanap adəap ‘he, she, it’, Kembayan (Hudson) odiapm ‘he, she, it’ (Adelaar) adəp ‘we (inclusive)’, Ribun (Hudson) odi ‘he, she, it’ (Adelaar) dia ‘we (inclusive)’, Canayan die ‘we (inclusive)’.

*āmí ‘we (exclusive)’ Bidayuh *āmí?, *kāmí?,

*kăp/uni0259g ‘cut in pieces’ Bidayuh *kăp/uni0259g, Semirau kapuk, Tanggung kapuk, Upe kapik, Kasro Mego kap, Tanap kapak, Semongan kap, Kembayan (Hudson) ŋopw/uni0259t (perhaps should be ŋop/uni0259/uni1D43t), Empodis kap, Ribun ngopuk, Gunam kapuk, Semandang ngopu’ (371)

*kăpən ‘cut’ Bidayuh*nantak, Mandong nataŋ, Bakati *nantak, Empodis motoŋ (cognate?) (371)

*jăwa ‘daylight’ Bidayuh *jăwa, Mandong jawa?, Semirau jw, Tanggung jw, Upe jw, Semongan jw, Empodis jwok, Gunam jw (375)

*ba-dăruh, ‘fight’ Bidayuh-Serian bidaru, Bakati *b/sadaruh, Moro Betung badaru, Ambawang Satu bedaru, Semirau bodoRuh, Tanggung bodoRuh, Upe bodoRuh, Kasro Mego badaRuh, Engkahan badaRuh, Tanap budoru, Semongan budoru, Kembayan budoru, Empodis bodohuh, Ribun (Hudson) baduhuh, Gunam bodohuh (394)


*atiH ‘this’ Bidayuh *Vti(H), Kasro Mego ti?, Engkahan ti?, Tanap te?, Semongan ta?,

*Vnto 'this' Semirau onto, Tangggung onto, Upe to; Gunam Nto, Nanga Rakan to, Lubuk Tajau to, Lemining ntoh, Nangka Mongkok nto, Selampong nto, Canayan nto (512);
*ŋoto 'here' Semirau wah ŋoto, Tanggung wah ŋoto, Upe wah to, Ribun nting ngotu, Gunam ŋoto, Semandang ngoto (404)

*ŋanamp 'hunt' Bidayuh-Sembaan ŋ/uni0259nop, Semirau ŋanamp, Tanggung ŋanamp, Semongan ŋan/uni0259ap, Kembayan ŋaningap, Empodis ŋaniy/uni0259p (407)

*rampaw 'hunt' Upe ngamaw, Kasro Mego Rampowu, Tanap rampow, Gunam hamao (407)

*galay 'lying down' Upe ngalay, Tanap galai', Kembayan (Adelaar) galay, Ribun (Hudson) ŋalay (Adelaar) ŋala, Gunam ŋalae, Semandang ŋale, Nanga Rakan ŋalay, Lubuk Rajau ŋalay, Selampong ŋaley, Canayan ŋale;
*ŋujay Kasro Mego ŋula, Semongan ŋule, Kembayan (Hudson) ŋule; *ŋura? Engkahan ŋuR/uni0259; *galik Semirau galik, Tanggung galik (415)

*guriŋ 'lying down' Bidayuh *guriŋ, Mandong guriŋ', Bakati *guriŋ, Moro Betung guriŋ, Saham guriŋ, Ambawang Satu guriŋ, Empodis guhi'/uni1D4Fŋ, Leminang gurikŋ, Nangka Mongkok gu/uni02B7ikŋ (465)

*naŋuy 'swim' Bidayuh *nāŋuy, *dŭŋo:y, Saham naŋoy, Kasro Mego b/uni0254Ra/uni0272ut, (498)

*ninh 'that' Bidayuh-Central ana, -Western inuh, Ambawang Satu lyu, Semirau ŋuh, Tanggung ŋuh, Tanap noh, Semongan coh (< *nsieh ?), Gunam noah, Lemining niien, Nangka Mongkok ŋuh, Selampong ŋuh: (513); *ninh 'there' Ambawang Satu kiu, Tanap no? cah, Semongan no? coh, Empodis nojih, Gunam ŋauh (468)

*nseŋ 'that' Upe ŋene, Kasro Mego sit, Engkahan saŋ, Nanga Rakan ce, Lubuk Tajau ce, Canayan ŋin (513); *nseŋ 'there' Upe wah ŋen. This set and the preceding one are quite irregular; it is possible that they are related. (468)

*dikoh 'that' Bakati *dvko/uni2081h, Saham dikoh (513); *dikoh 'there' Saham ke dikoh (468)

*mamān 'flow' Bidayuh *ăman, Engkahan mamān, Tanap mamān, Semongan mamān, Gunam mamān (498)

*mataŋ 'flow' Bakati *matuŋ, Saham matuk (498)

*ŋalir 'flow' Mandong bulalah, Moro Betung ŋalir, Ambawang Satu ŋaler (498)

*āpul 'float' Ambawang Satu apuŋ, Semirau malopoŋ, Tanggung malopoŋ, Kasro Mego timpoŋ, Engkahan pimpo? (cognate?); *āpul Tanap mapuwa, Semongan mapuwa, Empodis mapul; *puam Bakati *pua,m, Saham ŋarampowam (499)

*ka-đanāŋ 'swim' Semirau kadonoŋ, Tanggung kadonon, Upe kodonoŋ, Empodis kodonoŋ, Gunam kodonoŋ, Nanga Rakan kodonoŋ, Lubuk Tajau kodonoŋ, Lemining kodonoŋ, Nangka Mongkok kodonoŋ, Selampong kodonoŋ; perhaps related is *barānāŋ Moro Betung bananāŋ, Ambawang Satu baranāŋ, Canayan bahonāŋ (465)

*nāŋuy 'swim' Bidayuh *nāŋuy, *dūŋo:y, Saham nanjoi, Kasro Mego bānūjoi, Engkahan bānūjoi (465)

*kudāmi 'swim' Bakati *namuhi/e (unclear whether this can be related to the other forms in this set, as < *Camuhi), Tanap kudāmi, Semongan kudāmi, Kembayan (Adelaar) kudāmi (465)

*ninh 'that' Bidayuh-Central ana, -Western inuh, Ambawang Satu lyu, Semirau ŋuh, Tanggung ŋuh, Tanap noh, Semongan coh (< *nsieh ?), Gunam noah, Lemining niien, Nangka Mongkok ŋuh, Selampong ŋuh: (513); *ninh 'there' Ambawang Satu kiu, Tanap no? cah, Semongan no? coh, Empodis nojih, Gunam ŋauh (468)

*nseŋ 'that' Upe ŋene, Kasro Mego sit, Engkahan saŋ, Nanga Rakan ce, Lubuk Tajau ce, Canayan ŋin (513); *nseŋ 'there' Upe wah ŋen. This set and the preceding one are quite irregular; it is possible that they are related. (468)

*dikoh 'that' Bakati *dvko/uni2081h, Saham dikoh (513); *dikoh 'there' Saham ke dikoh (468)

*mamān 'flow' Bidayuh *ăman, Engkahan mamān, Tanap mamān, Semongan mamān, Gunam mamān (498)

*mataŋ 'flow' Bakati *matuŋ, Saham matuk (498)

*ŋalir 'flow' Mandong bulalah, Moro Betung ŋalir, Ambawang Satu ŋaler (498)

*āpul 'float' Ambawang Satu apuŋ, Semirau malopoŋ, Tanggung malopoŋ, Kasro Mego timpoŋ, Engkahan pimpo? (cognate?); *āpul Tanap mapuwa, Semongan mapuwa, Empodis mapul; *puam Bakati *pua,m, Saham ŋarampowam (499)

Several forms in this set have a or ay in the ultima. It is possible that this indicates that the form should be reconstructed as *galay and that the vowel-semivowel sequence *ay should be recognized for Proto Land Dayak along with *uy and *uy. See references to this issue in Part III, §5.1.3.
*timul* 'float' Mandong timul, Bakati’-Rara (Kalimantan) timul, Moro Betung timul, Upe timol, Gunam timuwa, Nanga Rakan timol, Lubuk Tajau timol, Lemining timol, Nangka Mongkok timol, Selampong timol, Canayan timol; cf. Malay timbul (499)

*mătah,* 'split' Bidayuh *CV* tah, Mandong mitah, Bakati’ *matah,* Saham mata?, Engkahan nudah, Tanap muto?, Semongan muto? (501)

*bălah* 'split' Ambawang Satu ba?lah, Nanga Mongkok balah;
*mălah* Moro Betung m/la/oh, Nanga Rakan molah, Lubuk Tajau molah, Leminang molah, Selampong molah, Canayan moloh (501)

*mămuk* 'split' Semirau momok, Tanggung momok, Empodis pamuwa?, Gunam miyo? (501)


*tampa* 'seed' Semirau tompan?, Tanggung tompan, Tanap tompah, Semongan tompa, Empodis tapa?h bin (502)


*gamaN* 'swell' Saham gamam, Engkahan kamah, Lubuk Tajau kama? (503)

*baha* 'swell' Bidayuh *baha* 'a boil', Mandong bi?:, Moro Betung bahu?, (503)

*i(n)sin* 'flesh, meat' Bidayuh-Western & Central *isin*, Bakati’ *inis,n*, Saham insit, Semirau isik; *ise?* Tanggung isik, Ribun (Adelaar) ise?, Nanga Rakan ise, Lubuk Tajau ise, Lemining ise, Nangka Mongkok ise, Selampong isi?, Canayan ise?; *iseh* Bidayuh-Eastern *isih*, Upe ische, Semongan isiyah, Empodis isyah, Gunam ishe. Since the forms with final *?* and *h* seem best reconstructed with the vowel *e*, it seems likely that the first reconstruction should be *ise-n. (505)


*dano/u* 'lake' Mandong dunu, Moro Betung danu, Semirau donu, Tanggung donu, Upe donu, Kasro Mego donu, Lemining donu, Tanap donu, Semongan donu, Gunam donu; *danau* Bidayuh-Sara/Riok danau, Ambawang Satu danau, Empodis danaw, Nanga Rakan danau, Lubuk Tajau danaw, Lemining danau?, Nangka Mongkok danau?, Selampong donow, Canayan danau; cf. Malay danau (508)

*daram* 'inside' Bidayuh-Kuching daram, Mandong ka?dara?m; *taram* Kembayan (Hudson) tarap, Ribun (Hudson) tohin; *dalam* Ambawang Satu kadalanu, Sembang dalan, Nanga Rakan dalan, Lubuk Tajau dalem panki??, Lemining wa? dalem kamar, Selampong wa? dalem kama?, Canayan dalem?; cf. Malay dalam (510)


*sadan* 'inside' Bakati’ *ka sada?*, Moro Betung ka? sa?n, Saham ke sada? (510)

*iduh* 'grass' Semirau iduh, Tanggung iduh, Upe iduh, Semongan iduh, Kembayan (Adelaar) iduh, Empodis iduh, Ribun (Adelaar) iduh, Gunam iduh, Nanga Rakan iduh, Lubuk Tajau iduh, Lemining iduh, Nangka Mongkok iduh, Selampong iduh; *uduh* Bidayuh *uduh*, Mandong ud?, Bakati’ *ud?*, Moro Betung ud?, Saham ud?, Kasro Mego uduh; *duh* Engkahan Nduh, Tanap duh (518)
*saŋkuhud* ‘cane, stick’ Bidayuh  *saŋkuhud, Mandong suŋkut, Bakati* *saŋkuhu,d, Saham saŋkuwuud, Semirau soŋkut, Tanggung soŋkut, Upe soŋkuh, Kasro Mego siŋkut, Engkahan sakuun, Tanap soŋkut, Semongan soŋkut, Empodis sokkut, Gunam soŋkut (520)

*pikir* ‘think’ Bidayuh  *pikir, Mandong peker, Bakati’-Rara mikir, Moro Betung mikir, Ambawang Satu bapaikir, Semirau panikiR, Tanggung panikiR, Upe pikeR, Kasro Mego pike, Engkahan pikeR, Kembayan (Hudson) piker (Adelaar) bupikir, bapiker, Empodis bupikir, Ribun (Hudson) pikeh (Adelaar) piki’h, Gunam pikiyeh, Semandang piker, Nanga Rakan bapike’y, Lubuk Tajau bapiker, Leminang bopikir, Nangka Mongkok pikir, Selampong bepikiy, Canayan pik’ey (555)

*paras* ‘squeeze’ Bidayuh  *p’aras, *maras ‘wring’, Mandong ŋrama’s, Ambawang Satu maras, Upe p’Ris, Kasro Mego p’Ras, Engkahan p’Ras; *tiris Semongan Ntiris, Empodis tihis (568)

*minset* ‘squeeze’ Bidayuh  *minset, Moro Betung mecet; *pinsa Semirau picu, Tanggung picu, Tanap p’asa, Gunam picu (568)

*N-ās/ŋ* ‘breathe’ Bidayuh  *N-āsŋ, Mandong p’ānsaŋ, Moro Betung sāŋat (cognate?), Saham pamak’ak, Semirau ḥasak, Tanggung ḥasak, Upe ḥasoŋ, Kasro Mego p’ānasak, Engkahan ḥaŋ, Tanap p’ūnasayak, Semongan ḥasah, Empodis ḥasiyha, Gunam gasoŋ, Selampong ḥasaŋ (569)
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