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## The Asmat-Muli Languages of Southwestern New Guinea

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## Abstract

We focus on three language families located along the southwestern coast of New Guinea from the Bomberai Peninsula in the northwest to Kolopom Island in the southeast: the Kamrau Bay family, the Asmat-Kamoro family, and the Muli Strait family. Our purpose is to show that these languages form a larger family called Asmat-Muli Strait. To this end we present sets of lexical cognates and the sound correspondences that can be observed in them. A crucial piece of additional evidence is a paradigm of verbal subject-indexing suffixes that can be reconstructed to Proto-Asmat-Muli Strait. Our research shows that the Kamrau Bay family and the Asmat-Kamoro family form a subgroup to which the Muli Strait family is more distantly related.

## Keywords

historical linguistics – comparative method – language classification – Papuan languages – Asmat-Muli Strait – Asmat-Kamoro – New Guinea – Indonesia

## 1 Introduction<sup>1</sup>

In this paper we demonstrate the genealogical relationship between three groups of Papuan languages that are spoken along the south coast of the Indonesian provinces of Papua and West Papua. The Kamrau Bay family comprises three languages spoken around the eponymous bay at the southeast of the Bomberai Peninsula. The Asmat-Kamoro family covers the entire strip of land along the south coast of Papua from Etna Bay in the north to Kolopom (or Yos Sudarso) Island in the south and is made up of at least six languages. The Muli Strait family, named after the narrow strait separating New Guinea from Kolopom Island, consists of one language spoken on Kolopom Island and another spoken on the adjacent island of Komolom (or Komoran). The existence of these three language families is generally recognized, but their affiliation with each other has not yet been formally demonstrated. In this paper we want to show that they form a superordinate family we call Asmat-Muli Strait.

Kamoro was the first Papuan language of West New Guinea to be documented. In an expedition to the Mimika coast in 1828 some Kamoro vocabulary was collected and subsequently published (Modera 1830). Later expeditions to that area produced further word lists. They were studied by Ray

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<sup>1</sup> We are indebted to Alice Eastwood of Suluh Insan Lestari's library in Sentani, Papua, for locating and sending us unpublished surveys and word lists. We thank the CartoGIS Services Manager of the ANU, Kay Dancey, for drawing the map in this paper and Professor Nicholas Evans for facilitating this. The completion of this paper was made possible by funding from the Institute of Comparative Language Science of the University of Zurich thanks to Professor Balthasar Bickel.

(1912), who recognized their interrelationship and united them under the name Angadi-Mimika group, all of them representing dialects of Kamoro. The Asmat languages only came to be known after a patrol station had been established at the Merauke River, the first words being published by Feuilletau de Bruijn (1913). Detailed descriptive work on the Asmat-Kamoro languages was carried out by the missionary linguist Drabbe, who stayed in Netherlands New Guinea from 1935 to 1960. Drabbe single-handedly documented the languages spoken along the south coast from Etna Bay to the border with the Australian mandated Territory of Papua and New Guinea. He published grammars of Kamoro and Central Asmat as well as a dictionary of Central Asmat (see Section 2). Furthermore, he produced a sketch grammar and vocabulary of the Muli Strait language Mombum. In the same article he gave a typological outline of the Papuan languages of southwestern New Guinea, dividing them into four groups: suffixing languages, prefixing languages, mixed languages, and conjunctive languages (Drabbe 1950:548). Kamoro, Asmat, and Mombum all belonged to the suffixing languages in this scheme.

Drabbe's studies did not extend to what is today West Papua Province. It was left to the Dutch linguist Anceaux to collect data on the Kamrau Bay languages on a trip to the Bomberai Peninsula in 1956 (see Section 2). Greenberg was the first classifier to note the relationship between the Kamrau Bay languages documented by Anceaux and the Asmat-Kamoro languages described by Drabbe: "... Asienara and Iria are closely related to each other. It has not been previously noted that these two languages are to be connected with the Kamoro group to the east from which they are separated both by the Etna Bay subgroup of the Western New Guinea subfamily and by Irahutu, an Austronesian language." (Greenberg 1971:840). Indeed, in his first classificatory article Voorhoeve (1968) did not yet have the Kamrau Bay languages on his radar, looking elsewhere for the relatives of Asmat-Sempan-Kamoro. Only in his contribution to the big survey volume edited by Wurm did he include the Kamrau Bay languages in his Asmat-Kamoro family (Voorhoeve 1975b:369-74). However, he treated the Kamrau Bay languages as a coequal member of the family beside Kamoro, Sempan, and Asmat whereas we believe that they constitute a separate branch. We call the family which includes the Kamrau Bay family and the Asmat-Kamoro family the Asmat-Kamrau Bay family (see Figure 2 in Section 2).

The interrelationship between the Kamrau Bay and the Asmat-Kamoro languages has been universally accepted since Greenberg pointed it out. The suggestion of a relationship between these languages and the Muli Strait languages has had a more complicated history. It was first proposed by Voorhoeve (1968:3-4), who assigned Mombum to his Asmat-Awyu-Ok family, stating that it was most closely related to Asmat. In his monograph on the Asmat languages he reiterated this view: "The Mombum Family is the closest relative of the Asmat-Kamoro Family; together they form a subgroup within the Central and South New Guinea Stock." (Voorhoeve 1980:1). This statement was supported by a small number of suggestive comparisons between his Proto-Asmat reconstructions and Mombum lexical items. It is unclear why Voorhoeve omitted the connection in his contribution to the Wurm volume. In that influential survey article, he separated the Asmat-Kamrau Bay languages from the Muli Strait languages, listing them as independent members of his Central and South New Guinea stock (Voorhoeve 1975b:369-74, 396-98). The same classification was repeated in Wurm's (1982:136-39)

monograph summarizing the survey of Papuan languages and was then carried over into following reference works.

We agree with Voorhoeve's (1980:1) proposal that the Muli Strait languages are the nearest relatives of the Asmat-Kamrau Bay languages. However, we do not subscribe to Voorhoeve's hypothesis of a Central and South New Guinea (CSNG) stock. In its first version, the CSNG grouping included virtually all of the Papuan language families spoken in southern New Guinea on both sides of the international border (Voorhoeve 1968:3, 8). Then, in his contribution to the Wurm volume, Voorhoeve (1975b:369) trimmed the membership down. Conspicuously, he removed language families that Drabbe had assigned to different typological groups, including Marind-Yaqay and Lake Murray (Drabbe's prefixing languages) and the Kolopom family (Drabbe's conjunctive languages), leaving only the languages of Drabbe's suffixing group in the revised CSNG stock. After a long hiatus, Voorhoeve (2005) published a comparative study of the CSNG families spoken in Papua Province, to wit, Asmat-Kamrau Bay, Awyu-Dumut, and Ok. We agree with his conclusion that, while there is good evidence for a fairly close relationship between Awyu-Dumut and Ok,<sup>2</sup> the relationship between these two language families and Asmat-Kamrau Bay is at best a distant one. Other language families appear to be more promising candidates for an immediate relationship with the Asmat-Muli languages.

In his well-received study of personal pronouns as a diagnostic for classifying Papuan languages, Ross (2005:22), too, dismantled Voorhoeve's CSNG stock. The reason was that he was unable to find in the personal pronouns any common innovation shared by all member families. In the process, he separated language families that do belong together. He did not recognize the relationship between Awyu-Dumut and Ok but suggested that Asmat-Kamrau Bay and Awyu-Dumut might constitute a subgroup. He can hardly be blamed for not seeing the connection between Asmat-Kamrau Bay and Muli Strait as these two language families have very divergent personal pronouns (see Section 4). The evidence for the genealogical unity of the Asmat-Muli stock comes from the lexicon (see Section 3.2) and verbal morphology (see Section 4). The separation of Asmat-Kamrau Bay from Muli Strait, which had been handed down in reference works since Voorhoeve (1975b), was thus seemingly corroborated by Ross (2005) and still lingers on in the most recent survey article (Pawley and Hammarström 2018:36-37, 72-73).

The paper is structured as follows. The introduction outlines the discovery of the Asmat-Muli languages and the history of their classification. Section 2 introduces the individual languages and the sources we have for them. The languages are shown on a map followed by our classification (Figures 1 and 2). In Section 3 we present cognate sets for the Asmat-Kamrau Bay family (3.1) and the Asmat-Muli Strait stock (3.2) as well as the sound correspondences derived from them. Section 4 adds further evidence for the genealogical unity of the Asmat-Muli languages in the form of a verbal paradigm and discusses the personal pronouns. The results of this study are summarized in Section 5.

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<sup>2</sup> Sound correspondences and cognates linking Awyu-Dumut and Ok can be found on Newguineaworld: <https://sites.google.com/site/newguineaworld/families/trans-new-guinea/central-west-new-guinea/digul-river-ok> (accessed on 28 January 2020).

## 2 The Languages and Their Documentation

The Asmat-Muli Strait stock is made up of three geographically separated language families, the Kamrau Bay family in the northwest of New Guinea, the Asmat-Kamoro family along the southwestern coast, and the Muli Strait family on Kolopom and Komolom islands in the south (see the map in Figure 1). The Kamrau Bay family is more closely related to the Asmat-Kamoro family than either of them is to Muli Strait. We call the subgroup they form the Asmat-Kamrau Bay family (see the classification in Figure 2). We are convinced that no other language family is more closely related to Asmat-Kamrau Bay than is Muli Strait.

Figure 1: Location of the Asmat-Muli languages

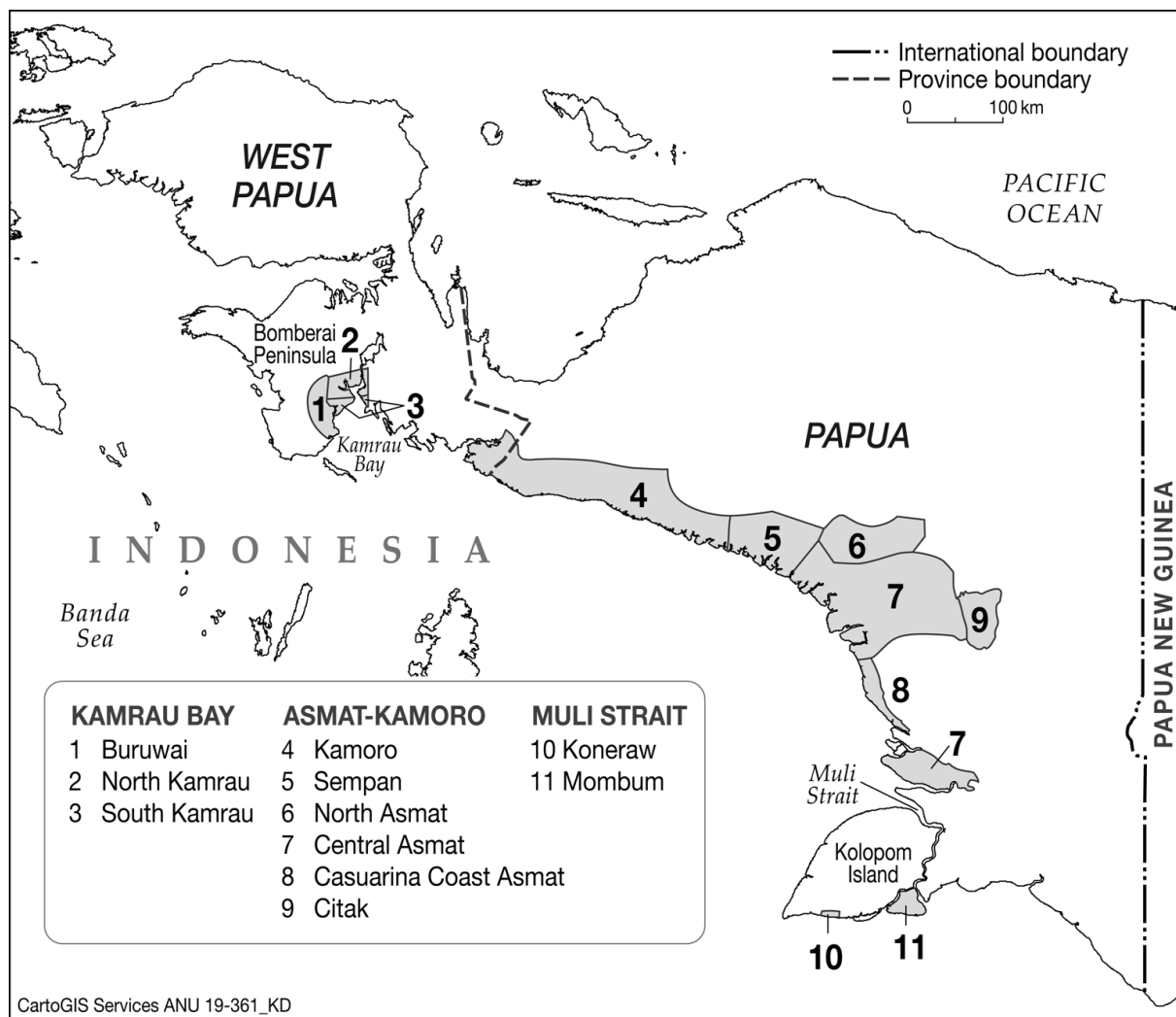


Figure 2: Classification of the Asmat-Muli languages

**Asmat-Muli Strait stock****Asmat-Kamrau Bay family****Kamrau Bay (= Sabakor) family**

Buruwai (= Sabakor, Madewana)

[700 speakers in 1978, endangered]

Kamrau subfamily [850 speakers in 1978, endangered]

North Kamrau (= Iria)

South Kamrau (= Asienara)

**Asmat-Kamoro family**

Kamoro [8,000 speakers in 1953]

Sempan [900 speakers in 1953]

Asmat subfamily

North Asmat [1,000 speakers in 1991]

Central Asmat [22,800 speakers in 1967]

Kawenak d [13,800 speakers in 1967]

Keenok d [6,200 speakers in 1967]

Keenakap d [1,700 speakers in 1967]

Sokoni d [1,100 speakers in 1967]

Casuarina Coast Asmat (= Kaweinag)

[8,600 speakers in 1967]

Citak (= Kaünak) [8,000 speakers in 1985]

**Muli Strait (= Mombum) family**

Koneraw (= Konorau) [1,200 speakers in 2001, endangered]

Mombum (= Komolom) [220 speakers in 1950, endangered]

As was mentioned in the introduction, the first descriptive data on an Asmat-Muli language, namely Kamoro, appeared in print in the 19<sup>th</sup> century. The early publications on Kamoro and Asmat are difficult to obtain and we have not seen all of them. Likewise, we have been unable to get copies of some more recent manuscripts, notably Drabbe's unpublished dictionaries of Kamoro and Sempan. In the following, we list all of the data sources, published and unpublished, of which we have made use in this article. As is customary, we indicate the number of speakers of the eleven Asmat-Muli languages listed in Figure 2. As it has proven impossible to find reliable figures for the present time, we cite figures from older sources we consider authoritative.

The Kamrau Bay languages are spoken around the eponymous bay that separates the Bomberai Peninsula from the Bird's Neck of New Guinea (see Figure 1). It was previously thought that there are two Kamrau Bay languages, called Iria and Asienara. A careful study of the available data reveals, however, that there are three languages which, following Walker and Hesse (1988), we call Buruwai, North Kamrau, and South Kamrau. The exonym Asienara seems to have contributed to the misconception that there are only two languages. In his survey of the Bomberai Peninsula, Anceaux

(1958:116) lists villages in which Buruwai and South Kamrau are spoken under Asienara, considering them two different dialects of one language. While the lexical data for Asienara he presents in the same paper (Anceaux 1958:120) represents South Kamrau, Voorhoeve's (1975a:100) Asienara vocabulary is mostly Buruwai. The name Iria is unambiguous as all data published under that name represents North Kamrau.

Walker and Hesse (1988:2) surveyed the languages of the Kamrau Bay area and noted that "the data clearly presents three distinct cognate groupings", namely Buruwai in the villages Yaron 2, Tairi, and Gaka-Guriasa, North Kamrau in the villages Tanggaromi, Wamesa, Waho, Bahomia, and Ubia-Seramuku, and South Kamrau in the villages Esania and Yaron 1. Their paper includes word lists from all of these villages and is the major source establishing the distinction between all three Kamrau Bay languages. Walker had already collected word lists for Buruwai and North Kamrau (1978) and for South Kamrau (1983). Anceaux's (1958) pioneering survey, in which he recognized the distinctness of the Kamrau Bay languages from the other Papuan languages of the Bomberai Peninsula, presents a small number of lexical items from South Kamrau and North Kamrau. Regrettably, most of the data he collected was never published, but excerpts appear in Greenberg's (n.d.) notebooks to which we had access. Matsumura (1985), who was working in a neighbouring language community, collected some vocabulary in the North Kamrau village of Wanoma. The social anthropologist Visser (1989) published some kin terms and other lexical items for Buruwai of Gaka village and North Kamrau of Ubia-Seramuku village in her report on a visit to the Kamrau Bay area. Voorhoeve's (2007) unpublished New Guinea lexical files contain Buruwai and Kamrau word lists that may have been collected in the same villages as Visser's. Both his Buruwai and North Kamrau data is mixed with South Kamrau, but these can often be distinguished by their sound correspondences. All of the sources discussed so far only present lexical data. A tentative statement of the phoneme inventory and the personal pronouns of North and South Kamrau is presented in Voorhoeve (1975b:370). Apart from this, nothing is known about the grammar of any of the three Kamrau Bay languages.

The Asmat-Kamoro languages cover a strip of coastal lowlands in the southwest of New Guinea that extends over several hundred kilometres (see Figure 1). Most of the languages of this family show considerable dialect diversity. For Kamoro, Drabbe (1953:2-3, 80-86) recognized six dialects. He described their location and some of their phonological and grammatical peculiarities. Although the information on dialects other than Tarya is sparse, the differences that can be gleaned from his description are so significant that one may wonder whether Kamoro is a single language. Voorhoeve (1975b:370) added a seventh dialect spoken in the extreme west around Etna Bay of which Peckham (1991) published a word list. The most important source of information on Kamoro is Drabbe's (1953) grammar of the Tarya dialect, which contains comparative word lists for Kamoro, Sempan and Central Asmat but unfortunately no word lists for the different Kamoro dialects. For Sempan, to our knowledge, no original data has been published besides the aforementioned word list and some notes on grammar (Drabbe 1953:87-104).

Drabbe (1963:1) considered Asmat a single language with multiple dialects. In his monograph on three Asmat dialects he gave a grammatical description of Kawenak, Keenok, and Keenakap and comparative word lists of these three dialects plus Kaūnak (Citak) and Kaweinag (Casuarina Coast). A

lexicostatistical analysis led Voorhoeve (1980:8-14) to the conclusion that Kawenak, Keenok, and Keenakap are dialects of a single language he called Central Asmat whereas Citak and Casuarina Coast Asmat are separate languages. In addition, in areas that had not yet been surveyed by Drabbe he recognized a fourth dialect of Central Asmat, Sokoni, and a fourth Asmat language he called North Asmat. It is possible that there are sociolinguistic criteria which speak for the recognition of more than one language on the territory of what Voorhoeve identified as the Central Asmat language. Indeed, Ethnologue (Eberhard, Simons, and Fennig 2020, map Indonesia, Eastern Papua) names two additional languages, Yaosakor Asmat and Tamnim Citak, spoken on the territory of Voorhoeve's Keenakap and Sokoni dialects, respectively. The existence of a New Testament translation for Yaosakor and the observation that the Tamnim people consider themselves Citak rather than Asmat suggest that there may be social reasons that warrant considering them separate groups. On purely linguistic grounds, however, that is not the case. It appears to be arbitrary to give Keenakap the status of a separate language while considering Kawenak and Keenok dialects of one language, as is done in Ethnologue, especially as Voorhoeve (1980:11) noted: "It seems that Kawenak and Keenakap group together as against Keenok." If Central Asmat is to be split up in several languages, all dialects must be taken into consideration. Ethnologue's map further includes a language named Diuwe located to the north of Citak and said to belong to the Asmat-Kamoro family. No data is available for Diuwe and its existence has not been confirmed. We follow then the well-reasoned subclassification of the Asmat family by Voorhoeve (1980).

The only well-described Asmat language is Central Asmat. In addition to the dialect study mentioned above (Drabbe 1963), Drabbe (1959a, 1959b) published a dictionary and a grammar of the Kawenak dialect of Central Asmat. Another variety of the same dialect was the object of Voorhoeve's (1965) dissertation containing a grammar, texts, and a word list. Roesler (1972) produced a phonology and a dictionary (Roesler and Roesler 2011) of the same variety that Drabbe had described. The Kawenak variety spoken in the exclave to the south of the main area of Central Asmat (see Figure 1) is documented in a word list by Lebold, Kriens, and Susanto (2013). Drabbe (1958, n.d.) further wrote a grammar and a dictionary of the Keenok dialect of Central Asmat. The only other Asmat language for which there is some grammatical data is Citak (Kruidhof 1979). The major source for the other languages and dialects is Voorhoeve's (1980) monograph on the Asmat family languages, which presents lexical data from fifty villages. Further word lists for the Keenakap and the Sokoni dialects of Central Asmat and for Citak were collected by the social anthropologist van Arsdale (1974).

The Muli Strait languages are named after the strait that separates Kolopom Island from the New Guinea mainland, formerly known as Marianne Strait. There are two languages, Koneraw (Konorau), spoken on a coastal strip of land in the south of Kolopom Island, and Mombum, spoken on Komolom Island to the south of Kolopom Island and separated from it by the Muli Strait (see Figure 1). A Koneraw word list was published in the appendix to Geurtjens's (1933) Marind dictionary. This data shows the language at an older stage than the lexical data that was collected by Susanto (2001). For Mombum, we have, in addition to the word lists in Geurtjens (1933) and Susanto (2001), the survey article by Drabbe (1950), which contains a brief grammar sketch as well as a word list. Drabbe's data is more reliable than Geurtjens's, whose transcriptions of phonemes are not always consistent.



### 3 Cognate Sets and Sound Correspondences

In this section we present lexical reconstructions that formalize our understanding of the regular sound correspondences to be found between cognate words in the eleven Asmat-Muli languages. The sound correspondences are compiled in tables and discussed in the accompanying text. The cognate sets and the sound correspondences are presented in two steps. Subsection 3.1 deals with the relatively closely related member languages of the Asmat-Kamrau Bay family; 3.2 correlates the Asmat-Kamrau Bay family with the more distantly related Muli Strait family. Cognates shared by Kamrau Bay and Asmat-Kamoro languages appear in 3.1 if they lack a counterpart in the Muli Strait family but in 3.2 if there is a Muli Strait connection. They are not listed twice. Space does not permit the reproduction of lower level cognates without cross-family connection. Readers can look all of them up on *Newguineaworld*.<sup>3</sup>

#### 3.1 Asmat-Kamrau Bay

Here we present the cognate sets shared by the Asmat-Kamrau Bay languages followed by the sound correspondences that can be observed in them. For a Proto-Asmat-Kamrau Bay (pAKB) reconstruction we need a reflex in a language of the Kamrau Bay (KB) family as well as a reflex in a language of the Asmat-Kamoro (AK) family. If a reflex in a daughter language has the same meaning as the superordinate reconstruction, the gloss is not repeated. We use IPA transcription throughout. If only one part of a compound is cognate, the unrelated part is enclosed in square brackets and explained in a footnote. Variable parts of a reconstruction are enclosed in round brackets. If no decision can be made between two vowels, they are both given in curly brackets. By default, all Kamrau Bay attestations are drawn from Walker and Hesse (1988) and all Asmat-Kamoro attestations from Drabbe (1953, 1963). A minority of Kamrau Bay attestations are found only in Anceaux (via Greenberg, n.d.) or Voorhoeve (1980, 2007) and are indicated by (JA) and (CV), respectively. Similarly, Asmat attestations found only in Voorhoeve (1980) are indicated by (CV). Walker and Hesse's Buruwai attestations are generally from Tairi village, South Kamrau from Yarona and North Kamrau from Waho, though in a few instances Buruwai was drawn from Gaka village and South Kamrau from Esania-Kuna. Drabbe's Casuarina Coast attestations are from Piramapun village, Citak from Senggo, Keenok from Komor-Amor, Keenakap from Ndamen and Kawenak from Ayam. The following list of Asmat-Kamrau Bay cognate sets is given in alphabetical order.

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<sup>3</sup> Cognates shared by the Muli Strait languages can be viewed here:

<https://sites.google.com/site/newguineaworld/families/trans-new-guinea/asmat-muli-strait/muli-strait>, cognates shared by the Kamrau Bay languages appear here: <https://sites.google.com/site/newguineaworld/families/trans-new-guinea/asmat-muli-strait/asmat-kamrau-bay/kamrau-bay>, cognates shared by the Asmat-Kamoro languages are here: <https://sites.google.com/site/newguineaworld/families/trans-new-guinea/asmat-muli-strait/asmat-kamrau-bay/asmat-kamoro> (accessed on 21 April 2020).

1. pAKB \*aeC ‘thigh’ > pKB \*ak > N. Kamrau *aʔ-a* (JA), S. Kamrau *ak-a* (JA), pAK \*ae > Kamoro *ae*, Sempan *ae*, N. Asmat *ae*, Kawenak *e*, Keenok *ee*, Keenakap *ee*, Casuarina C.A. *ai*, Citak *ae*
2. pAKB \*aji ‘new’ > pKB \*ai > Buruwai *ai-ra*, N. Kamrau *ai-ra*, S. Kamrau *ai-ra*, pAK \*aji > Kamoro *ai[ku]*, Sempan *ai[ha]*, N. Asmat *aj[as]*, Kawenak *ai*, Keenok *ai*, Keenakap *ai*, Casuarina C.A. *aji*, Citak *ai*
3. pAKB \*amoine ‘bow’ > pKB \*amom > Buruwai *amo-da* (CV), N. Kamrau *amo-a* (JA), S. Kamrau *amo-a* (JA), pAK \*amoine > Kamoro *amorə*, Sempan *amene*, N. Asmat *amne*, Kawenak *aman*, Keenok *amne*, Keenakap *amini*, Casuarina C.A. *amon*, Citak *amun*
4. pAKB \*amuini(C) ‘smoke’ > pKB \*amuni(C) > Buruwai *amuni-ra*, N. Kamrau *amuni-ə*, S. Kamrau *amonj-a*, pAK \*amuini > Kamoro *imini*, Sempan *amini*, N. Asmat *amnu*, Kawenak *amuin*, Keenok *amun*, Keenakap *amun*, Casuarina C.A. *amun*, Citak *amun*
5. pAKB \*anu ‘centipede’ > pKB \*anV > N. Kamrau *anə-ra* (JA), pAK \*anu > Kamoro *aru*, Kawenak *an[-okos]*<sup>4</sup>, Casuarina C.A. *ani*, Citak *ani*
6. pAKB \*apimi ‘sago pulp’ > pKB \*apin ‘sago’ > N. Kamrau *api-a*, pAK \*apimi > Kamoro *apimi*, Kawenak *apim*
7. pAKB \*(a)sa ‘egg’ > pKB \*asa > Buruwai *asa-ra*, pAK \*sa > Kamoro *ta*, Sempan *ha*, Kawenak *sa*, Keenok *sa*
8. pAKB \*asi ‘day’ > pKB \*asi ‘sun, day’ > Buruwai *asi-ra*, N. Kamrau *a:si-ra*, S. Kamrau *asi-ra*, pAK \*[jawu-]asi<sup>5</sup> ‘afternoon’ > Kamoro *ew-ati*, Sempan *jaw-ahi*
9. pAKB \*bebe ‘hard’ > pKB \*bebe ‘hard, strong’ > N. Kamrau *bebe-ra* (JA), S. Kamrau *bebe-ra* (JA), pAK \*pepe ‘tight, hard’ > Sempan *pepe* ‘be tied firmly’, Kawenak *pepe*
10. pAKB \*bere ‘vagina’ > pKB \*ber > Buruwai *be-da* (CV), N. Kamrau *be-a* (JA), S. Kamrau *be-a* (JA), pAK \*pere > Kamoro *pere[-ta]*<sup>6</sup>, Sempan *pere*, Kawenak *per* (CV)
11. pAKB \*bo ‘paddle’ > pKB \*bo > N. Kamrau *bo-ra* (CV), pAK \*po > Kamoro *po*, Sempan *po*, Kawenak *po*, Keenok *po*, Keenakap *po*, Casuarina C.A. *po*, Citak *pu*
12. pAKB \*bu ‘cassowary’ > pKB \*bu > Buruwai *bu-ra*, N. Kamrau *bu:-ra*, S. Kamrau *bu:-ra*, pAK \*pu > Sempan *pi*, Kawenak *pi*, Keenok *pi*, Keenakap *pi*, Citak *pi*
13. pAKB \*bura ‘moon’ > pKB \*bura > Buruwai *bura-ra*, N. Kamrau *bura-ra*, S. Kamrau *bura-ra*, pAK \*pura > Kamoro *pura*, Sempan *pira*, N. Asmat *pi*, Kawenak *pir*, Keenok *pir*, Keenakap *pir*, Casuarina C.A. *pir*, Citak *pira*
14. pAKB \*eake ‘fruit, seed’ > pKB \*eke ‘seed’ > Buruwai *eke-ra*, N. Kamrau *eʔe-ra*, S. Kamrau *eke-ra*, pAK \*eake ‘fruit’ > Kamoro *[muta-]eke*<sup>7</sup> ‘testicle’, Kawenak *eke*, Keenok *eak*, Keenakap *ek*, Casuarina C.A. *ek*, Citak *eke*
15. pAKB \*({e,a})nawa ‘come’ > pKB \*(a)new ~ (a)naw > Buruwai *naβ-*, N. Kamrau *ne:w-*, S. Kamrau *anaw-*, pAK \*(e)nawa > Kamoro *nao-*, Sempan *nao-*, Kawenak *ena-*, Keenok *ena-*, Keenakap *ena-*, Casuarina C.A. *ena-*, Citak *ena-*

<sup>4</sup> This is a compound with *okos* ‘tusk, big tooth, fierce’.

<sup>5</sup> This is a compound with pAK \*jawu ‘sun’.

<sup>6</sup> Kamoro *ta* means ‘egg’.

<sup>7</sup> Kamoro *muta* means ‘testicle’.

16. pAKB \*{e,a}poja ‘elder brother’ > pKB \*apoja > Buruwai *apoda-ra* (CV), N. Kamrau *apoda-ra* (JA), pAK \*(e)poca > Kamoro *poka*, Sempan *pota*, N. Asmat *epor*, Kawenak *epec*, Keenok *per*, Keenakap *epot*, Casuarina C.A. *ipæet*, Citak *pot*
17. pAKB \*{e,a}waoja ‘younger brother’ > pKB \*awoja > Buruwai *awoja-ra* (CV), N. Kamrau *awoda-ra* (JA), pAK \*(e)waoca > Kamoro *aoka*, Sempan *ota*, N. Asmat *or*, Kawenak *ewec*, Keenok *or*, Keenakap *eot*, Casuarina C.A. *oot*, Citak *waot*
18. pAKB \*eφe ‘leaf’ > pKB \*eφe > Buruwai *φe-ra*, N. Kamrau *ehe-ra*, S. Kamrau *ehe-ra*, pAK \*efe > Kamoro *ee*, Sempan *je*, N. Asmat *ji*, Kawenak *ee*, Keenakap *ei*, Casuarina C.A. *e*
19. pAKB \*eme ‘stand’ > pKB \*emej > Buruwai *mej*, N. Kamrau *emed-*, S. Kamrau *emed-*, pAK \*eme > Kawenak *em-*, Keenok *am-*, Keenakap *em-*, Casuarina C.A. *im-*, Citak *em-*
20. pAKB \*(e)namo ‘fish’ > pKB \*nam > Buruwai *na-da?*, N. Kamrau *no:w-a*, S. Kamrau *na-:*, pAK \*enamo > N. Asmat *enəmo*, Kawenak *enam*, Keenok *enmo*, Keenakap *enamo*, Casuarina C.A. *enam*, Citak *enam*
21. pAKB \*esaeC ‘netbag’ > pKB \*esak > Buruwai *isa-ta* (CV), N. Kamrau *es-a* (CV), S. Kamrau *esek-a* (JA), pAK \*esae ‘plaited bag’ > Kamoro *etae*, Sempan *ehae*, N. Asmat *esa*, Kawenak *ese*, Keenok *esa*, Casuarina C.A. *esa[ke]*, Citak *esa*
22. pAKB \*esi ‘sleep’ > pKB \*es (vb) > N. Kamrau *es-*, S. Kamrau *es-*, pAK \*esi (n) > Kamoro *ete*, Sempan *ehe*, N. Asmat *isi*, Kawenak *isi*, Keenok *isi*, Keenakap *ese*, Casuarina C.A. *is*, Citak *ese*
23. pAKB \*φae ‘buttocks’ > pKB \*φa ‘excrement’ > N. Kamrau *ha:-ra*, S. Kamrau *ha-ra*, pAK \*fae > Sempan *fae[-merə]*<sup>8</sup>, N. Asmat *fa[-mor]*, Kawenak *fa, fa [mbor]*, Keenok *fa [mber]*, Keenakap *fa [mbor]*, Casuarina C.A. *fe [mbor]*
24. pAKB \*φima ‘vein, tendon’ > pKB \*φima ‘calf’ > Buruwai *fima-ra* (CV), N. Kamrau *hima-ra* (CV), pAK \*fima ‘vein’ > Kamoro *imə*, Sempan *fuma[pi]*, N. Asmat *fime[pi]*, Kawenak *fim*, Keenok *fima* (CV), Keenakap *fima* (CV), Casuarina C.A. *fima*
25. pAKB \*φini ‘hair’ > pKB \*φin > Buruwai *φi-da*, N. Kamrau *hi-ə*, S. Kamrau *hi:j-ə*, pAK \*fini > Kamoro *iri*, Sempan *fini*, N. Asmat *fine*, Kawenak *fin*, Keenok *fini*, Keenakap *fini*, Casuarina C.A. *fin*, Citak *fini*
26. pAKB \*φoma ‘neck’ > pKB \*φoma > N. Kamrau *homa-ra*, S. Kamrau *homa-ra*, pAK \*f{e,o}ma(kV) ‘neck, throat’ > Kamoro *ema*, Sempan *homa*, N. Asmat *fəmak*, Keenok *femak*, Keenakap *femak*, Casuarina C.A. *femak*, Citak *femak*
27. pAKB \*gar(aw)u ‘old’ > pKB \*garu ><sup>9</sup> N. Kamrau *goru-ra*, S. Kamrau *garu-ra*, pAK \*tarau > Kamoro *akaraw[tə]*, Sempan *tarai[-ha]*<sup>10</sup>, Kawenak *tarei*, Keenok *tiri*, Keenakap *tare*, Casuarina C.A. *tarei*, Citak *tary*

<sup>8</sup> About the second part of the compounds in Sempan and the Asmat languages Voorhoeve (1980:71) says: “Perhaps it meant something like ‘bulge’ and is represented in Central Asmat by *mor* ‘blister’, and in Kamoro by *mora*, *moro* ‘blister, air-bubble floating on water’.”

<sup>9</sup> Buruwai *garu-ra* ‘old’ is phonologically irregular and may have been borrowed from South Kamrau.

<sup>10</sup> The suffix *-ha* also occurs in *ai-ha* ‘new’.

28. pAKB \*geφe ‘rain’ > pKB \*gek > Buruwai *de-ta*, N. Kamrau *ge:ʔ-a*, S. Kamrau *ge:k-a*, pAK \*tefe > Kamoro *kee* (Tarya d), *kefe* (Wania d), Sempan *te*, Kawenak *te*, Keenok *te*, Keenakap *te*, Casuarina C.A. *tee*, Citak *te*
29. pAKB \*geφi ‘leech’ > pKB \*geφi > Buruwai *deφi-rə*, N. Kamrau *gehi-ra*, S. Kamrau *gehi-ra*, pAK \*tifi > Kamoro *kii*, Kawenak *ci*, Keenok *ti*, Keenakap *ti*, Casuarina C.A. *ti*, Citak *ti*
30. pAKB \*gepane ‘cheek, jaw’ > pKB \*gepam > N. Kamrau *gepu[-era]*<sup>11</sup> (JA), S. Kamrau *ge-pa* (JA), pAK \*t{e,o}pane ‘chin, jaw’ > Kamoro *kepare*, Casuarina C.A. *topon*
31. pAKB \*gewu ‘son, child’ > pKB \*gewu ‘child’ > Buruwai *dewu-ra*, N. Kamrau *gewu-ra*, S. Kamrau *gevu-ra*, pAK \*tewu ‘son’ > Sempan *tiwi*, Kawenak *tiu*, Keenok *tii*, Keenakap *tyy*, Casuarina C.A. *ty*, Citak *tyy*
32. pAKB \*gi ‘cut up’ > pKB \*gi(j) > Buruwai *di-* (CV), pAK \*ti > Kamoro *ki-*, Kawenak *ci-*, Keenok *ti-*
33. pAKB \*igi ‘thorn’ > pKB \*igi ><sup>12</sup> N. Kamrau *igi-ra*, S. Kamrau *igi-ra*, pAK \*iti > Kamoro *iki*, Sempan *iti*, Kawenak *ici*, Keenok *iri*, Keenakap *iti*, Casuarina C.A. *iti*, Citak *iti*
34. pAKB \*isi ‘mosquito’ > pKB \*isi > Buruwai *isi-rə*, N. Kamrau *isi-ra*, S. Kamrau *isi-ra*, pAK \*isi > Kamoro *iti*, Sempan *ihi*, Kawenak *isi*, Keenakap *isi*, Casuarina C.A. *isi*, Citak *isi*
35. pAKB \*iwin{i,e} ‘lips’ > pKB \*iwin > Buruwai *iβi-di[-φu-rə]*<sup>13</sup>, N. Kamrau *iwu[-hu-ra]*, S. Kamrau *ivu[-hu-ra]*, pAK \*iwin{i,e} > Kamoro *iiri*, Sempan *iwini*, N. Asmat *jine*, Kawenak *ewen*, Keenok *ipni*, Keenakap *yny* (CV), Casuarina C.A. *jenee*
36. pAKB \*jaφa ‘hole’ > pKB \*aφa > Buruwai *afi-ra* (CV), N. Kamrau *aha-rə* (JA), S. Kamrau *aha-ra* (JA), pAK \*j{a,o}fa > Sempan *jafa*, N. Asmat *jofo*, Kawenak *jof*, Keenok *jof*, Keenakap *zafa*, Casuarina C.A. *jæf*, Citak *zafa*
37. pAKB \*jaφaro ‘wing’ > pKB \*aφa(r)[-φu]<sup>14</sup> > Buruwai *aφa-φu-ra*, N. Kamrau *aha-hu-ra*, S. Kamrau *aha-hu-ra*, pAK \*jafaro > Kamoro *jaru*, Kawenak *joro*, Keenok *jaora*, Keenakap *zaoro*, Casuarina C.A. *jari*, Citak *zær*
38. pAKB \*jage ‘call’ > pKB \*ag > Buruwai *d-* (CV), N. Kamrau *ag-* (CV), pAK \*j{a,e}te > Kamoro *jeke-*, Kawenak *jete-*, Keenok *jer-*, Keenakap *zate-*, Casuarina C.A. *jete-*
39. pAKB \*jaka ‘charcoal’ > pKB \*aka ‘black’ > Buruwai *aka-ra*, N. Kamrau *aʔa-ra*, S. Kamrau *aka-ra*, pAK \*jaka > Kawenak *jaka*, Keenok *jaka*, Casuarina C.A. *jaka* (CV)
40. pAKB \*jamopuC ‘armpit’ > pKB \*mopuk > N. Kamrau *mopu-a* (JA), S. Kamrau *mopuk-a* (JA), pAK \*jamopu > Kamoro *jamopu*, Sempan *jamapi*, N. Asmat *jiməp*, Keenok *jamep*, Keenakap *zamep*, Casuarina C.A. *jamep*
41. pAKB \*jawimi ‘ribs’ > pKB \*awin > Buruwai *awin[-əkera]*<sup>15</sup> (CV), N. Kamrau *awi[-ʔera]* (JA), S. Kamrau *abi[-əkera]* (JA), pAK \*jawimi > Kamoro *jajmi*, Sempan *jajmi*, Kawenak *jewem*, Keenakap *zaemi*, Casuarina C.A. *jaiem*, Citak *zamim*

<sup>11</sup> The second part of this compound is *eʔera* ‘bone’.

<sup>12</sup> Buruwai *igi-rə* ‘thorn’ is phonologically irregular and may have been borrowed from South Kamrau.

<sup>13</sup> The second part of the compounds for ‘lips’ is pKB \*φu ‘skin’.

<sup>14</sup> The second part of this compound is pKB \*φu ‘skin’.

<sup>15</sup> The second part of the compounds for ‘ribs’ in all three Kamrau Bay languages means ‘bone’.

42. pAKB \*jeta ‘stone’ > pKB \*eta > Buruwai *e:ta-ra*, N. Kamrau *eta-ra*, S. Kamrau *e:ta-ra*, pAK \*j{a,e}ka > Sempan *jaka*, N. Asmat *jeke*, Kawenak *ek*, Keenok *eke*, Keenakap *eka*, Casuarina C.A. *eke*, Citak *eka*
43. pAKB \*jita ‘tie’ > pKB \*it > Buruwai *it-*, N. Kamrau *i:t-*, S. Kamrau *it-*, pAK \*j{i,e}ka > Sempan *eka-*, Kawenak *jik-*, Keenok *jik-*, Keenakap *zik-*, Casuarina C.A. *jik-*
44. pAKB \*jiniŋa ‘knee’ > pKB \*inik > N. Kamrau *iniŋ-a*, S. Kamrau *inik-ə*, pAK \*jinifa > Kamoro (Tarya d) *iri[-po]*<sup>16</sup>, *inifa* (Lakahia d), Sempan *ini[-po]*, N. Asmat *jini*, Kawenak *jine*, Keenok *jina*, Keenakap *zine*, Casuarina C.A. *jine*, Citak *zini*
45. pAKB \*jiwu ‘small’ > pKB \*iwu > N. Kamrau *iwu-ra*, S. Kamrau *iβu-ra*, pAK \*j{i,u}wu ‘child’ > Kawenak *jiwi*, Keenok *jii*, Keenakap *zyy*, Casuarina C.A. *jywi*
46. pAKB \*jud{a,o}roC ‘heavy’ > pKB \*id{a,o}roC > Buruwai *idaro-da*, N. Kamrau *idoro-a*, S. Kamrau *idaru-a*, pAK \*jutoro > Kawenak *jytyr*, Keenakap *wutyru*, Casuarina C.A. *jytyr*, Citak *zytyry*
47. pAKB \*juŋo(ko) ‘cold’ > pKB \*iŋok > Buruwai *iŋo-ta*, S. Kamrau *ihok-a*, pAK \*jufo(ko) > Sempan *ifako*, Kawenak *jufu*, Keenok *jufuk*, Keenakap *zifo*, Casuarina C.A. *jyfyt*, Citak *zyfy*
48. pAKB \*juwuri ‘dog’ > pKB \*iwur > Buruwai *iβu-də*, N. Kamrau *i:w-a*, S. Kamrau *iβu-a*, pAK \*juwuri > Kamoro *uuri*, Sempan *iwiri*, N. Asmat *jui*, Kawenak *juur*, Keenok *juuri*, Keenakap *zuuri*, Casuarina C.A. *jur*, Citak *zuur*
49. pAKB \*jamane ‘penis’ > pKB \*jamam > Buruwai *jama-da* (CV), N. Kamrau *jemo-a* (CV), S. Kamrau *jem-a* (CV), pAK \*camane > Kamoro *kamarə*, Sempan *tamanə*, Kawenak *cemen*, Keenok *tamne*, Keenakap *tamane*, Casuarina C.A. *temen*, Citak *taman*
50. pAKB \*jawa ‘nest’ > pKB \*jawa > Buruwai *jo-rə*, N. Kamrau *jawa-ra*, pAK \*cawa > Kamoro *kao*, Sempan *tao*, Kawenak *co*, Keenok *to*, Keenakap *to*, Casuarina C.A. *to*, Citak *to*
51. pAKB \*jawoŋa ‘woman’ > pKB \*jawoŋa > Buruwai *jaβoa-ra?*, N. Kamrau *jowoda-ra* (CV), S. Kamrau *jaβoda-ra*, pAK \*cawoca > Kamoro *kaoka*, N. Asmat *toor*, Kawenak *cowoc*, Keenok *toor*, Keenakap *toot*, Casuarina C.A. *towot*, Citak *taot*
52. pAKB \*kaboma ‘two’ > pKB \*aboma > Buruwai *abomə-ra*, N. Kamrau *aboma*, S. Kamrau *aboma*, pAK \*kapoma > Kamoro *apoma*, Kawenak *kapom* ‘double’
53. pAKB \*kawei ‘person’ > pKB \*(o)weŋ > N. Kamrau *wed-a*, S. Kamrau *owed-a*, pAK \*kawei > Kamoro *we[-nata]*<sup>17</sup>, Sempan *owe[-naha]*, Kawenak *kawej*, Keenok *kee*, Keenakap *kae*, Casuarina C.A. *kawei*, Citak *kay*
54. pAKB \*komane ‘tongue’ > pKB \*(a)mam > Buruwai *ama-də*, N. Kamrau *mo:w-a*, S. Kamrau *ma-:*, pAK \*komane > Kamoro *mare*, Sempan *omane*, N. Asmat *emene*, Kawenak *komen*, Keenok *komen*, Keenakap *komen*, Citak *komen*
55. pAKB \*maŋe ‘weep, cry’ > pKB \*maŋa(C) > Buruwai *maiŋe-da?*, N. Kamrau *meda-ra* (JA), S. Kamrau *mada-ra*, pAK \*mace > Kamoro *makə makə-*, Sempan *matə matə-*, Kawenak *mbec*

<sup>16</sup> The second part of this compound also appears in Tarya Kamoro *tora-po* ‘elbow’. Its meaning may have been ‘joint’.

<sup>17</sup> In Kamoro and Sempan the etymon for ‘person’ is combined with an adjective meaning ‘true’.

- mbec-*, Keenok *mbiri mber-*, Keenakap *mbate mbet-*, Casuarina C.A. *mbat mbat-*, Citak *mbati mbati-*
56. pAKB \*mana(mV) ‘eye’ > pKB \*manam > Buruwai *mara-də*, N. Kamrau *monow-a*, S. Kamrau *mən-a*, pAK \*mana(mV)<sup>18</sup> > Sempan *man[akə]*, N. Asmat *man[ak]*, Kawenak *mbanm[ok]*, Keenok *mbanm[ak]*, Keenakap *mbanm[ak]*, Casuarina C.A. *mban[ak]*, Citak *mban[ak]*
57. pAKB \*mana-pun{i,u} ‘forehead’ > pKB \*mana-pu > N. Kamrau *manapu-rə* (JA), S. Kamrau *manapu-ra* (JA), pAK \*mana-pun{i,u} > Sempan *manapini*, N. Asmat *minipin*, Kawenak *mbipin*, Keenok *mbinipin*, Keenakap *mbipin*, Casuarina C.A. *mbanepin*, Citak *mbanapin*
58. pAKB \*masa{p,ɸ}u > ‘saliva’ > pKB \*masak > Buruwai *masa-ta*, S. Kamrau *masak-a*, pAK \*masa{p,f}u > Kamoro *matao*, Sempan *mahapi*, N. Asmat *mesip*, Kawenak *mbese*, Keenok *mbesep*, Keenakap *mbesa*, Casuarina C.A. *mbasa*
59. pAKB \*miC ‘nose’ > pKB \*mik > Buruwai *mi:-tə*, N. Kamrau *mi?-a*, S. Kamrau *mi:k-a*, pAK \*mi > Kamoro *mi[rimu]*, Sempan *mi[-make]*<sup>19</sup>, Kawenak *mbi*, Keenok *mbi[-mak]*, Keenakap *mbi[-mak]*, Casuarina C.A. *mi[-mak]*
60. pAKB \*miniC ‘mucus’ > pKB \*minik > Buruwai *mini-ta* (CV), N. Kamrau *mini?-a* (JA), S. Kamrau *minak-a* (JA), pAK \*mini > Kamoro *mini*
61. pAKB \*mo ‘cut down’ > pKB \*mo > N. Kamrau *mu-* (CV), pAK \*mo > Sempan *mo-*, Kawenak *mbo-*, Keenok *mbo-*, Citak *mbo-*
62. pAKB \*moneɸV ‘sugarcane’ > pKB \*monek > Buruwai *mone-ta* (CV), N. Kamrau *mone?-a* (CV), pAK \*moneɸV > Kamoro *mone* (Tarya d), *monifa* (Lakahia d)
63. pAKB \*musa ‘testicle’ > pKB \*musa > Buruwai *musa [tanakera]* (CV), N. Kamrau *musa-ra* (JA), S. Kamrau *musa-ra* (JA), pAK \*musa[(-eake)]<sup>20</sup> > Kamoro *muta*, *muta-eke*, Sempan *miha-kə*, N. Asmat *misa-k*, Kawenak *mbisa-k*, Keenok *mbisa-k*, Keenakap *mbisa-k*, Casuarina C.A. *mbisa-k*, Citak *mbisa-k*
64. pAKB \*nabu ‘white’ > pKB \*nabu > Buruwai *nabu-ra*, N. Kamrau *nobu-ra*, S. Kamrau *nəbu-ra*, pAK \*napu ‘light colour’ > Kamoro *napu*, Kawenak *ndapi*, Keenok *ndipi*, Citak *ndapi* (CV)
65. pAKB \*nasuC ‘wound’ > pKB \*nasuk > Buruwai *nasu-ta* (CV), N. Kamrau *nosu?-a* (CV), pAK \*nas{o,u} > Kamoro *natu*, Sempan *nahi*, N. Asmat *nusu*, Kawenak *ndoso*, Keenok *ndoso*, Keenakap *ndaso*, Casuarina C.A. *ndasy*, Citak *ndaso*
66. pAKB \*oɸo ‘rotten, soft’ > pKB \*oɸo ‘soft’ > N. Kamrau *oho-ra* (JA), pAK \*ofo ‘rotten’ > Kawenak *of*, Keenok *of*
67. pAKB \*ope ‘above’ > pKB \*ope > N. Kamrau *ope-ra* (JA), S. Kamrau *ope-ra* (JA), pAK \*ope > Kamoro *ope*, Sempan *ope*, Kawenak *op*, Keenok *op*, Keenakap *op*, Casuarina C.A. *op*, Citak *upu*
68. pAKB \*osV ‘cough’ > pKB \*os (vb) > Buruwai *os-* (CV), pAK \*osV ‘cough, phlegm’ (n) > Kamoro *ot[aj]*, Sempan *oho*, Kawenak *os*, Casuarina C.A. *os*, Citak *osa*

<sup>18</sup> It is not clear if the Asmat-Kamoro forms should be analysed with postposed \*eake ‘fruit, seed’ or \*emake ‘bone’. The Kawenak vowel suggests the second element \*oka ‘egg’.

<sup>19</sup> The second part of the compounds in Sempan and the Asmat languages is pAK \*emake ‘bone’.

<sup>20</sup> This is a compound with pAK \*eake ‘fruit, seed’.

69. pAKB \*sasoC ‘dry’ > pKB \*sasok > Buruwai *saso-ta*, pAK \*soso(to) > Kamoro *totoko*, Kawenak *soso*, Keenok *soso*, Casuarina C.A. *sæsæt*, Citak *sæsæ*
70. pAKB \*siC ‘tooth’ > pKB \*sik ‘teeth, sharp’ > Buruwai *siʔ-ta*, N. Kamrau *siʔ-a*, S. Kamrau *sik-a*, pAK \*sisi > Kamoro *titi*, Sempan *hi*, N. Asmat *sise*, Kawenak *sis*, Keenok *sisi*, Keenakap *sisa*, Casuarina C.A. *sis*, Citak *sisi*
71. pAKB \*sini ‘sand’ > pKB \*sin > N. Kamrau *si:-a*, pAK \*sini > Kamoro *tiri*, Sempan *hini*, Kawenak *[mbi-]sin*,<sup>21</sup> Keenok *[mbi-]sin*, Keenakap *[mbi-]sin*, Casuarina C.A. *[mbi-]sin*, Citak *[mbi-]sin*
72. pAKB \*sonane ‘forearm’ > pKB \*sonam > Buruwai *sona-da* (CV), pAK \*sona(ne) ‘elbow’ > Kamoro *tora[-po]*<sup>22</sup>, Sempan *honanə*, N. Asmat *sənənə*, Kawenak *sonon*, Keenok *senene*, Keenakap *sænæne*, Citak *sənan*
73. pAKB \*umid{i,u} ‘ashes’ > pKB \*umin ‘ashes, dust’ > Buruwai *umi-da*, N. Kamrau *u:mij-a*, S. Kamrau *u:mij-a*, pAK \*[jawo-]umit{i,u}<sup>23</sup> > Kawenak *jou-mbec*, Keenok *ju-mur*, Keenakap *zoo-mbet*, Casuarina C.A. *jao-mut*, Citak *za-mit*
74. pAKB \*usa ‘fire, firewood’ > pKB \*usa ‘fire’ > Buruwai *usa-ra*, N. Kamrau *usa:-ra*, S. Kamrau *usa-ra*, pAK \*usa > Kamoro *uta*, Sempan *juha*, N. Asmat *jysa*, Kawenak *jis*, Keenok *jis*, Keenakap *zys*, Casuarina C.A. *jis*, Citak *isa*
75. pAKB \*usini ‘coconut’ > pKB \*usin > Buruwai *usi-da*, N. Kamrau *usi-a*, pAK \*usini > Kamoro *utiri*, Sempan *ihini*, Kawenak *jysyn*, Keenok *jisin*, Keenakap *zysyni*, Casuarina C.A. *jysyn*, Citak *zisin*
76. pAKB \*w{a,o}namo ‘sky’ > pKB \*wanam(a) > Buruwai *wənama-rə*, N. Kamrau *o:naw-a*, S. Kamrau *wənama-ra*, pAK \*wonamo > Sempan *onamo*, N. Asmat *wonom*, Kawenak *onam*, Keenok *wenem*, Keenakap *wonamo*, Casuarina C.A. *onam*

Our Asmat-Kamoro reconstructions build upon the pioneering work of Voorhoeve (1980). For the comparison of the Asmat-Kamoro languages with the Kamrau Bay languages Voorhoeve’s monograph offers only some scattered remarks. The account of the sound correspondences between these two language families in Tables 1 to 4 is a new contribution to the field of Papuan historical linguistics. It is based on an analysis of the 76 cognate sets presented above and 11 further sets included in the top-level comparisons in Subsection 3.2 below. This rich data set made it possible to determine the correspondences between all consonants of the nine Asmat-Kamrau Bay languages, with only a few exceptions in some of the least well documented languages. Tables 1 to 3 present the correspondences between consonants in word-initial and word-medial position.

<sup>21</sup> The first part of the compounds in the Asmat languages is *mbi* ‘nose, land point, spit of land’.

<sup>22</sup> The second part of this compound also appears in Tarya Kamoro *iri-po* ‘knee’. Its meaning may have been ‘joint’.

<sup>23</sup> pAsmat \*jawo means ‘fireplace’.

Table 1 shows the correspondences for the nasals and for the unvoiced stops in the Asmat-Kamrau Bay languages. From a synchronic point of view, we should mention that in the Asmat languages the nasal phonemes have the slightly prenasalized voiced stops [b] and [d] as allophones in word-initial position and [m] and [n] elsewhere (Voorhoeve 1965:19). The phonemes with these allophones are transcribed as *m-/-m-* and *n-/-n-* in North Asmat in our cognate sets, following Voorhoeve (1980), but as *mb-/-m-* and *nd-/-n-* in Central Asmat, Casuarina Coast Asmat, and Citak, following Drabbe (1963). The allophony between nasals and voiced stops is possible in these languages because they lack a separate series of voiced stops, the voiced stops of Proto-Asmat Kamrau Bay having turned into unvoiced stops in the Asmat-Kamoro languages (see Table 2). In Buruwai, the sound change *\*-n- > -r-* in words beginning with the syllable *ma-* is a case of dissimilation. In the Tarya dialect of Kamoro, *-r-* may be the regular reflex of *\*-n-* and the few words with *-n-* might be borrowed from another dialect.

Table 1: Asmat-Kamrau Bay consonant correspondences I

pAKB	*m-, *-m-	*n-, *-n-	*-p-	*-t-	*k-, *-k-
pKB	*m-, *-m-	*n-, *-n-	*-p-	*-t-	*Ø-, *-k-
Buruwai	m-, -m-	n-, -n-, -r-/ma_	-p-	-t-	Ø-, -k-
N. Kamrau	m-, -m-	n-, -n-	-p-	-t-	Ø-, -ʔ-
S. Kamrau	m-, -m-	n-, -n-	-p-	-t-	Ø-, -k-
pAK	*m-, *-m-	*n-, *-n-	*-p-	*-k-	*k-, *-k-
Kamoro	m-, -m-	n-, -n-, -r- / _V#	-p-	-k-	Ø-, -k-
Sempan	m-, -m-	n-, -n-	-p-	-k-	Ø-, -k-
N. Asmat	m-, -m-	n-, -n-	-p-	-k-	Ø-, -k-
Kawenak	mb-, -m-	nd-, -n-	-p-	-k-	k-, -k-
Keenok	mb-, -m-	nd-, -n-	-p-	-k-	k-, -k-
Keenakap	mb-, -m-	nd-, -n-	-p-	-k-	k-, -k-
Casuarina C.A.	mb-, -m-	nd-, -n-	-p-	-k-	k-, -k-
Citak	mb-, -m-	nd-, -n-	-p-	-k-	k-, -k-



Table 2: Asmat-Kamrau Bay consonant correspondences II

pAKB	*b-, *-b-	*-d-	*j-, *-j-	*g-, *-g-
pKB	*b-, *-b-	*-d-	*j-, *-j-	*g-, *-g-
Buruwai	b-, -b-	-d-	j-, -j-	d-, -d-
N. Kamrau	b-, -b-	-d-	j-, -d-	g-, -g-
S. Kamrau	b-, -b-	-d-	j-, -d-	g-, -g-
pAK	*p-, *-p-	*-t-	*c-, *-c-	*t-, *-t-
Kamoro	p-, -p-	-k-	k-, -k-	k-, -k-
Sempan	p-, -p-	-t-	t-, -t-	t-, -t-
N. Asmat	p-, -p-	?	t-, -r-	t-, ?
Kawenak	p-, -p-	-t-	c-, -c-	t-, -t-; c-, -c-/_*i
Keenok	p-, -p-	?	t-, -r-	t-, -r-
Keenakap	p-, -p-	-t-	t-, -t-	t-, -t-
Casuarina C.A.	p-, -p-	-t-	t-, -t-	t-, -t-
Citak	p-, -p-	-t-	t-, -t-	t-, -t-

Table 3: Asmat-Kamrau Bay consonant correspondences III

pAKB	*ϕ-, *-ϕ-	*s-, *-s-	*w-, *-w-	*-r-	*j-
pKB	*ϕ-, *-ϕ-	*s-, *-s-	*w-, *Ø-/ _o, *-w-	*-r-	*Ø-
Buruwai	ϕ-, -ϕ-	s-, -s-	w-, Ø-/ _o, -w-	-r-	Ø-
N. Kamrau	h-, -h-	Ø-, s-/ _i, -s-	w-, Ø-/ _o, -w-	-r-	Ø-
S. Kamrau	h-, -h-	Ø-, s-/ _i, -s-	w-, Ø-/ _o, -w-	-r-	Ø-
pAK	*f-, *-f-	*s-, *-s-	*w-, *-w-	*-r-	*j-
Kamoro	Ø-, -Ø-	t-, -t-	w-, Ø-/ _o, -Ø-	-r-	j-, Ø-/ _i,u
Sempan	f-, -Ø- ~ -f-	h-, -h-	w-, Ø-/ _o, -w-	-r-	j-, Ø-/ _i
N. Asmat	f-, -Ø- ~ -f-	s-, -s-	w-, -w- ~ -Ø-	-Ø-	?
Kawenak	f-, -Ø- ~ -f-	s-, -s-	w-, Ø-/ _o, -w-	-r-	j-
Keenok	f-, -Ø- ~ -f-	s-, -s-	w-, -w- ~ -Ø-	-r-	j-
Keenakap	f-, -Ø- ~ -f-	s-, -s-	w-, -w- ~ -Ø-	-r-	z-
Casuarina C.A.	f-, -Ø- ~ -f-	s-, -s-	w-, Ø-/ _o, -w- ~ -Ø-	-r-	j-
Citak	f-, -Ø- ~ -f-	s-, -s-	?, -w- ~ -Ø-	-r-	z- ~ Ø-

No cognates have been found from which initial \*p- and \*t- could be reconstructed. There is also a gap among the Proto-Asmat-Kamrau Bay voiced stops (Table 2). No cognates have been found from which initial \*d- could be reconstructed and medial \*-d- is only sparsely attested. The voiced palatal stop \*j, on the other hand, is richly attested both word-initially and medially. The palatal place of articulation has been preserved in the Buruwai reflexes *j-/j-* and in Kawenak *c-/c-*. Proto-Asmat-Kamrau Bay \*j- results from a palatalization of Proto-Asmat-Muli \*d- (see Table 6). The palatalization left a gap in the alveolar place of articulation among the voiced stops of Proto-Asmat Kamrau Bay which was filled by \*-d-. The unvoicing of the Proto-Asmat-Kamrau Bay voiced stops is a common innovation of the Asmat-Kamoro languages.

Table 3 shows the correspondences for the two fricatives \*ɸ and \*s, the two semivowels \*w and \*j, and the rhotic \*r. For the semivowels and the rhotic, there is no other variation in the reflexes than retention or loss. Word initial \*j- is lost in the Kamrau Bay family and generally retained in the Asmat-Kamoro family. The rhotic \*-r-, only occurring word-medially, is retained in all languages except North Asmat, where it is lost. Initial \*w- is retained before the vowel \*a and lost before the vowel \*o in all languages except North Asmat and the Keenok and Keenakap dialects of Central Asmat, where it is also retained before \*o. The data for Citak is not clear. Medial \*-w- is retained in the Kamrau Bay languages as well as Sempan and the Kawenak dialect of Central Asmat, and lost or fluctuating with absence in the other languages. The reflexes of the labial fricative \*ɸ are transcribed as bilabial fricative *ɸ* in Buruwai and as labiodental fricative *f* in Asmat-Kamoro languages. Nothing of importance hinges on the reconstruction of \*ɸ rather than \*f. Word medial \*-f- drops in most cognates in the Asmat-Kamoro languages, but a few of them retain it. We have not found a conditioning factor. The sibilant \*s turns into *t* in Kamoro and into *h* in Sempan. Initial \*s- is retained before the vowel *i* in North and South Kamrau and lost before *a* and *o*.

A look through the word lists for the Kamrau Bay languages shows that nouns end in only a few sequences of consonant plus vowel *a* or *ə*. In Buruwai, the sequences are *-ra*, *-da*, *-ta*, and *-ja*; in North Kamrau they are *-ra*, *-wa*, *-a*, *-ʔa*, and *-da*; and in South Kamrau they are *-ra*, *-a*, *-ka*, *-ta*, and *-da*. A careful comparative analysis yields the insight that these *-CV* sequences are a fusion of former word-final consonants with a suffix that appears as *-ra* after vowels. As we have no syntactic data for the Kamrau Bay languages, only word lists, we cannot tell what this suffix means. It may be an article or a focus marker or perhaps something else. At any rate, it is consistently attached to all nouns and pronouns.

Table 4: Kamrau Bay final consonants

pAKB	pKB	Buruwai	N. Kamrau	S. Kamrau	pAK
*-V#	*-V[-ra]	-V-ra	-V-ra	-V-ra	*-V
*-mV#	*-m[-ra]/*a,*o_	-da	-w-a	-a	*-mV
*-nV#	*-n[-ra]/*i_	-da	-a	-a	*-mV
*-nV#	*-m[-ra]/*a,*o_	-da	-w-a	-a	*-nV
*-nV#	*-n[-ra]/*i_	-da	-a	-a	*-nV
*-pV#	*-k[-ra]	-ta	-ʔ-a	-k-a	*-pV
*-kV#	*-k[-ra]	-ta	-ʔ-a	-k-a	*-kV
*-dV#	*-n[-ra]	-da	-a	-a	*-tV
*-ϕV#	*-k[-ra]	-ta	-ʔ-a	-k-a	*-fV
*-sV#	*-t[-ra]	-ta	-ʔ-a	-t-a	*-sV
*-rV#	*-r[-ra]	-da	-a	-a	*-rV
*-Vi#	*-Vj[-ra]	-Vj-a	-Vd-a	-Vd-a	*-Vi

When one compares the noun-final *-CV* sequences of the Kamrau Bay languages with the corresponding *-CV* sequences of the Asmat-Kamoro languages, the patterns shown in Table 4 surface. By combining the reflexes from all three Kamrau Bay languages, original word-final consonants can be inferred. They fused with the initial consonant of the suffix *\*-ra* and left distinctive traces. Five patterns of correspondence can be observed, corresponding to six final consonants which, in a fully specified reconstruction, are *\*-m*, *\*-n*, *\*-k*, *\*-t*, *\*-r*, and *\*-j*. In Proto-Asmat-Kamoro, all words end in a vowel. We must compare the Proto-Kamrau Bay final consonants with the subfinal consonants of Proto-Asmat-Kamoro, that is to say, with the consonant preceding the final vowel. As can be seen in Table 4, Proto-Kamrau Bay final *\*-k* corresponds to Proto-Asmat-Kamoro subfinal *\*-p-*, *\*-k-*, and *\*-f-*. There is also a one-to-several correspondence in the case of the nasals. Proto-Kamrau Bay final *\*-m* corresponds to Proto-Asmat-Kamoro subfinal *\*-m-* and *\*-n-*, and so does final *\*-n*. The reflexes *\*-m* and *\*-n* are conditioned by the preceding vowel. If it is *\*i*, then the final nasal is reflected as *\*-n*, if it is *\*a* or *\*o*, then the nasal is reflected as *\*-m*. We have not found correspondence sets for all Proto-Asmat-Kamoro subfinal consonants, just for the ones given in Table 4. One correspondence pattern between the three Kamrau Bay languages does not reflect an original final consonant. Proto-Kamrau Bay final *\*-j* goes back to words ending in the vowel sequence *\*-Vi*.

### 3.2 Asmat-Muli Strait

After having delineated the sound correspondences between the Asmat-Kamrau Bay languages we turn now to the comparison with the Muli Strait languages. For a Proto-Asmat-Muli (pAM) reconstruction we need a reflex in the Asmat-Kamrau Bay family and a reflex in the Muli Strait (MS) family. The Muli

Strait family consists of the two languages Koneraw and Mombum. As described in Section 2 of this paper, we have data for these languages from Geurtjens (1933), Drabbe (1950), and Susanto (2001). In the following cognate sets the Koneraw reflexes are generally taken from Geurtjens unless postposed (YS) indicates that a word is cited from Susanto's word list and Mombum reflexes are taken from Drabbe unless postposed (HG) signals citation from Geurtjens. The same conventions obtain as specified at the beginning of Subsection 3.1 above.

1. pAM \*aβuyo 'breast' > pMS \*abuy > Koneraw *abur*, Mombum *apwyy*, pAKB \*awo > pKB \*awo > Buruwai *awo-ra*, N. Kamrau *awo-ra*, S. Kamrau *aβo-ra?*, pAK \*awo > Kamoro *ao*, Sempan *awo*, N. Asmat *aw*, Kawenak *ao*, Keenok *ao*, Keenakap *au*, Casuarina C.A. *ao*, Citak *au*
2. pAM \*amo 'louse' > pMS \*am > Koneraw *am*, Mombum *am*, pAKB \*amo > pKB \*om > N. Kamrau *oow-a*, S. Kamrau *o:w-a*, pAK \*[ufu-]amo<sup>24</sup> > Kamoro *m-amo*, Sempan *w-amo*, Kawenak *w-om*, Keenok *w-omo*, Keenakap *w-amo*, Casuarina C.A. *w-am*, Citak *w-amo*
3. pAM \*ata 'excrement' > pMS \*ar > Koneraw *ar*, Mombum *ar*, pAKB \*asa > pAK \*asa > Kamoro *ata*, Sempan *aha*, Kawenak *as*, Keenok *ase*, Keenakap *asa*, Casuarina C.A. *as*, Citak *asa*
4. pAM \*ata bu 'flatulate' > pMS \*ar pu > Mombum *ar pu-*, pAKB \*asa bu > pAK \*asa pu[-mu]<sup>25</sup> > Sempan *aha[-me] pu-mu-*, Kawenak *as pu-m-*,<sup>26</sup> Keenok *ase pu-m-*, Keenakap *asa pu-m-*, Casuarina C.A. *as [aur] pu-m-*, Citak *aasa pu-m-*
5. pAM \*boɣera 'see, look' > pMS \*peyer > Koneraw *pəðər-* (YS), Mombum *peyer-*, pAKB \*bora > pKB \*bor > Buruwai *bor-*, N. Kamrau *bor-*, S. Kamrau *bor-*, pAK \*pora > Kamoro *poro-*, Sempan *pora-*, Kawenak *por-*, Keenok *por-*, Keenakap *per-*, Casuarina C.A. *por-*, Citak *por-*
6. pAM \*βata 'clearing for a garden' > pMS \*par 'garden' > Koneraw *pa:r*, Mombum *par*, pAKB \*wasa > pAK \*wasa > Kamoro *wata* 'uninhabited, empty', Sempan *waha*, Kawenak *was*
7. pAM \*dai 'lie (down)' > pMS \*tai > Mombum *taj-* 'sleep', pAKB \*j{a,o}i > pKB \*joj > Buruwai *joj-*, N. Kamrau *jod-*, pAK \*cai > Kamoro *kai-*
8. pAM \*dapo 'hit' > pMS \*tap > Koneraw *tab-*, pAKB \*jaϕo > pKB \*jaϕ 'kill' > Buruwai *iϕ-*, N. Kamrau *e:h-*, pAK \*cafo > Kamoro *kao-*, Sempan *tafo-*, Kawenak *ca-*, Keenok *ta-*, Keenakap *ta-*, Citak *ta-*
9. pAM \*ete 'blood' > pMS \*iri > Koneraw *iri*, Mombum *iri*, pAKB \*ese > pKB \*et > Buruwai *e:-ta*, N. Kamrau *eʔ-a*, S. Kamrau *e:t-a*, pAK \*ese > Kamoro *ete*, Sempan *ehe*, Kawenak *es*, Keenok *ese*, Keenakap *ese*, Casuarina C.A. *es*, Citak *ese*
10. pAM \*gema 'give' > pMS \*jem > Koneraw *jem-*, pAKB \*g{e,a}ma > pKB \*g{e,a}m > Buruwai *dam-*, N. Kamrau *gem-*, S. Kamrau *gam-*, pAK \*t{e,a}ma > Kamoro *kemə-*, Sempan *[tea-]tamo-*

<sup>24</sup> pAK \*ufu means 'head'.

<sup>25</sup> The suffix \*-mV is a verbalizer, cf. pAK \*sapu-mu 'be extinguished' from \*sapo 'death'.

<sup>26</sup> The failure of some apparent examples of \*u, as here in 'flatulate', to be fronted in the Asmat languages suggests that another pAM vowel might be needed.

- <sup>27</sup>, Kawenak [te-]tam-, Keenok [te-]tam-, Keenakap [te-]tam-, Casuarina C.A. [te-]tam-, Citak [ta-]tam-
11. pAM \*gewa ‘take’ > pMS \*jiw > Mombum *jiw-* ‘carry’, pAKB \*gewa > pAK \*tewa > Kamoro *ke-*, Sempan *tewa-*, Kawenak *teu-*, Keenok *te-*, Keenakap *tae-*, Casuarina C.A. *teu-*, Citak *tae-*
  12. pAM \*yaimē ‘drum’ > pMS \*yaim > Koneraw *yaim*, Mombum *yajm*, pAKB \*eme > pAK \*eme > Kamoro *eme*, Sempan *eme*, N. Asmat *eme*, Kawenak *em*, Keenok *eme*, Keenakap *eme*, Casuarina C.A. *im*, Citak *eme*
  13. pAM \*yupu ‘head, hair’ > pMS \*yup > Mombum *yuf[-sin]*<sup>28</sup> ‘head hair’, pAKB \*ufu > pAK \*ufu<sup>29</sup> > Kamoro *uhu* ‘head’ (Wania d)
  14. pAM \*jaw{a,u} ‘sun’ > pMS \*zawa > Koneraw *dzawwo*, Mombum *zawa*, pAKB \*jawan > pAK \*jawan > Kamoro *jaw*, Sempan *jowi*, Kawenak *jou*, Keenok *jee*, Keenakap *zoe*, Casuarina C.A. *jawi*
  15. pAM \*jiwi ‘hear’ > pMS \*ziw > Koneraw *θəwə-* (YS), Mombum *zyw-*, pAKB \*jiwi > pAK \*jiwi > Kamoro *i-*, Kawenak *ji-*, Keenok *ji-*, Keenakap *zy-*, Citak *zi-*
  16. pAM \*j{i,u}ri ‘shoot’ > pMS \*z{i,u}ri > Mombum *zəri*, pAKB \*j{i,u}ri > pKB \*ir > Buruwai *ir-*, N. Kamrau *ir-*, S. Kamrau *ir-*
  17. pAM \*maβu ‘foot’ > pMS \*məb > Koneraw *mob*, Mombum *mop*, pAKB \*mawu > pKB \*mawu > Buruwai *maβu-ra*, N. Kamrau *mowu-ra*, S. Kamrau *moβu-ra*, pAK \*mawu > Kamoro *maw*, Sempan *mawi*, N. Asmat *maji*, Kawenak *mbei*, Keenok *mbee*, Keenakap *mbaey*, Casuarina C.A. *mbei*, Citak *mbai*
  18. pAM \*maneye ‘nose’ > pMS \*mæney > Koneraw *mannε*, Mombum *menəy*, [apur-]menε<sup>30</sup> ‘nipple’ (HG), pAKB \*mane ‘tip’ > pAK \*mane > Kamoro [ao] *mare* ‘nipple’, Kawenak [ao] *mbe* ‘nipple’, *mbe* ‘point, edge, end (as of a piece of wood)’
  19. pAM \*moi ‘water’ > pMS \*moi > Koneraw *moi*, Mombum *mwe*, pAKB \*moi > pKB \*moj > Buruwai *moj-a*, N. Kamrau *mo:d-ə*, S. Kamrau *mo:d-a*, pAK \*mui > Kamoro *mi*, Sempan *mi*, N. Asmat *mu*, Kawenak *mbui*, Keenok *mbi*, Keenakap *mbui*, Casuarina C.A. *mbi*, Citak *mbi*
  20. pAM \*nV ‘eat, drink’ > pMS \*nu[-gu]<sup>31</sup> > Koneraw *nugu*, Mombum *nuku*, pAKB \*n{e,a} > pKB \*nV > Buruwai *n-*, N. Kamrau *n-*, S. Kamrau *n-*, pAK \*n{e,a} > Kamoro *ne-*, Sempan *ne-*, N. Asmat *ne-*, Kawenak *nda-*, Keenok *nde-*, Keenakap *nda-*, Casuarina C.A. *nde-*, *nda-*, Citak *nde-*
  21. pAM \*opo ‘pig’ > pMS \*up > Koneraw *uφ* (YS), Mombum *u*, pAKB \*oφo > pKB \*ok > Buruwai *o-ta*, N. Kamrau *oʔ-a*, S. Kamrau *o:k-a*, pAK \*ofo > Kamoro *oo* (Tarya d), *oho* (Wania d), Sempan *ofo*, N. Asmat *ofo*, Kawenak *o*, Keenok *wo*, Keenakap *wo*, Casuarina C.A. *wo*, Citak *wu*

<sup>27</sup> The reflexes of ‘give’ in Sempan and the Asmat languages are compounded with contracted versions of pAK \*tewa ‘take’.

<sup>28</sup> Mombum *sin* means ‘body hair’.

<sup>29</sup> Reflexes of pAK \*ufu ‘head’ occur fused to the word for the louse (see 2. \*amo ‘louse’ above).

<sup>30</sup> Mombum *apur* (in Geurtjens’s transcription, spelled *apwyy* by Drabbe), Kamoro *ao*, and Central Asmat *ao* all mean ‘breast’. In Proto-Asmat-Muli the nipple was literally the ‘breast-nose’.

<sup>31</sup> In the Muli Strait languages the verb ‘eat, drink’ has been compounded with another verb which perhaps recurs in the Mombum collocation *put ku-* ‘be satiated’ (*put* ‘belly’).

22. pAM \*watae ‘red ochre’ > pMS \*war- > Mombum *war[-təy]* ‘red’<sup>32</sup>, pAKB \*wasae > pAK \*wasae > Kamoro *watae*, Sempan *waha*, N. Asmat *wasa*, Kawenak *wase*, Keenok *wasa* (CV), Casuarina C.A. *wasa* (CV)

The limited number of etymologies upon which the two authors could agree precludes a complete reconstruction of the phonological system of Proto-Asmat-Muli Strait. The phonetic values of some of the reconstructed proto-phonemes are open to debate. So far, we are only aware of a small number of possible cognates in other presumably related families. The discovery of more external cognates might help to pin down the values of the reconstructed phonemes. The values we propose in Tables 5 and 6 are tentative and may have to be adjusted when our knowledge improves. The two tables record all recurrent consonant correspondences that can be found in the 22 cognate sets given above. Tables 5 and 6 present the consonants in word-initial and non-initial position that are reconstructible. The hash (#) signals that a consonant occurs in word-final position, hyphens (-) before and after a consonant indicate word-internal occurrence. We only present the reflexes of the consonants in Koneraw and Mombum as well as those in Proto-Asmat Kamrau Bay and its two first-level daughters. The reflexes in the individual Asmat-Kamrau Bay languages must be looked up in Tables 1 to 4.

Table 5: Asmat-Muli consonant correspondences I

pAM	*m-, *-m-	*n-	*-p-	*-t-	*-β-	*-r-
pMS	*m-, *-m-#	*n-	*-p-#	*-r-#	*-b-#	*-r-
Koneraw	m-, -m-#	n-	[-b-, -ϕ#]	-r-#	-b-#	-r-
Mombum	m-, -m-#	n-	[-Ø/u_#]	-r-#	-p-#	-r-
pAKB	*m-, *-m-	*n-	*-ϕ-	*-s-	*-w-	*-r-
pKB	*m-, *-m-, *-N=	*n-	*-ϕ-, *-k=	*-s-, *-t=	*-w-	*-r-
pAK	*m-, *-m-	*n-	*-f-	*-s-	*-w-	*-r-

Table 6: Asmat-Muli consonant correspondences II

pAM	*ɣ-, *-ɣ-#	*b-	*d-	*g-	*-w-	*j-
pMS	*ɣ-, *-ɣ-#	*p-	*t-	*j-	*-w-	*z-
Koneraw	[ɣ-, x-, -ð-, -r#, -Ø#]	p-	t-	j-	-w-	[dz-, θ-]
Mombum	ɣ-, -ɣ-#	p-	t-	j-	-w-	z-
pAKB	*Ø-, *-Ø-	*b-	*ɟ-	*g-	*-w-	*j-
pKB	*Ø-, *-Ø-	*b-	*j-	*g-	*-w-	*Ø-
pAK	*Ø-, *-Ø-	*p-	*c-	*t-	*-w-	*j-

<sup>32</sup> Compare this colour term with *sor-təy* ‘black (literally, colour of charcoal)’.

The Proto-Asmat-Muli nasals \*m and \*n remain unchanged in all daughters (see Table 5). There are gaps among the unvoiced stops. Only medial \*-p- and \*-t- can be reconstructed from our cognate sets as clear initial occurrences of these sounds have not been found. The voiceless stop \*-p- is retained in the Muli Strait languages, with special phonetic realization in word-final position, and \*-t- is lenited to \*-r- before word-final vowel. In Proto-Asmat-Kamrau Bay, \*-p- and \*-t- are fricativized to \*-ɸ- and \*-s-. The voiced fricative \*-β- becomes \*-b- in Proto-Muli Strait, while \*-r- and \*ɣ are retained. In Proto-Asmat Kamrau Bay, \*-β- and \*-r- are reflected as \*-w- and \*-r- whereas \*ɣ disappears in all positions. The reflexes of \*ɣ are inconsistently transcribed in Koneraw, therefore we put the letters with which these sounds are transcribed in square brackets in Table 6 to highlight the phonetic notation. Word-initially, the three voiced stops \*b-, \*d-, and \*g- can be reconstructed to Proto-Asmat-Muli Strait (see Table 6). Initial \*b- and \*d- lose their voicing in Proto-Muli Strait, while initial \*g-, at least when followed by \*e, turns into \*j-. In Proto-Asmat-Kamrau Bay, initial \*b- and \*g- are retained and \*d- is palatalized to \*j-. The semivowel \*-w- remains unchanged in all daughter languages, \*j- becomes \*z- in Proto-Muli Strait.

#### 4 Verbal Morphology and Personal Pronouns

In this section we draw attention to agreements in the verb morphology between Mombum (Muli Strait family) and Central Asmat and Kamoro (Asmat-Kamoro family) that thus far have gone unnoticed. In these languages, verbs are inflected for tense and subject indexation. There is agreement between all three subject-indexing suffixes of the singular number as well as one plural form. We use the reflexes of the Proto-Asmat-Muli hodiernal past tense to demonstrate this, for here the tense marker, too, is cognate.

Verb paradigms have been published only for a minority of the Asmat-Muli languages. Nothing is known of the verb morphology of the Kamrau Bay languages. From the Asmat-Kamoro subfamily we have descriptions of the verb morphology of Kamoro (Drabbe 1953) and several varieties of Central Asmat (Drabbe 1959a, 1963, Voorhoeve 1965). A brief sketch of the grammar of Mombum (Drabbe 1950:561-66) is all we have for the Muli Strait family. We attempt a reconstruction of Proto-Asmat-Muli forms by directly comparing Kamoro, the Kawenak dialect of Central Asmat, and Mombum (Table 7).

Table 7: Proto-Asmat-Muli hodiernal past tense

	pAM	Mombum		Kawenak	Kamoro
subj.	hod. past	hod. past	subj. > obj.	ultimate past	present
1s	*-r-u	-r-'u	1s (> 3)	-'i	[-m-a]-r-i
			1s > 2	-'in	-m-ani
2s	*-r-em	-r-'im	2s (> 3)	-ər-'em	[-mə]-r-em
			2s > 1s	-ən'em	-m-anem
			2s > 1p	-ər-aw'om	-mə-nam
3s	*-r-e	-r-'i	3s (> 3)	-'er	[-mə]-rə
			3s > 1s	-'en	-m-anə
			3s > 1p	-ar-'aw	-mə-nao
			3s > 2	-'en	-mə-na
1p	*-r-{o,a}m	-r-'am	1p (> 3)	-ər-'om	[-mə]-r-om
			1p > 2	-ən'om	-mə-nom
2p		-r-'am	2p (> 3)	-er-'kom	-m-ajmi
			2p > 1s	-er-no'kom	-m-antim
			2p > 1p	-ər-aw'kom	-mə-najmi
3p		-r-'a	3p (> 3)	-ər-'es	-m-atə
			3p > 1s	-ən'es	-m-antə
			3p > 1p	-ər-aw'os	-mə-'natə
			3p > 2s	-ən'es	-mə-'natə
			3p > 2p	-'en	-mə-'natə
			1d (> 3)		-m-awmu
			1d > 2		-mə-nawmu
			2d (> 3)		-m-a'mimi
			2d > 1s		-m-ani'mimi
			2d > 1p		-mə-na'mimi
			3d (> 3)	-er-ma'mes	-m-'amuti
			3d > 1s		-m-a'nimuti
			3d > 1p		-mə-'namuti
			3d > 2		-mə-'namuti

Sources: Drabbe 1950:564 (Mombum), Voorhoeve 1965:107 (Kawenak), Drabbe 1953:11 (Kamoro)

The Asmat-Kamoro languages have an intricate verb morphology whereas Mombum verb morphology is relatively simple. Kamoro and Central Asmat have verb suffixes that index both the subject and the object. There are endings for all possible combinations of subject person in three numbers and object person in two numbers in Kamoro; Central Asmat has full paradigms for singular



and plural subjects but only a defective paradigm for dual subjects in combination with singular and plural objects. By contrast, Mombum only has subject-indexing suffixes. In Table 7, complete person-number paradigms for Mombum, the Flamingo Bay variety of the Kawenak dialect of Central Asmat, and Kamoro are juxtaposed.

As mentioned above, the inflectional endings of the verb in Central Asmat and Kamoro make reference to both the subject and the object of their clause. However, the endings that have a third person object (of unspecified number) can also be used if the verb is intransitive (see Table 7). Thus, the Central Asmat ending *-ər-em* 2s (> 3) is used both on transitive verbs with a second person singular subject and a third person object and on intransitive verbs with a second person singular subject only. The same holds for the Kamoro ending *[-mə]-r-em* 2s (> 3). We compare these endings in their intransitive use with the Mombum ending *-r-im* 2s, which makes reference to a second person singular subject. The three endings just cited are cognate and can be derived from Proto-Asmat-Muli *\*-r-em* 2s.

The Mombum paradigm of subject-indexing endings in Table 7 represents the hodiernal past tense, referring to a moment in time earlier today. Kawenak's ultimate past tense relates to "the period covering that part of the day which is prior to the speech event, as well as the distant past which is only known from tradition" (Voorhoeve 1965:109). In other words, it also covers the time earlier today. The Kamoro present tense contains the additional tense marker *-m(ə)*, which we disregard in our comparison. This tense marker was added to forms of another tense, just as the present tense marker *-'numur* of Mombum presumably contains a present tense marker *-'numu* added to the hodiernal past tense marker *-r*. If we subtract the tense marker *-m(ə)* from the Kamoro present tense endings, we get the endings of the hodiernal past tense (Drabbe 1953:21), with a significant difference. The hodiernal past tense of Kamoro lacks the formative *-r* which we find in four endings of the present tense, those of the first person singular, second person singular, third person singular, and first person plural with or without an object in the third person. This *-r*, we contend, descends from the Proto-Asmat-Muli hodiernal past tense marker *\*-r*. Traces of it remain in the Kamoro present tense but not in the hodiernal past tense. In Central Asmat, the cognate formative *-ər ~ -er* is found in more forms of the paradigm, for instance also in the forms of the second and the third person plural (acting on third person). It is unexpectedly missing in the form of the first person singular (acting on third person) *-i*. The reconstruction of Proto-Asmat-Muli *\*-r-u* 1s is based on the agreement between Mombum and Kamoro. In the other three forms we reconstruct, the hodiernal past tense marker *\*-r* is reflected in all three languages compared.

The Proto-Asmat-Muli first person singular subject-indexing suffix *\*-u* is regularly reflected as *-u* in Mombum and as *-i* in Kawenak, but in the Tarya dialect of Kamoro we would expect *-u* rather than the attested *-i*. In fact, both the suffixes *-i* 1s and *-u* 1s are recorded for another tense, the hodiernal past tense (Drabbe 1953:21). It is possible that the variation between the vowels *i* and *u* in this suffix is caused by the interference of other dialects with Tarya. There is a discrepancy between the first person plural suffix of Mombum and those of Kawenak and Kamoro. The vowel of Mombum *-am* 1p does not match the vowel of Kawenak *-om* 1p and Kamoro *-om* 1p. But the vowel of the Mombum first person plural suffix varies between different tenses, and in the present tense we find *-om* (Drabbe 1950:564). Disregarding the tense in which the reflexes occur, we could therefore reconstruct the subject-indexing

suffix \*-om 1p to Proto-Asmat-Muli. The forms of the second and the third person plural are irrecoverable.

Table 8: Asmat-Kamrau Bay personal pronouns

	1SG	2SG	3SG	1PL	2PL	3PL
pAKB	*nore	*wore	*are	*nare	*jare	*are
pKB	*nor	*or-or	*ar-ar	*nar	*er-er	*ar-ar
Buruwai	no-da	oro-da	?	na-da	?	?
N. Kamrau	no-a	oro-a	ar-a	n-a	eri-a	ar-a
S. Kamrau	no-a	oro-a	ar-a	n-a	ere-a	ar-a
pAK	*nore	*wore	*are	*nare	*care	*are
Kamoro	noro	oro	are	nare	kare	are
Sempan	noro	oro	aro	naro	taro	aro
N. Asmat	ne	we	?	?	?	?
Kawenak	ndor	or	ar	ndar	car	ar
Keenok	nder	wer	ar	ndar	tar	ar
Keenakap	nder	wor	ar	ndar	tar	ar
Casuarina C.A.	nder	or	ar	ndar	tar	ar
Citak	ndœr	wor	ar	ndar	tar	ar

Table 9: Muli Strait personal pronouns

	1SG	2SG	3SG	1PL	2PL	3PL
pMuli	*no	*ju		*numu	*jumu	
Koneraw	no	ju	ungumi	numu	jumu	
Mombum	nu	ju	aangib	num	jum	

The personal pronouns of the Asmat-Kamrau Bay languages (Table 8) and the Muli Strait languages (Table 9) diverge strongly from each other. Only in the first person singular is there a clear match between Proto-Asmat-Kamrau Bay \*no[re] and Muli Strait \*no.

## 5 Conclusion

We have seen that the Asmat-Muli Strait languages share commonly inherited vocabulary and verb morphology. The Kamrau Bay languages and the Asmat-Kamoro languages form a subgroup. We found 87 cognate sets uniting these two families. For the Asmat-Muli stock as a whole, the evidence we

presented was limited to 22 cognate sets. The lower number of shared cognates at the higher level is only partly due to the greater genealogical distance between the daughter families. An additional reason is that the Muli Strait languages have absorbed numerous lexical loans from the Kolopom languages and from Marind, thereby losing a good part of the inherited vocabulary through replacement. The Asmat-Kamrau Bay languages have borrowed much less from other languages. For wider comparison of the Asmat-Muli stock with other language families one must therefore rely on the lexical resources of the Asmat-Kamrau Bay languages rather than those of the Muli Strait languages.

The Asmat-Muli Strait languages are today spread over a very large stretch of land. There is some evidence from loanwords that this geographical distribution is the result of migrations that may have taken place in the not so distant past. Voorhoeve (1971:89) noted similarities between some words in the Awyu-Dumut language Sawuy and in languages spoken further south, among them Mombum. Indeed, Sawuy *xarab* ‘bow’ and *xorob* ‘banana’ look to have been borrowed from Proto-Muli Strait \**ɣaræp* ‘bow’ (> Koneraw *yarab*, Mombum *yarɛw*) and \**ɣorop* ‘banana’ (> Koneraw *horob*, Mombum *yurub*). An equally striking echo can be found in the Anim languages Yaqay and Warkay. The word for ‘breast’ in these languages is Yaqay *abur* and Warkay *abur* (Voorhoeve 1971:110), which recalls Proto-Muli Strait \**abuy* ‘breast’. We know that Proto-Anim had a different word for ‘breast’, namely \**mbumb(V)* (Usher and Suter 2015:128), which is reflected in Yaqay *bob* ‘chest’. There is therefore little doubt about the direction of borrowing: Proto-Muli Strait \**abuy* ‘breast’ was borrowed by Yaqay and Warkay. Yaqay, Warkay, and Sawuy are spoken north of the Digul River. At the time these languages adopted loanwords from Proto-Muli Strait, the ancestors of the Muli Strait people must have lived in the area of the Casuarina Coast.

## References

- Anceaux, Johannes C. (1958). ‘Languages of the Bomberai Peninsula: Outline of a linguistic map’ *Nieuw-Guinea Studiën* 2:109-21.
- Arsdale, Peter W. van (1974). Report of an expedition to the interior Asmat and Cicak regions of Irian Jaya, Indonesia. Department of Anthropology, University of Colorado.
- Drabbe, Petrus (1950). ‘Talen en dialecten van Zuid-West Nieuw-Guinea: Deel I’ *Anthropos* 45:545-74.
- Drabbe, Petrus (1953). *Spraakkunst van de Kamoro-taal*. ‘s-Gravenhage: Nijhoff.
- Drabbe, Petrus (1958). *Grammar of the Keenok dialect*. Mbi-Tsjiweu.
- Drabbe, Petrus (1959a). *Dictionary of the Asmat language*. Syracuse, Indiana: Our Lady of the Lake Press.
- Drabbe, Petrus (1959b). *Grammar of the Asmat language*. Syracuse, Indiana: Our Lady of the Lake Press.
- Drabbe, Petrus (1963). *Drie Asmat-dialecten*. ‘s-Gravenhage: Nijhoff.
- Drabbe, Petrus (n.d.). *Keenok-English dictionary*. Compiled in Dutch by P. Drabbe, translated to English by Martin van Roosmalen. Fort Wayne, Indiana: Crosier House of Studies.

- Eberhard, David M., Gary F. Simons, and Charles D. Fennig (eds.) (2020). *Ethnologue: Languages of the world*. Twenty-third edition. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>.
- Feuilleateau de Bruijn, W.K.H. (1913). 'Korte aantekeningen nopens de Kaja-kaja aan de Noord-West rivier (Nieuw Guinea)', *Tijdschrift Bataviaasch Genootschap* 55:544-56.
- Geurtjens, Henricus (1933). *Marindineesch-nederlandsch woordenboek*. Bandoeng: Nix & Co.
- Greenberg, Joseph H. (1971). 'The Indo-Pacific hypothesis', in: Thomas A. Sebeok (ed.), *Current trends in linguistics, vol. 8: Linguistics in Oceania*, pp. 807-71. The Hague: Mouton.
- Greenberg, Joseph H. (n.d.). Indo-Pacific notebooks. Unpublished manuscript.
- Kruidhof, Jouk (1979). *Bahasa Citak*. Catatan-catatan tentang bahasa Citak seperti diucap orang Tiau. ZGK Tiau.
- Lebold, Randy, Ronald Kriens and Yunita Susanto (2013). *A report on the Bamgi, Kia, and Lower Digul River language survey in Papua, Indonesia*. SIL Electronic Survey Reports. Dallas: SIL International.
- Matsumura, Takashi (1985). Word list for Bahasa Kamberau. Unpublished manuscript. SIL Irian Jaya.
- Modera, Justin (1830). *Verhaal van eene reize naar en langs de Zuid-Westkust van Nieuw-Guinea gedaan in 1828*. Haarlem: Loosjes.
- Pawley, Andrew and Harald Hammarström (2018). 'The Trans New Guinea family', in: Bill Palmer (ed.), *The languages and linguistics of the New Guinea area: A comprehensive guide*, pp. 21-195. Berlin: De Gruyter.
- Peckham, Lloyd (1991). 'Etna Bay survey report: Irian Jaya Bird's Neck languages' *Workpapers in Indonesian Languages and Cultures* 10:147-85.
- Ray, Sydney H. (1912). 'Notes on languages in the east of Netherlands New Guinea', in: A.F.R. Wollaston, *Pygmies & Papuans: The stone age to-day in Dutch New Guinea*, Appendix C, pp. 322-45. New York: Sturgis & Walton.
- Roesler, Calvin (1972). The phonology of the Ajam dialect of Asmat. MA thesis, Hartford Seminary Foundation.
- Roesler, Calvin and Ruth Roesler (2011). *Asmat-English dictionary*. The Evangelical Alliance Mission.
- Ross, Malcolm (2005). 'Pronouns as a preliminary diagnostic for grouping Papuan languages', in: Andrew Pawley, Robert Attenborough, Jack Golson and Robin Hide (eds.), *Papuan pasts: Cultural, linguistic and biological histories of Papuan-speaking peoples*, pp. 15-65. Canberra: Pacific Linguistics.
- Susanto, Yunita (2001). Word lists of Kalilam, Konorau, and Komolom. Unpublished manuscript. SIL Indonesia.
- Usher, Timothy and Edgar Suter (2015). 'The Anim languages of southern New Guinea' *Oceanic Linguistics* 54:110-42.
- Visser, Leontine E. (1989). 'The Kamrau Bay area: between Mimika and Maluku. A report of a short visit' *Irian* 17:65-75.

- Voorhoeve, Clemens L. (1965). *The Flamingo Bay dialect of the Asmat language*. Doctoral dissertation, University of Leiden. 's-Gravenhage: Smits.
- Voorhoeve, Clemens L. (1968). 'The Central and South New Guinea Phylum: A report on the language situation in south New Guinea' *Papers in New Guinea linguistics* 8:1-17. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (1971). 'Miscellaneous notes on languages in West Irian, New Guinea' *Papers in New Guinea linguistics* 14:47-114. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (1975a). *Languages of Irian Jaya: Checklist, preliminary classification, language maps, wordlists*. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (1975b). 'Central and western Trans-New Guinea phylum languages', in: Stephen A. Wurm (ed.), *New Guinea area languages and language study, vol. 1: Papuan languages and the New Guinea linguistic scene*, pp. 345-459. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (1980). *The Asmat languages of Irian Jaya*. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (2005). 'Asmat-Kamoro, Awyu-Dumut and Ok: An enquiry into their linguistic relationships', in: Andrew Pawley, Robert Attenborough, Jack Golson and Robin Hide (eds.), *Papuan pasts: Cultural, linguistic and biological histories of Papuan-speaking peoples*, pp. 145-66. Canberra: Pacific Linguistics.
- Voorhoeve, Clemens L. (2007). New Guinea lexical files: Comparative wordlists. Unpublished manuscript. Wageningen, Netherlands.
- Walker, Roland (1978). Word lists of Buruwai and Kamberau villages. Unpublished manuscript. SIL Irian Jaya.
- Walker, Roland (1983). Word list of Kambola village. Unpublished manuscript. SIL Irian Jaya.
- Walker, Roland and Ron Hesse (1988). Kamberau/Buruwai sociolinguistic/allocation survey. Unpublished manuscript. SIL Irian Jaya.
- Wurm, Stephen A. (1982). *Papuan languages of Oceania*. Tübingen: Narr.