LOCALITY MAP

SUKI

IWEWI
GWIBAKU
EWE
DURU
GWAKU
ISALA

GOGODALA

BALIMO

ARAMIA R.

FLY RIVER

0    10    20    30    40
MILES

DEPARTMENT OF HUMAN GEOGRAPHY, A.N.U.

# SOME NOTES ON THE SUKI-GOGODALA SUBGROUP
# OF THE CENTRAL AND SOUTH NEW GUINEA PHYLUM

C.L. VOORHOEVE

## 0. INTRODUCTION

0.1.  One of the languages which, for lack of data, could not be included
in my lexicostatistical classification of the languages in central and
south New Guinea[1] was the Suki language spoken round Suki lagoon in the
Western District of Papua.[2]  When I was working on the classification,
Dr. Capell kindly put at my disposal his own Suki materials, consisting
of the printed Acts of the Apostles, the Gospels of St. Mark and St.
John, and a manuscript containing daily devotions in Suki with a literal
English translation.  A study of these texts yielded some indications
that Suki might, first of all, be related to Gogodala, its eastern neigh-
bour across the Fly river.[3]

However, these clues could be followed up only after I had collected
first-hand information on Suki during a short field trip to the Western
District early in 1969.  I then obtained additional material from three
Suki boys studying at the Daru High School.  Two points now became clear:
Firstly, that the morphological structures of Suki and Gogodala are very
similar and that they share a typological feature not shared by any of
the languages with which Gogodala has previously been united into one
stock.[4]  Secondly, that there can be no doubt as to the genetic relation-
ship of the two languages.  The evidence makes it possible to unite them
into one separate stock within the Central and South New Guinea Phylum
(CSNG Phylum).

This paper intends to present the facts supporting these newly won
insights, and therefore falls into two main sections: a typological
section and a section dealing with the genetic relationship between Suki
and Gogodala and with their wider relationships.

0.2.   For the transcription of the Suki and Gogodala language materials
I have used a phonemic spelling based on my own tentative phonemic
analysis of both languages.   The two charts below give a survey of the
Suki and Gogodala phonemes and their allophones.   The phonetic trans-
cription of the allophones follows Pike 1947.   Further details can be
found in the appendix to this paper, which contains my phonemic analyses
of Suki and Gogodala.

### CHART I

### SUKI PHONEMES AND THEIR ALLOPHONES

| Consonants | | | Vowels | | |
|---|---|---|---|---|---|
| p [p] | t [t,t$^h$] | k [k,k$^h$] | i [i,ι,e] | | u [u,ŭ] |
| b [b,ƀ] | d [d] | g [g,ɠ] | | | |
| m [m] | n [n] | | e [ε,æ] | | o [o,ɔ] |
| | s [s] | | | | |
| | z [z] | | a [a,α] | | |
| | r[5] [ř,l] | | | | |

### CHART II

### GOGODALA PHONEMES AND THEIR ALLOPHONES

| Consonants | | | Vowels | |
|---|---|---|---|---|
| p [p] | t [t] | k [k,x] | i [i] | u [u] |
| b [b] | d [d] | g [g] | | |
| m [m] | n [n] | | e [e] | o [o,ɔ] |
| | s [s,$^t$s] | | ε [ε,æ] | a [a,α] |
| | l[5] [ř,l] | | | |

# 1. TYPOLOGICAL AFFINITY

1.0.  In this section I will deal with some typological features of Suki and Gogodala morphologies which show close similarities: the morphological processes in both languages, and their verb structure.

1.1.  In Suki and Gogodala at least three types of morphological processes occur: addition (affixation), duplication, and composition.[6]  No cases of a fourth type, internal modification, have come to my attention.

*Addition*:  Suki and Gogodala are both almost exclusively suffixing languages.  Prefixing is found in both languages with a few verb stems only.

*Duplication*:  Complete or partial duplication is the process by which the plural of nouns can be formed.  The process seems to be non-productive in both languages, since in both it is applicable only to a restricted number of nouns.

*Composition*:  The few cases of composition I came across were all of the widespread type of noun + noun.

It is possible to set up in both languages morphologically defined word classes: in Suki these are verbs, nouns, and pronouns; in Gogodala: verbs, nouns, adjectives, and pronouns.

1.2.  A close parallel between Suki and Gogodala verb structure shows in the future tense forms of their verbs.  The structure of these can be represented in the following formulae, in which + stands for 'obligatory', and ± for 'optional':[7]

Suki:
$$+ \text{ verb root} \pm \text{ causative suffix} \pm \left\{ \left( \begin{array}{c} \text{person-} \\ \text{object} \\ \text{suffix} \end{array} \right) + \begin{array}{c} \text{trans-} \\ \text{itive} \\ \text{suffix} \end{array} \right\} + \begin{array}{c} \text{tense} \\ \text{suffix} \end{array} + \begin{array}{c} \text{person-} \\ \text{number} \\ \text{suffix} \end{array}$$

Gogodala:
$$+ \text{ verb root} \ldots ? \ldots \pm \left\{ \left( \begin{array}{c} \text{person-} \\ \text{object} \\ \text{suffix} \end{array} \right) + \begin{array}{c} \text{trans-} \\ \text{itive} \\ \text{suffix} \end{array} \right\} + \begin{array}{c} \text{tense} \\ \text{suffix} \end{array} + \begin{array}{c} \text{person-} \\ \text{number} \\ \text{suffix} \end{array}$$

e.g.,
Suki:  wapa-wa-de-m-nat-eru  *he will cause them to be dry*

Gogodala:  awa - dɛ-mu-nama-lelo  *he will call them*

The two formulae are identical except for the possible absence of a causative suffix in Gogodala - my information is lacking in this respect.  The most striking feature of these verb structures is, that

when the person-object suffix occurs, it is obligatorily followed by
the transitive suffix.  This feature seems to be restricted to Suki and
Gogodala; I know of no other languages within the CSNG Stock which have
it.[8]

A further parallel between Suki and Gogodala can be found in the
semantic range of the person-number suffixes.  Suki has a three-fold
division:

| 1st p.s. | 1st p.pl. |
|----------|-----------|
| 2nd, 3rd p. ||

Gogodala has a similar three-fold division, but only in the past
tenses of the transitive verbs:

| 1st p.s., 2nd p.pl. | 1st p.pl. |
|---------------------|-----------|
| 2nd p.s.; 3rd p. ||

In the remaining part of the Gogodala verb system a more elaborate
person-number distinction is found, involving two to three person distinc-
tions and a distinction between singular, plural and, though not always,
dual:

| | | number | | |
|---|---|---|---|---|
| | | singular | plural | (dual) |
| | | 1 | 1 | 1 |
| person | | | 2 | 2 |
| | 2,3 | | 3 | 3 |

## 2.  GENETIC RELATIONSHIP

2.0.  Now I shall deal with the genetic relationship between Suki and
Gogodala as it appears from a) the correspondence of certain affixes and
b) their lexical correspondences.

Two affixes are said to correspond if they show enough similarity
in form and function to suggest a genetic relationship between them.
Similarly, two words or roots are said to correspond if they show such
formal-semantic similarity that a genetic relationship between them seems
likely.

## 2.1. Affixal correspondences

2.1.1. There are in Suki and Gogodala a number of corresponding verbal affixes. These are:

1. The person-object suffixes

|  | Suki | Gogodala |
|---|---|---|
| 1 s. | nε | nε |
| 2,3 s. | ø | ø |
| 1 pl. | ie | sε |
| 2,3 pl. | de | dε |

A few Gogodala verbs have prefixed person-object markers. I came across two such verbs in Suki: -ti-, *to see*, corresponding to Gogodala -ti-, *to see*, and -ata-, *to give*, a cognate of Gogodala -ata-, *to give*. Gogodala -ata- likewise has prefixed person-object markers, but when the object is 1st p.s. a suppletive root occurs:

|  | Suki | Gogodala |
|---|---|---|
| *to give to me* | n-ata | (mε-) |
| *to give to you, him* | -ata- | -ata- |
| *to give to you*(pl.), *them* | d-ata | d-ata |
| *to give to us* | (not ob-<br>tained) | s-asa |

2. The transitive suffix: Suki -m corresponds to Gogodala -mi, -mu.

3. Person-number suffixes: A few person-number suffixes of the future tense of Gogodala verbs show enough formal similarity to those in Suki to suggest a genetic relationship:

|  | Suki | Gogodala |
|---|---|---|
| 1 p.s. | -aru | -loa |
| 1 p.pl. | -erimu | -lelε; 1 p.du. delε |
| 2,3 p.s., pl. | -eru | -lelo (2,3 p.s.)<br>-delo (2,3 p.du.) |

4. The 'stative' suffix: In Suki, the suffix -atka, -itka marks a verb as 'stative': nan-itka *(he is) eating*; irat-atka *(he) will be living*.[9]

This suffix seems to correspond to Gogodala -taka which also marks a kind of stative verb having the categorical meaning of 'still being in the state caused by the action denoted by the verb root': kaliko papamina-taka *still wrapped in calico*.

2.1.2. A number of non-verbal suffixes also correspond. These are the suffixes marking emphasis or exclusiveness, direction, or possession.

5. Suki -iap, Gogodala iɛ, -iɛbi. These suffixes, marking emphasis or exclusiveness, occur with nouns and pronouns:

Suki:   e-iap *we ourselves, we only*
        Godte gi-iap *only God's word*

Gogodala:  sɛ-ɛi *we ourselves*
           baiga-iɛbi *(his) own village*

6. Suki -be, Gogodala -ma. -be indicates motion towards, -ma indicates motion *to* and *from*. They occur with nouns and pronouns. In Suki, the directional suffix is preceded by a suffix -ti when the under- lying form is a 3rd person pronoun or a noun denoting an animate being; in Gogodala the directional suffix may be preceded by a suffix -di, corresponding to Suki -ti, when the underlying form denotes an animate being:

Suki:   e-be *to you*
        ub-ti-be *to him, her*
        abi-tɨ-be *to father*
        dar-ti-be *to the man*

Gogodala:  gɛnɛli-ma *to/from the lagoon*
           oba-di-ma *to/from him*
           uaua-di-ma *to/from father*

7. Both Suki and Gogodala have a set of two mutually exclusive possessive suffixes. Their distribution seems to be the same in both languages. Suki -ne and the corresponding Gogodala -na occur only with nouns denoting place names; Suki -te and Gogodala -pɛ occur with all other nouns and with pronouns:

Suki:   e-te *your*(s.)
        Philip-te kuainu *Philip's pig*
        Suki-ne daru *a Suki man*
        gui-ne daru *a townsman*

Gogodala:  nɛ-pɛ *my*
           dalagi-pɛ gagi *the man's name*
           Aketa-na-luma *the people of Aketa*

Gogodala -pɛ does not seem to be a cognate of Suki -te; possibly it is related to Suki -bane in the two irregular possessive pronouns nabane *my* and abane *our*.

2.2. Lexical correspondences

2.2.1. From the lexical data collected in Suki and Gogodala, I compiled a comparative list of 170 items. This list yielded the 46 pairs of

probable cognates which are presented below. The items have been
arranged in alphabetical order; those marked 'B' belong to Swadesh's
basic word list of 200 items.

|     |                    | Suki    | Gogodala           |
|-----|--------------------|---------|--------------------|
| 1.  | *again*            | guarmap | goama              |
| 2.B.| *and, with*        | dap     | da                 |
| 3.  | *blackpalm*        | kauata  | souate             |
| 4.  | *body*             | pibku   | obe(s.), obebe(pl.)|

A number of Suki nouns seem to correspond to the plural
form of their Gogodala counterparts rather than to the
singular: see also items nos. 5., 18., 25., and 44. The
final syllable ku in pibku probably originally was a
separate morpheme as may appear from Suki pibdu *chest*,
and from related forms in the languages of the Morehead
River Stock: Parb pibi, Dorro fifi, *body*.

| 5. | *branch* | tadgomu | tala(s.), tata(pl.) |

tadgomu can be analysed as an originally bimorphemic word
in which tad- corresponds to Gogodala tata; -gomu is
possibly related to Boazi gomo *root*.

| 6. | *charcoal* | itpapru | ilapulu |

it- corresponds to ila- *fire*; papru (perhaps a reduplication
of puru) corresponds to -pulu.

| 7.B. | *to die* | gua | kau |

The protoform possibly is *kaua; Suki would then have lost
the first vowel. A similar case is presented by item 21.

| 8.B. | *drink!* (2nd p.s.) | ninu | nido |
| 9.B. | *to eat* | na | na |
| 10.B.| *fire* | araka | ila |

-ka in araka remains unaccounted for.

| 11. | *garden* | iga | egada |

-da in egada remains unaccounted for.

| 12. | *a girl* | zoagi | suakoabi |

zoagi : the corresponding morpheme in the Gogodala word is
sua-; -koabi is a morpheme meaning *small*. The final syllable
-gi in zoagi may have been a singular marker, corresponding
to the singular marker -gi in Gogodala (see item no.25).

| | | Suki | Gogodala |
|---|---|---|---|
| 13.B. | *to give him* | ata- | ata- |
| 14. | *grandfather* | eue | aba |
| 15. | *hard* | keikru | kalekale-bɛga |

The ending -bɛga occurs in many Gogodala adjectives. It seems to have been a suffix used to form adjectives from nouns, e.g., gigisabɛga, *tall, high*, the underlying form of which may have been a noun gigisa meaning *mountain*, witness the related form in Pare: gigiso *mountain*. The underlying form of kalekalebɛga could have been *kere, *stone*.

| 16.B. | *he* | u, ub- | oba |

ub- is a bound form, e.g., ub-te *his*, -te being the possessive suffix.

| 17.B. | *heavy* | mini | mene-bɛga |
| 18. | *house* | gagu | genama(s.), gegenama(pl.) |

-nama in (ge)genama remains unaccounted for

| 19.B. | *I* | ne | nɛ |
| 20.B. | *jaw, mouth* | mada | magata |

mada *jaw*, corresponds to magata *mouth*. Cognates of mada and magata occur in many languages of the CSNG Phylum, either with the meaning *mouth* or with the meaning *jaw*.

| 21.B. | *to know* | tua | itaua |
| 22. | *language* | gi | gilala |

gilala is a compound, built on gi *way of doing*, and the verb stem lala *to speak*(dual or plural subject).

| 23.B. | *leaf* | nigbagu | ibagi |

nig- is an allomorph of riku *tree* and corresponds to i- in ibagi (see item no.40).

| 24.B. | *to be, to live* | ir- | e- |
| 25.B. | *man* | daru | dalagi(s.), dala(pl.) |
| 26.B. | *meat* | kapu | sɛpo |
| 27.B. | *night* | ie | isa |
| 28.B. | *other* | itu | eta |
| 29. | *pandanus species* | garegi | kakai |
| 30.B. | *path, road* | rapru | nabidi |
| 31. | *pig* | kuainu | uai |

Cognates of kuainu and ual occur in many languages of the
CSNG Phylum.  The protoform probably was *geboiro.

| | | Suki | Gogodala |
|---|---|---|---|
| 32.B. | *root* | ta | sasa |
| 33.B. | *to see* | ti- | ti- |
| 34. | *sick* | giguse | gitɛ |
| 35.B. | *skin* | kaka | kaka |
| 36.B. | *tail (of dog)* | uani | uani |
| 37.B. | *that* | kiem | ɛma, iɛma |

iɛma is the emphatic form, ɛma the unemphatic form.

| 38.B. | *they* | i, im-, ib- | ubi |

im- and ib- are bound forms; im- occurs always in
combination with dere or der, probably bound allomorphs
of daru *man;* imderete *their;* imderk *them.*  ib- was
found in ibiap *themselves* (2.1.2.,5.)

| 39.B. | *this* | mem | mɛma |
| 40.B. | *tree* | riku | i |

riku refers more specifically to the trunk of a tree, and
also means *dug-out.*  The element -ku is perhaps identi-
fiable with -ku found in pibku (item no.4).  The meaning of
this morpheme could then have been *central part, trunk.*

| 41. | *wallaby* | ikapu | gauba |
| 42.B. | *we* | e | sɛ |
| 43.B. | *what* | pauda | poa |

-da in pauda remains unaccounted for.

| 44.B. | *woman, women* | atu | ato(pl.) |

The singular *woman* in Gogodala is susɛgi, which is not
derived from nor related to, ato.

| 45.B. | *you*(s.) | e | ɛ |
| 46.B. | *you*(pl.) | de | dɛ |

2.2.2.  When the sound correspondences found in the above list are
tabulated it becomes clear that regular sound correspondences exist
between Suki and Gogodala.  The most frequent correspondences appear to
be those between the phonetically most similar members of the two sound
systems.  It falls outside the scope of the present paper to attempt a
reconstruction of the Proto Suki-Gogodala sound system.  The list does

not yield enough cases of each correspondence for this purpose.
Correspondences involving Suki /o/ or /s/ are in fact completely lacking.

The sound correspondences occurring in 42 of the 46 pairs of the
list have been set out in the chart below.  Those found in the pairs
no.10., 18., 29., and 41 have not been included.  These pairs represent
the most doubtful cases of shared cognates in the list.

CHART III

SUKI-GOGODALA SOUND CORRESPONDENCES

| Suki | | Gogodala | Total number | Items in which found |
|---|---|---|---|---|
| a | : | a | 22 | 1,2,3,5,9,11,12,13, 20,21,23,25,26,30, 31,32,35,36,44 |
| a | : | o | 1 | 3 |
| a | : | e | 1 | 3 |
| e | : | ε | 7 | 19,34,37,39,42,45,46 |
| e | : | a | 4 | 14,15,27 |
| i | : | i | 10 | 6,8,22,23,27,31,33, 36,37,40 |
| i | : | e | 7 | 4,11,15,17,24,28 |
| i | : | u | 1 | 38 |
| u | : | u | 6 | 3,6,7,21,31,36 |
| u | : | o | 5 | 1,8,16,26,44 |
| u | : | i | 3 | 23,30,34 |
| u | : | a | 2 | 25,28 |
| u | : | e | 1 | 15 |
| - | : | a | 2 | 7,21 |
| p | : | p | 3 | 6,26,43 |
| p | : | b | 2 | 4,30 |
| b | : | b | 3 | 4,16,23 |
| m | : | m | 6 | 1,17,20,37,39 |
| m | : | b | 1 | 38 |
| t | : | t | 7 | 3,5,13,21,28,33,44 |
| t | : | s | 1 | 32 |
| t | : | l | 1 | 6 |
| d | : | d | 3 | 2,25,46 |
| d | : | t | 1 | 5 |
| n | : | n | 6 | 8,9,17,19,36 |
| r | : | l | 3 | 6,15,25 |
| z | : | s | 1 | 12 |

| | | | | |
|---|---|---|---|---|
| k | : | k | 4 | 15,35 |
| k | : | s | 2 | 3,26 |
| g | : | g | 5 | 1,11,22,23,34 |
| g | : | k | 1 | 7 |
| p | : | - | 2 | 1,2 |
| r | : | - | 2 | 1,40 |
| k | : | - | 2 | 31,37 |
| - | : | r | 1 | 15 |
| - | : | s | 2 | 27,42 |

2.2.3. The comparative word list of 170 items, which I originally
compiled, included 108 of Swadesh's basic vocabulary items. Of these,
82 belong to his 100-item list and 26 are supplementary items from his
200-item list. The list of 108 basic items yielded 31 pairs of probable
cognates (those marked 'B' in the list presented above, 2.1.) which
amounts to 28½% cognates. This figure lies just above the lower limit
of family-level relationship (28%), calculated for Swadesh's 200-item
list. However, since most of the 108 items belong to Swadesh's 100-
item list, which has a slightly higher retention rate than his 200-item
list, one may expect the cognation percentage to drop from the family
level to just within the stock level (12%-28%) when the full 200-item
list is used. The cognation percentage will certainly not fall below
the stock level because the 31 pairs of cognates guarantee a minimum of
15½%. Thus, lexicostatistically, Suki and Gogodala appear to share a
stock level relationship.

It should be noted, however, that the cognation percentage may
have been deflated by substantial borrowing between Suki and its western
and southern neighbours. Evidence for this borrowing relation will be
given in the next subsection.

This fact, coupled with the close morphological parallels already
noted, points to the possibility that increased knowledge of the two
languages will force us to classify them as belonging to one family
rather than belonging to one stock.

## 2.3. Wider relationships

2.3.1. In my previous classification of the languages of the CSNG Phylum
I set up Gogodala as a language isolate within the CSNG Stock. The
classification has since been under revision, the main outcome being
that several language families previously included in the CSNG Stock
have been assigned new status as separate stocks within the CSNG Phylum.
They are the former Marind Family, Kiwai Family, Oriomo Family and the
isolates Agob and Tirio. To these, Suki and Gogodala can now be added
as a separate stock, as will be shown by the following chart.

2.3.2.  CHART IV

LEXICAL RELATIONSHIPS BETWEEN SUKI, GOGODALA,
AND OTHER LANGUAGES OF THE CSNG PHYLUM

The first figure gives the cognation percentage, the second figure the
number of word pairs counted.

| | Suki | | Gogodala | | Notes: |
|---|---|---|---|---|---|
| **CSNG STOCK** | | | | | |
| Telefol | 12% | 110 | 12% | 141 | Telefol belongs to the Ok Family; Awin and Pare to the West Strickland Family and Beami to the East Strickland Family (revision of the Middle Strickland Family). |
| Awin | 16% | 108 | 13% | 127 | |
| Pare | 12% | 111 | 14% | 138 | |
| Beami | 13% | 111 | 13% | 125 | |
| **KIWAI STOCK** | | | | | |
| Wabuda | 8% | 110 | 7% | 119 | Wabuda, Island Kiwai, and Turituri all belong to the Kiwai Family. The other member of the stock, Miriam, is not included here. |
| Island Kiwai | – | – | 13% | 138 | |
| Turituri | 9% | 117 | 12% | 124 | |
| Tirio | 12% | 106 | 12% | 133 | |
| **ORIOMO STOCK** | | | | | |
| Gidra | 15% | 112 | 9% | 114 | Gidra, Gizra and Bine form one family, the only member of this stock. |
| Gizra | 10% | 115 | 9% | 122 | |
| Bine | 8% | 120 | 10% | 129 | |
| Agob | 13% | 121 | 12% | 128 | |
| **MOREHEAD RIVER STOCK** | | | | | |
| Parb | 13% | 89 | 9% | 93 | Parb, Keraki and Dorro belong to the Morehead-Wassi Kussa Family; Peremka belongs to the Bensbach-Morehead Family (revision of the Morehead River Family). |
| Keraki | 11% | 97 | 9% | 99 | |
| Dorro | 13% | 97 | 10% | 105 | |
| Peremka | 8% | 94 | 3% | 102 | |
| **MARO RIVER STOCK** | | | | | |
| Kanum | 7% | 120 | 5% | 129 | Kanum and Yey are related on the stock level. |
| Yey | 9% | 121 | 7% | 130 | |
| **MARIND STOCK** | | | | | |
| Zimakani | 20% | 77 | – | – | Zimakani and Boazi belong to the Eastern Family, Bian to the Central Family of the stock (revision of the Marind Family). |
| Boazi | 15% | 75 | – | – | |
| Bian Marind | 14% | 72 | – | – | |

2.3.3.  Even if further study would not reveal any new cognates, most of the percentages guarantee a phylum-level relationship,[10] except for the percentages shared with Wabuda, Peremka, and Kanum, but of these only the percentages shared with Peremka seem too low to reach the phylum level (5%-12%).  The reasons for this drop in cognation level are not clear and require further study.

Suki shares with Awin an unexpectedly high percentage of cognates.  This may reflect secondary historical contacts.  The Awin live on both sides of the upper Fly river, and recently an Awin village has settled on the lower Fly opposite Suki creek.  A similar drift downriver may have happened in the past.  In general, Suki shows higher cognation percentages with the languages of the Trans Fly than does Gogodala, whereas Gogodala shows higher cognation percentages with the Kiwai languages.  These differences may be attributed to mutual borrowing: Gogodala is in direct contact with the Kiwai languages of the Fly and Bamu deltas, Suki with languages of the Trans Fly.  It is known that there were regular trade routes between the Suki area and the south coast, and between Suki and the Marind.[11]  Especially with their western neighbours, the tribe called Ngowugar by Nevermann (1939), the Suki must have had frequent contacts.  Witness the following probable loan-words in Suki:

|  | Ngowugar | Suki |
|---|---|---|
| moon | tae[12] | tai |
| mouth | taroga | tauka |
| coconut | puka | puka |
| ghost | gurnai | gurne |
| sun | kamgo | kamgu |
| good | gabu | gabu |
| crocodile | ageia | agaia |

Ngowugar belongs to the Bensbach-Morehead Family of the Morehead Stock.  Other borrowings from this family in Suki are: *star*: Suki goara, Kundarisa kurr, Kubirikar ker, Yendorador kerre; *breadfruit*: Suki nagu, Peremka neangi.
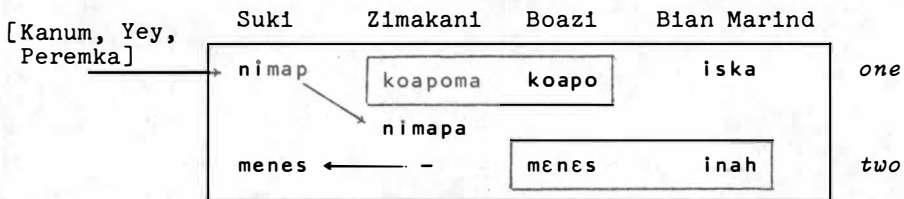
Another possible borrowing from the languages of the Morehead Stock is Suki pib-, found in pibku *body* and pibdu *chest*, which correspond to Parb pibi *body* and to Dorro fifi, Peremka fepe *flesh*.  A possibly corresponding form is also found in Gogodala: obe(s.), obebe(pl.).  The fact that Suki pib- occurs in two former compounds, added to the fact that pib- corresponds to the plural form in Gogodala rather than to the singular (see 2.1., item 4) would then suggest either that the word found its way into Suki-Gogodala before or shortly after their split,

or, that the protoform *pipi or *pepe was original to both stocks.

The Suki word for *water*, nia, has certainly been borrowed from languages in the Mai Kussa-Pahoturi area (Warubi, Mikud, Agob) where it is widespread. From Suki it will have found its way into Zimakani (neia).

Zimakani, like Awin, shows a relatively high percentage of cognates with Suki. Here the cause is clear: Zimakani is the north-western neighbour of Suki and speakers of both languages have been in close contact in the past. In 1924 a Zimakani village was located on the right bank of the Fly river near Suki creek. This village subsequently returned to the Lake Murray area.

A clear case of mutual borrowing between Suki and Zimakani are the numerals *one* and *two*. Suki seems to have borrowed Zimakani mɛnɛs *two*, cognates of which occur in the Eastern and Central Families of the Marind Stock. Zimakani, on the other hand, dropped mɛnɛs and borrowed Suki nimap *one*, changing the meaning to *two* (Zimakani: nimapa *two*). Suki nimap in its turn, may have been borrowed from Suki's south-western neighbours: Yey nampei, Kanum namper, Peremka neambi.

|  | Suki | Zimakani | Boazi | Bian Marind |  |
|---|---|---|---|---|---|
| [Kanum, Yey, Peremka] → | nimap | koapoma koapo |  | iska | *one* |
|  |  | nimapa |  |  |  |
|  | menes ← – | mɛnɛs | inah |  | *two* |

2.3.4. I have dwelt for some length on loan words in Suki to show that even a superficial study of this language reveals quite a number of them. This makes a case for postulating a deflated cognation percentage with Gogodala (see above, 2.2.3.).

On the other hand, the Gogodala seem to have had very few contacts with the outside world from time immemorial.[13] The areas to the west and north of the Gogodala are practically uninhabited. In the east and south their nearest neighbours are speakers of Kiwai languages, but contacts with these have been scarce and only a very few Kiwai loan words occur in Gogodala. I noted the following: gagari *bow*, waduru *bamboo pipe*, sokɛ *dog*, baidamo *shark*, and pere-edi *left hand*.

Concluding one can say that the known facts are not decisive as to the exact relationship between Suki and Gogodala. As a group their position as a separate stock within the CSNG Phylum seems to be certain.

## APPENDIX

### A. A SKETCH OF SUKI PHONOLOGY

The consonant phonemes in Suki are: p, t, k, b, d, g, m, n, s, z, r; the vowel phonemes are: i, e, a, o, u.

*Consonants:*

/p/ a voiceless bilabial stop, unreleased in word-final position: [piᵇdu] *chest*, [llpipiɛ] *wind*, [llɛřkap̚] *earth*, [kɑpsɛ] *hand*.

/b/ a voiced bilabial stop: [budu] *bone*, [abi] *father*. A fricative allophone was noted once, in [abɑp̌kabɪ ~ abɑp̌kabl] *kunai grass*.[14] /b/ contrasts with /p/ in: [pimɛ] *bird* - [bina] *forehead*; [abi] *father* - [apl] *lower part of leg*.

/t/ a voiceless alveodental stop, sometimes slightly aspirated in word-initial position: [tɑmki] *teeth*, [itl] *wing*, [nanlč̌ka] *eating*, [tup̚tupu] *hornbill*, [tʰa] *root*.

/d/ a voiced alveodental stop: [dařu] *man*, [bidi] *a sore*, [umɛdgu] *navel*. /d/ contrasts with /t/ in: [atařu] *give it!* - [adɛřu] *take it!*

/k/ a voiceless velar stop, word-initially sometimes aspirated and alternating with a back-velar allophone when followed by /a/: [kʰɑnka] *tongue*, [kaka, kạkạ] *skin*, [kɛlkřu] *hard*.

/g/ a voiced velar stop, alternating with a fricative allophone when occurring between like vowels: [gigusɛ] *sick*, [tigidɛ, tlɣidɛ] *bamboo*, [atadgu] *shoulder*. /g/ contrasts with /k/ in: [gabu] *good* - [kapu] *meat*; [gi] *speech* - [kiwa] *fireplace*; [řiku] *tree* - [řugi] *come!*

/m/ a voiced bilabial nasal: [mɛm] *this*, [azimu] *sago*, [timku] *belly*, [pɛpmɛ] *foot*.

/n/ a voiced alveolar nasal: [nɛ] *I*, [kualnu] *pig*.

/s/ a voiceless alveolar fricative: [slso] *rat*, [iřsi] *ashes*, [mɛnɛs] *two*.

/z/ a voiced alveolar fricative, in word-initial position alter-
nating with a voiced affricated alveodental stop:[15] [zoagi,
dzoagi] *girl*, [azimu] *sago*. No clear cases of contrast with
/s/ occur in my materials.

/r/ a voiced flap, word-initially alternating with a voiced
lateral allophone: [řiku, liku] *tree*, [řaru] *egg, fruit*,
[ňapřu] *path*.

*Vowels*:

/i/ an unrounded front vowel with allophones ranging from high-
close [i] to mid-close [e]: [ı] *they*, [i:ga] *garden*, [gikɔa]
*cassowary*, [abi, abı, abe] *father*.

/e/[16] an unrounded front vowel with allophones ranging from mid-
opèn [ε] to low-close [æ]: [ε] *you(s.)*, [εiku] *white ant*,
[pimε, pimæ] *bird*, [kapsε, kapsæ] *hand*.

/a/ a low unrounded vowel with allophones ranging from front [a]
to central [ɑ]. Preceding a consonant cluster (except, it
seems, when the second consonant is /r/), or a final consonant,
[ɑ] is found. Elsewhere more fronted allophones occur: [amǔ]
*mother*, [bagu] *leaf*, [sanba] *ribs*, [nimap̌] *one*.

/o/ a rounded mid-back vowel with allophones ranging from close
[o] to open [ɔ]: [mεgodi] *elbow*, [guɔgasε] *thorn*, [siso] *rat*.

/u/ a rounded high-back vowel with allophones ranging from close
[u] to open [ǔ]: [u] *he*, [nǔmka] *old woman*, [atu] *woman*,
[amǔ] *mother*.

In a few instances I noted nasal vowels: [pε̃ĩ] *blood*,[17] [ĩε̃pi]
*younger brother*, [kiã:ga] *cuscus*. However, nasality does not seen to
be distinctive; witness the following cases in which it seems to be
caused by a following nasal consonant or by the dropping of an inter-
vocalic nasal consonant: [kani, kã̃ĩ] *turtle*; [gunı, gũĩ] *urine*; [kuainu]
*pig* - [kuã̃ĩnte kaka] *pig's skin*. Note also that nasalisation in these
cases always involves an /i/ and the vowel next to /i/.

In many instances I noted extra vowel length. In all these cases
the vowel appeared to be stressed. Extra length is especially con-
spicuous in the case of stressed /a/ which can assume the length of a
double vowel. Thus I noted [uáani] *tail*, [kaápsæ, kapsæ] *hand*. I will
regard length as non-distinctive.

*Distribution of the phonemes*

All consonants occur word-initially and word-medially. Word-finally only /p/, /m/, and /s/ are found. The only instance of final /s/ I noted is in the loan word menes *two* (see 2.3.3.).

The vowels /i, e, a, u/ occur word-initially, word-medially and word-finally. /o/ does only occur word-medially and word-finally in my material.

Consonant sequences of up to three consonants occur, but only word-medially. I noted the following sequences: /pt, pk, pm, ps, pr, bd, bk, bm, br, tp, tm, tr, dg, kr, gb, gm, md, mg, mk, nb, np, ng, nk, rb, rg, rk, rs, rn, rm, mkr/.

Vowel sequences of up to three vowels occur. Sequences of two vowels occur word-initially, word-medially, and word-finally; sequences of three vowels I noted only medially and finally. The sequences are: ie, ia, ua, oa, ei, ai, au, ao, ui; uai, oai, aia, aua/.


*Accent*

When the vowels /i, u, o/ occur in sequence with a more open vowel they seldom have an accent. These vowel sequences can be regarded as diphthongs (/ie/ etc.), triphthongs (/uai, oai/) or as sequences of a vowel plus diphthong (/aia, aua/). In the words I recorded, a primary stress falls in most of the cases on the first vowel, diphthong, or triphthong. I could not ascertain whether stress is phonemic or not.


## B. A SKETCH OF GOGODALA PHONOLOGY

The consonant phonemes in Gogodala are: p, t, k, b, d, g, m, n, s, l. The vowel phonemes are: i, e, ɛ, a, o, u.

*Consonants:*

/p/ a voiceless bilabial stop: [pɔsɔ] *tooth*, [sɛpɔ] *meat*.

/b/ a voiced bilabial stop: [bou] *coconut*, [oba] *he*. /b/ and /p/ contrast in: [bɔda] *mud* - [pɔdɔ] *mountain*; [tepa] *time* - [tuba] *thigh*.

/t/ a voiceless alveodental stop: [taɔ] *eye*, [atɔ] *women*.

/d/ a voiced alveodental stop: [dɛ] *you*(pl.), [nido] *drink!* /d/ and /t/ contrast in: [tata] *branches* - [dɛdɛ] *blood*.

/k/ a voiceless velar stop; once, between like vowels, a fricative allophone was noted: [kɑːka] *skin*, [kɑniki, kɑnixinɑ́pa] *new*.

/g/ a voiced velar stop: [gɔsa] *bone*, [dɔgɔ] *forehead*. /g/ and /k/ contrast in: [gɔgɔ] *year* - [kaka] *skin*.

/m/ a voiced bilabial nasal: [mɛma] *this*.

/n/ a voiced alveolar nasal: [nɛ] *I*, [gĕnama] *house*. /n/ and /m/ contrast in: [goana] *belly* - [goama] *again*.

/s/ a voiceless alveolar fricative, in word-initial position alternating with a voiceless affricated alveodental stop: [sɔkɛ] *dog*, [tsegeda:ba] *hornbill*, [kɛisa] *netbag*.

/l/ there are two main allophones: a voiced alveolar flap [ř] and a voiced lateral [l]. Both [ř] and [l] can be retroflex ([ɽ̌], [ḷ]) when contiguous to a back vowel. The flapped and lateral allophones are not mutually exclusive, although they favour different environments. Word-initially [l] and [ḷ] are found almost exclusively; word-medially there is a marked preference for [l] when the immediate environment contains at least one of the front vowels /i/, /e/, and a marked preference for [ř], [ɽ̌], in all other environments. There seems to be a rule of allophone-harmony which prohibits the occurrence of [ř] and [l] within the same word: if /r/ occurs twice, and the first /r/ is [l], then the second /r/ will also be [l] regardless of the vocalic environment.[18] [liga] *jaw*, [ḷuma] *people*, [ila, iřa] *fire*, [delila] *bird of paradise*, [dařa] *men*, [ɔřɔřářéařa] *while it was burning*, [lɔpala] *object*, [gilala] *language*.

**Vowels:**

/i/ a high-close unrounded front vowel: [mi] *chest*, [bibi] *taro*, [i] *tree*.

/e/ a mid-close unrounded front vowel: [sege] *small children*, [ema] *betelnut*.

/ɛ/ a mid-open to low-close unrounded front vowel: [ɛi] *leg*, [pæpæia] *tinea*, [gedɛ] *tomorrow*.

/a/ an unrounded low vowel with allophones ranging from front to central: [ɑi] *sugarcane*, [bɑia] *sago*, [uai]     [gagi] *name*.

/o/ a rounded mid back vowel: [iou] *egg*, [ɔkɔ] *work*, [mɔbe] *elbow*.

*Distribution of the phonemes*

All consonants occur word-initially and word-medially. I did not note any consonant clusters except for two instances of medial /sm/:

ɑsmisi *knee* and ɑsmi- *to begin with.*  Single vowels and sequences of
vowels occur word-initially, word-medially and word-finally.  I found
the following sequences of up to four vowels: /ea, ɛa, ɛi, ai, ae, oa,
ua, uo, ui; aua, aia, eia, eua, ɛua, ouɛ, auɛ, uai, iou; uaua, eiua/.

## Accent

Gogodala has phonemic stress, as is shown by umína *wind,* úmina
*buttress.*  In bi-syllabic words the stress falls generally on the first
syllable, in tri-syllabic words on the second syllable.  Sequences of
/i/, /u/, and a more open vowel can be regarded as diphthongs (/ei, ɛi,
ai, eu, ɛu, au, ou, ua/) or triphthongs (/uai, iou/).

# *N O T E S*

1.  Voorhoeve 1968.

2.  The Suki language is spoken by approximately 1,000 people living in
six villages: Iwewi, Ewe, Guaku, Guibaku, Duru, and Isala.  An early
word list in Suki, compiled in Nausaku village can be found in the Papua
Annual Report of 1919/20.  Nausaku no longer exists; it was situated not
far from the modern village of Isala and was perhaps an earlier settle-
ment of the Isala people.  Williams (1936) gives a few words in Suki and
in Garamudi (= Nausaku); all subsequent linguistic work in Suki has been
done by the Unevangelized Fields Mission, who prepared the texts already
mentioned above.  The Acts of the Apostles and the Gospels of St. Mark
and St. John are the only Suki texts published to date.  Further general
information on the Suki people can be found in Nieuwenhuijsen 1965.

3.  The Gogodala language is spoken by approximately 5,000 people living
in about 30 villages in the area between the north bank of the Fly river
and the northern tributaries of the Aramia river.  As in Suki, linguis-
tic research has been carried out almost solely by the Unevangelized
Fields Mission (UFM) who have written a phonemic statement and grammar
for their own use.  The Mission literature in Gogodala published to date
consists of the Gospels of St. Mark and St. John (1952), the Gospels of
St. Matthew and St. Luke (1958), the Acts of the Apostles (1958), and
the Epistles to the Philippians, Colossians and Philemon (1960).
      Three early word lists from different parts of the Gogodala area
can be found in Riley 1930.  They suggest a dialectal diversity of which
unfortunately nothing is yet known.  A word list, some grammatical notes
and a few short texts were collected by me during a short visit to Balimo
in 1966.
      To date there has been only one first-hand ethnographical account
of the Gogodala people, given by Wirtz (1934).

4.  i.e., the CSNG Stock, consisting of the following families: Asmay-Awyu-Ok, Middle Strickland, Marind, Kiwai, Oriomo, and of four language isolates: Fasu, Gogodala, Agob, and Tirio.  This classification has since been under revision, see below, 2.3.

5.  I have adopted the U.F.M. spelling which uses r for Suki [ř, ɭ] and l for Gogodala [ř, ɭ].

6.  For a survey of the morphological processes and their limitations, see Uhlenbeck 1962, pp.426-32.

7.  The formulae do not pretend to be exhaustive and are only the most general ones, because both in Suki and in Gogodala, verbs which are transitive but lack the transitive suffix occur.  Some of these, more-over, have the person-object marker prefixed to the verb root, see 2.1.1.

8.  There is therefore no ground for classifying Gogodala as B 1(a) and Suki as B 1v (i.e., absence versus presence of 'object incorporation') as has been done by Dr. Capell (1969, pp.70, 92, 139).

9.  Suki -atka/-itka occurs when the subject is 2nd or 3rd person; when the subject is 1st person, -upma/-ipma occurs.

10.  The minimum percentages which give a phylum-level relationship are:

$$
\begin{array}{rl}
\text{for} \ 70 \ \text{words:} & 14.4\% \\
\text{for} \ 80 \ \text{words:} & 12.5\% \\
\text{for} \ 90 \ \text{words:} & 11.1\% \\
\text{for} \ 100 \ \text{words:} & 10\% \\
\text{for} \ 110 \ \text{words:} & 9\% \\
\text{for} \ 120 \ \text{words:} & 8.3\% \\
\text{for} \ 130 \ \text{words:} & 7.7\% \\
\end{array}
$$

11.  Mentioned in the Papua Annual Report 1924/25, p.13.

12.  In the following I shall spell the non-Suki words as I found them in my sources, except for those found in Nevermann which I stripped of their obscure diacritics.

13.  See Wirtz 1934, pp.372, 373.

14.  It is probably this allophone which has been spelled v in the
earlier word lists.  Nausaku list: navanato = /nabane atu/ *my wife;*
William's list: lovroma = /rubruma/ *house-fly.*

15.  Likewise, a voiceless affricate alveodental stop seems to occur as
an allophone of /s/, judging from the Nausaku list which gives iritsi
*ashes,* my own notation being irsi.

16.  Written ae by the U.F.M.

17.  The Nausaku list gives peng.

18.  I did not find any instances of the opposite case, in which [ř]
would determine the occurrence of a following [ř].

BIBLIOGRAPHY

BOELAARS, J.H.M.C.
   1950      *The Linguistic position of South-Western New Guinea.*
             Leiden, Brill.


CAPELL, ARTHUR
   1969      *A Survey of New Guinea languages.*   Sydney University Press.


NEVERMANN, H.
   1939      'Die Kanum-irebe und ihre Nachbarn', *Zeitschrift für*
             *Ethnologie* 71.1, 70.


NIEUWENHUIJSEN, CORRIE en JAN
   1965      'The Suki Area, Fly River Open Electorate.'  in: *The*
             *Papua-New Guinea Elections 1964,* edited by David. G.
             Bettison, Colin A. Hughes, Paul van der Veur: 374-87.
             The Australian National University, Canberra.


PIKE, K.L.
   1947      *Phonemics.*  Ann Arbor.


RILEY, EDWARD BAXTER
   1930-31   'Sixteen vocabularies from the Fly River, Papua.'
             *Anthropos* 25.  173-94, 831-50; 26.171-92.


UHLENBECK, E.M.
   1962      'Limitations of Morphological Processes, Some Preliminary
             Remarks.'  *Lingua XI,* 426-32.


VOORHOEVE, C.L.
   1968      'The Central and South New Guinea Phylum.'  *Pacific*
             *Linguistics,* Series A., Occasional Papers No.16.  1-17.

WILLIAMS, F.E.

    1936     *Papuans of the Trans-Fly.*  Oxford, Clarendon Press.

WIRTZ, PAUL

    1934     'Die Gemeinde der Gogodára.'  *Nova Guinea*, vol.16.
             371-499.