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by C.L. Voorhoeve

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**Languages of the Gulf District: A Preview,**
by K.J. Franklin

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CORRIGENDA

The name of the Phylum appears erroneously as 'South and Central New Guinea Phylum' on pages 3 (1.5. fourth line), 8 (3. title), 16 (map); and as 'South and West New Guinea Phylum' on page 10 (3.3. last line). In all these cases one should read: 'Central and South New Guinea Phylum'.
1. INTRODUCTION

1.0 In this report the writer presents the preliminary results of a lexicostatistical comparison of forty-one languages spoken in the plains of South New Guinea. It appears that some of these languages form a single stock, and that the remaining languages form, with this stock, one large phylum which stretches from Etna Bay in the west to the Papuan Gulf in the east, including a portion of the highlands in the interior of New Guinea and a number of islands in the Torres Straits.

1.1. By the end of 1966 our knowledge of the linguistic situation in the southern lowlands of New Guinea permitted us to distinguish nine groups of languages:

1. The Kamoro-Sempa-Asmat group (Drabbe 1953)
2. The Awyu languages (Drabbe 1959)
3. The Ok family of languages (Healey 1964)
4. The Awin-Pare group (Healey 1964)
5. The Kiwai group (Wurm 1951)
6. The Kunini-Orlomo group (Wurm, oral communication)
7. The Yaqay-Marind-Boazi group (Boelaars 1950)
8. The Frederik-Hendrik Island languages (Drabbe 1949)
9. Yelmek-Maklew (Drabbe 1950)

Whether there existed genetic relationships between these groups was still unknown, and too little was known of the remaining languages to allow any classification.

1.2. During recent fieldwork in the Nomad area between the
Strickland River and the Southern Highlands it became clear to the writer that the languages which he was studying - Samo, Kubo, Bibo and Beami - were related to two mountain languages, Bosavi and Fasu, spoken west of Lake Kutubu near the border of the Southern Highlands. It also appeared that there existed a genetic relationship with the Pare and Awin languages to the west, with the Ok languages to the north-west, and possibly even with languages as remote as Asmat and Kamoro. Consequently this raised the question of the possibility of genetic relationship between the Kamoro-Sempan-Asmat group and the Ok languages.

These observations eventually led to the lexicostatistical study the first results of which are presented below.

1.3. Publishing of results at this stage can have only a limited aim: firstly, to show that genetic relationships indeed appear to exist between a number of languages which hitherto seemed unrelated; secondly, to give a tentative classification of these languages to serve as a starting point for further research.

To this end only the cognition percentages will be given below, and not even an exhaustive list of these, but only those which are needed to illustrate the point. The publication of lexical data and the discussion of the analytical problems will have to wait till further progress has been made.

1.4. The lexicostatistical counts have been made on the basis of a version of Swadesh' 200-item list, adapted to the specific New Guinean circumstances. The critical cognition percentages used in connection with this list are: 81% as the lower limit for dialects belonging to the same language, 28% as minimum percentage of languages belonging to the same family, 12% as minimum percentage of language families belonging to the same stock, and 5% as lower limit for stocks belonging to the same phylum.

For every gloss in the list the whole field of comparable lexical data was examined for probable cognates. The occurrence of regular sound changes was taken into account and proto-forms were constructed where the date permitted it. In this way the writer came to recognise many words as cognates which at first seemed to be unrelated. Many of
the word lists available to the writer did not allow the full 200-item count. In order to make the percentages comparable to percentages obtained from a 200-item count, maximally 1% has to be subtracted for every 10 items counted less than 200. Thus, if two word lists with 130 matching items show 40% shared cognates, the estimated percentage of shared cognates for the same lists, expanded to 200 matching items - the adjusted percentage - is $(40\%-7\%) = 33\%$ or a little more. In the section below three columns of figures will be given; the first shows the number of items counted, the second the percentage of shared cognates for that number, and the third the adjusted percentage. It goes without saying that 'cognates' stands for 'probable cognates' and 'cognition percentage' for 'percentage of probable cognates'.

1.5. In the following sections first a group of languages will be discussed which appear to form one large stock, the South and Central New Guinea Stock. Then a number of languages will be dealt with which can be combined with this stock into one phylum, the South and Central New Guinea Phylum. A list of sources, and references conclude the report.

2. THE SOUTH AND CENTRAL NEW GUINEA STOCK

2.1. Five language families and four isolated languages together form this stock:

- The Asmat-Awyu-Ok Family
- The Yaqay-Marind-Boazi Family
- The Pare-Samo-Beam-Bosavi Family
- The Kiwai Family
- The Oriomo River Family
- Fasu
- Gogodala
- Tirio
- Miriam

2.2. The Asmat-Awyu-Ok Family

This family consists of three major subgroups and one isolated language, Mombum. The subgroups are: Kamoro-
Sempan-Asmat, Awyu and Ok.

The Ok languages, established as a family by Healey (1964) appear to constitute a major subgroup of the much larger Asmat-Awyu-Ok Family, within which they have their closest relationship with Asmat.

Mombum is a border case; its closest relationship is with Asmat. Since it does not show comparably close links with any other language it has been provisionally included in the Asmat-Awyu-Ok Family.

A. Kamoro-Sempan-Asmat

Drabbe (1953) distinguishes six dialects within Kamoro but only in one of these, the Tarya dialect, he published sufficient lexical material to allow lexicostatistical comparisons to be made. Within Asmat five dialects can be distinguished (Drabbe 1963). They all share approximately 90% cognates. The Asmat figures are based on the 'Kawenak' or Central Coastal dialect since this dialect has been most fully described (Drabbe 1959a,b, 1963; Voorhoeve 1965).

*Cognition percentages:*

| Kamoro - Asmat | 152 | 74% (70%) |
| Sempan - Asmat | 200 | 72% (72%) |

B. Awyu

Drabbe (1959c) mentions six dialects: Syiagha, Yenimu, Pisa, Aghu, Kaeti and Wambon. These appear to be six different languages which fall into three groups: Syiagha-Yenimu, Pisa-Aghu, and Kaeti-Wambon.

*Cognition percentages:*

| Syiagha - Yenimu | 135 | 84% (78%) |
| Pisa - Aghu | 136 | 72% (66%) |
| Kaeti - Wambon | 135 | 70% (64%) |
| Syiagha - Pisa | 132 | 60% (54%) |
| Pisa - Kaeti | 137 | 44% (38%) |
| Kaeti - Syiagha | 137 | 37% (31%) |

For further counts Aghu has been selected to represent the subgroup. It seems to be relatively free of borrowings from the surrounding non-Awyu languages.
Since the internal relationships of the Ok languages have been described in detail by Healey (1964) and summarised by Wurm (1965) they will not be dealt with in this report. For the present purpose it should suffice to note that the Ok languages fall into two major groups, Mountain Ok and Lowland Ok. One language of each group has been included in the counts: Téléfol for Mountain Ok and Northern Kati7 for Lowland Ok.

D. Cognition percentages on the Family Level:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asmat</td>
<td>Téléfol</td>
<td>142</td>
<td>46%</td>
</tr>
<tr>
<td>Asmat</td>
<td>Kati</td>
<td>155</td>
<td>33%</td>
</tr>
<tr>
<td>Asmat</td>
<td>Aghu</td>
<td>156</td>
<td>37%</td>
</tr>
<tr>
<td>Asmat</td>
<td>Mombum</td>
<td>156</td>
<td>31%</td>
</tr>
<tr>
<td>Aghu</td>
<td>Kati</td>
<td>155</td>
<td>31%</td>
</tr>
<tr>
<td>Aghu</td>
<td>Téléfol</td>
<td>142</td>
<td>32%</td>
</tr>
</tbody>
</table>

2.2. The Yaqay-Marind-Boazi Family

Four languages belong to this family: Yaqay, North-west or Bian Marind, South-east Marind, and Boazi. Bian Marind, and South-east Marind constitute a subgroup. Boazi hovers on the borderline of family and stock but has been included in the family because it shares with Yaqay and Marind a feature of verb structure which sets them off from the surrounding languages: "The subject-index precedes the base" (Boelaars 1950, p 200).

South-east Marind is spoken in four dialects of which the Gawir dialect, spoken near Merauke, is the best known. This dialect has been used for the lexicostatistical counts.

Cognition percentages:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bian</td>
<td>Gawir</td>
<td>200</td>
<td>67%</td>
</tr>
<tr>
<td>Yaqay</td>
<td>Gawir</td>
<td>200</td>
<td>30%</td>
</tr>
<tr>
<td>Yaqay</td>
<td>Bian</td>
<td>200</td>
<td>30%</td>
</tr>
<tr>
<td>Boazi</td>
<td>Gawir</td>
<td>200</td>
<td>27%</td>
</tr>
<tr>
<td>Boazi</td>
<td>Bian</td>
<td>200</td>
<td>26%</td>
</tr>
<tr>
<td>Boazi</td>
<td>Yaqay</td>
<td>200</td>
<td>21%</td>
</tr>
</tbody>
</table>
2.3. The Pare-Samo-Beam i-Bosavi Family

There are four divisions:
A. Awin-Pare; B. Samo-Kubo-Bibo; C. Beami; and D. Bosavi.

A. Awin-Pare

The writer recorded two word lists of Awin, one each from the villages of Pampenae near Ningerum, and Drimska near Palmer Junction (Fly River). These samples will be referred to as West Awin and East Awin.

The Pare language is reported to consist of five dialects. Of these, the easternmost or Ba dialect is the only one sufficiently studied by the writer to be included in the lexicostatistical comparison.

Cognition percentages:

<table>
<thead>
<tr>
<th></th>
<th>West Awin</th>
<th>East Awin</th>
<th>West Awin - Ba</th>
<th>East Awin - Ba</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82</td>
<td>85%</td>
<td>101</td>
<td>50%</td>
</tr>
</tbody>
</table>

Because of the limited size of the Awin word lists it cannot be clearly established whether West Awin and East Awin constitute dialects or separate languages. The lists have not been used for further counts.

B. Samo-Kubo-Bibo

This group also comprises two other languages, Alibu and Aibe, which seem to be most closely related to Bibo.

Cognition percentages:

<table>
<thead>
<tr>
<th></th>
<th>Samo - Kubo</th>
<th>Samo - Bibo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>160</td>
<td>82%</td>
</tr>
</tbody>
</table>

Cognition percentages on the Family level:

<table>
<thead>
<tr>
<th></th>
<th>Samo - Ba</th>
<th>Samo - Beami</th>
<th>Kubo - Beami</th>
<th>Bibo - Beami</th>
<th>Beami - Bosavi</th>
<th>Beami - Ba</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>153</td>
<td>36%</td>
<td>131</td>
<td>35%</td>
<td>131</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(32%)</td>
<td>(29%)</td>
<td>(29%)</td>
<td>(29%)</td>
<td>(18%)</td>
</tr>
</tbody>
</table>
2.4. **The Kiwai Family**

The Kiwai Family has been well established by Wurm (1951). As with the Ok languages no cognition percentages will be given for the languages within the family. For comparisons with languages outside the family the best known dialect, Island Kiwai of the Southern Kiwai language, has been used.

2.5. **The Oriomo River Family**

Three languages make up this family: Bine (Ray's Kunini), Gidra and Gizra.

*Cognition percentages:*

- **Bine - Gidra** 80 43% 32%

  Approximately the same percentage of cognates is shared by Gizra and Bine, Gizra and Gidra.

2.6. **Cognition Percentages on the Stock Level**

Five more languages enter the comparison at this stage: Fasu, Gogodala, Tirio, Agöb (Ray's Dabu), and Miriam. None of these seems to have lower level relationships with any other language.

- **Asmat - Bia** 155 14% (12%)
- **Kati - Bia** 154 15% (12%)
- **Teléfòl - Bia** 141 16% (12%)
- **Aghu - Bia** 155 19% (15%)
- **Kati - Ba** 148 25% (21%)
- **Teléfòl - Ba** 132 30% (24%)
- **Teléfòl - Samo** 140 28% (23%)
- **Beami - Fasu** 108 20% (12%)
- **Bosavi - Fasu** 64 32% (19%)
- **Ba - Gogodala** 136 19% (14%)
- **Samo - Gogodala** 136 19% (14%)
- **Kiwai - Gogodala** 145 24% (21%)
- **Kiwai - Ba** 142 23% (19%)
- **Kiwai - Samo** 142 21% (17%)
- **Kiwai - Kati** 151 21% (17%)
Kiwai - Teléföl 140 27% (22%)
Kiwai - Bine 151 16% (12%)
Agób - Bine 147 19% (16%)
Miriam - Bine 200 23%
Kiwai - Bine 200 20%
Kiwai - Tirio 200 22%
Kiwai - Miriam 200 27%

3. THE SOUTH AND CENTRAL NEW GUINEA PHYLUM

3.1. To the south a number of languages are found which show phylum-level relationships with the South and Central New Guinea Stock. They can be divided into:

A. The Frederik-Hendrik Island group
B. Yelmek-Maklew
C. Yey-Kanum-Moraori
D. The Morehead River group

A. The languages spoken on Frederik-Hendrik Island are Kimaghama, Riantana and Ndom. They form one family.

*Cognition percentages:*

Kimaghama - Riantana 186 44% (43%)
Riantana - Ndom 184 33% (32%)
Ndom - Kimaghama 184 40% (39%)

B. Yelmek and Maklew, on the eastern side of Marianne Strait also form one family.

*Cognition percentage:*

Yelmek - Maklew 200 58%

C. Yey, Kanum and Moraori, bordering on South-east Marind in the east, seem to form one stock. However, the percentages may be inflated by shared borrowings from South-east Marind.

*Cognition percentages:*

Yey - Kanum 200 17%
Yey - Moraori 200 18%
Kanum - Moraori 200 18%
D. The Morehead River Group corresponds with Ray's Bangu, Sanana and Parb groups (Ray 1923), and with Williams' Morehead-Bensbach and Mai Kussa-Morehead groups (Williams 1936). The divisions within this group are still not clear, but the three wordlists available show three languages forming one family, possibly with two subgroups following the division given by Williams. The lists are from Peremka in the western, Dorro in the central, and Parb in the eastern part of the area.

Cognition percentages:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Peremka - Dorro</td>
<td>118</td>
<td>35%</td>
</tr>
<tr>
<td>Dorro - Parb</td>
<td>80</td>
<td>58%</td>
</tr>
<tr>
<td>Peremka - Parb</td>
<td>86</td>
<td>33%</td>
</tr>
</tbody>
</table>

3.2. Cognition Percentages on the Phylum Level:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kimaghama - Mombum</td>
<td>187</td>
<td>12%</td>
</tr>
<tr>
<td>Kimaghama - Gawir</td>
<td>123</td>
<td>10%</td>
</tr>
<tr>
<td>Yelmek - Yaqay</td>
<td>200</td>
<td>8%</td>
</tr>
<tr>
<td>Yelmek - Gawir</td>
<td>200</td>
<td>9%</td>
</tr>
<tr>
<td>Yey - Gawir</td>
<td>124</td>
<td>14%</td>
</tr>
<tr>
<td>Kanum - Gawir</td>
<td>122</td>
<td>12%</td>
</tr>
<tr>
<td>Moraori - Gawir</td>
<td>124</td>
<td>28%</td>
</tr>
<tr>
<td>Agöb - Parb</td>
<td>105</td>
<td>14%</td>
</tr>
<tr>
<td>Agöb - Dorro</td>
<td>122</td>
<td>14%</td>
</tr>
<tr>
<td>Agöb - Peremka</td>
<td>116</td>
<td>10%</td>
</tr>
<tr>
<td>Kimaghama - Yelmek</td>
<td>190</td>
<td>11%</td>
</tr>
<tr>
<td>Kimaghama - Yey</td>
<td>126</td>
<td>13%</td>
</tr>
<tr>
<td>Kimaghama - Kanum</td>
<td>126</td>
<td>14%</td>
</tr>
<tr>
<td>Kimaghama - Moraori</td>
<td>126</td>
<td>13%</td>
</tr>
<tr>
<td>Kimaghama - Peremka</td>
<td>87</td>
<td>5%</td>
</tr>
<tr>
<td>Kimaghama - Agöb</td>
<td>101</td>
<td>7%</td>
</tr>
<tr>
<td>Kimaghama - Bine</td>
<td>110</td>
<td>8%</td>
</tr>
</tbody>
</table>

3.3. The Goliath Family

To the north, in the highlands east of the Baliem River, the languages of the Goliath Family are spoken. This language family has been established by Bromley (1967); it includes Wanam, Naltje (T-Valley), Korappun (Erok Valley), and
the language of Mount Goliath.

The only lexical data on these languages published so far is the short word list of the Mount Goliath language collected by De Kock (1912).

Healey (1964, p.116) using this list found 10% possible cognates with the Ok languages. Bromley (1967) however denied the existence of a genetic relationship between the Ok and the Goliath languages.

Looking through De Kock's word list the present writer arrived at the following results which fully confirm Healey's findings:

- Number of items compared: 60
- Possible cognates with Telêfôl: 15
- Possible cognates with Kaeti: 12
- Possible cognates with Asmat: 8.

De Kock's word list is too short to allow calculation of meaningful percentages, but the indications of genetic relationship with Telêfôl, Kaeti and Asmat appear to be clear enough to warrant the inclusion of the Mount Goliath language - and consequently, of the Goliath family - in the South and West New Guinea Phylum.

4. LIST OF SOURCES

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>Drabbe</td>
<td>Kimaghama, Riantana, Ndom</td>
</tr>
<tr>
<td>1950</td>
<td>&quot;</td>
<td>Mombum, Yelmek, Maklew</td>
</tr>
<tr>
<td>1953</td>
<td>&quot;</td>
<td>Kamoro, Sempan</td>
</tr>
<tr>
<td>1954</td>
<td>&quot;</td>
<td>Yaqay, Marind, Boazi, Yey, Kanum, Moraori</td>
</tr>
<tr>
<td>1955</td>
<td>&quot;</td>
<td>Marind</td>
</tr>
<tr>
<td>1959a</td>
<td>&quot;</td>
<td>Asmat</td>
</tr>
<tr>
<td>1959b</td>
<td>&quot;</td>
<td>Syiagha, Yenimu, Pisa, Aghu, Kaeti, Wambon, Northern Kati</td>
</tr>
<tr>
<td>1963</td>
<td>&quot;</td>
<td>Asmat</td>
</tr>
<tr>
<td>1964</td>
<td>Healey</td>
<td>Telêfôl</td>
</tr>
<tr>
<td>1912</td>
<td>De Kock</td>
<td>Mt Goliath Language</td>
</tr>
<tr>
<td>1932</td>
<td>Ray</td>
<td>Kiwai</td>
</tr>
<tr>
<td>1930</td>
<td>Riley - Ray</td>
<td>Gogodala, Tirio, Kiwai, Bine (Kunini), Agób (Dabu), Parb, Dorro, Peremka</td>
</tr>
</tbody>
</table>
Summer Institute of Linguistics, Survey word list Fasu, Bosavi

Writer's own data on Asmat, Awin, Ba, Samo, Kubo, Bibo, Beami, Gogodala and Kiwai

Wurm, oral communication Kiwai, Miriam, Tirio, Gidra, Gizra

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1936 *Papuans of the Trans-Fly*. Oxford, At the Clarendon Press.
Wurm, S. A.


NOTES

1. The location of the languages and their groupings are shown on the map added to this report.

2. Drabbe's Dutch spelling of language names has been adapted to the English spelling by replacing j with y.

3. A short word list of a language spoken near Lake Murray (Kuni) was published by Ray (Murray and Ray 1918) who noted the clear lexical relationship which it shows with Gawir Marind. However, to state that "the Marind-Kuni family was first identified by Murray and Ray" (Healey 1964, p.108) seems to the writer a too broad interpretation of Ray's remarks.

Three other languages in the same general area seem to link with Marind: Zimakani, Dea and Suki, but no published material is available to assess their relationships.

4. The need to adapt the Swadesh list to the special conditions encountered in New Guinea has been discussed by Wurm (1960, p.125) and more recently by Bromley (1966).

5. According to Thomas and Healey (1962), who do not mention how they arrived at this figure. Several checks made by the writer on wordlists used for this study confirmed that the maximum subtraction value (SV) is indeed 1%; for the majority of cases the actual value was found to be approximately 1%. Furthermore it has to be noted that the 1% maximum SV does not hold for cognition percentages lower than 20%. For instance, for 10% shared cognates the maximum SV is 1% as can be easily seen: if in the 100-item count 10% cognates is found, the minimum percentage cognates of the 200-item count will be 5%, and not 0%.

6. In the light of information available at present, Gogodala and Tirio may each constitute a small family.
7. Drabbe called this language Kati Ninati.

8. Oral communication from Mr Cochrane, U.F.M. Debepare, and later confirmed by Pare informants.


10. The information concerning the interrelationships of Kiwai, Bine, Tirio and Miriam was kindly supplied to the writer by S.A. Wurm.

11. However, according to S.A. Wurm, Tirio is presumably identical with or closely related to the Mutum language spoken to the south along the Bituri River.

12. Drabbe (1954, p.1) mentions that Moraori - at the time spoken by only 40 people - is heavily influenced by Marind. This accounts for the unexpectedly high cognition percentage even after eliminating the obvious loans.
I. THE ASMAT-AWYU-OK FAMILY
   A. Kamoro-Sempan-Asmat
      1. Kamoro (Tarya)
      2. Asmat (Kawenak)
   B. Awyu
      3. Sylagha
      4. Yenimu
      5. Pisa
      6. Aghu
      7. Kaeti
      8. Wambon
   C. Ok
      9. Northern Katí
      10. Teléfóí
   D. Mombum

II. THE YAQAY-MARIND-BOAZI FAMILY
   11. Yaqay
   12. Bian-Marind
   13. Gawir-Marind
   14. Boazi

III. THE PARE-SAMO-BEAMI-BOSAVI FAMILY
   A. Awin-Pare
      15. West Awin
      16. East Awin
      17. Ba

IV. FASU

V. GOGODALA

VI. TIRIO

VII. THE KIWI FAMILY
     21. Island Kiwai

VIII. MIRIAM

IX. THE ORIOMO RIVER FAMILY
     22. Bine, Gízra
     23. Gídra

X. AGOB

XI. THE MOREHEAD RIVER FAMILY
     24. Parb
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LANGUAGES OF THE GULF DISTRICT:
A PREVIEW

Karl J. Franklin
LANGUAGES OF THE GULF DISTRICT: A PREVIEW

KARL J. FRANKLIN

0. INTRODUCTION

This article outlines and classifies the languages of the Gulf District of Papua. In so doing four previously unreported Families of languages are suggested:

1. The Mikaruan, which extends from Karimui of the Chimbu District south and west as far as the junction of the Sirebi and Kikori Rivers (see Map), and then east to the Purari River.

2. The Kikorian, lying mainly along the Kikori River, but extending westward toward the Turama River area.

3. The Bamu-Turaman, consisting of languages between the middle Turama and Bamu Rivers, and of one language at the mouth of the Turama River.

4. The Kutubuan, comprising at least two languages in the area surrounding Lake Kutubu.

1. PRELIMINARIES

1.1. Historical Summary

Prior to 1951 the Districts in Papua were called Divisions. During 1951 the Central Highlands and Delta Divisions of Papua were abolished and the former Gulf and Delta divisions were amalgamated into a single district known as the Gulf District. Administrative headquarters for the Gulf District was set up at Kerema. In 1966 the Chimbu District was formed, a small part of it from the Gulf District by crossing over the Papua–New Guinea territorial boundary (see Map inset).

The Papuan Gulf has had a long history of contact: linguistic information appeared as early as Bevan (1890), Ray
(1895), Chalmers (1897-8), and Holmes (1913). Two recent surveys, Loukotka (1957) and Capell (1962b), give names and limited information on languages in the Gulf District. Capell lists 19 language names on his map of the district, but several of these are not verified. Loukotka includes certain language groups, as well as language isolates, on his map and amplifies them in text by including all possible dialect names of each language. Neither Capell nor Loukotka give details on how they arrive at their language groups. The language families proposed in this article include several of Loukotka's (1957:44ff): Mikaruan includes his Sesa; Kikorian includes some of his Kasere; several of his isolates are included within other families. Many of his language and dialect names are identified in the legend at the end of this article.

The most recent attempt to summarise linguistic information on Papua is by C. F. and F. M. Voegelin (hereafter referred to collectively as Voegelins) in 1965. Their interpretations of the linguistic situation in the Gulf are frequently in error and have been examined critically in this article.

1.2. Materials and Methods

Linguistic data are primarily from three sources: vocabularies from early Annual Reports of Papua (hereafter, simply AR), or, as Papua was known earlier, British New Guinea; from wordlists collected by members of the Summer Institute of Linguistics (hereafter SIL); and from wordlists collected by Reverend John Cribb of the London Missionary Society (hereafter LMS). Although the AR lists often appear to be phonologically and in other ways defective, for many languages of the Gulf these alone are available for comparison.

The classifications proposed are based solely upon lexical data and may consequently be modified later. The number of lexical items compared between languages is given in square brackets immediately following the shared percentage figure. Percentages are a mean figure between apparent and possible cognates which have been identified by inspection. The term Language Family means that the languages listed as members of the Family generally show a lexical connection above 20%
in the vocabulary tested;\(^5\) dialects show at least a 75% lexical relationship. For the purposes of this article all dialects of one language are assumed to be mutually intelligible, but it is only at this level that mutual intelligibility is considered. Sub-classification, based upon limited intelligibility (Wurm and Laycock 1961) or upon percentage figures (Wurm 1960, after Swadesh) is not attempted, nor, at this stage, thought meaningful.

In certain instances separately published AR vocabularies of the same language do not show the close relationship expected. For example, vocabularies of the Sau language (in the Samberigi valley area, near the common border of the Southern Highlands and Gulf Districts) show less than a 70% relationship with each other. Because there was then no common trade language known throughout the hinterland, bilingual (or multilingual) interpreters assisted the government officers in collecting early AR lists. The interpreters, coupled with other factors such as word taboo and (in cases other than the Sau) the semi-nomadic nature of the people, probably contributed to skew the lexical relationships by widening them. If this is so, even closer relationships between representative members of the Families may be assumed.

2. LANGUAGE GROUPINGS

In the following presentation languages of the District are catalogued according to their postulated Family relationship. Several apparent language isolates are labelled "Unclassified". References in parentheses immediately following language names are to the major sources of data. The languages are designated by numerals, and subscripts to numerals designate dialects. Any name with the suffix -an (or -n) always represents a language Family.

2.1. The Kiwaian Family

Beginning west of the mouth of the Fly River of the Western District and extending east along the Gulf of Papua to the Era Bay is a large number of related languages which Wurm (1951) calls the Kiwai(an), after an island by that name. One area, called the North-Eastern, is within the
Gulf District and is further subdivided into: (a) the Western, with the Turama River and Kerewa-Goari languages, and (b) the Eastern, with the Urama-Iwainu and Era River languages. According to Wurm (1951:7ff) this NE group of Kiwaian contains some strong non-Kiwaian elements, but even so, Kerewa shares a 52% lexical relationship with "the majority" of other Kiwaian languages. The Family as a whole shares a 50-65% lexical relationship between the languages (p.77). The Kiwaian Family languages in the Gulf District on which we have data are:

(1) Kerewo (J. Cribb, LMS) which is spoken in the area from the West bank of the Omati River east and inland to the village of Samoa, near Aird Hills.

(2) Gope (J. Cribb, LMS) apparently spoken from the boundaries of Kerewo east to at least the Wapo River. Gope shows a lexical relationship of between 51-59% [98 words] with Kerewo.

(3) Turama (Brown et al, SIL) is spoken on both banks of the lower reaches of the River by the same name, and may also include the Gama River area.

(3a) Wariadai and (3b) Umaidai (AR, 1923-4) appear to be closely related dialects on the west bank of the Turama River area. Lists in the AR were taken at the villages of Kesumubu and Iosuku. Austen's map (1934) calls the whole area the Turamarubi, meaning people of the Turama River area.

There are reported to be an estimated 5500 speakers in the North-Eastern group of Kiwaian (Wurm, forthcoming).

2.2 The Toaripian Family

One language Family extends from near the Purari River at the west to east of the Miaru River (near the border of the Gulf-Central Districts). Ray (1907:322ff) listed seven languages for this area which he said "are all more or less related to each other". Capell (1962:140ff), on the other hand, lists four names which he says "are all branches of one language, though not mutually intelligible". By comparing the information of Capell and Ray (which was based mainly on Holmes), as well as SIL and AR wordlists, the following languages seem to be well attested:
(1) Toaripi proper (Brown et al., SIL; AR, 1890-1; Holmes 1924) includes the two languages called Moaripi and Lepu, both eastward toward Cape Possession. Lists by Brown et al., SIL, suggest there may be at least three other dialects, each related by at least 75% [50] with Toaripi:

(1a) Kaipi, from the village of Silo; (1b) Opau, inland on a river by the same name and taken from the village of Malakera, near Kerema; and (1c) Peto, west of the Kerema bay. Although the latter two are geographically quite close, they show a number of apparently regular sound changes, e.g. (O)pa θ #k > (P)eto θ #t O b -> P m- O#l > P #n; and O #h > P #f. These three dialects comprise areas referred to as Kerema by Capell, which in turn includes the language areas which Ray called Uaripi and Milarepu.

(2) Elema (Brown et al., SIL; AR 1914-15; 1919-20) extends from the mouth of the Purari River east to the Bairu River. The name Elema is apparently a Motu designation for people in the general Orokolo area (Williams 1940.24ff), but, as mentioned, Williams applies the name to all of the people between Cape Possession and the Purari River. It includes the main villages of Orokolo (see also Williams, 1940) and Vailala, which may also be dialects. The AR list from near Orokolo shows a 65% [35] relationship with Toaripi, while the list taken up the Vailala River at Paku shows only 53% [38]. Compared with each other, the AR lists are cognates in 24 out of the 28 words tested.

2.3. The Angan Family

The Angan or Kukukuku Family of languages centres on the Papua-New Guinea boundary and has up to eleven member languages. Based on Lloyd’s map (SIL, n.d.) three of these languages extend into, or totally lie within, the Gulf District. However, AR reports suggest only one major language consisting of numerous dialects:

(1) Kapau proper (W. and L. Oates, 1968; Brown et al., SIL) extending from the Morobe District well into the Gulf District mainly along the Tauri and Kapau Rivers, but as far inland east to the Lakekamu River (approximately the border of the Gulf and Central Districts). At least three dialects are apparent in the Gulf District: (1a) Lohiki, spoken from the Vailala River north and along the Lohiki River, then
perhaps north and northeast. It shows an 86% [50] relationship with the dialect spoken further east at the Nabo Range - (lb) Mumuro. Lohiki may be what Lloyd tentatively calls Obi. (lc) Oreba (AR, 1918-19) is spoken along a river of the same name which is a northeastern tributary of the Lakekamu. It shows a close relationship with Mumuro (20/22 words), including some easily recognised sound shifts: M #h > #?, M -r- > -t-.

There are undoubtedly many other dialects of Kapau but at present there is no linguistic evidence which suggests more than this one Angan language in the Gulf District.

2.4. The Pawaian Family

Wurm (forthcoming) places Pawaia as a language isolate within the East New Guinea Highlands Phylum. However, there are two known, although closely related, languages in the Family, as well as dialects of the languages. The geographical spread of this Family is immense: from Karimui in the Chimbu District south along the Pie River, and then (probably) south along the Purari to near the Koriki language area. In addition a settlement has been found as far southeast as Pollard's Peak (northwest of Kerema). Based on other observations by Hides, as well as Capell, it seems that the Pawaian have roamed far west into the area mapped for the Mikaruan. According to Hides the names "Pawaia" and "Turoha" were known and feared throughout the Kikori hinterland. Williams (1924), however, does not mention any of the Pawaian names in sketching the boundaries and neighbours of the Koriki tribes. At present there are but two Pawaian languages known:

(1) Pawaia proper (D. Trefry, SIL) is spoken in the Karimui area, south along the Pie, and along the Purari River by some 2000 people.

(2a) Aurama (AR, 1919-20, J. Cribb, LNS) is spoken halfway up the Purari in the present day vicinity of Oroi. It is 70-72% [98;51] related to Pawaia and includes as a dialect (2b) Huaruha at the village of Havoro, at Pollard's Peak. The latter is 84% [56] related to Aurama, but only 60% [35] with Pawaia.
2.5. The Mikaruan Family

Extending from Karimui in the Chimbu District south to the headwaters of the Era River, then west to the junction of the Sirebi and Kikori Rivers, and then finally northwards to the Kerabi valley (near the southeastern border of the Southern Highlands District) is a large but yet undetermined number of related languages and dialects. Relationships within the proposed Family are very tentative:

(1) Mikar (G. MacDonald, SIL) is a language spoken near Karamui and shows a 45% [170] relationship with

(2) Kewah (G. MacDonald, SIL), a language spoken somewhere in the vicinity of the junction of the Tua and Erave (upper Purari) Rivers.

(3a) Polopa (K. Franklin, SIL) is a dialect comprising some 1500 speakers, mainly in the Kerabi valley at the villages of Keba, Kumbirepa, Turibadi, Wopasali, Boro, Pupitau, Sirigi, Sese, and Suani. Polopa shows a 45% [170] relationship with Kewah, but only up to 25% [170] with Mikar, indicating (perhaps) that Kewah is the genetic link between 1 and 3.

(3b) Foraba (AR, 1922-3) is a dialect spoken north of Mt Murray, ten miles or so east of the Polopa area. The AR list shows up to a 75% [70] cognate relationship with Polopa. This, along with the phonetic resemblance of the names, suggest that Polopa and Foraba are dialects.

(4a) Bara (AR, 1919-20) represents the village of Uarli between the Kiko (now Kikori) and Sibi (now Sirebi(?)) Rivers at the headwaters of the Anu Creek. Bara is about 60% [58] related to Polopa (3a), 37% [58] related to Mikar (1), and 86% [76] related to Ro (4b).

(4b) Ro (AR, 1922-3), which is also called Keai or Worugl, and Bara are dialects, Ro is located east-southeast of Mt Murray near the headwaters of the Sirebi River. The AR list is said to represent the villages of Muimani, Suru, and Abasariba. Ro is also closely related to Polopa (55% [66]) and Foroba (50% [85]) and may, with Bara actually constitute a dialect chain from the Kerabi valley area south to the junction of the Sirebi-Kikori Rivers.14

(5) Sesa (AR, 1924-5) is a language spoken in an area on the north bank of the Era River where it is joined by the
Aweri Creek, twelve miles above Maipua. The village where
the list was collected is called Hai-i. Sesa shows up to a
45% [65] relationship with Polopa.

(6) Ibukairu (AR, 1920-1) vocabulary items were collected
at the village of Wiau which is northeast of the Kuro Creek,
off the Kwinic River (creek), i.e. just north of the Sesa
and south of Lake Tebera. Ibukairu may eventually be clas-
sified as a dialect of Sesa in that it shows well over a 50%
[65] relationship with it, as well as up to a 48% [62]
relationship with Polopa.

Another language name known within the area is Harahui
(J. Cribb, personal communication), which is said to be
between the upper Purari and Mt Murray. This name is very
similar to Harahu which Capell (1962) lists on his map as an
unclassified language in the vicinity of Bara. The mobility
of the people, and consequently the shifting of tribal
names, suggest a possible dialect chain for some of the lan-
guages postulated earlier.

Capell (1962b:139) also lists the languages of Mamisu and
Songu in the Lake Tebera area on the basis of informa-
tion from A.P.C. oil expeditions. The former group are said to
reside on island villages in the lake. It is doubtful that
these languages would be very different from Sesa or Ibuk-
airu (5 and 6).

2.6. The Kikorian Family

In general the languages which lie along the southern
banks of the Kikori River, and extending as far westward as
the Turama River, are closely related. The languages and
dialects which are known to exist in this area are:

(1a) Kasere (Brown et al, Austen's map, 1934) appears to
be spoken somewhere around the areas southeast of Kibirowi
Island on the Kikori River. Brown's list (comprising only
50 words) was elicited from a speaker of Sorobo village.

(1b) Kairi (Brown et al) apparently is spoken not far
from Wabi Island on the Kikori River. The speaker was from
the village of Komaio. Kairi shows a 74% [50] relationship
with Kasere.

(2) Barika (AR, 1921-2) vocabulary was taken at a village
called Aso-nu which is (or was) eight miles northeast by
east from the headwaters of the Omati River. **Barika** shows a fairly close relationship with **Kasere** (57% [33]) and may actually be a dialect of **Dugeme** (3a).

(3a) **Dugeme** *(AR, 1923-4)* shows a 66% [62] relationship to **Barika**. The AR list was taken at a village which is also called Sorobo (see **Kasere**), said to be fifteen miles northwest of the headwaters of the Paibuna River.

(3b) **Karima** *(AR, 1919-20)* is also said to be in the area at the headwaters of the Paibuna River and has been included here as a dialect with **Dugeme**, even though it shows only a 70% [63] relationship. **Dugeme** and **Karima** should, when more information is available, turn out to be even more closely related. **Karima** shows only a 44% relationship with **Barika**, compared to 66% for **Dugeme**.

(4) **Kibiri** *(AR, 1917-18)* is also called **Kai-iri** or **Dumu**. It is said to be spoken along several tributaries of the Kikori River: the Veru River, the Momera Creek, and the Sirebi River. The last at least is also reported to be **Bara** *(cf. 2.5., 4a)* territory. **Kibiri** shows the following relationships with languages of the assumed Family: **Kasere** - around 20% [50]; **Kairi** - around 25% [50]; **Barika** - around 18% [110]; with **Kopo-Monia** (see below) - over 50% [50]. Only two or three words show any similarity with **Bara**.

(5) **Kopo-Monia** *(Brown et al.)* is spoken mainly north of the government station of Kikori at the villages of Irimuku, Kabarau, Kopi, Waira, and Tugugi. **Kopo-Monia** shows only a 14% [50] relationship with **Kasere**, but has a chain relationship up the Kikori River similar to **Kibiri** and is therefore included within the Kikorian Family.

### 2.7. The Bamu-Turaman Family

Three languages are included within this Family, none of which show more than a chance relationship with the Kikorian Family, i.e. one or two words:

(1) **Pepeha** *(AR, 1920-1)* is also referred to as the **Eme-Eme** tribe. The AR list was collected two miles southwest of Hibiri on the Paibuna River. According to Austen *(1934.25)*, the **Pepeha** are the same as the **Hei**, who live between the Bamu and Turama Rivers.

(2) **Mahigi** *(AR, 1923-4)* is 37% [95] related to **Pepeha** and
is located around the fork of the Aworra and Bamu Rivers.

(3) Karami (AR, 1917-18) is related to both Pepeha (16% [80]) and Mahigi (15% [80]) about equally. The list is said to represent the villages of Kikimairi and Aduahai on the right hand side of the left branch of the Turama River. It is tentatively included as a member of the Family because other languages which are also assumed members appear to lie between it and Pepeha or Mahigi. These additional but un-recorded languages should demonstrate the relationship of the Family more clearly by serving as a link between Karami on the one hand and Pepeha and Mahigi on the other.

2.8. The Kutubuan Family

Within this Family there are two languages which adjoin or cross over the Southern Highlands District into the Gulf District:

(1) Foi (Rule, UFM; Brown, et al, SIL) is a language spoken east and south of Lake Kutubu. An identical dialect is spoken on the Mubi River which includes three tribes: Mubi, Fimaga and Ifigi (Williams 1940-1:12,13). The Foi are cut off from the Kikori River by rapids on the Mubi (AR 1926-7:35). Although Foi shows little relation to Kasere, the Foi people originally obtained steel axes from such groups along the Kikori River (ibid., p.36). Foi shows a 25% [165] lexical relationship with Fasu.

(2) Fasu (J. May and E. Loeweke, SIL) is spoken west and southwest of Lake Kutubu by several dialects. It appears that the southernmost dialect of Fasu may cross over to the west bank of the Kikori River, east of Mt Bosavi. Voorhoeve (this volume) includes Fasu as a language isolate within his South and Central New Guinea Stock.

May and Loeweke have been told that Fasu speakers (a dialect?) are also located at the headwaters of the Turama River, i.e. south, southeast of Mt Bosavi. Some of the possible wider affinities of Kutubuan are mentioned later.

2.9. Unclassified Language Isolates

Several languages within the Gulf District do not show any lexical relationship with each other or the Families described:
(1) Tate or Tati (Strong, 1911) is spoken at the village of Uriri which is located "on the Cupola, a rocky promontory on the shores of the Papuan Gulf, close to the village of Kerema" (p.178). Strong remarks that in his list of 240 words, fifteen are similar to and probably borrowed from Elema (Toaripian Family). Ray examined Strong's list and appended a total of seventeen apparent borrowings from Melanesian languages to the east.

(2) Mai-hea-ri (AR, 1917-18) is said to lie in the valleys between the Nabo Range and the Albert Mountains. Villages which speak this language are Karauwi, Papikava, and Arowa Hawoiu.

(3) Ipioki (AR, 1925-6; J. Cribb, LMS) shows a very slight relationship with Kibiri. The village where the AR list was collected was a temporary one called Amipoki and the people were semi-nomads at that time living about 30 miles up the Pie or Kapainia River. Cribb's list is from the village of Ipiko, also on the upper Pie River. The two lists show 81% [31] in the few words that it was possible to compare.

(4a) Koriki (Williams, 1924; Brown et al, SIL; J. Cribb, LMS), also commonly called Namau by both Ray (1907) and Holmes (1913), is spoken between the Kapaina Inlet and the Elema language area by about 4000 people. Holmes (1913: 125) says that Namau refers to the Vaimuru tribe in the Era Bay, the Kaimare tribe east of the Pie River, and the Iai tribe inland near the eastern boundary of the delta. Williams (1924:5) lists four tribes and calls them all Purari (=Koriki) speakers: (a) Ukiravi (sometimes called Koriki), (b) Iari, (c) Kaimari, and (d) Baroi. Kaimari includes the villages of (e) Vaimuru and (f) Maipua, of which the latter is probably a separate dialect. Maher (1961:14ff) says that a-f are tribes which speak dialects of a common language.

(4b) Maipua (AR, 1893-4) is probably a close dialect of Koriki (Capell 1962:137). According to Brown et al (unpublished) other villages which speak the same dialect are: Akoma, Apiope, Ara-av, Baimuru, Ikinu, Kinapo, Kaimana, Koravake, and Kairimai.

In 1890 Bevan published a list of 72 words and expressions of a language which he called Evorra after a village
on the Stanhope River (now Pie River) of Port Romilly. Allowing for phonetic discrepancies the list matches that of Williams (1924) and can be classified as a Koriki dialect. Williams (1924) and, more recently, Maher (1961), have given ethnographic summaries of the Koriki area.

(5a) Porome (Brown, et al SIL; J. Cribb, LMS) is spoken in the Aird Hill area and is mentioned by Capell (1962:138) as a language distinct from Dumu or Kiwai. It shows a close 85% [165] relationship with the dialect (5b) Veiru, spoken by villagers at the junction of the Veiru River with the Kikori River.22

3. OTHER POSSIBLE GULF LANGUAGES

There are undoubtedly other languages than the ones outlined in this article that lie within the Gulf District. However, in no instance has a language or dialect been included without some linguistic data to support it. Other linguists and writers have mentioned names which are reported to be separate languages; some of these are even included on maps. In this section a list of these unverified language names is given, followed by, in some cases, a comment on their likely placing:

(1) Harahu (Capell, 1962:139 and on his Gulf District map), and (2) Songu (idem) are supposed to be spoken near Mt Favenc (=Faveng). These would seem to be quite clearly our Sesa and Ibukairu. Capell, however, speaks of Harahu and Songu as "two regions both near Mt Favenc" (p.139). Although both names appear as language designations on his map, it is unclear in the text if the same language is found at both areas, or if both areas speak a different language. Voegelins (1965:40) interpret Capell's remarks as the latter and list Harahu, Songu and also (3) Mamisu as languages. Capell quotes A.P.C. oil explorers as saying Mamisu is spoken on islands of Lake Tebera. If this is so, it is most likely a language of the Mikaruan Family, in that Pawaian languages are east of the Purari or on islands in the Purari. (4) Wailemi, (5) Morigi Island, and (6) Kibene are also on Capell's map as languages in the Gulf District. Kibene is said to have "much vocabulary in common" with other languages of the upper Turama and Paibuna Rivers, "probably
including the Omatic River" (p.138). This would suggest that Kibene is probably in the Bamu-Turaman Family. Morigi Island must be either a Kiwaiian language, and if so a dialect of Turama, or else related to Pepeha. The former is more likely, in that Austen includes Morigi Island as part of the Turamarubi group. The island is located at the mouth of the Turama River. Capell's Waiemi is located inland between the Kikori and Turama Rivers. No other information is given by Capell, but all languages now known in this area belong to the Kikorian Family.

Lloyd of SIL has an Angan language called (7) Ye ripa on their map with a question mark. This and their (8) Obi are in the vicinity of, and probably similar to, the Lohiki dialect of Kapau.

Austen (1934) prepared a map which outlines in great detail names of language groups, language group boundaries, tribe boundaries, tribes and villages. However, very few of the languages other than those in the Kiwaiian Family are mentioned in the text, so that it is impossible to fully interpret the map. The name tribe is of course also ill-defined. It usually refers to some sort of a descent group which may either be localised (as is the case of the various tribes representing the Koriki language), or nomadic (as would be the case of the people around Lake Tebera or along the upper Purari River).

4. WIDER AFFINITIES

Some of the wider possibilities of linguistic affiliation have been mentioned by Voorhoeve (this volume) and Wurm (forthcoming). Voorhoeve's Central and South New Guinea Phylum already includes Kutubuan and Kiwaiian and, depending on the interrelationship of the Kutubu-Kikorian Families, will quite likely include Kikorian. The position of the Bamu-Turaman Family is not as certain but it may also be included realistically within the Phylum.

Wurm, as mentioned, has already included the Mikaruan and Pawaian Families within his East New Guinea Highlands Phylum. He has also included Foi as a language isolate, but this conflicts with our (and Voorhoeve's) evidence that Kutubuan belongs within the CSNG Phylum. It may, however, eventually be linked to Wurm's ENGH Phylum, but through the
West-Central Language Family. There is evidence of a lexical relationship between Kewa in the Southern Highlands District and Fasu. A dialect of Kewa borders Foi which in turn geographically separates Kewa and Fasu. There is also evidence of much culture contact between Foi and Augu, a Mendi dialect of the West-Central Family (Williams 1940-1). It is too early to positively conclude that Fasu or Foi and languages of the West-Central Family are genetically related. It appears, however, that the link of the Kutubuan with the ENGH Phylum should be investigated along this avenue, rather than as language isolates - Fasu in Voorhoeve's CSNG Phylum and Foi in Wurm's ENGH Phylum.

CHART 1, in a very superficial and limited manner, illustrates three words which are common across language Families. Most examples are from the ARs where, in some cases, polymorphic entries are identified with parentheses.

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<td></td>
<td>kuhiru</td>
<td>henia</td>
<td>gahola</td>
</tr>
<tr>
<td>Karami</td>
<td></td>
<td>epegu</td>
<td>koibo</td>
<td>kso</td>
</tr>
<tr>
<td>Ipijoki</td>
<td>Unclassified</td>
<td>uwhino</td>
<td>hinia</td>
<td>gaho</td>
</tr>
<tr>
<td>Fasu</td>
<td>Kutubuan</td>
<td>hi</td>
<td>sikina</td>
<td>kasa</td>
</tr>
<tr>
<td>Foi</td>
<td></td>
<td>i</td>
<td>guru</td>
<td>gesa</td>
</tr>
<tr>
<td>Kaluli(Bosavi)²⁶</td>
<td>CSNG Phylum</td>
<td>siyo</td>
<td>gusuwa</td>
<td>gasa</td>
</tr>
<tr>
<td>Beami</td>
<td></td>
<td>si</td>
<td>wida</td>
<td>weme</td>
</tr>
</tbody>
</table>

²⁶ The number 26 seems to be an error or a reference to a specific context not provided in the text.
5. SUMMARY

There are eight distinct language families and five language isolates within the Gulf District. Three families, the Kiwaian, Angan and Kutubuan, are peripheral to their main areas which lie respectively in the Western, Morobe and Southern Highlands Districts. It is also possible that the southernmost language in the West-Central Family, i.e. Sau (Wurm 1960), overlies the Gulf-Southern Highlands border.

Of the 44 dialects outlined in this article, 29 are classified as individual languages. The aspects of this classification will undoubtedly change after the proposed survey, but the Families outlined here seem well established.

Several of the language Families as well as one language isolate show more remote affinities.

All of the evidence is lexical and the problem of wider and wider classifications, e.g., macro-phylums, and then macro-macro-phylums must be treated with caution. The classification of New Guinean Papuan (Non-Austronesian) languages has already been too extensive and needs more supporting comparative evidence.

6. LEGEND

In this section all Gulf languages or dialects which have been verified, as well as some neighbouring languages of other districts are listed alphabetically, followed in parentheses by the language family of which they are a member. Alternate names and their sources conclude each entry.

AURAMA (Pawaian) Turoha and Uri (Hides 1938); cf. Huaruha
BARA (Mikaruan) Harahui (Cribb, n.d.); Harahu (Capell 1962)
BARIKA (Kikorian)
DIBIASU (Bamu-Turaman(?))
DUGEME (Kikorian)
ERA RIVER (Kiwaian) (Wurm, 1951)
ELEMA (Toaripian) Orokolo (Ray 1892; Williams 1940); Kairu-Kaura (AR 1920-1); Haiera (AR 1914-15); Kaipi (Brown et al, Loukotka 1957); Muru (Loukotka 1957)
FOI (Kutubuan) Kutubu and Mubi River (Williams 1940-1); Foi-i or Mobi River (AR 1926-7)
FORABA (Mikaruan)
GIBARIO (Kiwaian) Goaribari (Ray 1913-14); Kerewa-Goari (Wurm 1951); Baia (Ray 1907)
GOPE (Kiwaian) Era River (Wurm 1951); Paia (Ray 1907)
HUARUHA (Pawaian) Dialect of Aurama
IBUKAIRU (Mikaruan)
IPIKOI (Unclassified) Ipiko (Williams 1924)
KAPAU (Angan) Menyamya; Kukukuku (Voegelins 1965). Includes our Lohiki, Mumuro and Oreba dialects; Inaukina (Loukotka 1957)
KAIIRI (Kikorian) Also Gairi
KAIPU (Kutubuan) Dialect of Fasu
KARAMA (Bamu-Turaman)
KARIMA (Kikorian) Dikima (AR 1926-7); Kibene (Capell 1962). As a Phylum (Voegelins 1965)
KASERE (Kikorian) Waiiemi (Capell 1962); possible dialects: Pimuru, Gorau, Utabi (Loukotka 1957)
KASUA (Kikorian) (?)
KEREMA (Toaripian) Our dialects of Kaipi, Opau (Loukotka 1957) and Petoi; Uaripi (Ray 1907); Milarepu (Ray 1913-1914). Milareipu (Loukotka 1957)
KERIWA (Kiwaian) Kerewa-Goari (Wurm 1951); Baia (Ray 1907); Kerewo (Austen 1934)
KEWAH (Mikaruan) Kewa‘ (Wagner 1967)
KIBIRI (Kikorian) Kai-iri (AR 1917-18); Dumu (Bevan 1890; Capell 1962); Tumu (Ray 1895); Ruruwa (Austen 1934)
KOPO-MONIA (Kikorian)
KORIKI (Unclassified) Evorra (Bevan, 1890), Evora (Loukotka 1957); Kaura (Holmes 1913), Namau (Holmes 1913); Uki rave and Kipaia (Williams 1924); Purari (Williams 1924); Kaimare (Loukotka 1957)
LEPU (cf. TOARIP)I
LOHIKI (Angan) Dialect of Kapau; Obi (?) (Lloyd, n.d.)
MAHIGI (Bamu-Turaman)

MAIPUA (Unclassified) (Loukotka 1957) Vaimuru and Kaimari (Williams 1924); cf. KORIKI

MAI-HEA-RI (Unclassified) Possibly Opau (AR 1922-3)

MAMURO (Angan) Lakekamu (AR 1916-17); Kamaweka (Ray 1907)

MIKARU (Mikaruan) Karimui; Daribi (Wagner 1967)

MILAREIPU (cf. KEREMA)

MOTUMOTU (cf. TOARIPI)

OBI (Angan) Perhaps same as Lohiki

OREBA (Angan) Dialect of Kapau

OROKOLO (cf. VAILALA)

PAWAIA (Pawaian) Sira (Capell 1962)

PEPEHA (Bamu-Turaman) Eme-Eme (AR 1920-1); Hei (Austen 1934); Oberi (Loukotka 1957)

POLOPA (Mikaruan)

POROME (Unclassified)

RO (Mikaruan) Keai or Worugl (AR 1921-2)

SAU (West-Central) Samberigi; Okani or Tugi (AR 1921-2)

SESA (Mikaruan) Mamasu and Songu (Capell 1962)

TATE (Unclassified) Tati; Lorabada or Lou (Brown et al 1961)

TOARIPI (Toaripian) Moaripi (Ray 1907); Lepu (Ray 1913-14); Motumotu (Chalmers 1897)

UARIPI (cf. KEREMA)

UMAIDAIAI (Kiwaian) Turamarubi (Austen 1934). This and Wariadai (below) Turama River (Wurm 1951); Baru (Austen 1934)

URAMA (Kiwaian) Urama-Iwainu (Wurm 1951); Kaa (Ray 1907); Iwainu (AR 1917-18)

VAILALA (Toaripian) Keuru (Ray 1907); this and Orokolo is Elema; Baibala (Loukotka 1957)

WARIADAI (Kiwaian) Perhaps Dabura (Ray 1907) and Morigi Island (Capell 1962)

YERIPA (Angan) (Lloyd n.d.)
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NOTES

1. This preliminary report anticipates a more detailed survey of the Gulf District, proposed for early 1969 and to be carried out by the writer. I am grateful to T.E. Dutton, C.L. Voorhoeve, and S.A. Wurm of the Australian National University for comments on a previous draft of this article.

2. This Family lies almost completely within the Southern Highlands District, but borders on and probably extends into the Gulf District along the upper Kikori River.

3. A bibliography of the Papuan Gulf languages by Ray (1913-14), as well as a map by him (1907), summarises all of such very early language materials.

4. Klieneberger (1957) gives an excellent alphabetical listing of all AR vocabularies, although his language distributions and classifications are at times inconsistent.

5. No attempt has been made to adjust the percentages as if a full 200 items were being compared - as C.L. Voorhoeve does in his article on the Central and South New Guinea Phylum (CSNG Phylum) in an accompanying article of this volume. Earlier Wurm (1960:126) used the percentage figure of between 28% and 81% cognates as depicting a Family relationship. Wurm and Laycock (1961:140) later lowered the figure to 60%, which represents "at least limited mutual intelligibility". This, it seems to me, is much too low: distinct languages with which I am acquainted in the Southern Highlands would be considered dialects.

6. For a summary of Wurm's materials see Capell (1962b. 131ff).

7. Language or dialect boundaries are only suggestive. Cribb (personal communication to SIL) mentions a third Kiwaian "dialect" called Urama. This, with Wurm's Iwainu continue east to the Era River. However, Wurm (1951.2;96)
also mentions the Era River language which he says "shows the same typical features of the north-eastern group as Urama and Iwainu" but has some very atypical vocabulary. He suggests that words from Gogodara and Waruna (in the Western District and perhaps, with Tirio, a Family of the South and Central New Guinea Stock - see Voorhoeve, this volume) may have come into the Era River language. This remark may have prompted the postulation of a Kiwai Phylum (Voegelin 1965:37). Loukotka's comment in Current Anthropology (1962:415) also points in this direction.

8. Williams (1940:25ff) called the population from Cape Possession to the Purari River the Elema and said that the area was divided into "some dozen territorial units which may be called tribes". He said that all of them "speak mutually intelligible dialects". Certainly the linguistic situation has changed very rapidly since Ray's assessment and Toaripi is now the dominant lingua franca for most of the area. Voegelins (1965:41-2) follow Capell and list four distinct languages. Orokolo, Vailala, Kerema, and Toaripi.

9. In 1907 Ray (p.324) stated that Moaripi, consisting of the villages of Jokea, Miaru and Lese had been surplanted by Toaripi. Lepu comprises the area closest to the Melanesian languages of Roro and Mekeo, both in the Central District, although West Mekeo is spoken at the village of Apinaipi, just within the Gulf District and at two villages near the junction of the Kunimaipa and Lakekamu Rivers.

10. R. Lloyd (SIL) confirms the classification of this Family, first postulated by S.A. Wurm (1960). Voegelins (1965:40-1) list seven member languages, but this includes Samberigi, which is in the West Central Family (Southern Highlands), Wantakia and Barua, which are called one language by Lloyd, and (probably) Mumeng, which, if it is Buang-Mangga as Voegelins suggest, is Austronesian (see Hooley 1964:247). Lloyd recently (personal communication) suggests that Langimar is more distantly related to other Angan languages. He also states that Obi and Veriba are distinct Angan languages in the Gulf District.

11. The semi-nomadic nature of the Pawaian may render local information quite misleading; for example, the list taken at
Pollard's Peak may have been from a group temporarily settled in the area. In 1938 Hides reported four main nomadic tribes along the banks of the Purari: the Uri, the Pawaia, the Naiakaia, and the Turoha. Capell (1962:139) says that Pawaia [Pawaia] is spoken by people at Namainina, Keka, Taraha, Sira and Sesa, as well as being understood at Yo, to the east. However, Sesa is clearly in the Mikaruan Family, which is in turn only remotely related to the Pawaian Group. The blank area on the map between the Purari and Vailala Rivers is most likely Pawaian territory.

12. The AR list was collected at a village called Uo-Ho. Orio is near the now extinct village of Uri mentioned by Hides (1938) and marked on early maps.

13. Sau (Samberigi) villages which are eastward understand Polopa. Tiri, Tomo, and Waraga. The Wiru (W-C Family, Wurm 1960) and Polopa have social contact, but neither Wiru nor Sau show more than a remote lexical relationship with Polopa.

14. Interpreters who were used for several of these lists were from the Samberigi Valley (the Sau language), indicating that if a Sau speaker could understand Foroba, i.e. his nearest Mikaruan neighbour to the east, he could also understand other Mikaruan dialects or languages of the area. Apparently government officers asked what other villages spoke the language being collected and these names are usually listed at the top of the lists in the AR. However, it is questionable that Foroba speakers also reside in Dono, Iangorigi, Wariga, Suguburu, and Warerigi, or that some of these are anything more than the Sau words for the areas. South Kewa (Pole) speakers call an isolated sub-dialect of their language in the Kerabi Valley area "Yangori".

15. Voegelin (1965:60) follow Loukotka (1962:415) in postulating a Karima Phylum, despite the fact that they did not know where its member languages were located. As has been shown, the languages are closely related linguistically and are along the Kikori River.

16. Dumu has been perpetuated since Bevan first recorded some words and expressions in 1890 (see, for example, Ray
1907:322, Capell 1962:138; Voegelins 1965:39). Klieneberger (1957:36) correctly lists Dumu and Kibiri as the same language, in that Bevan's short vocabulary and the AR list are almost identical. Part of the confusion is one of language names and naming: Bevan thought Dumu referred to a group of people or a village, but as Beaver has shown (1914:136), the word simply meant 'bush'.

17. Voegelins (1965:12ff) follow Loukotka (1962:415), who speculated wildly when he suggested that Kutubu (Foi), Sesai-ibukairu, Ro-Keai-Bara, Foraba, and Pawaia constitute a Sesa group. Aside from Kutubu and Pawaia, which are related only as possible language isolates in Wurm's ENGH Phylum (Wurm, forthcoming), all other languages are outlined in the Mikaruan Family. There is nothing to support Voegelins' suggestions that "further work may show that languages of the group [Sesa] are members of a family, rather than language isolates" (p.13). Pawaian and Mikaruan show slight relationship (less than 5% [165]) and this is probably simply the result of borrowing.

18. W. and J. Rule of the Unevangelized Field Mission (UFM) have studied Foi for a number of years. Vocabulary has been extracted mainly from their unpublished M.A. theses and then compared with other materials. The area Williams mentions is the upper Mubi (around the present UFM Orokan mission station), but the AR reports refer to the lower Mubi near the Gulf District border at the Kikori River. Voegelins (1965:13) mention 6 dialects of Foi, but 4 of them are simply Williams' villages in the present Orokan area. Voegelins also speak of the dialects of Kutubu and Foi, but Williams says these are the same.

19. In 1961 Brown et al recorded materials from a language which they called Lorabada or Lou from the village of Uriri. This is also the Tate language. Hogbin (1964) includes Tati speakers from Uriri village within the same culture group as the Elema. All reports indicate that Tate speakers also speak Elema.

20. The AR 1922:18-19 describes a tribe called the Opau and shows how it may have originally come from the Purari River area to Pollard's Peak, Keuru, and near Kerema, as well as
spreading north to the Lohiki River. This would be in the area west of the Nabo Range, near where the Mai-hea-ri list was taken. The Opau and Mai-hea-ri could refer to the same group.

21. Not 15,000 people, as reported by Capell (1962:137) and repeated by the Voegelins (1965:40). According to AR (1965-1966) only 18,363 people live in the whole Kikori sub-district. The 4000 figure is estimated by J. Cribb.

22. J. Cribb calls the Porome dialect in this area the Kibiri. To avoid confusion with the Kibiri of the Kikorian Family, Cribb's Kibiri is called Veiru. Apparently it is spoken by the villages of Tipeiowo (formerly Karatiwo, according to Cribb), Doibo, Paile, Koiara, and Babaguina.


24. On the basis of information from J. May of the SIL, a language called Kasua is spoken on the upper reaches of the Kikori River. This language is approximately 15% [165] related to Fasu. Kasua and Kasere appear to be related, so that Kikorian and Kutubuan may be more closely related than now suspected. A language called Dibiasu (AR 1924-5:74) on the upper Bamu (Western District) shows some possible affinity to the Bamu-Turaman Family, as well as with Voorhoeve's Phylum.

25. Dog's teeth were an important item of trade along the Purari River (Williams, 1924). However, Pawaian has different words for dog from those shown in Chart 1.

26. Kaluli and Beami are languages in Voorhoeve's Pare-Samo-Beami-Bosavi Family.

27. These, along with the Naiakaia, are nomadic tribes listed in Hides. The AR 1926-7:36 refers to a "nomadic tribe of Papuan gypsies" on the course of the upper Vailala River and calls them the Nahikai-a. Both groups are probably the same and therefore Pawaian.
28. Capell does not describe this group in detail but I have placed the name as a variant within the area it most likely represents.

29. Not a composite dialect of Akiave, Mikaravi, and Namau - as the AR suggests. Williams (1940:25) calls the whole Toaripian Family area the Elema.

30. Williams (1924:3) also refers to some trading partners of the Koriki people by the name of the Koropenairu. This may be the Ipikoi.

31. A tribe "far up the Kikori", said to be enemies of the Foi. This may be a dialect of the Kasere.

32. Part of this group may not speak Koriki (Holmes 1913:124).

33. If Morigio Islands, Baru, Umaidai, and Wariadai all prove to be closely related, they can collectively be called Morigio.
0. **Introduction**

1. **Division and Multiplication**

2. **Division of Stems**
   2.1. By Stem Type
   2.2. By Transitivity

3. **Simple Verb**
   3.1. Verb Stem
   3.2. Aspect 1
   3.3. Tense
   3.4. Subject
   3.5. Aspect 2
   3.6. Mood

4. **Multiplication of Compounds**
   4.1. By "to be"
   4.2. By "to do"
   4.3. By "to put" or "to go"
   4.4. Extended Multiplication

5. **Equatives**

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0. **INTRODUCTION**

The importance of the verb in Fore\(^1\) should never be underestimated. Always appearing clause-finally, it is the only item obligatory to a clause. Furthermore, whole utterances can be made without the addition of other clause fillers. An example is *wama kanáiyó uwaimítégina kanaakapa kataabukuwe.*\(^2\) These five verbs have the meaning, "When you have gone and told them to come, and then come back, I will take you with me".
Two categories of verb structure occur in Fore, and these we term MEDIAL and FINAL. A Medial Verb always expresses a relationship between itself and a succeeding action, being used to denote sequences such as those signified by the English conjunctions "and, then, when, while, if"; etc. In contrast, the Final Verb described in these pages expresses no such relationship, but is used to close an utterance.

While Medial Verbs form the basis for continuous narrative, the simpler Final Verb is most important to everyday back-and-forth conversation.

1. DIVISION AND MULTIPLICATION

A system of division and multiplication aids explanation of Final Verb structure. The centre of consideration is the SIMPLE Final Verb, which is defined as containing only one verb stem. On one hand the Simple Verb may be divided into classes according to the contrastive features of Stem Type and Transitivity, while on the other it may also be multiplied by "to be", "to do", "to put", or "to go" Compounds.

2. DIVISION OF STEMS

The Stem of a verb is ascertained from Past Tense forms of the Simple Verb. When only obligatory items are present (as described in Section 3), the Stem is that part of the verb preceding the Past Tense morpheme. For example, in watūwe (wa-t'-uw-e') go-past tense-I-indicative) 'I went', wa- is the Verb Stem "to go".

2.1. Division by Stem Type

Stems are divided into four classes according to their final vowel, which is either a-, e-, i- or u-. Each Stem Type has its respective features. Firstly, e- and i- Stems make use of a transitional -y when the following morpheme commences with a vowel. a- and u- Stems do not, but prefer vowel elision or fusion. Secondly, i- and u- Stems cause conditioning of following morphemes which commence with -a, changing this -a to -e. a- and u- Stems do not. Table I outlines this division by Stem Type.
TABLE I
Division of Verbs according to Stem Type, with examples

<table>
<thead>
<tr>
<th>USE OF TRANSITION</th>
<th>CONDITIONING OF (-a:)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(-y:) NOT USED</td>
<td>a- STEMS</td>
<td>u- STEMS${}^5$</td>
</tr>
<tr>
<td></td>
<td>wa- 'to go'</td>
<td>tumu- 'to go down'</td>
</tr>
<tr>
<td></td>
<td>waane 'You go.'</td>
<td>tumene 'You go down.'</td>
</tr>
<tr>
<td>USED</td>
<td>e- STEMS${}^6$</td>
<td>i- STEMS</td>
</tr>
<tr>
<td></td>
<td>mae- 'to get'</td>
<td>i- 'to go up'</td>
</tr>
<tr>
<td></td>
<td>maeyaane 'You get.'</td>
<td>iyene 'You go up.'</td>
</tr>
</tbody>
</table>

2.2. Division by Transitivity

Stems are further classified according to their Transitivity. Here again there are four divisions: Intransitive, and Common, Direct and Indirect Transitives. The three Transitives differ from INTRANSITIVE in their ability to take an optional free-form clause-level Direct Object. Direct and Indirect Transitives contrast with the COMMON TRANSITIVE by taking obligatory internal Pronominal Referents (described in Section 3.1.). DIRECT TRANSITIVE and INDIRECT TRANSITIVE further contrast in that Indirect Transitives are alone able to support an optional clause-level Indirect Object. Table II shows the extended division caused by Transitivity.

(See Table II overleaf.)
TABLE II
Division of Verbs according to Transitivity, in conjunction with Stem Types

<table>
<thead>
<tr>
<th>Transitivity</th>
<th>Stem Type</th>
<th>Verb Stem</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intransitive</td>
<td>a-</td>
<td>wa-</td>
<td>'to go'</td>
</tr>
<tr>
<td>Common Transitive</td>
<td>e-</td>
<td>mae-</td>
<td>'to eat'</td>
</tr>
<tr>
<td>Direct Transitive</td>
<td>i-</td>
<td>ki-</td>
<td>'to get'</td>
</tr>
<tr>
<td>Indirect Transitive</td>
<td>u-</td>
<td>tumu-</td>
<td>'to go up'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pu-</td>
<td>'to do'</td>
</tr>
</tbody>
</table>

3. SIMPLE VERB

The tagmemic formula for the Simple Final Verb, the centre of our consideration, is:

Simple Verb = \[ + \text{Verb Stem} \pm \text{Aspect 1} \pm \text{Tense} \pm \text{Subject} \pm \text{Aspect 2} \pm \text{Mood} \]

in which + indicates an obligatory item and \( \pm \) an optional one.

natáane (na-tá-an-e eat-past-you singular-indicative) 'You ate'

nagaitáampéne (na-gai-tá-ampé-n-e eat-completive-past-you singular-emphasis-indicative) 'You really finished eating'.

3.1. Verb Stem

Stem Types and Transitivity have already been outlined in Sections 2.1. and 2.2., but more needs to be said concerning the place of Pronominal Referents. Intransitive and Common
Transitive Stems present no problems, as these are unadorned. Direct and Indirect Transitive Stems, however, take obligatory Pronominal Referent prefixes. Although it would be quite in order to include these in the Simple Verb formula as a separate item, it seems more reasonable to handle them as part of the Verb Stem because of their peculiar nature: obligatory to some verbs, obligatorily absent from others. Thus as fillers of the Verb Stem slot we have the following:

**Intransitive:** Intransitive stem, **wa-** 'to go'

**Common Transitive:** Common Transitive stem, **na-** 'to eat'

**Direct Transitive:** + Pronominal Referent + Direct Transitive root, **a-ga-** 'it-to see'

**Indirect Transitive:** + Pronominal Referent + Indirect Transitive root, **a-bigá-** 'him-to ask'

With Direct Transitives the Pronominal Referent refers to the optional clause-level Direct Object, while with Indirect Transitives it refers to the optional Indirect Object. In both instances the forms of the Referents are the same. These are set out in Table III.

### TABLE III

**Pronominal Referents for Direct and Indirect Transitive Roots**

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PERSON</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
<td></td>
<td>na-</td>
<td>ka-</td>
<td>a-</td>
</tr>
<tr>
<td><strong>Plural</strong></td>
<td></td>
<td>ta-</td>
<td>ti-</td>
<td>i-</td>
</tr>
<tr>
<td><strong>Dual</strong></td>
<td></td>
<td>tasi-</td>
<td>tisi-</td>
<td>isi-</td>
</tr>
</tbody>
</table>

3.2. **Aspect 1**

This is an optional slot, able to be filled by Compleitive, Intensive, Permissive or Cautionary Aspects.
COMPLETIVE Aspect may be added to give a sense of finality to an action. Allomorphs are: -gása used preceding -y or -a; -gas' before other vowels; -gai' and -ge' preceding other consonants, the former following a- and e- Stems, the latter u- and i- Stems.

nagasányé (na-gasá-#-y'-e eat-completive-present-he-indicative) 'He has finished eating'

INTENSIVE Aspect morpheme -gá is used to give intensity to an action. It is not widely used except in a few verbs, of which the most common is the verb "to do" in its various forms and compounds.

puyaye (pu-gá-#-y'-e do-intensive-present-he-indicative) 'He does very much', or 'He does it intensely'

PERMISSIVE Aspect adds the meaning "should" or "may". It occurs only in Present Tense forms in clause-level Interrogative Mood (explained under Mood - Section 3.6.), and always without Emphasis (Aspect 2 - Section 3.5.). Its morpheme is -s.

nasínó (na-s-#-in-ó eat-permissive-present-you singular-interrogative) 'Should you eat?' or 'May you eat?'

CAUTIONARY Aspect has the morpheme -ís. It is also limited in its usage, being restricted to the Present Tense, without Emphasis. Generally this aspect occurs in conjunction with a'yúgúwé 'It is inadvisable'.

a'yúgu náisíné10 (a yúgú na-íís-#-in-e inadvisable eat-cautionary-present-you singular-indicative) 'It is not good that you eat'

The aspects mentioned do not occur concurrently. There is a possibility, however, of one or two other aspects filling this slot, but they at least can co-occur with Completives. Because of the uncertainty surrounding their analysis, and their limited occurrence, they are treated as part of complete verb stems.

nawáe- 'to eat all' (or na-wáe- 'to eat-all')
maerú- 'to get' (or mae-rú- 'to get-towards??')
3 3. Tense

Four tenses occur in Final Verbs. In general, PRESENT Tense is used to signify any time from the present moment back to and including the previous night; PAST Tense includes any time from yesterday to one or two weeks ago; FAR PAST is used for periods prior to that signified by Past Tense; FUTURE represents any time in the future. A special note is needed regarding Far Past Tense. This often has a "perfect" sense such as in the English phrase "He has arrived". Consequently it is often used in place of a Present Tense.

ibaa miye or ibaa mintiyé (ibaa 'today', mi-#-y-e or mi-nt'- (i)y-e be-present/far past-he-indicative) 'He is there today'

Just occasionally a Past Tense is heard being used in the future, or a Present Tense concerning the past. It is quite probable that the tenses do not line up completely with a temporal definition, but rather have some kind of aspect about them such as Future showing incompleteness, Past completeness and so on. Further study of Fore may yet reveal this.

PRESENT Tense morpheme is -# (a zero morpheme).

nauwe (na-#-uw-e eat-present-I-indicative) 'I eat'

PAST Tense allomorphs are the norm -t', and -tá which is used only when the following morpheme commences with -y or -a.

natúwe na-t'-uw-e eat-past-I-indicative) 'I ate'
natáane na-tá-an-e eat-past-you singular-indicative) 'You ate'.

FAR PAST uses -nt' normally, but -nta12 occurs with Set 2 Subject morphemes which commence with -a (Section 3.4.).

nantúwé (na-nt'-uw-e eat-far past-I-indicative) 'I ate'
nantaampéne na-nta-ampé-n-e eat-far past-you singular-emphasis-indicative) 'You really ate'

FUTURE allomorphs are -k as the norm, -kib when Subject morphemes commence with -a, -e or -i, and -kub when they
commence with -o.

nakuwe (na-k-uw-e eat-future-I-indicative) 'I shall eat'

nakibene (na-kib-an-e eat-future-you singular-indicative) 'You will eat'

nakubóne (na-kub-ô-ne eat-future-I-emphasis-indicative) 'I will really eat'

3.4. Subject

Subject is a fusion of Person and Number. There are three basic sets of Subject morphemes, as displayed in Table IV. SET 1 is considered the norm. SET 2 is used exclusively in conjunction with Emphasis and Improbability Aspects (Aspect 2 - Section 3.5.). Accents on Set 2 morphemes override any caused by Tense morphemes. SET 3 occurs exclusively with Imperative Mood (Section 3.6.).

Some very interesting points concerning these Subject morphemes are brought forward by Pike.14 He explains the possibility of separation of these composites into Person (the initial vowel) and Number (the consonants and following vowels). Broken lines in Table IV show how the vowels separate 1st Persons (introduced by -u and -o) from 2nd and 3rd (-a), and make 3rd Singular a possible separate entity. There seems to be no simple rule for the conditioning of the consonant portions, except that s in Sets 1 and 3 and me in Set 2 designate Dual. Worthy of note, though, is the criss-crossing patterns in Set 1 of w and n, representing Singular and Plural in 1st Person, but reversing to represent Plural and then Singular in 2nd Person. This criss-crossing pattern is again present in Set 2 morphemes in the usage of # and mpe. In all Final Verbs 3rd person forms of Plural and Dual are the same as their 2nd Person counterparts.

Morphemes commencing with -a are subject to conditioning. When they immediately follow u- or i- Verb Stems or Future Tense allomorph -kib, this -a is conditioned to -e. When they follow Permissive Aspect (Aspect 1 slot), the -a is conditioned to -i.

tumene (tumu-#-an-e go down-present-you singular-indicative) 'You go down'

nasinó (na-s-#-an-ô eat-permissive-present-you singular-interrogative) 'Should you eat?'
3rd Person -y is preceded by a transitional -i when following a consonant.

nakiye (na-k-(i)y-e eat-future-he-indicative) 'He will eat'

TABLE IV
Basic Sets of Composite Subject Morphemes

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>SET 1</th>
<th>SET 2</th>
<th>SET 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERSON</td>
<td>PERSON</td>
<td>PERSON</td>
</tr>
<tr>
<td></td>
<td>1st 2nd 3rd</td>
<td>1st 2nd 3rd</td>
<td>2nd</td>
</tr>
<tr>
<td>Singular</td>
<td>-uwi-an-y or -y'</td>
<td>-ó'</td>
<td>-ó'</td>
</tr>
<tr>
<td>Plural</td>
<td>-uni-a-w-a-w</td>
<td>-ompé-á'</td>
<td>-á'</td>
</tr>
<tr>
<td>Dual</td>
<td>-us-a-as-as</td>
<td>-omé-ámé</td>
<td>-ámé</td>
</tr>
</tbody>
</table>

3.5. Aspect 2

This is the second optional slot in the tagmemic formula, and may be filled by Emphasis, or by Improbable or Alternative Aspects.

EMPHASIS may be added by the inclusion of the Emphasis morpheme -n. Its presence necessitates usage of Set 2 Subject morphemes.

náoné (na-#-ó'-n-e eat-present-I-emphasis-indicative) 'I really ate'

IMPROBABLE Aspect morpheme -sin' is usually used in conjunction with a special Medial Verb form to give an Improbable Conditional construction, which will not be handled here. Again only Set 2 Subject morphemes are used.

náosiné (na-#-ó'-sin'-e eat-present-I-improbable-indicative) 'I would have eaten'

ALTERNATIVE Aspect has the allomorphs -bayaaw', -payaaw' and -sabayaaw', and gives an "either... or" construction expressing doubt. This suffix may only be followed by the Indicative Mood morpheme -e, and in this respect parallels
the Questioner word class described in Section 3.6. The w
ending the allomorphs is virtually a Predicative morpheme
(see under Equatives - Section 5), but for simplicity of
analysis here it is included in Alternative Aspect when
associated with verbal forms, and listed as part of this
Aspect 2 filler.

mikubayaawé (mi-k-u-bayaaw'-e be-future-I-alternative-
indicative) 'Will I be there or not?'
mikibempépayaawé (mi-kib-ampé-payaaw'-e be-future-you
singular-emphatic alternative18-indicative) 'Will you
really be there or not?'

It will be noted in the first example that the Number
portion of the Set 1 Subject morpheme appears to be absent.
(This supports Pike's conjecture that Person and Number
could be separated.) Its influence, however, is still there
if not its presence. Where there was a w or y as the Number
portion of the Subject composite, -bayaaw' is the allomorph
used. Where there was an n, -payaaw' is used. Where an s,
-sabayaaw' occurs. Thus there is never confusion in the
mind of the hearer. With Set 2 Subject morphemes (second
example), -payaaw' is always used. This usage shows that an
n was previously present, which in this instance was the
Emphasis morpheme -n. Thus even though Emphasis is not
present segmentally, it certainly is morphophonemically.
This could necessitate a separate tagmemic slot between
Aspect 2 and Mood, or be handled as a limited duplication of
the Aspect 2 slot. It has been mentioned in the morpheme
breakdown here simply as "emphatic alternative". The
phenomena of w causing -b... and n causing -p... are in ac-
cordance with morphophonemic changes as outlined by R. and
R. Nicholson 19 For various reasons s seems to be a more
recent addition to Fore phonemes, and as such does not
conform to the general morphophonemic patterning.

Apart from the peculiarity mentioned, the various aspects
of Aspect 2 slot are not co-occurent, and none appear with
the Imperative Mood.

3.6. Mood

Indicative, Interrogative and Imperative are the moods of
Fore Final Verbs.
INDICATIVE Mood, whose morpheme is -e, is used in narratives and statements.

naana (na-#-an-e eat-present-you singular-indicative) 'You eat'

INTERROGATIVE Mood, morpheme -ó, is used for yes/no questions.

naanó (na-#-an-ó eat-present-you singular-interrogative) 'Are you eating?' or 'Have you eaten?'

Interrogative Mood may also be formed on the clause-level by using a Questioner plus Indicative Mood. (A Questioner is a non-verbal part of speech which asks a question such as 'What?', 'Where to?', 'How?', etc.) When this clause-level construction is used, accent from the Interrogative morpheme -ó remains on the Indicative morpheme -é. Alternatively it could be stated that there are two allomorphs of Interrogative mood, -ó and -é, with -é being used whenever a Questioner is present.

naaná naané (naaná na-#-an-é What? eat-present-you singular-indicative??) 'What are you eating?'

IMPERATIVE Mood, morpheme -ó, is used in commands. Since Imperative Mood occurs only in the Present Tense, takes exclusively Set 3 Subject morphemes, and does not occur in association with Aspect 2 slot, Imperative and Interrogative morphemes can never be confused.

náo (na-#-#-ó eat-present-you singular-imperative) 'Eat!'

4. MULTIPLICATION OF COMPOUNDS

As explained in Section 1, the Simple Verb may be multiplied by various compounding verbs. Although it is common to hear compounds with "to be", or with "to do", or "to put" or "to go", extended multiplication is much less common. The structural system, however, allows for this possibility, and in the right situations many may be elicited.

punatáyaba:mikenabiye (pu-na-tá-yaba:'mi-kena-pu-#-(i)y-e20 do-for me-put-habituative-be-desiderative-do-present-he-indicative) 'He wants to be always doing it for me'
Extended multiplication, with explanation and examples, is handled in Section 4.5. For our purposes each compound will be dealt with separately at first. The tagmemic formula for a single compound is:

\[
\text{Compound} = \ast \text{Verb Stem} \ast \text{Aspect 3} \ast \text{Compounding Verb Stem} \ast \text{Aspect 1} \ast \text{Tense} \ast \text{Subject} \ast \text{Aspect 2} \ast \text{Mood},
\]

in which Aspect 3 depends on which Compounding Verb is used. When Aspect 3 slot is filled by segmental phonemes, Completive Aspect from Aspect 1 slot changes position to precede it. All morphemes following a Compounding Verb Stem are conditioned in accordance with it and not with the original Stem.

4.1 Multiplication by "to be"

When the Compounding Verb is mi- 'to be', the fillers of Aspect 3 slot are -yaba' and -'.

HABITUATIVE Aspect is formed using -yaba', giving the sense of something always occurring.

\[
\text{na-yaba'-mi-#-y-e eat-habituative-be-present-he-indicative) 'He is in the habit of eating', or 'He is always eating'}
\]

Preceding -yaba' the Completive Aspect allomorph is -gasi'. Why it is not -gasá (Section 3.2.) I am not able to explain at present.

CONTINUATIVE Aspect is formed when -yaba' is absent and an accent is used instead. This gives continuation to an action. In this construction the accent falls on the penultimate syllable.

\[
\text{ka-namíye (kana-’-mi-#-y-e come-continuative-be-present-he indicative) 'He is coming', or 'He is in the act of coming'}
\]

4.2 Multiplication by "to do"

The Compounding Verb -pu 'to do' uses the morphemes -kena and -' as its fillers of Aspect 3 slot.

DESIDERATIVE Aspect is formed when -kena is used. This aspect does not occur in the Future Tense, probably because
-kena may be a combination of -k (Future) and -ena (Nominaliser).

nakenabene (na-kena-pu-#-an-e eat-desiderative-do-present-you singular-indicative) 'You desire to eat', or 'You want to eat'

ABILITATIVE Aspect occurs when -kena is absent and an accent instead is present. Again, as with the Continuative Aspect, this accent falls on the penultimate syllable. In both instances this accent is superseded by any caused by Tense and Subject Morphemes.

nabéne (na-’pu-#-an-e eat-abilitative-do-present-you singular-indicative) 'You are able to eat', or 'You know how to eat'

4.3 Multiplication by "to put" or "to go"

Compounds caused by use of the verbs "to put" and "to go" constitute the third multiplication. They are included together in the composite tagmemic formula (mentioned in Section 1 and detailed in 4.4.) for the simple reason that they have never been observed in the same word. No amount of elicitation has been able to produce such a combination, so for the moment it must be assumed that "to put" and "to go" Compounds are mutually exclusive. They are similar in that the only Aspect 3 morpheme they take is an accent.

BENEFAC TIVE Aspect is formed using the Compounding Verb a-ta- 'him/it-to put'. So far, although occurrences of the Benefactive are relatively rare except with the verb pu- 'to do', no consistent limitations of its use have been noted. Accent falls on the Root except when other accents follow, in which event it shifts to the Pronominal Referent.

punatáye (pu-’na-ta-#-y-e do-benefactive-for me-put-present-he-indicative) 'He does it for me'

STATIVE Aspect is formed using wa- 'to go'. Some verbs necessitate usage of a following glottal stop, while others take none, yet there appears to be no consistent ruling. Very few verbs seem able to take this particular compound. Accent falls on the syllable following wa-, and when this syllable is word-final, wa- is also accented.

atisa’wáyé (atisa(·)-’wa-#-y-e break-stative-go-present-it-indicative) 'It is broken'
4.4 Extended Multiplication

A composite tagmemic formula including all compounds is:

Extended Compound = + Verb Stem ± (×Aspect 3
+ "to put" or "to go")
+ (×Aspect 3 + "to do")
+ (×Aspect 3 + "to be")
+ Aspect 1 + Tense + Subject
+ Aspect 2 + Mood,

in which Aspect 3 is restricted to use of the morphemes occurring with their respective Compounding Verbs. Table V gives examples of the compounded combinations observed to date.

**TABLE V**

**Extended Multiplication of Compounds, with examples**

<table>
<thead>
<tr>
<th>&quot;to be&quot;</th>
<th>&quot;to do&quot;</th>
<th>&quot;to put/go&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>be:</td>
<td>do:</td>
<td>put:</td>
</tr>
<tr>
<td>nayaba'miye</td>
<td>nakenabiye</td>
<td>punatáye</td>
</tr>
<tr>
<td>'He is always eating'</td>
<td>'He wants to eat'</td>
<td>'He does it for me'</td>
</tr>
<tr>
<td>be.do:</td>
<td>do.put:</td>
<td>put:</td>
</tr>
<tr>
<td>mayaba'mikenabiye</td>
<td>punatákenabiye</td>
<td>punatáye</td>
</tr>
<tr>
<td>'He wants to be always eating'</td>
<td>'He wants to do it for me'</td>
<td>'He does it for me'</td>
</tr>
<tr>
<td>be.put:</td>
<td>do.go:</td>
<td>go:</td>
</tr>
<tr>
<td>punatayaba'miye</td>
<td>atisa'wakénabiye</td>
<td>atisa'wáye</td>
</tr>
<tr>
<td>'He is always doing it for me'</td>
<td>'It wants to be broken (it will break)'</td>
<td>'It is broken'</td>
</tr>
<tr>
<td>be.do.put:</td>
<td>do.go:</td>
<td>go:</td>
</tr>
<tr>
<td>punatayaba'mikenabiye</td>
<td>atisa'wayábasabá'wakénabiye</td>
<td>atisa'wayába'wáye</td>
</tr>
<tr>
<td>'He wants to be always doing it for me'</td>
<td>'It is always wanting to be broken'</td>
<td>'It is broken'</td>
</tr>
</tbody>
</table>
5. **EQUATIVES**

From one point of view an Equative is not strictly a verb, yet when it appears it has the status of a Final Verb filling the clause-level Action slot. An Equative is a non-verbal item which has been verbalised by the addition of Predicative and Mood morphemes, according to the formula:

\[
\text{Equative} = + \text{Non-verbal Item} + \text{Predicative} + \text{Mood.}
\]

\[
\text{kaasaané (kaasaá'-n-e new-predicative-indicative)} \quad \text{'It is new'}
\]

NON-VERBAL items in this formula may range over any parts of speech (except actual verbs), and include their various optional affixes.

\[
\text{naamápintíwe (naamá-pintí-w-e house-into-predicative-indicative)} \quad \text{'It is in the house'}
\]

PREDICATIVE allomorphs are \(-n\) and \(-w\), and occasionally \(-y\). All Non-Verbs fall into one of three arbitrary classes, each with its own peculiarities. Class I items use \(-w\) as their Predicative allomorph, though occasionally \(-y\) in some words and with some speakers fluctuates with it. Classes II and III use \(-n\). These classes will be fully handled in a Non-Verbal paper dealing with morphophonemics at a later date. They have already been mentioned by R. and R. Nicholson.

MOOD slot may be filled by either Indicative \(-e\) or Interrogative \(-6/-é\) morphemes, but never by Imperatives.

It is probably good to restate the importance of the ACTION slot in Fore. No statement can be made without it. Thus any utterance must include either a Medial or Final Verb or an Equative.
NOTES


2. Orthography used throughout is based on that suggested by R. and R. Nicholson in "Fore Phonemes and Their Interpretation", Oceania Linguistic Monographs, 6, 128-48 (1962). Changes have been made to the stops in that medially the voiced allophones have been written b, r, g, and the voiceless lengthened allophones p, t, k. Glottal stop is written '. Accent (') is a pitch-stress combination as outlined by K.L. Pike and G. Scott in "Pitch Accent and Non-Accented Phrases in Fore (New Guinea)", Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung, 16: 179-89 (1963). I have benefited from some personal consultation by Pike, and also from Ruth Nicholson's "Introductory North Fore Verb Paper", 1961 Workshop Papers, Summer Institute of Linguistics, New Guinea, 151-63 (mimeo). This present analysis has also been made in the Northern dialect.

3. A similar Medial/Final contrast exists in the other languages of this language family. An outline of this in Kanite (Kamano Sub-Family) from the point of view of Dependent and Independent clauses is given by Joy McCarthy in "Clause Chaining in Kanite", Anthropological Linguistics, 7(5): 59-70 (1965).

4. An acute following a morpheme indicates induced accent on the next syllable. Accent associated solely with Verb Stems is that which exists when only unaccented affixes are
present. Where a complex syllable is accented, the acute is marked over the first vowel only.

5. u- Stems followed by a vowel or -y lose the u- of the Stem. When the u- of the Stem is followed by a consonant it fluctuates with i-, with the tendency towards i- except when the vowel following is also u. There are some irregular Verb Stems. a-egú- 'him-to hit' takes transition -y instead of u- loss. kai- 'to remove' becomes kas'- preceding a vowel.

6. e- Stems take -ya as the transition when the following vowel is -a.

7. Stems to fill these vacant boxes have not yet been recorded.

8. In the split root u-...-mú- 'to tell to', the Referent which is normally a prefix becomes an infix. Then in accordance with the general morphophonemics relating to Fore consonants, 2nd Singular ka- changes to ga- and 1st Plural ta- to its voiced equivalent ra-. Further, 3rd Singular a- fuses with the initial u- of the stem to become o-, and initial i of 3rd Plural and Dual forms becomes wai. These changes also occur in Benefactives (where the Referents follow pu- 'to do' - Section 4.3.).

- ugamúwe (u-ka-mú-#-uw-e tell-you singular-tell-present-I-indicative) 'I tell you';
- omúwe (u-a-mú-#-uw-e tell-him-tell-present-I-indicative) 'I tell him'

9. Referents which end in i- take a transitional -y when they precede a Stem commencing with a vowel.

- tiyegúye (ti(y)-egú-#-y-e you plural-hit-present-he-indicative) 'He hits you all'

10. Two consecutive accents occur, but where three consecutive accents would appear, the centre one is lost.

11. This analysis differs slightly from that used by K.L. Pike in "Theoretical Implications of Matrix Permutation in Fore (New Guinea)", Anthropological Linguistics (November 1963). There the vowel of the -tá allomorph was included in the Subject morpheme. The present method accommodates some-
what the Central dialect group where the equivalent to natúwe (na-t'-uw-e) is natáuwé (na-tá'-uw-e) 'I eat'. See G.K. Scott, "The Dialects of Fore", Oceania, 33, 280-6 (1963).

12. This could also be postulated as -nta' or even -ntá', but any inherent accent is overridden by that on Set 2 Subject morphemes.

13. -an 'you singular' is conditioned to -en by the Future Tense marker -kib. This conditioning is outlined in Section 3.4.

14. op. cit.

15. 1st and 3rd Person forms do exist, but only in a medial construction, so have been omitted here.

16. An accent is induced in most Present Tense forms when a preceding accent occurs on the stem or suffixes to which this is directly attached. Limitations to this rule have not been fully explored.

   nagasáyé (na-gasá-#=y'-e eat-completive-present-he-indicative) 'He has finished eating'

17. These fluctuate freely. -í is the shortened form of -amí.

18. Explanation follows below.

19. op. cit., p.132.

20. Morphophonemically p becomes b when preceded by a vowel, in line with k/g and t/r changes mentioned previously.
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