LANGUAGES OF THE FINISTERRE RANGE - NEW GUINEA

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0. INTRODUCTION

During the past decade the linguistic picture for the Territory of Papua and New Guinea has been brought considerably nearer completion. In 1960, S.A. Wurm published his lexicostatistical classification of the Highlands languages and since that time a number of lexicostatistical classifications relating to other parts of the Territory have been completed: Bougainville (Allen and Hurd 1965); the Central District (Dutton 1969, Steinkraus and Pence 1964); the D'Entrecasteaux Islands (Lithgow and Staalsen 1965); the Gulf District (Franklin 1968); the Madang District (Z'graggen 1969); the Morobe District (Hooley and McElhanon 1970, Wilson 1969); New Britain (Chowning 1969); New Ireland (Lithgow and Claassen 1968); the Northern District (Dutton 1969, Wilson 1969); the Sepik area (Healey 1964, Laycock 1965, 1968, Dye, Townsend and Townsend 1968); and the Western District (Healey 1964, Voorhoeve 1968).

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The present paper is the result of preliminary studies toward filling
in yet another gap of the linguistic picture. Hooley and McElhanon
(1968) surveyed the Morobe District languages and noted the existence
of a large group of non-Austronesian (NAN) languages. This group
stretches from Umboi Island in the east through the Huon Peninsula and
along the Finisterre mountain range into the southeastern Madang Dis-
trict. In an addendum to the paper, McElhanon provisionally named the
group the Finisterre-Huon Micro-phylum consisting of two stocks - the
Finisterre Stock and the Huon Stock - and a language isolate on Umboi
Island. Although the eastern boundary of the micro-phylum was known,
the western boundary was indeterminate.

A survey of the Madang District languages by Z'graggen (1969) left
an area of an unknown number of languages in the eastern Ramu Sub-dis-
trict and the Saidor Sub-district. This area lay between the Madang
Phylum as posited by Z'graggen (1969:40-69) and the Finisterre-Huon
Micro-phylum as posited by McElhanon (Hooley and McElhanon 1968). In
order to determine the degree of relationship between these two phyla
Claassen surveyed the languages of the Saidor Sub-district and the
Bogadjim, Kabenau, Naho-Rawa, Dumpu-Kaigulan and Urigina-Kesawai census
divisions of the Ramu Sub-district. This paper constitutes an initial
step towards clarifying the knowledge of the linguistic situation of
that area and provides preliminary remarks regarding the Finisterre
Stock.[1]

The languages discussed in this paper are spoken on either side of
the Saruwaged and Finisterre mountain ranges (see map) stretching from
the area of the Boana Patrol Post near Lae northeasterly into the Madang
District as far as the Kabenau River. Portions of the upper Ramu valley,
the Astrolabe Bay area and the Rai coast are also included. The people
dwell in hamlets and villages of a dozen to 600 inhabitants located on
the mountain slopes below an altitude of 7000 feet and in the valley
flats and coastal areas.

1. CLASSIFICATION

Two of a number of problems confront the field worker who attempts a
lexicostatistical classification of New Guinea languages. The first of
these is the problem of dialect chains; e.g., in A-B-C-D-E, A is mutually
intelligible with B, B with C and so on. Dialects A and D, however, may
be unintelligible. The problem confronting the classifier concerns
drawing the boundary separating dialects A and D which apparently repre-
sent different languages. Although a number of scholars would undoubt-
edly consider all the dialects to represent a single language, the

present writers have divided such dialect chains into separate languages
on the basis of the native speakers' judgments.[2] A related problem con-
cerns the question of language or dialect.[3] It was found that the
borderline between language and dialect as judged by native speakers
generally coincided with 70-75% shared basic vocabulary. Thus when a
lexicostatistical percentage was at the borderline of language and dia-
lect, resort was made to the natives' judgments as well as structural
criteria when it was available.

The basic vocabulary list upon which this study is based consists of
a selection of 139 items from Swadesh's lists of 100 and 215 items
(Swadesh 1955b). In determining probable cognates the writers used
established sound correspondences whenever possible. Otherwise the
"inspection method" as outlined by Gudschinsky (1956) was followed. In
coding the list for computer counting a particular item was numbered
serially throughout the list of languages with identical numbers being
given to items considered as cognate. By so doing, the determination
of cognates was done with a minimum of interruption in the hope of re-
cording consistent decisions. The counting was done at the Australian
National University on an IBM 360/50 computer and the results are
presented in Table 1. The upper right triangle presents the percentage
of shared vocabulary and the lower left triangle presents the number of
items compared.

In classifying the languages the following percentages of shared
vocabulary were generally followed in separating levels: *a.* 75-100%,
dialects of the same language; 28-75%, languages within the same family;
12-28%, families within the same stock; 4-12%, stocks within the same
micro-phylum. Using these percentages as a starting point, a number of
groupings are posited. The languages from the Boana area along both
slopes of the Saruwaged and Finisterre ranges northeast to the Rawa lan-
guage near Dumpu constitute one group of interrelated languages which
is named the Finisterre Stock. This stock of languages, the Huon Stock
and a language isolate on Umboi Island form the Finisterre-Huon Mcro-
phylum. The majority of the remaining non-Austronesian languages in
the upper Ramu area and the western Rai Coast apparently constitute an-
other group of interrelated languages which may be tentatively included
in the Madang Phylum. Lexicostatistical percentages indicate the pos-
sible existence of a single stock, the Rai Coast Stock, which consists
of the Usino, Evapia, Kabenau and Yaganon families. The Bongu, Gusap
and Abaga languages are not classified.

2. THE FINISTERRE STOCK (POP. 46,000)

The Finisterre Stock may be sub-divided into six families of languages

NUMBER OF WORDS COMPARED

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	x	136	136	135	136	136	136	136	136	130	136	136	136	97	68	135	69	99	98	135	136	136	135	136	136	136	136	136
2	83	x	136	135	136	136	136	136	136	130	136	136	136	97	69	135	69	99	99	135	136	136	135	136	136	136	136	136
3	29	32	x	135	136	136	136	136	136	130	136	136	136	97	68	135	69	99	98	135	136	136	135	136	136	136	136	136
4	34	35	63	x	136	136	135	136	136	130	136	136	136	97	69	135	70	99	98	135	136	136	135	136	136	136	136	136
5	31	32	67	76	x	137	136	137	137	131	137	137	137	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
6	31	32	62	69	75	x	136	137	137	131	137	137	137	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
7	26	29	62	58	65	63	x	136	136	130	136	136	136	97	68	135	69	99	98	135	136	136	135	136	136	136	136	136
8	26	29	35	37	34	34	37	x	137	131	137	137	137	98	69	136	70	100	99	137	137	137	136	137	137	137	137	137
9	26	27	26	28	28	28	28	40	x	137	137	137	137	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
10	15	18	21	20	20	21	21	31	34	x	131	131	131	98	69	130	70	100	99	130	131	131	131	130	131	131	131	131
11	21	23	27	25	25	25	26	34	36	58	x	137	137	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
12	16	17	21	20	20	20	20	22	28	37	45	x	137	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
13	20	23	23	22	21	20	22	29	34	34	36	37	x	98	69	136	70	100	99	136	137	137	136	137	137	137	137	137
14	17	20	19	17	17	18	17	19	23	23	25	19	31	x	68	98	69	94	94	97	98	98	97	98	98	98	98	98
15	23	28	26	25	23	25	23	26	32	29	30	25	38	69	x	69	69	67	68	69	69	69	69	69	69	69	69	69
16	20	23	24	23	23	23	22	24	27	27	30	21	32	61	70	x	70	100	99	135	136	136	135	136	136	136	136	136
17	22	25	23	23	21	23	22	26	27	27	24	19	29	48	54	54	x	68	69	69	70	70	70	70	70	70	70	70
18	20	21	19	22	22	22	19	19	24	22	24	18	26	28	34	41	38	x	98	99	100	100	99	100	100	100	100	100
19	23	24	29	31	30	30	28	30	29	22	29	22	27	29	32	38	33	37	x	98	99	99	98	99	99	99	99	99
20	21	21	26	28	27	27	25	31	25	22	26	19	21	29	31	32	36	35	68	x	136	136	135	136	136	136	136	136
21	12	14	17	19	18	19	18	19	16	16	16	16	19	23	20	24	19	23	29	x	137	136	137	137	137	137	137	
22	15	16	19	20	20	19	19	17	15	13	15	13	15	16	23	18	23	16	24	27	35	x	137	137	137	137	137	137
23	18	18	22	23	22	20	20	24	21	18	21	13	18	19	25	21	21	19	30	31	46	31	x	136	136	136	136	136
24	23	25	32	31	31	28	29	36	28	27	31	21	26	21	27	28	29	26	42	43	29	26	42	x	137	137	137	137
25	19	19	23	25	24	23	23	24	20	18	21	15	20	18	23	19	23	20	33	32	34	38	41	41	x	137	137	137
26	18	18	21	25	25	23	23	25	21	19	20	16	19	19	23	21	21	20	32	32	34	33	35	37	55	x	137	137
27	18	20	21	22	23	21	22	22	20	17	19	14	17	17	22	20	21	20	25	28	33	42	26	29	37	42	x	137
28	18	20	21	23	23	23	20	18	16	17	12	15	16	20	18	21	13	20	24	29	35	23	29	31	35	68	x	
29	15	17	20	22	23	21	21	20	18	18	22	16	17	15	25	19	24	18	26	28	24	31	23	29	31	34	51	59
30	16	18	19	22	23	21	21	22	17	18	20	15	17	15	25	18	23	18	22	26	23	27	21	28	28	31	47	49
31	15	16	16	19	20	18	18	17	15	12	13	9	12	14	19	14	19	14	22	23	30	39	23	24	32	36	60	58
32	15	16	18	17	17	17	18	21	23	21	25	25	23	18	23	16	17	17	19	17	15	15	16	19	13	16	17	16
33	12	13	14	14	15	16	13	18	16	17	19	19	21	18	29	16	20	17	21	17	13	15	16	16	15	13	13	14
34	11	11	14	13	13	13	13	15	13	13	16	13	14	12	19	10	15	10	12	10	12	13	15	13	13	11	14	13
35	11	11	12	12	13	13	11	10	12	11	5	8	10	14	20	12	16	11	15	11	11	12	14	13	12	12	14	13
36	11	11	12	12	12	13	11	11	9	13	7	9	15	16	12	14	9	14	12	10	14	11	12	11	11	14	15	
37	13	13	13	14	15	17	15	13	13	11	11	8	8	9	11	8	8	9	11	11	15	19	15	13	15	8	15	15
38	10	9	11	11	10	11	10	11	11	7	8	10	9	8	10	7	9	8	12	9	10	13	10	11	10	10	12	12
39	8	10	11	12	11	11	11	10	9	10	10	8	11	10	16	10	13	9	12	11	9	11	10	11	10	10	8	9
40	10	10	14	14	12	13	12	11	11	12	9	10	10	13	9	11	8	13	13	11	14	11	13	12	11	11	13	
41	10	10	14	13	12	13	13	12	10	9	10	7	10	9	13	9	11	9	12	13	12	14	11	12	11	12	13	13
42	7	7	6	8	8	8	6	8	8	5	4	9	6	9	12	7	7	3	7	5	4	5	5	6	5	6	7	8
43	5	6	7	9	9	8	6	6	5	5	8	8	7	10	9	7	3	7	5	4	5	5	6	4	4	5	8	
44	5	7	6	10	10	9	6	7	7	6	5	7	10	6	9	8	6	4	7	5	5	2	6	5	5	6	4	6
45	5	5	5	6	5	6	5	5	6	7	9	4	10	6	4	4	5	5	3	4	5	7	5	6	3	2		
46	5	6	5	5	5	5	5	4	8	5	6	11	6	12	7	3	3	4	4	4	7	5	6	5	3	3	5	
47	7	8	7	6	6	6	6	7	8	5	5	7	6	5	13	8	7	4	8	7	3	5	7	7	4	3	4	4
48	7	7	5	5	5	5	5	2	7	0	2	2	5	5	7	12	7	7	5	0	5	5	5	5	2	2	2	
49	5	5	4	4	4	4	5	5	4	2	4	2	4	3	4	3	5	4	3	2	3	4	3	5	5			
50	4	6	5	5	6	4	6	6	5	5	4	3	3	4	6	4	7	5	6	4	6	6	4	3	3	4	6	4
51	5	6	6	5	5	5	5	4	6	4	4	4	5	10	7	7	4	6	4	5	6	5	6	5	4	6		
52	7	7	7	7	7	7	5	9	2	3	7	9	6	10	9	6	6	7	5	3	9	7	7	7	3	5	5	
53	8	8	10	10	10	10	10	8	12	4	6	8	6	11	10	8	6	10	8	4	10	10	10	6	6	6		
54	8	8	8	8	8	8	6	10	2	4	6	8	7	11	10	6	7	9	6	4	10	8	8	8	4	6	6	
55	11	11	11	11	9	11	9	6	9	4	6	9	9	11	9	9	11	9	4	6	6	6	4					

PERCENTAGES OF SHARED VOCABULARY   TABLE I

LANGUAGE KEY FOR TABLE 1

Finisterre Stock

1. Komutu	9. Som	17. Saseng	25. Nimi	33. Asat
2. Hamelengan	10. Kewieng	18. Bam	26. Sauk	34. Morafa
3. Kumdauron	11. Nokopo	19. Yagawak	27. Numanggang	35. Gira
4. Worin	12. Domung	20. Irumu	28. Nakama	36. Ngaing
5. Mitmit	13. Nankina	21. Mamaa	29. Nek	37. Neko
6. Mup	14. Awara	22. Uri	30. Nuk	38. Nekgini
7. Sindamon	15. Leron	23. Pinungwan	31. Munkip	39. Ufim
8. Sakam	16. Wantoat	24. Gusan	32. Degenan	40. Nahu
				41. Rawa

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      29   30   31   32   33   34   35   36  37   38   39   40   41   42   43   44   45  46   47  48   49   50   51  52  53  54  55
  1  136  136  136  128  126  126  128  132  46  125  132  131  133  131  130  130  127  95  132  41  130  132  133  56  48  47  45
  2  136  136  136  128  126  126  128  132  46  125  132  131  133  131  130  130  127  95  132  41  130  132  133  56  48  47  45
  3  136  136  136  128  126  126  128  132  46  125  132  131  133  131  130  130  127  95  132  41  130  132  133  56  48  47  45
  4  136  136  136  129  127  126  128  132  47  125  132  132  133  131  130  130  128  96  133  42  130  132  134  57  49  48  46
  5  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
  6  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
  7  136  136  136  128  126  126  128  132  46  125  132  131  133  131  130  130  127  95  132  41  130  132  133  56  48  47  45
  8  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
  9  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 10  131  131  131  124  122  123  124  127  47  120  127  126  128  127  125  126  123  96  127  42  125  127  128  57  49  48  46
 11  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 12  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 13  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 14   98   98   98   95   95   95   94   96  46   94   95   96   96   96   95   95   96  94   90  96   41   95   96  96  54  48  44
 15   69   69   69   68   68   67   66   69  47   67   69   69   69   68   67   68   66  69   42  69   69   69   50  47  46  44
 16  136  136  136  128  126  126  129  132  47  126  132  131  133  131  130  130  128  96  132  42  131  132  133  57  49  48  46
 17   70   70   70   69   69   68   67   70  47   68   70   70   70   69   68   69   68  67   70  42   69   70   70  50  47  46  44
 18  100  100  100   96   96   96   96   99  46   95   97   98   98   98   97   98   96  92   98  41   97   98   98  54  48  45  44
 19   99   99   99   97   97   97   96   99  46   96   97   98   98   98   97   98   96  93   98  41   97   98   98  54  48  45  44
 20  136  136  136  128  126  126  128  132  46  125  132  131  133  131  130  130  127  95  132  41  130  132  133  56  48  47  45
 21  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 22  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 23  136  136  136  128  126  126  128  132  47  125  133  131  133  131  130  130  127  95  132  42  130  132  133  56  49  48  46
 24  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 25  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 26  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 27  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 28  137  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 29    x  137  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 30   59    x  137  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 31   39   36    x  129  127  127  129  133  47  126  133  132  134  132  131  131  128  96  133  42  131  133  134  57  49  48  46
 32   17   17   13    x  126  125  126  128  47  124  127  128  128  128  127  128  125  96  129  42  126  127  129  57  49  48  46
 33   16   13   12   36    x  124  124  126  47  121  125  126  126  126  126  126  124  96  127  42  124  126  127  57  49  48  46
 34   13   11   10   27   34    x  124  124  46  121  125  125  126  126  125  126  123  95  126  42  125  125  126  56  48  47  45
 35   14   11   11   18   16   16    x  128  47  124  127  127  128  128  127  128  125  95  128  42  127  127  128  57  49  48  46
 36   13   11   13   12   18   15   39    x  47  126  131  131  132  131  130  130  127  96  132  42  130  131  132  57  49  48  46
 37   13   13   15   13   17   15   45   62   x   47   47   47   47   47   46   47   47  46   47  42   47   47   47  47  46  46  44
 38   13   12   11   14   16   14   27   46  68    x  124  124  125  125  124  124  122  96  125  42  124  124  125  57  49  48  46
 39    9    7    9    8   14    9   19   25  36   35    x  130  133  130  129  129  126  94  131  42  129  131  132  56  49  48  46
 40   12   11   11    9   13   10   23   28  40   37   70    x  131  130  129  129  127  96  132  42  129  130  132  57  49  48  46
 41   13   13   13    9   13   12   23   27  38   36   57   76    x  131  130  130  127  95  132  42  130  132  133  57  49  48  46
 42    6    7    7    9    9    9    9    9  11   10   10   13   17    x  130  130  128  96  131  42  129  130  131  57  49  48  46
 43    7    7    5    4    6    5    5    8  17    8    8   10   11   48    x  129  126  95  130  42  128  130  130  56  48  47  45
 44    5    6    5    3    5    3    5    7  15    7    6    6    8   35   57    x  126  95  130  42  128  129  130  56  49  47  45
 45    5    5    4    6    5    6    4    4   8    7    9    6    9   19   15   17    x  95  128  42  127  126  128  57  49  48  46
 46    5    3    5    5    6    4    8    7  13    9   13   15   14   16   19   17   26   x   96  41   94   95   96  56  48  47  45
 47    6    5    3    5    5    6    5    4   8    6    8    8   10   11   11   19   25  24    x  42  130  131  133  57  49  48  46
 48    2    2    0    2    7    5    5    5   7    9    9    9   14   12   12   33   24  71    x  42   42   42   42  41  42  40
 49    5    5    5    3    3    3    4    3   8    5    5    7    7    6    6    7   12  17   22  24    x  129  130  57  49  48  46
 50    4    6    6    5    6    6    9    6   8    4    8    7    8    5    5    5    8  13   12   7   14    x  132  56  49  48  46
 51    7    7    5    5    5    6    4    6   6    6    6    6   10    8    9   12   17  23   24  15   11    x   57  49  48  46
 52    5    5    3    5    5    7    5    7   8    7    9    5    5   16   12   12   26  25   30  24   17   14   75   x  48  48  45
 53    8    8    4    8    6   10    6    8   9    6    8    4    6    8    8   18   23  33   29  18   18   49   56   x  45  44
 54    6    6    4    6    6    8    6    6   9    8   12    8    8   10    8   25   23  27   24  15   15   71   77  56   x  45
 55    4    4    6    9    6    2    9    9   7    6   15    9   15   13   13   11   13  16   20  15   20   50   11  18  23  20   x
      29   30   31   32   33   34   35   36  37   38   39   40   41   42   43   44   45  46   47  48   49   50   51  52  53  54  55
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LANGUAGE KEY FOR TABLE 1 (contd.)

Rai Coast Stock

42. Yabong
43. Saep
44. Ganglau
45. Kolom
46. Suroi
47. Lemio
48. Gurumbu

49. Watiwa
50. Usino
51. Sinsauru
52. Koropa
53. Taga
54. Kaikovu
55. Bagasin

and a language isolate. There are no clearly defined borders for most
of these families because of the problem of the languages forming
chains. For most of the languages, the only data available are the
test lists of vocabulary so that not enough structural features of the
individual languages are known for structural criteria to be of use in
clarifying the classification. For the moment, the languages which show
a high lexical relationship to more than one family will be listed with
the family exhibiting the closest lexical relationship.

Table 2 indicates the relationship between member families of the
Finisterre Stock. Column one presents the percentage range of shared
basic vocabulary items in the stock. The remaining columns tabulate
the number of language comparisons indicating a particular percentage of
lexical relationship when the member languages of two given families
were compared. Thus, column two shows that when the seven languages of
the Gusap-Mot Family were compared with the three languages of the
Warup Family, two of the comparisons indicated 8% lexicostatistical
relationship, two indicated 9% relationship, one indicated 10% relation-
ship; there were no relationships at 11% (so indicated by a blank), two
indicated 12% relationship and so on. In this way the degree of rela-
tionship between any two families may be quickly ascertained. For ex-
ample, the Uruwa and Erap families share 13-36% of the basic vocabulary
but the tabulation indicates that most comparisons fall between 18% and
24% shared basic vocabulary.

2.1. *THE GUSAP-MOT FAMILY (POP. 14,000)*

This is the westernmost family in the Finisterre Stock.[4] Except for
the Ufim language in the Morobe District, all members are within the
Madang District. The languages within this family show a range of 19-
76% shared vocabulary. There appear to be three sub-groups within the
family: (1) Gira; (2) Ngaing, Neka, Nekgini; and (3) Nahu, Rawa and
Ufim.

2.1.1. The Gira language is spoken by about 400 people living in an
area along the coast and extending about six miles inland west of Saidor
in the Mot census division. Two dialects, 90% related, are represented
by the villages of Yeimas and Wab. The villages of Nampa and Suang east
of the Nankina River are reported to speak the same language. This lan-
guage appears to be the most divergent of the family with its highest
lexicostatistical relationship at 45% (with Neko) and the lowest at 19%
(with Ufim).

2.1.2. The Ngaing language is spoken by 800-900 people inhabiting the

PERCENTAGES	Gusap-Mot : Warup	Gusap-Mot : Yupna	Gusap-Mot : Uruwa	Gusap-Mot : Wantoat	Gusap-Mot : Erap	Warup : Yupna	Warup : Uruwa	Warup : Wantoat	Warup : Erap	Yupna : Uruwa	Yupna : Wantoat	Yupna : Erap	Uruwa : Wantoat	Uruwa : Erap	Wantoat : Erap
7		1		1											
8	2	5	1	2	2										
9	2	6	1	13	5							1			
10	1	7	8	3	5				3	1					
11		6	15	8	19	1			3			1			
12	2	1	10	6	15	1	2		3			3			
13	3	1	13	7	13	2	4		11		4			1	1
14	3		4	3	10	1	5				1				3
15	2	1	3	2	7	3	1	6	1	5			5	2	
16	3		3			1	2	2	4	1	6		4	3	
17	1					1	3	5	2		1	2	1		
18	2					3		8	4	12	6				
19			1	1		1	2	1	3	3	5	4	8		
20			1		1		1	7	3	2	13	8			
21			2	1		1	5	2	3	2	13	7			
22						4	4	2	6	4	3				
23				1		2		5	11	8					
24			1	1			3	9	8	4					
25			2				4	2	5						
26					3	3	3	1	3						
27					1	3	2	5	1	2					
28				1		1	3								
29					3	3	3	1							
30					1	2	3	2							
31					1	1	1	1	1	1					
32						2	1	1							
33						1									
34			3												
35															
36							1								
37						1	1								
38															
39															
40															
41															
42															1
43															1

TABLE 2: INTER-FAMILY RELATIONSHIPS

hinterland between the Nankina and Mot rivers. The word lists for this
language are from the villages of Amun and Busaka near the eastern
boundary of the language. Reports from Ngaing, Neko, and Nekgini in-
formants indicate the presence of a dialect chain linking the three lan-
guages. A vocabulary list from a more central village would probably
reveal a closer lexical relationship to the Neko and Nekgini languages
than those reported here.

2.1.3. The Neko language is spoken by 200 people in two coastal vil-
lages west of the Mot River. The vocabulary list is from Warai village
near Biliau (Lutheran) mission station.

2.1.4. The Nekgini language is very closely related to the Neko lan-
guage and subsequent study may show these two languages to be dialects
of a single language. The 450 speakers of this language live in five
inland villages west of the Mot River. There are two dialects repre-
sented by the villages of Sorang in the west and Reite in the east,
about 90% related. The relationship of the Neko language to these dia-
lects is about 70%.

2.1.5. The 5,400 speakers of the Nahu language live in villages on
both sides of the Finisterre Range; on the northern slopes along the
headwaters of the Mot and Yangda rivers, and on the southern slopes
along the upper Gusap River. The villages of Yorkia and Matoko on the
northern slopes and the villages of Sewe and Budemu on the southern
slopes represent four dialects about 95% interrelated.

2.1.6. Although the Rawa language is the largest (pop. 6000) in this
family and covers an extensive area, there are only slight dialectal
variations. On the northern slopes the language is spoken in the western
villages of Gur, Bangri and Usau and throughout the tributaries of the
Yaganon River and in the middle Yangda River valley. On the southern
slopes it is spoken along the upper Bura, Lanu, Surinam, and Uria
rivers. The people of the northeasternmost villages of Ramba, Koiaku,
Guti, and Kurei were reported by Rawa informants to speak Rawa and by
Nahu informants to speak Nahu.

2.1.7. The Ufim language (pop. 500) is the southernmost language of
this family and is spoken in a number of villages along the upper Umi
and Ufim rivers in the Morobe District.

2.2. *THE WARUP FAMILY (POP. 1700)*

The Warup language family is located along the Rai coast from Saidor eastward to the Yaut River. Three languages are in the family. Their relationships are: Degenan-Asat, 37%; Asat-Morafa, 34%; Morafa-Degenan, 27%.

2.2.1. The Asat language is spoken by 500 people living on the coastal plain between the Yaut and Warup rivers. Informants stated that the people of Monara and Guiarak villages speak either a divergent dialect of Asat or a different language.

2.2.2. About 300 people in three villages near the mouth of the Warup River are reported to speak the Degenan language. Two villages, Sel and Seure, are said to be composed of speakers of Degenan as well as speakers of the Austronesian language, Moromiranga (see 5.3.). People in the village of Mamgak are said to speak a divergent dialect of Degenan or perhaps a different language.

2.2.3. The extent of the Morafa language remains undetermined. Vocabulary lists from three villages, Baru, Kasu, and Somek, located southeast of Saidor reveal only slight dialectal differences.

2.3. The Dahating language (pop. undetermined) is a language isolate spoken in a number of villages south of Saidor. A vocabulary list of 45 items from the village of Wilwilan indicates the following relationships with the languages of the Warup family: Morafa, 20%; Degenan, 17%; Asat, 15%. Comparison with the languages of the Gusap-Mot Family yields relationships of 9-16%.

2.4. *THE YUPNA FAMILY (POP. 7000)*

Four languages, and probably five, belong to this family. The languages are between 34-58% interrelated and are spoken on the northern slopes of the Finisterre Range on both sides of the Madang-Morobe district boundary.

2.4.1. The Nankina language is spoken by about 1800 people in the upper Nankina River valley.

2.4.2. The Domung language is spoken by about 850 people in a number of villages near Tapen (Lutheran) mission station.

2.4.3. The language spoken at Nokopo village is tentatively classified as a language distinct from that spoken at Kewieng village. There is a

great amount of dialectal variation within the Yupna River valley. Although the lexicostatistical relationship is only 57% a number of informants have said that the villages of upper Yupna valley, including Nokopo and Kewieng, represent a single language. This area, together with the Uruwa area to the east exhibit conditions particularly suitable to a sociolinguistic study.

2.4.4. The Kewieng language (pop. 2300) is reported to be spoken with considerable dialectal variation in eight villages of the upper Yupna valley in the Morobe District.

2.4.5. One other language has been reported to be spoken at the villages of Bonkiman and Wandabong (pop. *c*.500). No word list was obtained but informants stated that the language is similar to the Kewieng language and so it is provisionally included in the Yupna family.

2.5. *THE URUWA FAMILY (POP. 2300)*

The Uruwa basin contains a number of widely scattered villages with small populations. These villages represent a chain of languages and one informant from a central village, who regularly patrolled the area for the administration (D.A.S.F.), stated that the villages in the upper Uruwa represented a single language rather than the five languages reported in this paper. The individual status of these languages needs to be confirmed by further research. The languages share 26-75% of the basic vocabulary.

2.5.1. The Som language is spoken at the village of Gorgiok (pop. 80). Its high lexical relationship of 28-37% with the Yupna languages may be the result of its location on the main trail linking the Yupna and Uruwa valleys. Its lexical relationship with the remaining Uruwa languages varies from 25-40%.

2.5.2. The Sakam language (pop. 400) is the most divergent of the remaining Uruwa languages. It is spoken in three villages, Sakam, Kundem, and Dinabat, in the foothills south of the Som River, and in one village, Kamdarang, south of the Saruwaged Range in the Erap census division.

2.5.3. The remaining languages of the Uruwa basin form a subgroup of five languages sharing between 60-75% of the basic vocabulary. These languages are: Sindamon (pop. 150) spoken south of the Som River; Mup (pop. 100) and Mitmit (pop. 100) spoken in villages of the same names

on the west side of the upper Uruwa valley; Worin (pop. 400) spoken in the villages of Worin, Yawan and Gotet on the east side of the upper Uruwa valley; and Kumdauron (pop. 400) spoken at the villages of Kumdauron, Sapmanga and Boksawin on the east bank of the middle Uruwa River.

2.5.4. The Komutu language is spoken in a number of small villages in the lower Timbe valley and along the coastal ridge. Word lists obtained in Komutu and Hamelengan villages indicate two dialects, 83% related. The people, who number about 500, are gradually being assimilated by the more populous Timbe (10,000) people.

2.5.5. Another language which may be within the Uruwa family is spoken at the villages of Karangi and Weleki in the lower Timbe and Selepet areas. Assimilation of the people by both the Timbe and Selepet peoples is in an advanced stage and word lists collected from the two villages show considerable borrowing from these languages.

2.6. *THE WANTOAT FAMILY (POP. 9500)*

This family of languages stretches from the Leron valley in the west along the southern slopes of the Saruwaged Range to the Irumu valley in the east. The family is dominated by the Wantoat language which represents more than half of the total population. Member languages share 28-70% of the basic vocabulary.

2.6.1. The Awara language is spoken by 900 people in the upper Leron valley. Davis (1967) regards it as a dialect of Wantoat. The lexicostatistical relationship, however, is only 61% and so in this paper it is classed as a separate language. Davis is preparing a dialectal study of his greater Wantoat language and results should be forthcoming.

2.6.2. The Leron language (pop. 500) is spoken in the villages of the middle Leron valley below the Awara villages. The individual status of this language is based on lexicostatistical relationships of 69% with Awara and 70% with Wantoat. Davis also considers this to be a divergent dialect of Wantoat.

2.6.3. The Wantoat language (pop. 5000) is spoken in the villages along the Wantoat River and eastward to the Bam River. Davis (personal communication) reports considerable dialectal variation.

2.6.4. The Bam language, spoken by 600 people living in four villages

along the Bam River, in part of a chain linking the western languages
of the Wantoat Family with those in the Irumu and Erap valleys to the
east.

2.6.5. The Yagawak language (pop. 400), spoken in three villages south
of the Bam language, completes the chain between Wantoat and Irumu with
a relationship of 37% with Bam and 68% with Irumu. Subsequent study
may show it to be a dialect of the Irumu language.

2.6.6. The Saseng language is spoken in the village of Saseng (pop.
200) on the west bank of the lower Leron River.

2.6.7. The Irumu language (pop. 1800), spoken along the headwaters of
the Irumu River, is the easternmost language in the Wantoat Family.
With a lexicostatistical relationship of 43% with the Gusan language of
the Erap Family, it is one of the main links connecting the Wantoat and
Erap families.

2.7. THE ERAP FAMILY (POP. 11,400)

This family stretches across the headwaters of the Busip and Erap
Rivers and along the lower reaches of the Irumu River. The languages
form a chain and share 21-72% of the basic vocabulary list. The four
languages around Boana - Nuk, Nek, Nakama, and Numanggang - form a sub-
group of more closely related languages.

2.7.1. The Mamaa language is spoken in the village of Mamaa (pop. 200)
on the east bank of the lower Irumu River. With the exception of the
Finungwan language, this language shows no lexicostatistical relation-
ship greater than 35% with the other languages in the family. The 46%
relationship with Finungwan may reflect borrowings since the people are
being assimilated by the Finungwan people and most of them are bi-
lingual.

2.7.2. The Finungwan language is spoken by 400 people living along the
ridge separating the Irumu and Erap river basins.

2.7.3. The Gusan language (pop. 800) includes a number of villages in
the headwaters of the Erap River. Informants from various villages in-
dicate that there is some dialectal variation.

2.7.4. The Sauk language (pop. 300) is spoken near the airstrip at
Kisengan in the eastern Erap river basin.

2.7.5. The Nimi language (pop. 1400) of the central Erap basin appears to have substantial dialectal variation among its several villages.

2.7.6. The Uri language (pop. 2100) has two dialects; a small eastern dialect spoken in the villages of Fi, Tinibi and Torowa in the central Erap and a larger dialect of several villages between the Erap and Irumu rivers.

2.7.7. The village of Munkip (pop. 100) on the east bank of the lower Erap village speaks a distinct language. Its apparently close relation-ship with the Numanggang and Nakama languages north of it may be due to contact since Munkip village is located on the main trail leading from the Markham valley (and the port of Lae) into the hinterland.

2.7.8. The Numanggang language (pop. 2200) is spoken in several vil-lages along the mountain ridge separating the Busip and Erap river val-leys. There are two dialects, 87% related. This language and three other languages, Nakama, Nek and Nuk, constitute a sub-group of lan-guages sharing 46-72% of the basic vocabulary.

2.7.9. The Nakama language is spoken by 900 people directly west of the Boana patrol post. There are two dialects - northern and southern - which are 87% related.

2.7.10. The Nek language is spoken by 1300 people north of Boana. A western dialect is 96% related to an eastern dialect. Many of the adults are bilingual in the Nuk language which is about 60% related.

2.7.11. The easternmost language in this family is Nuk which is spoken by 1800 people living east of Boana. There is little dialectal varia-tion.

3. THE RAI COAST STOCK (POP. OVER 8300)

This stock includes four families, one of which, the Usino Family, is included by Z'graggen (1969:61) within the Madang Phylum. A number of the more stable vocabulary items of the Mobusu Stock of that phylum are also regular throughout most of the languages of the proposed Rai Coast Stock. These items are: the pronouns *'I'*, *'thou'*, *'he'*, *'we'*, and the words for *'breast'*, *'ear'*, *'elder brother'*, *'eye'*, *'fat'*, *'louse'*, *'moon'*, *'name'*, *'sun'*, *'tongue'*, *'tooth'*, *'two'* and *'water'*. Z'graggen is planning to collect further data in the languages of the

Rai Coast Stock and then compare these typologically with the Mobusu Stock.

The languages of the Rai Coast stock appear to be quite hetero-geneous, particularly with regard to the basic vocabulary.[5] One of the main problems encountered in the classification was the generally low percentages of shared vocabulary among the member languages. It was difficult to decide if lexical evidence warranted the classification of the four families as constituting a single stock rather than two or perhaps three stocks.

There is good evidence for classifying the Kabenau and Evapia fam-ilies within a single stock. The Yaganon Family, however, is lexically divergent and its inclusion in the same stock is tenuous. The Usino Family is related to the Yaganon Family below the stock level and its relationship to the Kabenau and Evapia families just borders on the stock level. On the assumption that a more detailed study would prob-ably reveal correspondences and relationships not recognised in this preliminary study, the writers have chosen to posit a single stock.

Although the percentages in Table 1 indicate that the languages of the proposed Rai Coast Stock are generally 4-8% related to the lan-guages of the Finisterre Stock, the two groups are classified in dif-ferent micro-phyla for a number of reasons. The lexicostatistical relationship is slight and within the range which could be attributed to chance or to the presence of unrecognised loans. The pronominal system differs as also do a number of vocabulary items which are gener-ally stable throughout the Finisterre-Huon Micro-phylum. These vocabu-lary items are: *burn, eat, earthquake, eye, fire, say* and *sleep*.

3.1. *THE USINO FAMILY (POP. OVER 3000)*

In studying the languages of the southeast Madang District, Z'graggen (1969:61-2) posited an Usur Group consisting of three languages: Usino, Garia (Sumau) and Urigina. Z'graggen followed Swadesh's (1954) per-centage of 36% as the border between family and stock and stated that the Urigina language links with the other two languages at the stock level. The present writers, however, on the basis of Swadesh's (1955a) figure of 28%, combine these three languages with a fourth language, Bagasin, and suggest that the group be provisionally named the Usino Family. The percentages of shared basic vocabulary are given in Table 3.[6]

TABLE 3: USINO FAMILY RELATIONSHIPS

USINO			
38%	GARIA		
30%	34%	URIGINA	
50%	63%	44%	BAGASIN

3.1.1. The extent of the Bagasin language is not known and further field work is necessary in the area south of the Gogol River to determine whether there are other languages within this family. Data indicate a dialect chain linking this language with the Garia language and a detailed study may show them to be dialects of a single language.

3.1.2. About 800 people living in eight villages northeast of the Usino patrol post speak the Garia (Sumau) language (Z'graggen 1969:62).

3.1.3. The Usino language is spoken by about 1000 people living in an area west of the Usino patrol post. Z'graggen (1969:61) lists seven villages for the language.

3.1.4. The southernmost of the Usino languages is Urigina, spoken by about 1500 people in fifteen villages east of Usino and north of the Ramu River (Z'graggen 1969:62).

3.2. THE EVAPIA FAMILY (POP. EST. 2500)

The Evapia Family comprises an undetermined number of languages along the upper Ramu River northwest of Dumpu. Four languages have been classified as belonging to this family and their lexicostatistical relationships are 49-77%.

3.2.1. The Sinsauru language is spoken by the people living on the upper Midjim River in the Bogadjim census division. Word lists from Baipa and Saipa villages indicate about 85% lexicostatistical relationship.

3.2.2. The Koropa language is spoken southwest of the Sinsauru language. A word list from Koropa village indicates close lexical ties with both Sinsauru (75%) and Kaikovu (77%). The relationship with the Sinsauru dialect spoken at Baipa village, however, is only 69%. Subsequent study may establish that these are simply divergent dialects of a single language.

3.2.3. The Kaikovu language is spoken in a number of villages along the

Evapia and Ramu rivers northwest of Dumpu.

3.2.4. The Taga language is spoken along the Ramu River northwest of Dumpu. Its full geographic extent and number of speakers is not known.

3.3. *THE KABENAU FAMILY (POP. EST. 1700)*

This family stretches along the Rai coast from Bilau westward to Bongu and thence inland across the foothills at the western end of the Finisterre Range to Dumpu in the Ramu valley. Five languages are tentatively included in the family. Only two languages, Lemio and Gurumbu, are closely related (71%) and these may eventually prove to be dialects of a single language. The remaining three languages share 19-33% of the basic vocabulary.

3.3.1. The 120 speakers of the Kolom language live in the villages of Lamtub and Singor located near the mouth of the Yangda river.

3.3.2. The Suroi language is spoken by about 600 people in the coastal villages between the Guabe and Male rivers. Its lexicostatistical rela-tionship (24-27%) with other members of the Kabenau Family is not significantly greater than its relationship with the members of the Evapia Family (17-25%). It may constitute a link between the families and so its inclusion in the Kabenau Family is tentative. Note, however, its position on the coast, relatively distant from the Evapia Family of languages.

3.3.3. The Lemio language is spoken by an undetermined number of people living in several villages along the upper Kabenau River.

3.3.4. The Gurumbu language is spoken by approximately three-fourths of the population of the village of Gurumbu (pop. 91) on the Uria River. The remainder of the population of Gurumbu speak the Rawa language of the Finisterre Stock (see 2.1.6.).

3.3.5. The Watiwa language is spoken by 250 people in the villages of Dumpu, Abikal, and Bembei along the Ramu River near Dumpu. The language shows a range of 12-24% relationship with the Kabenau Family and 15-18% with the Evapia Family. Therefore, its inclusion in the Kabenau Family is tenuous and it may prove to be a language isolate.

3.4. *THE YAGANON FAMILY (POP. 1050)*

The Yaganon Family comprises three languages, Yabong, Ganglau and Saep with the following lexicostatistical relationships: Yabong-Saep, 48%; Yabong-Ganglau, 35%; and Ganglau-Saep, 57%.

3.4.1. The Yabong language (pop. 370) is spoken in five villages west of the Yangda River. Vocabulary lists from Gogou, Bidua, and Basor villages reveal only very slight dialectal variations. Many of the people are reported to be fluent in the Rawa language.

3.4.2. The Ganglau language is spoken by 200 people living along the coast near the Yaganon, Ganglau and Menglau rivers. A widely divergent dialect is reported to be spoken in the villages of Kulilau and Dumun to the west.

3.4.3. The 475 speakers of the Saep language live in four villages between the middle Yaganon and Gowar rivers.

4. UNCLASSIFIED NON-AUSTRONESIAN LANGUAGES

Three languages included in this study remain unclassified. The first is the language of Bongu (Astrolabe Bay). A word list obtained by Claassen shows no more than 16% probable cognates with the languages included in this study. The area west of Bongu and around the Astrolabe Bay to the Gogol river, which was not covered by this survey, is reported to be linguistically complex and brief vocabulary lists from four coastal villages near Bongu indicate three other languages closely related to Bongu. There are perhaps as many as 14 languages spoken along the coastal and hinterland areas from the Guabe River westward to Bogadjim. These languages may constitute another stock, the Astrolabe Bay Stock, of the Madang Phylum.

The second unclassified language is that of Gusap which is spoken between the Gusap and Umi rivers in the Morobe District. The language appears to be related to the Gusap-Mot Family, but the similarities in vocabulary are slight and may be due to borrowing.

An examination of an Abaga language word list collected by F. Mecklenburg and drawn to the writers' attention by S.A. Wurm reveals evidence that the language is within the Finisterre Stock. The language is known to be spoken by only a few people living in the villages of Kose and Kanofi near Kainantu in the Eastern Highlands District. When the Austronesian people invaded the Markham valley most of the people speaking the Finisterre languages were forced eastward out of the Ramu-Markham valley and into the Finisterre Range. This remnant probably

represents a small group which were cut off and forced westward into
the Highlands only to be assimilated by the more numerous Kamano (pop.
31,000) and Benabena (pop. 11,700). The language is heavily influenced
by loans from both Kamano and Benabena.

5. THE AUSTRONESIAN LANGUAGES

The Austronesian languages are found along the coast in the Saidor
Sub-district from the Morobe District border westward just beyond the
Yaganon River. Six languages, and probably seven, share 30-45% of the
basic vocabulary and are 27-58% lexicostatistically related to the
Gedaged language of the Belan Family (see Z'graggen 189f.).[7]

5.1. The Roinji language is spoken in the villages of Roinji and Gali
near the mouth of the Yupna River.

5.2. The Malalamai language is spoken by 300 people living in the vil-
lages of Malalamai and Bonga east of the Sama River.

5.3. The Moromiranga language is spoken in the coastal villages of Mur,
Sel and Seure west of Malalamai.

5.4. The Sengam language (pop. 600) is spoken west of Saidor in
several villages.

5.5. The Mindiri language is spoken in the village of Mindiri (pop.
81) just west of the Yaganon River.

5.6. The Arop language is spoken by 600 people living on Long (Arop)
Island.

5.7. Another Austronesian language is reported to be spoken in the
villages of Wab and Saui near Saidor. Lawrence (1964:19) states that
this group, which he names the Som, number about 150 people.[8]

6. TYPOLOGICAL FEATURES

In general the typological features of one language from each family
have compared. When sufficient data are not available in any one
language of a family, some general remarks regarding the family are made
on the basis of the vocabulary lists. The languages included in these
comparisons are: Saep (Yaganon Family); Suroi and Kolom (Kabenau

Family); Sinsauru (Evapia Family); Rawa (Gusap-Mot Family); Kewieng
(Yupna Family); the Uruwa Family in general; Wantoat (Wantoat Family);
and Uri (Erap Family).

6.1. *PHONOLOGY*

6.1.1.   The Yaganon languages have a series of voiceless stops, voiced
stops, and nasals in the labial, alveolar and velar positions. Voiced
prenasalised stops may also be phonemically distinct, particularly in
Yabong where they occur word initially. Velar nasals have been ob-
served word initially in Ganglau but not elsewhere. Syllabic velar
nasals occur in Saep and occasionally in Ganglau. The alveolar lateral
and flap are not phonemically contrastive. The alveolar lateral in
Saep and Ganglau corresponds to an alveolar flap in Yabong.

The following oral continuants occur in all three languages: [p],
[s], [w] and [y]. A voiced labial fricative in Ganglay may be an allo-
phone of w. The phone [h] in Saep corresponds to [s] in Ganglau and
Yabong and also [p] in Ganglau. An [h] phone has an infrequent occur-
rence in Ganglau.

6.1.2.   The Suroi language has 21 consonant phonemes: p, t, k, b, d, g,
mb, nd, ŋg, m, n, ŋ, f, s, dž, ndž, l, r, w, y, and ny; and 5 vowel
phonemes: i, e, a, o and u. The consonant phonemes contrast in manner
of articulation as to voiceless stops, voiced stops, prenasalised stops,
nasals, voiceless fricatives, voiced affricates, lateral, vibrant and
semivowels. The stops and nasals are contrastive in labial, alveolar,
and velar points of articulation. The voiceless fricatives contrast
in alveolar and alveopalatal points of articulation. The semivowels
contrast in labial and alveolar points of articulation. The vowels
contrast as to high, mid and low tongue heights. The high and mid
vowels contrast as to front and back tongue positions.

The voiceless stops, unaspirated intervocalically, have aspirated
and unaspirated variants occurring in free alternation initially and
finally. Except for k the voiceless stops have final unreleased vari-
ants. The phoneme g has a variant [ʔ] occurring medially and finally.
The Phoneme f has a variant [h] occurring in free alternation inter-
vocalically with [f]. The phoneme r has a variant [ř] occurring in free
alternation with [r̃] initially and intervocalically.

6.1.3.   The languages of the Evapia Family have voiceless stops in the
labial, alveolar and velar positions. Koropa and Sinsauru appear to
have contrastive voiced stops in these positions also. Nasals have been
observed only in the labial and alveolar positions. An alveolar vibrant

occurs in all the languages, and all except Koropa appear to have a contrasting lateral. The following oral continuants occur in all the languages: [f], [s], [h], [w] and [y]. All the languages appear to have five vowels: i, e, a, o and u.

6.1.4. The Rawa language has 17 consonant phonemes: p, t, k, b, d, g, mb, nd, ŋg, m, n, ŋ, s, h, r, w and y; and six vowel phonemes: i, e, a, â, o and u.[9] The consonant phonemes contrast in manner of articulation as to voiceless aspirated stops, voiceless unaspirated stops, prenasalised voiced stops, nasals, voiceless fricatives, vibrant, and semi-vowels. The stops and nasals contrast in labial, alveolar and velar points of articulation. The fricatives contrast in alveolar and glottal points of articulation. Semivowels contrast in labial and alveolar points of articulation. The vowel phonemes contrast as to high, mid and low tongue heights and front and back tongue positions. The alveolar vibrant [ř] has a lateral allophone [ľ] occurring in free alternation.

6.1.5. The Yupna language appears to have nineteen consonants: p, t, k, kp, b, d, g, gb, m, n, ŋ, w, y, ɡ, s, dz, ts, l, and r; and six vowels: i, e, a, â, o and u. Vowel length is probably phonemic. The consonants contrast in manner of articulation as to voiceless and voiced stops, nasals, flat and grooved fricatives, voiceless and voiced affricates, lateral and vibrant. Only the stops contrast in four points of articulation: labial, alveolar, velar and labio-velar. The nasals and flat fricatives lack the labio-velar series. The apparent contrast between the voiced affricate dz and the voiceless affricate ts may be resolved by more data and a more detailed study. The same may be said with regard to the apparent contrast between l and r. The six vowels contrast as to high, mid and low tongue heights and front and back tongue positions.

The voiceless stops are aspirated in initial and intervocalic positions and unreleased in syllable final position. The velar stops are backed. The voiced stops are prenasalised when they occur intervocalically and tend to be prenasalised initially. The affricates and lateral are palatalised.

6.1.6. The Uruwa languages have a series of voiceless stops, voiced stops and nasals in the labial, alveolar and velar positions. The voiceless stops are unreleased syllable finally. Prenasalisation of the voiced stops is common, although not universal. The velar stops are backed. All the languages have an alveolar vibrant and for all except Mitmit and Sindamon an alveolar lateral has been observed as well. The lateral in Som is palatalised and fluctuates with [y].

A series of oral continuants including [w], [y] and [s] occurs in all languages. Komutu, Kumdauron, and Worin have an [h], probably with phonemic status. All languages have a voiced velar fricative [ɡ] which may be an allophone of the h in those languages where h occurs. In some languages, on the other hand, [ɡ] fluctuates with intervocalic [kʰ]. In two languages, Kumdauron and Mitmit, there is an [f]. This phone occurs in Mup as well, but it fluctuates with [pʰ] and is probably a variant of p. The phone [h] in the Worin language corresponds to the [f] and [s] in the Kumdauron and Mitmit languages. Many of the languages have a final glottal stop. An intervocalic glottal stop in the Mup language corresponds to intervocalic [ɡ] or [kʰ] in the other languages.

The Som and Sakam languages are the westernmost of the Uruwa languages and resemble the Kewieng language of the Yupna Family in that there is a series of labiovelar stops as well as an affricate dz. Furthermore, these languages are the only Uruwa languages with a syllable final [l], another feature of the Yupna languages.

All the languages appear to have six vowels: i, e, a, â, o and u. In Som and Sakam the vowel â tends to have a centralised phonetic norm approaching [ə].

6.1.7. The Wantoat language has sixteen consonants: p, t, k, kw, b, d, ɡ, ɡw, m, n, ŋ, ŋw, s, z, w and y; and seven vowels: i, e, æ, a, â, o and u.[10] The consonants are contrastive in manner of articulation as to voiceless and voiced stops, nasals, voiceless and voiced fricatives and semivowels. The stops and nasals contrast in four points of articulation: labial, alveolar, velar and labio-velar. The semivowels contrast as to labial and alveolar points of articulation. Vowels are contrastive as to front, central and back tongue positions and high, mid and low tongue heights.

The voiceless stops are aspirated in initial and intervocalic positions and unreleased in word final position. The voiceless velar and labio-velar stops are backed. Voiced stops and the voiced fricative are prenasalised. Some dialects of Wantoat have an h, corresponding to the s of the main dialect.

6.1.8. The Uri language has sixteen consonants: p, t, k, kw, b, d, ɡ, ɡw, m, n, ŋ, f, s, r, w, and y; and five vowels: i, e, a, o, and u. Vowel length is also phonemic for the vowels i, a and u. The consonants contrast in manner of articulation as to voiceless and voiced stops, nasals, fricatives, semivowels and a vibrant. The stops contrast in four points of articulation: labial, alveolar, velar and labio-velar.

The nasals contrast as to labial, alveolar and velar points of articulation. Fricatives contrast as to labio-dental and alveolar points of articulation. Semivowels contrast as to labial and alveolar points of articulation. Vowels contrast as to front, central and back tongue positions and high and low tongue heights.

The voiceless stops, p and k, have aspirated variants initially and intervocalically, and nasally released variants utterance finally. The voiceless alveolar stop has a glottal variant in syllable final position. Voiced stops are not prenasalised. The phoneme g has a voiced velar fricative variant [ǥ] occurring between a sequence of u phonemes. The phoneme r has a lateral variant [l̃] occurring in fluctuation with [ɽ] intervocalically. The semivowel w has a bi-labial fricative variant [ƀ] occurring intervocalically between two i phonemes. The vowel a has a phonetic norm [ə]. When the vowel is lengthened, however, the quality is that of [a·]. The phone [æ] is a variant of e and [ɔ] is a variant of o.

Among the languages of the Finisterre Stock, the syllable structure is generally simple, with no consonant clusters within the syllable. In most of the languages the syllables may be closed by voiceless stops p, t, k and nasals m, n, and ŋ. A few languages have a syllable final lateral. Two languages, Rawa and Nahu have no closed syllables. The nucleus of the syllable is simple and vocoid clusters in Rawa, Wantoat and Uri have been interpreted as sequences of simple syllable nuclei. Stress is phonemic in Rawa but probably sub-phonemic in Yupna and Wantoat. In none of these languages does it carry a heavy functional load.[11]

The languages of the Rai Coast Stock also do not have consonant clusters within the syllable. Most of the languages evidence closed syllables. In the Yaganon Family syllables may be closed by voiceless stops, p, t, k, voiced stops b, d, g, and nasals m, n and ŋ. In the Suroi language syllables are closed by any consonant except w, y, and ny. In languages of the Evapia Family syllables are closed by voiceless stops t and k as well as nasals m and n, except in the Kaikovu and Taga languages which apparently do not have closed syllables. Complex syllable nuclei occur in the Rai Coast languages, e.g., Suroi has vocoid clusters of up to three segments in length. In Suroi stress is contrastive, but only on a limited number of words.

6.2. NOUN STRUCTURE

The languages of the Finisterre Stock generally evidence two noun classes; those which occur with obligatory possession marking suffixes and those which do not. The former class includes kinship nouns and

body parts. In some languages these possessed nouns may also be marked for number. Uri distinguishes singular and plural as in sabana *'my son'* and sabane *'my sons'*; Rawa has a suffix meaning *'all'* as in bareno *'his wife'* and baresumâno *'all of his wives'*. The class of nouns which does not take obligatory possession marking suffixes includes nouns which have never been observed with possession markers, e.g. terms denoting *'sickness'*, *'cloud'*, and other meteorological phenomena, and nouns with optional possession markers, e.g. terms denoting personal possessions and domestic animals. Possession marking suffixes in Rawa and Yupna have separate forms indicating (1) 1s, (2) 2s, (3) 3s, (4) 1d, (5) 2 and 3d, (6) 1p and (7) 2 and 3p. In Uri the forms do not distinguish between dual and plural nor between 2p and 3p in these non-singular forms. In Wantoat the distinction between dual and plural is absent in the second person and all distinction of number is absent in the third person.

Some general features of the noun phrase are uniform throughout the Finisterre Stock: (1) a possessive axis-relator phrase occurs in a pre-head position and (2) optional post head qualifiers have an order of adjective, quantifier (numeral) and demonstrative.

The languages of the Rai Coast Stock have not been observed with number marked in the noun structure. Obligatory possession markers occur on kinship nouns and body parts in a number of Rai Coast languages; Saep in the Yaganon Family, Watiwa in the Kabenau Family and Usino in the Usino Family.

6.3. PRONOUNS

Pronouns may be divided into two types, free forms and bound forms. The free forms are basic minimal forms which accept post clitics when occurring in grammatical constructions marked by the clitics. For example, in Rawa the basic form no '1s' may take the subject marking clitic -ndo as in nondo *'I (the actor)'*. In the location slot the forms are nono *'to me'*, and nonoŋgo *'from me'*; and in the possessive phrase or benefactive slot the form is noro *'my, for me'*. No inclusive/exclusive distinction in the personal pronouns has been found in any of the languages included in this survey.

The phonemic shape of the free pronouns is quite uniform throughout the Finisterre stock and the pronominal systems show obvious relationship to the languages of the Huon Peninsula Stock as well as the Highlands' languages. First person forms begin with n and second person singular forms with g or k. Dual forms are often distinguished by an alveolar nasal. The free forms also resembel the possession marking suffixes. The Wantoat forms are given in Table 4.

TABLE 4:

WANTOAT PERSONAL PRONOUNS AND POSSESSIVE SUFFIXES

	FREE PRONOUNS			POSSESSIVE SUFFIXES[12]		
	Sg.	Du.	Pl.	Sg.	Du.	Pl.
1	nâ	nit	nin	-na	-nit	-nin
2	gâ	git	gin	-ga	-sâ	-sâ
3	an	git	gin	-nâ	-nâ	-nâ

The pronominal systems of the Rai Coast languages are different from those of the Finisterre languages. First person singular forms generally begin with y or i and the other first person forms begin with s. Second person forms begin with n. In some languages dual and plural are distinguished as in the Finisterre group. The Suroi free forms are given in Table 5.

TABLE 5: SUROI PERSONAL PRONOUNS

	Sg.	Du.	Pl.
1	ye	sile	sine
2	ne	tale	tane
3	nu	nale	nane

In Kolom, Suroi and Sinsauru the pronominal forms have a different phonemic shape when occurring as possessive pronouns, e.g. Sinsauru iye *'I'*, iyo *'my'*; Suroi ye *'I'*, yine *'my'*; and Kolom inga *'I'*, imi *'my'*.

The second type of pronoun occurs as object marking affixes bound to transitive verbs. These bound pronouns show concord in number and person with optionally occurring free forms functioning as objects at the clause level.

Transitive verbs in the Rawa language may be divided into two classes, those which have obligatory object prefixes and those which have obligatory object suffixes. This appears to be the case for Yupna as well, but both Wantoat and Uri have only object prefixes. The object prefixes and suffixes for the Rawa language are given in Table 6. Note that the initial consonants are the same for both prefixes and suffixes.

TABLE 6: RAWA OBJECT AFFIXES

	SINGULAR		DUAL AND PLURAL	
	Prefix	Suffix	Prefix	Suffix
1	nâ-	-nerâ		
2	gâ-	-gerâ	yâ-	-yerâ
3	ø-	-ø		

In the Rai Coast languages object markers are suffixed rather than prefixed. In Suroi one class of transitive verbs never occurs with object suffixes, another class always occurs with object suffixes and a third class has an optional occurrence of the suffixes. The Suroi forms are presented in Table 7.

TABLE 7: SUROI OBJECT SUFFIXES

	Sg.	Du.	Pl.
1	-y	-sik	-siŋ
2	-n	-tik	-tiŋ
3	-ø	-nik	-niŋ

All the languages distinguish '1s', '2s' and '3s'. Furthermore, '3s' is uniformly represented by a zero morpheme. In the Saep language dual and plural in all persons is represented by a single form. Other languages show a variety of distinctions relevant to the dual and plural forms. For example in the Sinsauru language one form includes '1s' and '1d' while another indicates '1p' and another indicates second and third person dual and plural.

6.4. VERB STRUCTURE

All of the languages have a contrast between dependent sentence medial verbs and independent sentence final verbs. As characteristic of NAN languages in general, the affixation involves a large number of suffixes and a few prefixes. Verbal prefixes are usually limited to object pronouns although Davis (1964) identified two other prefixual orders in Wantoat indicating mode and aspect.

6.4.1. Dependent verb morphology usually includes a suffix indicating whether the subject of the following verb is the same or different. If the subject is different a further suffix occurs which indicates the

number of the subject of the dependent verb. In Rawa these suffixes
also indicate an indicative or subjunctive mode. Wantoat suffixes in-
dicate whether the action of the dependent verb is punctiliar or con-
tinuative and simultaneous or antecedent to that of the independent
verb. In the Suroi language (Rai Coast Stock) the only medial form has
a suffix indicating that the following verb is a closely related action
performed by the same actor. If the action of the two verbs is not
closely related or the following verb has a different subject, independ-
ent verb suffixation occurs in both verbs and a conjunction joins the
clauses.

6.4.2. Independent verb morphology varies considerably in complexity.
Generally suffixes include object pronouns, benefactive markers, aspect
and/or mode, tense and subject person-number markers in that order.

In Rawa at least four tenses are distinguished: future, present, past
and remote past; four aspects are indicated: completive, intentional,
habitual and continuative; and two modes, indicative and subjunctive.
Continuative action is indicated by different allomorphs occurring with
the future, present and past tenses. The imperative and contrary-to-
fact (subjunctive) suffixes do not occur with tense indicating suffixes.

Wantoat verb suffixation distinguishes nine modes: assertive, in-
tentive, benefactive, negative, interrogative, prohibitive, imperative,
phobic and subjunctive of desirability. Completive and continuative
aspects are also distinguished.

The verb in the Suroi language is marked for five tenses: indefinite
future, immediate future, present, immediate past, and simple past; and
six modes: imperative, question, interrogative, apprehensive, narrative
and intentive. The intentive mode suffix may occur as the only suffix
or with the indefinite future tense suffixes. The continuative aspect
is indicated by the addition of the verb 'to be' to other verbs. Person
and tense are combined in portmanteau suffixes.

6.5. NUMERALS

Counting systems are uniform throughout the languages included in
this survey. Counting begins with the small finger of one hand, pro-
gresses through the other hand, the toes of one foot and finally the
toes of the other foot to complete a unit of twenty. Numerals 'one'
through 'four' are expressed by separate terms, although in Saep (as
well as the other languages of the Yaganon Family) the terms for 'two'
and 'three' are similar: abode and abokoŋ respectively. In Nahu 'four'
is expressed by 'not the thumb' or 'minus the thumb'. 'Five' is usually
expressed by 'one hand' and 'ten' by 'two hands'. 'Twenty' is expressed

by either *'one body'* or by *'two hands and two feet'*.

6.6. CLAUSE STRUCTURE

A number of clause types have been recognised as occurring in most of the languages. The illustrative data are from the Rawa language.

6.6.1. The declarative transitive clause has a falling intonation contour (↓) and the predicate is filled by a transitive verb. The usual tagmeme order is ± temporal ± subject ± instrument ± object + predicate. The temporal tagmeme may also follow the subject.

     kuyowo simâ mâ ne-wo-ro ↓

yesterday man taro eat-past-they (du.)

'Yesterday the men ate taro.'

6.6.2. The declarative intransitive clause contrasts with the declarative transitive clause by the obligatory absence of the object and instrument tagmemes and the occurrence of intransitive verbs in the predicate tagmeme.

   no-ndo   ko-no ârowu-te-no ↓

I-subject marker garden-to go-present-I

'I am going to the garden.'

6.6.3. A declarative clause may be made interrogative by the substitution of a rising intonation contour (↑). A number of languages (e.g., Saep and Suroi) also have optional interrogative markers translatable as *'or'* occurring sentence finally. The Rawa language has no such interrogative marker.

   ge no-ro se keno-wo-Ø ↑

you I-for dog see-past-you

'Did you see my dog?'

6.6.4. The equative clause has the usual tagmeme order of + subject + predicate in which the subject is manifested by a nominal construction or its substitute and the predicate is usually manifested by an adjectival construction.

   mâ   ŋa   puwo

taro this rotten

'This taro is rotten.'

6.6.5. A common feature is the occurrence of a clause filling another clause level slot. Such embedded clauses have been observed filling the subject, object, temporal locative and benefactive slots. The

resultant construction is treated as an axis-relator phrase with a clause filling the head slot plus a relator post clitic.
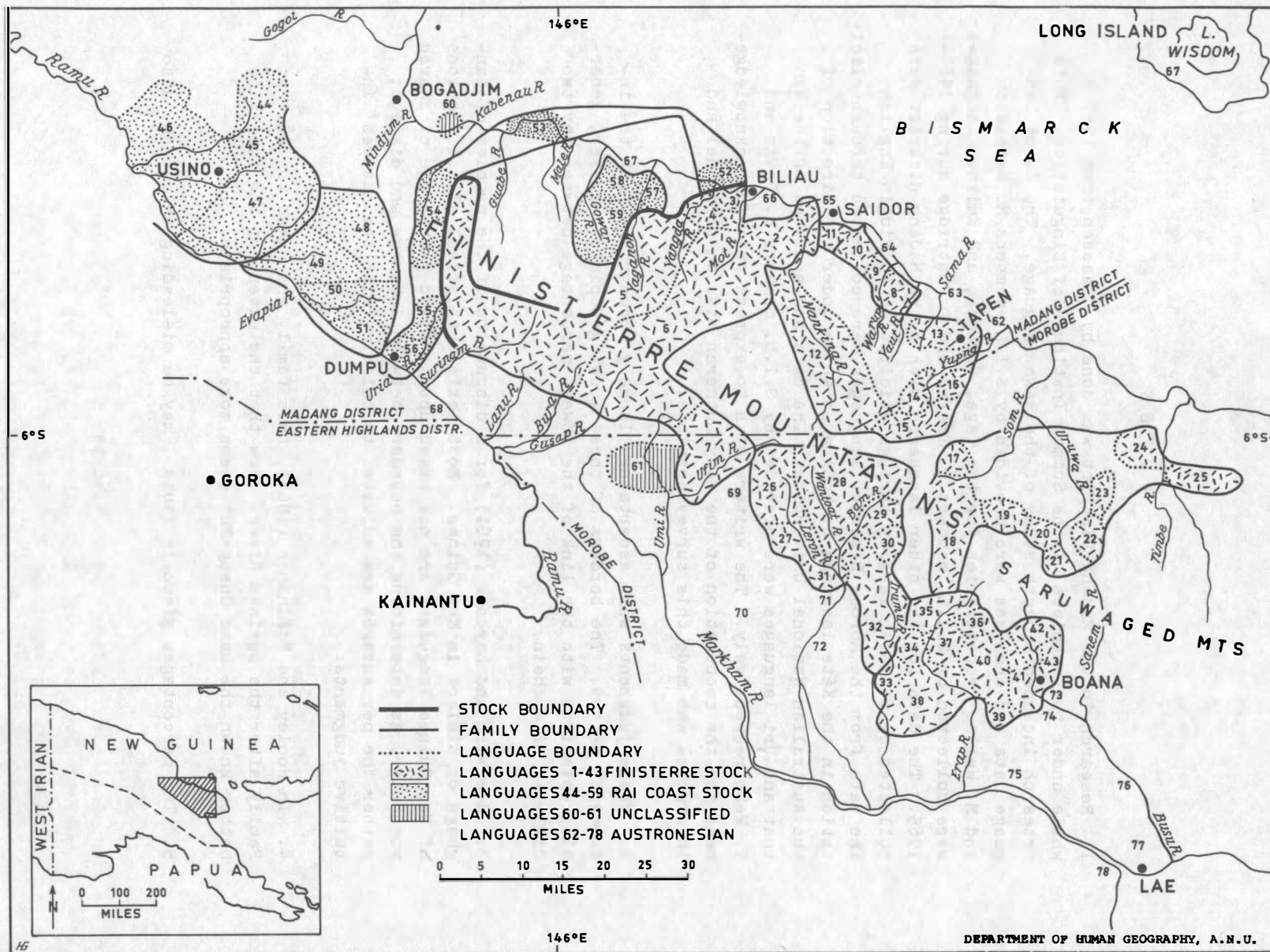
no-ndo bowera ŋa-no ye-wo-no-mu-ndo namba bini dowâ-rorâ-te-Ø
I-subject *trap this*-locative *put-past-I-included*-subject *cassowary*
maybe hold-continuous-present-*it*
'Perhaps the trap which I set here is holding a cassowary.'

7. LANGUAGE LIST

The following list of languages is keyed to the Map.

1. Gira	27. Leron	53. Suroi
2. Ngaing	28. Wantoat	54. Lemio
3. Neko	29. Bam	55. Gurumbu
4. Nekgini	30. Yagawak	56. Watiwa
5. Rawa	31. Saseng	57. Yabong
6. Nahu	32. Irumu	58. Ganglau
7. Ufim	33. Mamaa	59. Saep
8. Asat	34. Finungwan	60. Bongu
9. Degenan	35. Gusan	61. Gusap
10. Morafa	36. Sauk	62. Roinji
11. Dahating	37. Nimi	63. Malalamai
12. Nankina	38. Uri	64. Moromiranga
13. Domung	39. Munkip	65. Som
14. Nokopo	40. Numanggang	66. Sengam
15. Kewieng	41. Nakama	67. Mindiri
16. Bonkiman	42. Nek	68. Houp
17. Som	43. Nuk	69. Yaros
18. Sakam	44. Bagasin	70. Azera
19. Sindamon	45. Garia	71. Sukurum
20. Mup	46. Usino	72. Sirasira
21. Mitmit	47. Urigina	73. Sirak
22. Worin	48. Sinsauru	74. Guwot
23. Kumdauron	49. Koropa	75. Laewomba
24. Komutu	50. Kaikovu	76. Musom
25. Karangi	51. Taga	77. Bukaua
26. Awara	52. Kolom	78. Labu

LANGUAGES OF THE FINISTERRE RANGE - NEW GUINEA

Map labels and legend:

LONG ISLAND   L. WISDOM   67

BISMARCK SEA

BOGADJIM   60
BILIAU   52   66
SAIDOR   65
TAPEN   62   63   64   13
MADANG DISTRICT / MOROBE DISTRICT

USINO   46   44   45   47   48   49   50   51   55   56   54   53   57   58   59

DUMPU   68
MADANG DISTRICT / EASTERN HIGHLANDS DISTR.

GOROKA

KAINANTU

FINISTERRE MOUNTAIN

SARUWAGED MTS

BOANA

LAE

Rivers: Ramu R., Gogol R., Mindjim R., Kabenau R., Guare R., Male R., Gowar R., Nagaon R., Yanada R., Mot R., Mankina R., Yaut R., Warger R., Sama R., Yupna R., Som R., Uruwa R., Timbe R., Sanem R., Evapia R., Uria R., Surinam R., Lanu R., Byra R., Gusap R., Ufim R., Umi R., Waiaat R., Irumu R., Bam R., Leron R., Ramu R., Markham R., Erap R., Busu R.

Numbers 1-78 distributed across map.

LEGEND:

STOCK BOUNDARY
FAMILY BOUNDARY
LANGUAGE BOUNDARY
LANGUAGES 1-43 FINISTERRE STOCK
LANGUAGES 44-59 RAI COAST STOCK
LANGUAGES 60-61 UNCLASSIFIED
LANGUAGES 62-78 AUSTRONESIAN

0 5 10 15 20 25 30
MILES

Inset map:
NEW GUINEA
WEST IRIAN
PAPUA
0 100 200 MILES
N

N O T E S

1. Research in the Madang District was done by Claassen from 1967-9 while under the auspices of the Summer Institute of Linguistics. This research included a depth study of the Rawa language. The Suroi language data and analyses were provided by S.I.L. members M. Mathieson and M. Wells. Vocabularies for the Taga, Gurumbu, and Kaikovu languages were collected by S.I.L. members D. Trefry and D. Oatridge during 1964-1965. The data for the other languages within the Madang district were collected by Claassen largely through elicitation in Pidgin English. The data from the Morobe District languages were collected through elicitation in the Kâte language by McElhanon while under the direction of the Australian National University. The data and analyses of the Wantoat and Uri languages were provided by S.I.L. members D. Davis and T. Webb respectively. The writers wish to express grateful acknowledgement for the cooperation of the many Lutheran Mission personnel and informants who made this survey possible.

2. These judgments were ascertained largely through the "ask the informant" method. The borders of these local groupings, however, generally coincided with the link of the lowest percentage between any two dialects of a chain.

3. See Wurm and Laycock (1961) for a discussion of the problem of language or dialect in New Guinea. Most lexicostatistical classifications of New Guinea languages are not based upon a fixed percentage of shared vocabulary as determining the boundary between language and dialect; rather the percentages are adjusted to coincide with the natives' intuitive judgments.

4. In Hooley and McElhanon (1968), this family was named the Surinam Family after the Surinam River. Now that the extent of the family is better known the name Gusap-Mot seems more appropriate.

5. The percentages given in Table 1 may be misleading unless one also

notes the number of comparisons involved in determining any given per-
centage. Note that for Gurumbu, Koropa, Taga, Kaikovu and Bagasin,
there are always less than 50 comparisons. For Suroi, the number is
usually about 95. In dealing with basic vocabulary lists of varying
lengths it is advisable to adjust the percentages when a small number
of comparisons are involved. Voorhoeve (1968:3) suggests that maximally
1% must be subtracted for every 10 items less than 200.

6. All percentages except that for Usino-Bagasin have been calculated
by Z'graggen.

7. The Roinji language, which is included in the Siassi Family (Hooley
and McElhanon 1968), shares 27% of the basic vocabulary with Gedaged.
The decision as to whether the Siassi and Belan families really repre-
sent a single family and the relation of Roinji to these two groups must
wait until further study is completed.

8. Note that this name is the same as that of a NAN language of the
Uruwa Family. No attempt will be made to avoid possible confusion of
these names until the status of the Austronesian group is determined.

9. In Rawa, p, t, and k represent voiceless aspirated stops; b, d, and
g represent voiced stops in the northern dialect and voiceless unaspi-
rated stops in the southern dialect. The symbol â represents a phoneme
with a phonetic norm of [ɔ] in Rawa and [ə] in Wantoat and other lan-
guages.

10. Phonetic vowel length in Wantoat on phonemes a, e, æ and o has
been interpreted by Davis (1961) as sequences of like vowels.

11. In an early analysis Davis (1961) showed stress differences in near
identical (analogous) environments for pairs of words in Wantoat. In
the most recent analysis Davis (1967) states that stress is non-phonemic.

12. Allomorphic variations are given in Davis (1964).

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