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STABILITY AND CHANGE IN THE YEGA ECONOMY .

A geographical case study of land tenure, land use and settlement
in Northern Papua.

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Thesis submitted for the Degree of Master of Arts (Honours),
in Geography.

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PREFACE

This thesis has been written on the basis of observations made and information gathered during three visits to Yega territory. The first visit, which was part of a general reconnaissance trip, lasted only two days, but on subsequent visits, I lived in Yega villages for periods of 14 weeks and 6 weeks respectively. The friendliness and co-operation of the Yega people not only made this thesis possible, but also made my visits happy and memorable experiences, for which I wish to record my grateful thanks. Particular thanks are due to all members of Kurou, my 'adopted' clan, especially to Ethelbert Mokada, John Gilbert Bananga, George Weston Gainde, Philemon Yaruso and Lawrence Andere, who spent many hours guiding me through the countryside or helping with interpretation. Other Yega who also gave generously of their time and hospitality were Herbert Puimba, James Boboru and his wife, Dulce, Napoleon Aiga, Robinson Sisere, Newton, Nixon Kairembora and his wife, Roma Mary. To you all, for your children may one day read this thesis, I say, doyo be sena!

I wish to make grateful acknowledgement of the financial assistance given by the University of Sydney, by way of research grants. Without such assistance it would not have been possible to carry out the field work on which this thesis is based. I also acknowledge the assistance given by the staff of the Division of National Mapping, Department of National Development, in the selection of aerial photographs. Fig. 2 is reproduced with the permission of the Director of National Mapping. Mr. Ken Foreman of the Bureau of Census and Statistics gave valuable advice on the technique of random sampling of inter-planted gardens.

Whilst in Papua, many people and organisations offered help and assistance. Foremost among these was the A.N.U. New Guinea Research Unit, whose Executive Officer, Dr. David Bettison, lent me camping equipment during my periods of field work and further assisted me to prolong my stay in the field by arranging a substantial travel grant. In addition, he and other members of the Unit, particularly Dr. Ron Crocombe, Mr. Cromwell

Bureau and Mr. Nigel Oram, made many helpful suggestions in the course of discussions held, both in Port Moresby and in the Northern District.

In Departments of the Administration, I encountered nothing but cordial co-operation from all officers from whom I sought information. These are too numerous for me to mention them all by name, but I especially thank Mr. David Fenbury of the Administrator's Department, for his introduction to Territory problems; Messrs. K.C. Atkinson, D. Clifton-Bassett, and H.L. Williams of D.N.A., all of whom were District Commissioners of the Northern District during one or other of my visits; Mr. Harry Jackman of the Department of Trade and Industry for helpful criticism of parts of the text; Messrs. W. Conroy, J. Lamrock, M. Belfield and R.J. Cheetham of D.A.S.F.; Mr. Wal Laurie of the Department of Lands, and Mr. Greg Neilsen, Land Titles Commissioner, Northern District, for their help with equipment and their elucidation of land problems. Special thanks are due to Mr. Neilsen for permission to reproduce his land boundaries map, Fig. 13.

A welcome hot bath, a meal and a bed for the night always awaited me in Popondetta at the homes of Bob and Margaret Butters, Ross and Joan Liddle, and latterly, Peter and Elaine Dillon. Pat and Andy McCullagh frequently revived me with a cool drink and often went out of their way to give me a lift on my visits to Popondetta. Nearer 'home' there was always a welcome cup of tea and stimulating discussion in the home of Ted and Ruth Kelly at Gona Mission. Many thanks to you all!

In Sydney, I am indebted to Margaret Westwood, Librarian at the School of Pacific Administration; to several of my colleagues in the Department of Geography, Dr. John Rutherford and Dr. Dennis Jeans, for their many helpful comments; to Mr. Alan Bartlett, Cartographer in the Department, who drew most of the maps, and particularly to my supervisors Dr. Peter Lawrence of the Department of Anthropology, and Professor G.H. Dury of the Department of Geography. Without their patient encouragement this thesis would never have been completed.

My deepest appreciation is reserved for my wife, who, as well as doing all the typing involved in this thesis, has managed to retain her own sanity and keep our home reasonably happy for the past $2\frac{1}{2}$ years, an outstanding feat!

STATEMENT OF ORIGINALITY

Apart from the help acknowledged above, or in footnotes throughout the text, this thesis is the original work of the author.

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DEFINITIONS

The following definitions apply throughout this thesis:

Anthropological terms follow the definitions given in Notes and Queries on Anthropology 1954.

<u>Area</u>	Where it is underlined this term is used in the sense in which Williams ¹ uses it, i.e., to mean a defined, named area of land. The cultivation rights to such <u>areas</u> are vested in individual lineages: hence the need for a specific term.
Horticulture	The term horticulture meaning the cultivation of a garden or the art of managing a garden ² has been used to describe the Yega system of food production. Horticulture is preferred to the term agriculture which is commonly used in geographical literature now to include the rearing of livestock in addition to cultivating the soil. ³
Land rotation	This term used in the World Land Use Survey (I.G.U. 1952) and adopted by Wills, ⁴ appears the most accurate to describe the traditional Yega system of subsistence agriculture. It is defined as ....'the system whereby cultivation is carried on for a few years and the land allowed to rest perhaps for a considerable period before the scrub or grass which grows up is again cleared and the land re-cultivated.... however, the farms or settlements from which cultivation takes place are fixed and the cultivation of the land is the dominant occupation. The secondary growth which is allowed to appear has little or no economic importance'. 'Land rotation' is a more apt term than 'rotational bush fallow' under which, according to Morgan's definition ⁵ ,'cultivation rotates through a fixed area of grasses or woody plants in which woodland is not allowed to regenerate.'

1. Williams, F.E., 1928, p.126 ff.

2. Oxford Dictionary definition.

3. Stamp (ed) 1962, p.14.

4. Wills, J.B., 1962, p.201.

5. Morgan, M.W., 1959 (a), p.138.

Definitions (Cont'd.)

Swidden This is an old English dialect word which connotes a burned clearing⁶. 'Swidden' has the practical advantage of lacking the regional associations of alternative terms such as ladang, kaingin and chena. The term 'swidden' is used throughout this thesis to mean an area of land used for subsistence gardening,

ABBREVIATIONS

Administration	The Administration of the Territory of Papua and New Guinea.
A.D.O.	Assistant District Officer.
A/R.M.	Assistant Resident Magistrate.
CRTS	Commonwealth Reconstruction Training Scheme.
CSIRO	Commonwealth Scientific and Industrial Research Organisation.
D.A.O.	District Agriculture Officer.
D.A.S.F.	Department of Agriculture, Stock and Fisheries.
D.C.	District Commissioner.
D.N.A.	Department of Native Affairs.
M.H.A.	Member of the House of Assembly of T.P.N.G.
T.P.A.R.	Territory of Papua Annual Reports.
P.H.D.	Public Health Department.

Abbreviations used for Yega Clans.

Seseko	-	Se
Sambori	-	Sa
Kurou	-	Ku
Konambo	-	Ko
Jambapa	-	Ja
Eupu	-	Eu
Emoi	-	Em
Gena	-	Ge

6. Conklin, H.C., 1957, p.1, also Lea, D.A.M., 1964, p.1.

SUMMARY OF METHODS

I developed an interest in New Guinea over the period 1956-1960 when, living in Kenya, I regularly received copies of the Australian School of Pacific Administration journal, South Pacific. Reading the South Pacific articles, I was often impressed by the apparent similarities between Kenya and New Guinea. Thus, when an opportunity presented itself in 1961 for pursuing further academic study, the field of interest was already aroused.

The precise definition of the area for study followed discussions with Dr. H.C. Brookfield and Dr. A.M. Healey of the Australian National University, a field reconnaissance trip of 6 weeks early in 1962, discussions with Dr. D.G. Bettison and Dr. R.G. Crocombe of the New Guinea Research Unit, and consultation of literature relative to the Northern District of Papua.

A limited time only was available for the field work on which this thesis is based. The following field trips were made:

November 1962 - February 1963	-	14 weeks
July 1964 - August 1964	-	6 weeks.

Although the two trips were timed to coincide with the wet and dry seasons, this planning was to a large extent frustrated by an abnormally dry period during January-February 1963, and an abnormally wet July-August 1964. Climatic variation in the humid tropics was admirably demonstrated.

Since my time in the field was so limited, I had to establish cordial relations with the people as rapidly as possible. This I attempted to do by living in a bush house, under conditions which approximated as closely as possible to those under which the villagers themselves lived. Unfortunately, there was no time to learn more than a few words of the Yega language (Ewa-ge), all information being obtained from English-speaking Yega or through an interpreter.

Immediately after my arrival, I arranged a meeting with the village elders at which I explained as simply and as honestly as I could what I wanted to do and asked their permission to work in their village. Permission was granted. There is no doubt that this introduction to the village was

greatly facilitated by the help of Mr. Cromwell Burau, an educated Notu man, whose services for 3 weeks were offered by the New Guinea Research Unit Executive officer.

I first counted the Yega people and mapped their places of residence on a base map prepared beforehand from aerial photographs. Data collected were:

- i) Number and sex of adults and children in each dwelling,
- ii) Clan and sub-clan of each adult male,
- iii) Size of each clan and sub-clan,
- iv) Possession or non-possession by male adults of areas of cash crops in the Yega Project,
- v) People absent from the village.

With these data in hand it became clear that the time available did not permit a full study of the Yega people in any great detail. Sampling was therefore essential. My enumeration had revealed the presence among the Yega of 8 patrilineal clans, each consisting of several sub-clans and lineages. The only effective method of studying the interactions of these sub-groups seemed to be to study one clan as a unit. An additional advantage of the one-clan sample was the physical problem of dispersion. The Yega are widely dispersed. In 1962 they lived in 14 different places separated by distances of up to 5 miles. The problem of contact with a group of people selected at random would have enormously increased the time and effort necessary to complete the work. Finally, it was felt that information obtained from members of the same clan would be more reliable and more freely forthcoming. It was considered likely that members of the same clan would be more willing to speak freely than would a mixed-clan group.

Kurou clan was selected as being suitable for intensive study. Its size was manageable; all members lived in one village; some members were holders of cash crop blocks, while others were not, and some members engaged in wage labour were absent from the village.

There were certain disadvantages attached to the sampling technique outlined above:

- i) The clan size was atypical, being much less than the average for Yega clans.

- ii) All members of Kurou clan lived in one village. This circumstance was unique, all other Yega clans being dispersed in two or more villages.
- iii) My work was concentrated in only a limited portion of Yega territory. There may well have been variations in soil type or topography which I did not see.

A schedule was used to ensure that information relating to the same set of facts was collected from each informant.

Pace and compass traverses were used to calculate areas of swiddens. Where the closure error exceeded 5% of the total length of the traverse the swidden was re-measured. All diagrams were drawn in the field.

The technique used by the Survey of Indigenous Agriculture, 1961-62, for making crop counts in inter-planted gardens was adopted. This consists of placing a 1/100th acre rope triangle in a swidden, its position selected at random. An exact count of all plants within the triangle is then made. In this way, an estimate was made of the number of plants of major species in any swidden. Plants present in a swidden in only small numbers were counted individually.

Information on work organisation was obtained by observation and the keeping of a day-book, the details of which were collected by a Papuan assistant. The systematic collection of these data proved to be one of the most difficult parts of the field study and is probably the least accurate. Major causes of inaccuracy were:

- i) Difficulty in the exact measurement of time spent on particular jobs, e.g., a man may state quite truthfully that he spent 'all day' on garden work. He may subdivide this into 'about half on clearing and half on planting'. He doesn't bother to mention time off for breakfast, time taken to have a wash in the creek, time taken to go into the forest and cut the handle for a sago-pounder, or time spent helping someone else with his garden. The effective time taken to perform any piece of work may therefore bear little relation to the time stated, which in most instances is only an approximation. The only way to obtain accurate information on the amount of time spent on different tasks would be to concentrate on this aspect only for some weeks. I did not have time available to do this.

ii) The Yega custom of spending several days at a time living in a garden house away from the permanent village. I was unable to visit people at the garden house each day; by the time they returned to the village they had forgotten what work they did during the first few days at the garden house.

Finally, much general and background information was obtained from conversation and discussion with Yega elders. This was all carried on by interpretation and, hence, is subject to inaccuracy, the greatest factor being simply the lack of time for adequate cross-checking on information given in this manner.

FIG.1

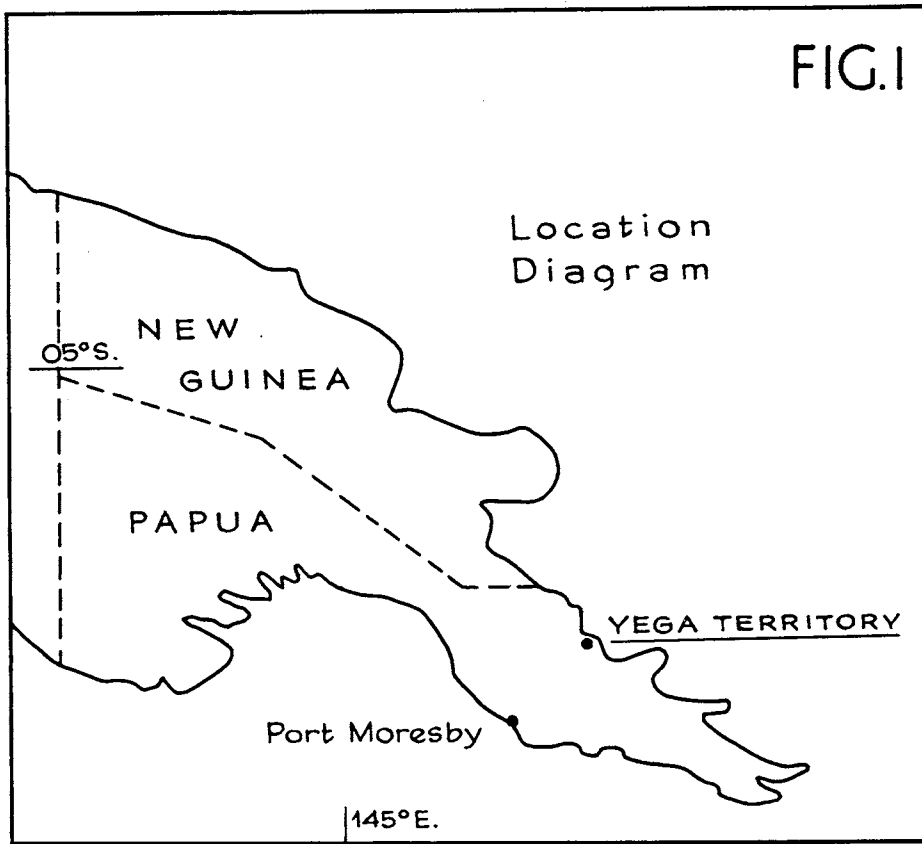
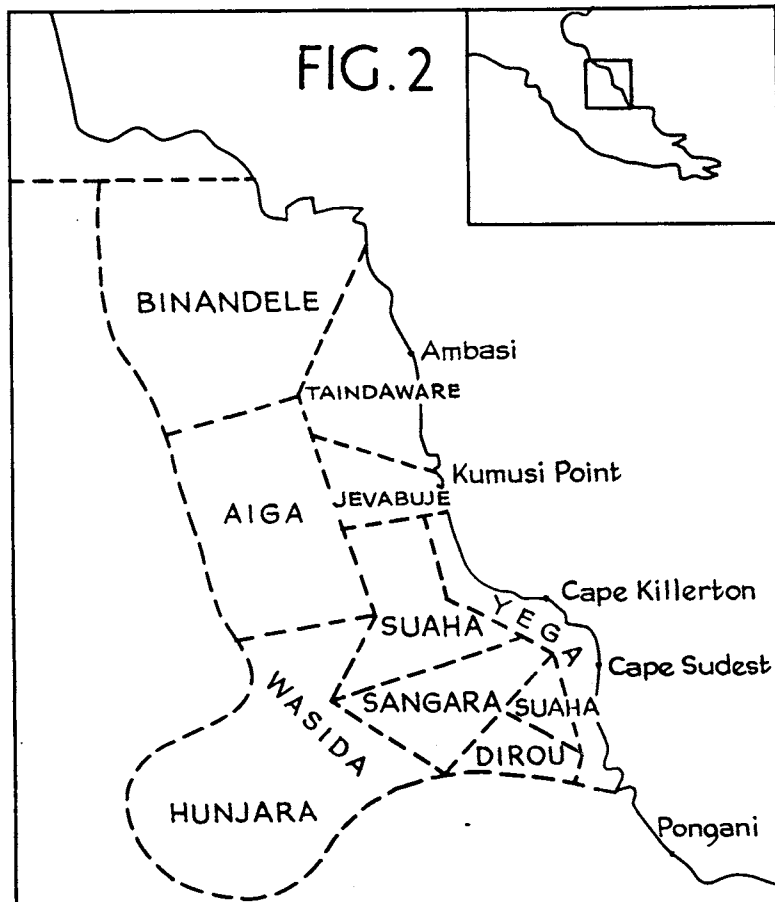
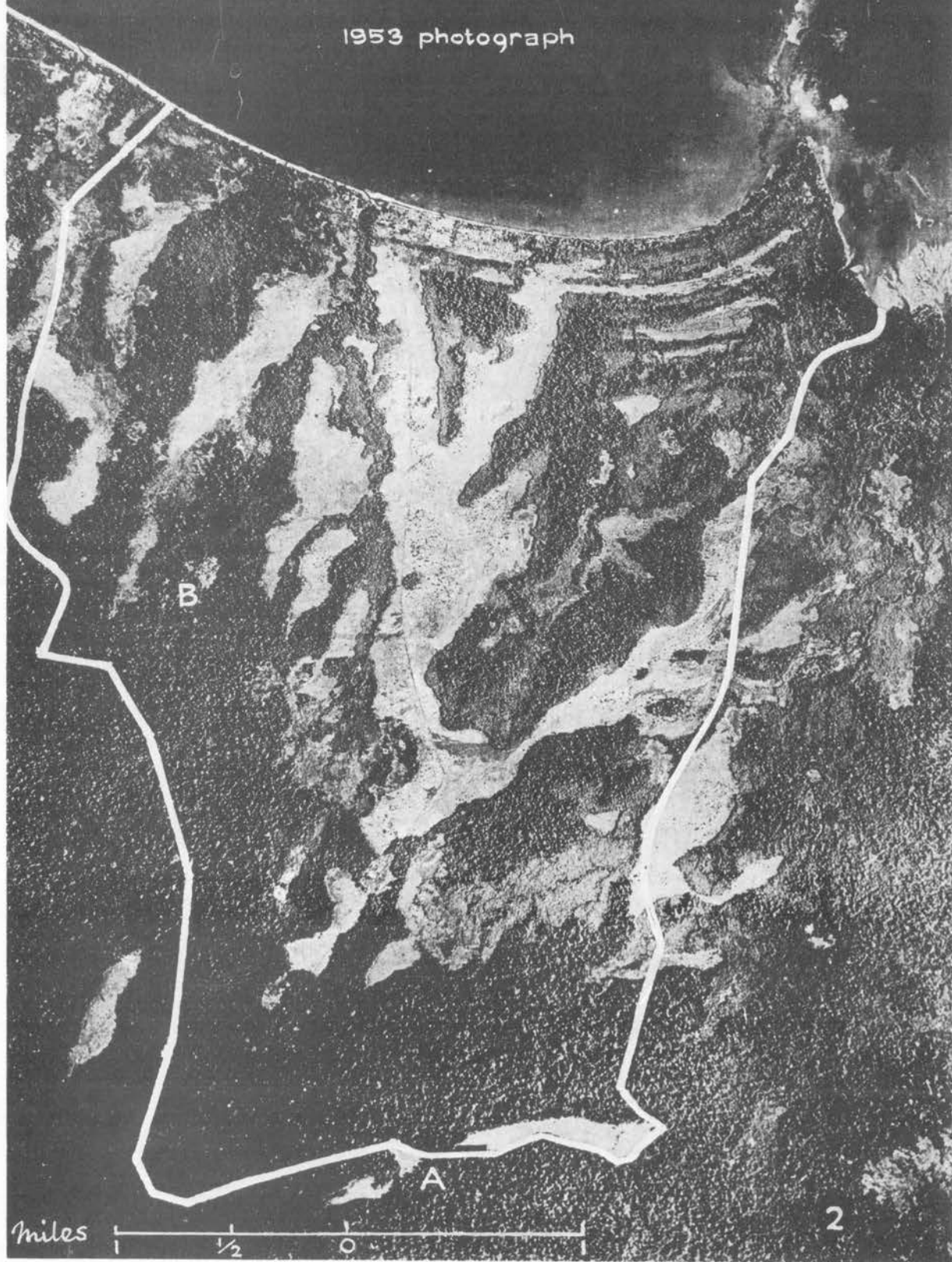


FIG.2



Yega territory from the air
- white line indicates undisputed land
boundary

1953 photograph



INTRODUCTION

The Territory of Papua-New Guinea is a land in transition from the stone age to the complex civilization of the 20th century. The rate of change differs enormously from one part of the country to another, but everywhere there exists a stable, conservative, traditional way of life which is frequently at variance with the forces of change. In order to study the effects of the interaction of the new way of life on the old, it was considered necessary to select a small, closely-knit social group for intensive study. The Yega meet these requirements. They are a small tribe living on the lowlands of northern Papua and the changes occurring in their way of life are typical of changes occurring more generally throughout Papua-New Guinea, especially in areas which have experienced a long period of acculturation. The aim of this thesis is to study the changing Yega economy against the background of traditional customs of land tenure and land use.

A brief summary will suffice to emphasise the magnitude of the changes currently occurring in Papua-New Guinea. Early in 1964, the Territory held its first democratic national election which resulted in a House of Assembly containing a majority of elected indigenous members. Expenditure of public money has tripled during the last decade; pressure from within Australia and from overseas is likely to ensure a continuance of this trend. Building is booming in the Territory's towns; dams, factories and major public works are being constructed, and the establishment of a University has been recommended. In all spheres of the economy the problems of change from a traditional to a modern western-style way of life are being actively discussed and appraised.

One of the most pressing problems is the most suitable mode of transition for the indigenous people from an economy of subsistence agriculture to one based upon the production of cash crops. Whatever direction the development of the country may take in the future, it is generally agreed by economists and by administrators that the only possible short-term policy is to attempt to build up a viable economy on primary production: essentially this must mean agricultural production.

At the present time cash crops are being produced by two major sectors of the community, the white expatriate sector and the indigenous sector. The produce of the white expatriate sector is by far the larger, accounting for some three-quarters of the present total production offered for sale. However, in today's political climate it is clear that any major agricultural advance must be in the indigenous sector. Expansion here will involve additional widespread planting of tree crops - coconuts, cocoa, coffee and rubber - by indigenous growers. Any major increase in the area of land devoted to tree crops, which by their nature are semi-permanent, raises the problem of land tenure.

In order to provide incentive for increased planting of cash crops, and at the same time maintain intra-tribal harmony, some change in traditional customs of land tenure is desirable. In the traditional society of Papua-New Guinea there is little conception of individual freehold of land, and title deeds are unknown. Individuals may hold cultivation rights to land: these rights are inherited within the tribe or sub-tribal social group but only in very exceptional circumstances may land be alienated to a person outside the tribe or even, for that matter, to a person belonging to another clan within the tribe.

The subsistence economy is based upon a land rotation system of land usage. This ensures that an adequate period of fallow - 5 to 20 years - follows each short period of use, thus maintaining soil fertility indefinitely. The planting of semi-permanent tree crops, which may remain in the ground for up to 70 years, runs contrary to such a system of land use because it effectively removes the tree-planted area from the normal land rotation cycle. In addition there may be strong social pressure upon an individual to share the produce of his land with relatives other than members of his own family, even though the actual ownership of trees of economic value is usually vested in the individual planter.

The Administration's answer to the land tenure problem has been, over the past few years, to work towards the eventual establishment of individual land titles on the Australian freehold pattern.¹ This course led to the passing of the Land (Tenure Conversion) Ordinance 1963 early in 1964. An indigenee may, under the terms of this Ordinance, apply for registration in his own name of an area of land. If his application is approved, the land ceases to be native land and the applicant becomes the owner in fee simple. The legal machinery is therefore now available to provide for radical changes in the traditional land tenure customs of the people of Papua-New Guinea.

Many of the indigenous people who have already planted tree crops have experienced land tenure problems. Others have not yet had great difficulty but all are aware of the potential problems of growing tree crops on land which they hold under traditional tenure.

The Yega have been subjected to a long process of acculturation. As a result they have shown an increased willingness, even eagerness, to change their traditional subsistence way of life and to adopt the techniques, attitudes and mores of Europeans. Their attempts to attain increased cash incomes have resulted in a series of land use changes, particularly since 1945, in which the planting of tree crops has figured prominently. Concurrent with these land use changes there have been major changes in the pattern of settlement of the Yega.

This thesis is an attempt to study in depth the changes which have occurred and to explain them by reference to the social structure and traditional way of life of the Yega people. It is a micro-geographical

1. See Hon. P. Hasluck, 'The Economic Development of Papua and New Guinea'. Address to the Economic Society of Australia and New Zealand, N.S.W. Branch, 20th October, 1961.

study (for Yega Territory is but 12 square miles in extent) of the type advocated by Brookfield¹ in which the understanding of human motivation is essential to an understanding of the process of change.

The land use and settlement patterns of the Yega well illustrate the interaction of environmental and social forces in determining past and present geographical distributions. To understand these patterns and the changes to which they have been subjected, an understanding of the physical environment, the traditional social structure and the pre-contact history of the Yega is essential. Chapter I is an attempt to reconstruct this background.

Chapter II describes, in two sections, the process of acculturation to which the Yega were subjected between 1888 and 1946. The year 1942 has been selected as the chronological limit for the first period because on 21st July of that year the Japanese landed at Gona Mission in Yega territory to begin their overland assault on Port Moresby, shattering forever the old way of life of the Yega. The impact of the second world war is described in the second section of this chapter.

In Chapter III, which comprises the major part of the thesis, the present economy of the Yega is analysed. Although most Yega still depend on a system of subsistence horticulture for their livelihood, their interest in the money economy is increasing rapidly. This interest has been manifested in a number of attempts to increase their cash earnings, firstly by co-operative agriculture and latterly by selling agricultural produce at Popondetta market and by growing tree crops. The aim of this chapter is to indicate the nature and scope of the Yega entry into the money economy while also emphasising the extent and the stabilizing effect of the subsistence sector of the economy. An additional aim of Chapter III is to relate recent land use changes to changes in the pattern of settlement. These changes are given particular emphasis by a series of maps.

1. Brookfield, 1964.

The recent changes in Yega land use and settlement are summarised in Chapter IV. The general move is seen to be away from traditional forms to those more in keeping with a money economy, with particular emphasis on the planting of cash crops, necessitating an accelerated rate of forest clearing, a willingness to adopt land tenure innovations, and the widespread dispersal of settlement.

THE PHYSICAL ENVIRONMENT

The Yega live in a coastal equatorial region characterised by a consistently high temperature with little seasonal variation. Rainfall shows marked seasonality, but is usually sufficient to ensure plant growth throughout the year. Micro-variations in terrain account for some variations in land use and in particular have influenced location of settlement in the past. Variations in nature and distribution of natural vegetation are most important to an understanding of the traditional system of land use employed by the present inhabitants. On these several counts, a review of the physical environment is directly relevant to the topic in hand.

The Northern District of Papua falls into Koppen's classification Af-tropical rain forest climate.¹ The most important characteristics of the climate are the generally heavy rainfall and the absence of marked seasonal changes in temperature. Rainfall is particularly heavy during the northwest monsoon season from December to March, and temperatures and humidity are high throughout the year. These characteristics make the climate enervating, particularly if physical labour is performed.

On the coastal lowland of the Northern District temperatures are uniformly high throughout the year. Table I below indicates that there is a difference of only $3\frac{1}{2}$ degrees between the highest and lowest mean maximum temperatures; mean minimum temperatures have a similar range. There is a slight seasonal variation in mean temperatures, the warmer time of the year corresponding fairly closely to the northwest season.

Diurnal variation is appreciable even at the coast - e.g., 8 to 12^oF. at Buna. With increasing distance inland and increasing altitude, temperatures become more extreme, particularly at the lower end of the scale. Diurnal variation increases to 16^o to 18^o at Popondetta (400 ft A.S.L.) and to about 20^o at Kokoda (1200 ft A.S.L.).

1. The most useful climatic study to date of the Northern District has been written by Slatyer, R.O., CSIRO Report 1964.

TABLE I

SUMMARY OF CLIMATIC STATISTICS - POPONDETTA

(Rainfall records, partial 5 years, complete 6 years - Temperature records, partial 2 years, complete 3 years.)

	J	F	M	A	M	J	J	A	S	O	N	D
<u>RAIN.</u>												
Mean mthly rainfall (inches)	11.5	8.7	9.9	9.3	4.9	5.4	3.5	3.7	7.0	7.7	11.4	12.8
Mean no. of rainy days (8 years)	17	16	17	19	15	14	12	12	14	16	19	21
Highest daily fall (inches) (5 years)	4.87	3.05	4.17	3.79	2.03	2.68	1.75	3.30	3.35	4.89	3.33	8.02
<u>TEMP.</u>												
Mean Max. °F.	89.4	88.8	88.0	86.5	87.6	86.8	85.9	87.3	87.1	88.8	88.5	88.3
Mean Min. °F.	71.8	71.8	71.5	70.7	69.6	68.5	68.5	68.2	69.2	70.1	70.4	71.1

The Northern District lies within the tropical trade wind system. The high NW-SE aligned ridge of the Owen Stanleys prevents any effective penetration by rain-bearing southerly winds during the south-east season, resulting in a marked seasonal variation in rainfall. The Popondetta area receives two-thirds of its mean annual rainfall of approximately 100 inches during the six months November to April, i.e., in the northwest monsoon season. Local variation within the Northern District is shown by the four histograms¹ (Fig. 3). Of the four stations for which records are available, it is clear that Popondetta, the nearest to Yega territory, is markedly drier than the others.

1. Histograms for Buna, Kokoda and Ioma were calculated by Slatyer ibid.

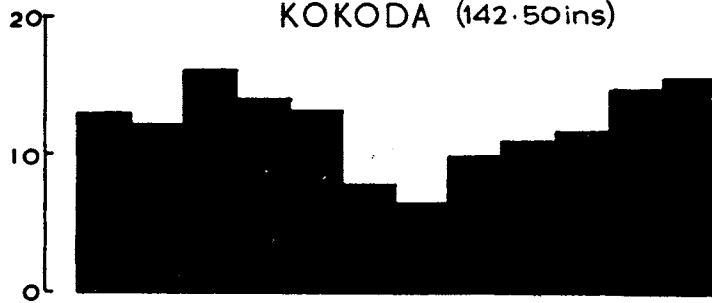
FIG. 3

RAINFALL HISTOGRAMS - Northern District
of PAPUA

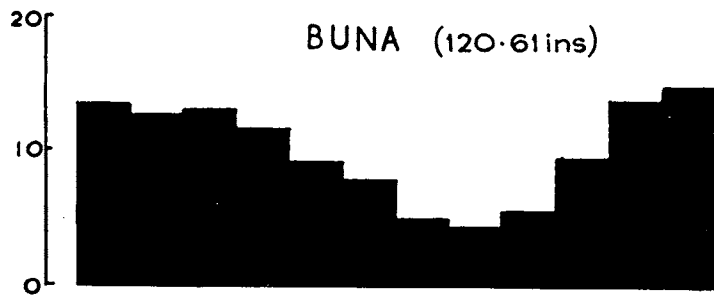
IOMA (155.76ins)



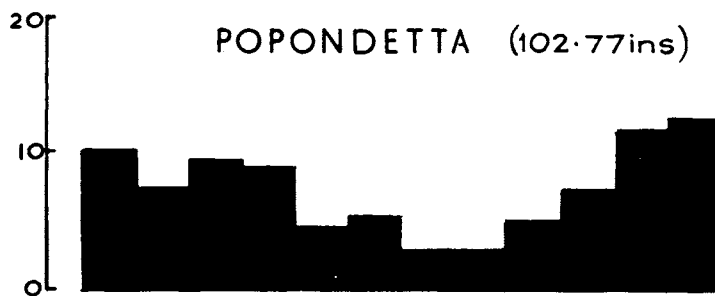
KOKODA (142.50ins)



BUNA (120.61ins)



POPONDETTA (102.77ins)



J F M A M J J A S O N D

In the humid tropics, any month having a mean rainfall of less than 4 inches may be regarded as 'dry'.¹ On this basis, July and August at Popondetta may be classified as 'dry', and June and September as 'fairly dry'. Nevertheless, even in the driest month, rain can be expected to fall on at least 12 days (see Table I), and in all but the driest months, one or two falls per fortnight exceed one inch. There is, therefore, no really dry season of sufficient duration to ensure the successful ripening and thorough drying for storage of cereal crops such as maize or rice.

The Yega recognise four seasons. These are:

A dry season, Gaeko or Tuvira,² (June-July-August). This is the time of clearing, particularly if saute is to be cleared, and burning off of new swiddens: it is also the season for hunting small game by burning grassland.

Baimana,³ also called Beji'iji, (late August and September). This is also a dry period, but coming directly after Tuvira it is regarded as the most difficult time of the year for food. It is the time when most sago is collected.

A wet season subdivided into 2 periods;

Garawa-Gaun⁴ (late September, October), beginning of the wet season, a period of active planting in the gardens and preparation of the large komboro fishing nets; characterised by afternoon thunderstorms;

Gareba⁵ (November to May), regarded as the season of plenty and therefore the time for feasting, with plentiful garden produce and best time for fishing; heavy falls of rain may occur at any time of day or night.

1. Beard, 1946; Wills, 1962.

2. Gaeko means 'dry weather'; Tuvira means 'the time of flowering of the Tuvira tree'.

3. Baimana means 'the time when the sea becomes dark'; Beji'iji means 'time of food shortage'.

4. Garawa-gaun, literally 'Garawa tree thunder', i.e., 'when the Garawa tree flowers and we hear thunder in the afternoon'.

5. Gareba means 'time of flowering of the Gareba tree'.

Slatyer¹ has calculated that over most of the Buna-Kokoda area the growing season is seldom of less than 12 months duration: at Buna on the coast, 15 miles south of Yega territory, he estimates there is a full 12 month growing season nine years out of ten. This indicates a very reliable climate for agricultural purposes. Nevertheless, wide variations from the means are not uncommon. For instance, at Popondetta the mean rainfall for January is 11.5 inches, but falls of over 20 inches have been recorded during this month. During 1962 and 1963 however, drought conditions prevailed in January. In 1962 the total fall for January was 3.37 inches, of which 1.27 inches fell in one day. In January 1963 only 2.40 inches was recorded, a very wide departure from the mean, resulting in substantial retardation of crop growth and actual death of plants in some areas. By contrast, 20.2 inches was recorded in January 1964 and 8.7 inches in July, this latter figure representing approximately three times the mean for that month.

The north coastal plain on which Yega territory is located has few variations in its monotonously flat surface.² Those minor variations which do occur nevertheless have an important bearing on land use, and also, in the past, greatly influenced the pattern of settlement of the Yega people.

The coastal lowlands north and northeast of Mt Lamington are volcanic outwash plains consisting mainly of sandy fan-sediments deposited after earlier eruptions of the volcano. The landscape in the southern sector of this area is dominated by the upstanding volcanic mass of Mt Lamington with its semi-radial pattern of main rivers, the Kumusi, Amboga, Girua, Samboga and many smaller streams, which spread fanwise across the plain to the north and northeast. Popondetta, the administrative centre

1. Slatyer, op.cit., 1964, pp. 29-31.

2. Paterson, S.J., CSIRO, 1964, contains a systematic treatment of the geomorphology of the area.

of the Northern District, stands at the base of Mt Lamington foothills, 12 miles in a direct line from the summit of the mountain and 400 ft above sea level. To this point there is an average gradient from the mountain summit of 1 in 13. From Popondetta to the coast at Gona Mission, a straight line distance of 11 miles, the average gradient is 1 in 145. The plain is quite devoid of major topographical features except watercourses. The larger streams such as the Amboga and Girua Rivers and Hayo Creek have wide shallow beds and braided channels. They show a marked tendency during freshets to cut new channels through the unconsolidated sediments of the plain - a circumstance which poses serious difficulties for present-day human occupation of the plain, and particularly for the maintenance of transport facilities. At the present time one of the major problems facing the Administration locally is erosion of the Popondetta-Cape Killerton road by the Girua River, which has actually breached it in one spot and is within a few feet of destroying it in another. Much of the plain near the coast is low-lying and swampy. Neither the Amboga nor the Girua have major outlets, but dissipate their flows in extensive swamps from which small distributaries discharge into the sea.

The gently inclined plain which comprises Yega territory is traversed only by small permanent creeks. Epa Creek, which forms part of the southern boundary of Yega territory, flows into Ononda Creek, a tributary of Barida River. This river gives easy access by canoe to some garden areas of Seseke and Eupu clans and also to members of the eastern Bapa who have gardens along its banks. The three streams already mentioned drain the eastern part of Yega territory; none is as important to the majority of Yega as a small creek which flows from south to north, just west of the Popondetta-Gona road. This creek is named at different places from south to north, Imangada, Konje and Kikiri. It has one small tributary, Gora, which joins it about three miles from its mouth at Gona Mission. This creek, only about ten miles long and flowing as it does through the centre of the main Yega subsistence gardening area, is a reliable source of drinking water to many people during work or on their way to and from the

the gardens. Half a mile to the west a similar creek, Kaireda, parallels Konje Creek, also traversing important garden areas. Still farther to the west, almost on the boundary of the territory of the Western Bapa, another small creek, Saroda, fulfils a similar function. In addition to the permanent streams a number of dry watercourses occur at irregular intervals.

All the stream beds are incised well below the surface of the plain; for example, the bed of Ononda Creek at Ononda bridge is approximately 15 ft below the plain surface, that of Imangada Creek at Tatogosusu approximately 12 ft below.

Apart from these incised stream beds there is little variation in the flat surface of the plain. The most noticeable variations are shallow depressions four or five feet deep and from 20 to more than 100 yards in width, scattered at irregular intervals over the plain. These depressions remain moist even during dry spells; for this reason they are usually distinguishable from a distance by clumps of sago palms. Much more extensive depressions, from 3 to 10 feet deep and 10 to 80 chains wide, have been noted by the CSIRO Land Research and Regional Survey team¹ in its Hanau Land System, which includes most of Yega territory. Though not thoroughly investigated by the CSIRO, these depressions seem to represent a lower terrace surface along most streams: the depressions are invariably wooded.

A wide variety of features is found on the coast. Cape Killerton is a raised coral reef which has become part of the mainland only in the fairly recent past. Almost completely surrounded by mangrove swamp, it is accessible by foot along the beach from Wye Point, and from the north by road bridge and, at high tide, through a foot of water which covers the road at its lowest point. Half a mile from the Killerton Wharf the road traverses a beach ridge, which is currently being eroded by waves on the seaward side. At its narrowest, this ridge is but 12 yards wide. Tree

1. Personal communication, H. Haantjens, October, 1963.

stumps offshore indicate recent recession of the shoreline.¹

A mile west of the Cape Killerton wharf is the compound recurved spit of Niniyanda. A motorable track, branching from the Killerton-Popondetta road, runs to the tip of the spit and gives access to two villages. On the landward side the spit is bordered by mangrove swamp, and on the seaward side by a receding shore. Roots of trees growing along the beach are exposed, and a large stump stands about 30 yards offshore; for a distance of 20 yards the spit narrows to little more than the width of the motor track. Local residents state that the width here has decreased very noticeably in an interval of seven years.

Half a mile offshore, and almost due north of the tip of Niniyanda spit, are Baroda Deuga (Mangrove Islands) - three vegetated coral reefs. Only one of these was investigated, but informants stated that the other two islands are similar to it in structure. The islands consist of low rims of broken coral fragments and coarse sand, rising to about 2 ft above the sea, and reaching widths of 3 to 15 ft, which encircle salt-water lagoons about 2-3 ft deep. Growing in the lagoons, round the rims, and offshore to distances of 20 yards, are well-established mangroves of at least two distinct species. It was claimed by several old Yega men that when they were boys or young men, their fathers and grandfathers had subsistence gardens on Baroda Deuga. If this was so, very extensive erosion has occurred in the past 50 years.

The bay between Niniyanda spit and Waususu Point is being infilled. Along the shore is an extensive area of mangrove swamp, which extends about a mile along the shore and up to half a mile inland. Barida River, three

1. Cf. CSIRO 1964, p.67, 'In the Buna-Gona area where the shoreline is advancing seaward...' Although it is true that the general evidence of beach ridges parallelling the shoreline indicates an advancing shoreline, the present phase at least, along the Yega coast, is one of shore recession.

large creeks, and many small waterways traverse this area of dark-grey mud. Deposits from the streams and creeks have accumulated with marine sands in the bay so that it is possible at low water neap tides to walk in almost a direct line between Niniyanda to Basabuga through water nowhere more than 18 inches deep. Several mudbanks are exposed at low water springs.

Waususu Point is a cusped foreland with a fairly extensive coral reef extending about half a mile offshore from its tip. Plate 3 illustrates the pattern of beach ridges extending west along the beach for two miles and inland for about half a mile. This pattern characterises the whole extent of Holnicote Bay from Cape Killerton to the Kumusi River mouth. It is most distinctive near Bakubari, 9 miles northwest from Waususu Point where the swales are water-filled, forming long narrow lakes. The ridge-and-swale pattern indicates a period of constructional marine activity during Quaternary times, or alternatively, re-distribution of alluvium by marine agencies. A Quaternary extension of the shoreline by $\frac{1}{4}$ to $\frac{1}{2}$ a mile appears certain.

The variation in topography in the near-coastal zone is slight. The ridge nearest the beach is nowhere more than 3-4 ft above high tide level. It is vegetated all along its seaward face by a thickly-growing creeper (Ipomoea pres-caprae), the matted roots of which prevent wave-erosion from being even more rapid than it is. A few large trees of the original Barringtonia asiatica-Pterocarpus indicus association still grow along the beach ridge but most have disappeared. Several very large specimens lie dead on the beach. The higher part of the ridge is grassed, mainly with Imperata spp. The dominant tree species present on the ridge is the coconut palm, Cocos nucifera.

The swales, which in the dry season are long narrow stretches of swampy or boggy ground, thickly planted with sago palms (mainly Metroxylon sagu with some M. Rumphii) fill with water during the wet season to a depth of three or four feet. At intervals of 300 or 400 yards along the beach are small creeks which connect with the sago swamps behind. The openings of these creeks are barred by sand for most of the time, but occasionally

the increasing volume of water in the swamps breaches the bars, so that the swamps are temporarily drained.

The width of the ridges varies at different points along the beach. At Beporo village the beach ridge on which the village is built is 210 yards wide, although a small isolated patch of sago swamp occurs in the centre of the village 65 yards from the beach. The water table in the village is normally 4 to $4\frac{1}{2}$ ft below the surface, and good fresh water is obtainable from wells sunk 100 yards back from the beach. The swampy area of the swale is about 30 yards wide, and the second ridge, partly vegetated here by secondary forest and partly by permanent grassland, 185 yards wide. Near old Nyamboro village at the eastern end of the beach, the shore ridge is but 8 yards wide, the first swale about 10 yards, the second ridge 75 yards, and the third ridge some 175 yards wide.

Further evidence of a shift of the shoreline occurs near Kurou village, three miles west of Waususu Point. Two creeks, Kurou and Paga (or Fuaga), enter the sea to the west and east respectively of Kurou village. The bottom of Paga Creek is soft and sandy, whereas the bottom of Kurou Creek, one hundred and twenty yards from its mouth is composed of solid coral, while large blocks of coral protrude from the bed, some to within a few inches of the water surface.¹ At present, the creek is tidal and its water brackish at most states of tide. Coral could not have grown in present conditions: the reef must have grown offshore, at a time when the shoreline was not less than several hundred yards inland of its present position.

Although constructional agencies were formerly dominant in Holnicote Bay, the present trend is one of marine erosion. Trees on the present

1. The legendary explanation for this phenomenon is briefly as follows: There was originally a reef in each creek. Once upon a time the reefs decided to migrate and live in the sea, but the Kurou reef was lazy and by the time it was ready to start its journey all suitable places were occupied. Paga reef is located offshore, but Kurou reef has remained in its creek.

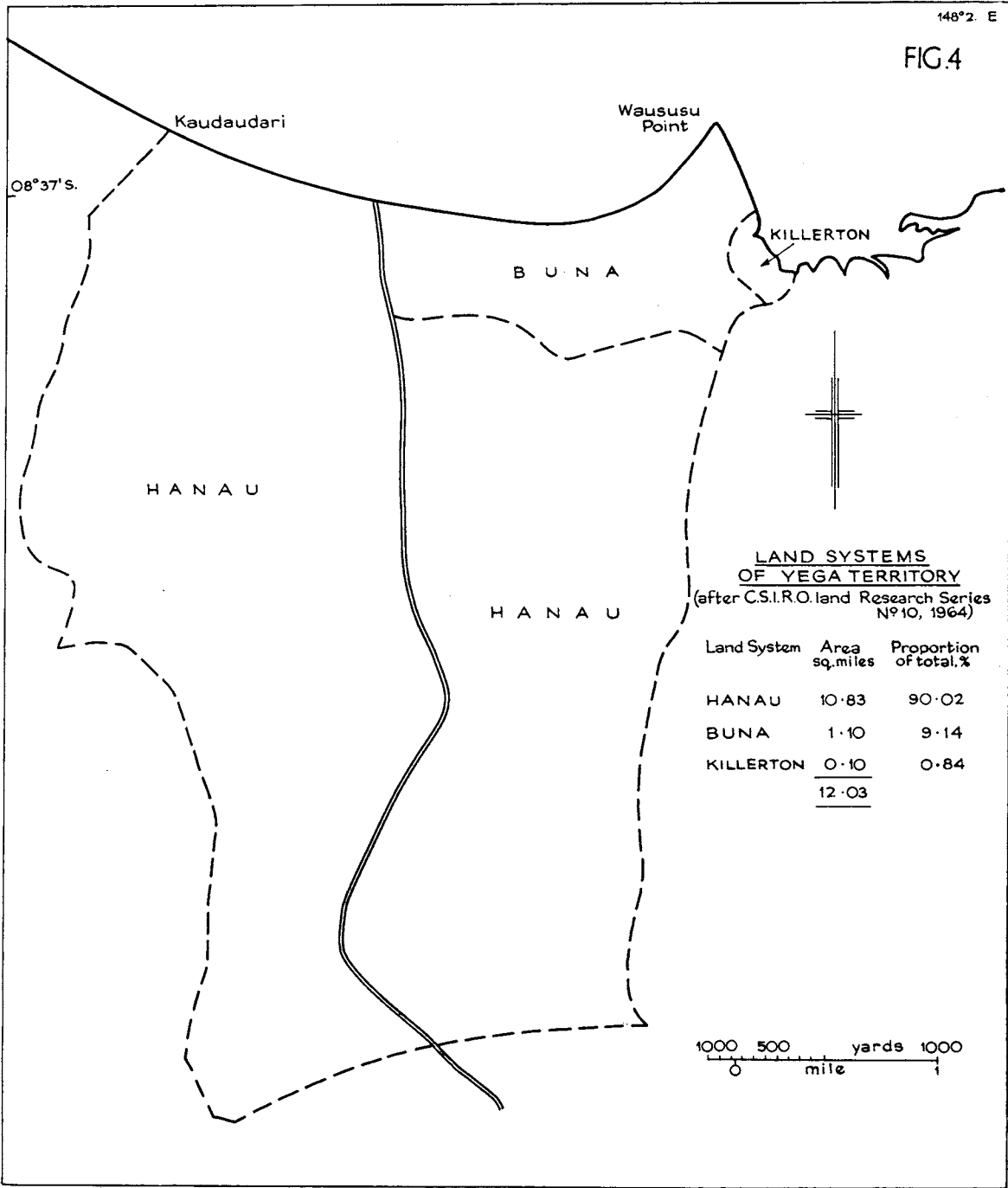
shoreline are being undermined on the western side of Waususu Point (Plate 3). There was a quite noticeable extension in the quantity of roots exposed by wave action in this area during the three-month observation period. At low water springs, many palm stumps are visible at varying distances from the shore.¹ Informants say that erosion of the beach has only occurred since the war. Some confirmation of their statement was provided by two pieces of evidence: a 44-gallon drum, almost entirely buried in the sand 14 yards out from the present shoreline, was described as part of a latrine used by an American Army unit in 1943-44; an entry dated 19th November, 1946, in the diary of Rev. James Benson of Gona Mission gives details of an extremely severe storm which destroyed many homes and lines of coconut palms along the beach front. This storm was the most severe within the memory of local inhabitants; it is probable that, by destroying vegetation, the storm accelerated the erosion of the foreshore.

The soils of Yega territory were classified by the CSIRO Land Research and Regional Survey team during its wider study of the Buna-Kokoda area in 1953.² On the basis of soil differences as well as differences in geology, landforms and vegetation, a classification of land systems was adopted. Portions of the following land systems occur within Yega territory:³

Hanau Land System
Buna Land System
Killerton Land System

-
1. The distance from the present shoreline to seven stumps, between Tarebosusu and Beporo villages, varies from 13 to 18 yards.
 2. Haantjens, CSIRO, 1964.
 3. Excluding areas of disputed Yega territory. An enlargement of section of the CSIRO Land Systems Location map has been included, Fig. 4.

FIG.4



Soils of the Hanau Land System (10.83 square miles). Almost all the Yega gardening areas fall within the Hanau Land System. The portions covered by rain forest (and young secondary forest as well as swiddens in various stages of cultivation) are almost level surfaces of mainly medium-textured but also fine textured alluvials of andesite volcanic origin. They are poorly or imperfectly drained and are liable to flooding. South of Gona, and interspersed between the patches of forest, are elongated, slightly elevated, and commonly undulating grassland strips of unweathered, sandy, volcanic soils with black topsoil, well to excessively drained¹ (Plate 5). In Yega territory, the topographical variations within the grasslands and between grass and forest areas are very slight.

From personal observation the main difference in soils under different vegetation covers was the effect upon drainage. Frequently after rain the ground under dense mature rain forest was soggy, under secondary forest it was friable, and on the grasslands where it dried out most rapidly, it was friable to firm. Differences in vegetation cover appeared to be of greater importance than variations in soil type, at least in the matter of drainage.

Soils of the Buna Land System (1.10 square miles). The area within Yega territory classified in the Buna Land System extends from the western end of the Gona Mission to Waususu Point, and inland for approximately half a mile. Long, narrow beach ridges roughly parallel to one another and to the coastline, alternate with swales, some narrow, others quite wide. Creeks cut through the ridges to the sea at irregular intervals, draining the surplus water which collects in the swales. Unweathered sandy soils with black topsoils cover the ridges. These are well to excessively drained and are usually vegetated by grassland. The swales are filled with unidentified alluvial soils of coarse to medium texture, poorly drained and often permanently waterlogged in the lower levels. Land use potential of these soils is rated as low.

1. CSIRO, op.cit., p.72.

Soils of the Killerton Land System (0.10 square miles). The Killerton Land System is an area of recent marine sediments with some volcanic sand and coral fragments. It is covered mainly by tidal mangrove swamp, though at Cape Killerton itself is a limited area of more elevated sandy soil on which are located two villages surrounded by coconut palms. Apart from this one small area the agricultural potential of the land is very low to nil.

The Yega do not correlate one soil with forest and another with grassland, nor do soils play an important part in the allocation of garden sites. This relative unimportance of soil differentiation is perhaps an indication of the high measure of homogeneity of soils in Yega territory. The Yega recognise four different soils¹ in their garden areas. These are:

- dumeno - a black sandy loam: the most common type; regarded as most fertile and most suitable under normal conditions for growth of taro and other food crops.
- ogata - black sandy clay loam: almost indistinguishable from dumeno, but somewhat heavier in texture.
- godina - black sandy loam: appearance and feel similar to dumeno but recognised by Yega as the best soil for taro during heavy rains, so presumably with somewhat better drainage characteristics than dumeno.
- sigije - greyish-brown, clay loam, with heavy yellowish clay layer at about 16 inches.

Detailed scientific analysis of the soils of Yega territory was not possible in the time available.² However, relevant work has been done by Graham and Baseden³ on soils in the Warangoi Valley of New Britain; the Warangoi soils are of similar volcanic origin and developed under similar climatic conditions to those of Yega territory. In the course of their

1. This differentiation is based only upon differences in the topsoil.

2. Thirty soil samples collected from sites under differing land uses in Yega Territory were, in fact, analysed by the D.A.S.F. in Port Moresby. However, following discussion with the Principal Soils Research Officer of D.A.S.F. (Mr. D. Murty), it was decided that conclusions drawn from such a small number of samples might prove fallacious and even misleading.

3. Graham and Baseden, 1956.

investigation, which extended over a period of years, Graham and Baseden analysed thousands of soil samples. It was found¹ that the bulk of the organic matter is close to the surface, the content being about 23% in the first few inches, rapidly decreasing to almost nil at 10 inches. The present mechanical stability and fertility of these soils would appear to depend to a large extent upon the organic phase because the maintenance of nitrogen reserves depends upon the continued high level of organic material in the topsoil. Any system of land use which permits the depletion of organic matter can be expected to reduce the nitrogen reserves in the soil, lowering fertility and opening the way for accelerated erosion. It was therefore strongly advocated that management practices should aim at the conservation of organic matter in the topsoil.

The implications of these findings to the Yega appear to be twofold. Firstly, in the production of food crops by the swidden system, any tendency to shorten the land rotation cycle should be resisted. Secondly, the soil under tree crop plantations should be given a green cover or else should be regularly mulched.

The distribution of natural vegetation is of major importance, for upon the classification of vegetation associations is based the Yega system of land rights. The landscape in Yega territory is predominantly forest broken, by ribbons of grassland, into strips which are aligned roughly northeast to southwest (Plate 2). Grassland covers about one quarter of the total area: there are also small areas of sago and mangrove swamps.² The Yega recognise distinctive vegetation associations occurring on different areas of land within their territory. In the classification given below the Yega names for the six main associative groups are described in English;

1. *ibid*, pp.12, 17 and 18.

2. Taylor, B.W., CSIRO, 1964, contains a systematic treatment of the vegetation of the Buna-Kokoda area.

botanical names of the most frequently occurring or most distinctive species are included for each group:

Saute¹ - Mature rain forest generally over 100 ft high, rich in thick-stemmed lianas and woody as well as herbaceous epiphytes. On the best drained areas west of Barida River this forest is of Anisoptera kostermansiana - Pometia pinnata² association. Of much wider distribution however, is forest of Pometia pinnata-Alstonia scholaris-Octomeles sumatrana association. This association is found on areas of poorer drainage than the A.kostermansiana-P.pinnata association. Saute forest has not been cleared for gardening within the living memory of the Yega.

Enda³ - Immature secondary forest: rarely above 50 ft in height and characterised by the following tree species:

mange, (Commersonia bartramia)
songa, (Melochia umbellata)
oera, (Rhamnaceae alphitonia)
bamba, (Urena lobata)
dobu, (Ficus hispidiodes)
kapura, (Glochidion spp.)

Two varieties of wild ginger are also common. These are:

esege, (Zingiberaceae tapcinochilus)
roriwa, (Alpinia spp.)

Several species of ferns occur also.

The word enda can also be translated as 'land' i.e., the land used for making swiddens for food production. Areas of enda are characterised by a uniformity of tree height which is dependent upon the period of growth since the abandonment of a swidden.

1. The Ewa-ge names for vegetation associations are used throughout succeeding chapters to avoid clumsy repetition of the descriptive English phrases.
2. Taylor, ibid, p.82-83, The description of saute species relies directly on Taylor's work.
3. The enda, manene and eke species named here were identified at Lae Botanical Gardens from specimens collected in the field. Taylor, ibid, p. 83-84, names other species as being dominant in the younger secondary growth areas.

Manene - Early stage regrowth (up to 2 years after abandoning the swidden). Manene is characterised particularly by a tall and very densely growing sorghum-like plant, Tambara (Polytoca macrophylla). Young trees of the species found in enda are common, as is the grass sassawa (Imperata spp.) found in eke areas. Greeners such as basinoro (Passiflora

ADDENDUM.

Buro - Land on which crops are growing.

Eke - Grassland. The two dominant species are:
ugaru, (Saccharum spontaneum)
sassawa, (Imperata spp.- cylindrica and conferta)

Other frequently occurring species are:

bonenji, (Sorghum siatidum)
ukio, (Coelorrhachis rottboellioides)
jinjiga, (Seleria lithocarpa)
gagi, (Fimbristylis dichotoma)

Four tree species occur, scattered over the grasslands.¹
 Two are common. They are:

sigore, (Antidesma ghaesembilla)
tiga, (Nauclea orientalis)

The others, gewa (Albizia procera) and dobu (Ficus hispidioides) occur less frequently.

These tree species must possess fire resistant qualities to persist in spite of annual burning of the grass.

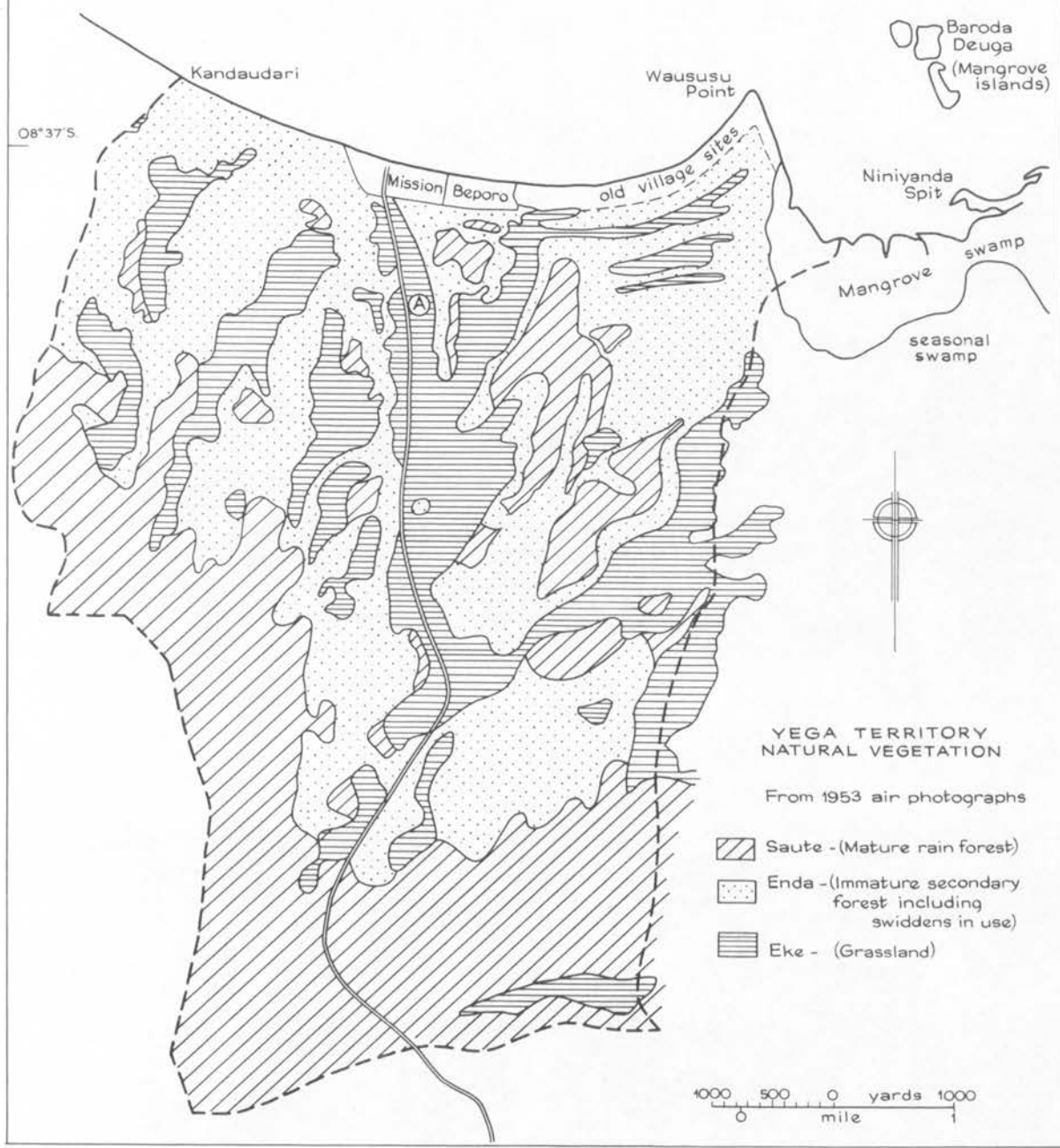
Gogoro - Sago swamp. The species occurring most commonly in the Yega area is Metroxylon sagu. The spiny-leaved M.rumphii is also present but is relatively rare. The main areas of Gogoro occur in long narrow strips parallel to the beach. Other patches occur in swampy hollows scattered throughout Yega territory.

Sara - Mangrove swamp (Rhizophora spp.). Mangroves grow on offshore coral islands as well as on the mainland. The main areas of sara are found round the shores of the sheltered bay east of Waususu Point and round Cape Killerton.

The broad distribution of these major vegetation types within Yega territory is shown on Fig. 5.

1. Taylor, ibid, p.89, recognises Timonius timon also as a commonly occurring tree on the grasslands. From observation it is not common on the grasslands within Yega territory.

FIG.5



08°37'S

Kandaudari

Waususu Point

Mission Beporo

old village sites

Baroda Deuga (Mangrove islands)




Niniyanda Spit

Mangrove swamp

seasonal swamp

YEGA TERRITORY NATURAL VEGETATION

From 1953 air photographs

-  Saute - (Mature rain forest)
-  Enda - (Immature secondary forest including swiddens in use)
-  Eke - (Grassland)

1000 500 0 yards 1000
0 mile 1

FIG.6a

Method of organising a grassland hunt

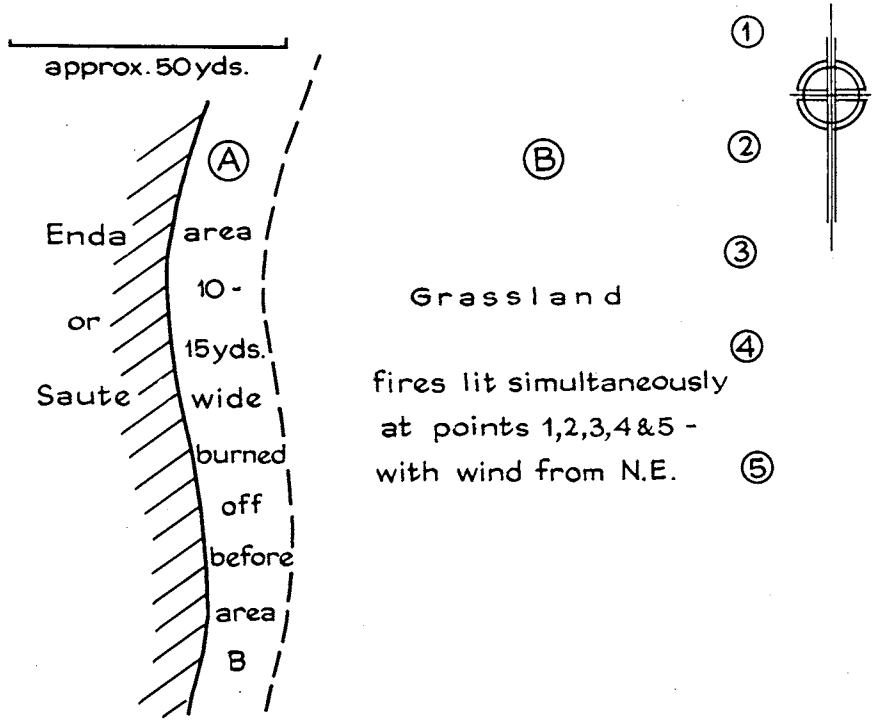
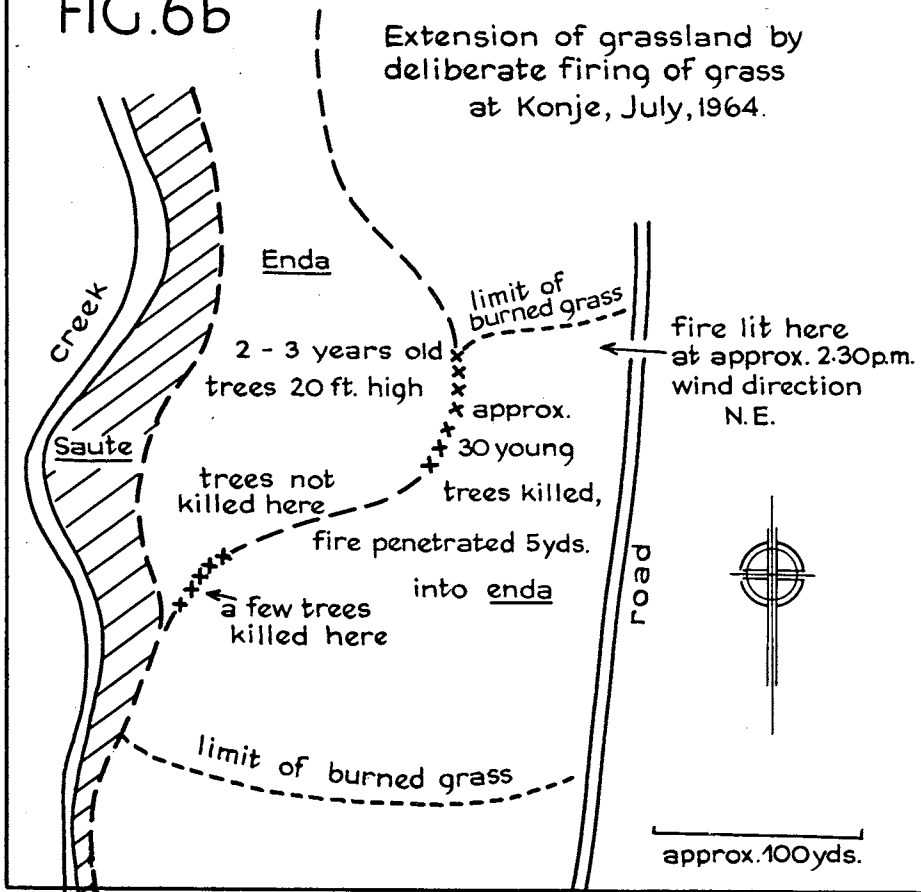


FIG.6b

Extension of grassland by deliberate firing of grass at Konje, July, 1964.



The area of land in various categories, controlled by one clan (Kurou clan), was measured on the ground by pace and compass traverse, by triangulation and from a study of air photographs. These calculations were plotted on a base map and the area in each category measured by planimeter. Results are tabulated in Table 2 below, the areal distribution of land of various categories being shown on Fig. 7.

TABLE 2

KUROU CLAN - LAND CLASSIFICATION, JANUARY 1963

	<u>ACRES</u>	<u>% OF TOTAL</u>
a) Area of rain forest (<u>saute</u>)	519.0	44.4
b) Area of grassland (<u>eke</u>)	355.0	30.4
c) Area of secondary growth (<u>enda</u> and <u>manene</u>)	247.5	21.2
d) Area under cultivation (subsistence)		
i) by Kurou members	5.0	
ii) by members of other clans	3.3	.7
e) Area under cultivation (cash crops)	2.3	.2
f) Area of derelict village sites	9.0	.7
g) Area of mangrove swamp (<u>sara</u>)	Nil	
Measurement error	27.9	2.4
	<hr/>	<hr/>
Total area of Kurou clan land	1169 acres	100
	<hr/>	<hr/>

Area of present effective use for subsistence gardening within the land rotation cycle, i.e., total (c) plus (d) above, 256 acres.

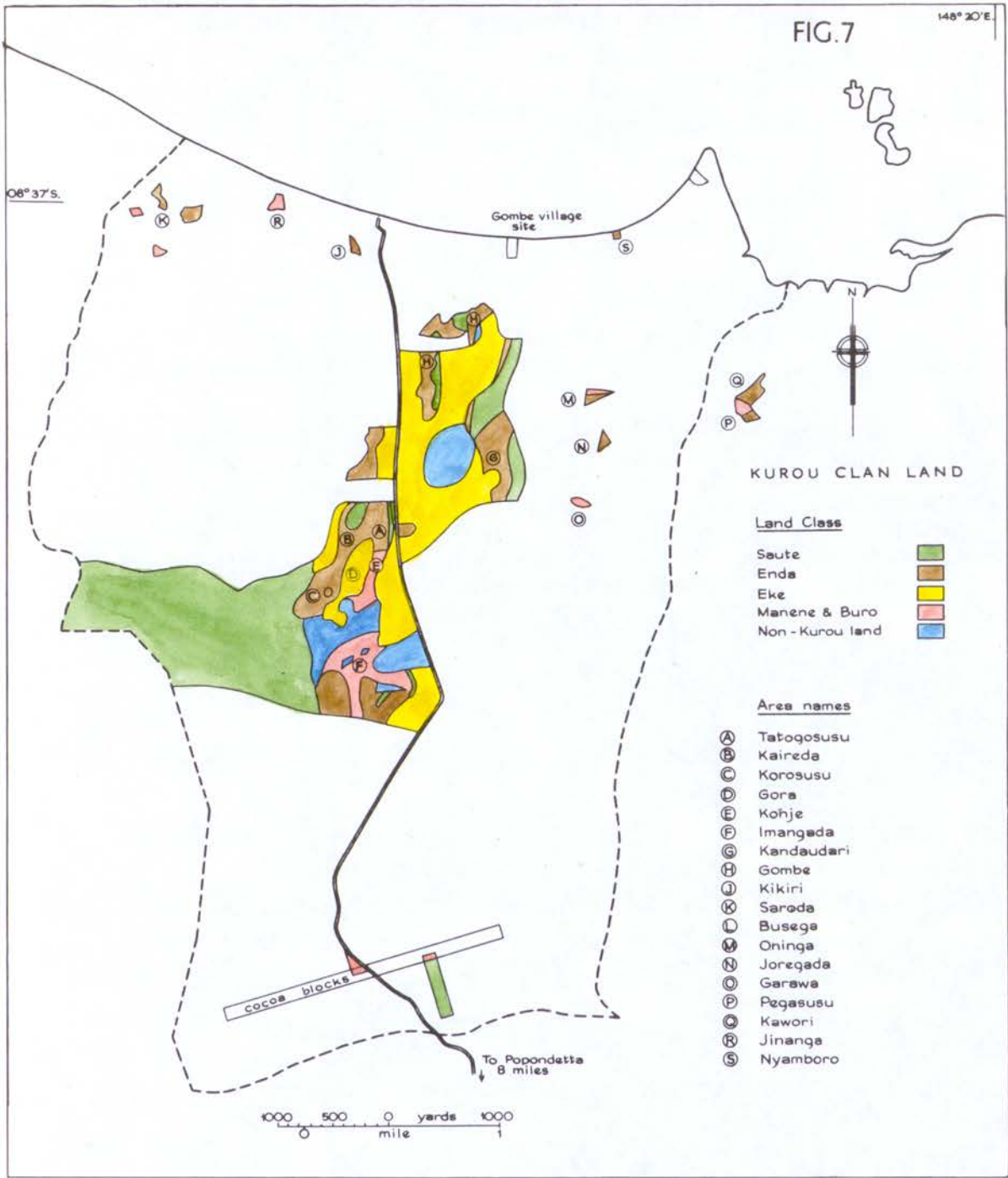
In addition to the figure given against (d)(i) above, Kurou clan members are at present cultivating 4.24 acres of land controlled by members of other clans.

No figure is given for the area of sago swamp. The number of clumps (of varying extent) in Kurou clan control is 34.

Several vegetation species require special mention. The most important is mono (Cordyline terminalis) of which two varieties, one with green leaves, the other with reddish leaves, are common. The red-leaved variety is normally used by the Yega as a land boundary marker. It is said to be remarkably adaptable and resilient. It grows equally well if planted in grassland or rain forest and is not generally destroyed by cutting or burning. Occasionally Croton spp. may be used as a boundary marker.

FIG. 7

148° 20' E



A creeping grass, utudawosari (Paspalum conjugatum) is found dominating areas which are kept clear of weeds and bush, e.g., in permanent village sites such as Ononda Extension Settlement. It provides a good ground cover and a thick mulch under coffee or cocoa shade.

Two recently imported species of commonly occurring vegetation were noted. Only one, jemina (Erechthites valerianaefolia) has been given a name in Ewa-ge as yet. The name means 'volcano' for it was stated that this thistle-like herbaceous plant has only appeared in Yega country since the eruption of Mt Lamington in 1951. The other importation, Mimosa invisa, has only appeared, it was claimed, along the road sides in the vicinity of Ononda, since the Administration began the improvement of the Gona-Popondetta road in 1962, with loads of gravel and sand brought from the Amboga river area. In this brief period M.invisa has spread rapidly.

From information given by Yega elders it seems apparent that the present landscape, viz., belts of rain forest interspersed by ribbons of grassland, has altered very little in appearance since the Yega people first arrived in the area. Undoubtedly, the area of enda secondary forest has been extended to supply the needs of an increased population in recent years.¹ During the past five years members of Seseko (the most populous clan) have extended and are continuing to extend their garden areas round Mumburada, $3\frac{1}{2}$ miles inland, by clearing saute, and even during my short stay in the village, a dispute was threatening between Kurou clan and a Seseko man, who, it was claimed, had trespassed on the Kurou saute hunting area to clear a new swidden.

The grasslands were probably formed as a result of the gardening methods of previous occupants. Referring to grasslands generally in the Buna-Kokoda area, Taylor² states that it is reasonably certain that most of

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1. The present lineage heads of Kurou clan remember, as boys, the clearing of saute at Imangada, Konje and Gora. These are the most extensive Kurou garden areas at the present time.
 2. Taylor, op.cit., 1963, p.82.

the grasslands are maintained in a state of disclimax by regular hunting fires.¹ In a few small areas, for example, that marked A on Fig. 5, fire-resistant species (notably Sigore, Antidesma ghaesembilla), have restored a partial tree cover but there is no evidence yet of re-forestation by less fire-resistant species. Nevertheless, it is more common for forest land to be converted to grassland. In spite of government regulations to the contrary, regular burning still takes place during the dry months, July and August. Burning may result in a gradual extension of the grassland strips by destroying trees along the forest edges.

Occasionally the grass is burned off by an organised hunting party, in which case there is little danger of damage to the forest. The organisation of a grassland hunt is shown diagrammatically in Fig. 6(a). The important feature of such an activity is that the full force of a fire sweeping across several hundred yards of grassland blown by a strong wind, is prevented from reaching the trees by the prior burning of a narrow strip along the forest edge. However, hunting fires are relatively rare in Yega; of the seven grass 'burns' which I observed whilst living in Konje village during July-August 1964, only one was lit by an organised hunting party.

More often, fires begun thoughtlessly or carelessly may cause destruction of trees and extension of the grasslands. Most fires which I observed were lit by children or boys in their early teens, with little aim in view other than that of whiling away the time on an otherwise dull afternoon. One such fire very nearly destroyed two dwellings, and in several other instances young enda growth was destroyed. The larger saute trees on the forest edge appeared to be little affected by fire; their trunks appeared to be resistant to the heat of the fires which did not burn high enough to reach the foliage.

1. Bartlett, 1956, (entire paper), and Nye and Greenland, 1960, p.8.

Most fires in Yega territory are lit in the afternoon when the northeast sea breeze blows strongly. Fires travel northeast to southwest, usually burning in strips separated by unburned patches of grass (see Plate 6). Young enda on the northeast aspect of forest patches is particularly vulnerable to such fires, as illustrated by Fig. 6b.

Several other instances were documented in which the careless use of fire has resulted in the conversion of enda to grassland. Comparison with 1953 air photography led to closer investigation of two small areas of existing grassland which were forested in 1953. In one case it was stated the enda had been cleared for a garden: later, the young regrowth (manene) was deliberately fired by two hunters in their attempts to drive a pig into the open. The young trees were killed by the fire and never grew again; grass (Imperata spp.) has now become firmly established. In the other instance, a woman walking home from her garden inadvertently dropped a firestick in young regrowth (manene) and a patch of about 2 or 3 acres was burnt. This patch is now grassland also.

A protracted period of cropping may result in grassland extension. Two areas, Ononda and Gatara (marked A and B on Plate 2), were cleared from saute in 1947 and cropped continuously for four years during a co-operative cash cropping venture. In both areas the forest cover failed to regenerate and grass, particularly Imperata spp., became the dominant vegetation.

The conclusion reached from these instances of grassland extension is that the manene and young enda stages of regeneration, corresponding to the first two to two-and-a-half years after abandonment of a swidden, are the critical stages during which a fire can seriously retard or even permanently prevent forest regeneration. Three years after abandonment of a swidden the young trees have begun to dominate the succession, growth of a dense ground cover is inhibited by shade, and the danger of fire recedes.

The elongated ribbon-like shape and northeast/southwest orientation of the grasslands in Yega territory have, in my opinion, resulted from the combination of dominant northeasterly sea-breezes, which blow every afternoon during the dry season (July and August), when most firing of the grass takes place, and from the indiscriminate lighting of fires with little aim in view and

no attempt at control.

The elongated strips parallel to the coast in the vicinity of Waususu Point (see Plate 2) have a geomorphological origin. They are found along the crests of a series of beach ridges.

Isolated grassland patches may have resulted from special causes such as protracted cropping or careless action as detailed above.

Certain physical controls are observable. For instance, the eastern edge of the belt of forest land which cuts across the general trend of grassland strips just west of the Gona-Popondetta road (see Plate 2) marks, in the main, the course of Imangada Creek.

Finally, the Yega view of the three major categories of natural vegetation found in their territory may be summarised:

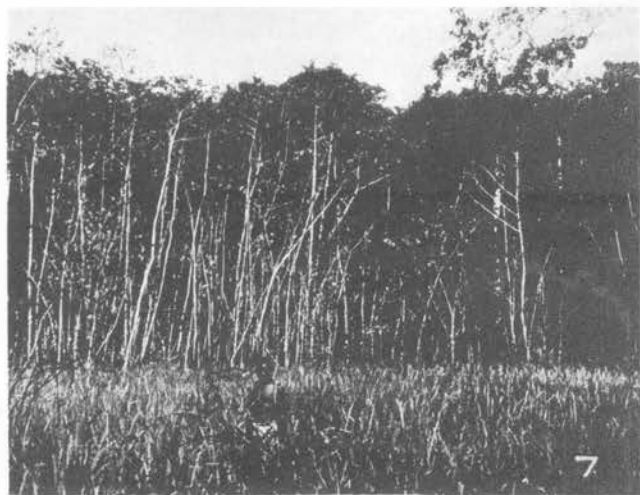
- enda - valuable gardening land
- saute - valuable as potential enda
- eke - of only minor agricultural value, mainly useful for home or village sites, and for occasional hunting excursions.

Although there is little change in the overall appearance of the landscape in Yega territory, the detailed distribution of enda, eke, and to a lesser extent, saute, is in a perpetual state of change in accordance with the prevalent system of subsistence horticulture which will be described in a later chapter.

PLATES ILLUSTRATING -

ASPECTS OF THE PHYSICAL ENVIRONMENT OF YEGA TERRITORY

- PLATE 3 - Beach ridge system in the vicinity of Waususu Point. Ridge tops are indicated by elongated grass strips; intervening swales are occupied by sago swamp.
- PLATE 4 - Active foreshore erosion on the beach between Beporo village and Waususu Point.
- PLATE 5 - Natural vegetation of Yega territory. Grass with scattered trees (foreground), Enda 5 years old, trees about 35-40 ft high (centre), Saute tall trees 100 to 150 ft high (rear).
- PLATE 6 - A fire burning in typical 'strip' fashion fanned by the Nor'east sea breeze, time 2.30 p.m., late July 1964. Note strips of already burned grass in foreground and centre of picture.
- PLATE 7 - Destruction of enda secondary forest. The whole area shown was under crop 4 years ago. A fire extended from nearby grassland into the young regrowth, killing off all the young trees in the foreground area shown. The grass is imperata cylindrica.



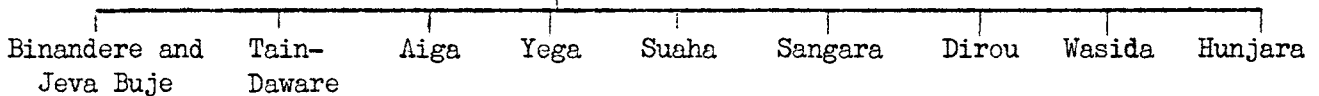
THE SOCIAL ENVIRONMENT

People live on land. The purpose of this section is to provide the background of social structure and pre-contact history of the Yega people necessary for an understanding of the complementary functions of people and land in the area under discussion.

Social Structure of the Yega. The Yega people live on a small strip of the north Papuan coast between Cape Killerton and a place called Kandaudari at the southeastern end of Holnicote Bay. They are included in the classificatory name 'Orokaiva'¹ which is generally applied to a group of people having linguistic affinities who live on the slopes of Mt Lamington and the coastal plains north and east of the mountain. Their place within this framework was first defined by F.E. Williams² as follows:

OROKAIVA

(GROUP OF 9 TRIBES)

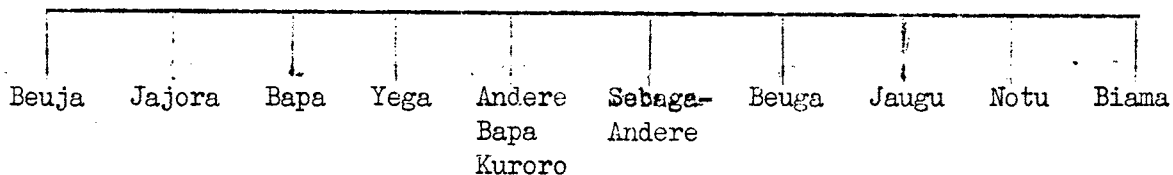


According to Williams, these tribes may be grouped into three broad environmental classifications, the Umo-ke or River people (Binandere and Jeva Buje), the Eva-embo or Salt-water people (Tain-Daware and Yega) and the Pereho or bush people, (the six remaining tribes).³ My investigations have led me to conclude that Williams' broad grouping of all coastal Orokaiva within the two tribes, Tain-Daware and Yega, is an over-simplification. South from the Kumusi River to Oro Bay there are 11 small tribes, each inhabiting a few miles of coastline to a depth of 5 or 6 miles inland.

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1. For a discussion of the origin of the name Orokaiva, see Williams (1928, p.121 and 1930, pp.1-4).
 2. Williams, 1930, p.6.
 3. ibid, p.6.

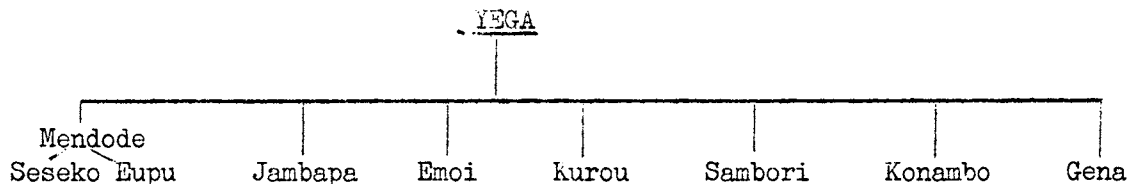
In order of residence from north to south these tribes are:

EWA EMBO



The Yega tribe is composed of a number of named, totemic clans, sub-clans and lineages in all of which descent is patrilineal: residence is normally viri-patrilocal. Clans are normally exogamous, though 10 instances of endogamous marriage were documented (nine of these occurred within Seseke clan and one in Sambori).

In the Yega tribe there are 8 normally exogamous clans (ewowo). The members of each ewowo recognise descent from a common ancestor, but cannot trace it. Yega clans are:



Members of Seseke and Eupu clans recognise common descent from an earlier single clan called Mendode, but nowadays they observe the rule of exogamy towards each other and have separate keratu (totemic emblem). Hence they are, for practical purposes, separate clans. This splitting of clans is described by Williams as quite common among the Orokaiva.¹

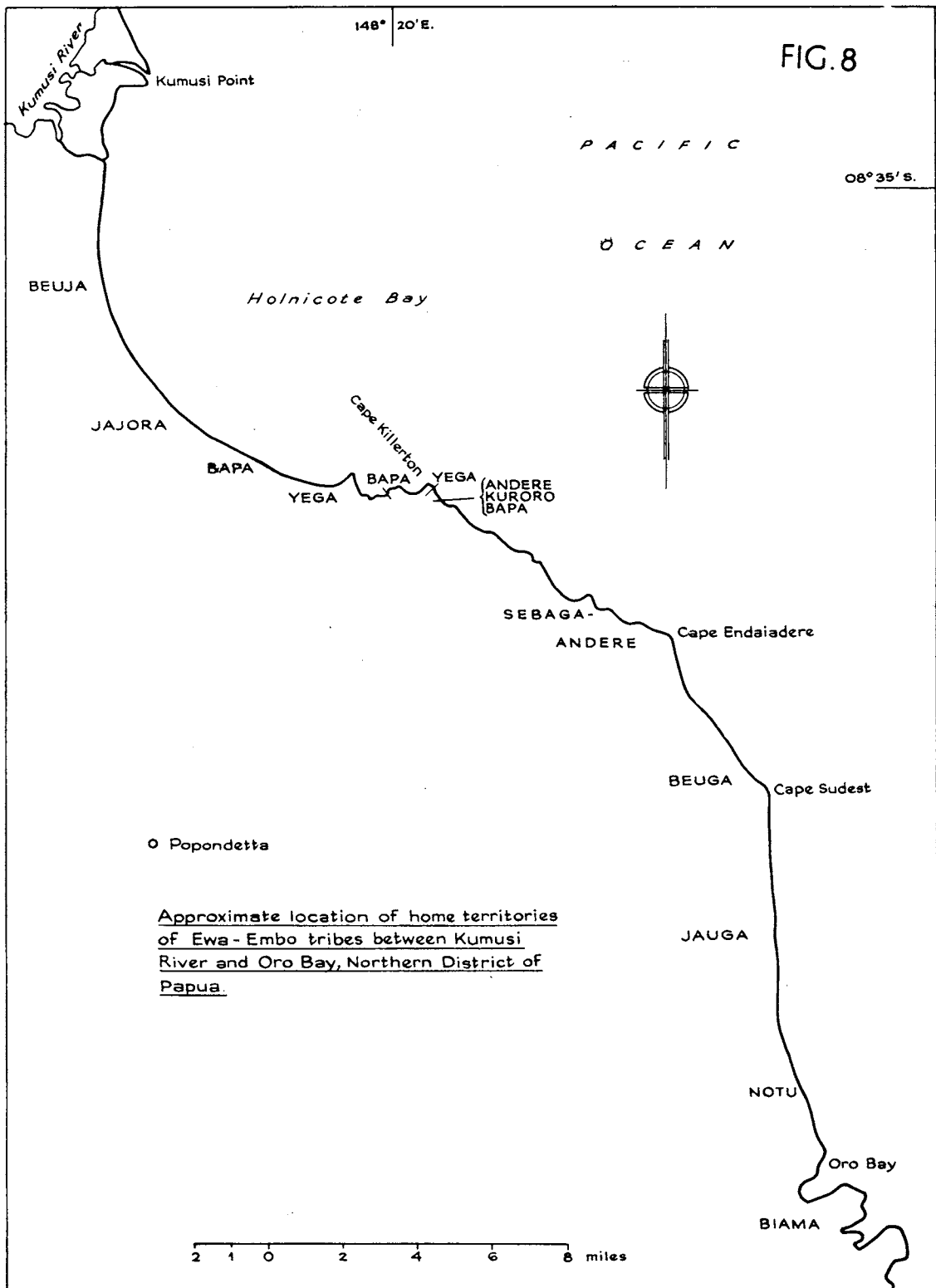
Each Yega clan is composed of a varying number of sub-clans which are distinguished by the suffix - 'undi', and are called in Ewa-ge² 'orobe' (cf. Crocombe and Hogbin, orope).³ Members of the sub-clans use the same

1. ibid, p.101-2.

2. Ewa-ge is the language of the Yega - literally 'salt-water tongue'.

3. Crocombe and Hogbin, 1963, p.17.

FIG. 8



totemic emblem as the clan to which they belong. In addition, the sub-clans and lineages are strictly exogamous, no instance of endogamous marriage being recorded between two members of the same sub-clan or lineage.¹

YEGA SUB-CLANS

<u>Clan</u>			<u>Sub-Clans</u>	<u>Notes</u>
<u>Seseko</u>	...	...	Kaiora Jari Dabinya Atota Ewa Onya Ombigo Gainde	Classified by Administration as <u>Seseko No. 1 clan</u>
			Soroda Taponu Kisera	Classified by Administration as <u>Seseko No. 2 clan.</u> (Have tended to reside apart from other Seseko and practice inter-marriage between sub-clans).
<u>Eupu</u>	...	...	Kero Kaembo Jabure Manuna Woworu	
<u>Jambapa</u>	...	....	Ubagu	
<u>Emoi</u>	...	...	Borege Gawasa Gajari	
<u>Kurou</u>	...	...	Kuapu Orewo Andoga	
			Sagadi Dunemba	Now extinct. Joined Bapa at Kurou village.

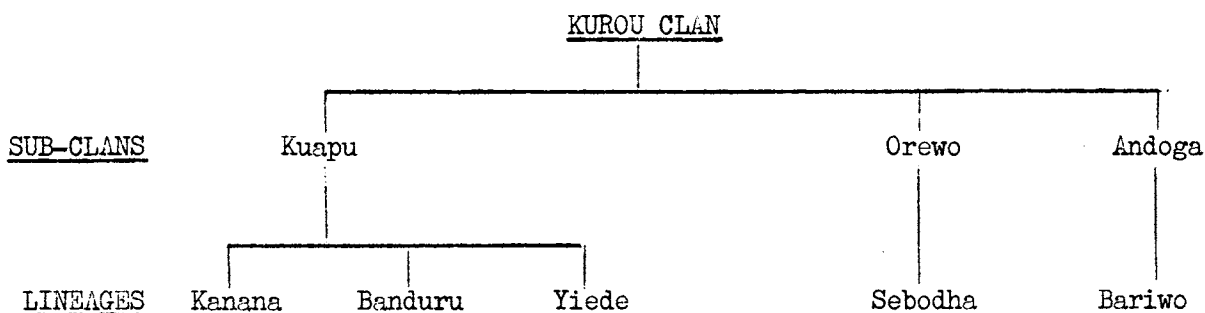
1. op.cit., p.17. Note here the differences in terminology and social practice as compared with an Orokaiva group less than 30 miles distant.

YEGA SUB-CLANS (CONT'D.)

<u>Clan</u>	<u>Sub-Clans</u>	<u>Notes</u>
Sambori	Gembari)	Call themselves Beporo Sambori
	Gerari)	
	Buna	Call themselves Waususu Sambori
	Jorari	Call themselves Jambapa Sambori
Konambo	Manunda	
Gena	Omanje	
	Ajega	
	Digere	
	Korepa	

Each Yega sub-clan is composed of a number of patrilineages. These patrilineages are groups of people in each sub-clan who can trace their descent from a known ancestor rarely more than two or three generations removed from the present. Members of a lineage distinguish themselves by using their ancestor's name with the suffix 'apie (singular) or 'apipe (plural).

For instance, in Kurou clan there are three sub-clans, Kuapu, Orewo and Andoga. Members of Andoga are descended from a captive of tribal warfare days: they usually refer to themselves as Kurou-Omboba. In addition to these three sub-clans, one other sub-clan, Sagadi, has died out, while yet another, Dunemba, has severed its connection with Yega and joined a neighbouring tribe, the Bapa. In Kuapu there are three patrilineages, Kanana, Banduru, and Yiede: Orewo sub-clan has only one patrilineage, Seboda, its other patrilineage, Seina, becoming extinct when the last male member was killed in the Mt Lamington eruption in 1951. Andoga sub-clan has only one patrilineage, Barewo. Kurou clan structure is shown diagrammatically:



Each Yega clan has a different totemic emblem (keratu).¹ These are not all plant emblems as recorded in a nearby village by Crocombe and Hogbin,² but are in two instances animals, and in one, soil. The keratu of Yega clans are given for reference below:

TABLE 3

YEGA TOTEMIC EMBLEMS (KERATU)

<u>Clan</u>	<u>Description of Keratu</u>	<u>Ewa-ge Name for Keratu</u>
<u>Seseko</u>	Shrub with thorns and spiky leaves, found on beach ridges	Seseko
<u>Eupu</u>	Herbaceous plant, species of lily	Kesa
<u>Sambori</u>	Yellow-flowered acacia shrub	Ng'eng'ena
<u>Kurou</u>	Small black fish (as an alternative, in practice the leaves of the <u>sauro</u> tree are used as a <u>keratu</u>)	Kurou
<u>Konambo</u>	Sandy soil	Kora
<u>Gena</u>	Leaves of large tree found in rain forest	Kaira
<u>Jambapa</u>	Seagull (as an alternative, in practice the leaves of the <u>Jambo</u> tree are used as <u>keratu</u>)	Kanau
<u>Emoi</u>	The present Emoi clan is very small comprising only 8 adult males of whom 5 are unmarried. Emoi was once much larger and was called Emoipapa. In those days it consisted of two linked clans each having its own <u>keratu</u> but regarding themselves as one exogamous unit for marriage purposes. The <u>keratu</u> of the two linked clans were:	
	<u>Emoi</u> - a fleshy-leaved tree growing in mangrove swamps	Bereri
	<u>Jepo</u> - a species of pandanus palm	Vevero
	The name, Emoipapa, has now fallen into disuse and the name, Emoi, now applies to all members of Emoi and Jepo clans.	

1. Williams, op.cit., p.112 ff. for details of the functions of the Keratu.

2. Crocombe and Hogbin, op.cit. 1963, p.16.

Although the following information relates to the present-day Yega social structure, it is felt to be applicable to this present chapter.

In addition to the already-quoted instance of 'splitting' of the Mendode clan within Yega, a number of instances of the 'hiving-off' or 'splitting' process described by Williams¹ were documented. These groups have apparently left Yega to live permanently in distant localities among people with whom they have no cognatic relationships:

- (a) Two men of Emoi, and their wives and children, who live with Orokaiva people at Soputa.
- (b) A number of Jambapa men, living with their wives and children at Ambasi.
- (c) A number of Eupu men, living with their wives and children at Kokoda.
- (d) A number of Emoi men, living with their wives and children at Tufi.
- (e) One Kurou man, living with his wife and child at Kopure, near Eroro.

In addition, there are, nowadays, members of every Yega clan working in paid employment, scattered throughout Papua and New Guinea. Several of these men have been away for such long periods (up to 15 years) without re-visiting their homes that it is likely that they too have permanently cut themselves off from their cognatic kin.

Polygyny, although probably fairly common among the Yega in pre-contact times, is now rare. Only one instance exists at the present time; one other instance was documented of a man now deceased, who 'sent away' his old wife in order to marry a more attractive younger woman. Widows have a free choice regarding place of residence; some live with the relatives of their dead husbands, others return to live with their own agnatic kin, while yet others alternate from home to home: one widow lives with her children in an isolated homestead at some distance from her relatives.

1. This process of clan sub-division, at times with complete separation of residence of the two sub-clans is described by Williams (op.cit., p.102)

Pre-Contact History. I was unable to discover the meaning of the name Yega. It appears to have come into general usage as a term by which the members of the eight associated Yega clans refer to themselves and by which they are known by neighbouring people.

The origins of the Yega people are obscure. According to their oral history, the nucleus of the Yega - the Mendode clan - were 'sea people' who lived entirely on marine products. The date of the arrival of the Mendode in the Gona area is uncertain, but when they arrived they first established shore dwellings on Baroda Deuga (The Mangrove Islands). Venturing on to the mainland after some time, they met people who gave them taro to eat and showed them how it grew. Soon afterwards they moved from the islands, and settled at Basabuga (the place of taro trash), which is a natural defensive site, protected on the landward side by swamps and permitting retreat by canoe in the event of an attack by overwhelming enemy forces.

In the immediate hinterland of Basabuga the Yega began cultivating taro. Gradually their numbers grew. Natural increase was probably slow, but there were successive additions to the original group. The ancestors of Konambo clan came from the inland southwest; the ancestors of Emoi from the north coast; the ancestors of Kurou from the inland northwest. Apparently too, it was quite common for the growing tribe to make extended journeys by canoe northwards or southwards along the coast. On one such journey they were joined in the vicinity of Oro Bay, by some members of the Gena people who live there. These Gena returned to Basabuga with the tribe and thenceforth were accepted as members. A reconstruction of the pre-contact pattern of settlement was attempted from information given by Yega elders. This reconstruction, shown diagrammatically in Fig. 9, illustrates the allocation of clan building sites within the general village area and the close clustering of clans for mutual defence against attack.

About the time of first contact with Europeans there was a lessening of the close physical grouping of Yega clans in Basabuga. Portion of Seseko clan moved eastward across the lagoon to Kanaunje, whilst other clans moved round to the western side of Waususu Point.

This movement may have been initiated by the growing self-confidence of the Yega, who were at that time in a period of military ascendancy, or it may simply have been necessitated by a rapid expansion in population. The location of Yega villages subsequent to this move is shown in Fig. 10, where, it will be noted, settlement was still concentrated along the beach ridge protected as this is by a line of sago swamp several hundred yards inland.

While Yega numbers were being increased by immigration, three additional immigrant groups arrived in the Holnicote Bay area. These were the Bapa, Andere and Kuroro people from the more northerly coastal regions. The Bapa people divided into two groups. One group remained west of the Yega territory, where they occupied a small wedge of country between the Yega and the Jajora. One group of Yega, the Dunemba sub-clan of Kurou clan, had already settled in this area and established a village which they called Kurou. This sub-clan now joined the Bapa and cut their ties with the other Yega. Their village is still called Kurou. The other Bapa group settled for a time with the Yega at Basabuga, became friendly with them, and were permitted by the Yega to clear swiddens in the secondary forest along the banks of Barida River. These arrangements are the cause of some present-day friction with the Bapa, who claim cultivation rights over the land so cleared, the Yega contending that only temporary cultivation rights were permitted. When, after the initial period of friendship, disputes occurred between the Yega and Bapa, the latter moved to a site on the eastern bank of the Barida. Later they moved again to join the Andere and Kuroro people on the site known today as Old Garara, a low-lying spit about half a mile east of Basabuga. About 1955 they made a further move and founded a village on Niniyanda spit.

The Andere and Kuroro peoples have always been regarded as newcomers and foreigners by the Yega. They probably arrived in the area only a short time before the coming of the white man, and being relatively few in numbers, settled together for reasons of added security.

Unlike the Bapa, they made little attempt to fraternise with the Yega or to obtain land from them. Settling originally at Old Garara, they purchased

land from the inland Orokaiva people in the area now traversed by the Popondetta-Cape Killerton road, and paid for it with shell ornaments (kambo).

Late in the pre-contact period, probably between 1880 and 1900 the Yega from Basabuga made two coastal excursions under the leadership of a man named Jebure, one to Pongani, 80 miles to the south and the other to Bakubari and Ambasi, 20 to 30 miles north. The reason for these trips was to make contact with dispersed members of Yega clans, and if possible convince them of the advisability of returning to the Yega homeland at Basabuga.¹ These dispersed Yega had originally visited the areas concerned for peaceful purposes, trading or bride-exchange, had entered into military alliances with the local people and had settled down there. Jebure brought them home to meet a local threat from the Sebaga-Andere tribe. For this struggle, which was still in progress when the first Europeans arrived, the Yega and Bapa were in alliance against the Sebaga-Andere. The Sebaga-Andere had been driven back about a mile from Cape Killerton to Wye Point. The Yega and Bapa claim the land thus added to their territory by right of conquest, but the boundary is still subject to dispute, the Sebara-Andere claiming that they had suffered only a temporary reverse; they claim that they would have soon regained the lost territory if the Europeans had not put a stop to the fighting.

The sparse historical evidence shows the Yega as one of many small groups inhabiting the north Papuan coastlands, constantly at enmity with its neighbours, in a pattern of changing alliances, changing site of residence and mutual distrust. The only sure basis of confidence was in the kinship ties within each clan and between the clans which recognised affinity within the Yega tribe.

The foregoing descriptions of physical environment and the social background make it clear that the Yega are broadly typical of the indigenous

1. While living with the Yega, I took several members of Kurou clan on a visit to the Kurou family living at Eroro: the visit had a similar purpose.

people of Papua-New Guinea in both these aspects. They inhabit a confined geographical area with limited physical resources; they regard themselves as separate and distinct from their neighbours and they have developed a hierarchy of kinship similar to most other tribal groups. The interaction of physical and social factors is manifested in their pre-contact history. Against this background we proceed to a discussion, in the following chapter, of the early contacts between Yega and Europeans.

CHAPTER IIACCULTURATION

In a recent essay Fisk¹ stressed the necessity for adequate capital, a vastly improved infrastructure of transport and communication facilities and the growth of incentives on the part of the indigenous people as three of the most pressing pre-requisites for the development of a viable economy in Papua-New Guinea. The recently-completed report of the International Bank² has reinforced Fisk's views but has gone further in recommending specific aspects for development, such as the increase of cattle and tea production, the promotion of tourism and the expansion of secondary and tertiary education. These are all aspects of a Western-type money economy, the type of economy which Australian administrators and businessmen have been trying to engender in Papua-New Guinea for the past 76 years. Progress was at first slow, necessarily so, for the indigenous people had little conception of the technology or attitudes of the culture which was being imposed upon them.

The aim of this section is to describe the impact of European culture on the Yega, their reception of it, and the gradual acculturation which occurred during their first 58 years of contact with Europeans.

Early European Contacts, 1888-1946. During the 58 year period covered in this section Papua had 6 different Chief Executives and two periods of government by Administrative bodies. These were:

Sir William Macgregor,	Lt. Governor,	1888-1898
Sir George Le Hunte,	Lt. Governor,	1898-1903
C.S. Robinson,	Administrator,	1903-1904
F.R. Barton,	"	1904-1906
Sir Hubert Murray,	"	1906-1908
Sir Hubert Murray,	Lt. Governor,	1908-1940
Leonard Murray,	Administrator,	1940-1942
Military Administration		1942
Australian New Guinea		
Administrative Unit (ANGAU)		1942-1946

As conditions changed so Administrative policy varied and contact between

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1. Fisk, in Bettison et al, 1962.
 2. International Bank Mission Report, 1964.

Europeans and Papuans increased in frequency and in scope.

The first mention of Administrative contact with the Yega and their neighbours is made in the Annual Report of 1893-94:¹

...Gona (Halnicote (sic) Bay) was fully examined. The villagers were at first timid and prepared for hostilities but peaceful relationships were established and maintained though they might have been disturbed by the numerous and thievish population. The country there is flat and low. Some of the men are of very powerful physique; they possess a great number of good canoes but they do not appear to use them for sailing.

Later in the same report² is a comment upon the good harbour which exists between the reef and the shore at the south end of the bay, that is, to the north of Waususu Point. A 'large number' of natives were seen in this vicinity. These people must have been Yega, who at that time lived in the villages of Kanaunje and Basabuga to the south of Waususu Point, and in Busega, Bangaigomo and Nyamboro villages on the northern side of the point.³

The next official contact between the Administration and the Yega is recorded on 4th February 1903, when Mr. C.A.W. Monckton, Resident Magistrate for the Northern Division, and Mr. Surveyor Tooth landed at Basabua (sic) and:

...started inland with a strong body of carriers and armed constabulary towards the northern slopes of the Hydrographers Range occupied in part by natives with an ill reputation called the Sangara...⁴

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1. Annual Report, 1893-94, p.XV.
 2. *ibid*, Appendix F, p.35.
 3. Part of Seseke clan lived in Kanaunje; the remainder of Seseke as well as Eupu, Konambo and Gena clans, lived in Basabuga; Kurou and Sambori lived in Busega, Jambaba in Bangaigomo and Emoi in Nyamboro.
 4. Annual Report, 1902-3, p.12. Monckton was being very cautious at this time. A few months earlier a patrol he was leading had narrowly escaped annihilation at the hands of the Dobodura to the south.

The purpose of Monckton's expedition was to survey a road from the coast to the Yodda goldfield in preference to the unreliable channel of the Kumusi.¹ The Yodda goldfield was, in 1903, producing most of the gold exported from Papua, so this road was an important developmental project. Had Basabuga been selected as its terminus, the acculturation of the Yega may have been considerably speeded, but Buna Bay was selected as the terminus. A settlement was established there, and in 1906 Buna became an administration outpost with A/R.M. Oelricha in charge.

The agricultural potentialities of Orokaiva territory early aroused government interest. On a tour of inspection in 1904 the Administrator (Capt. F.R. Barton) observed:

.....The base of the mountain (Lamington) is a segment of an arc of 20 miles, and land contained within it is uniformly good, thus giving an area of about 90 square miles of the finest agricultural land within easy reach of the coast by a road already made. This land is perfectly suited for the culture of cacao...²

Meanwhile, the Anglican Mission, whose headquarters was established in 1891 at Dogura, was extending its activities northwards. During 1903, the Rev. Copeland King reconnoitred the coast northward from Oro Bay: he commented on Yega territory:

.... Mangrove Islands, Villages here are extended along 2 or 3 miles of coast, the approach, even by dinghy, being impeded by sand. The population may be reckoned at 200 and includes the Batabua tribe. The anchorage is excellent...³

The 'Batabua tribe' clearly is a reference to the Yega of Basabuga village but it is likely that the Bapa and Andere of nearby Old Barara village would have been included by King in his population estimate.

1. ibid, p.12.

2. Territory of Papua, Annual Report, 1904-5, p.14.

3. Australian Board of Missions, Annual Report, March 1904, p.29.

Two years after this trip, Rev. Copeland King established the mission of St. Margaret at Ambasi, 30 miles north of Basabuga. He immediately planned the extension of mission activity southward along Holnicote Bay but it was not until 1909 that a new mission was commenced at Gona village¹ with a Solomon Islander, Albert Landau (Lander?) in charge, and another islander, Nathan Iaura, assisting. These two Solomon Island teachers opened a branch church and school at Basabuga in 1910 with 15 boys and 14 girls on the first school roll. In 1913, Albert Landau moved permanently to Basabuga and school classes assumed a much more regular place in the lives of Yega children. The Yega have thus had a school in close proximity to their village for over 50 years. Today, only a few very old Yega have not had at least a few years' elementary education.

Following Macgregor's retirement in 1898, Le Hunte, Robinson and Barton, influenced the development of the Northern Division very little. It was Sir Hubert Murray, in his long term of 32 years as Lt. Governor, who set the pattern of Papuan development up to the outbreak of World War II. A brief outline of his policy and its effects upon the life of the Yega is therefore included.

In a paper presented to the 1926 Congress of the Australian Association for the Advancement of Science, Murray summarised his policy:

...I should always uphold the general principles of Indirect Rule, but I think that their application is attended with all sorts of difficulties. Indirect Rule seems to me to be the safer of the two, but I can imagine that Direct Rule, where it can be successfully applied, might lead to much quicker progress. Under Indirect Rule"rapid improvements are not to be looked for; they are rather to be deprecated" (Sir Godfrey Lagden, quoted by Roberts, S.H. in Population Problems of the Pacific, p.174). Every improvement, every attempt at reform must be ..."tested and retested and slowly riveted on to the existing structure of native life" (Roberts, p.174); and the result may easily be complete stagnation.²

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1. Gona village is approximately 4 miles north of the present site of Gona Mission.
 2. Murray in P.A.R. 1927-28, p.185.

Murray's critics have claimed that stagnation did result from his policy, but in fact Murry attempted to hold the balance between -

....a gang of capitalists interested in Papua who want to get rid of me to have a free hand with the natives... ²

and the obvious fact that without European enterprise there was little money to carry out any programme for improving the position of the indigenous people. He was criticised by the settlers for being pro-native and by the missions for being pro-settler .

When he became Administrator in 1906, Murray realised that he did not have the staff to enforce the planting of coconuts by Papuan villagers as permitted by the Regulation.¹ He therefore embarked on a policy of encouraging European enterprise. A measure of such encouragement was the rapid increase in the acreage of land granted under long-term agricultural leases in the early years of his administration. The increase was:

1907	-	48,002 acres held under lease
1910	-	363,425 acres held under lease

From 1908 to 1910 the area under cultivation doubled to 10,000 acres and by 1915 had reached 20,000 acres. Such rapid expansion in plantation agriculture created a high demand for unskilled labour.

Wage labour was not available to the Yega near their home villages during this period. Only a few European plantations were developed before 1940 in the Northern Division - at Sangara, at Giropa Point near Buna, and at Cape Nelson. Even to work on these plantations meant, for the Yega, living in barracks away from home. So, in company with thousands of other lowland Papuans, Yega men began leaving their homes around 1907 to work as indentured plantation labourers or on the wharves at Samarai and Port Moresby. Usually they went as unmarried men: if a man was married he was rarely, if ever, accompanied by his wife.

1. Native Regulation No. 2, 1894, provided that Papuans could be compelled to plant coconuts: they could be fined for non-compliance.

2. West, 1963, p.290

Like most other Papuans at this stage of development the Yega were essentially 'target' workers. Periods of a year or two working for wages away from the village often alternated with periods at home. When the desire for something, which could only be obtained for cash, became strong enough a man would go to work again until he had earned the required sum. Often, when he had seen something of the outside world, earned sufficient to pay his tax for a year or two, and saved money to pay bride-price, the labourer was content to leave wage employment and settle down in the village. Unfortunately, accurate information regarding Yega participation in the money economy is not available for this period, but Table 4, compiled from information given by Yega elders, illustrates the pattern of wage employment in the late 1920s and early 30s.

TABLE 4

PREVIOUS WAGE EMPLOYMENT OF SOME YEGA ELDERS

Informant No.	Approx. Present Age	Aggregate years in wage-paid employment	Number of periods of employment
1	50	.75	2
2	65	6	3
3	50	Nil	-
4	60	4	2
5	50	1.25	2
6	55	2.25	2
7	55	15 (police 12 years)	3

Though Table 4 is compiled from a very small sample it illustrates the general attitude towards wage labour which prevailed at that time. Some men did not become involved at all; most sampled the novelty for a short time but quickly resorted to village life: a few, as No. 7 above, became deeply involved in the money economy. This man, it will be noted was a member of the police force. Government service generally provided more permanent employment than private industry.

Some Yega, who did not go away to work for wages, were able to earn money collecting and selling beche-de-mer to a trader, Mr. Filler (Filler?), who established a buying post on the lagoon not far from

Basabuga village, about 1914. However, this enterprise was short-lived as trade declined during the first world war. Apart from this short period, trade was conducted by small vessels from Samarai and later from Buna, until the establishment of a store at Cape Killerton after the second world war.

After the end of the first world war there was a change in Murray's policy of agricultural development. European settlers were not being attracted to the Territory, so for the next decade at least, he laid great emphasis on the development of 'native plantations'. Thirty five such plantations were commenced in the Northern District, all of them connected with inland villages to the north of Mt Lamington. Crocombe¹ has pointed out that all these communal plantations in the Northern District were economic failures. Although no group planting of cash crops by the Yega took place at this time, it is likely that some compulsory planting of coconuts occurred. However, there are no records of any Yega copra yields or of sales of copra to traders during the period 1920 to 1942.

The Anglican mission has provided an increasing number of opportunities for Papuans in wage employment as teacher-evangelists, and latterly as deacons and priests. In spite of the fact that the mission rates of pay are considerably lower than those offered by the Administration, 14 trained Yega teachers still teach in mission schools. In addition, the mission has provided since early days a source of real income for the Yega and their neighbours. This is the system of ori (barter) between the mission and the villagers. The villagers trade the produce of their gardens for a limited range of European goods supplied by the mission.

A marked change in the settlement pattern occurred between the end of the war of 1914-18, and the establishment of the Mission Hospital at Kikiri Creek. This was the westward spread along the beach from Nyamboro and the establishment of five new villages - Tarebosusu, Banumo, Siumbago, Gombe, and Beporo. Beporo, the most westerly of these villages, is about $1\frac{1}{2}$ miles from Basabuga.

1. Crocombe, 1964, p.4 ff.

Several reasons for the outward movement present themselves. In the first place, administrative control was becoming more effective and there was less risk of inter-tribal warfare. The abandonment by a large number of Yega, of the good defensive position of Waususu Point, may thus be ascribed to a feeling of greater security. There was no longer any necessity for the whole populace to live close together for mutual support in the event of attack. Nevertheless, the new village sites were only slightly less defensible than Waususu Point, for they are backed by a continuous line of sago swamp which parallels the shoreline, 150 to 250 yards inland; this swamp forms an effective barrier against intrusion - particularly in the wet season - in all but a few places. In addition, as the fear of ambush receded many family heads whose 'food garden' areas were in the west or southwest of Yega territory, decided to lessen the walking time between village and garden, reduce the distance loads had to be carried, and maximise working time. They therefore moved along the beach nearer their garden areas.

Shortly after this shift of settlement, the Anglican Mission, whose main station in the Northern District was 25 miles north of Gona at Ambasi, established a hospital on the west bank of Kikiri Creek in 1926. A church and school followed on the east bank in 1932; since then trained European staff have been continuously in charge of these institutions, except during the war years, 1942-45. The Yega and other local tribes, notably the Bapa and Jajora, have thus enjoyed the advantage of geographical proximity to these social amenities for over 30 years. It is perhaps some indication of the acculturative influence of the Gona Mission to note that the first Papuan bishop (of any denomination) and the first M.H.A., for the Northern District, both live within 3 miles of the mission station.

World War II and the growth of incentives.

The war of 1942-45 in Papua had two major effects upon the way of life of the Yega. Firstly, it was the stimulus which triggered off changes in their traditional outlook. Secondly, the shift of the Administration headquarters from Buna to Higaturu and the concurrent construction of a major road between Cape Killerton and Higaturu, brought the people into

closer contact with the outside world than ever before. For the young men in particular, the war widened their horizons by travel and, above all, brought in a flood of new learning and ideas.

During the first half of 1942 the Japanese pushed rapidly south and eastward from Asia, through the Netherlands East Indies (now Indonesia) and the islands to the north of the New Guinea mainland. With the capture of Rabaul in January, 1942, the Australian Administration realised that an attack on the mainland of Papua-New Guinea was a distinct probability, but, in spite of instructions to evacuate, the mission staff at Gona remained at their station. The shock to Europeans and Papuans alike, of the Japanese landing on 21st July 1942, has been vividly recorded by Rev. James Benson,¹ who was the missionary in charge in 1942. Most of the Papuan population fled inland and made their way northwards to Ambasi beyond the Kumusi river, where they lived until after the Japanese were defeated in the Buna-Gona area early in 1943.

During the war almost all Yega able-bodied men served either in the police force, Papuan Infantry Battalion, or in labour battalions: in the course of that service, many of them travelled widely, experiencing a great deal of contact, not only with other Papuans, but with Australian and American servicemen, and with the material objects of foreign culture. In addition to acquiring the skills of driving jeeps and handling firearms, for instance, the serving Yega acquired the custom of wearing shorts and a taste for tinned meat and sweetened tea. Almost all men of the age-group participating in the war had attended school at least for a few years,² and so had some grounding in English. This facilitated their contact with the white soldiers with whom they served, and helped to broaden their experience and outlook.

Moreover, acculturation was facilitated by the very nature of the contact with service personnel. To the Papuan, whose only other contact with

1. Benson, 1957.

2. In a sample group of 20 men aged between 40 and 55 years, only one had had no schooling whatever, and the average number of years at school was three.

Europeans had been with the plantation manager, the administrative officer and the missionary, where, in every instance, he had been in a more or less subordinate position, the soldiers were a revelation. Here were white men who shared with them the same hardships, food, living conditions, and even their last smoke, and Yega ex-servicemen can still recall, with obvious nostalgia, the names of the Australian friends they made during the war.

After the defeat of the Japanese in 1944, the Yega people returned from Ambasi and settled temporarily on the strip of coast between Kikiri Creek and Kurou village. Gardening was recommenced and produce, particularly fruit, sold in fairly large quantities to the troops still stationed in the area. A brisk souvenir business in model canoes and grass skirts also sprang up, and, according to some local informants, considerable cash incomes were earned by some Yega during this period.¹

Additional cash was obtained by the Yega people during the following five years in the form of war damage compensation. As the area concerned was one of the major battlefields of the Pacific theatre, the damage sustained amounted to complete destruction of all dwellings and utensils and a very large proportion of economic trees. For all this damage, compensation was made by the Australian Government during the years 1946-49, by the issue of a credit in a savings bank book.² It was found to be extremely difficult to obtain reliable estimates of the amounts actually received by individual heads of families, but it is certain that during the years stated appreciable amounts

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1. Statements of informants varied widely regarding the prices paid. Informants in the village stated that they received such prices as coconuts 2/- each; grass skirts up to £6; paw paws 5/- each; bananas up to £10 per bunch. By contrast, an Australian acquaintance who served in the area about that time stated that he did not pay more than 5/- for a bunch of bananas (less than the present market price). He stated however that he would believe that American servicemen might have paid £6 for a grass skirt as these were in high demand as souvenirs.
 2. The issue of a savings bank book was a matter of policy designed to prevent or at least hinder the traditional 'share the wealth' attitude of the recipients' relatives.

of cash were injected into the area.¹

Although much of the money obtained from the sale of produce and handcraft items and that received as war damage compensation was spent almost immediately on the purchase of implements, tinned food, and clothing, considerable amounts were retained in bank books or hoarded in the villages; when the co-operatives began in 1947, individual payments of up to £14/16/- were made, and average share payments amounted to over £4 per member.

After the end of the second world war, the old Administration headquarters at Buna was abandoned and a new station opened at Higaturu on the northern slopes of Mt Lamington. A wharf was built at Cape Killerton and a road built to link it to Higaturu. Coastal trading vessels began to call regularly at Cape Killerton with stores for Higaturu, and for the newly-erected trade stores at Popondetta and at Cape Killerton itself. Regular employment for wharf labourers became available at Cape Killerton and to meet this demand two new villages were established close to the wharf. The small Andere and Kuroro tribes from Garara settled in New Garara, together with some Bapa from Barida village. Just to the north of New Garara, 11 Yega men and their families from Kanaunje and Basabuga founded the new village of Surilai. By this move the Yega were brought into closer and more constant contact with European culture than had been the case pre-1942. Fig.11, which shows the pattern of Yega settlement about this period, illustrates, by comparison with Figs. 9 and 10, the continuing spread of villages outward from Basabuga.

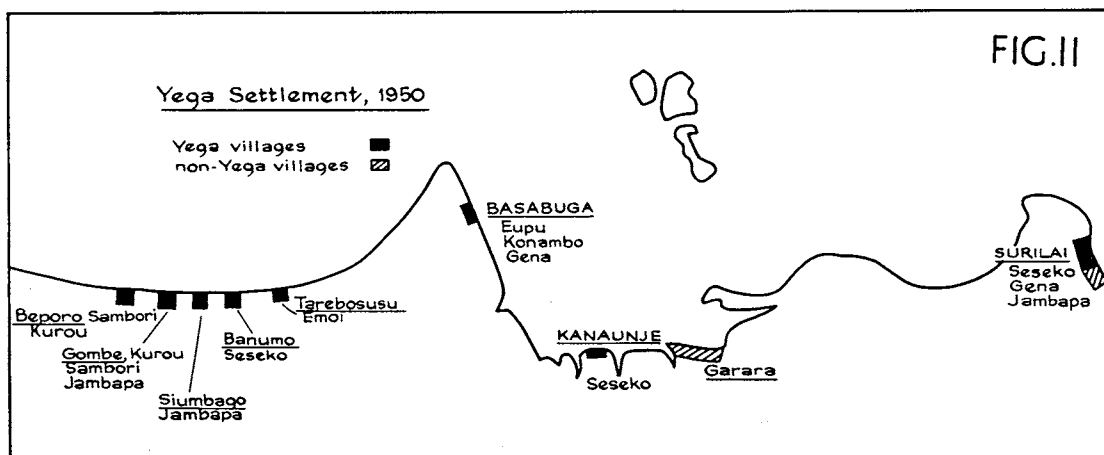
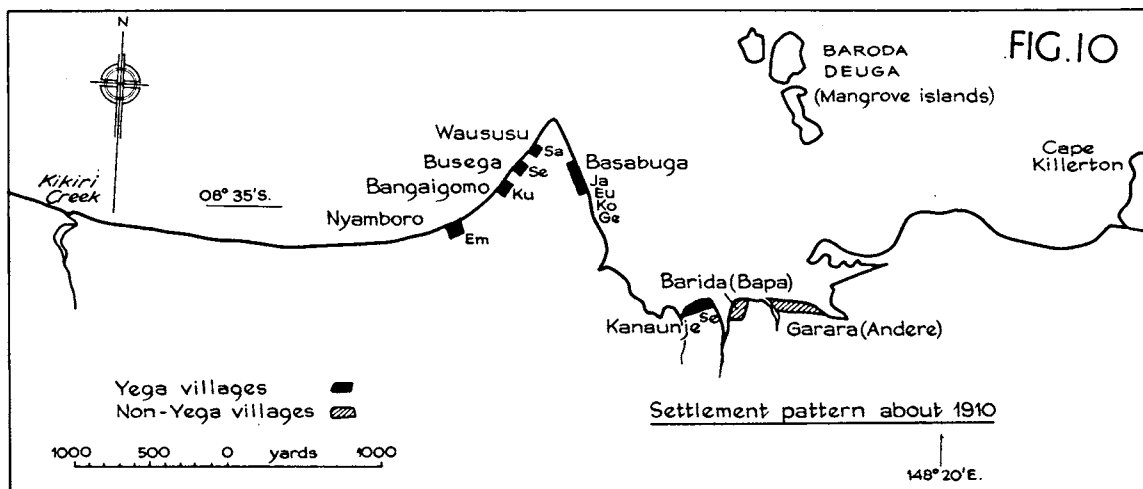
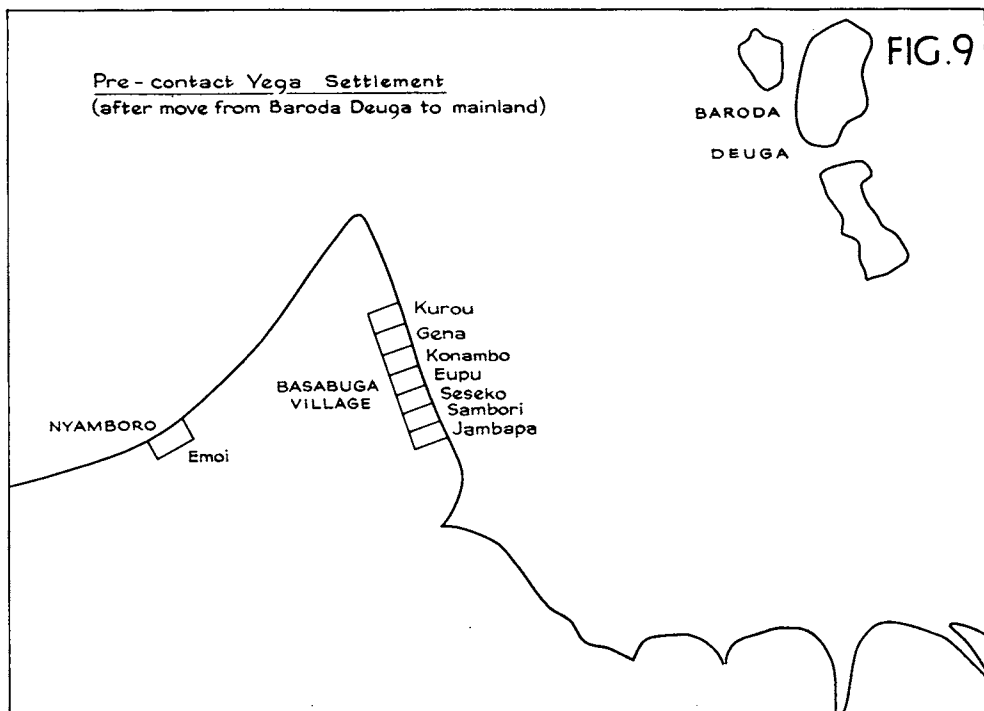
1. Some indication of amounts received may be gained from the following instances:

a) Three local informants claimed to have received compensation as follows:

1. Young man about 30 years - £1
2. Young man about 35 years - £8
3. Old man, clan head - over £100

b) A patrol officer in his report (1949) noted that he paid 199 claims in the Gona-Buna area. The average amount paid was £8/10/- per person.

In summary, the second world war had the important effect of stimulating in the Yega an increased desire for a change in their near-subsistence way of life. Money, and the goods which could be purchased with money, became highly desirable commodities. The war engendered the incentive to earn money; the question to which the Yega wished to find the answer was, how were they to earn it? In their attempts to answer this question the Yega have been willing to experiment with innovations to their traditional land tenure, land use and place of residence. These innovations will be examined against the relatively stable background of the subsistence economy.

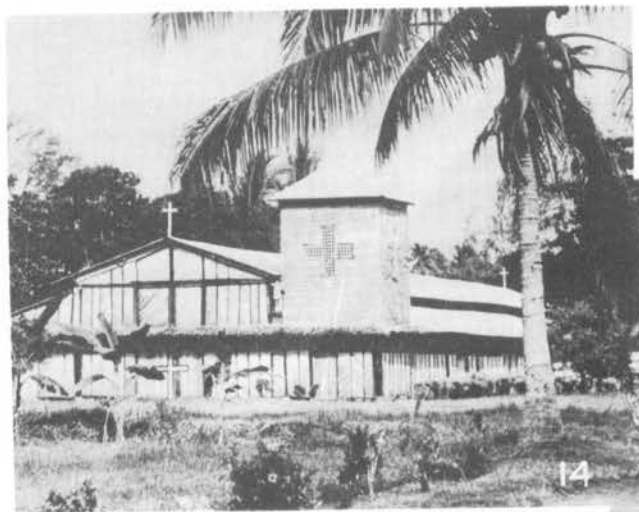


PLATES ILLUSTRATING

ASPECTS OF ACCULTURATION.

- PLATE 8 - Site of Nyamgoro Village, now unoccupied; Site indicated by grove of coconut palms.
- PLATE 9 - Basabuga Village, 1963. These three houses are all that remain in this one-time major Yega village. Settlement patterns have changed with the changing economy.
- PLATE 10 - Making preparations for a fishing trip. The beach near Beporo village. If the catch is a good one, some fish will be smoke-cured for sale in Popondetta market.
- PLATE 11 - Fisherman sleeping after an all-night fishing excursion.
- PLATE 12 - An example of tapa (bark cloth) - a traditional Yega handcraft; now being neglected as more people wear cotton cloth.
- PLATE 13 - Cooking pots in Beporo. The rounded pot (left front) comes from Wanigela, 100 miles to the south; the conical pot (right front) is from Ambasi, 30 miles north. The aluminium pots (rear) are from the local trade store.
- PLATE 14 - The Anglican Mission Church at Beporo. A combination of Papuan traditional skill (the plaited reed walls), and European technology (the corrugated iron roof).
- PLATE 15 - A community working-bee at Surilai village, making sisoro (roofing) for the women's clubhouse.





CHAPTER III

THE PRESENT YEGA ECONOMY

The present Yega economy has two major aspects:

- a) A long-established subsistence economy based on traditional social customs.
- b) A more recently developed cash economy which is having far-reaching effects upon the people's way of life.

The previous chapter briefly outlined the agents of acculturation until the end of the second world war. In the 18 years which have elapsed since 1946 the rate of change has accelerated sharply and all Yega family heads are now in receipt of at least some cash income. Such income is derived from personal effort, from gifts given by wage-employees, and from several minor sources. Many Yega now operate savings bank accounts and some have hoarded quantities of silver money. In every Yega home are found items of manufactured clothing and aluminium cooking pots; all are familiar with tinned meat and refined sugar. Yet, in spite of all innovation, the production of food crops at a near-subsistence level remains the basic way of life for a majority of the Yega people. It is the purpose of Chapter III to examine the two aspects of the modern Yega economy, the subsistence base and the superimposed cash economy, taking particular note of changing distributions resulting from an interaction of these two facets.

The Yega population is increasing rapidly at the present time. Although there is little evidence yet of 'land hunger', there is evidence of changing land use, for example, the clearing of swiddens in saute forest, resulting from increased numbers of people. An appreciation of demographic trends is deemed to be necessary for a full understanding of the present Yega economy; for this reason a summary of available information precedes the discussion of the economy.

DEMOGRAPHY

Collection of data. During the course of this study a private census was conducted of all Yega people during July-August 1964. Shortage of time and the absence of many people from the villages on visits or at work, enforced dependence on informants in many cases, although every effort was made to ensure the greatest possible accuracy. The private census was necessary because the regular Administration census did not supply the demographic information which was required. The method of collection of demographic data by the Administration, and the limitations of such data, are outlined in Appendix B. Briefly, the basic census document is the Village Population Register on which is entered data for each census division within the District. The Village Population Registers for Gona census division are those relevant to the present study. Unfortunately, the Yega people living in villages other than Beporo and its near neighbours are combined in the Administration census with groups of non-Yega, so that no clear picture of Yega demography could be obtained from official records. Few Yega know their exact ages or the ages of their children: ages had therefore to be estimated in most instances. Two methods were used to ensure that estimation of ages was as accurate as possible. Before beginning the census, a time scale of historical landmarks was drawn up, and the ages, particularly of people over about 20 years of age, were estimated by reference to events on this scale.

Time Scale of Historical Landmarks of Relevance to the Yega

- | | |
|------------------------|--|
| <u>1893-4</u> | - First record of Administrative investigation of Gona area (Holnicote Bay). |
| <u>1903 (February)</u> | - Government Survey Team started inland from Basabuga - led by the Resident Magistrate, Mr. C.A.W. Monckton and Surveyor Tooth - to survey a road to the Yodda Goldfield - (terminus decided on was Buna). |
| <u>1906</u> | - Establishment of Administration Station at Buna. |
| <u>1910</u> | - Establishment of Anglican Mission School at Waususu Point. |
| <u>1914</u> | - 'German' War started. |
| <u>1918</u> | - Introduction of tax. |
| <u>1926</u> | - Establishment of Mission Hospital at Kikiri Creek. |
| <u>1942 (July)</u> | - Japanese landing - Gona. |
| <u>1946</u> | - Beginning of Yega Agricultural Co-operative. |
| <u>1951 (January)</u> | - Eruption of Mt Lamington. |
| <u>1960 (May)</u> | - Work began on Yega Scheme cocoa blocks at Ononda. |

A good check on the ages of persons under the age of 20 was provided by the mission baptismal register which includes not only the date of baptism but also the date of birth of all children baptised since the end of the second world war. The names and ages of children born and baptised away from the Yega home territory unfortunately were not included in these records.

Results of the census are tabulated in Table 5 below and are shown graphically in Figs. 12(a) and 12(b).

TABLE 5

YEGA POPULATION STATISTICS - JULY 1964

Classification	Present in Yega Villages	Absent - Wage employment (including dependent wives and children.)	Absent Students	Totals	%
<u>Adults -</u>					
Males - Unmarried	19	49	12	80	9
Married*	109	39	-	148	17
Females - Unmarried	22	9	3	34	4
Married*	124	38	-	162	18
Children- Males	175	61	-	236	27
(16 yrs. Females and under)	166	54	-	220	25
TOTALS	615	250	15	880	-
%	70	28	2	100	100

* The 'married' category includes widows and widowers.

The figure of 38 adult married females absent from the village represents the main discrepancy with the Administration figures. On the Village Population Register only a very small number of women is shown as being absent from the villages 'at work'; moreover, there is no category for dependents absent from the village. My findings were that 38 of the 50 adult females absent from the villages were married dependents.

POPULATION PYRAMID - ALL YEGA

(as at July 1964)

Total Population 880 Persons

FIG.12a

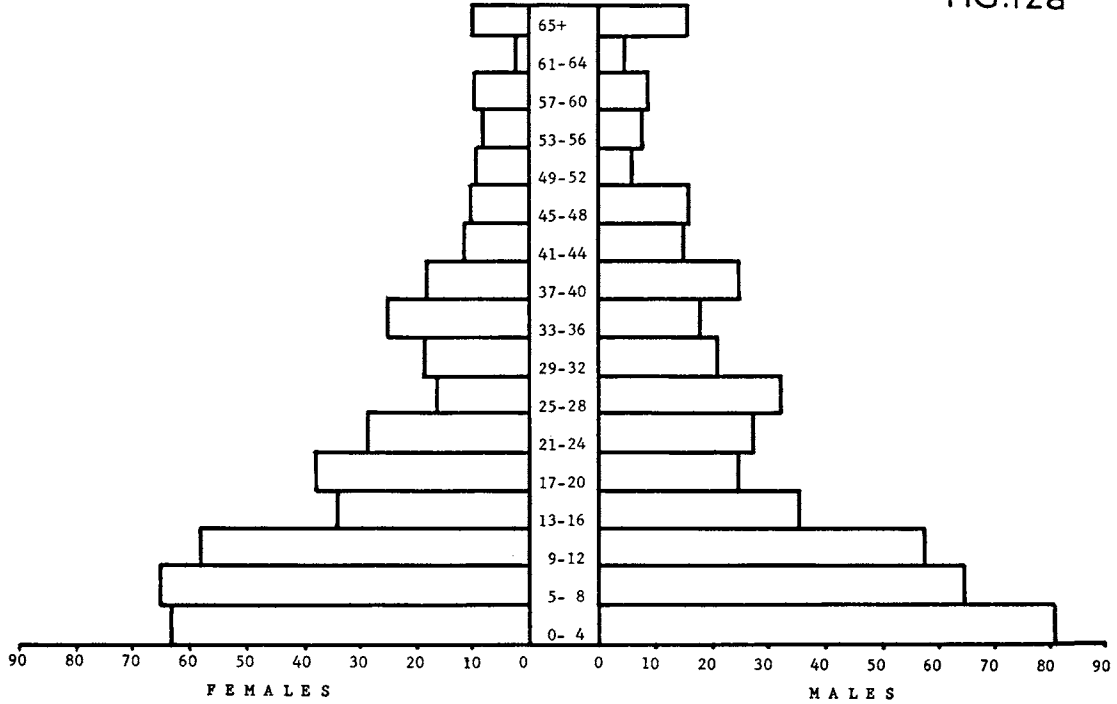
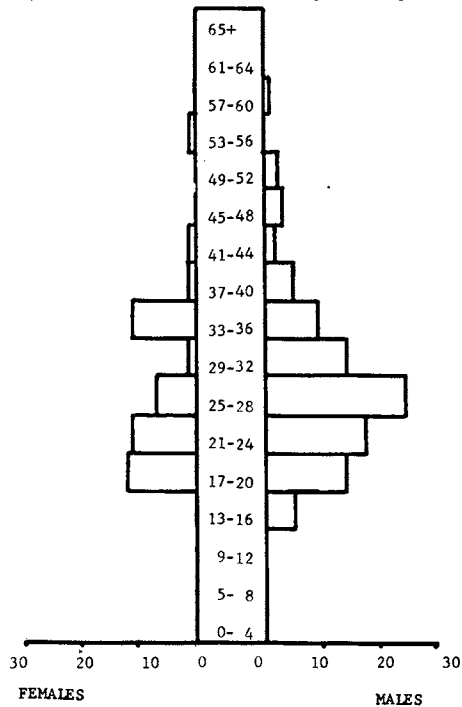


FIG.12b

POPULATION PYRAMID - YEGA ABSENT FROM HOME TERRITORY

(Excluding dependent children, but including boarding school pupils)



Population Trends. The most important trend in present Yega demography is a very high rate of population growth. For the reasons detailed in Appendix B it has not been possible to calculate this rate of growth with absolute certainty. However, I have been able to estimate the approximate village population in 1960 (absentees excluded). The 1960 population was approximately 533; this increased to 615 by July 1964, an increase of 15.5% in 4 years, that is a yearly rate of increase of 3.9%. There are strong indications that this rate of growth for the Yega is fairly accurate. Recent population statistics for Gona Census Division, of which Yega Territory is a part, are as follows:

TABLE 6

GONA CENSUS DIVISION - POPULATION CHANGES 1952-62

<u>Year</u>	<u>Population</u>
1952	1675
1955	1612
1957	1576
1958	1696
1960	1908
1962	1963

Net percentage increase during the 10 year period is 17.2%, i.e., an average rate of 1.72% per annum. More important, the rate has increased during the period 1958-62 to an average 3.2% per annum. There is evidence that this marked increase in total population, the reversal of decline in numbers and the onset of a rapid rate of increase is related to a diminution in infant mortality. Table 5 and Fig. 12(a) show very clearly the large proportion of the Yega concentrated in the lower age groups. Almost one third of the population is under 9 years of age: 52% is under 17 years.

In the Gona area, two main factors are responsible for the diminution in infant mortality - an increasing willingness on the part of pregnant women to accept medical advice and services from the Gona Mission hospital, and the official campaign to decrease the incidence of malarial infection in infants and young children. Compulsory administration of anti-malarial drugs to all children under 5 years of age was instituted in the Gona area

during the period 1956-58: it has been spectacularly successful. The importance of these influences is clearly demonstrated by the following extracts from the records of the maternity section and the infant welfare clinic of the Gona Mission Hospital.¹

Table 7 illustrates the growing confidence of women in the advice and treatment they receive at the pre-natal clinic. Table 8 indicates an increasing use of the maternity section of the hospital. The reduction by 114% of the infant mortality rate during the 6 year period can be attributed in part to increased use of hospital facilities.

Table 9 illustrates the increased volume of enrolments and attendances at the post-natal clinics. The marked fall in the incidence of malaria in children is indicated in line 4 of Table 9.

TABLE 7

ANGLICAN MISSION HOSPITAL, GONA - PRE-NATAL CLINIC ACTIVITIES

	<u>Average Monthly Totals</u>
<u>1957</u>	
Women enrolled	31
Number of new cases	8
Total attendances per month	19
<u>1959</u>	
Women enrolled	37
Number of new cases	7
Total attendances per month	21
<u>1962</u>	
Women enrolled	60
Number of new cases	8
Total attendances per month	34

Records are available only since 1957.

1. All statistics quoted refer to the area of influence of the Gona Mission hospital, i.e., approximately 30 miles north and 20 miles south along the coast and 10 to 15 miles inland.

TABLE 8ANGLICAN MISSION HOSPITAL, GONAINFANT MORTALITY RECORDS 1957, 1959, 1962

	J	F	M	A	M	J	J	A	S	O	N	D	TOTAL
<u>1957</u>													
Births	7	2	6	4	9	6	3	14	5	5	8	4	73
Deaths	1		1	3			4	3	1				13
Infant mortality rate, 178 per 1000 births.													
<u>1959</u>													
Births	12	28	12	4	36	20	26	9	10	3	33	11	204
Deaths		3		6	8	1	6	1	2		1	1	29
Infant mortality rate, 142 per 1000 births.													
<u>1962</u>													
Births	15	15	29	5	19	12	30	9	17	2	45	18	216
Deaths	1					3	1	1	1		3	4	14
Infant mortality rate, 64 per 1000 births.													

TABLE 9ANGLICAN MISSION HOSPITAL, GONA - POST-NATAL INFANT WELFARE

	<u>Monthly Average</u>
<u>1957</u>	
Total children enrolled	879
Number less than 12 months	172
Number examined per month	467
Number with palpable spleen*	326
<u>1959</u>	
Total children enrolled	910
Number less than 12 months	185
Number examined per month	403
Number with palpable spleen	69
<u>1962</u>	
Total children enrolled	1055
Number less than 12 months	152
Number examined per month	556
Number with palpable spleen	45

* Palpable spleen or enlarged spleen verifiable by touch is one of the most distinctive symptoms of malarial infection.

Available records do not provide any basis for calculating birth rates for the Yega people - not even crude birth rates. However, from the 1962 Village Population Register for Gona Census Division, a combined crude birth rate for the Yega Gona, Bapa and Binandere sub-tribes can be calculated at 28.9 per 1000.

No firm demographic predictions can be made for the Yega people. However, the increase in total population and a high crude birth rate in the Gona Census Division, combined with a decreasing infant mortality rate in the area influenced by the Gona Mission hospital, indicate a probable continued rise in numbers and do not exclude the possibility of a sustained high rate of increase.

Population Density. The calculation of population density for Yega territory poses several problems. Firstly, the area of Yega territory cannot yet be determined with any degree of accuracy. The area of undisputed Yega territory is 12.03 square miles¹ but the Yega have good prospects of extending this area by at least 3 square miles when all boundary disputes are settled. However, as any extension is problematical the area of Yega territory is taken for the purposes of this thesis to be 12.03 square miles.

Secondly, the number of people resident on Yega tribal land is constantly changing. In July 1964, 265 Yega, representing 30.1% of the entire tribe, were absent from the tribal territory. This figure varies as people come home to stay and as others go off to work. However, it must be assumed that the present pattern will continue so population density has been calculated on the basis of the 615 people resident on the tribal lands. In these circumstances, the population density of Yega territory is 51.1 per square mile.

THE SUBSISTENCE ECONOMY

The present-day landscape of Yega territory has been determined, to a large extent, by the subsistence gardening techniques of the Yega themselves, or of previous occupants. The distribution of the three main types of vegetation (see Fig. 5), the patchwork pattern of swiddens in various

1. By planimeter measurement.

stages of clearing, cultivation and regrowth (see Figs. 15, 16 and 17, and Plates 16 to 31 and 36, 38), the garden houses and the network of footpaths, are all manifestations of the Yega subsistence gardening routine. This routine is itself the manifestation of the traditional Yega culture with its social groupings and hierarchy of land rights. Traditional land rights still largely govern the system of subsistence horticulture practised by the Yega; the interaction of these two aspects of Yega culture is described in the following pages.

Such a description constitutes necessary comparative material against which recent changes, in particular the attempts to grow cash crops and the trend towards acceptance of tenure conversion, may be more readily understood.

Land Tenure

Leadership. The Yega have no traditional office of chief or priest. Their most important public position is that of land custodian. This office is not hereditary, each succeeding land custodian being nominated by his predecessor. The last two land custodians have been Jebure of Eupu clan and Yaruso of Jambapa clan. The present land custodian is Nixon Kairembora of Eupu clan, a man of about 70 years of age. The prestige of Nixon's position excels that of any other Yega man and he is generally regarded by all as the wise and respected leader of the tribe.

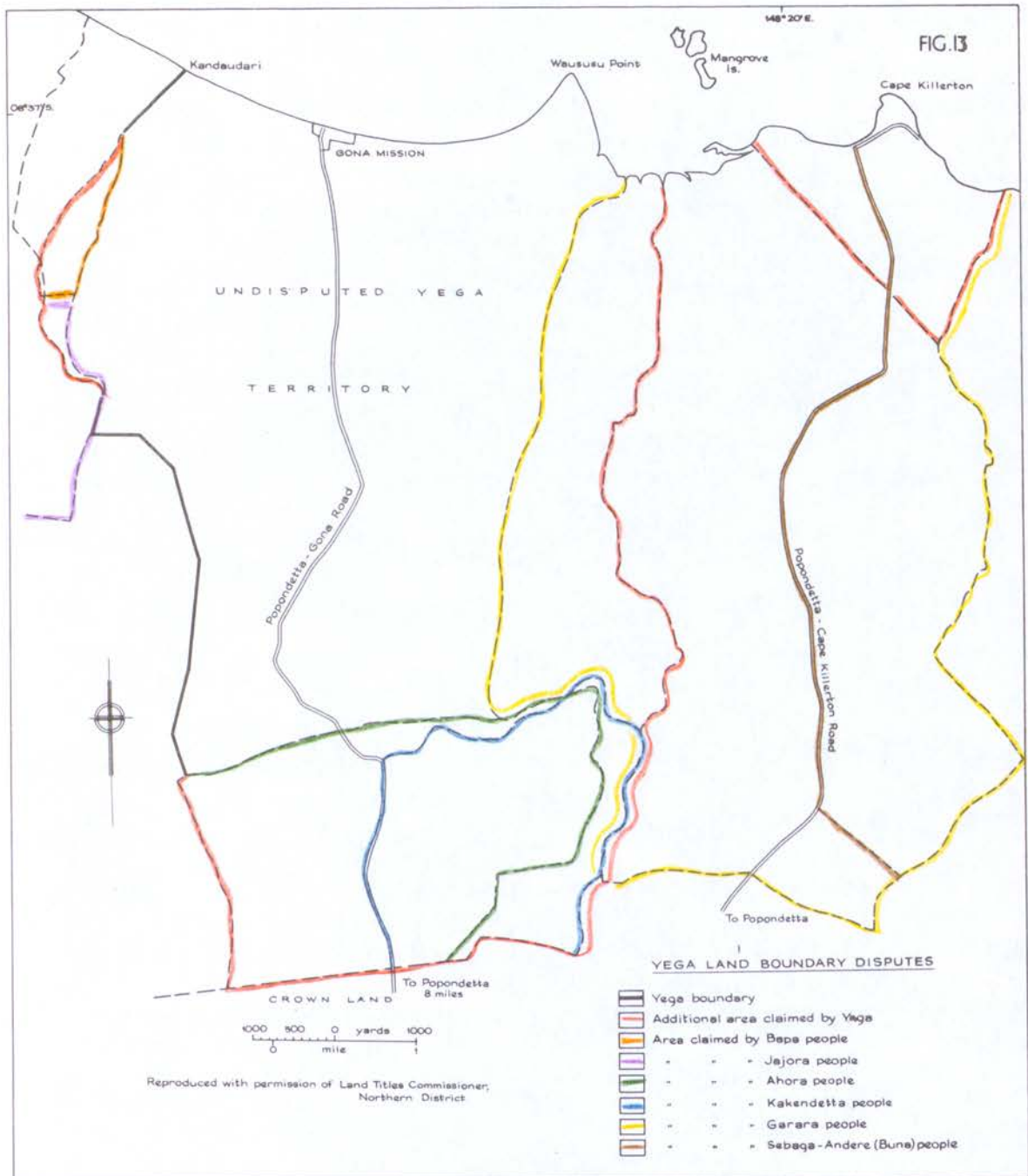
Leadership amongst the Yega remains stable where it concerns such aspects as the traditional usage of land. The leader of a Yega clan is usually its eldest male member, though a younger man may get the position if the oldest member is senile or remains away from the village for a long period. A clan leader is usually also leader of his sub-clan and lineage. The clan leader's function is to know all the boundaries of clan lands and to act as spokesman in inter-clan land disputes. The clan leader is known by the term busu da giti jigari (leader of the soil). Yega sub-clans are generally small units (e.g. in Kurou clan Kuapu'undi has six adult males; Andoga'undi three; and Orewo'undi only two). The sub-clan leader usually decides upon the area of enda where all members will plant

food crops, but his word is not mandatory in such matters. Only the lineage leader has the authority to make a firm decision on the location of food crop gardens for other members of his lineage.

In, as yet, partially understood aspects of modern life, leadership is in a state of flux; no strong and trusted leader has yet emerged. In the present changing situation the elders of the Yega have shown themselves quite willing to be led by young educated men. A young Kurou man was, for a time, the driving force behind the co-operative movement from 1946 until 1951, when he was killed in the Mt Lamington eruption; two young men, a teacher and a clerk, initiated the first consolidated Yega village at Beporo in 1953; a middle-aged (40) Yega employee of the D.A.S.F. organised the 'Yega Scheme' cocoa plantations at Ononda. Finally, a middle-aged well-educated man with a responsible job in the P.H.D. has recently been elected Yega representative to the newly-formed Oro Bay Local Government Council. There appears to be no resentment on the part of older men at this assumption of leadership by younger men. In fact, at one meeting which I attended it proved extremely difficult to get anyone to accept nomination to a committee of three required for planning a new village. In the end, two men and a girl, all under 30, were elected.

Land boundaries. The extent of Yega territory is not accurately delimited. In traditional times there existed between the Yega and their neighbours a 'no man's land', a mile or two wide, the area claimed depending upon the ascendancy of the fighting men of each side at any particular time. The general pattern was one of a central area of eke¹ and enda surrounded by a fringe of saute. This 'core' area was undisputed Yega territory. Surrounding the 'core' area, saute extended towards the undisputed 'core' areas of neighbouring groups of people. Somewhere within the forest 'no man's land' existed the boundary between the neighbouring groups of people. The Administration is presently engaged, through its Land Titles Commissioner, in clarifying the boundaries of the Yega and other groups

1. See Chapter I, page 19, for definitions of these terms.



groups in the vicinity. The method observed by the Commissioner in adjudicating between two opposing groups is to call a meeting at which spokesmen for each side state their claims to the area in dispute. The Commissioner's task is to reach a compromise which is acceptable to both sides. In all land disputes with neighbouring people, Nixon Kairembora, the Yega land custodian is the chief Yega spokesman. He may ask the advice of other senior Yega, but his opinion carries most weight.

To date, agreement on a precise boundary has been reached only between the Yega and the Beuru people to the south west; cement boundary markers have been placed in position along this boundary. In addition, partial agreement has been reached between the Yega and the Bapa. Table 10 below shows the present state of boundary disputes and the areas of land involved. Yega territory and disputed boundary areas are shown on Fig. 13.¹ For the purpose of this thesis Yega territory is defined as that area over which the land rights of the Yega are not disputed by neighbouring tribes.

TABLE 10

Yega Land Boundary Disputes at July 1964

Boundary Location	Disputed by	Total Area in dispute (acres)	Yega expectation (acres)
Eastern	Garara	1452.64	726.32
Northeastern	Garara and Buna	739.71	246.57*
Southeastern	Ahora and Kakendetta	1269.66	423.22
Southern	Ahora	999.22	499.61
Western	Beuru	46.08	23.04
Northwestern	Bapa	123.81	61.90
TOTALS		4631.12	1980.66

* This figure is only approximate as the Yega have not yet completed the delimitation of their claim.

Areas in the above table were calculated by planimeter from the surveys of the Land Titles Commissioner, Northern District.

1. For this information regarding Yega boundary problems I am much indebted to Mr. G.F. Neilsen, Land Titles Commissioner, Popondetta.

Yega expectation is estimated as half the total area where there is one other disputing party or one third of the total area in a tripartite dispute.

The area of undisputed Yega territory is 12.03 square miles. If Yega expectations are added, the total area is 15.13 square miles.

Land Rights. Within Yega territory are clan areas, each clan having rights to three classifications of land, saute (mature rain forest), enda (immature secondary forest), and eke (grassland). The approximate distribution of clan areas (not accurately surveyed) is shown on Fig. 14. Among the Yega the distribution pattern of clan areas is much more complicated than was found by Williams to be the case among the Aiga.¹ Clan areas are widely dispersed and garden land is sub-divided into sub-clan and lineage holdings.² Much greater cohesion exists between the members of each sub-clan than between members of the clan as a whole, while between members of each lineage the ties are even stronger. Nevertheless, the members of different lineages of a clan normally combine in communal labour to clear areas of saute. When the work is completed the cleared land is divided up among the lineages which helped. In this way the pattern of fairly large contiguous strips of land belonging to one clan was developed; the contiguous strips are sub-divided among the sub-clans and lineages as shown on Figs. 15 and 16. The common elongated shape of clan holdings is the result of continued expansion in one direction of an original clearing in the saute by a group of friends talking and joking as they worked and thus keeping in fairly close proximity to one another. Soil type had some bearing on the choice of the general area of saute to be cleared, but once the work was begun, soil variations were not taken into consideration. After clearing and use saute usually regenerates to secondary forest, enda.

Only in rare instances does a single clan control all rights to a homogeneous area of enda. More commonly, a number of clans hold rights to

1. Williams, 1928, p.126.

2. A very similar situation is reported of the Ngarawapum of the Markham Valley in Read, 1950, p.194 ff.

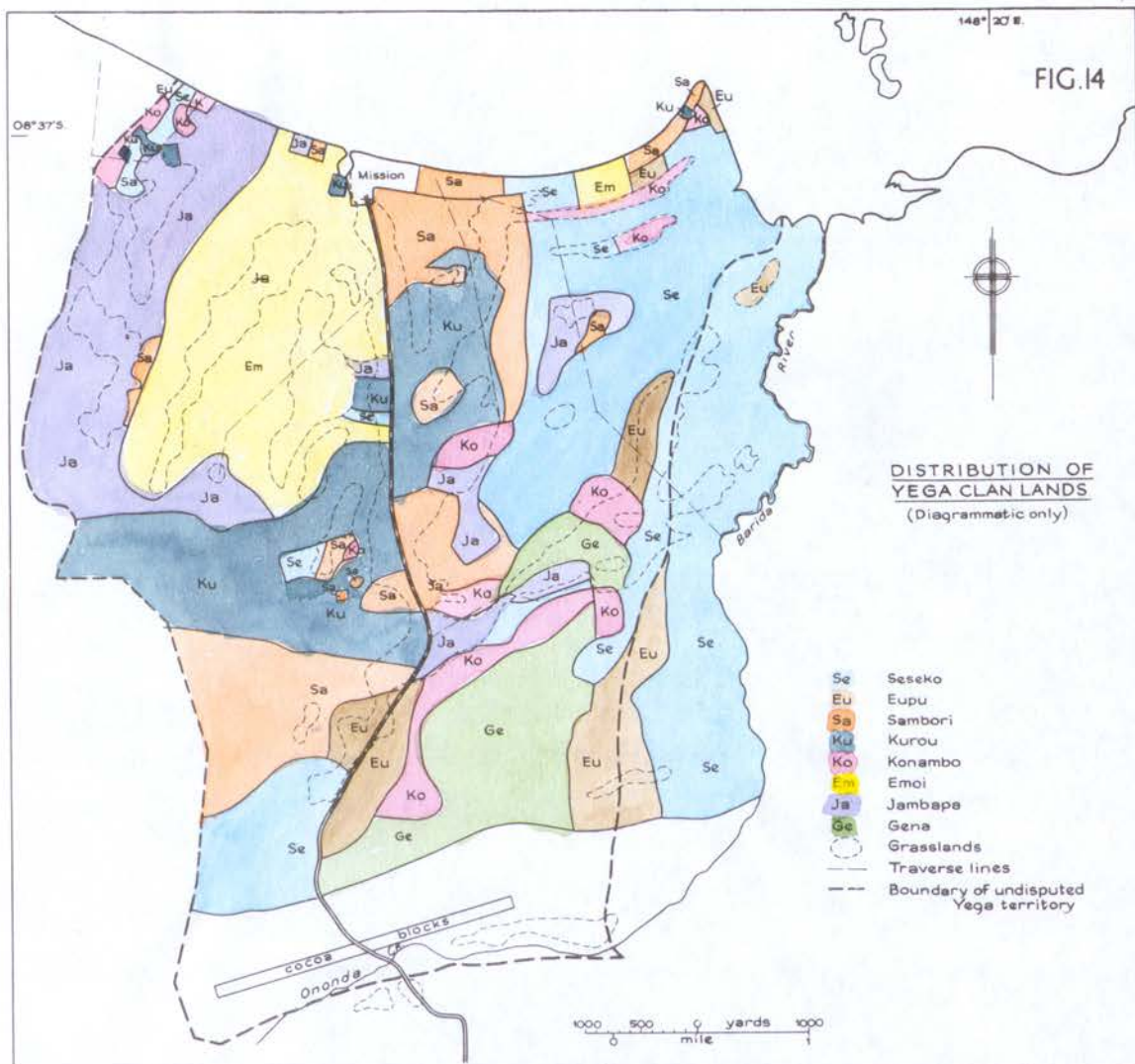
FIG. 14 - Distribution of Yega Clan lands -

Map is diagrammatic only being based upon the following sources:

Traverses, as indicated.

Reference to aerial photographs.

Information from Yega elders.



small enclaves of land within the general holding of any one clan. An illustration of such enclaves is given in Fig. 15 which shows the pattern of enda holdings by the sub-clans and lineages of Kurou clan.

The small enclaves of land, held by clans other than Kurou, interspersed within the Kurou areas are largely explained by affinal relationships. When Kurou ancestors cleared saute on what are now the Imangada and Gora areas, they gave permission at various times for affinal kin in Konambo, Seseko and Sambori to work with them. Tracts of saute, cleared by the members of these other clans, have been inherited by their descendants and remain today as enclaves within the general Kurou area. Other small enclaves have originated from the custom of occasionally giving as dowry a piece of land. Such gifts are usually very small in area.

Yega land tenure is best understood by describing the rights held by individuals and groups in various categories. The rights which will be considered are: the right to plant, to harvest, to gather, to build, to hunt and fish, to alienate and to inherit.

i) The right to plant. The Yega regard only enda (immature secondary forest), its cultivation stage (buro) and its early regeneration stage (manene), as valuable agricultural land. All enda was once mature rain forest (saute) which was cleared as required and is now used in a land rotation cycle averaging 7-8 years (Table 13). Saute is regarded as reserve garden land; it may be cleared following the granting of permission by the clan leader. Any individual who clears an area of saute thereby acquires permanent cultivation rights to that land for himself and for the future members of his lineage. Each individual therefore, has the right to make a swidden on land which was originally cleared of saute by his lineage ancestor. In practice, however, it is found that the head of each sub-clan usually co-ordinates the gardening activities of the members of his sub-clan. Many of the lineages are small in numbers, and most people agree that it is more satisfactory to work near one another. Company counteracts loneliness, and work is less tedious: there is always someone to gossip with, and share a smoke or a watermelon during rest breaks. The sub-clan

head decides on the general area in which all members should work and, while it is not obligatory on all to accept his decision, in practice he is rarely thwarted. However, individual members of each lineage, and their wives, are responsible for the care of their own swiddens. If help is given in clearing or in the initial planting of a swidden, such help is repayable either in produce or in reciprocal help at some later date.

Temporary allocation of the right to plant food crops is widespread among the Yega. At the time of my survey, Kurou clan members had, in fact, planted ten swiddens on land to which they did not claim cultivation rights. They had a lesser number of swiddens (only 7) on their own land. In like manner, many non-Kurou had been allocated temporary planting rights on Kurou enda land. In every instance observed, the person to whom temporary planting rights were allocated had a close affinal relationship to the land right-holder. Table 11 below shows some of these relationships.

TABLE 11

Swiddens on Kurou clan land, planted by members of other clans

Land Name	Rights held by Kurou lineage	Kurou sub-clan	Clan of cultivator	Swidden area (acres)	Relationship of cultivator to landholder
Saroda	Banduru	Kuapu	Jambapa	1.83	Sister of planter's father is mother of a Kuapu man.
Garawa	Bariwo	Andoga	Seseko	.31	Planter's mother is Kurou/Kuapu.
Oning'a	"	"	Seseko	.52	Planter's mother is Kurou/Andoga.
Saroda	Kanana	Kuapu	Andere (non-Yega)	.42	Planter's mother is Kurou/Kuapu.
Korosusu	Bariwo	Andoga	Jambapa	.21	Planter's wife is Kurou/Andoga.
TOTAL				3.29	

In the temporary allocation of planting rights, the importance of women is clearly illustrated by the above table. A married woman retains cultivation rights to the land of her natal sub-clan, as do her children,

but these rights lapse with succeeding generations. The right to allocate land for temporary planting is vested in the sub-clan head.

The temporary allocation of cultivation rights to enda along the Barida River was made many years ago to some Bapa people who originally settled with the Yega at Basabuga. This land is now the subject of dispute; the Bapa claim permanent rights to it by reason of their long-continued usage, whilst the Yega take the stand that, being enda, it was not given in perpetuity, but that temporary cultivation rights only were allocated.

ii) The right to harvest tree crops. The right to harvest the produce of a permanent tree¹ is vested in the planter or his heir, irrespective of his rights to the land on which the tree is planted. A planter usually plants trees on land to which he has planting rights, but in one notable instance, that of Beporo Village, members of all other clans have planted permanent trees around their houses on Sambori land. On the death of the planter, the right to harvest tree products is inherited by his sons, though two instances were documented in which an old man before his death gave harvesting rights to clumps of sago to two of his daughters. One daughter was married to a Yega man of another clan. The other daughter had married outside Yega (to a Bapa man), but according to Yega elders, this fact would not prevent the woman and her husband from gathering the sago within Yega territory. Traditionally, trees to which a planter has harvesting rights are coconuts, areca (betel) nuts, sago and breadfruit. Nowadays this list has been expanded to include additional trees introduced by Europeans; mango, orange, lime, cocoa, coffee, soursop, kapok and rubber.

iii) The right to gather wild foods, building materials etc. Each clan has areas of saute forest in which its members have the right to harvest the fruit of wild trees, nuts and roots. Such rights are claimed if an ancestor of a particular clan was the first man to walk through an area and plant his mono or croton boundary mark therein. Alternatively,

1. Banana and paw paw trees are regarded as temporary food plants.

he may have marked a conspicuous tree or trees with his axe.¹ Building materials and firewood may be collected in any saute area claimed by any Yega clan, but permission to fell special trees, e.g., for canoe-making, must first be obtained from the leader of the clan which claims allocation rights to the area where the tree is growing. Sago is not regarded as a wild food; all clumps are individually owned in the same manner as coconuts or other economic trees. In many instances, sago clumps have been started by the deliberate planting in a marshy spot of a young sago palm in exactly the same manner as a coconut or breadfruit tree is planted.

iv) The right to build. Traditionally, each patriclan was allocated an area on the village site where adult members lived with their wives and families. Each family head was permitted to select a site and build a dwelling within the clan area. The area along the seashore and extending inland as far as the first line of sago-swamp was regarded as building land where any clan could locate and establish a new village. This is indicated by the successive occupation of sites westward along the coast from the original common site at Basabuga. The entire coast as far west as Beporo has been occupied at some time by villages which are now, for the most part, deserted and derelict. However, occupation and the planting of permanent trees have conferred rights on the people who lived there so that now they refer to the sites where they once lived as, 'our land at Busega', and so on.

In addition, any family head has the right to build on land over which his lineage controls the cultivation rights. The recent dispersal of settlement into small hamlets along the Gona-Popondetta road is an indication of the possession of such rights (see Fig. 24). Sometimes, though, dwellings are built on land to which the builder has no right at all. For example, members of the Waususu Sambori, who have strong affinal ties with Kurou are presently building their homes on Kurou land at Konje. This building has been sanctioned by the Kurou clan leader.

v) The right to hunt or fish. Any Yega male has the right to hunt without obtaining prior permission, in any saute within Yega territory. If

1. The Kurou clan leader claimed he could point out the very trees in Kurou saute marked long ago by Kaita, the original Kurou explorer.

he makes a kill in the saute claimed by a clan of which he is not a member, he is under obligation to make a present of portion of his kill, normally to the head of that clan. Should he meet a member of the right-holding clan when on his way home from hunting he may give his gift to that person. A large area of saute along the southern Yega boundary was unclaimed by any Yega clan; hunting could be carried on there by any Yega man without the obligation of payment of a present.

Before hunting in enda areas a hunter must obtain permission from the head (busu da giti jigari) of the clan which claims planting rights to the enda concerned. Any kill must be shared with the members of the right-holding clan. In addition, if weapons or implements are borrowed, (in the past a spear or pig net, nowadays a shotgun or electric torch), the lender must be recompensed by a gift of portion of the kill.

Hunting in the grassland is usually a co-operative venture for which members of different clans combine.¹ I was informed that a similar custom prevailed in traditional times. The initiation^{vc.} for such a hunt comes from the busu da giti jigari of the clan which claims allocation rights to a particular grassland area which he has decided to burn off. This information is spread round and all who so wish come along with their weapons. Each hunter is entitled to any game he kills but at the conclusion of a successful hunt the clan leader whose grassland has been burned off receives, from members of other clans who have participated, gifts of animals killed or captured.

The Yega are, by tradition, coast dwellers. A large proportion of their time is spent obtaining sea food. The women collect a variety of shellfish and crabs from the beach, from the mangrove swamps and from the lagoon enclosed by Waususu Point, Mangrove Islands and Niniyanda Spit. This lagoon is regarded by the Yega as a common fishing ground. The men catch fish in the lagoon and also on the offshore reefs which are clan property.

1. On a hunt I attended, initiated by Emoi clan, members of Emoi, Sambori, Kurou, Jambapa, Eupu and Seseke clans were present. The hunt was abortive because of an unseasonable thunderstorm.

Rights to fish on an offshore reef are held by the clan leader whose ancestor discovered the reef. Members of the right-holder's clan may fish on the reef at will, but members of other clans must always obtain permission and if successful, must recompense right-holder with a gift of fish. Eleven reefs are known by the Yega to exist off their strip of coast. Details of these reefs are:

TABLE 12

Clan fishing rights to offshore reefs

<u>Name of Reef</u>	<u>Right-Holding Clan</u>	<u>Remarks</u>
Ubagu	Jambapa	near wreck of Ayatozan Maru
Biore	Seseko	
Ingaba Betari	Emoi	meaning, 'dead crocodile'
Juwaiya	Eupu	
Sarigari	Jambapa	
Ambeba Pono Wosari	Seseko	meaning, 'where Ambeba's shell ornament fell into the water'.
Kikiri	Sambori	
Ukuku	Konambo	
Opeta	Gena	
Kandoro Betari	N/S	meaning, 'dead mouse'
Fwaga	Bapa tribe	

Inter-clan borrowing of canoes is common. If a canoe is borrowed for a sea-fishing trip its owner is recompensed on the return of the fishermen by a gift of a fish. However, it was noted in practice that if there was only a small catch, the canoe owner waived his right.

The waters of rivers or streams flowing through Yega territory are controlled by the clan which holds alienation rights to the surrounding land. For example, Imangada Creek flows at different stages of its course through enda land of Kurou, Sambori and Emoi clans. Permission to fish in any section of the creek must be obtained from the clan concerned; if the fisherman is successful a reciprocal gift is made to the clan leader.

vi) The right to alienate. The right to transfer land from one Yega clan to another reposes with each clan leader. Any clan member desirous of making such transfer of land must obtain the prior consent of his clan

leader (busu da giti jigari). The transfer of land between Yega clans is not uncommon. The following documented instances illustrate some of the circumstances under which it can occur.

Land may be alienated as part of the bride price. On his marriage to a woman of Sambori clan, Yagoro (Kurou) transferred a parcel of land to his Sambori brother-in-law. This occurred about 50 years ago.

Land may also be given as a gift to a female relative at the time of her marriage. For example, Monoku (Kurou) transferred a parcel of land to his daughter, Mainde, on the occasion of her marriage to a Sambori man (about 1915): Nixon (Epu) transferred a parcel of land to his daughter, Cecilea, on her marriage to a Jambapa man (about 1953): David Bananga (Kurou) transferred a parcel of land to his daughter, Theresa, on her marriage to a Seseko man (in 1949). (In this instance, David also gave a clump of sago and a coconut palm as a personal gift to the husband). In these instances it is important to note that the transfer of land is made to the woman and her children. Should there be no children, or if all direct descendants of the woman should die, the land reverts to the donor or to his descendants.

Finally, land may occasionally be alienated as a friendly gift. Monoku, one time head of Kurou clan had no close relative in his old age. He was looked after by Botere (Sambori) and his wife. Before he died he transferred all rights to a small parcel of land (about 1 acre) to Botere. This was an unusual circumstance. In every other instance documented there were close cognatic ties between the donor and the recipient of land transfers.

One instance was noted in which the head of a Yega clan, Ethelbert (Kurou, Kuapu sub-clan) transferred a piece of land to Freda (Kurou, Orewo) on her marriage to Herbert, a Bapa man. The piece of land given (Onjada) was Orewo sub-clan land, but because all Orewo men were absent from the village, Ethelbert, as clan leader, claims he had the right to act in this manner. George (Orewo) confirmed the action on his return to the village. The cultivation rights to this parcel of land have thus been transferred to Freda and her children, who will be members of the Bapa sub-tribe.

The land has therefore been alienated from Yega control. It is located on the Bapa boundary; it is very doubtful if such a transfer could have been made of land located in the central part of Yega territory.

A special circumstance relative to the disposal of land occurs in Yega. The land custodian, Nixon, exercises control of the saute areas which were once held by the now extinct Bowori clan. These areas of saute were never re-distributed among other Yega clans; they are de facto Yega tribal lands to which all Yega hold hunting rights in common. Any Yega wishing to clear saute for subsistence or cash crops in the ex-Bowori area must first obtain Nixon's consent. Recent clearings in the ex-Bowori saute and the newly-emerging pattern of lineage cultivation rights are indicated on Fig. 27.

vii) The right to inherit. Enda land is inherited patrilineally by all the males in a lineage. There is no fragmentation of land, all rights being held jointly, with control vested in the eldest son. This situation is sometimes varied nowadays with the absence from the village of many young men. The position of lineage head always passes to a man who has remained in the village and 'knows the land'. In Kurou clan alone there are three instances in which the eldest male member of the lineage is absent from the village and is not, and will not, become lineage head; the most complex is that in which both adult male members of Orewo sub-clan are absent from the village engaged in wage employment. Responsibility for all matters affecting Orewo sub-clan land rests with the clan leader (a member of another lineage) who is also responsible for teaching them their land boundaries when they return to the village. It is the main function of the eldest male or lineage head to know precisely the location of the boundaries of the land which has been inherited by the lineage. In any dispute over internal land boundaries he is the spokesman for the lineage. The corners are usually marked by living mono or croton plants, and in my experience, these boundary markers can be located by the lineage heads with amazing accuracy even in dense undergrowth (Plate 27).

Saute and eke, which is general clan land, is inherited by the clan leader in whom is vested the right of allocation to clear for purposes of cultivation or building.

LAND USE

The Yega use a system of land rotation to grow food crops. Swiddens are cleared and used for food production for only a short period - 12 to 15 months - after which the forest is allowed to regenerate. Meanwhile, other swiddens are cleared and planted in order to ensure a continuing food supply. Under such a system, it is essential that the areas under forest fallow be included with the areas actually under crop when any attempt is made to calculate the land requirements of the people concerned. Fallow land is non-productive of vegetable or animal food products but restoration of soil fertility after cultivation necessitates a prolonged period of rest.

Land rotation is the most important factor in fashioning the Yega landscape. Residual belts and patches of saute remain in the midst of larger areas of enda which varies from tangled grass and scrub to trees 50 feet or more in height. In the enda are scattered swiddens in all stages of preparation, use and disuse. The strips of eke are probably former garden lands on which forest regeneration was for some reason prevented, and which are now maintained in a state of disclimax by regular burning.

Land requirements and land availability.

Detailed and painstaking research over the past few years has resulted in a gradual accumulation of authentic data relating to the land requirements of subsistence cultivators in Papua and New Guinea. An up-to-date summary of all such information for the New Guinea highlands was given by Brookfield¹ in 1962. No such collation of data exists for the lowland area, but in January 1950, Hogbin² calculated the land under cultivation by the people of Busama, a coastal village near Lae, to be 106 acres for the 512 people of the village; an average of 0.21 acres per head. Barrau's estimate³ for the coastal lowlands of New Guinea is 0.1 to 0.2 acres per head per annum. A rather higher figure, 0.27 acres per head per annum, is contained in the Report of the Survey of Indigenous Agriculture of Papua and New Guinea⁴

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1. Brookfield, H.C., 1962, p.242.
 2. Hogbin, Ian H., 1952, p.300.
 3. Barrau, J. 1958, p.32.
 4. Department of Territories, Survey of Indigenous Agriculture and Ancillary Surveys, 1961-62, p.14.

1961-62. This figure is calculated from a wide sampling of villages in all parts of Papua-New Guinea, not specifically the lowlands. Crocombe and Hogbin¹ in the most recent survey conducted in lowland Papua (incidentally, only 30 miles from Yega), calculate the per capita land requirements at 0.27 acres per annum. The mean of these calculations is therefore approximately 0.25 acres per head per annum. On this basis, and allowing for an average land rotation cycle of 8 years (see Table 13), the total land requirement per head of population is 2.0 acres. Availability of this amount would avoid a decrease in the normal fallow period and should ensure maintenance of soil fertility at its present level. It is calculated that the Yega have at present approximately 9.9 acres of enda and saute, i.e., cultivable or potentially cultivable land available per head of population.² If eke grassland is included, the figure rises to 12.5 acres per head (Table 14).

Whilst the figure given above for the Yega is calculated only in round figures, care has been taken to calculate accurately the land available to the members of Kurou clan. If all members of Kurou clan lived on their tribal lands they would require 136 acres of land for their adequate support. The 46 members at present living on tribal lands require only 92 acres. My field calculations, summarised in Table 14 indicate, however, that Kurou clan has in fact 220.4 acres of enda available to it. Thus, for Kurou clan as a whole 3.5 acres of enda per head is available, whilst for the 46 Kurou resident in the village, 4.8 acres per head is available.

Among the Yega the cycle of land use is quite flexible. Documented case histories of 21 swiddens, all of which are now under cultivation, show that there is a very wide variation in the period of fallow, even if allowance is made for errors of memory on the part of informants. The fallow

1. Crocombe, R.G. and Hogbin, G.R., 1963, p.9.

2. This figure refers to the Yega population resident on the tribal lands. It does not include the 30% of all Yega who are living semi-permanently away from their homelands.

period ranges between 2 and 15 years with a mean of 7.4 years (see Table 13 below). The reason most commonly given by cultivators of land, which had been fallowed for only a short period, was the desire to work in close proximity to other kinsmen even if this necessitated the clearing of very young enda.

TABLE 13

KUROU CLAN - LAND ROTATION CYCLE FOR SAMPLE SWIDDENS

Name of Area	Holder of Cultivation Rights	Year of Last Cultivation	Period of Fallow (Years)
Oning'a	Alwyn	1953	9
Garawa	"	1950	12
Kawori	"	1952	10
Gatara*	Duna	1960	2
Mumburada*	D. Gill	1950	12
Saroda	Alwyn	1957	5
Saroda	"	1957	5
Saroda	Aubrey	1958	4
Konje	John Gilbert	1955	7
Konje	"	1955	7
Jinanga	"	1949	13
Korosusu	Parmenas	1952	10
Imangada	Ethelbert	1959	3
Konje	"	1952	10
Imangada	"	1960	2
Konje	"	1958	4
Gatara*	Duna	1957	5
Saroda	Ethelbert	1956	6
Tatogosusu*	Byron	1947	15
Gatara*	Duna	1957	5
Sirawa *	Gena clan	c.1953	10

Mean fallow period - 7.4 years

Mean period of cycle - 8.4 years

* Indicates land owned by Yega other than Kurou clan members, but which is under cultivation by Kurou at the present time (January 1963).

TABLE 14

Land availability and Population densities for

(a) All Yega resident on tribal lands.

(b) Kurou clan resident on tribal lands.

a) Number of Yega resident on tribal land = 615

	Area (sq. mi.)	Pop. Density per sq. mile	Area (acres)	Acres per head
Total land area	12.03	51.1	7699	12.5
Land area - less grassland*	9.39	65.5	6009	9.9
Area included in present land rotation cycle (i.e., <u>enda</u>)	4.39		2809	4.56

* The Yega do not yet possess the technical skill, nor do they need to utilise grassland areas for food production. The figures here include mature forest, regrowth, and land under cultivation, i.e., all cultivable or potentially cultivable land under present technology.

b) Number of Kurou Clan ^{*1} resident on tribal land = 46

	Area (sq. mi.)	Pop. Density per sq. mile	Area (acres)	Acres per head
Total land area	1.82	25.3	1164	25.4
Land area - less grassland	1.27		813	17.7
Area included in present land rotation cycle (i.e., <u>enda</u>)	.34		220	4.8

*1 Kurou clan (68 persons) contains 7.7% of the total Yega population. It controls 15.1% of Yega land.

30.1% of all Yega and 32.3% of Kurou clan are absent from tribal lands in wage employment or as dependents.

There is considerable variation in the amount of land to which each lineage has cultivation rights. Details of the enda land controlled by Kurou lineages is tabulated in Table 15. Figs. 15 and 16 show the distribution pattern of Kurou garden areas.

TABLE 15

KUROU CLAN: LAND WITHIN PRESENT ROTATION CYCLE

	<u>Lineages</u>					TOTAL
	A	B	C	D	E	
Total area to which cultivation rights are held by lineage members.	70.8	48.5	24.5	32.5	46.1	220.4
Number of <u>areas</u> (incl. swiddens) per lineage.	19	12	9	9	12	61
Average size of <u>areas</u> (acres)	3.7	4	2.7	3.6	3.8	
Size of largest <u>area</u> (acres)	14.1	10.2	12.8	13.4	15.4	
Size of smallest <u>area</u> (acres)	.25	.8	.5	1.25	.6	
Per capita area (ac) available to Kurou members.	3.5	4.8	4.1	1.5	4.6	
Number of people in each lineage	20	10	6	22	10	

Index to lineages (to be used in all future tables where lineages are referred to):

Kuapu sub-clan	-	Kanana lineage	=	A
		Banduru "	=	B
		Yiede "	=	C
Andoga sub-clan	-	Barewo "	=	D
Orewo sub-clan	-	Sebodha "	=	E

At the time this survey was made no members of Banduru (B) or Sebodha (E) lineages were resident on tribal lands.

Most of the people of Kurou clan appear to have plenty of land available with little prospect of land pressure developing in the near future. There are, however, several factors which make the situation somewhat less favourable. Some quite extensive tracts (e.g., 4 acres at Kawori, lineage D) are unsuitable for cultivation because of perennial flooding; other patches of ogata (heavy clay loam soil) cannot be used during the rainy season and finally, some areas (totalling approximately

148° 18' E

FIG. 15

MAIN SUBSISTENCE GARDEN AREAS OF KUROU CLAN

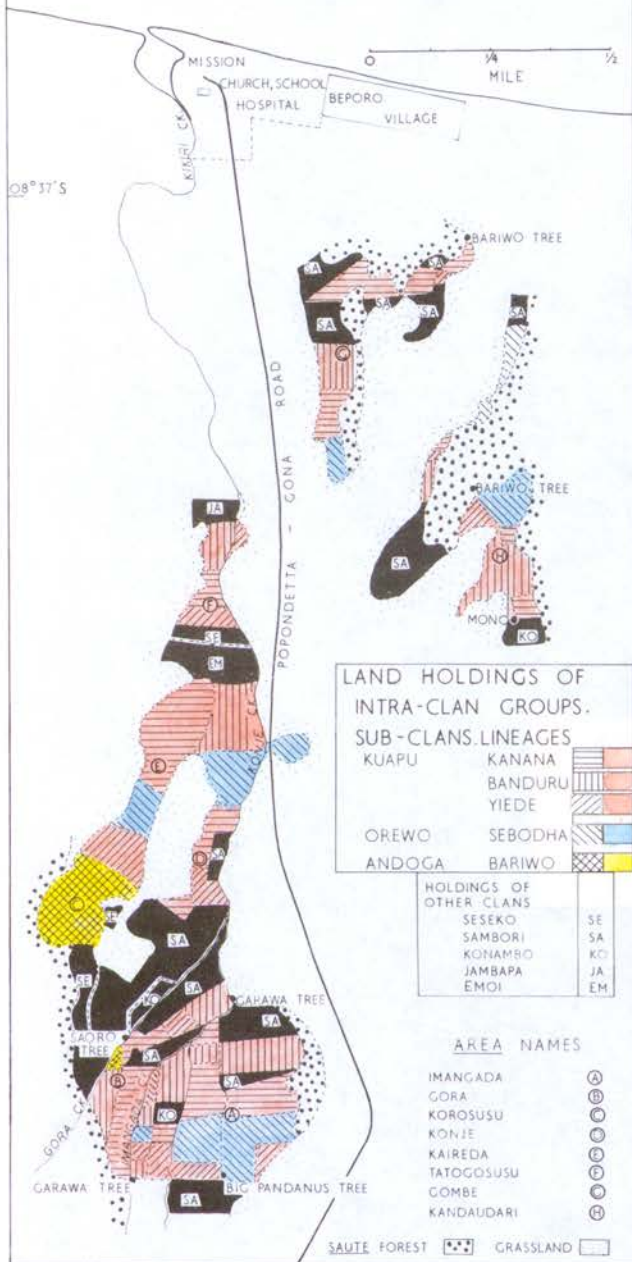
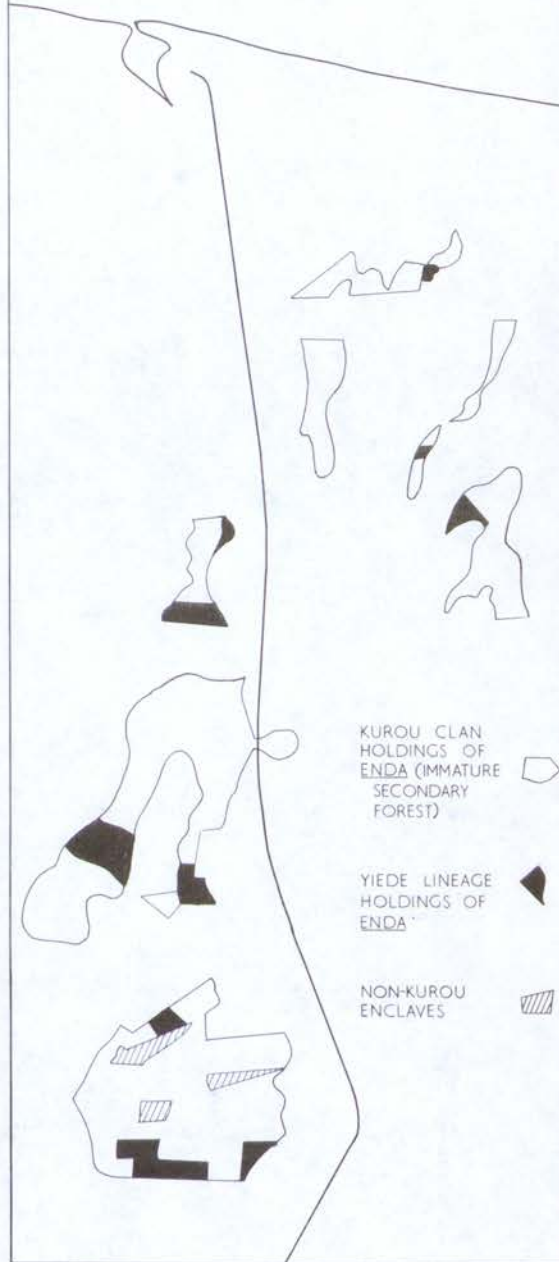


FIG. 16

CULTIVATION RIGHTS HELD BY ONE LINEAGE OF KUROU CLAN



20 acres) are so scattered and so far distant from the main Kurou areas that they are rarely used by Kurou members. This circumstance may help to account for the practice - universal among the Yega - of temporary exchange of land (Tables 11 and 19). Furthermore, Table 15 provides an illustration of the variation within one clan, of cultivation rights held by the different lineages. It is seen that for lineage A the per capita availability is 3.5 acres; for lineage B, 4.8 acres; for lineage C, 4.1 acres; for lineage E, 4.6 acres, but for lineage D only 1.5 acres. The explanation for this variation probably lies in the historical circumstances surrounding the entry of lineage D (Andoga sub-clan) into the Kurou clan (Chapter 1, page 29). Lineage D's shortage of good land was apparent during my stay in the village. At that time, all lineage D swiddens, except one, were located on the land of other lineages.

In summary, it is unwise on the basis of the details given above for Kurou clan to draw general conclusions for all Yega. As indicated (footnote to Table 14), Kurou clan controls a disproportionately large amount of land. Some members of the larger clans, particularly Seseko, are quite definitely short of land, while members of small clans which were once large, in particular Emoi, have a superabundance of land. However, it can be safely stated that, while traditional attitudes to land utilization are adhered to, the Yega appear to be in little danger of suffering from a shortage of garden land, for no land-holder would refuse permission for a kinsman to clear a swidden on land he is not using himself.

For comparative purposes the land available to the western group of Bapa was calculated. It was possible to get a reliable figure in this instance where the Administration census of July 1962 showed a total population of 186, and where the Land Titles Commissioner at Popondetta had recently completed a chain and compass traverse round western Bapa land.¹ This survey shows that undisputed Bapa territory is 435.84 acres.²

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1. This survey, reproduced with the kind permission of Mr. Neilsen (Land Titles Commissioner, Popondetta), is included in Fig. 13.
 2. By planimeter measurement.

Bapa territory disputed by the Yega was 125.44 acres but, just before I left Gona, agreement had almost been reached on an equal division of the disputed area. This will give the Bapa an additional 62.72 acres: their aggregate area is thus 498.56 acres, giving a population density of 238 per square mile, and a land availability of 2.68 acres per head. However, this area includes some swamp and grassland as well as arable land; the land available for cultivation is therefore considerably less than the total of 498.5 acres. I was informed that the land rotation cycle is now 3-5 years, so it seems doubtful if more than 1.3 acres per head is available for cultivation.¹

Subsistence Horticulture²

Williams³ gives a detailed description of the Orokaiva subsistence gardening routine. His observations, made 40 years ago, referred specifically to the Aiga, a tribe living inland to the southwest of the Yega. At the time Williams made his observations (early 1920's), the major cultural change from stone to steel implements had been completed; it is unlikely that the basic routine has altered appreciably in the intervening period. The aim of this chapter is, therefore, to attempt a detailed analysis of the practice of subsistence gardening among the Yega today, and to provide as much documentary evidence as possible relating to the Yega pattern of land use.

The Yega subsistence gardening routine is based upon a few fundamental necessities. The first of these is the maintenance of a continuous supply of food.

Maintenance of food supply. Most Yega swiddens are made by clearing enda, though nowadays with an increasing population many men are clearing saute in order to ensure that their descendants have cultivation rights to

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1. Deterioration in soil fertility in Bapa territory is a very real possibility. However, it was not possible to make any further investigation during the limited period of fieldwork. According to R.M. Prothero (private communication) experience in West Africa indicates that the critical population density is around 250 per sq. mile. Above this level soil degeneration is likely. Nye and Greenland in The Soil under Shifting Cultivation, present a great deal of evidence pointing to decreasing crop yields with a decrease in the fallow period.
 2. Plates 16 to 31 illustrate aspects of subsistence horticulture described in this section.
 3. Williams, 1928, pp.105-165 and 1930, pp.21-24 and 42-65.

adequate amounts of garden land. The following description applies to the making of a swidden in enda. Trees are cut off 3 or 4 feet above the ground, and no attempt is made to remove the stumps which, in most cases, do not coppice. The felled trunks, branches and leaves are allowed to dry for about 3 weeks before being burned off. Prior to burning, most of the straight poles are cut into lengths of about 20 ft and stacked for future use as fencing material or for domestic firewood. Williams makes the interesting point that the Orokaiva appeared to have no conception of the value of ash as a fertilizer.¹ There is no attempt to dig the soil, seeds or cuttings being planted in holes made with a digging stick. Gardens are weeded when plants are small during the first two or three months after planting, but once they are well-established no further care is taken and gradually grass and weeds increase. Most weeds are removed after harvesting taro prior to the planting of sweet potato cuttings, though often the young regrowth enda trees are left at this stage and only grass and tambara (polytoa macrophylla) removed.

Under typical Yega subsistence horticulture the area under cultivation and the areas of individual swiddens change constantly as additional land is brought into cultivation and the area first planted reverts to bush. The staple food is taro (Colocasia esculenta); normally, only one crop of taro, followed by a crop of sweet potatoes, is taken from each swidden. The area cleared for a new swidden is in the first instance usually about a quarter to half an acre. This is then planted communally, members of a man's sub-clan assisting his family. In this way, 2000 to 2500 taro suckers may be planted in a day. After this initial help, it is the task of the individual gardener gradually to extend his swidden by personally clearing and burning off patches of enda. As additional patches are cleared they are usually planted with up to 500 taro suckers per patch, though daily plantings would probably not exceed 200 or 250 suckers. A succession of maturing crops is thus ensured. A typical garden area presents the picture at any point in time of swiddens containing crops

1. ibid, Williams, 1928, p.134. This is in contrast to most African shifting cultivators who do recognise the value of ashes, e.g., Richards, 1958, p.306.

in varying stages of maturity; patches of felled trees; patches partly burned-off, and areas from which the crops have been harvested and upon which forest regeneration has begun (Plates 36 and 37). The swiddens in use by Kurou clan at the time of my visit, were examined in detail, and the area of land at various stages was calculated. Results are tabulated in Table 16 below.

TABLE 16

KUROU CLAN - CULTIVATION STAGES OF SWIDDENS IN USE, NOV. 1962

TO JAN. 1963

Swidden Index No.	Area cleared Not yet planted (acres)	Area under crop (acres)	Area reverting to fallow (acres)	Total area of swidden (acres)
1	0.02	0.23	-	0.25
2	-	0.79	-	0.79
3	0.08	0.47	-	0.55
4	0.03	0.33	-	0.36
5	-	0.44	1.73	2.17
6	0.23	0.26	-	0.49
7	0.06	0.41	-	0.47
8	0.10	0.20	-	0.30
9	0.67	-	-	0.67
10	-	0.32	1.03	1.35
11	0.03	0.23	-	0.26
12	-	0.32	-	0.32
13	-	0.25	0.02	0.27
14	-	0.06	-	0.06
15	-	0.32	0.17	0.49
16	-	0.10	-	0.10
17	0.15	0.27	-	0.42
TOTALS	1.37	5.00	2.95	9.32
PROPORTIONS	14.7%	53.7%	31.6%	100%

The area under crop at any point in time is relatively small. Table 16 indicates that during December 1962-January 1963, the 46 people of Kurou clan, resident on tribal lands, had a total of 9.32 acres in some stage of cultivation. This is equivalent to .20 acres per head, an area equivalent to the highest point of Barrau's estimate, slightly

lower than the Survey of Indigenous Agriculture figure of .27 acres per head per year, and almost identical with Hogbin's findings in Busama. Only 53.7% of this area was actually under crop at the time. In addition, in much of the area listed as being under crop, the crop had not reached maturity. For instance, it can be seen by reference to Fig. 18(c) that of the .79 acres listed as under crop in swidden No. 2 (Table 16 above) only .34 acres was actually in production. Of the swiddens closely observed by me during 1962-64, I estimate that approximately 1/3 of the area under crop was actually in production, that is, 46 people were supported from the produce of approximately 1.67 acres at any point in time in the land rotation cycle; this is equivalent to just under .04 acres or 17 square yards per head.

Inter-planting of crops. The inter-planting of crops in a swidden is a common feature of tropical subsistence agriculture. As well as helping to maintain continuity of the food supply - because of differential growth rates - the system also helps to provide a desirable variety in the diet. The Yega have maintained this traditional practice and extended it to cover the many new crops introduced by Europeans. Such crops include maize, cassava, some varieties of sweet banana, water melons, shallots, pineapples, tomatoes, pawpaw and pumpkin.¹ Tobacco, although almost certainly of foreign origin, is in a special category.² The crops planted in 14 Kurou swiddens were counted by using a 1/100th acre rope triangle. In these 14 swiddens the mean number of varieties of interplanted crops per swidden is seven; as many as 13 varieties were found in one swidden.

The dominance of taro is evident from Table 17. Plant counts of taro varied from 4900 per acre to 11,400 per acre, i.e., the average of 7605 plants per acre is slightly lower than the Survey of Indigenous

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1. Lime, orange, mango and soursop trees have also been introduced by Europeans but are commonly planted round the villages, rarely in the gardens.
 2. See Williams, 1928, p.121, for a discussion of the introduction of tobacco.

TABLE 17

Kurou Clan - Inter-planting of crops

Swidden Index No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15*	16	17
Area of Swidden under crop (acres)	.23	.79	.40	.33	.44	.26	.41	.20	N11	.32	.23	.32	.25	.06	.32	.10	.27
Area planted with Taro (acres)	.23	.47	.37	.33	-	.24	.41	.20	-	.30	.23	.06	.25	-	.32	.10	.27
Area planted with Sweet potatoes (acres)	-	.32	.03	-	.44	.02	-	-	-	.02	-	.26	-	.06	-	-	-
Bananas (Clumps)		58	36	63	28	37	-	5	-	34	13	-	-	-	-	3	10
Sugar Cane "		29	23	23	9	27	2	16	-	40	15	-	13	-	-	11	14
Pit Pit "		5	4	-	6	5	-	-	-	52	1	-	-	-	-	-	-
Yams - Plants		10	5	-	-	70	-	2	-	6	-	-	-	-	-	-	1
Cassava "		25	-	10	-	-	-	-	-	-	1	-	-	-	-	-	-
Taro "		5358	2200	2772	-	1456	4592	1928	-	1500	1274	318	1550	-	-	630	1930
Maize "		186	-	.56	-	106	-	23	-	53	9	-	-	-	-	-	-
Pineapples "		10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cucurbits "		7	8	6	6	26	-	-	-	7	9	-	-	-	-	-	5
Paw Paw "		4	8	25	17	-	-	4	-	-	3	-	4	-	-	-	5
Edible Cannas "		-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Snake beans "		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tobacco "		-	-	11	-	5	-	10	-	-	4	-	-	-	-	-	24
Indigenous Vegetables "		-3	-	-	-	15	-	-	-	15	3	-	-	-	-	-	-
Shallots		-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-

* No detailed crop count made of these swiddens. Swidden index numbers correspond to those in Table 16.

Agriculture conversion factor¹ of 8000 taro plants per acre. The information given in Table 17 makes it difficult to assess the relative importance of bananas and sweet potatoes in the Yega diet. Sweet potatoes are an important secondary staple - bananas much less important than either taro or sweet potatoes.²

Fencing. Fences are built to keep wild pigs out of the swiddens. Williams³ gives illustrations of two methods of fencing used by the Orokaiva, but of these only the upright type is used by the Yega (Plate 20). Pairs of thin stakes, 8-10 inches apart, are driven into the ground with 3-4 feet between pairs. Logs are then laid horizontally between the pairs of stakes which are bound together with vines or strips of tough bark. Fences are built to the height of about six feet, but I was assured that the wild pigs would scramble over anything lower. The fences are not built before planting but are generally begun three or four months after the taro is planted.

Williams⁴ states that these fences surround ... 'the whole group of clan gardens ... each man being responsible for the part nearest his own garden', but among the Yega, each cultivator is responsible for the construction of a fence round his own individual swidden, except where he may have a common boundary with a neighbour. In a large number of instances swiddens are never completely encompassed by fences, but in this event, pieces of cloth are hung on shrubs or fires kept smouldering in the gaps. If this is done, I was informed, the wild pigs, scenting the presence of humans, will not venture into the gardens. Sometimes, also, pig traps are set in the fence gaps, or alternatively, a hunter may take his stand there at night.

Fence building is a tedious task. Natural features such as creeks are utilized as fully as possible as swidden boundaries to avoid the work of building fences. Frequently a cultivator requests the help of other

1. ibid, p.8

2. ibid, p.14, shows that for Papua and New Guinea as a whole, sweet potatoes are a more important food than taro, Bananas rank about even with taro.

3. ibid, Williams, 1928, pp.140-141.

4. ibid, p.140.

members of his sub-clan. Such help is usually given, for it involves the recipient in the obligation to repay at some future date with reciprocal help, or possibly a gift of produce.

Areal distribution of swiddens. The areal distribution of swiddens in use by members of Kurou clan in the period November 1962-February 1963 is shown in Fig. 17. The wide scatter of swiddens is determined by two main factors, the pattern of distribution of land to which any one lineage holds cultivation rights, and the affinal relationships which members of any lineage have with other clans.

Fig. 14 shows the approximate distribution of the lands over which each Yega clan has certain rights. Figs. 15 and 16 show in greater detail the main extent of land over which Kurou clan has cultivation rights. This land has a linear extent of approximately $2\frac{1}{2}$ miles, but most Kurou swiddens made on their own land are grouped in fairly close proximity to one another. The reason for this is that members of each sub-clan usually accede to the wishes of their busu da giti jigari regarding location of the sites of their swiddens, although it is not incumbent upon them to do so. Details of the swiddens made by Kurou members on land to which they hold cultivation rights are given in Table 18 below.

TABLE 18

SWIDDENS IN USE BY KUROU CLAN MEMBERS ON KUROU LAND¹

Index and land name	Cultivation rights held by lineage	Name of cultivator	Lineage of cultivator	Swidden area (acres)
1 Ononda	A	Dennis	A	.25
2 Imangada*	A	Ethelbert	A	.79
3 Konje	C	John	C	.55
4 Konje	A	Lola	A (before marriage)	.36
5 Konje	C	John	C	2.17
6 Korosusu*	D	Parmenas	D	.49
7 Konje	A	Ethelbert	A	.47
TOTAL				<u>5.08</u>

Key to lineages column 4 is given in Table 15.

Index numbers correspond to those in Tables 16 and 17.

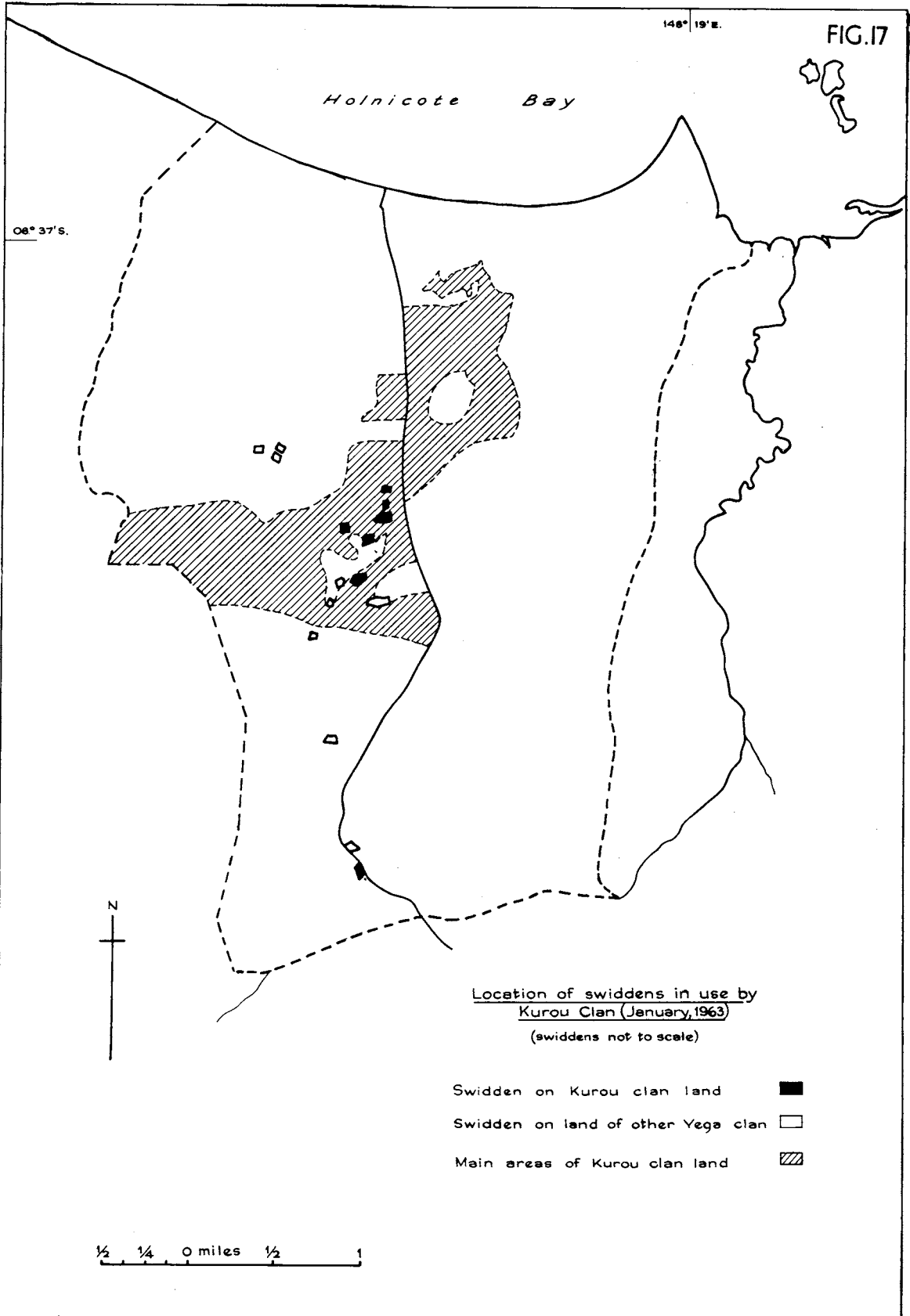
- Detailed plans were drawn of all swiddens in use by Kurou members during the period November 1962-January 1963. Three of these, marked * in Tables 18 and 19 are included, See Figs. 18(a), 18(b) and 18(c).

148° 19' E.

FIG.17

Holnicote Bay

08° 37' S.



Location of swiddens in use by Kurou Clan (January, 1963)
(swiddens not to scale)

- Swidden on Kurou clan land
- Swidden on land of other Yega clan
- Main areas of Kurou clan land

1/2 1/4 0 miles 1/4 1

The much wider dispersal of Kurou swiddens cleared on enda controlled by members of other clans is also indicated on Fig. 17. At the time of my survey Kurou members were using 10 swiddens on the land of other clans. In every instance there was a clear affinal relationship between the holder of cultivation rights and the Kurou cultivator. These relationships are shown in Table 19.

TABLE 19

SWIDDENS IN USE BY KUROU CLAN MEMBERS ON LAND WHOSE CULTIVATION
RIGHTS ARE VESTED IN MEMBERS OF OTHER CLANS

Index and land name	Cultivation rights held by member of ... clan	Kurou cultivator	Lineage of Kurou cultivator	Swidden area (acres)	Relationship of cultivator to right-holder
8. Gatara I	Jambapa	Ethelbert	A	.30	Ethelbert's wife is Jambapa girl.
9. Siruwa	Gena	Dennis	A	.67	Kinsman's sister (Lena) is married to Gena man.
10. Imangada	Sambori	Parmenas	D	1.35	Mother of Sambori right-holder was Kurou girl.
11. Mumburada	Seseko	Philemon	D	.26	Philemon's wife is Seseko girl.
12. Imangada *	Sambori	Maud Jean	D	.32	Maud Jean (Kurou girl) is widow of Sambori man.
13. Gatara	Jambapa	Matilda	D	.27	Matilda (Kurou girl) is widow of Jambapa man.
14. Ononda	Seseko	John	C	.06	John's sister married a Seseko man.
15. Tatogosusu	Sambori	Lola	A	.49	Mother of Sambori man was Kurou girl.
16. Imangada	Seseko	Aspecia	A	.10	Aspecia's mother was from Seseko.
17. Gatara	Jambapa	Alwyn	D	.42	Alwyn's wife is Jambapa girl.
TOTAL				4.24 acres	

Index numbers correspond to those in Tables 16 and 17.

* See footnote Table 18

SAMPLE YEGA SWIDDENS

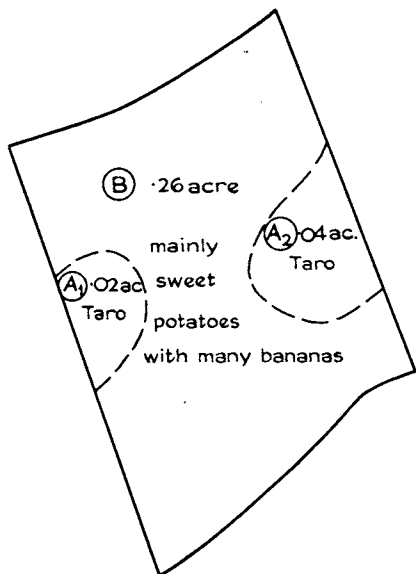


FIG. 18a. Total area of swidden, .32acre
 Planter, Maud Jean (widow)
 area A₁ is immature taro, 4 months old
 area A₂ is being cleared of potato vines
 in preparation for 2nd. taro crop

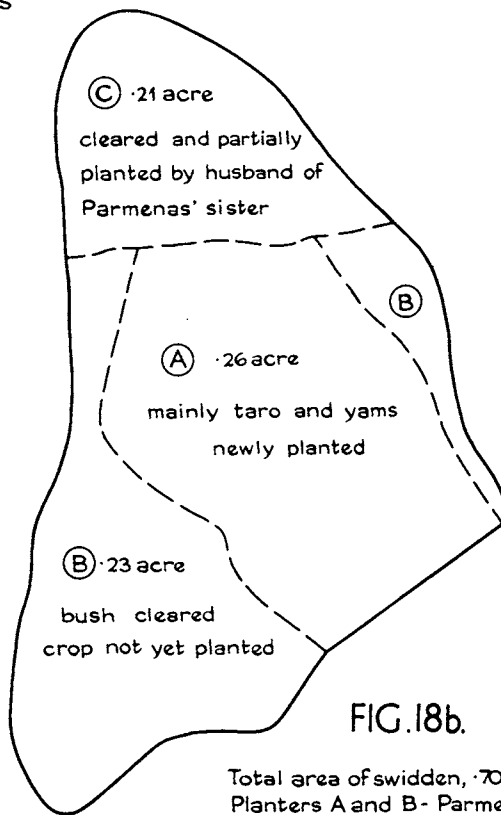


FIG. 18b.
 Total area of swidden, .70acre
 Planters A and B- Parmenas
 C - Columba

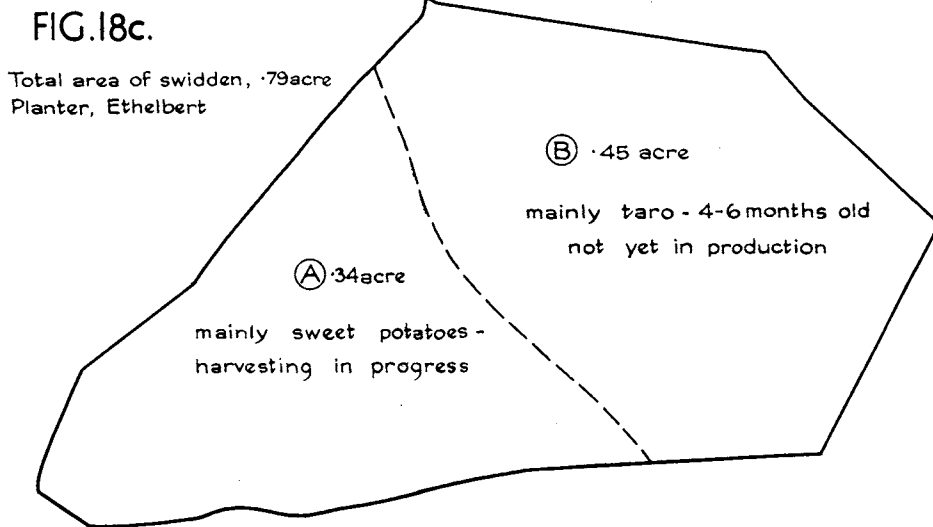


FIG. 18c.
 Total area of swidden, .79acre
 Planter, Ethelbert

0 10 20 30 40 50 yards

It is already evident from Tables 16 to 19 that there is a wide range of individual ability and initiative amongst Yega agriculturists, as there is amongst farmers in any country. Table 20 below illustrates the extent of such differences.

TABLE 20

KUROU CLAN - LAND USE BY HOUSEHOLDS

Household	Lineage	No. of people in household	No. of Swiddens in use	Total acreage of swiddens under crop	Acreage per head
1	A	13	8	3.72	.29
2	C	5	3	.97	.19
3	D	14	4	1.27	.09
4	D	8	2	.81	.10

Column 3 refers only to members resident in the village.

The long distances - up to 5 miles - separating the traditional coastal village sites from the garden lands has given rise to the practice of erecting a temporary shelter, dobo, on the swidden currently in use; the man of the family, or in some instances the entire family, may then live in the dobo for periods of up to a week at a time, during which time a concentrated effort is made on subsistence gardening tasks. The family then returns to the permanent village and, apart from harvesting, may do no further garden work for a week or more. A great deal of effort and time in travelling between the permanent village and the gardens is thus saved. The use of 'garden houses' is a normal feature of Yega gardening routine today, but it is doubtful if this was so in earlier times when, for defence reasons, it is likely that all people returned to their villages each night.

PRODUCTION OF SUPPLEMENTARY FOODS

The production of food by horticulture is heavily supplemented by quantities of food obtained by hunting, fishing and collecting.

Most hunting is carried on by individuals at night with the use of an electric torch and a heavy pig spear which invariably carries a steel

tip up to 18 inches long. Bow and arrows are never used but several men have shotguns. The game most sought after is wild pig, but cuscus, bandicoots and bush hens are occasionally killed also. Not all men are hunters; some have specialised in hunting and may be commissioned by others to provide meat for a feast. Payment is provided by gifts of other food, vegetables or sago, or by the provision of shotgun cartridges and a share in the carcass of the killed animal. During the dry season, June to September, grassland hunts are organised (Chapter I, page 27). Many men take part in such a hunt which is always carried out in daylight.

Fish is an important item in the Yega diet; it is included at least once a week for most families. Fish are caught in the following ways:

TABLE 21
YEGA FISHING TECHNIQUES

<u>Gear used</u>	<u>How used</u>	<u>Location</u>
i) multi-pronged spear with light at night	in hand - wading <u>OR</u> in hand standing on prow of canoe with separate paddler (day or night)	Lagoon, creek or open sea.
ii) triangular-shaped net - <u>yako</u> - sides about 9 ft.	by hand - solo - night only	Open sea, usually shallow bank near Waususu Point.
iii) long seine net - <u>Komboro</u>	laid from canoe pulled by hand - up to 20 fishermen - day only	open sea, usually off the beach - sandy bottom (used for catching Trevally, Aug. to Oct.)
iv) small seine net up 15-20 yds long - <u>Jaura</u>	by hand - solo - day only	coral reef partly exposed. Net is laid round large coral rock - fish frightened out from rock.
v) Derris root (<u>imanya</u>) poison	hand - usually tied to end of stick or spear - day or night	in lagoon or on reef. pulped root is inserted in hole in coral rock and agitated.
vi) Damming	hand - up to 10-15 fishermen - day only	in streams - water cut off by dam - fish speared or caught by hand, in shallow pools below dam.

TABLE 21 (Cont'd)

<u>Gear used</u>	<u>How used</u>	<u>Location</u>
vii) rubber-powered spear-gun (home made) and diving goggles	hand - solo - day only	on reefs in water 8-12 ft deep.
viii) Hook and line	individual fisher- men in canoe	offshore usually over sandy bottom - not often used.

For three of the fishing methods outlined above a canoe is essential, but not more than $\frac{1}{4}$ of Yega men own a canoe. If a request is made to borrow a canoe, it is rarely refused, but there is always the obligation on the borrower's part to repay the loan by a gift of portion of the catch. In addition, permission from the right-holding clan must be obtained before fishing on any of the off-shore reefs (Table 12). There is strict division of labour in fishing activities (Table 24). No man would be seen gathering shellfish; no woman would be allowed to help pull a Komoro net. In addition, nobody jokes with, or even speaks a word of greeting to a man starting off on a hunting or fishing trip. This would spoil his concentration and is regarded as very unlucky.

While hunting and fishing are carried on throughout the year, the gathering of supplementary vegetable foods usually occurs periodically during times of low productivity of cultivated crops or with the seasonal ripening of tree crops. The main exception to this general rule is the gathering of coconuts which goes on regularly throughout the year. Coconut, in one form or another, is eaten by most Yega every day. The liquid and soft 'meat' from green nuts is the chief source of refreshment during the day. In the evenings the main dish of taro, sweet potatoes or sago is often cooked in su (coconut cream) sometimes slightly salted. The importance of coconuts in the daily diet is sometimes overlooked by critics who claim that copra production by villagers could be vastly increased.

Rights to the produce of a tree are vested in the person of the planter, irrespective of the rights to the land on which the tree is growing.

There is, therefore, frequent planting of coconut and sago palms, particularly by the younger male members of families, who are able in this way to prepare in some measure for the future responsibilities of married life. Kurou clan ownership of trees of economic value is shown in Table 22.

TABLE 22

KUROU CLAN - OWNERSHIP BY INDIVIDUALS OF TREES OF
ECONOMIC VALUE (NUMBERS OF TREES)

Individual	Sago clumps	Coconut	Areca nut (Betel)	Breadfruit	Pandanus	Other*
Ethelbert	19	27	11	6	2	5
John	22	15	-	1	-	-
David	15	30	11	2	5	1
George	8	18	-	1	-	14
Alwyn	9	13	2	2	7	-
Parmenas	34	21	5	-	-	4

* This category includes citrus, tapa, mango, soursop and guava. A sago 'clump' may vary from one or two palms to 50 or more palms, depending upon the age of the clump and the use to which it is put. Members of Kurou clan appeared to have an abundance of sago.

The sago, breadfruit and pandanus trees listed in the above Table were scattered throughout Kurou clan lands, sometimes at considerable distances from Kurou villages. Some of the Kurou sago clumps were even planted in swamp patches on the land of other clans. Kurou members saw nothing remarkable in such plantings. On the other hand, all the other trees mentioned above were planted near present or past places of residence.

At certain times of the year, sago constitutes a very important supplementary staple. This is particularly the case following a very dry or a very wet season when the normal growth of the annual staples has been inhibited. There are at present far more sago palms growing in Yega territory than can possibly be used, but as can be seen from Table 22 above, there is wide variation in the numbers of palms owned by each individual. This variation appears to indicate that some families may suffer from a shortage of sago, but such is not the case, for there is a great deal of sharing and co-operation between clan members once rights

of allocation are acknowledged . The amount of sago processed in Beporo village during a week in January 1963 is given in Table 23 below.

TABLE 23

Sago processed by Beporo villagers between 21/1/63 and 27/1/63

Date	Location of palm processed	Approx. distance from village	Weight of raw sago (lbs.)
22/1/63	Imangada	3 miles	77
25/1/63	Banumo	½ mile	144
27/1/63	Konje	2 miles	95
27/1/63	Monjiro	?	85
27/1/63	Basabuga	1½ miles	80
27/1/63	Nyamboro	1 mile	180
TOTAL			661

The total weight, 661 lbs., processed during the 7 day period represents an average consumption per head of the Beporo population of 1.1 lbs (slightly more than one pound per head per week). It is not claimed that this figure is constant over a long period, for the recording period was short, and in any event, consumption of sago varies considerably with availability of the two major staples, taro and sweet potatoes.

Work. There is no doubt that the introduction of steel tools considerably eased the burden of work for the Yega, but as no documentary record exists of the pre-contact work organisation, no accurate comparison can be made. Even Williams' observations¹ of the early 1920's were made long after the introduction of steel tools.

The growing of food crops is the most important productive labour performed by Yega villagers, but it is by no means the only type of work. Many other tasks are essential to the smooth functioning of the subsistence economy. These subsidiary tasks may be classified under three broad

1. Williams, op.cit., 1928, pp.105-165 and 1930, pp.21-24 and 42-65.

headings - hunting and collecting, handicrafts and domestic work. Table 24 below summarises the main types of work performed by the Yega under their traditional economy. It may be noted that whilst members of both sexes share in most aspects of garden work (except for the very heavy work of clearing saute, which is a man's job), a fairly rigid division of labour applies to the subsidiary tasks.

TABLE 24

YEGA TRADITIONAL WORK - DIVISION OF LABOUR

<u>Type of Work</u>	Performed by <u>men only</u>	Performed by <u>women only</u>	Performed by <u>both sexes</u>
<u>Gardening routine</u>			
a) clearing <u>saute</u> forest	X		
b) " <u>enda</u> "			X
c) burning off litter			X
d) cutting taro suckers for planting			
e) planting			X
f) weeding			X
g) harvesting		X	
h) fence construction			X
Pounding sago			X
Washing sago			X
House building	X		
Fishing a) with spear	X		
b) with small net (<u>yako</u>)	X		
c) with large net (<u>komoro</u>)	X		
d) at night with light	X		
e) at night without light	X		
Gathering shell fish		X	
Hunting	X		
Canoe making	X		
Making <u>sisoro</u> * roofing			X
Mat weaving		X	
Spear making	X		
String bag knitting		X	
Making fishing nets	X		
Making <u>tapa</u> cloth		X	
Carving wooden bowls	X		
Making shell ornaments	X		
Cooking		X	
Caring for children		X	

* sisoro is the name given to sago leaf thatching strips. Sisoro corresponds to atap (Malay).

Of the Yega who live on the tribal lands, both men and women still spend a much larger proportion of their time on subsistence gardening than on any other single occupation. The men spend over 30% of their time, and the women nearly 30% on work associated with food production. This represents in each case, about half of the time spent by each sex in productive labour. Women appear to spend a smaller proportion of their time in productive labour than do men. However, if the essential (though non-productive) tasks of caring for children and domestic work were included in the 'productive' category, the situation would be reversed. Women do, in fact, spend more time working than do men. Evidence in support of these generalisations is presented in Table 25 below.

TABLE 25

KUROU CLAN - WORK PATTERNS OF MEN AND WOMEN

<u>Type of work</u>	<u>Men %</u>	<u>Women %</u>
a) <u>Productive occupation (Proportions of time spent)</u>		
Cash crops	5.9	Nil
Food crops	28.1	26.7
Fencing	5.1	1.9
Gathering	8.4	7.4
Fishing/hunting	8.4	Nil
Collecting shellfish	Nil	2.2
Handcrafts	5.6	11.4
Building	Nil	Nil
	TOTALS	61.5% 49.6%
b) <u>Unproductive occupation (Proportions of time spent)</u>		
Travel	11.3	11.0
Social obligations	9.9	9.4
Mission obligations	1.5	Nil
Government obligations	2.5	1.6
Religious observance	2.1	1.8
Leisure	7.7	2.1
Domestic duties	Nil	8.9
Sickness	3.5	15.3
	TOTALS	38.5% 50.1%

TABLE 25 (Cont'd.)

Summary of a survey covering 6 men and 10 women over a four week period, 7th January to 3rd February, 1963.

Slight errors in percentages are caused by rounding of figures. The 'travel' category includes time spent travelling between gardens and village, and also, time spent on visits to friends and to trade stores.

'Gathering' is almost entirely sago-making, but includes a small proportion of time spent collecting coconuts.

'Sickness' of women is misleading. The high proportion of time is accounted for largely by the sickness of children rather than the women themselves.

Table 25 above can be used only to obtain a general picture of Yega work patterns.¹ The figures given must be qualified in several ways:

Mission obligations were very small during the month surveyed, much more time being spent on mission buildings the previous month. A total of 15 man days was spent at garden houses by men and women in the group under survey; during these times of absence no records were made of the way in which time was spent, so an allowance of eight hours per person per day on subsistence gardening work has been estimated for the period; finally, the men's work patterns are in error because of the amount of time spent in assisting me to locate and measure swiddens. The time spent amounted to 154 man hours for the month, excluding one member of Kurou clan (a young educated man), whom I hired as an interpreter during my stay in the village. The allocation of this time lost by the men in the survey group is a matter of conjecture.

As subsistence agriculture plays such an important part in the life of the people, the time spent on the various jobs associated with it has been further analysed in Table 26.

1. The study of work organisation, in rural areas of Papua, is a major study in itself. Such a study is currently being undertaken by P. Krinks and E. Waddell of the New Guinea Research Unit.

TABLE 26

Allocation of time by men and women to the different tasks associated with subsistence gardening (from observation of Kurou clan members during a 4 week period, 7th January 1963 to 3rd February 1963)

<u>Task</u>	<u>Proportion of time spent on specific tasks</u>	
	<u>Men (%)</u>	<u>Women (%)</u>
Clearing and burning off	52.3	20.8
Cutting taro suckers for planting	Nil	8.3
Planting	22.4	11.8
Weeding	6.3	22.9
Harvesting	Nil	31.1
Fencing	18.7	5.1

Men and women spend approximately equal time on subsistence gardening work. Table 26 shows that the men spend proportionately a much greater time on the heavy jobs, clearing and fencing, while lighter jobs such as cutting taro suckers for planting, and harvesting, appear to be entirely women's work. I was informed, however, that men do sometimes cut taro suckers.

Papuans have often been criticised for being indolent, but in most informed opinion, this is a superficial view. My first impressions while I was living in a village were that the people led a very easy life. A man may be seen sleeping all morning on a gaga;¹ a group of men sits talking and chewing betel; in the shade of a house some girls and women also sit talking and laughing, while under a leafy shelter yet another group of men sit talking and playing cards for areca nuts. It is only later that one learns that the sleeping man spent the entire night fishing; the men are preparing cord from pandanus root fibre for making a fishing net; the women are likewise engaged in weaving mats or knitting string bags, while the last group is fulfilling a social obligation and observing a day of mourning with the relatives of a person who has just died. The longer I remained in the village and the greater part I took in village activities,

1. A gaga is a social meeting platform.

the greater became my conviction that relatively little time was wasted during daylight hours. Gardening work in the lowlands within 10° of the Equator is tiring, while other jobs such as the pounding of sago can be quite exhausting. After six hours spear-fishing on the reef, I was more than ready for a meal and a rest, but I noticed that the young men who were with me went straight off, after a drink of coconut milk, and busied themselves at other tasks, one mending a fish spear, another to the garden and another to collect coconuts. It is not laziness that dictates frequent rest periods during work, but simply the nature of the work under the prevailing climatic conditions, combined with the strict code of obligations required by the prevailing social system.

Trade and Gift Exchange

Trade and gift exchange were important aspects of traditional Yega life, but both have now atrophied to some extent. The traditional trade in tapa¹ cloth and cooking pots is now negligible, but gift exchange, particularly on ceremonial occasions, is still observed. Traditional gifts are, however, less in evidence now than are manufactured European goods and even actual cash.

Tapa and clay pots. The Yega and their near neighbours are, by tradition, expert tapa (bark cloth) makers. In pre-contact times tapa formed the only body covering for both men and women. Even now tapa garments are prized more highly than cotton clothing by the village people. Sunday best in the village means a tapa skirt or loin cloth; no girl would consider being married in anything but her best tapa skirt. Because of the high value set on tapa, it is the usual gift made to honoured guests, including the parents and relatives who accompany a bride coming to marry a Yega man.

Tapa was used by the Yega as their main barter commodity. The Yega have no traditional skill at making clay pots. Pots were obtained by

-
1. Tapa is made by beating the stripped bark of a small tree (the wild mulberry) with a wooden mallet. The end product is a white felt-like material up to 3 ft wide. The vernacular name for tapa is bo but as the word tapa is so widely known it has been used in this thesis.

exchanging tapa with the pot-makers of Ambasi, 30 miles north, and Wanigela, 100 miles south along the coast. Ambasi pots are shaped like inverted cones with thick heavy bases. Wanigela pots are quite different, being much more rounded and more delicately moulded. The recognised rate of exchange is four pots for one large tapa (big enough for a woman's skirt), or one pot for one small tapa (suitable for a man's loin cloth). Table 27 shows the origins of the pots used in a sample group of homes in Beporo village. Plates 12 and 13 illustrate samples of tapa and the different types of pots used by the Yega.

TABLE 27

Origin of clay cooking pots used by Yega housewives -
sample of 13 Beporo women

Place of origin - Ambasi area

- a) Number of pots - 61
- b) Average pots per housewife - 4.7
- c) Age of oldest pot - 20 years
- d) Number of women owning pots more than 10 years old - 7

How pots were obtained

Gift from relative	Gift from friend	Exchange for <u>tapa</u>	Exchange for other goods	Wedding present	Purchased	Not Stated
13	13	10	2	14	2	7

Place of origin - Wanigela area

- a) Number of pots - 30
- b) Average pots per housewife - 2.3
- c) Age of oldest pot - 11 years
- d) Number of women owning pots more than 10 years old - 1

How pots were obtained

Gift from relative	Gift from friend	Exchange for <u>tapa</u>	Exchange for other goods	Wedding present	Purchased	Not Stated
14	8	0	2	6	0	0

In Table 27 several important factors are emphasised -

i) The importance of gift exchange. Almost all the pots from Wanigela were obtained as gifts of one kind or another. Likewise, many of the Ambasi pots were obtained as gifts. The wide net of relationship that exists between the Yega and areas which 30 years ago would have been regarded as foreign parts, is also emphasised by the volume of gift exchange.

ii) The importance of the tapa/clay pot trade appears to be declining. No tapa was exchanged for Wanigela pots and less than one sixth of the total number of Ambasi pots were obtained in exchange for tapa. The manufacture of tapa by the Yega also appears to be declining. Few trees were seen in Beporo village, and on only 3 occasions were women observed making tapa.

iii) The greater durability of Ambasi pots is illustrated. In only one instance was a Wanigela pot more than 10 years old, whereas 7 Ambasi pots had reached this age. This is probably the reason why Ambasi pots are preferred by Yega housewives. Of the sample group of 13 women, 8 preferred Ambasi pots, 4 preferred Wanigela pots, and one had no preference.

Pots bought at the trade stores are also used in addition to clay pots. All but two of the women interviewed owned aluminium boilers purchased at the trade stores. These boilers cost up to £4 each and average about £1/10/- each. Many of them are of large capacity, holding two or three times as much as the average clay pot. Their main use is during the preparation for feasts, so they are not displacing, to any great extent, the clay pots which are in every-day use.

Large numbers of gifts change hands at a wedding ceremony. At a wedding which I attended at Niniyanda village, when a Notu girl married a Yega man, the bride received enough clay cooking pots, mats, string bags and tapa to last her for years to come, but by far the greatest volume of gifts was enamel plates, mugs and basins of all shapes and sizes, which had been bought at local trade stores. As well as these utilitarian

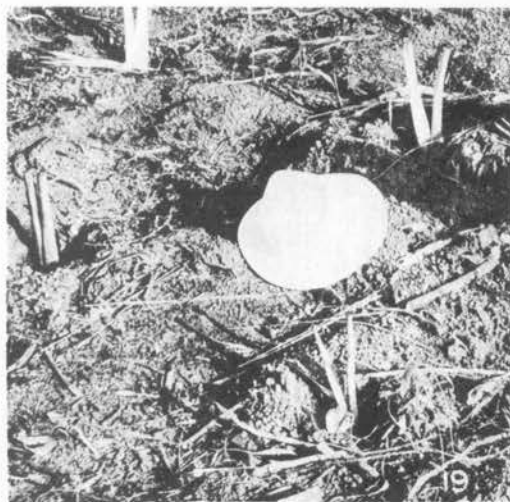
PLATES ILLUSTRATING

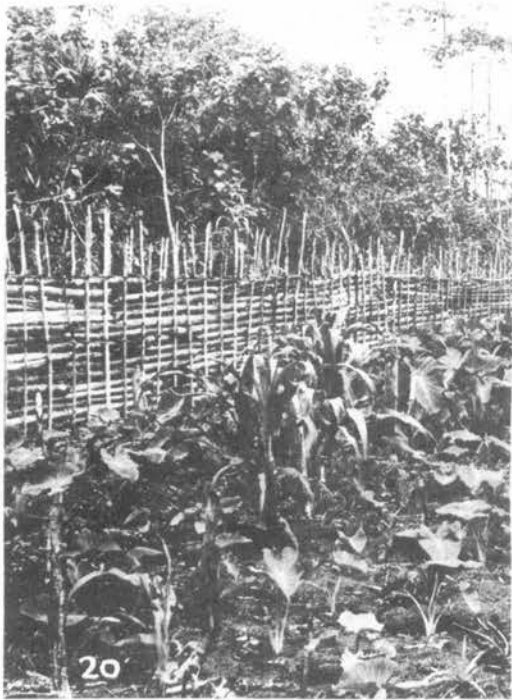
THE SUBSISTENCE GARDENING ROUTINE

- PLATE 16 - A cleared swidden; felled bush drying-off before being burned. Enda in background.
- PLATE 17 - Burning-off a swidden. Stacked poles in right rear are for later use as firewood or in construction of a pig fence.
- PLATE 18 - Yega man planting taro.
- PLATE 19 - Newly planted taro (scale indicated by hat).
- PLATE 20 - Portion of a pig fence surrounding a swidden. Interplanted crops shown in foreground.
- PLATE 21 - Dobo (temporary garden house) in a producing swidden. A family may live for a week at a time in such a house.
- PLATE 22 - Making a crop count using a 1/100th acre rope triangle.
- PLATE 23 - Early stage regeneration of enda in a swidden planted mainly with taro. The taro stalks have been pulled aside to show the heart-shaped leaves of young enda trees.
- PLATE 24 - A swidden in production near Basabuga, January, 1963.
- PLATE 25 - Photograph taken in July, 1964, at the same spot as Plate 24. Regrowth has already reached a height of approximately 12 feet.
- PLATE 26 - A buttressed tree (species unknown), remnant of the previous saute forest growing in enda c.6. years old.

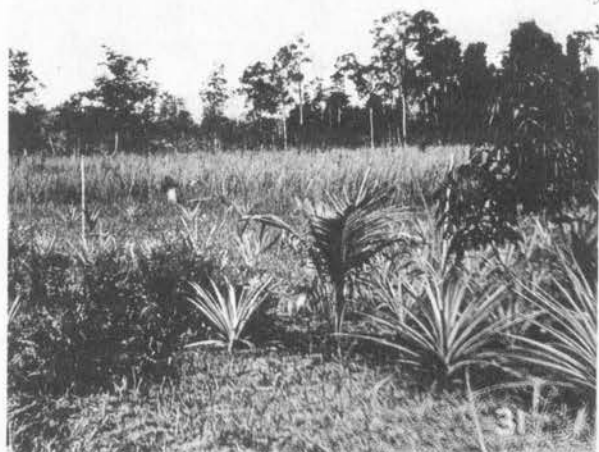
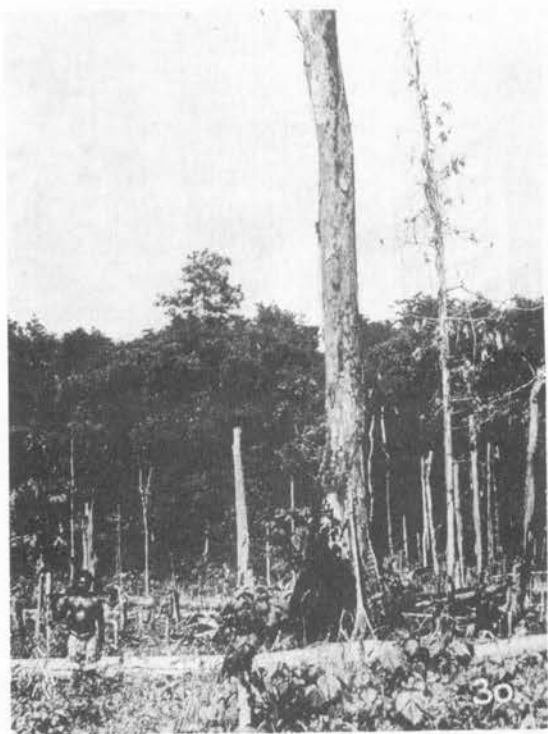
- PLATE 27 - A mono (Cordyline terminalis) boundary mark located by the head man of Kanana, lineage in thick regrowth 2½ years old.
- PLATE 28 - Manene (early regrowth) 2 months after the abandonment of a swidden.
- PLATE 29 - Manene here consisting very largely of Polytoea macrophylla approximately 9 months old.
- PLATE 30 - Residual saute trees in a newly cleared swidden at Jamberoda.
- PLATE 31 - Young coconut palms, pineapples (as a cash crop), bananas and cassava, near a dwelling in the new 'ribbon' village of Konje. Such a planting on grassland contravenes traditional Yega practice, but it is not uncommon in the vicinity of recently established Yega settlements. Crops appear to grow satisfactorily.
- PLATE 32 - Washing sago fibre to extract the starch.
- PLATE 33 - The man on the right is carrying raw sago back to the village.
- PLATE 34 - Woman carrying garden produce back to her village. Average weight of the bag of vegetables is 60-70 lbs; the bundle of firewood weighs about 30 lbs; the child is just an additional 30 lbs!
- PLATE 35 - Young boy carrying home sugar cane and taro.

- PLATE 36 - (with identification diagram)
General view of Yega subsistence swiddens from approximately 900 feet.
- PLATE 37 - (with identification diagram)
Details of a swidden.
- PLATE 38 - (with identification diagram)
Clearing saute for subsistence swiddens, near new village of Ononda.

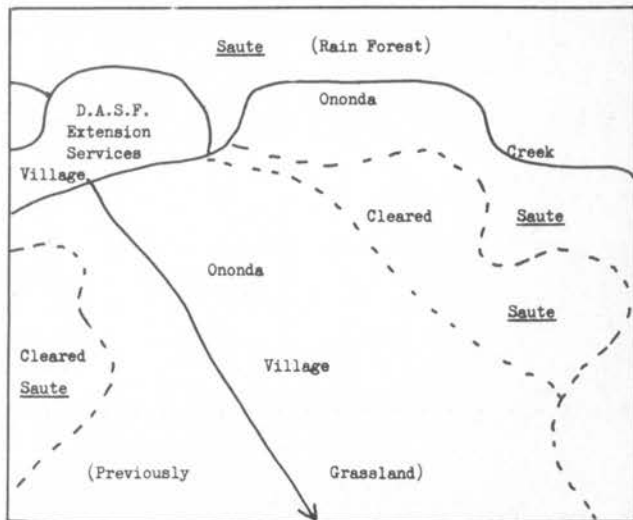
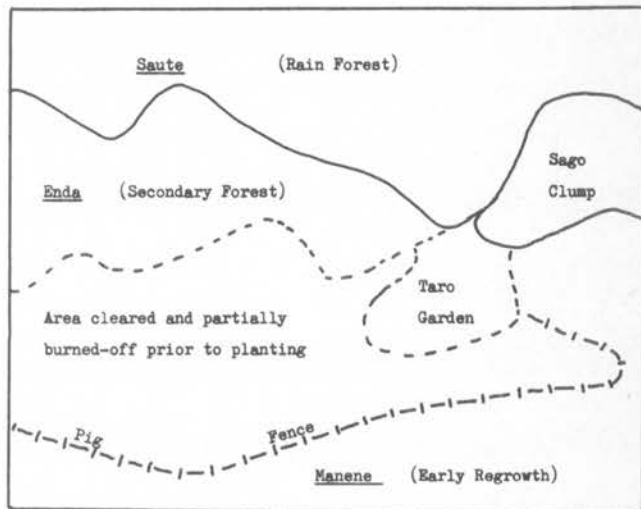
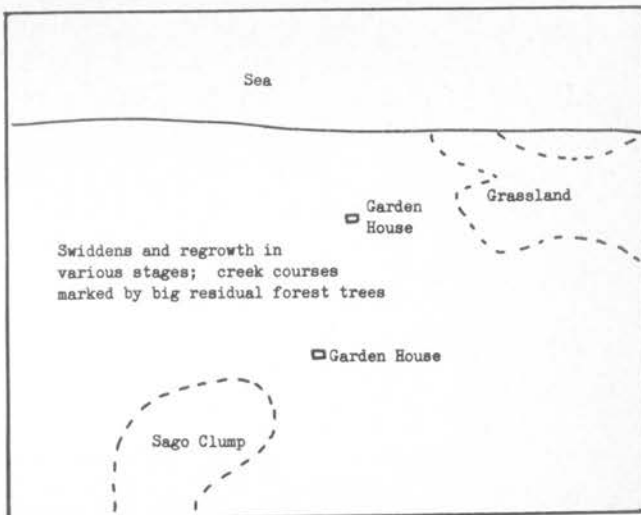












gifts, the bride also received from the groom's father a large number of shell ornaments, the traditional wedding gifts presented by a father to his son's bride, and worn by her during the marriage ceremony and following festivities. A large sum of money was paid to the bride's father.

Shell and feather ornaments. Shell ornaments, kambo,¹ and feather ornaments, yi, formed important items in pre-contact gift exchanges and barter. Although some species of Bird of Paradise are found on the coast, they are rare. On the other hand, shell is readily obtainable (though the most highly prized 'bailer' shells and red shells occur only in limited areas). With the exception of warfare, the barter trade in kambo and yi formed almost the only contact between the coast dwellers and the inland people. Kambo and yi are still important today but more as items of gift exchange than as items of barter.

THE MONEY ECONOMY

Yega involvement in the money economy is at two levels. A smaller group, comprising about 30% of the total membership of the tribe, and consisting in the main of the younger, better educated men and their wives and families, is fully committed to wage employment. Most of them live semi-permanently away from the tribal lands and move from place to place as their employers see fit. They are entirely dependent upon cash income for their sustenance, apart from the periods of their brief and infrequent visits to their traditional homes. The activities of this group of Yega have been only indirectly responsible for distributional changes in the Yega tribal lands, but they have played an important part in raising the economic level of the village Yega.

Members of the larger group comprising 70% of all Yega (615 individuals) still live in villages and hamlets on the traditional lands. They are all interested in increasing their cash incomes, for all desire the material possessions which can only be purchased for money. However,

1. These are the Yega spellings. The Notu equivalents are hambo and di.

they are still basically subsistence horticulturists whose efforts to increase money earnings have not yet been very successful. Nevertheless, the efforts of this group to increase their involvement in the money economy have led to major land use and settlement changes. These efforts and their effects are described in the following pages.

WAGE EMPLOYMENT

All over Papua-New Guinea, wage employment generally implies labour migration. There are some exceptions, notably the Hanuabadans, who work in nearby Port Moresby, or the Tolai living near Rabaul, but most indigenees who wish to work for wages must leave their tribal areas to find such employment. The Yega are no exception to this generalisation. Almost one third of them (Table 29) are absent from their home villages, working, studying, or as dependants. Forty-four percent of all Yega men are away working, those who are married being accompanied in almost every instance by their wives and children.¹ This situation represents a marked change from the pre-1940 situation when many Yega men worked as indentured or casual labourers. Under those conditions, wives and children were left behind in the villages. Nowadays most Yega work in semi-skilled or skilled occupations in which family accommodation is often provided by employers; even if accommodation is not supplied the breadwinner's earnings are apparently adequate to provide his wife and children with acceptable living quarters.

The occupations of Yega working in wage employment have undergone considerable change since the end of the second world war. Before the war most Yega were employed in jobs requiring only a low degree of skill; recent change has been towards more highly skilled occupations.

1. In this regard, the Papua-New Guinea migrant labour situation differs markedly from that of Africa, where it is common for wives and dependents to remain at home in the villages when a man goes to work in a town or on a plantation.

TABLE 28

Job categories of 80 Yega men, working in wage employment compared with the previous experience of 30 villagers over 30 years of age who have engaged in wage employment in past years.

	Unskilled		Semi-skilled*		Skilled*	
	No.	%	No.	%	No.	%
a) 80 men working away from village	1	2	14	17	65	81
b) Sample of 30 men over 30 years of age now in village (previous employment)	13	43	14	47	3	10

Job categories are given for only 80 of the 88 Yega men absent from their villages. Of the remaining 8, 2 are in a T.B. hospital; 3 presently unemployed; 3, job not known.

Categories¹ are as follows:

Unskilled: Plantation labour, village constable, wartime labour, wharf labour.

Semi-skilled: Police, Army, Carpenter's assistant, plumber's assistant, driver, mechanic, D.A.S.F. field worker, cook, gardener, boat crew.

Skilled: Clerk, teacher, medical orderly, laboratory technician, malaria control assistant, W.T. operator, survey assistant, draftsman, freezer operator, trainee forest officer, deacon, storeman, salesman, airline steward, geologist's assistant, assistant agriculture officer.

* Five trainees are included in the semi-skilled, and six in the skilled categories of group (a).

The main factor in the marked improvement in the skills of Yega workers is education. The educational opportunities which have been available to the Yega for nearly 50 years have been exceptionally favourable

1. Although a mechanic or a D.A.S.F. field worker may very easily be more skilled than a malaria control assistant, a medical orderly or a storeman, it is not possible without a detailed knowledge of the individuals concerned to categorise occupations in an entirely satisfactory manner. In any case, the same categories apply to both groups selected, so there is comparative value in the table even if the absolute figures are debatable. Secondly, the classification has been correlated with that of another research worker (Mr. R.J. Cheetham) in order to facilitate comparison of results.

when compared with those available to many other Papuan peoples. The history of educational development in Yega territory has been summarised above (Pages 38 and 39). This educational background has enabled the younger generation of Yega men to take advantage of opportunities for employment in posts of greater responsibility and higher income which have become available in increasing numbers during the post-war period.

Very little paid labour is available to the Yega within walking distance of their homes. During 1962, a number of men obtained two month's work, paid for by the Government, repairing the Popondetta-Gona road; a few men living in Surilai village work regularly as wharf labourers when coastal trading vessels call at Cape Killerton; one man earns his living, managing the co-operative store at Cape Killerton. Work is also available on the European plantations near Popondetta, but Yega men refuse to accept plantation work, partly because of the low wages paid, partly because of the monotonous nature of the work, and partly because they now consider that they can earn more by growing cash crops themselves. This latter point was expressed rather quaintly by one man who left a plantation job to return to his village -

'I gave up work to come home and earn more money'

- for the past four years he has earned practically nothing but he was looking to the future when his cocoa trees begin to bear.

Apart from very limited opportunities, paid labour implies absence from the village. The present absentee labour situation among the Yega is analysed in Table 29.

TABLE 29

Absentees from Yega tribal lands, compared with total Yega population.

Category	Total	Total Absent	Percentage Absent
All Yega	880	265	30
Adult males (17 years and over)	228	100	44
Adult males of working age (17-56)	195	100	51
Adult unmarried males	80	61	77
Adult unmarried females	31	9	29

Thirty percent of all Yega reside away from their home villages. Of the 88 men working outside, 23 have been away for 10 years or more: in four cases divorce from the village situation is virtually complete; 3 have never revisited the village, and one, only once in 13 years. This data illustrates the breakdown of traditional social ties and customs, which is occurring under the impact of the money economy. The large number of unmarried Yega men (many of them over 30 years of age), compared with the much smaller number of unmarried girls, appears to indicate that Yega men are postponing marriage longer than are other Ewa-embo tribes with whom they intermarry.

The most significant figure in Table 29 above is that relating to adult unmarried males, 77% of whom are absent from the tribal lands. A more detailed analysis of unmarried males is made in Table 30.

TABLE 30

Analysis of Unmarried Yega Males aged 17 years and over.

<u>Category</u>	<u>Totals</u>	<u>Percentages</u>
Absent from home villages in wage employment	49	62
Absent at boarding schools	12	15
At local school	6	7
Suffering from physical disability	4	5
Returned from wage employment or employed locally	5	6
Remainder	4	5
	TOTALS	80 100

The present-day pattern thus emerges of a Yega society in which virtually all young unmarried men seek paid employment away from the village. It seems evident from the data summarised in Tables 29, 30 and 31, and from talking with informants, that the pressures which have led to the establishment and maintenance of this pattern are twofold:

a) The desire for money and imported goods and for experience outside the village: these desires are reinforced by young men who come home for holidays smartly dressed, bringing presents for all their relatives and friends, telling exciting tales of their doings in the outside world, and having cash to spend in the local stores.

b) The influence of older relatives whose unskilled labour now yields so small a return that they no longer reckon it worth while to go outside to work; instead, these older villagers virtually live (in respect of imported commodities) on the gifts of money and goods sent to them by the younger men working outside in the money economy.¹ The extent of this assistance may be gauged from Table 31.

1. Parallels occur in many parts of the world, e.g., among the Luo and Baluyia tribes of western Kenya where the writer lived for 9 years, a similar practice was almost universally followed by migrant workers.

TABLE 31

Cash inflow to Yega home area from sample group of young Yega men in paid employment.

Informant	Age	Marital status	Employment	Employer	Salary £ p.a.	No. of gifts	Value of gifts to relatives	Value of gifts to non-rel.
1	25	S	Teacher	Ed.Dept.	213	3	£10	£19
2	21	S	"	"	207	21	31	9
3	27	S	Lab.Asst	D.A.S.F.	217	20	30	30
4	24	S	Teacher	Mission	34	4	7	-
5	35	M	Ag.Asst	D.A.S.F.	196	11	102	4
6	23	S	Draftsman	Private	260	7	30	-
7	23	S	Lab.Tech.	D.A.S.F.	527	50	52	25
8	22	S	" "	"	420	18	124	17
9	24	M	Clerk	Loc.Gov.	168	-	-	-
10	27	M	Storeman	Admin.	246	4	20	-
11	29	M	Malaria C.	"	832	12	63	-
12	30	M	Clerk	Lab.Dept.	321	15	94	12
13	26	M	Tech.Asst.	D.A.S.F.	592	5	112	70
14	23	S	App.Draft.	P.W.D.	218	10	35	-
15	22	S	Steward	T.A.A.	390	14	51	-
16	39	M	Orderly	Loc.Gov.	250	2	10	3
17	30	M	Priest	Mission	182	4	4	-
18	20	S	Res.Asst.	N.G.R.U.	238	11	43	-
MEANS					305	12	45	10

Salary includes value of rations or cash in lieu of rations where applicable for Government employees.

Numbers and value of gifts were in some instances only estimates on the part of informant.

Informant No. 9 was paying bride price in 1962. He did not give other gifts. He was reluctant to state the amount paid in bride price.

Some gifts were made in kind, mainly clothing, but also food and tobacco. In such cases the value of the gifts has been estimated. Informant No. 13 paid bride price during the year, £54 in cash and an estimated £16 in kind. This total has been shown in the last column.

The degree to which the Anglican Mission has imbued some of its members with the spirit of service is clearly brought in Table 31.

Informant No. 4 is a teacher with identical qualifications and a similar period of service to informant No. 1.

TABLE 32

Cash Incomes Received During 1962 by Individual Yega Villagers

Informant N ^o	Paid Work		Sale of Produce		Monetary Gifts		Gambling		Withdrawal from Savings		Totals	
	Amount (sh)	%	Amt. (sh)	%	Amt. (sh)	%	Amt. (sh)	%	Amt. (sh)	%	(sh)	(£)
1	-		68.-	12.3	246.-	44.4	240.-	43.3	-		554.-	28
2	-		123.-	82.6	26.-	17.4	-		-		149.-	7
3	-		24.-	3.3	366.-	50.1	-		340.-	46.6	730.-	37
4	-		38.-	14.8	219.-	85.2	-		-		257.-	13
5	150.-	12.7	22.-	1.8	1010.-	85.5	-		-		1182.-	59
b	-		-		50.-		-		-		50.-	3
Totals	150.-		275.-		1917.-		240.-		340.-		2922.-	
Means	25.-		46.-		311.-		40.-		57.-		487.-	
Proportions	5%		9%		64%		8%		12%			

N.B. Estimated cash value of gifts received in kind has been included in the above list as part of cash income



The young men who gave the information contained in Table 31 remitted an average of 15% of their total incomes to relatives who remained in the villages. If gifts to other friends are included, the amount of salary given away is approximately 18%.

By comparison, the sources of income of six male Yega villagers are analysed in Table 32 above. The totals vary widely between £3 per annum and £59 per annum. Income received from monetary gifts comprises over 60% of the total, other sources being relatively unimportant.

For the middle-aged and older Yega, the post-war period has provided less opportunity than for the younger people. Most of the men in the older group travelled fairly widely in Papua-New Guinea either during the war or before it. They are worldly-wise and desire a share in the material goods of the modern world: hence their eagerness in 1948-1950 to develop a co-operative cash-cropping venture (page 109) even though this meant radical changes in their work organisation, their place of residence, and their periods of recreation. After the failure of the co-operative they were unable to use the time available to them to any material advantage. For these older Yega, whose labour was of insufficient economic value to attract them to further paid labouring, the opening of the Yega Scheme cocoa cash-crop blocks was timely.

BARTER

Although it does not add actual cash to Yega incomes, the system of mission barter (ori) is still practised and constitutes a minor source of real income for many people. Since the establishment of the mission on its present site in 1926, all aspects of mission work have expanded till now it has 95 people, 90 Papuans and 5 Europeans, on the daily ration list. The details of the rationing system are given in Appendix C.

The mission has to obtain 840 lbs of vegetables per week from local villagers. To do this, collecting teams visit Beporo,¹ Kurou and

1. Since mid 1963, collecting teams have also visited the settlements along the Popondetta road.

and Gona villages twice weekly. The mission authorities estimate that they give goods worth 1d. per pound of vegetables, that is, goods worth £3/10/- per week are dispersed among the people of Beporo, Kurou and Gona villages. In order to gauge the proportion of goods which accrue to the Yega, a summary of the barter conducted on three occasions is here included.

TABLE 33

Summary of barter transacted between Yega of Beporo village and Anglican Mission authorities on 19th, 22nd and 26th March 1963.

Date	Variety of Produce given by villagers	Weight of produce	Variety of goods given by Mission	Value
19/3	Taro, sweet potatoes, cassava, water melons, pumpkin, pitpit, sugar cane, bananas, paw paws, corn.	175 lbs	Tobacco, salt, matches, razor blades, fish hooks, needles.	17/3
22/3	As above.	218 lbs	As above	£1/1/10
26/3	As above.	201 lbs	As above	17/8
	Average	198 lbs per day		Sha. 18/10

An average of 18.3 families contributed each day, i.e., 36.6 families per week (though doubtless some families contributed twice).

Main items given by Mission authorities were salt 110 lbs (approx.) and tobacco 27 sticks during the 3 day survey.

Main varieties of vegetables offered by villagers were taro, sweet potatoes, cassava and bananas.

It is calculated from Table 33 that the Yega supply 396 lbs or 47% of the 840 lbs of vegetables required weekly by the Mission. For this volume of food they receive goods valued at 37/8, an average of just over 1/- worth per contributing family. This may appear a trifling sum but the presence of the ori system helps to explain two otherwise puzzling aspects of the Yega economy. One of these aspects is the total lack of purchases of salt from the Killerton Co-operative Store. The second is the low level of participation by the Yega in the Popondetta

market.¹ At the market people could sell their produce for 3 or 4 times as much as the Mission pays. On the other hand, ori is a most convenient way of converting a small surplus of agricultural produce into required goods with a minimum of effort on the part of the villager, in short, an arrangement of convenience for both parties.

MARKETING

A weekly market is held at Popondetta, the Administrative headquarters of the Northern District. The market functions as an outlet for the surplus garden produce of village people, and as a source of supply of fresh food to the town-dwellers.

Some Yega regularly sell surplus agricultural and marine produce in the market; others attend occasionally, whilst others rarely sell in the market. An attempt was made to assess the extent to which the sale of produce in the market affects the cash incomes of the Yega.

The General Influence of the Market.

The market was first held at Popondetta in February 1953, and is now a regular Saturday morning institution. The original market place was a small area of cleared land about 50 yards square on the northern outskirts of the township. On this site was built an open-sided, thatched shed about 15 ft by 40 ft; inside the shed and on the open space round about were erected low tables of bush poles on which sellers displayed their wares. The use of this site was discontinued in July 1964, when a new site, much more spacious, and with a large concrete-floored, tin-roofed shelter shed, was opened about 300 yards northwest of the old site. The market starts at daybreak on Saturday mornings and usually trading has ceased by about 10.30 a.m. Entry to the old market was free, but sellers must pay a 6d fee to use the new market. Money collected in this way goes to the Oro Bay Local Government Council.

Most buyers interviewed in the market live in Popondetta. The great majority are Papuans and New Guineans employed in Popondetta in

1. This comment referred to the situation in January 1963. Since then, Yega marketing activity has increased markedly.

Government offices or private businesses. A few settlers from the resettlement schemes at Sangara and Isivita were encountered buying items such as fish and betel nut, and in addition, some sellers buy goods which are not readily obtainable in their own localities.

When the market was visited early in 1963¹ only a small number of European buyers was encountered; a few Europeans sent their Papuan servants to buy fruit and vegetables. It was estimated at that time that spending by Europeans accounted for less than 5% of the weekly market turnover. During 1963 and early 1964 there was a big increase in the European population of Popondetta, and when I visited the market in July 1964 the number of European shoppers had at least tripled since January 1963. However, there had been little apparent attempt on the part of Papuan suppliers to meet the increased demand of Europeans for special produce such as tomatoes, pineapples, and fresh vegetables. A frequent complaint voiced by Europeans was -

There's nothing (that we want) to buy in the market.

TABLE 34

Place of Residence of Buyers in Popondetta Market (Sample Group of 60)

<u>Place of Residence</u>	<u>Number</u>	<u>Percentage</u>
a) Popondetta township	41	68.3
b) Sawmill and agricultural station	4	6.6
c) Papuan and New Guinean settlers	1	1.6
d) Villages within 5 miles radius of Popondetta	4	6.6
e) Villages more than 5 miles from Popondetta	10	16.6

Most of the buyers in category (e) above are sellers who, having sold their own produce, purchase other goods such as meat, fish, betel nut or betel pepper to take home.

Most of the Papuan residents of Popondetta stated that they depend almost entirely on the market for regular supplies of fresh food.

1. The market was visited on the following dates:- 1st and 15th December, 1962, 19th January and 2nd February, 1963, 11th and 18th July, 1964.

Popondetta market is one of three main commercial outlets¹ for the surplus garden produce of the approximately 85,000 people who live within a 20 mile radius of Popondetta township. However, sellers from much further afield pay occasional visits to the market, in order to obtain money for special purposes. The sphere of influence of the market is shown on Fig. 19. On this map are shown the names, and approximate locations (not all could be found on the available maps) of villages from which at least one member attended the market on the days on which surveys were made.

In order to assist sellers who live long distances from the market, a large thatched sleeping platform has been built at the roadside, 50 yards from the market area. This platform can accommodate 50 or 60 people, and by nightfall on Friday evenings all available places have been taken. Any Yega intending to sell in the market usually walk in to Popondetta on Friday mornings and spend the day visiting friends, or looking round the trade stores. They then sleep on the platform and are among the first sellers to take their places in the market on Saturday.

Almost all sellers walk to market. It was found that a few people travel by truck or in the Higaturu Council trailer. The normal fare charged is 2/- or 3/-, depending upon the distance travelled. Other people living at Cape Killerton or along the Popondetta-Cape Killerton road are sometimes given free lifts in private trucks. Most of the people who travel this way are Yega from Surilai and Niniyanda villages, or Bapa, Andere and Kuroro people from Garara village. Means of travel to market by sellers are summarised in Table 35 below.

1. The other outlets are the Administration hospital at Saiho and the Anglican Mission T.B. Hospital at Embogo, both of which purchase their supplies of vegetables from sources other than Yega.

FIG.19

PLACE OF RESIDENCE OF SELLERS AT POPONDETTA MARKET

Surveys taken in Jan, 1963 and July, 1964

AMBASI - indicates 10 or more from this village present at time of survey.

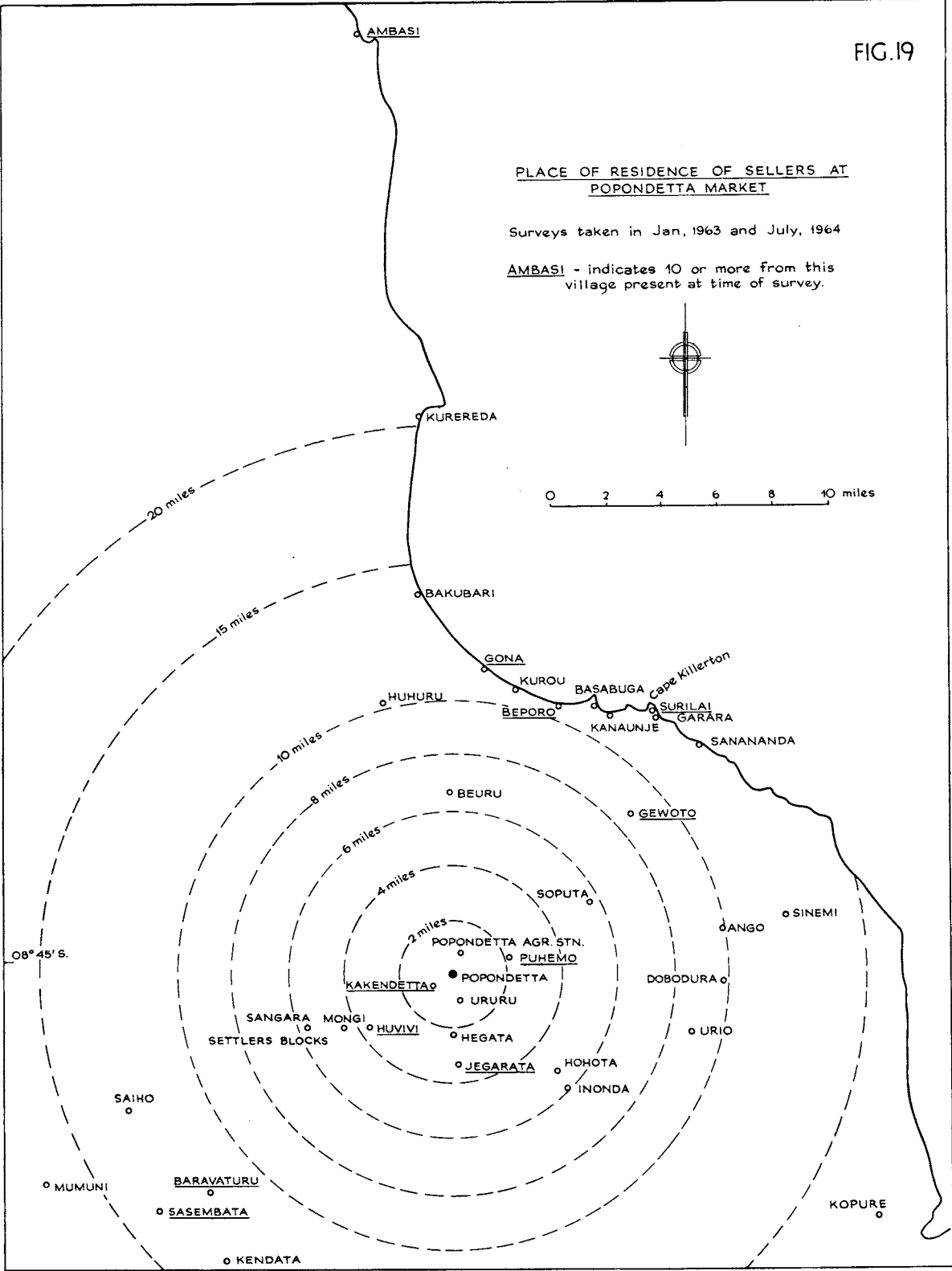


TABLE 35

Sellers in Popondetta Market - Means of Travel to Market (Sample Group of 40 Sellers), January 1963.

<u>Method of Travel</u>	<u>Number</u>	<u>Percentage</u>
Walked entire distance	32	80
Motor transport - paid fare	1	2.5
Motor transport - did not pay fare	4	10
Coastal vessel - paid fare; walked from coast	2	5
Canoe - walked from coast	1	2.5

Sellers usually operate in family groups. These groups are predominantly female and most sellers are women. However, men do sell in the market and appear to concentrate on such lines as betel nut, meat and fish. The impression conveyed by the family group system, which results in a large number of people standing about at the back of the stalls, is that of a very large number of sellers, each having a very small amount of produce on sale. This impression is strengthened by the fact that any member of the family group may apparently quote a price for an item when asked by a prospective buyer; she may also accept payment.

Details of produce offered for sale, prices obtained and disposal of unsold goods were obtained in 1962-63 from a group of Yega sellers. The results, summarised in Table 36 below, give an indication of the wide variation of dependance upon the market as a source of cash income; Table 36 also indicates the low average level of income derived from the market about that period. (In the majority of instances market earnings are per fortnight not per week). There are indications that Yega participation in the market has increased during the past 18 months. On 11th July, 1964, there were 4 Yega selling groups in the market, and on 18th July there were 15. Yega turnover has also increased in the same period to an average of about 23/- per family group.

TABLE 36

Popondetta Market - Sale of Produce and Disposal of Unsold Produce
by 14 Yega Villagers on 3 Visits in Dec., 1962, Jan. and Feb. 1963.

Family Group No.	Total Value of produce taken to market (shillings)	Value of goods sold (shillings)	Disposal of unsold produce.
1	24	16	All taken home
2	24	6	Lime exchanged for taro, remainder taken home.
3	20	5	All taken home
4	14	9	" " "
5	20	18	" " "
6	10	6	Fish exchanged for taro, remainder taken home.
7	18	16	All taken home
8	4	4	---
9	13	9	All taken home
10	13	10	Bananas eaten, remainder taken home.
11	32	15	Lime exchanged for betel nut, remainder taken home.
12	18	10	All taken home
13	25	25	---
14	62	51	Green coconuts eaten, remainder taken home.
Averages	21.2/-	14.3/-	

In addition to cash transactions, some barter is carried on at the market. Table 36 indicates that a seller can expect to clear only about $\frac{2}{3}$ of the produce she takes to market. Most unsold produce is taken home but some is exchanged with other sellers and some (usually fruit) is eaten. During school term quite a large volume of fresh fruit and vegetables is obtained by the pupils of Popondetta Secondary School who barter salt for produce. When questioned, the school boys and girls stated that some

sellers refused to accept salt in exchange for vegetables, but others were quite willing to do so, and the children had no trouble obtaining all the vegetables they required. In this way the school obtains cheap food and the sellers are able to dispose of some of their unsold produce. There is, however, little attempt to dispose of unsold goods by reducing prices. Some instances of price reduction were noted. Usually this was done by doubling the 1/- quantities. On the whole though, sellers adopt a 'take it or leave it' attitude similar to that of Tolai sellers in the Rabaul market as noted by Epstein.¹ Prices generally, do not appear to be set in accordance with the laws of supply and demand but rather on the basis of tradition. The reason for this may lie in the apparently firmly entrenched idea that all trading must be done in multiples of 1/-; this practice militates against varying the price up or down by a fraction of a shilling for superior or inferior produce. The sellers' attitude seems to be -

coconuts were two for a shilling last week and the week before that, therefore I shall sell two coconuts for 1/- next week

- and this is the price asked irrespective of the quantity of coconuts on sale.

Produce in high demand by Europeans forms an exception to this generalisation. If, for example, there are few tomatoes in the market, the 1/- heaps may contain only two tomatoes instead of the usual three or four. With larger items though, such as watermelons and pineapples, price setting flexibility is inhibited by the reluctance to trade in fractions of a shilling.

The total turnover in the market is small. It was found difficult to check the total value of produce offered for sale because some sellers whose goods are in great demand sell out rapidly, while others arrive when the market is in progress and are missed by an observer. In addition, the trading is considerably affected by the schedule of fortnightly

1. Epstein, 1961. Although Rabaul market is much bigger than Popondetta market, the two have many similarities.

Administration paydays. On non-paydays there is less volume of produce in the market and a check suggested that the turnover is approximately 20% less than on paydays. Detailed surveys were carried out on two occasions, both of which happened to be paydays. These indicate that the total value of goods offered for sale is about £70 to £80.¹

TABLE 37

Popondetta Market - Value of Produce Sold on two Market Days in January and February 1963

<u>Item</u>	<u>Market Days</u>		<u>Average</u>	<u>Percentage</u>
	<u>19/1/63</u>	<u>2/2/63</u>		
Sago	13. 0	11. 0	12. 0	0.8
Taro	6. 0. 0	3.15. 0	4.17. 0	6.4
Sweet Potatoes	3. 8. 0	1.10. 0	2. 9. 0	4.5
Coconuts	3. 8. 0	7. 3. 0	5. 5. 0	7.0
Bananas	4.13. 0	3. 5. 0	3.19. 0	5.2
Other fruit	4. 4. 0	1.13. 0	2.18. 0	3.8
Betel nut and tobacco	25. 4. 0	16.11. 0	20.17. 0	27.7
Fish and meat	18. 7. 0	17. 6. 0	17.15. 0	23.4
All other produce	8.19. 0	20.19. 0	14.19. 0	19.7
TOTAL £	78.16. 0	72.13. 0	75.14. 0	98.5

In addition to minor agricultural produce such as beans, and pitpit, the 'all other produce' category includes high value items such as pots, mats, tapa cloth, bread rolls, ready-made dresses and skirts, lime pots and string bags.

Taro and sweet potatoes are plentiful in January, so the demand for sago is small. Informants stated that much larger quantities of sago appear in the market around July-August.

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1. Additional surveys were conducted in July 1964 as follows:
 11/7/64 (non payday) value of produce £56
 18/7/64 (payday) value of produce £71.

The Influence of the Market on Cash Incomes of Yega.

The Yega make up only a small proportion of the sellers who attend the market.

From Tables 36 and 37 it is calculated that, in spite of the large number of individual sellers in the market, the average number of family groups is between 70 and 80. Counts of Yega family groups which attended the market on four separate days in January and February 1963, were 7, 3, 4, and nil. The Yega, therefore, represented at that time only about 4% of the selling groups in the market. By mid-1964, the numbers of Yega attending the market had increased noticeably (two counts of 4 and 15 groups respectively).

In 1963 the total cash income accruing to all Yega from market sources was less than £5 per week. This income was unevenly distributed for while some Yega families sell regularly in the market, others attend only occasionally, and other never. By 1964 the total Yega cash income from market sources had undoubtedly increased, but it is still true to say that for most families only a negligible amount of money is earned in this manner. A few families (4 or 5), regularly earn from 10/- to 25/- per week.

CO-OPERATIVE AGRICULTURE

Since the end of World War II there has been a rapid development of co-operative production, marketing and retailing, amongst the indigenous people of Papua. The spontaneity and rapid growth of the co-operative movement is in sharp contrast to the sluggish response of the people to pre-war Administration efforts to encourage the planting of cash crops by means of compulsive methods.

The Yega were one of the first groups to organize a producers' co-operative, under the guidance of the local Anglican mission. The movement rapidly extended to other groups of Orokaiva living along the coast, on the slopes of Mt Lamington, and in the foothills of the Owen Stanleys. The co-operative movement among the Yega has an important

bearing on subsequent land-use and settlement changes.

As early as 1940 the Rev. James Benson, Missionary in charge of the Anglican Mission at Gona, had begun to preach the virtues of co-operation. Benson was captured and imprisoned by the Japanese, but returned to Gona in mid-1946.

The first mention of any co-operative in the Northern District comes as a brief entry in his diary, dated October 6th, 1946, 'Foundation of Gona Public Trust' (G.P.T.). The functions and aims of the G.P.T. are not made clear, and there is no attempt in the diary to explain them. However, further notes show that the G.P.T. was organized as a committee or board - entirely Papuan in composition, with Mr. Benson as advisor - aimed at investigating ways and means of improving the standard of living of the Papuan people in the area.

One of the most dynamic and influential members of the G.P.T. committee was an ex-Papuan Infantry Battalion corporal of Gombe Village, Samuel Ungega. He was a member of Orewo lineage of the Kurou clan of Yega. He was educated up to Standard IV at Gona Mission School and had spent the year before the war working at Buntings' store at Cape Killerton. Just prior to the war he joined the Papuan Infantry Battalion and became a corporal. During his time in the Service he met and became friendly with an Australian soldier who convinced him of the possibility of raising money from short-term cash crops. The Administration had introduced copra-making much earlier, but prices were low and there was little enthusiasm for the crop.

Samuel was a man of action. Even before the official formation of the G.P.T. he had convinced most of the Yega of the benefits that would follow the introduction of co-operative farming. Subscriptions were called for: plenty of money was available from war damage compensation, and most Yega households subscribed from £5 to £10. No set share amount was laid down, each person contributing as he wished.

Clearing bush for the co-operative gardens was begun at four sites, all in mature rain forest (saute) at Ononda, Gatara, Mumburada and

Ingaba-Betari. Little information was available on the subsequent operations at Mumburada and Ingaba-Betari, but some details were obtained for the Ononda and Gatara projects.

At Ononda, Samuel placed one of his ex-service comrades in charge. The site for the clearing was selected by Nixon Kairembora, the Yega 'land custodian'. It was between Ononda and Epa Creeks, and was located on land which the Yega claim was once occupied by one of their clans, Bowori, which was wiped out in tribal warfare, by the neighbouring Ahora people. The Yega thus reinforced their ancient claim by present occupation. Meanwhile, some of the neighbouring Beuru and Ahora people, hearing of the co-operative project, approached Samuel, obtained his consent to join the Yega in their efforts, paid him money and were permitted by him to assist with the clearing of saute at Ononda.¹

Crops were planted at Ononda by co-operative work organisation for two years. It was stated by the jobmaster in charge that good crops of peanuts were grown and were sold to the Administration at Higaturu, being taken by head load to the coast, thence by canoe to Cape Killerton. The money from the sale of these crops was paid to Samuel Ungega, who banked it at Higaturu. Unfortunately, no records of the amounts obtained are now available.²

In addition to peanuts, large quantities of sweet potatoes were also grown. These were used mainly as food by the co-operative workers, but in times of local food shortage they were bought by other people.

-
1. When asked whether the fact that Ahora and Beuru cleared saute at Ononda, would strengthen their claims to the land, the Yega replied in the negative. They stated that non-Yega people were employed only in the capacity of workmen: they were paid in produce at the time and had no right to further payment.
 2. One of Samuel's brothers, who was a young boy at the time of Samuel's death in the Mt Lamington eruption, said he remembered numbers of Samuel's books being burned, and others thrown away in the bush when relatives went through his belongings.

The jobmaster received payment for such sales: he remembers receiving amounts up to £1 a week in some weeks. All money received was paid to Samuel.

All workers, Yega, Ahora and Beuru, lived in temporary garden houses on the Ononda garden site during the week, returning to their home villages only at week-ends.

The establishment of gardens and the work organisation were similar at Gatara. There also, peanuts and sweet potatoes were the main crops planted. According to an informant (not verified from records) the value of the first harvest in 1947 was £95.

Unfortunately for the co-operatives, the Mission organisers very soon disagreed with Samuel, for a note, 1st April 1947, in Mr. Benson's diary speaks of '...Samuel Ungega, who is a wife-deserter, and who in consequence has been put off the committee of the G.P.T.' (and presumably placed under Church discipline). In addition, it was stated by more than one informant that there was some dissatisfaction among shareholders with Samuel's rather secretive management of the money.

At this point, the G.P.T. ceased to function and the co-operative efforts of the Yega proceeded in different directions. The Anglican Mission sponsored a Christian co-operative which became known as the Gona Co-operative Society, while Samuel Ungega, became the organiser of the Gombe Co-operative. He was supported by most of the members of his own clan (Kurou), some of the members of his new wife's clan (Jambapa), a few members of other Yega clans (Seseko and Konambo) and also, by five members of the neighbouring Bapa sub-tribe. Four of the Bapa men were married to women of Kurou Dunemba sub-clan, the Kurou sub-clan which joined the Bapa people in past times but with whom present Yega Kurou still maintain exogamous relations. The fifth man was a brother of one of these four, having no direct affinal link with Samuel or other members of Kurou clan.

The Ononda farming area ceased to function early in 1948 when the jobmaster in charge was sent by the Mission to instruct people in co-operative techniques at Boreo. About the same time, the Ahora and

and Beuru labourers were forced by the Administration to return to their own villages because of labour problems at home. Samuel's Gombe co-operative did not have the manpower to continue farming at Ononda, but restricted its operation to the Gatara site, where all land rights were held by members of the Jambapa clan, the clan of Samuel's wife.

All members of the Gombe Co-operative work force, including the Bapa men, lived in garden houses (dobu) on the Gatara site from Monday to Friday each week. The Jambapa land holders permitted the members of other clans and the Bapa men to use nearby secondary forest (enda) for their food gardens. This saved travelling time and permitted the maximum time to be spent on the co-operative gardens.

The Gombe Co-operative continued operations during 1948-49, but because of opposition from the Mission authorities, it never gained popular support, a peak number of 19 households being engaged during 1949. In 1949 Samuel was selected by the Administration Co-operatives Officer (Mr. G. Morris), to attend a nine months' training course in Port Moresby, beginning in 1950. Before leaving, Samuel attempted to ensure the continuity of his scheme by appointing and training three men to oversee the operations of the co-operative during his absence. Two of the men chosen were Yega with close affinal ties with Samuel. The third was a Bapa man having no direct kinship link but particular ability; under this leadership the scheme continued to function smoothly during 1950. Samuel's plan was to grow annual cash crops and to build up a reserve fund for the first few years, then to undertake tree-cropping. He bought cocoa pods and had the seeds planted in a nursery in January 1951. During his training period, Samuel made two trips back to Gona to observe the progress which had been made during his absence. On the second of these visits, on 19th January 1951, his young daughter became ill and Samuel and his wife took her to the government hospital at Higaturu for treatment. They were still there on Sunday, 21st January, when Mt Lamington erupted and they were among the 4000 who were killed. After Samuel's death there were no

more plantings at Gatara. No one knows what became of the money which Samuel received: none was ever distributed to the members of the Gombe Co-operative.

The Mission-sponsored Christian co-operative embraced far more people and a much greater area than the Gombe Co-operative. The sphere of operations of the Anglican Gona Mission stretches approximately 30 miles north and 15 miles south, and extends in a rough arc 5 to 10 miles inland. Within this area are many different tribal and dialectal groups. The Mission recognizes an equal responsibility to them all and all had received some measure of teaching from Mr. Benson on the benefits of Christian co-operation.

Unfortunately, not a great deal of information is available from the Mission records. However, it seems likely that the Christian co-operative, named the Gona Co-operative Society, was launched during April or May 1947, that membership among the Yega was almost universal, (apart from the members of the Gombe Co-operative), and that there was no fixed share payment, each adult male contributing what he could afford.

By September 1947, a large store had been built; during that month Mr. John Millar, Government Officer in charge of co-operative development in the Territory, visited Gona and, at a large meeting of 500, held in the new store, explained the Administration's plans for the development of co-operatives in this area. He suggested that the present Gona Co-operative Society be split into an association of eight smaller societies, each centred in its own local community - presumably with the aim of reinforcing the solidarity of support in local areas. The eight societies within the association were to be centred at Gona, Garara, Bakubari, Gombe, Soputa, Buna, Huhuru and Hamburata. The meeting agreed with this suggestion and Mr. Millar departed, evidently pleased with the work to date; he promised that if the rate of progress was maintained, these would be among the first co-operatives to be registered when the necessary legislation had been passed. This was the position when Mr. Benson departed on home leave at the beginning of December, 1947.

Mr. Millar's advice was implemented following the arrival of Rev. Alfred Clint on 13th April, 1948. Mr. Clint became the organizer and co-ordinator for the development of each of the small local co-operatives. These were all organized along similar lines, but the following description applies specifically to the Gombe Co-operative, which, to distinguish it from Samuel Ungega's venture, was renamed the Yega Co-operative.

The executive committee consisted of five members, a chairman who was the acknowledged leader of the Yega, a secretary who was a younger man of some education and was in very good standing with the Mission authorities, and three members, all young and energetic, two of them ex-servicemen who had had some post-war agricultural training at Dogura. This committee was elected by a general meeting of Yega people. Their function was to decide which land to use and when to change areas of cultivation, and when to work - co-operative work days were Tuesdays and Saturdays, when all people (even school children on Saturdays), were supposed to work on the co-operative gardens. At certain times, such as harvesting, extra work was necessary. The committee made the decision when to call for such extra effort. In addition, the committee appointed people to perform other set duties and it supervised the performance of these duties. Such duties were -

- a) Jobmaster, who was in charge of the allocation of work;
- b) Farm leaders, who kept actual farm records,¹ supervised sowing, harvesting and other technical aspects - these men were all ex-agriculture trainees;
- c) Huller operator. A rice huller was acquired and installed at the western end of Beporo village (its concrete stand is still there).
- d) Toolkeepers and timekeepers. Their task was to keep tools sharp and in good repair. In addition, they had a clock and rang the starting bell (8 a.m.), Angelus (mid-day prayers), and knocking-off bell (5 p.m.).

1. Unfortunately, I was unable to locate any written records of the co-operative.

Although people lived at that time in villages stretching along about three miles of coastline, and only one bell was rung in Gombe village, it was stated that in the early days of co-operative work most people were punctual for work - after the first year there was a gradual, but perceptible slackening in enthusiasm.

The Secretary kept a roll book in which were entered the names of all workers. During each work day he walked round the gardens and ticked off the names of all people present. No attempt was made, however, to discriminate between the hard workers and the slackers. The person who worked for one hour received the same credit for attendance as one who worked eight hours. This became an important basis for resentment and discontent among the workers.

The arrival of Mr. Clint ushered in a period of dynamic growth in the co-operative movement in the Northern District. Clint appears to have had a deep interest in co-operatives, and had been associated in Australia with an organisation called the Christian Socialist Movement. He was specifically recruited by the Bishop to organize agricultural co-operatives, on the recommendation of Mr. Benson, with whom he had had earlier associations, and who knew something of his abilities and interests. Within three weeks of his arrival Mr. Clint had held meetings with the members of three of the co-operatives, and had also discussed future development with the District Agricultural Officer, Mr. Cockshott. In mid-May, he commenced a co-operatives instruction class to be held once weekly. Co-operative leadership, history of co-operatives, basic techniques, book-keeping and English were taught.

From the outset, Mr. Clint was very insistent that Christian ritual be associated with co-operative action. Educational and committee meetings always closed with a special prayer, and work was invariably associated with such activities as church services, at which tools were blessed and newly planted seed was blessed in the gardens. This spiritual aspect of the co-operative movement was regarded with some apprehension by visiting Administration officers, who felt that it could easily be misunderstood by the Papuans and might lead to the development of a cargo cult. There

is some evidence to suggest that a cult did in fact begin. Money was collected surreptitiously (its disposal was never explained), and in the opinions of some observers, there was a belief in the minds of some participants that the mere formation of co-operatives and the routine performance of the work required, would magically raise the Papuans in a short time to the status of Europeans in all respects. On the other hand, there is evidence to support the view that the people, in their desire to improve their economic position, saw co-operatives as the channel, and adopted the idea wholeheartedly. There is something of both these views in the statement of the ex-chairman, now a very old man. He said -

We wanted to be like other civilized countries, and earn money by working together.

During 1948, real progress was made. When several agricultural officers and the Registrar of Co-operatives visited the area in November, 1948, Mr. Clint was able to show 25 acres under rice¹ at Gona No. 1, and 10 acres under taro, 6 acres of rice and one acre of peanuts at Gona No. 2. Similar extensive areas were under crop at the other co-operatives.

The first harvest in early 1949 appears to have been a success. On his return from leave in March 1949, Mr. Benson gives his impressions...

...barns and storehouses bursting with rice, people happily busy... true comradeship and Christian co-operation.

In August 1949, the first four co-operatives in the Territory were registered.² They were, in order: No. 1 Yega; No. 2 Gona; No. 3 Garara; No. 4 Buna. The registering officer (Mr. H. Hodgson), stated at the time that...

...the co-operative movement in this district is the only one yet far enough advanced for registration.³

1. The variety grown was almost exclusively dryland 'hill' rice.
2. This registration was made under the terms of draft legislation. It was not confirmed by the Registrar of Co-operatives under the finally approved legislation, the Co-operative Societies Ordinance 1950.
3. Quoted in the Gona Anglican Mission Diary.

About this time, active discussion was conducted between Mr. Clint and the agricultural officers regarding the practicability of planting tree crops - especially coffee and cocoa - as eventual replacements for the annual crops then being grown. The problems associated with the establishment of these tree crops were not solved however;¹ had they been, a serious difference of opinion regarding policy would have been avoided. The divergence of views was between Mr. Clint, who saw the production of rice by co-operative methods mainly as a way of improving the subsistence diet of the people, and the people, who saw it as a way of getting money in their pockets. As time went on, it appeared to the villagers that Mr. Clint's interests lay only in the production of subsistence crops, and their enthusiasm began to wane. Towards the end of 1949, Mr. Clint developed chronic dermatitis, and he had to return permanently to Australia in January, 1950.

It had been Mr. Clint's view that the Christian co-operatives had..

...grown naturally out of the teachings of the Christian faith.²

Unfortunately, he did not recognise that material considerations weighed at least as heavily as spiritual values in the minds of the people among whom he was working, nor did he realise the height of their economic aspirations. The people had readily accepted three major changes from their traditional way of life. These were a departure from the traditional practices of land tenure and selection of swiddens; an entirely different system of work organisation; and the cultivation of a new crop, rice, which involved radical changes in their gardening techniques. The Yega had welcomed these changes because they assumed that, by their acceptance a substantial cash income would be secured. It was soon discovered, however, that rice could not be converted readily to cash. There was no possibility of rice being grown in sufficient quantity in any one locality

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1. Specifically, lack of knowledge of the soils in the area, lack of any experimental plantings, and a shortage of trained staff.
 2. Clint, 1950.

(for reasons of land availability and manpower) to justify the establishment of central milling facilities. In addition, inadequacy of transport facilities prevented combination with other areas, even had these existed at that time. Without central milling, which would have produced a brown rice, properly dried, and saleable to the Administration and plantations (only brown, unpolished rice was issuable as native rations), the only means of converting 'padi' rice into a storable product was to use smaller, semi-portable mills to produce white or polished rice. Although this process, which removes the endosperm, enabled the rice to be stored for reasonably long periods, the removal of the vitamin content prevented its issue to Administration and plantation labour, except with the addition of extra vitamin supplements - an uneconomic proposition. The milling, therefore, whilst converting 'padi' to food, prevented the conversion of the food to cash. Although white rice was unsuitable for issue where it formed the staple, it was quite suitable for village consumption where it formed only a supplementary part of the diet. In fact, white rice is more palatable, and has now become an important 'status' food at feasts and other special occasions. Rice-growing continued for about a year after Mr. Clint's departure; small quantities were sold by the cupful but the per capita income received must have been negligible. In 1951, the crop was attacked by a species of 'army worm' and, on the recommendation of the District Agricultural Officer, was destroyed. No further plantings were made and all co-operative agricultural activity lapsed.

By 1952, co-operative agricultural activity had ceased among the Yega. The death of Samuel Ungega removed from the Gombe co-operative its main driving force; the only man in the co-operative who had any training in co-operative work; the only man who was capable of directing activities on a long term basis.

The reasons for the failure of the Christian Co-operative are more complex. The basic reason for failure seems to have been the misunderstanding between Mr. Clint and the Yega regarding the aims of

of the project. Mr. Clint's apparent aim was to produce a storable food crop which would be a valuable addition to the Yega diet. The Yega wanted a cash crop, but when the work was done and the crop harvested, there was no market for it. The scheme was an idealistic attempt to improve the standard of living of the Yega and other co-operative groups, but it was promulgated with insufficient understanding of the peoples' deep-seated desires, and on an inadequate business basis. Misunderstanding between Europeans and indigenees is, as Lawrence¹ points out, a common phenomenon in Papua-New Guinea. The spiritual message presented by missionaries has in many cases been accepted by Papuans as being a religious ritual superior to their own. They have tended to assume that adherence to this superior ritual would provide the key to the Europeans' supply of wealth and material possessions. Co-operative production of crops did not produce any marked improvement in the material welfare of the Yega; when this was realised co-operative agriculture ceased.

Co-operative Trading Activities²

The present co-operative, organised by the Administration, is known as the Gona Villages Native Society Limited; it came into being in May, 1953. In that month, share capital amounting to £1271 was repaid by the Administration to 332 members of the old Gona, Gombe (Iega) and Garara Co-operatives, most of whom immediately became shareholders, at a uniform £5 per share, in the new society.

The new co-operative was to serve different purposes from the earlier venture. There was to be no attempt whatever at communal production. Functions were twofold:

- a) To provide marketing facilities for agricultural produce grown by individual members;
- b) To conduct a retail trading store.

1. Lawrence 1956, p.85, and 1964, p.7.

2. Although many other tribes are involved, particular emphasis in this chapter has been laid on the degree of Yega participation.

Operations were begun in a store previously owned by A.H. Bunting Ltd., on the Popondetta-Killerton Road, half-a-mile from its terminus at Cape Killerton. Originally built from local materials, and with a tin roof, the store had to be rebuilt by the co-operative, adjacent to its original site, in 1954; it was replaced in 1958 by the present permanent building, constructed on a new site only 100 yards from the wharf at Cape Killerton.

The marketing function of the store was of minor importance for the first ten years of its operation. Although there appear to be numerous coconut palms in the shareholders' villages, the subsistence demands of the people on them are heavy. Very little copra was offered for sale at the store before 1962, but production is now increasing following a renewed emphasis on the crop by the Department of Agriculture's Extension Service Officers. Copra turnover has increased from nil in 1961-62, to £127 in 1962-63, to £552 in 1963-64. There are presently few other cash crops in production and none of these are marketed through the co-operative store.

By contrast, the store's retail function was rapidly established; it has continued to discharge this function over the last 11 years under the competent control of its first appointed manager, Mr. Hankin Kombega, a local Yega man who is also secretary of the Society.

Within 2½ years of the start of retail trading a net profit of over £1000 was disbursed to shareholders at the rate of 2/6 for every £1 spent. Only two other rebates have been paid - in November, 1960, and December, 1962 - the rebate which would normally have been paid about the end of 1957 or early 1958 being diverted to the construction of the new store. The average rebate paid to shareholders in December, 1962, was approximately £1/10/- per head. For Yega shareholders the average was £2/11/- per head. Although these amounts may sound small, it should be borne in mind that the share basis is only £5 per head. In addition, the rate of rebate (at present 2/- in the £) is much higher than is paid by co-operative societies in Australia. The inducement offered by the rebate system does influence Yega purchasers in their choice of a retail store. Of a sample group of eight men questioned, two claimed that all their purchases were

made at the Co-operative store, four others estimated that over half their purchases were made there, one estimated less than half, and one was uncertain.

The Gona Villages Native Society Ltd., is managed by a chairman, secretary and Board of nine directors, all Papuans, elected by the shareholders. The Board meets each month, and its minutes are sent to the Co-operatives Inspector in Popondetta. Board decisions are approved or vetoed by the Inspector, but if vetoed, adequate explanation is given.¹

The finances of the store are under continual careful surveillance both by the local Inspector and by the Assistant Registrar of Co-operatives in Port Moresby, to whom regular inspection reports are submitted by the Inspector. Advice on problems raised in these reports, and on financial aspects such as the increasing of capital or the investment of surplus funds, is supplied to the Board by the local Inspector or direct from Port Moresby. A general reserve fund is maintained and fully invested. Provision for depreciation is made every 6 months; this money is banked so that the provision of a new store building should be possible in about 10 years' time.

The Cape Killerton store operates as a normal retail trading store but over three-quarters of its business is conducted with its shareholders. The extent of shareholder participation is indicated in Table 38 below.

TABLE 38

Shareholder Participation in Gona Villages Native Society, Cape Killerton Store, January 1963.

a) Total number of shareholders as at 1/2/63	578
b) Proportion of Yega shareholders to total	19.0%
c) Proportion of spending by Yega shareholders (as a percentage of total sales to all shareholders)	34.1%
d) Proportion of sales to non-shareholders.*2	13.5%

*1 Calculated from the rebates given in December, 1962.

*2 Calculated on the basis of sales for the months October-December 1962.

1. An example was the recent rejection of a Board decision to increase the purchase price of copra from 3½d to 4d per lb. Detailed costs were calculated to show the Board that at 4d per lb they would make too small a profit margin.

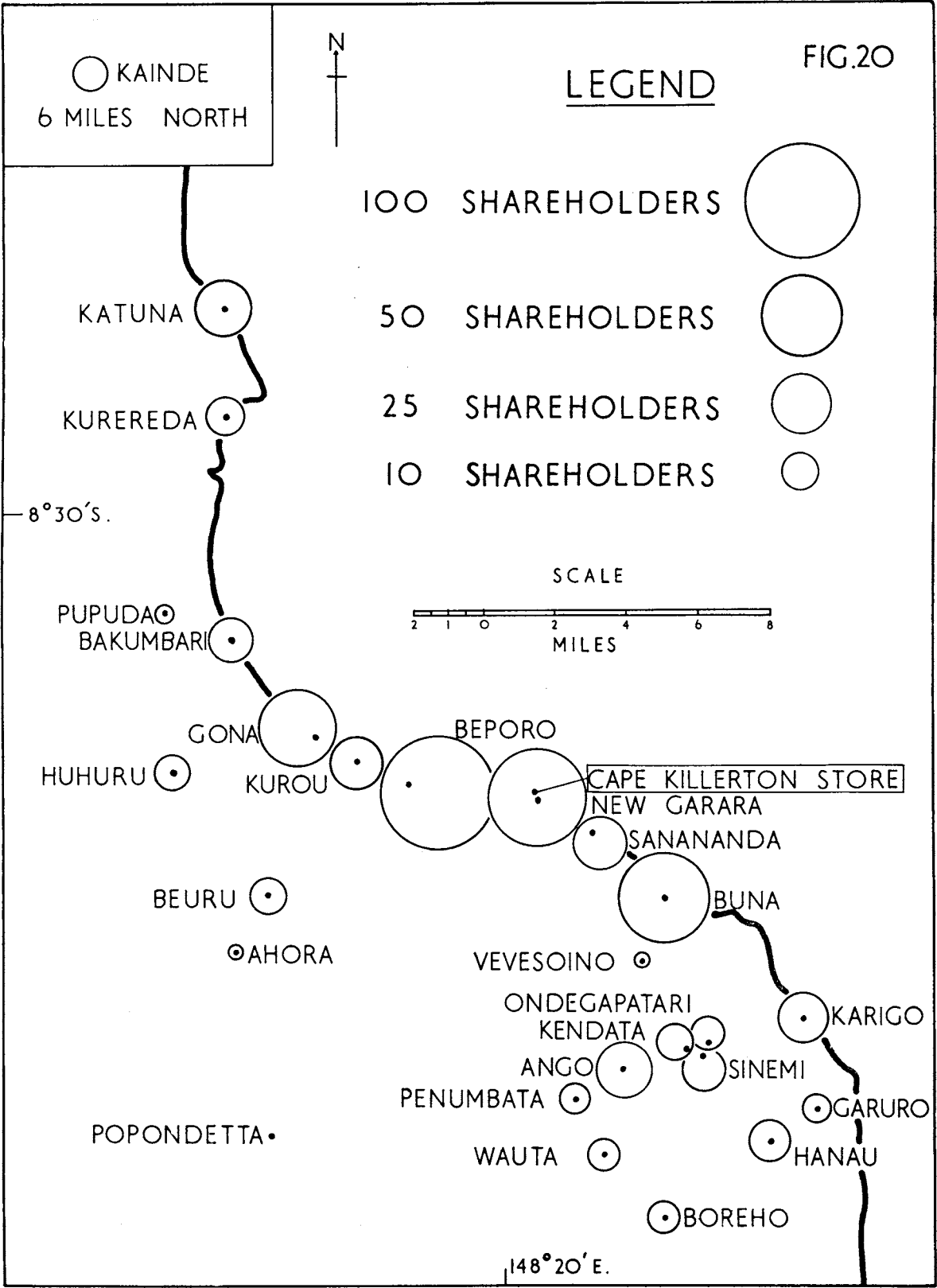
The proportionately high rate of spending of Yega shareholders relative to the total membership (Table 38(c)) is explained by several factors, the first of which is the nearness of Yega villages to Cape Killerton. Apart from the large non-Yega village of Garara, which is situated right beside the store and accounts for 13% of total membership, the Yega people live nearest the store, averaging from nil to four miles distance. The two other major groupings are those living further north along the coast, other Ewa-Embo, who comprise 26% of the total membership and live at distances of 6 to 15 miles from Cape Killerton; and those living near Buna, who account for 33% of membership. The villages near Buna are about 8 to 12 miles south of Cape Killerton.¹ Secondly, the Yega as a group receive a substantial cash income. Since no study has been made of the income of other groups of shareholders, it cannot be claimed that Yega incomes are unusually high, but grounds exist for supposing that they are.

The Yega have been better favoured educationally than have other people in the area: well-educated young men earn high wages and remit large sums to relatives and friends in the villages (pages 97-98). In addition, some Yega obtain a regular cash income from produce sold in Popondetta market, and, though undoubtedly some of the money from this source is spent in the trade stores in Popondetta, a proportion is carried home to the villages and later spent in the co-operative store.

Expansion of membership in the G.V.N.S. Co-operative has almost ceased: 561 members in 1958 increased to 578 in 1961. As a branch store was opened at Buna in 1962, effective shareholder support for the Killerton store will probably diminish. In any event, there can be no major increase in shareholder numbers among the Yega, for nearly every adult Yega man resident in the area is already a shareholder in the co-operative. The bulk of the store's business is done with its shareholders but in practice non-shareholding friends, such as members of a shareholder's family, or visitors home on holiday from the towns, are asked by shareholders to use their

1. Place of residence of shareholders in the G.V.N.S. store at Cape Killerton is shown on Fig. 20..

FIG. 20 - Place of residence of shareholders in the Gona Villages Native Society store at Cape Killerton. (Total Yega membership is shown at Beporo, although, at the time of joining the Society, Yega members lived in 8 small villages). At the present time, the Yega are dispersed throughout their territory in 17 localities varying in size from 30 houses to single homesteads.



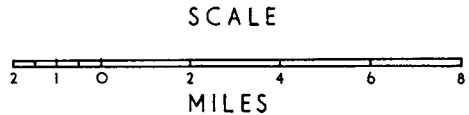
○ KAINDE
6 MILES NORTH



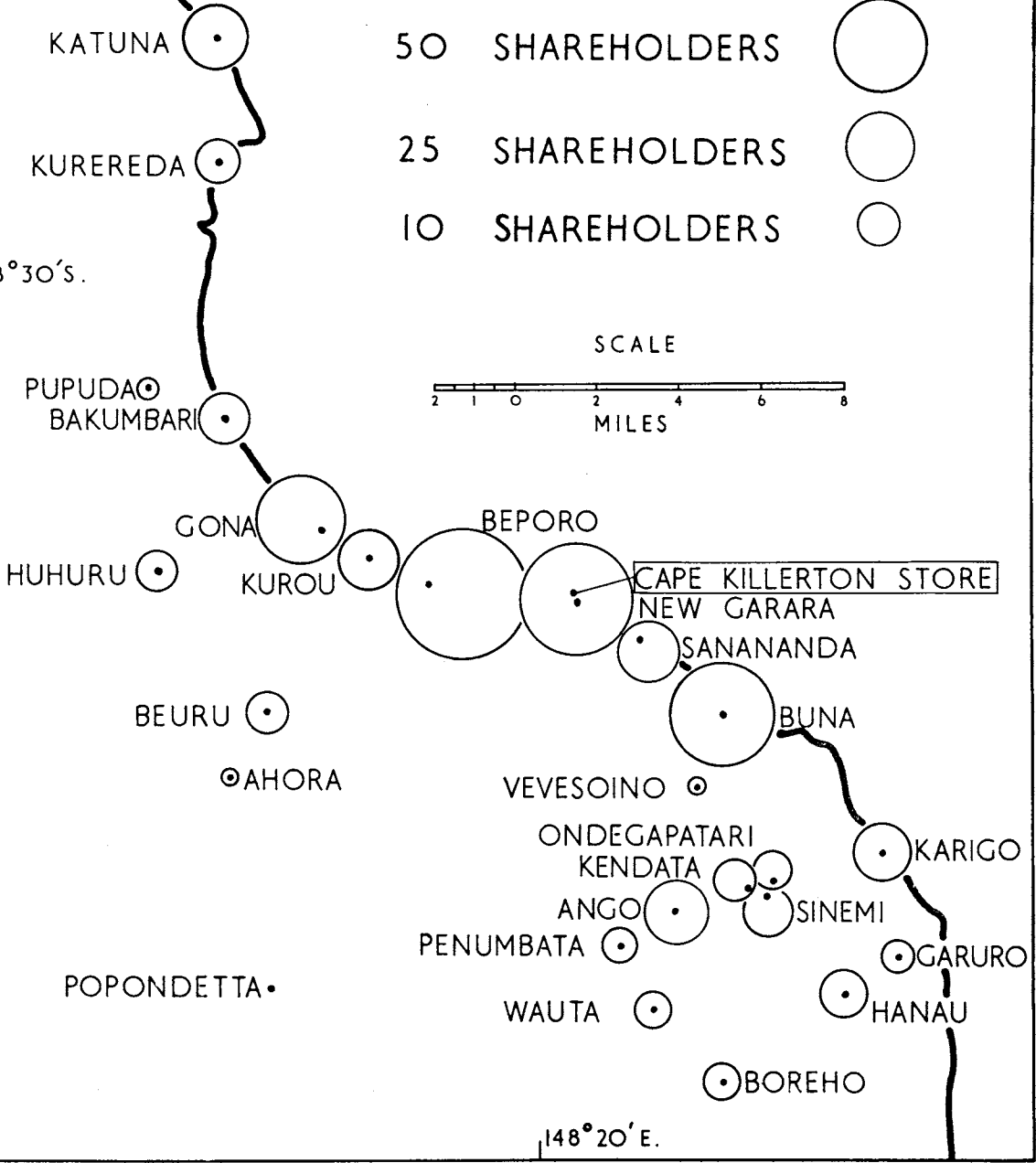
LEGEND

FIG.20

- 100 SHAREHOLDERS ○
- 50 SHAREHOLDERS ○
- 25 SHAREHOLDERS ○
- 10 SHAREHOLDERS ○



8°30'S.



148°20'E.

share numbers when making purchases. In this way, the shareholders obtain additional rebate benefits. In general, however, sales to non-shareholders are seen to follow a rhythmic pattern, which, according to the store manager, correlates fairly closely with the presence or absence of small coastal trading vessels at the wharf. Sales to non-shareholders have increased since 1958 when the store was re-sited adjacent to the Cape Killerton wharf.

Most of the buying at the store is done by men. There are no women shareholders, but wives and daughters use their husbands' and fathers' share numbers when purchasing goods. In the course of 6 or 7 visits to the store I can recall only once seeing a woman at the counter. The men are discriminating buyers. Though a man may have walked some miles to the store to buy some specific item, he will usually stand for a while surveying the goods displayed and asking a question or two about prices. Then a purchase is made, usually of only one or two items, and the buyer leaves the store. However, he rarely goes straight home. Surilai village on the northern side of the store is a Yega village, so there is always gossip to exchange there, and the time of social intercourse gives time for reflection and a mental review of possible further purchases. Quite frequently another visit is made to the store on the same day and a further purchase is made. On more than one occasion a buyer was observed making a decision about which type of tinned meat to buy - 'square' meat (corned beef) at 4/6, or 'round' meat (camp pie, containing an observable amount of cereal) at 2/-. The conflict was obviously between quality and price; price is by no means always decisive.

An analysis was made of the spending patterns of a group of 27 Yega shareholders, over a two-year period (January 1961-December 1962). The results are collated in Table 39 below.

TABLE 39

Analysis of Shareholder Purchasing at G.V.N.S. Store, Cape Killerton,
January, 1961 - December 1962.

Informant No.	Total Visits	Total Expenditure to nearest £.	Percentage expenditure in selected categories						
			A	B	C	D	E	F	G
1	22	14	43	9	11	6	5	25	3
2	22	14	54	7	8	5	2	22	2
3	15	7	76	2	15	4	1	-	1
4	32	21	53	18	22	-	-	4	2
5	23	9	53	14	15	-	2	11	3
6	12	7	59	1	15	-	-	20	3
7	3	2	45	17	9	-	5	26	-
8	7	11	60	7	6	-	22	4	-
9	20	7	61	4	11	9	-	9	7
10	17	9	33	7	19	13	3	15	9
11	20	19	60	5	9	5	12	5	4
12	24	19	56	11	17	-	9	4	1
13	30	17	38	20	16	6	12	8	1
14	39	26	58	6	12	3	2	15	1
15	17	12	51	20	23	3	-	1	2
16	6	3	52	2	40	-	6	-	-
17	22	8	51	5	20	-	1	15	6
18	4	3	28	2	16	4	12	38	-
19	12	14	51	20	13	1	-	10	5
20	41	26	42	10	18	5	15	11	-
21	27	8	51	7	23	2	4	13	1
22	27	16	50	9	15	3	11	11	-
23	122	41	44	16	14	6	6	9	3
24	43	58	29	7	55	-	5	2	1
25	235	134	53	10	7	2	9	17	-
26	46	30	72	9	15	-	3	2	-
27	91	37	30	18	30	3	9	7	1
TOTALS %			49	11	16	3	7	11	1
TOTALS £			574	63	94	18	38	64	7

Source: Purchase Invoices retained by individuals and presented for assessment of rebate on 11/12/62.

Table 39 was constructed from a random sample of 27 Yega shareholders.

Slight discrepancies in percentages are due to rounding of figures.

(Continued p.125)

Categories selected were as follows:

- A. Food, including tinned and bulk food, but excluding soft drink. Main items were tinned meat and fish, rice, biscuits and sugar.
- B. Tobacco, twist and proprietary brands of tobacco, cigarettes and newspaper (for use as cigarette papers).
- C. Miscellaneous, including - torches, torch batteries and bulbs, soft drink, talcum powder, pressure lamp mantles, kerosene, matches, locks, marbles, plastic belts, shotgun cartridges, umbrellas, fish hooks, fishing line, plastic bags, beads, dyes, mirrors, toothpaste, hair oil and jews harps.
- D. Garden utensils, axes, tomahawks, bush-knives, petos (for slashing grass).
- E. Kitchen utensils, pots, boilers, small knives, forks, spoons, plates, basins, lamps.
- F. Clothing, including all textile goods, blankets, calicos (skirts), shorts, dresses, T-shirts, socks, towels, cummerbunds (loin cloths).
- G. Unreadable, the source of information was receipt docketts (often hurriedly written) so that this category was an unfortunate necessity.

Table 39 strikingly reveals the high proportion of spending on food. In only five cases was expenditure on food less than 40% of the total, and with two men it constituted over 70% of total expenditure at the store. Expenditure on food was almost exactly half the total of £574. The most sought-after foods are those of high protein content - tinned meats and fish. Sweet biscuits and refined sugar are also very popular, though everyone grows sugar cane and munches it almost daily in the gardens. The large sale of rice, often in £3 bags, was puzzling until I attended a feast! Rice is a prestige food, and most bulk purchases of rice are in all probability for ceremonial use.

A surprising omission from the invoices examined was salt, which occurred but once in the hundreds of invoices examined. Explanations offered included:

- a) Most cooking is done with sea-water diluted in varying degrees with fresh water;
- b) Any salt which is required, is obtained by bartering fruit and vegetables with the nearby Gona Mission, which runs a regular barter system to maintain food supplies for its staff and boarding school (page 101).

Smoking is almost universal among Yega men, and most women also smoke. Most of the tobacco used is home-grown and home-cured, but smokers of all degrees of sophistication prefer the commercial 'twist'. However, percentages listed in category B indicate a positive correlation between sophistication and desire for tobacco of commercial quality. Of the nine persons who spent more than 10% of their incomes on tobacco, seven were young men, all but one of whom have worked away from the village in paid employment in the fairly recent past.

The variety of articles included under category C (miscellaneous) was so wide that they have been listed in full. This list is, however, itself generalised: for instance, at least 3 brands of talcum powder and 4 of toilet soap were on sale. Only one bicycle (costing £26) had been sold during the two years surveyed. It was purchased by informant No. 24, a middle-aged man who returned in 1961 from a long period of paid employment.

The low rate of spending on category D (garden tools) is noteworthy, considering the importance of gardening in the Yega economy; but axes and bush knives are carefully guarded and are never lost, and, being very durable, they rarely need replacement.

Expenditure on kitchen utensils (category E) is not great, but almost every Yega housewife nowadays has at least one metal cooking pot. These pots or 'boilers' are usually large (2 to 4 gallon capacity), and are not used for everyday meals. They are kept for special occasions when large quantities of food have to be cooked. 'Boilers' costing between £1 and £3, are the only major items of expenditure in category E. At least one was included in the purchases of every informant whose expenditure in category E exceeded 10% of his total expenditure.

Almost every Yega child over 6 years of age, and every adult of both sexes, possesses at least one item of European-type clothing. On working days, cotton skirts are worn by the girls and women, and shorts or cotton loin cloths by the men, but tapa¹ skirts are preferred by the adolescent girls, and tapa boavo² by the older men for Sunday best. More discrimination is shown in the selection of clothing (category F) than for any other category in Table 39. In general, only people on low incomes buy most of their clothing at the Killerton store. Most people prefer to purchase their clothing requirements in the larger Popondetta stores where a much wider range is available to choose from.

Retail trading showed a remarkable increase from 1961-62 to 1962-63; turnover doubled during this period but no satisfactory explanation for this increase can be offered. A fall-off in trade of about 12 $\frac{1}{2}$ % occurred in 1963-64.³ It is likely that this situation has resulted from lower spending by Yega shareholders, many of whom moved their place of residence during 1963-64 to sites along the Gona-Popondetta road, 3-5 miles inland from the coastal villages. This move of residence brought them within easier access of Popondetta where the larger stores also offer a greater variety of goods.

TABLE 40

Monthly Turnover at G.V.N.S. Killerton Store, 1962

<u>Month</u>	<u>Percentage of Total Turnover</u>
January	9
February	9
March	7
April	7
May	7
June	7
July	8
August	8
September	6
October	8
November	8
December	<u>16</u>
	<u>100%</u>

This table refers to total turnover for the store, not only the Yega participation.

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1. tapa = bark cloth
 2. tapa boavo = bark loin cloth.
 3. It is regretted that co-operative regulations do not permit publication of specific figures.

July and August are regarded by the people as 'hungry' months, but there is no marked increase in expenditure at the store during those months. In fact, the rate of spending is remarkably even throughout the year, except in December. Turnover in December, 1962, was approximately double the monthly average for the remainder of the year. For this circumstance, there are several explanations. Firstly, a distribution of rebates to shareholders was made on 12/12/62. I was present on this occasion when much of the money given in rebates was immediately spent again in the store. Secondly, many men who work outside the village return for holidays at Christmas time, bringing with them appreciable sums of money, much of which is spent on food and presents for friends and relatives in the village. Finally, holding of feasts and parties during the Christmas period is an aspect of European culture which has been adopted wholeheartedly by the Yega. This occasions increased spending on food each December.

The Yega are still predominantly subsistence cultivators, having very limited financial resources. The Co-operative store serves a useful purpose in providing them with easily preservable protein as well as a range of other foods, clothing, consumer goods, tools and domestic equipment. No increased participation by the Yega in the operations of the Killerton Store appears possible until the general level of cash income is raised as it should be from mid-1964 when cocoa at Ononda comes into bearing. This increased income may, however, be offset by the shift in place of residence of many Yega families as already noted. This move to the new inland villages of Ononda and Binjapada, while increasing the walking distance from Killerton to five or six miles, has decreased the distance to the much more attractive shopping centre of Popondetta to seven or eight miles.

Finally, the development of a deep water port at Oro Bay has already progressed beyond the planning stage. When Oro Bay becomes the port serving Popondetta, Cape Killerton is bound to decline in importance. It seems likely that the Killerton Co-operative store will continue to function as a retail supplier to a smaller higher income group of customers, but that its growth potential is handicapped by its present location.

COFFEE PLANTING

After the failure of co-operative farming in 1951, the Yega went through a period of inactivity in the sphere of cash cropping. They were apparently disheartened, and for several years their cash-cropping efforts were negligible in spite of the efforts of Rev. J.L. Wardman of the Anglican Mission at Gona, and Messrs. H.H. Jackman and G. Morris (Administration co-operative officers) to stimulate the planting of coconuts and the production of more copra. Mr. W. Fielding, the District Agricultural Officer, who arrived in the Northern District in 1955, also regarded coconuts as being the most suitable cash crop for the coastal areas, but his efforts to arouse interest by allocating agriculture trainees to help the villagers likewise met with failure.

As an alternative, the D.A.O. suggested the planting of coffee in individually-managed blocks. A few Yega had previously planted individual blocks of coffee trees - 2 in pre-war years, one in 1950 and another in 1956 - but in no case had any return been obtained. A family group of 6 men was at that very time engaged in clearing a large block which they intended to work communally. Thirteen other Yega accepted the D.A.O.'s advice and, during late 1957 and 1958, they cleared patches of secondary forest (enda) and planted coffee using Leucaena glauca as shade. Table 41 gives details of these blocks, their distribution being shown on Fig. 21.

The Yega had already (page 109) contravened their traditional land use and labour techniques, but the co-operative gardens, though worked in much larger areas than usual and by communal labour, remained part of the land rotation cycle. The importance of the coffee planting project was that for the first time in their history Yega lineage heads, who control cultivation rights to enda, agreed to remove land permanently from the land rotation cycle, by planting tree crops. The permanent allocation of areas of enda to individuals who, in all cases but one, were members of the right-holding lineage (though in a majority of cases they were not themselves heads of lineages) was an innovation in Yega land usage. The single exceptional

TABLE 41.

Yega Coffee

Analysis of Plantings

INDEX	CLAN	NO. OF TREES	DATE PLANTED	AREA APPROX. ACRES	CLASS OF LAND USED	PICKINGS	PRODUCTION TO DATE	PRESENT SITUATION
1	KUROU	160	1958	1/4	ENDA	1	6-	Fair-producing
2	SAMBORI	560	"	1	"	2	£5/6/0	Derelict
3	SESEKO	274	"	1/2	"	Nil		Not seen
4	JAMBAPA	450	"	3/4	"	Nil		Not seen
5	SAMBORI	200 350	1950 1957	1/4 1/2	" "	Nil 3	£5/18/0	Derelict Well kept
6	SESEKO	470	1958	3/4	"	1	11/0	Producing
7	SESEKO	612	"	1	"	Nil		Not seen
8	GENA	1000 approx.	1957	1 3/4	"	?	?	Fair-producing
9	JAMBAPA	100	1958	1/6	"	1	£1/13/0	Fair-producing
10	JAMBAPA	220	1956	1/4	Saute	-		Derelict
11	EUPU	160	1958	1/4	Enda	Nil		Producing
12	SESEKO	352	1958	1/2	"	Nil		Producing
13	SESEKO	150	1935	1/4	"	Nil		Derelict
14	KONAMBO	513	1948	1	"	3	£1/8/6	Producing
15	SESEKO	120	"	1/5	"	Nil		Producing
16	SESEKO	142	"	1/4	"	2	£2/13/6	Producing
17	SAMBORI	-	1940	?	"	Nil		Destroyed

case in which portion of the coffee plantation was established on land not belonging to the planter's lineage is Index No. 4, Table 41. Monetary gifts from coffee returns would normally be made to the head of the lineage who agreed to the planting of coffee trees, but so little income has been received from the coffee that no payments have been made.

The communal coffee planting venture by Gena clan members (Index No. 8 Table 41) was also a radical change from traditional practice, though in a different manner. In this instance, ownership of trees, which is traditionally vested in individual planters, was to be communal. A group leader was appointed to take charge of marketing and financial affairs. Land was cleared by communal effort and approximately 1000 trees planted. The five members of the group resident in the villages worked well together at the hard toil necessary to establish the block, while the sixth member, an Administration medical assistant, purchased a mechanical pulper. The communal foundation of the venture led to its failure.¹ The man responsible for handling the finance for the group banked or spent all proceeds personally and refused to give account to the other members. After a bitter quarrel all work ceased and no work has been done on the block for the past three years.

The coffee planting scheme described above has been an economic failure. Only six planters have received any return in the 7 years since they planted their trees. The average total return for these six men has been only 54/- per head (8/- per head per annum). Most of the blocks are presently neglected though not derelict. The most common reason for neglect given by planters was the tedious nature of the work of hand pulping the cherry coffee. There was, in addition, the long period of working and waiting for the trees to reach maturity. During this time people lost interest, particularly as the blocks were so scattered and isolated from others engaged in similar work.

1. This is another instance of the failure of communal cash cropping to be added to the many documented by Crocombe, 1964.

The more recent planting of cocoa in contiguous blocks at Ononda provides an interesting comparison with this coffee scheme in the areal distribution of the blocks, in the class of the land used, and in the changed attitude of the workers themselves towards the care and harvesting of tree crops.

COCOA PLANTING - THE YEGA SCHEME

The planting of cocoa at Ononda in what has become known as the Yega Scheme is, without doubt, the most significant change in Yega land use to have occurred since the end of the second world war. Important aspects of the Yega Scheme to be discussed in the following pages are:

- i) The availability of land.
- ii) The degree of co-operation between Administration and villagers.
- iii) Changes in traditional land tenure.
- iv) Perseverence of the villagers in the care and maintenance of the young trees.
- v) Experimentation with new methods of work organisation.

The Yega Scheme, in its early stages, secured the wholehearted co-operation of all Yega villagers who, in a very short space of time, cleared a large area (approximately 84 acres) of saute, and planted shade and cocoa trees on it. Moreover, although the interest of some planters has waned, that of the majority has been maintained, most blocks have been cared for, and the trees are now beginning to yield financial returns.

The Genesis of the Yega Scheme

On several occasions prior to 1960, the Yega people discussed their desire to plant extensive areas of cocoa with the D.A.O., Mr. M.H. Belfield. Suitable land was not available near the coast, and it was not until early 1960 when an old war-time road was re-opened between Gona and Popondetta, that access was provided to suitable forest country further inland.¹

1. The road had been built by the Japanese after their invasion in 1942. Its re-opening was mainly due to the efforts of the Anglican missionary in charge at Gona, Rev. J. Wardman.

Soon afterwards, in March 1960, Yega representatives approached the D.A.O., pointing out that land was now available. They sought his advice and assistance in promoting cash production of cocoa. The land available was mature rain forest situated about four miles inland, just north of Ononda Creek. This land was part of an area over which, in past time, the Bowori clan of Yega had exercised allocation rights. The entire Bowori clan had been wiped out in inter-tribal fighting with the neighbouring Ahora people, but their land was never re-allocated among the remaining Yega clans. It was used as communal hunting land to which no one Yega clan had any stronger claim than others. No complex pattern of clan rights applied to the area selected for the planting of cash crops so there was no need of compromise among clans during the allocation of blocks. The exceptional nature of this wholly fortuitous circumstance, and its bearing on the accord among clans which had prevailed, at least up to the time of writing, should not be overlooked: the stroke of chance is relevant not only to studies of the Yega Scheme itself but also to the possible use of this scheme as a 'pilot' for future projects. Allocation of this land, whether for subsistence gardens or for cash cropping, was vested in the hands of the chief Yega land custodian, who fully approved of the purpose in hand.

The land proposed by the Yega was inspected by the D.A.O. and pronounced suitable for growing cocoa. Officers of the Department of Native Affairs conducted an enquiry into the possibility of dispute over the ownership of the land. The investigation showed that although the land south of Ononda Creek was in dispute, ownership of the area specified for the cocoa project lying north of Ononda Creek was not disputed by any non-Yega group.

After discussion with the District Officer, the D.A.O. and his staff decided to attempt to avoid some of the problems inherent in the Higaturu Council Land Registration Scheme¹ by suggesting that plantings be made in a contiguous area, giving the appearance of a European-type plantation, rather

1. Crocombe and Hogbin, 1963, Appendix A, pp.89-96, gives a detailed description of the Higaturu Council Land Registration Scheme.

than in scattered plots of irregular size and shape. Contiguous planting could be expected to secure a whole range of advantages. All blocks would be accessible by road; more efficient agriculture extension services could be offered to the growers; control of pests and diseases would be facilitated; ordered expansion of individual plantings could occur without interference with the blocks of others; a centrally-located fermentary could give growers easy access to processing.

In order to ensure competent, on-the-spot supervision of the establishment of the cocoa plantation, the Agriculture Department Extension Service built a village on the north bank of Ononda Creek. Here agricultural trainee field-workers were housed and fed while they worked with the Yega advising and assisting them in the unfamiliar tasks of laying out their blocks, 'lining' the shade trees and ensuring correct spacing of the cocoa trees. The D.A.O. entrusted a local Yega man (Napoleon Aiga of Sambori clan) with the oversight of this work. Although he is not a trained agricultural worker,¹ Napoleon is a man of great drive and ability; he had the confidence of the Yega and was also able to direct and control the agricultural field worker trainees who worked with the villagers in the initial stages of the Scheme.

Development of the Scheme

Beginning in May 1960, an area approximately 7 by 120 chains was rapidly cleared by communal labour in which a large proportion of the male members of all Yega clans participated. Provision was made for a road down the centre of the cleared area: 48 blocks were then marked off, 24 on each side of the central road on 5 chain frontages.² One block was allocated to the Mission and one block beside the Gona-Popondetta road was reserved as the site for a future fermentary. The remaining 46 blocks were allocated by ballot to participants in the work. The 46 men to whom blocks were allocated represent almost all Yega lineages; those lineages not represented are ones in which

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1. He was a clerk in the D.A.S.F. office at Ioma when selected for this job.
 2. The number of blocks was based on the number of men who originally showed interest in participating in the project, plus two special blocks as indicated.

only old people remain in the villages, the young men having left home to work in paid employment elsewhere. After the ballot, one week was allowed for voluntary exchanges before a firm list of blockholders was drawn up. This firm list was, however, still subject to alteration within the framework of the traditional Yega land tenure system. Any cultivator who was considered to be unsatisfactory could be disciplined by the land custodian, Mixon Kairembora; if a blockholder failed repeatedly to comply with the standards expected he could be dispossessed, and his block re-allocated to another cultivator. One such re-allocation did, in fact, take place late in 1960.¹

With the passage of the Land (Tenure Conversion) Ordinance in February, 1964, the tenure position has altered. It is now Administration policy to grant individual title to any blockholder who desires it. By July 1964, seventeen blockholders had applied for registration of their blocks as the first step to obtaining individual title. When, in due course, conversion orders are made in favour of these applicants, their blocks will no longer be subject to traditional tenure. The blockholders themselves will then have full authority to make any decisions relative to land use on their own blocks.

With the establishment of individual titles, a pattern seems likely to develop of dispersed homesteads on small-holdings. In the original clearing no demarcation was made of the fourth (rear) side of each block since, by common agreement each blockholder was permitted to extend his area of cultivation by clearing additional forest on that side. Limits to such clearing are set by Epa and Ononda Creeks to the south, and by the Gena and Seseko clan boundary markers to the north. This means that there is room for extension of each block to a maximum of 7 to 10 acres. As early as November, 1962, one blockholder had left his home in Beporo Village and located a new dwelling in Binjapada grassland on what he calculated to be the extension of his cocoa block. By July, 1964, he had been joined by 3 neighbours impelled by a

1. The blockholder referred to ignored three warnings from Nixon about his laziness. As a result he was dispossessed and his block allocated to another cultivator; 30/- compensation for work already done was paid by the new blockholder.

similar motive to locate their dwellings upon their own blocks.¹

The initially cleared area of each block, about $2\frac{1}{2}$ acres, was available immediately for planting with shade trees.² Up to the time of writing, each block has been planted with about 2 acres of shade and cocoa trees. In some poorly-drained sections, numbers of trees of both types have died (Plate 46) but the drainage problem can, it is thought, be overcome by deep-ditching. Late in 1962 and early 1963, many young cocoa trees suffered a severe setback as a result of infestation by army worm³ which, however, caused less damage to the Yega trees than to trees on the larger European and indigenous ex-servicemen's plantations closer to Popondetta. Marked irregularity is noticeable in the growth of the cocoa trees: this may be attributed to the degree of cut-back resultant from the depredations of army worm and also, to some extent, to micro-variations in soils or topography.

The irregularity of tree growth is reflected most noticeably in the wide variation in production from block to block. Production of cocoa has just commenced at Ononda, almost exactly four years from the inception of the scheme. Many blockholders have not yet started to pick their cocoa, whilst others are already harvesting regularly and systematically. No attempt has yet been made to establish a co-operative fermentary on the site provided. Instead, the Popondetta Cocoa Fermentary Pty. Ltd. runs a monthly pick-up trip to collect wet beans from Ononda and two other centres. The current price (August 1964) for wet beans at the fermentary is $5\frac{1}{2}$ d per lb. The price paid at the village is 3d per lb., $2\frac{1}{2}$ d per lb being deducted for collection expenses.

Cash income earned by the Yega from cocoa is still very small. The collection and sale of cocoa was observed on two occasions at Ononda (Plates 48 and 49). Work time expended by Yega villagers varied with the very wide range in production. In a few instances pods were picked on the previous day but most people picked and opened pods on the morning of the pick-up.

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1. According to my admittedly inaccurate pace and compass traverses, two of these men had in fact missed the mark and built their dwellings on neighbouring blocks. Accurate surveys should therefore be made as soon as possible in order to avoid future difficulties.
 2. Lucaena glauca, as recommended by Agriculture Department extension officers.
 3. Tiracola plagiata.

Pods are opened under the trees on the blocks; the wet beans are then carried in cooking pots, basins or sacks the $\frac{1}{4}$ to $\frac{1}{2}$ mile to the pick-up point at Ononda bridge. Production details for the two observed occasions are given below:

TABLE 42

Yega Scheme, Cocoa Production and Income Received by Growers
on two occasions

a) 1st July, 1964

Name	Picking	No.Pods	Wt. lbs	Less Tare lb.	Net Wt. lb.	Amount Received
Wilfred	3rd	86	20	4	16	4. 0
Ethelbert	2nd	205	53	8	45	11. 3
Timothy	3rd	810	153	10	143	1.15. 9
Wilson	1st	123	28	7	21	5. 3
Needham	1st	96	19	3	16	4. 0
Dick Shepherd	3rd	519	129	13	116	1. 9. 0
Reginald	1st	62	22	4	16	4. 6
Roy	1st	14	6	3	3	9
Geoffrey	1st	60	16	4	12	3. 0
Livingstone	2nd	408	90	11	79	1. 0. 9
Randolph	1st	36	10	2	8	8. 0
Spencer	2nd	136	34	4	30	7. 6
Hubert Murray	1st	176	36	6	30	7. 6
TOTAL		2731	616	79	535	7. 1. 3

N.B. i) Average 100 pods for 20 lbs wet beans
ii) Average beans/pod = 31 (count of 13 pods selected at random).

b) 29th July, 1964.

Name	Picking	No.Pods	Wt. lbs.	Less Tare lb.	Net Wt.lb.	Amount Received
Wilson	2nd	34	6	3	3	9
Bruce (Bapa, not member of Yega Scheme)		250	62	6	56	14. 0
Aubrey	3rd	103	30	3	27	6. 9
Dewhurst	1st	50	12	3	9	2. 3
Faithful	4th	410	90	7	83	1.0. 9
John Livingstone	3rd	?	53	3	50	12. 6
Dick Shepherd	4th	400	107	4	103	1.5. 9
Wilfred	4th	?	7	2	5	1. 3
TOTAL		1247	367	31	336	4.4. 0

N.B. Average 100 pods for 22 lbs wet beans.

Incentives and Income Distribution

The Yega Scheme has provided the middle-aged group of Yega men particularly, with the opportunity desired by all, of increasing their cash incomes. The younger Yega men working in wage-paid employment away from the village were not attracted back home by the prospects of cash crop planting. Only one unmarried man left his job (in the police force) to return home and obtain a block in the Scheme.

TABLE 43

Age structure of blockholders in the Yega Scheme
compared to other Yega males of working age.

Category A - Yega men allocated a cocoa block.

Category B - Yega men not allocated a cocoa block.

Category C - Yega men working away from villages.

Age grouping	A		B		C	
	No.	%	No.	%	No.	%
Under 30	7	15	13	20	53	62
Over 30 and under 40	16	35	17	26	23	27
Over 40 and under 50	17	37	17	26	6	7
Over 50	6	13	18	28	3	4
	46	100	65	100	85	100

N.B. Ages are in most cases estimates and for category C estimates by informants. Ages of 3 men in Category C were not obtained.

Table 43 above indicates that, of the 46 cocoa blocks in the Yega Scheme, the great majority (33 or 72%), are held by men in the middle-aged group (30-50 years), and slightly more than half of these men are over 40.

While only 28% of the persons allocated blocks are in the very young and very old age-groups, nearly half the persons not allocated blocks are in these groups. The large number of old men in category B is understandable. They have few needs other than for food and betel nut and the cost of small luxuries like sugar and rice can usually be provided by their sons. On the other hand, there is a very strong desire on the part of men in the two middle-age groupings of category B, to obtain cocoa blocks themselves. The figures in category C show that the men in the 40 and over age-groups have

drifted back to the village though at some period during their lives these men have also been away to work.

In addition to their earnings from the production of cocoa Yega villagers have four sources of income. Several of these sources have been described in detail above. They are:

- i) Gifts from relatives or friends working in paid employment (page 100).
- ii) Marketing (page 109).
- iii) Barter with the Mission (page 101).

An additional source of income for some men is gambling. As gambling is illegal, this is an 'unofficial' source of income. As such, people were reluctant to divulge details. Nevertheless, it was apparent that for some men, gambling constitutes an important source of income. The stakes in domestic games of 'Lucky' are usually betel nuts; in games with outsiders the stakes are always cash. In particular, Yega gamblers aim to relieve the workers on nearby plantations of their wages. During my stay, one Yega man won £43 in one night in such a game.

Sources of additional income for two sample groups are summarised in Table 44 below:

TABLE 44

Additional sources of cash income of Yega villagers during 1962.

Classification	Personal effort	Gifts	Other
Holders of cocoa blocks (sample of 25)	8	17	2
Non-holders of cocoa blocks (sample of 14)	8	9	Nil

N.B. The 'other' category above includes savings and gambling (one informant in each). Some persons received income from two sources.

The holders of blocks clearly receive more income in the form of gifts than non-holders of blocks. The main reason for this is that most blockholders are in the age-group that has sons or brothers of working age. Many of these work in paid employment. So by making gifts to blockholders,

these 'outside' workers are ensuring reciprocity of gifts in the future. Table 44 shows only gifts received by people living at home. Monetary gifts are rarely given by the village people, but when the 'outside workers' return for holidays in the village they are fed, boarded and feasted free.

Work Patterns

It is traditional practice among the Yega for members of one lineage to work together to clear the forest in preparation for planting food gardens. The cleared patch is then sub-divided among those who helped with the work. Planting and caring for the growing crop is the responsibility of the individual and his family. This traditional work pattern was modified when clearing the rain forest for the Yega Scheme. The work was a community effort undertaken by all able-bodied Yega males present in the villages. Planting of the cleared blocks was the responsibility of individuals; the man to whom each block was allocated by ballot assumed responsibility for the planting of shade trees, laying out a seed bed, planting out the young cocoa trees, 'lifting' shade as the trees increased in size, and keeping down the weed growth. In most instances, relatives of the blockholder helped with these tasks and according to Yega social custom they must be compensated for such assistance rendered. Several instances were observed in which blockholders made part compensation for previous help.

The cocoa pickings on 29th July (ref. Table 42) by Aubrey and John Livingstone were made from the same blocks as those by Ethelbert and Livingstone on 1st July. Aubrey is a member of the same lineage as Ethelbert, and John Livingstone is a son of Livingstone. As part payment for work done previously on the blocks these two men were permitted by the blockholders to harvest one month's cocoa production. Other relatives who have helped with the work will be given a similar privilege.

Late in 1962 and early in 1963, many Yega moved their homes to the new villages of Ononda and Binjapada (page 152), the reason given in every case being that of greater proximity to their cash-crop areas. It was

evident in January 1963¹ that the move had not yet resulted in a significant increase in the amount of time spent on the cocoa blocks. The reason for this was that all the men were spending a great deal of time on building their new houses. Only one man out of 12 spent any time working on his cocoa block during the period 14-28th January. The remainder divided their time about equally between building tasks and work in their food gardens, which are scattered between the coast and the new cocoa blocks.

Several attempts have been made to introduce communal labour methods into the production of cocoa. The first was organised by a blockholder, Wilfred Upena, early in 1963. He and 17 other Yega belonging to 5 different clans, made an agreement to do a day's communal work clearing rain forest to extend each man's block in turn. As the originator of the scheme, Wilfred's turn was first; on 5th February, 1963, a day's work was done on his block, and an acre of rain forest was cleared. This scheme was a failure, for on my return in 1964, no further communal work had been done by the group.

The second attempt at communal labour was by the men of Kurou clan, who agreed to work on specified days on the two cocoa blocks allocated to Kurou members. This scheme was initiated in mid-1963. Only two day's work were done.

The third attempt at communal labour is a very recent one, owing its origin to a suggestion made by the Yega Councillor in the newly-formed Oro Bay Local Government Council. This suggestion was that all the Yega should perform communal work on the cocoa blocks on Tuesday of each week. The work to be performed was only cutting grass and clearing additional forest, not harvesting cocoa. The first two work periods under this system were observed and counts of the workers were made by a Papuan assistant. The results were remarkable.

1. An unsupervised record of daily work was kept by a man living at Ononda from 14/1/63-28/1/63. It is felt to be of only limited value.

TABLE 45

Communal work on cocoa blocks July-August, 1964.

Date	Number of Workers (adults)	Time spent (Hrs.)		
		Shortest	Longest	Mean
28.7.64	64	3	8½	6½
4.8.64	79	7	8½	8

Irrespective of what time people started work, 'knock-off' time was by whistle at 4.30 p.m. The permanency of this arrangement remains to be seen.

The harvesting of cocoa is carried out by individuals. Details of the work times of two men harvesting cocoa for sale to the fermentary representative were observed as follows:

Ethelbert, 1/7/64 (assisted by son aged 6 and daughter aged 8)

Walk from village to cocoa block	25 minutes
Harvest 205 cocoa pods and collect in one spot	55 minutes
Remove beans from pods	50 minutes
Await arrival of fermentary Land Rover, weigh produce, await payment	<u>1 hr.35 minutes</u>
TOTAL	<u>3 hrs.45 minutes</u>

Aubrey, 29/7/64 (unassisted)

Walk from village to cocoa blocks (including time spent visiting friend on way)	45 minutes
Harvest 103 cocoa pods	1 hr.
Remove beans from pods	40 minutes
Await arrival of Land Rover, weigh produce, await payment	<u>2 hrs.10 minutes</u>
TOTAL	<u>4 hrs.35 minutes</u>

The cash reward for labour performed may be seen in Table 42 Ethelbert received $11/3$, i.e., $2/9$ per hour, while Aubrey received $6/9$, i.e., $1/6$ per hour.

From the foregoing description it can be seen that the Yega Scheme has been the source of major changes in Yega land use, land tenure, cash income and work organisation. It appears that the process begun by the Yega Scheme is generating further change, particularly amongst those Yega who did not obtain cocoa blocks at Ononda. The extent of such change between February, 1963, and August, 1964, is indicated in the following pages and on Fig. 27.

Development of Cash Cropping since January, 1963.

Extension to the area under cash crops has been effected by two methods -

- a) by scattered plantings;
- b) by the initiation at Berojou of another 'block' scheme similar to the Yega Scheme.

a) In February, 1963, many Yega were disappointed because they had no individual area of cocoa. It had already become apparent to most of them that a half or quarter share in the block of a relative would return them very little income; all those who had missed allocation of one of the Ononda blocks were, therefore, very eager to clear a further block. Clearing did, in fact, begin on a new block parallel and to the south of the Ononda block the week I left the area in mid-February, 1963. However, very soon after this, the Yega organiser of cocoa planting, Napoleon Aiga, was posted by D.A.S.F. to another district, and instead of continuing with another 'block' development, people began clearing and planting in scattered patches. Seven blocks totalling about 8 acres were planted in this manner. Several aspects of these plantings require comment.

All plantings have been made on the south side of Ononda Creek in the area which the Yega claim because it was their Bowori (extinct) clan land and which the Ahora claim by right of conquest. The Yega decided to reinforce their claim by occupying at least a portion of the disputed territory.

A large area of saute has been cleared for food gardens, in addition to the cocoa blocks which have been planted. Permission to clear was in all instances given by the land controller, Nixon Kairembora. Swiddens have been cleared by members of Sambori (1), Jambapa (5), Konambo (1), Eupu (1),

Seseko (3). Cultivation rights to the land on which these swiddens have been made will from now on be vested in the lineages to which the individual gardeners belong.

One instance of change of residence as a result of these new clearings was noted. Three Jambapa brothers have built their homes on Jamberoda grassland near which they have cleared a swidden and planted food crops and cocoa. This is about $\frac{1}{2}$ mile south of Ononda village and well into disputed Yega/Ahora territory. These houses constitute the furthest extension of the emerging ribbon pattern of settlement developing along the Gona-Popondetta road; this hamlet typifies the Yega trend away from large nucleated settlement to a farmstead pattern in which homes are dispersed on or near the main garden and cash crop areas.

b) In March 1964, a group of 23 Yega men, only one of whom had been allocated a cocoa block at Ononda, decided to clear another large tract of saute which would then be divided equally among the participants in the scheme. The site chosen for this new block-type development was Berojou, near the southwestern Yega/Beuru boundary. This boundary has been declared by the Land Titles Commissioner, surveyed, and cement boundary posts placed in position. Though final siting arrangement for the individual blocks has not been completed, it is expected that blocks will be approximately 10 chains frontage by 20 chains depth. Frontages are double those of the Ononda blocks.

The Berojou scheme differs in two major respects from the earlier Yega Scheme at Ononda. Firstly, it is sited on land over which certain clans, Jambapa and Kurou, have recognised rights of allocation, and secondly, all members of the group concerned in the development are members of these two clans or have close affinal ties with them. Men related to Jambapa have been allocated blocks on Jambapa land, while men related to Kurou have been allocated blocks on Kurou land.

These relationships have been detailed to illustrate the method by which saute is traditionally cleared by the Yega. The close affinal tie is essential before a person can be invited to join such a group and clear saute belonging to another clan. (Table 46).

TABLE 46

Berojou cocoa blocks - relationship of non-Jambapa and non-Kurou
blockholders to right-holding clans

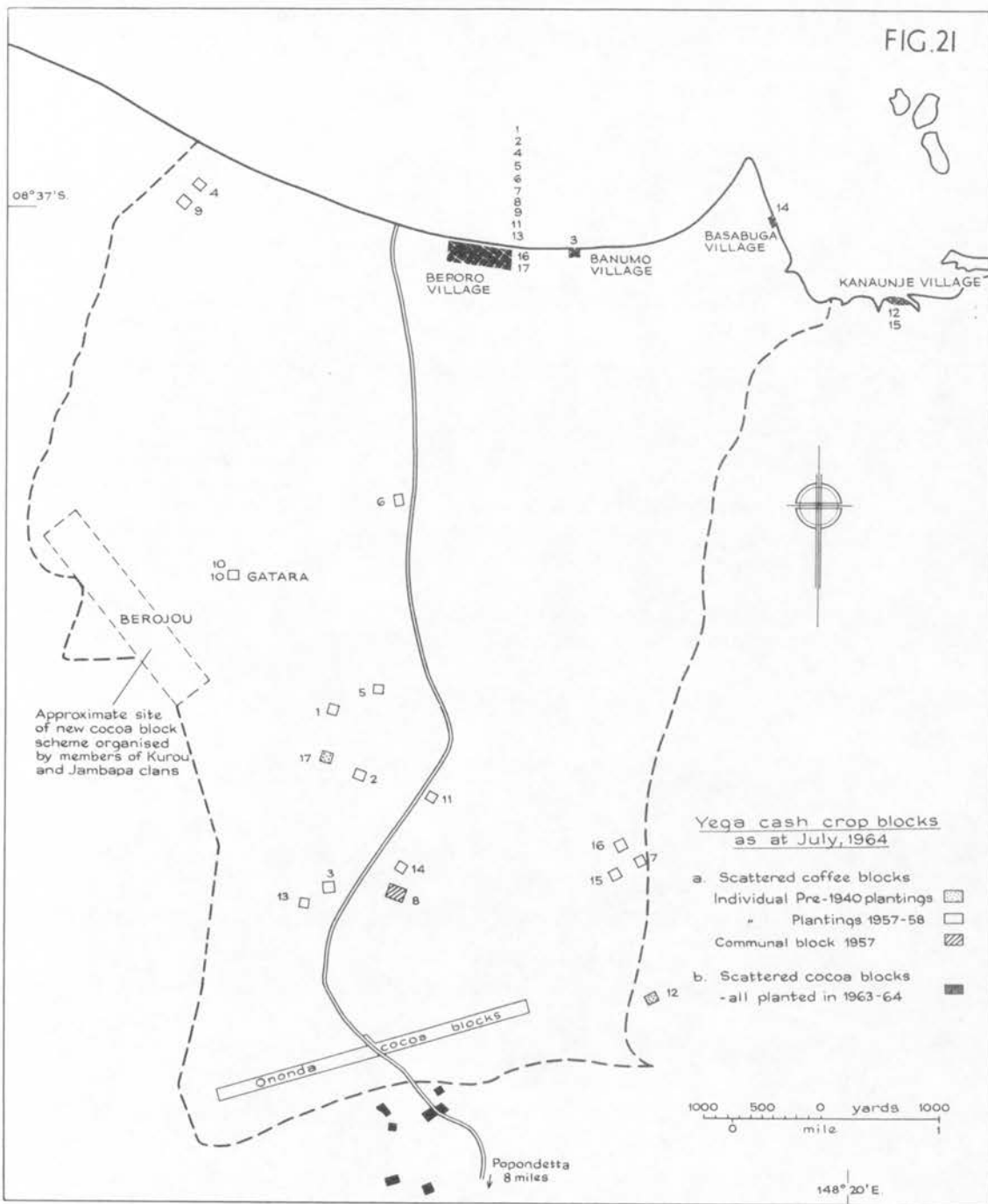
<u>Block No.</u>	<u>Name</u>	<u>Clan</u>	<u>Relationship</u>
4	Anskar	Seseko	Wife is Jambapa
8	Samson	Emoi	Mother is Jambapa
9	Faithful	Emoi	As for Samson
14	Byron	Sambori	Mother is Kurou
15	Winterford	Sambori	Mother is second wife of Newton, Winterford's father. Her first husband was Sambuba, a man of Kurou and her two sons by her first husband are members of Kurou. Winterford is therefore a half-brother of these Kurou men who regard him as a brother although he is of a different clan.
17	Newton	Sambori	Newton is Winterford's father (see above)
18	James	Sambori	Mother was Kurou
20	Clinton	Sambori	Father's sister married a Kurou man
21	Benson	Sambori	Brother of Byron, mother was Kurou woman
22	Maxwell	Sambori	Mother is Kurou

Work on this scheme had not progressed far at the time of observation because of unseasonable weather. Underbrush and small trees had been cut by each individual on his block, but it was decided to wait for dry weather before cutting the big trees by communal effort. When it is decided to complete this task all Yega will be invited to help. Helpers will be recompensed after the clearing of each block by a feast given by the blockholder and his family.

As with the Yega Scheme, the advice and help of D.A.S.F. Extension Service officers was requested and given. The site was inspected and an evaluation of soil suitability was made before the Yega made a start on clearing. However, although the layout of the Berojou blocks bears close resemblance to the Ononda blocks the availability of transport has not been considered. The blocks are a good half hours' walk along narrow footpaths from the Gona-Popondetta road which is the only motorable road in the vicinity.

FIG. 21 - Distribution of Yega cash crop plantings, July 1964.
Paired numerals indicate place of residence of holders
of coffee blocks, at time of planting. Blocks are not
drawn to scale.

FIG. 21



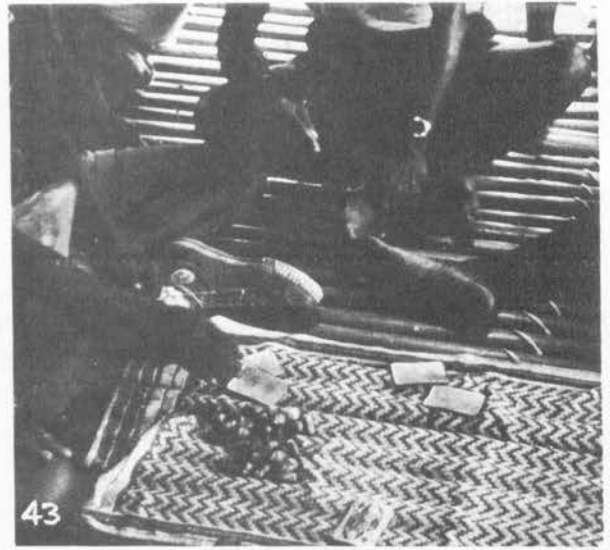
PLATES ILLUSTRATING

ASPECTS OF THE MONEY ECONOMY

- PLATE 39 - House in the new Port Moresby suburb of Hohola, occupied by a Yega man employed in the Public Service. The rent charged for such a house is 8/- per week.
- PLATE 40 - Communal water-point in Kaugeri, a Papuan suburb of Port Moresby, where several Yega families are living. Pipes are laid on top of the ground; the tap was askew and could not be turned off properly, resulting in a morass in which people stand to draw water.
- PLATE 41 - An educated Yega man addressing a village meeting; he has a responsible position in an Administration hospital and has recently been elected to a position of community leadership as Councillor on the Oro Bay Local Government Council.
- PLATE 42 - Modern transport facilities in Yega. The Gona-Popondetta road which had been repaired 3 months previously was impassable at this stage (Photo in December, 1962).
- PLATE 43 - A game of 'Lucky' in Beporo village. Here the stakes are areca (betel) nuts, but in games with outsiders the stakes are always cash.
- PLATE 44 - Scene in the old Popondetta market place. A new market was opened in July 1964.
- PLATE 45 - Issue of rebates at the Cape Killerton Co-operative store, December, 1962.
- PLATE 46 - Aerial view of the Yega Scheme cocoa blocks at Ononda. Note irregular growth of shade trees in centre and right foreground.

- PLATE 47 - Workers resting under cocoa shade trees at Ononda.
Cocoa trees 18 months old at time of photograph.
- PLATE 48 - Picking cocoa pods, July, 1964. Trees 4 years old.
- PLATE 49 - Selling 'wet' cocoa beans to European fermentary
representative from Popondetta.







The place of residence of people involved in the Berojou scheme varies. Most now live in the Konje area, one at Mumburada, one at Gatara, whilst 8 live in Beporo, and one even further away at Gombe. It is likely that the Beporo and Gombe people will move inland in the near future. There is at present no talk of establishing home sites in the vicinity of the new cocoa blocks at Berojou.

It is clear that the Yega pattern of land use is in a state of flux at the present time. Whilst the production of food crops by horticultural techniques remains a secure, though time-consuming, basis for the people's way of life, there is evidence of a continuing move towards the increased production of cash crops. The acreage of mature tree crops is still small relative to the size of the population, but the production of even a small financial return is proving a stimulus to increased plantings; at the same time, traditional attitudes towards land tenure are showing adaptation to the new requirements of cash cropping. Concurrent with, and largely resultant from, these changes in land use and land tenure, major modifications have occurred in the Yega settlement pattern. The chronological sequence of such changes is described in the following pages.

CHANGES IN THE YEGA SETTLEMENT PATTERN FROM
1950 TILL THE PRESENT DATE

Under the influence of rapid changes in land use, the location of Yega residences has radically changed in the 14 years since 1950. In 1950, the Yega lived in small coastal villages spread along 4 miles of coastline. In 1952-53, there occurred a major amalgamation of dwellings into Beporo Village. Members of all clans took part in this move. This consolidated settlement was maintained with little change until late in 1962, but since then there has been a strong and continuing trend towards dispersal. A 'ribbon' development is taking place along the Gona-Popondetta road; a small but growing nucleation has developed at Ononda (Figs. 23 and 24), while in the most radical departure from tradition yet seen, homes have been located on cash crop blocks at Binjapada (Fig. 26).

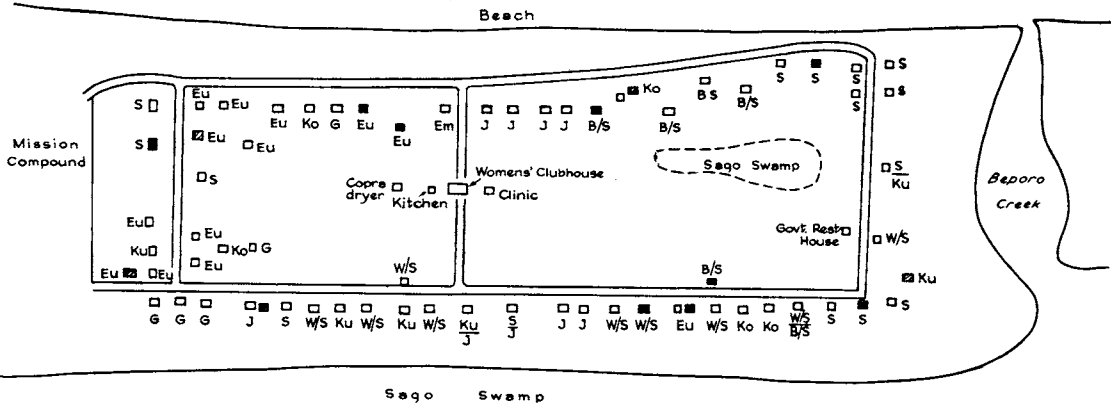
The consolidation of settlement in Beporo Village, 1952-53

An important side-effect of the co-operative movement which engaged the attention of the Yega between 1947-50 was the consolidation of settlement in a large village at Beporo; at the period of its greatest extent, Beporo was the home village of more than three-quarters of the Yega who remained on the tribal lands. Even at the time of my first stay in Beporo in late 1962 and early 1963, there were still 345 people living in Beporo. This number represents approximately 3/5ths of all Yega resident in tribal territory. Beporo had been, for many years, a small village sited on the west bank of Beporo Creek (Fig. 11). It was originally the home of members of the Beporo branch of Sambori clan and their wives and children. Beporo was the Yega village nearest the Anglican mission with its growing complex of social services, church, school and hospital.

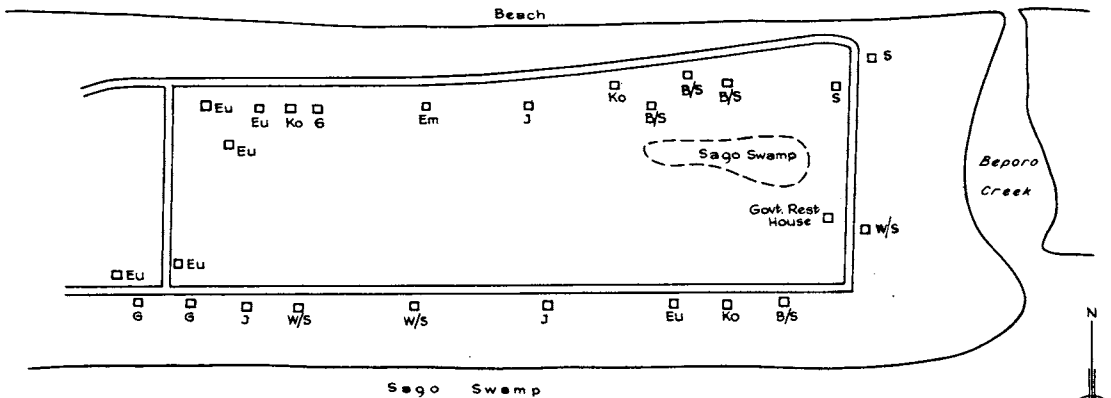
During the period of co-operative activity, not only was agricultural co-operation practised in the fields, but co-operative theory was preached as a Christian ideal in the churches and taught in the schools and training colleges of the Anglican mission. As part of this teaching, the practical advantages of living in a large community were advocated - the organisation of co-operation labour would be facilitated, women's and men's social clubs could function more satisfactorily, and schools and churches would be more easily accessible to greater numbers of people. In 1951 and 1952, two young educated men, Hannington Puimba, the Gona Mission clerk, and John Hunt Orewo, a school teacher, held meetings and personally visited the elders in all Yega villages to persuade them to come together in a large village at Beporo in order that they might enjoy the advantages of greater communal solidarity. Their efforts were successful for a number of reasons. Firstly, they were backed by the mission authorities whose work would be considerably facilitated by an amalgamation of the scattered villages into one large settlement close to the mission; they were also supported by the C.R.T.S. trainees who had been trained in co-operative theory and practice at the mission training college at Dogura; many of the younger

FIG. 22

Occupance - December, 1962



Occupance - July, 1964
(Deserted houses not shown)



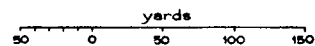
BEPORO VILLAGE

Changes in occupance, 1962 - 1964

Clan residence indicated thus -

- | | |
|-------------|-----------------------|
| S - Seseko | Beporo Sembori - B/S |
| Eu - Eupu | Waususu Sembori - W/S |
| J - Jembapa | Konambo - Ko |
| Em - Emoi | Gena - G |
| Ku - Kurou | |

- | | |
|------------------------------|---|
| Occupied dwellings | □ |
| Dwellings under construction | ▣ |
| Deserted dwellings | ■ |



married couples favoured the scheme which would make school attendance easier for their young children: finally, there was support from the elders who saw in the proposed amalgamation a return to the traditional village form (see Fig. 9) as it had been at Basabuga.

Accordingly, during the latter part of 1952 and continuing throughout 1953, people of all clans began building new houses in Beporo Village, following a rectangular plan laid out by the two young men (Fig.22). In the new village there was no strict allocation of sites to members of the various clans as had been the case in old Basabuga. There was a tendency for household heads to locate their homes near those of other clansmen and there was also a tendency to retain the same inter-clan relationships as had existed in the smaller villages (e.g. see on Fig. 22 the location of Kurou, Waususu Sambori and some Jambapa dwellings). Nevertheless, there was a breakdown in the previously tight control over the location of dwellings. Some household heads exercised this freedom by building away from their own clansmen but in close proximity to their cognatic kinsmen.

Settlement change resultant from coffee-planting.

The planting of coffee by Yega men on individual scattered blocks had little apparent effect upon the Yega settlement pattern. Only two men moved their places of residence as a result of their establishment of coffee blocks. One man of Sambori clan moved from Beporo and built an isolated homestead at Imangada; the other, a Jambapa man, moved from Beporo to Gatara, a distance of about 2 miles. One man stated that his reason for moving was simply to get away from Beporo and its round of obligations. The other man wanted to live near his coffee block in order to avoid walking time.

The importance of these changes of residence is that they set a precedent for the Yega. Until this time nobody had lived in isolation from the clan villages. Now two homesteads were established, as a result of cash cropping activities, in which Yega family heads and their wives and children were separated by distances of several miles from the villages of their kinsfolk.

Changes in the Yega settlement pattern since 1960

In 1960, almost all Yega, apart from those working away from home, still lived in coastal villages. Table 47 below shows the estimated distribution of population in 1960, compared with the distributions determined by personal interview in November 1962 and July 1964.

TABLE 47

Distribution of Yega population by villages 1960, 1962, 1964.
(For location of villages refer to Fig. 24)

<u>Village Name</u>	<u>1960 (estimated)*¹</u>	<u>November 1962</u>	<u>July 1964</u>
Surilai	60	52	61
Niniyanda	44	9	5
Kanaunje	15	17	11
Basabuga	17	19	14
Tarebosusu	7	10	Nil
Banumo	14	8	10
Gombe	19	15	19
Siumbago	9	13	Nil
Beporo	335	278	164
Gatara	6	6	6
Konje	Nil	6	97
Otobejare	Nil	8	13
Mumburada	Nil	17	55
Ononda (D.A.S.F.)* ²	1	5	1
Ononda	Nil	41	66
Binjapada	Nil	51	61
Jamberoda	Nil	Nil	15
Gona Mission	7	6	18
	534	561	616

*1 Calculated from a private census taken in 1964. Some degree of error is possible because of the movement of wage-paid employees and their families.

*2 D.A.S.F. indicates that these informants had made no attempt to build houses of their own but were using the facilities available at the D.A.S.F. Ononda Settlement.

FIG. 23

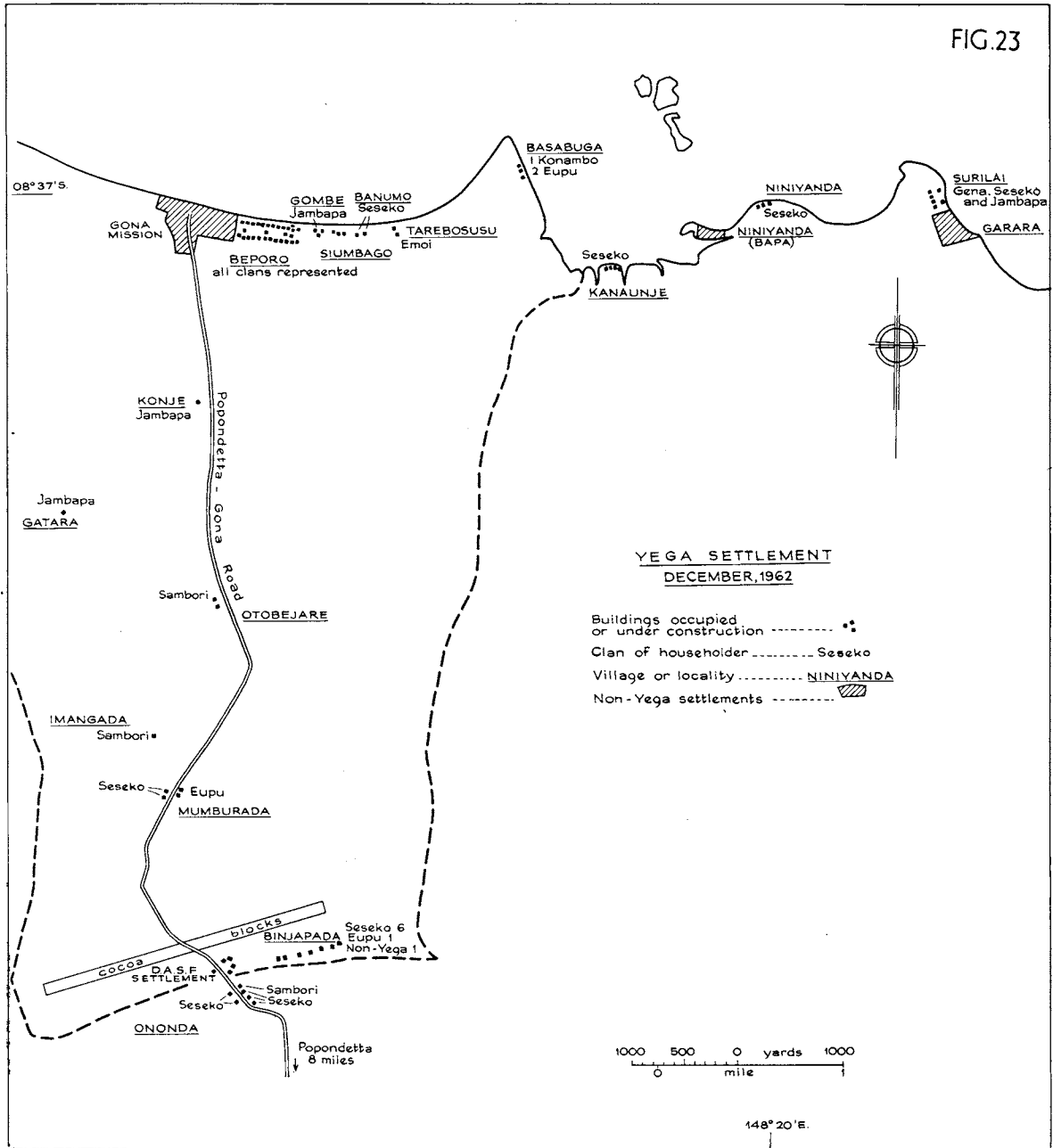


FIG. 24

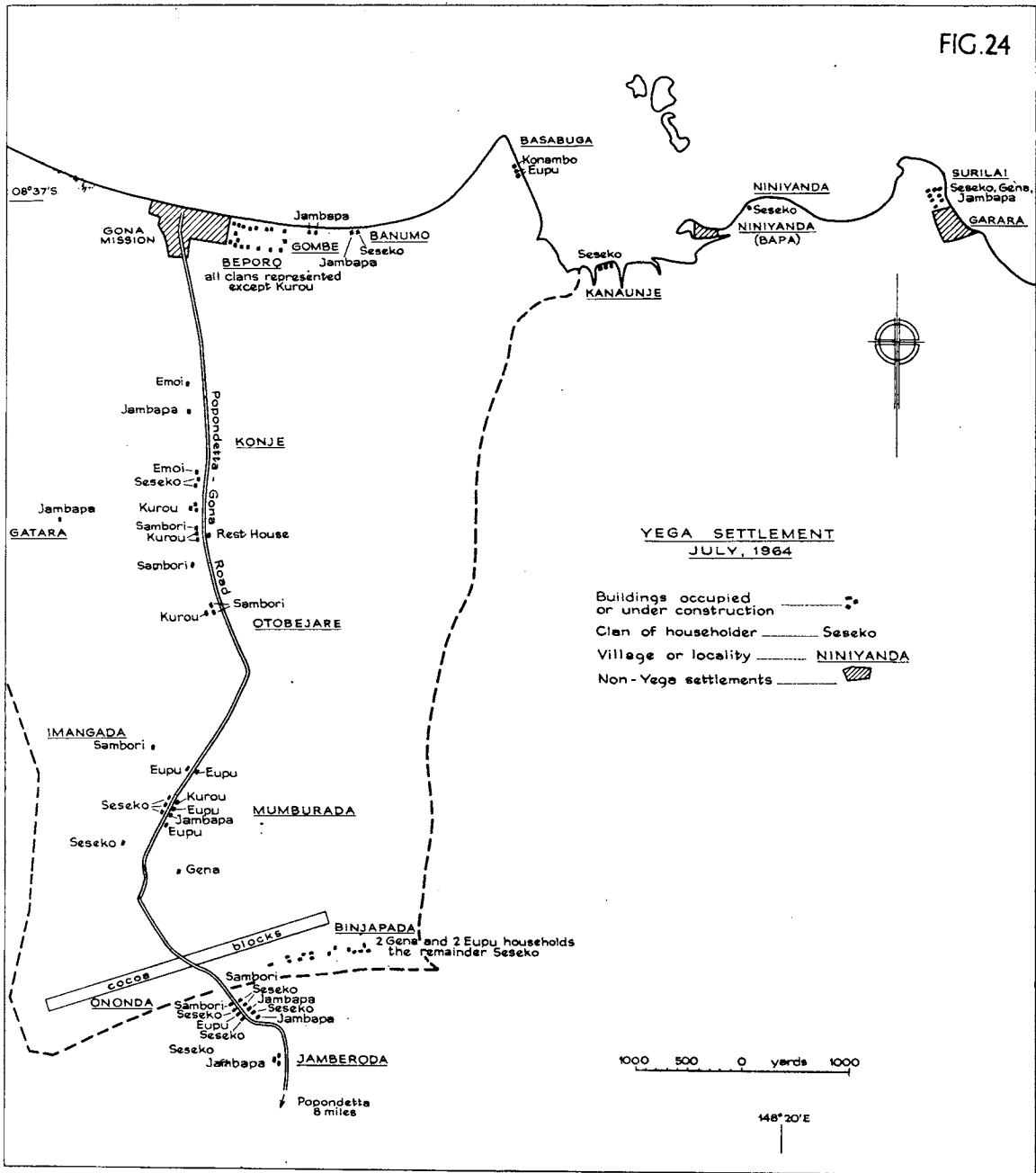


Table 47 illustrates the movement of people away from the nucleated coastal villages and the rapid increase in number and size of inland villages which followed the implementation of the Yega cocoa scheme in mid-1960. Two main reasons were given for this move inland by interviewees. The men who were allocated a cocoa block moved so that they would be closer to this new field of work, thus reducing time and effort which would otherwise be used in walking to and from the coastal villages; those who were not allocated blocks moved in order to remain near to their relatives.

The movement inland began immediately after the start of clearing the cocoa blocks. In July 1960, a young unmarried man of Seseke clan, moved from Beporo and took up residence in the D.A.S.F. Settlement. He was followed during the succeeding year by other Seseke members, many of them from Kanaunje and Niniyanda villages. These villages are furthest away from the cocoa blocks and, backed by swamps, have more difficult routes of access than other Yega villages further to the west. Convenient village sites were available for the newcomers on two patches of grassland known as Ononda and Binjapada (Ref. Fig. 23). Seseke clan claimed hunting rights to Binjapada and a Seseke lineage claimed cultivation rights to Ononda which had been used by Seseke members as a food garden some years previously. There was, therefore, no early dispute over building sites. Even when some members of clans other than Seseke¹ desired to move from the coast late in 1962 and early in 1963, they were allocated building sites on Seseke land in close proximity to the already-erected houses of Seseke members. The growth of Ononda and Binjapada villages is indicated in Table 48 below:

1. including even one non-Yega man.

TABLE 48

Analysis of permanent residents of new village of Ononda and Binjapada

a) as at 4th December, 1962

Informant	Clan	Marital Status	Village of birth	Village of last residence	Village of present residence	Period since move
1	Seseko	M	Kanaunje	Niniyanda	Binjapada	1 year
2	"	M	"	"	"	2 mths
3	Jambapa	M	Gombe	Beporo	Ononda	2 mths
4	Seseko	M	Kanaunje	Kanaunje	Binjapada	2 mths
5	"	M	"	"	"	2 mths
6*1	Andere	M	Old Garara	New Garara	"	2 mths
7	Seseko	M	Kanaunje	Kanaunje	"	2 mths
8	"	M	"	Surilai	"	1 week
9*2	"	S	"	Niniyanda	"	1 year
10	"	M	Banumo	Beporo	Ononda	2 mths
11	"	S	"	"	D.A.S.F.	1 year
12	"	S	"	"	"	2½ years
13	Kurou	S	Gombe	"	"	2 mths
14	Seseko	M	Kanaunje	"	Binjapada	2 years
15	"	M	"	"	Ononda	1 year
16	"	M	Banumo	"	"	2 mths
17	"	M	"	"	"	2 mths
18	"	M	"	"	"	2 mths
19	"	S	"	"	D.A.S.F.	1 year

b) persons who commenced building at Ononda and Binjapada between 4/12/62 and 31/1/63.

20	Seseko	M	Banumo	Banumo	Ononda	-
21	Sambori	M	Beporo	Beporo	"	-
22	Jambapa	M	"	"	"	-
23	"	M	"	"	"	-
24	Gena	M	Basabuga	"	Binjapada	-
25	Seseko	M	N/S	"	"	-
26	Eupu	M	Basabuga	Beporo	"	-

*1 Informant No. 6 is a non-Yega man who was accepted into the Seseko clan of Yega. He was allocated a cocoa block in the Ononda scheme and his son was adopted by a Seseko man from whom the boy could inherit land. At the time of my second visit to Yega in July-August 1964 this man had rejoined his own people and his block was re-allocated to a Yega man.

*2 Brother of informant No. 1, whom he helps. He is a deaf mute. Has not been allocated a cocoa block.

As already noted, with the formation of Beporo village, the earlier strict residential pattern of clan 'areas' or clan villages was relaxed. This process has reached a further stage in the new villages in which a man chooses his house site more from the point of view of convenience of access to his place of work than on the basis of his kinship ties. The overall effect of this trend is to produce a 'ribbon' pattern of settlement along the main Popondetta-Gona road, with a branch along the Binjapada track (Fig. 24).

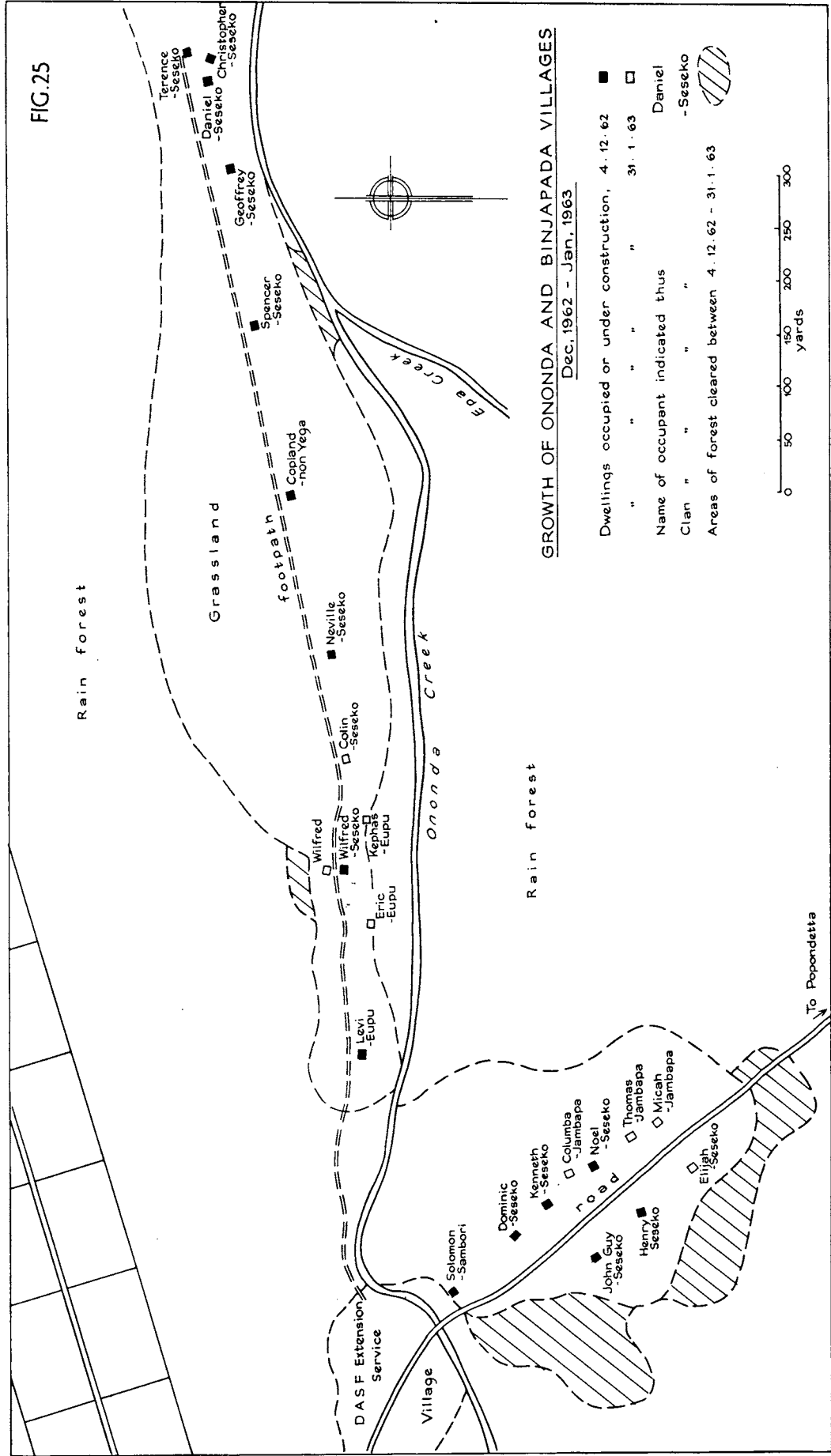
In the development of the new settlement pattern at Binjapada, the geographical location of an elongated grassland area lying roughly parallel to the cocoa blocks cannot be ignored. The absence of such a grassland area in the vicinity of the western section of the cocoa blocks is one of the main reasons why no similar 'ribbon' village has developed there. Holders of blocks in the western section have built their new homes either on the Ononda grassland or in smaller hamlets beside the Gona-Popondetta road at distances up to 2 miles from their blocks. Those who have built in Ononda are, in general, men who had no cultivation rights to garden land in close proximity to the cocoa blocks. Since establishing their homes in Ononda village, most of these villagers have cleared rain forest in the Ononda area, thus establishing their present and future cultivation rights to nearby areas of land. On the other hand, villagers who have established new homes along the road have, in most instances, built upon, or near to land over which they possess cultivation rights. With the men in this group, proximity to food gardens has been a powerful subsidiary reason for moving inland.

Proposed settlement change

Whereas most recent Yega settlement changes have been associated with land use changes, a recent proposed consolidation has been initiated by two entirely different factors. These are:

- a) The formation of the Oro Bay Local Government Council, and
- b) A misunderstanding on the part of the Yega elected councillor.

FIG. 25



GROWTH OF ONONDA AND BINJAPADA VILLAGES
 Dec. 1962 - Jan. 1963

- Dwellings occupied or under construction, 4. 12. 62
- " " " " 31. 1. 63
- Daniel
- -Seseko
- ▨ Areas of forest cleared between 4. 12. 62 - 31. 1. 63

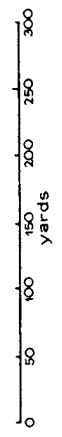
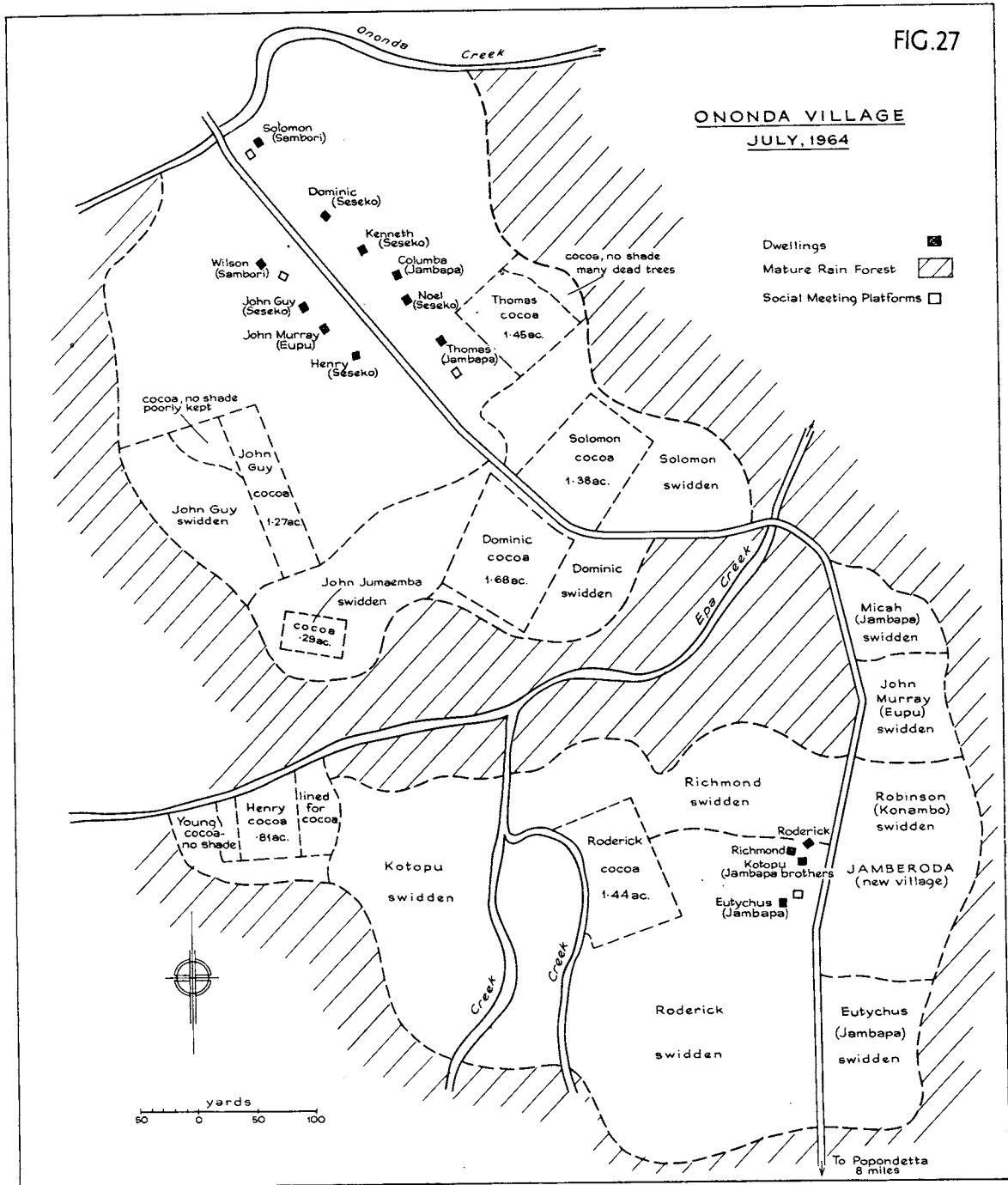


FIG.27

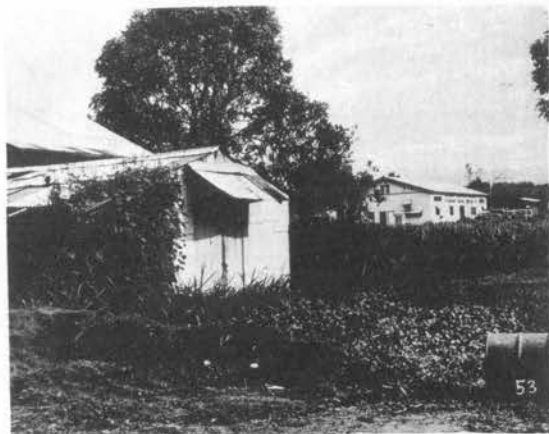
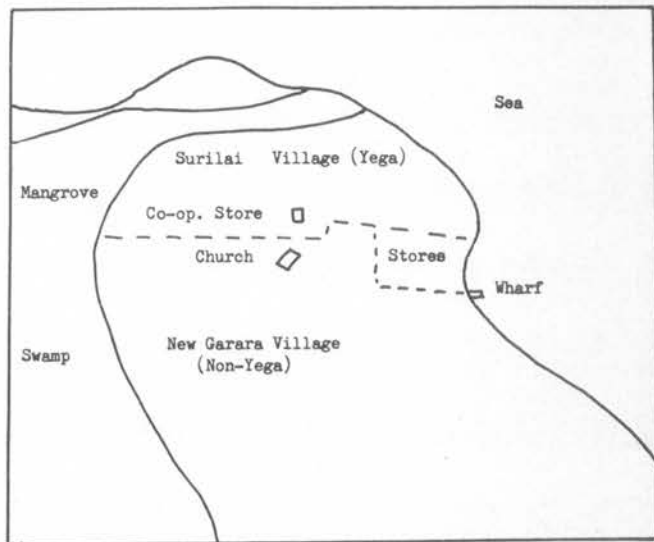
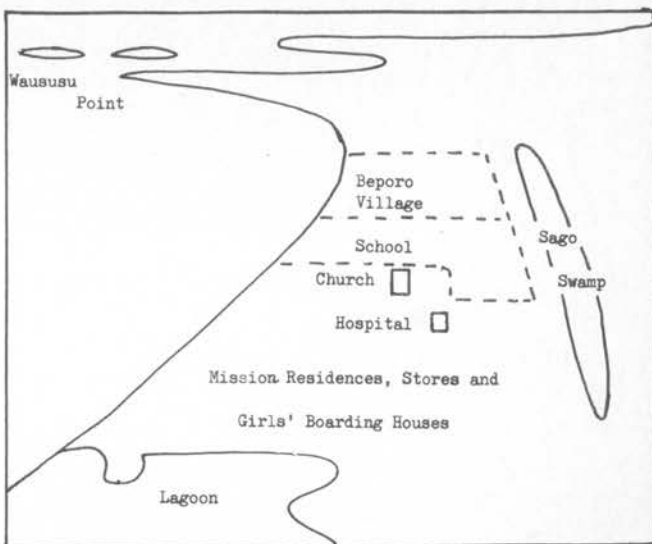
ONONDA VILLAGE
JULY, 1964

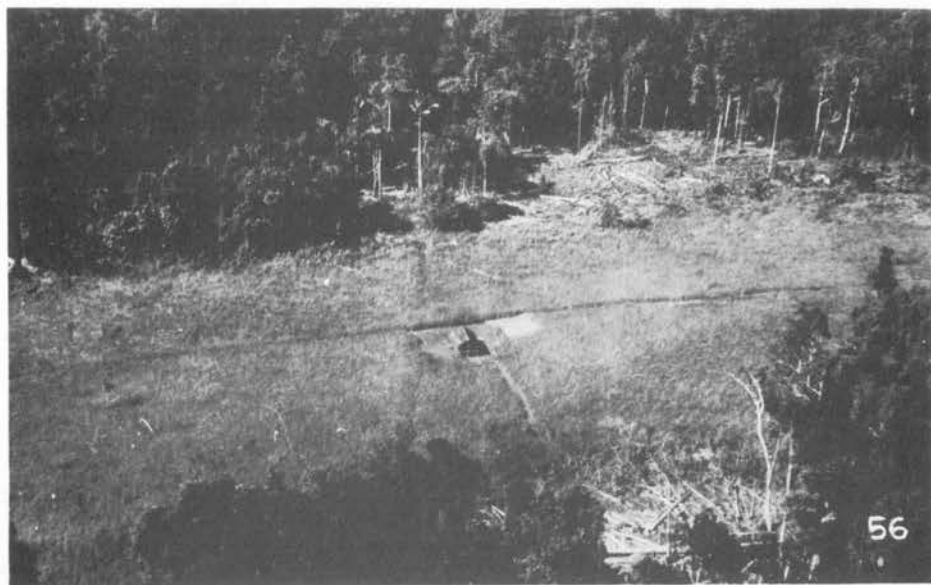
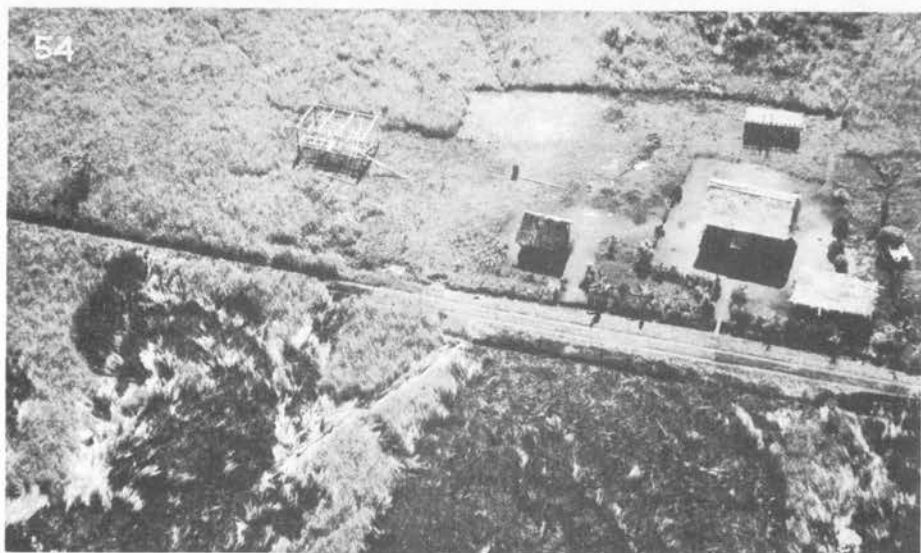


PLATES ILLUSTRATING

CHANGING SETTLEMENT PATTERNS

- PLATE 50 - (with identification diagram)
Aerial view showing close proximity of Beporo village to the social amenities provided by the Anglican Mission.
- PLATE 51 - (with identification diagram)
Aerial view of Surilai village, an outlying Yega settlement, isolated from other Yega villages and far from subsistence garden lands.
- PLATE 52 - Aerial view of Popondetta township, July 1964, showing the growth of 13 years - central and southern sections of township.
Left rear - D.C.'s office and Administration buildings.
Centre rear - Trade stores (first store in town is ringed).
Right rear - Trade stores and new hotel.
Left and central front - Early residential area.
Right front - Sports field and new residential area.
- PLATE 53 - Popondetta's first trade store opened C.1948 (ringed in Plate 52) with, at right rear, Steamships Trading Co. store presently operating.
- PLATE 54 - Hamlet at Otobejare, 2 miles south of Gona Mission, in December 1962. One dwelling occupied and two under construction. Area below road has been recently burned off.
- PLATE 55 - Hamlet at Mumburada, 3 miles south of Gona Mission, in December 1962. Hamlet established 18 months but coconut palms were planted 4 years earlier. Note areas of recently burned-off grass.
- PLATE 56 - Portion of Binjapada village, December 1962. House is located on extension of cocoa block. Cleared patches of saute are for food gardens.





The Oro Bay Local Government Council was proclaimed on 1st April, 1963. It covered the coastal area from Sanananda Point in the north to the Tufi sub-district boundary in the south; 4644 people (according to the 1963 census reports) were included in the Council area. Subsequently, the Council area was extended in June, 1964 (by proclamation dated 26/6/64) to include the coastal areas north of Sanananda Point to Iwaie near the Mambare River mouth. An additional 4612 people were thus included, bringing the total to 9256 for the whole area. The revised Council area extends along a strip of coastline approximately 80 miles long and 5 miles wide. It includes the entire Census Divisions of Pongani, Oro Bay, Gona and Dawari, as well as all Iawa-Buje except for two villages, Deunia and Dewaia. A large portion of the Buna Census Division previously excluded from the Higaturu Local Government Council area is also included in the Oro Bay Council area.* In addition, three Baruga villages of the Bariji Managalase and the village of Batari on the Kumusi have been included.

There are twenty-two elected councillors each representing an average of 420 people. The Beporo councillor will not represent all Yega, those at Surilai village being represented by the councillor for Garara village which adjoins Surilai. The Beporo electorate of 764 is, however, the largest in the Council area.

The election of councillors is by secret ballot. For the Yega there were two nominations. Each adult who attended the election meeting came individually to the A.D.O. Local Government and gave the name of his favoured candidate. This candidate's name was ticked on a ballot slip which was then placed in a ballot box. The Yega elected candidate received 126 of the 138 votes cast (total on roll 172 men, 66 women, over 17 years of age).

The priority task selected by the council in its works project is the improvement of village water supplies. An amount of £1285 has been budgeted for over a two year period for the installation of 16 wells of an improved design.

* The only Buna Census Division villages included in the Higaturu Council area are Inonda, Mosou, Ajora, Sewa, Bofu and Hohota.

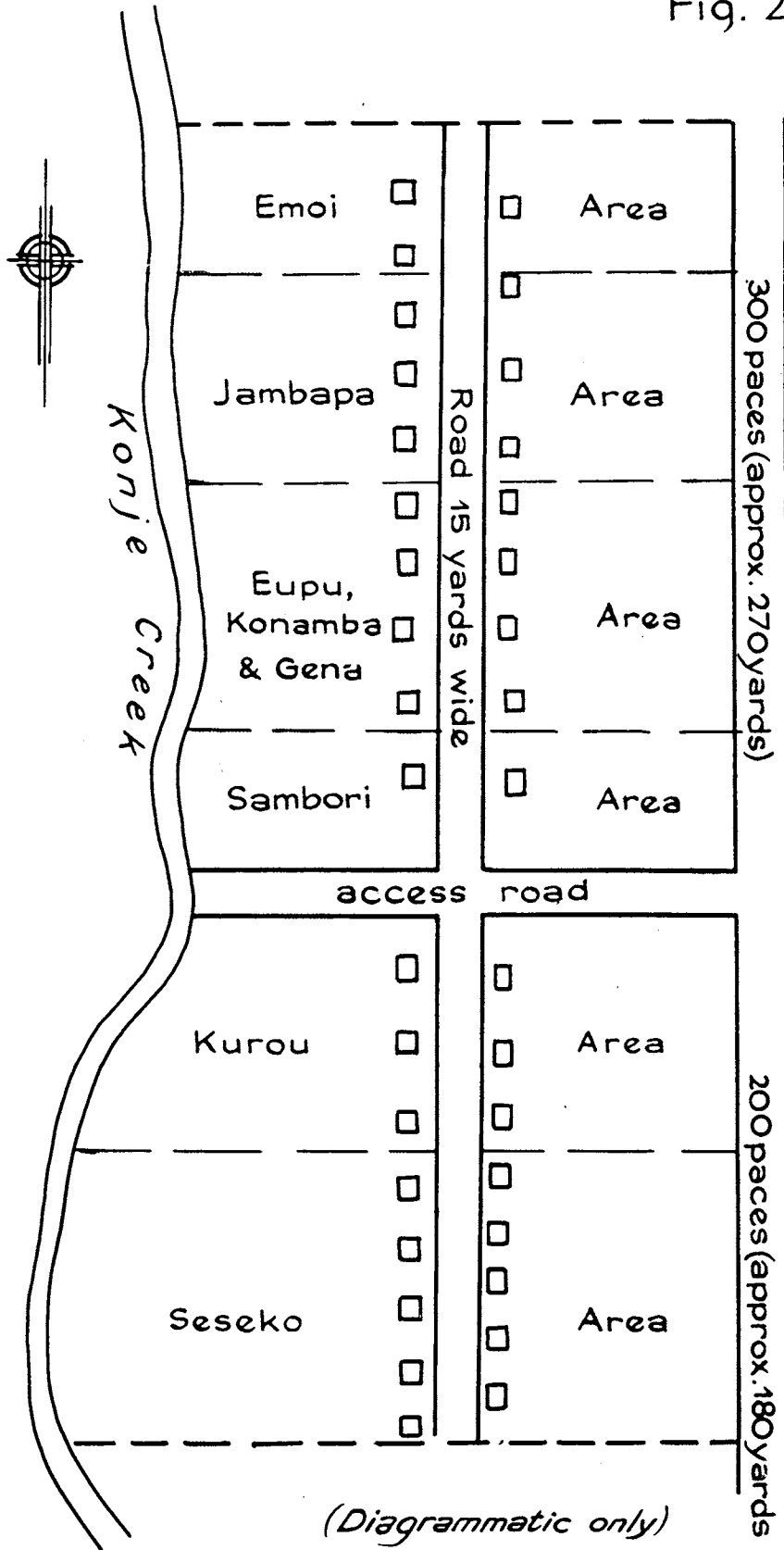
Beporo is one of the villages selected by the Council for installation of one of these wells, but many Yega people who once lived in Beporo have moved out to live in smaller villages and hamlets along the Popondetta-Gona road. This exodus has reduced the population of Beporo by half over the last 18 months. Beporo now has a semi-derelict appearance which is increased by the large area of long grass in the middle of the village. Cutting the grass was a tiresome task for the once large population. It is an impossible job for the reduced numbers. At a recent training course for new councillors held by the A.D.O. Local Government, the necessity for tidy and neat villages was stressed. The A.D.O. meant this teaching to be applied in cases like Beporo, by reducing the overall area of the village and concentrating houses in a smaller, more compact group which could then be more easily maintained. The Yega councillor, however, interpreted this teaching to mean that all people should live in compact villages. At a well-attended meeting of Yega people in Beporo village on 12th July, 1964, he put forward the proposition for a new consolidated village of the Beporo type to be built at Konje near the Gona-Popondetta road about $\frac{1}{2}$ mile inland. This suggestion aroused the antagonism of those Yega who have moved furthest inland, notably members of Seseke clan whose main food gardens are also well inland. Such people see a return nearer the coast as a retrograde step which would greatly increase their travelling time and reduce their effective working time for both food and cash crops. Many of them have said openly that they do not intend to move back to the Konje site. Instead, they plan to remain in their homes in Ononda and Binjapada villages and also enlarge the present hamlet at Mumburada, 3 miles from the coast.

The proposed plan (Fig. 28) indicates that the lesson of Beporo has been well learned. There is, in this new plan, no allowance for waste land in the centre of the village. A 15 yard roadway divides the two rows of houses, each house having 75-100 yards of kitchen garden and space for fruit trees behind it, towards the road or toward the creek. It may be noted also that there is a proposed return to the traditional village structure of clan areas within the general village boundary. By the

beginning of August when I returned from field work, a start had already been made on the new village; some grass had been cut and lines of poles erected to mark the areas allocated to each clan within the village boundary.

PROPOSED PLAN FOR NEW YEGA VILLAGE AT KONJE

Fig. 28



(Diagrammatic only)

CHAPTER IV

SUMMARY AND CONCLUSIONS

The Yega economy is in a state of transition. The stable traditional social system on which was based the system of land holdings, land use and settlement is coming under increasing pressure from the money economy. Change was gradual until about 1942 but, since then, the rate of change has accelerated sharply. The following summary emphasises this recent acceleration:

<u>Year</u>	<u>Land Use Changes</u>	<u>Settlement Changes</u>
C.1910-1915	Continual clearing of <u>saute</u> - expansion of <u>enda</u> subsistence garden areas.	Expansion east and west from Waususu Point, small nucleated coastal villages.
1942	Gardens derelict for 2 years	All buildings destroyed.
1944-45	Nil	Re-establishment of settlement on pre-war sites.
1946-52	Co-operative agriculture. <u>Saute</u> cleared in several areas, and used for co-operative production of crops.	Nil.
1952-53	Nil.	Consolidation of settlement at Beporo. Approx. $\frac{3}{4}$ of tribe affected.
1957-58	Coffee planting on scattered blocks of <u>enda</u> .	Two isolated homesteads established.
1960	Beginning of cocoa planting in contiguous blocks - the Yega Scheme. <u>Saute</u> cleared for these blocks.	Nil.
1961	Nil.	Beginnings of dispersal of settlement to new inland sites.
1962	<u>Saute</u> cleared for food gardens in proximity to new villages.	Move to inland sites gathers momentum. 'Ribbon' development along Gona-Popondetta road and at Binjapada. First location of homestead on cocoa block.
1963	Additional cocoa planting, scattered blocks, clearing of <u>saute</u> for food gardens, continued.	Extension of 'ribbon' development along road, at Jamberoda and Konje.
1964	Genesis of Berojou (contiguous cocoa blocks) scheme,	Re-consolidation in large village mooted - site proposed Konje, $\frac{1}{2}$ mile inland.

During the period between European contact and the second world war, most changes in Yega settlement were related to such factors as the imposition of the Pax Britannica, an expanding population, and the development of increasing cognatic kinship ties between certain clans. Land use changes during this period were confined to the extension of enda by the clearing of saute, thus bringing additional areas into the land rotation cycle, to keep pace with an expanding population. With the imposition of law and order, saute could be cleared at greater distances from the village than was possible during the days of tribal warfare; the custom also developed of building temporary houses on the garden sites and living in them for several days at a time. The only divergence from a purely subsistence horticultural routine was the obligatory planting of coconuts along the coastal beach ridges; there is no evidence that any cash income was obtained from these coconuts in spite of Administration powers of enforcement.

After the second world war, two co-operative agricultural schemes, controlled in one instance by the mission, and in the other by a private group of Yega villagers, both failed for different reasons which have been explained previously. As a result, however, of the 5 years indoctrination in co-operative theory and practice, a majority of the Yega agreed, in 1952-53, to consolidate their scattered villages into one large nucleated village. This village was sited at Beporo in close proximity to the Anglican mission station. Although the consolidation of settlement at Beporo occurred some time after the cessation of co-operative agricultural activities, it was, nevertheless, a direct outcome of the radical change in Yega land technology which characterised that experiment.

Numerically minor, but intrinsically major, changes occurred with the planting of scattered coffee blocks in 1957-58. Firstly, some areas of enda land were removed from the land rotation cycle and planted with semi-permanent tree crops. At the same time two family heads and their wives and children broke with Yega tradition, left the village compound

and established isolated homesteads near their coffee blocks.

The implementation of the Yega Scheme has led to important departures from traditional practices. The clearing of saute for planting blocks with permanent tree crops whose produce is to be sold for cash is a radical departure from traditional Yega land usage. The Yega Scheme incorporates traditional principles of land tenure and work organisation but modifications have been made to meet the changed circumstances of Papua today. Features of traditional culture are:

- i) The employment of communal labour during the process of clearing the forest, and the subdivision of the cleared area among those who helped in the work;
- ii) The absence of any documentary record of the transference of rights to individual right holders;¹
- iii) The organisation of group labour for certain tasks even though recruitment of members may not necessarily be based on purely traditional criteria;
- iv) The strong desire on the part of individual members of extended families each to have personal control of a piece of land and of the trees of economic value on that land.

The aspects which have little precedent in traditional custom and which result from the acceptance of new principles are:

- i) The systematic lay-out of blocks;
- ii) The production of crops specifically for the purpose of sale for cash;
- iii) The supervision and guidance of Agricultural Extension officers and workers, most of whom had no kinship ties with the Yega;
- iv) The setting aside of a block of land near the road as a site for a fermentary which, it is envisaged, will be run as a co-operative;
- v) The provision for the location of a blockholder's dwelling on the block itself rather than in a village.

The value of the Yega Scheme is seen to be this combination of old and new which has been achieved by basing the scheme on traditional precedents

1. This traditional feature, present at the outset of the Yega Scheme, will be inapplicable when registration of blocks under the Land (Tenure Conversion) Ordinance 1963, is completed.

in so far as they are appropriate and incorporating innovations were necessary. The main innovations are organisational and technological - involving new crops, new husbandry techniques, new processing methods and equipment. There has been an increase in some forms of group activity, for example, bush clearing by all the Yega, (whereas bush clearing was traditionally carried out by sub-clan groups) and the proposed co-operative fermentary and marketing facilities. On the other hand, a greater dispersal of residence and the adoption of new mores have been responsible for some diminution of traditional forms of group activity. In pre-contact times the family was the basic unit for garden work but larger groups formed for other activities. Now, with the addition of cash crops, agricultural work takes more time and many of the larger groups for fishing, hunting and social activities have atrophied.

The rights of the individual in cash cropping land will become more definite relative to those of the sub-clan and tribe. Whereas food gardens are held by individuals or small descent groups and rights at this level are flexible due to rapid demographic changes and the system of land rotation, cocoa is a relatively permanent crop and the planter will be associated all his life with the land on which the trees are planted. With change in the legal status of the land now possible it is apparent that the rights of the social group to the cash crop lands are certain to diminish in favour of individual rights.

The Yega cocoa-planting Scheme has had very far-reaching effects upon the settlement pattern. The Yega have broken tradition completely by moving inland away from the coast in large numbers; the traditional location of residence in close proximity to other agnatic kin, already weakened in Beporo, has become less important, in some instances being completely disregarded; the pattern of residence as mapped on Figs. 23, 24, 25, 26 showing tendencies toward 'ribbon' development and particularly towards dispersal of homesteads, varies markedly from traditional forms. Most significant of all variations from tradition is the trend noted on Fig. 26

for cocoa blockholders to locate their homesteads on the potential extensions to their blocks. With registration of individual title to the blocks it seems reasonably likely that this rational trend will continue.

The rapid expansion of cash cropping by scattered plantings of cocoa in the vicinity of Ononda village and the initiation of additional contiguous blocks at Berojou is an indication of the increasing measure of Yega involvement in the money economy; to date there has been no move by the villagers concerned with the Berojou blocks to locate their homes nearer the blocks, though three other families have settled at Jamberoda, half-a-mile south of Ononda on the Popondetta road, well within the territory disputed by the Ahora.

Finally, the recent proposal for a re-amalgamation of residence by all the Yega at Konje diverges from recent trends in that it is not based upon economic considerations, it does not have the support of the Administration and it commands only half-hearted support among the Yega themselves; numbers are, in fact, quite antipathetic towards the proposal. It is, therefore, considered to have little chance of wide acceptance leading to the kind of rapid extension which has characterised other recent spontaneous settlement changes more rationally based, as they have been, on changes in land use.

The settlement pattern is presently in a state of instability. Radical changes have taken place in the recent past, mainly as a result of economic development, and if the trend towards dispersion continues, a pattern of farmsteads set in consolidated, individual holdings may well replace today's villages and hamlets with their fragmented widely scattered land holdings.

APPENDIX A.

CLIMATE STATISTICS FOR POPONDETTA, T. P. N. G.

(Source, Commonwealth Bureau of Meteorology Melbourne).

1. Rainfall, Monthly totals (Points)

Year	Jan.	Feb.	Mar.	Apr.	May	Jne	Jly	Aug	Sep.	Oct.	Nov.	Dec.	Total
1954	-	-	-	-	-	-	-	-	724	617	1613	918	
1955	758	1205	211	654	623	-	297	185	655	490	1978	1026	
1956	831	835	556	650	116	208	210	323	-	-	-	-	
1957	-	-	1740	836	398	306	191	390	550	1060	702	1682	
1958	1909	424	1415	1309	477	646	211	198	586	1010	1061	1237	10483
1959	898	1636	982	1209	829	661	384	77	808	464	1010	1298	10256
1960	1301	1062	1161	1230	341	487	261	870	326	897	1227	1066	10211
1961	2042	720	698	1480	712	825	350	227	593	1179	630	1464	10920
1962	337	821	1058	831	602	819	728	368	769	361	1249	1572	9515
1963	240	152	1121	191	335	358	33	456	1040	919	826	1327	6998
1964	2020	953	-	-	-	-	874	626	783				
Means	1149	868	994	932	493	539	354	372	703	777	1144	1288	9613

APPENDIX A. (Cont.)

3. Temperatures. Mean Maximums and Mean Minimums (in degrees F.)

	Jan.	Feb.	Mar.	Apr.	May	Jne	Jly	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Avg. Max. Temp. (51-'56)	87.8	88.2	87.4	86.9	87.6	87.4	85.7	87.1	87.7	88.4	87.9	87.7	87.5
No. of years of Age -	3	4	3	3	3	3	3	2	3	4	4	3	
Mean Max. Temp. of 1962	91.0	89.4	88.6	86.0	87.7	86.2	86.2	87.6	86.4	90.2	89.2	88.9	88.1
" " " 1963	91.6	93.1	89.4	89.4	89.4	87.1	87.4	87.4	87.2	86.6	89.1	89.0	88.9
Avg. Min. Temp. (51-'56)	70.8	70.9	71.0	70.3	68.0	67.3	67.2	67.1	68.4	69.1	70.0	70.5	69.2
No. of years of Avege.	3	4	3	3	3	3	3	2	3	4	4	2	
Mean Min. Temp. 1962	72.7	72.7	71.9	71.1	71.2	69.6	69.8	69.4	70.0	71.2	70.8	71.8	71.0
" " " 1963	71.0	73.4	72.3	70.1	70.7	69.8	68.5	70.3	70.3	70.3	70.3	70.6	70.6

APPENDIX B ADMINISTRATION CENSUS TECHNIQUE

The method used by the Administration in collecting census data is briefly as follows. Each district is divided into a number of sub-districts. Within the Northern District there are 3 such sub-districts; Popondetta, Kokoda and Tufi, and one Patrol Post at Ioma. In each sub-district is a number of census divisions¹: within each census division are a number of census points, usually the major villages. An officer of the Department of Native Affairs makes an annual patrol round the census points in each census division; information concerning births, deaths, migration, absence from the village and labour potential is entered on Village Population Register forms. While possessing many advantages, this system also has several drawbacks and limitations.

i) The census divisions are not accurately demarcated areas. The local Administrative officers are familiar with the names of the villages located in each census division, but the boundary lines shown on the Village Directory location maps do not attempt to represent the boundaries of land controlled by the villages concerned. Clearly, any attempt, based upon the areas given in the Village Directory, to calculate the population densities of the census divisions is liable to wide error.

ii) Because of various exigencies, particularly concerning staffing, which arise from time to time at the District headquarters, all census divisions may not necessarily be censused every year; incomplete date results.

iii) When several small tribal groups live in close proximity in one census division as do the Bapa, Gona, Yega, Andere and Kuroro in the Gona Census Division, no attempt is made to census the different groups separately. Apart from conducting a private census, there is therefore no way of determining from Government records the exact numbers or components of any one group of people.

1. Names, boundaries and populations of the census divisions are given in the Village Directory 1960, produced by the Department of Native Affairs, Konedobu, Port Moresby.

APPENDIX CFOOD SUPPLY, ANGLICAN MISSION, GONA

(as at 31st January, 1963)

The present rationed Mission staff is:

Europeans	5
Papuans - including teachers medical staff, pastoral staff trainees and school boarders	<u>90</u>
Total	<u>95</u>

The ration scale is calculated on the basis of -

1 lb rice per person per day, OR
4 lbs vegetables per person per day.

On the average, 4 days' rations of rice and 3 days' rations of vegetables are supplied each week by the mission; therefore weekly requirements are:

Rice	-	95 x 4 x 1	=	380 lbs/week
Vegetables	-	95 x 3 x 4	=	1140 lbs/week

The rice is distributed free by the mission. Each non-boarding school child is expected to bring one vegetable per week. This provides approximately 300 lbs vegetables per week. The remaining 840 lbs per week must be provided by means of barter (ori).

In order to obtain food by barter, parties of teachers and schoolboys visit three local areas twice weekly, as follows:

<u>Village</u>	<u>Tribe</u>	<u>Visits</u>
Beporo village (and other new villages along the Gona-Popondetta road)	Yega	Tuesdays and Fridays
Gona	Jajora	Tuesdays and Thursdays
Kurou	Bapa	Mondays and Wednesdays.

The mission party takes sacks, scales and a supply of trade goods such as salt, fish hooks, needles, tobacco, matches and razor blades. Vegetables offered by householders are weighed and the desired goods given in exchange. The approximate rate of exchange on which the mission operates is one penny per pound weight of vegetables. Approximately half the food required is obtained from Yega villages.

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