

GILBERT & ELLICE ISLANDS

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Line Islands Expedition

AUGUST—OCTOBER 1974

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G.H. BALAZS

Scientific Expedition of the

Line Islands

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(By Minister of Natural Resources)

It was unfortunate that at short notice the zoologists, botanists and biologists (including Dr. Helfrich) were not able to join the team. Only two scientists joined from abroad, Dr H Grossman from Hamburg doing research work into diseases carried by sea birds and Mr W. Cooke, a graduate student from the University of Hawaii dealing with corals. Birds and corals may be of some long term benefit to us, but I cannot see any immediate commercial interest that would result from these researches. Our own men consisted of the Chief Agricultural Officer, Fisheries Development Officer Line Islands and Master R.C.S. "Teraaka". Team members reports are included with this report. The Secretary Natural Resources, Mr. R.E.N. Smith, took over as Leader of the expedition in Apia, Western Samoa.

Washington and Fanning

The party spent a day on each island on the first call. The two islands were examined and the following data collected:

	<u>Washington</u>	<u>Fanning</u>
<u>Population Total</u>	430	386
<u>Labour</u>	77	72
<u>Average Total</u>	3494	8528
<u>Coconut Areas</u>	2103	3122
<u>Copra Production</u>	1000 tons average p.a. since 1937	550 tons average p.a.
<u>Rainfall</u>	120" average	77" average
<u>Airstrip</u>	reefnud	nil
<u>Shipping</u>	2 Bank Line p.a. 3 G. & E ships p.a.	2 Bank Line p.a. 3 G&E ships p.a.

Washington has a high level of copra production (0.5 tons/acre) because of high rainfall and peat soil. The palm regenerate continuously, so that there is a continuous involuntary "replanting" programme.

On Fanning Island palms were mostly planted between 1890 and 1923 (a total of 2397 acres), the other 725 acres having been planted in the 1950's. Thus most of the palms on Fanning are very old indeed and they are the cause of the low overall copra yield. In the past Fanning used to average 1000 tons of copra every year - but this has now declined with the increasing age of the palms. The Manager has proposed a replanting scheme to Burns Philp Ltd.

There was no information collected about the plantations' assets and liabilities and their profitability or otherwise. The accounts of both plantations are kept in the Sydney office. One could imagine, however, that substantial profits are reaped during good years with peak prices and that adequate financial provisions are made for the bad years. The Fanning Island Plantation Balance Sheet for the year ended 30th June, 1969, (five years ago) revealed that the company made a profit of \$105,531, after payment of dividends of \$40,000 to shareholders.

The real issue about these two islands is the mystery over their ownership and sovereignty. The situation as I understand it that Burns Philp Ltd (in the form of Fanning Islands Plantation) has a freehold on both Washington and Fanning, but the two islands are subject to the laws and jurisdiction of the Gilbert and Ellice Islands. It is perhaps more clear to put it this way: Fanning and Washington are an integral part of the territory of the Gilbert and Ellice Islands but the lands are owned by a foreign company.

I recommend that we should now move fast and acquire the lands and all properties of Burns Philp Ltd. on the two islands. The following methods of acquisitions are recommended:

1. The Copra Board's exclusive right under the Ordinance to purchase and export all copra produced in the territory has never been applied to commercial plantations. We can subject the plantations to this legal requirement referred to above which may in turn prompt the company to sell out with us having the better part of the bargain.
2. We enact legislation for lands in the Line Group on the lines of the Gilbert Islands Lands Code and then effect transfer of lands under the code.
3. Out right nationalisation.

4. Arrangement by negotiations.

I suggest we start with 4 and must involve the Australian Government. The Labour in Australia has been very sympathetic to cases of this nature. It has recently returned Australian state - controlled lands in the New Hebrides. The case of Fanning and Washington is slightly different because they are owned by an Australian private company. However, the involvement of the Australian Government will not only put pressure on Burn Philp but it may agree on request to compensate the company for the loss of its assets under some aid programme. Negotiations should not be made by correspondence. I suggest that arrangements should now be made for the Minister of State and some assistants to carry out direct negotiations with the company and government officials in Australia. The Minister and his team should be well briefed about the whole history of the plantations. Actions 1, 2 and 3 may apply only in the event of unsuccessful negotiations.

After acquisition we may decide:

1. to continue to operate the plantations on commercial lines by a private company, a co-operative society or a statutory body or
2. resettle people permanently, giving preference to people already there and the landless throughout the territory. In this case copra production will have to be done on a subsistence basis as it is the case in the Gilbert and Ellice groups.

Resettlement

If resettlement is preferred the following factors should bear in mind: Washington is about the size of Butaritari in land area. Its heavy rainfall and peat soil allow a variety of crops (breadfruit, babai, taro, sweet potato, banana, etc) to grow well. The would-be presence of some organised agricultural

programmes (including livestock) will help to even more improve production to support say a population of some 3000 people. Fish, both pelagic and in the lakes are in abundance, Fanning is only a few acres smaller than both Tabiteueas put together, but has a better rainfall on average. Naturally crops grow less well than their counterparts on Washington, but certainly a lot better than the drought-stricken islands in the Southern Gilberts. Taking Southern Gilbert standards and given improvement through agricultural development, this island can support an even larger population. Its spacious lagoon is rich in fish of all kinds not to mention its pelagic stocks.

Against these one has to take account of the islands' isolation and poor communications with Tarawa and elsewhere. The present rate of ship calls is completely inadequate, and unless the situation improves with the establishment of commercial venture on Christmas and in the Line generally, care must be taken not to over-stock the islands with people.

Canton & Enderbury

On the question of sovereignty I feel that we cannot treat Washington and Fanning in isolation from Canton and Enderbury. The case of Canton and Enderbury is rather like the controversial case of the New Hebrides, which is jointly controlled by the British and French. Canton and Enderbury are jointly administered by G & E and the U.S.

I don't think the U.S. would ever dream of hanging on to its claim to the two islands and risk considerable damage to its international image if we were to make an issue of this. As well as Fanning and Washington we must get the Canton and Enderbury controversy settled as fast as we can.

Christmas Island

I do not propose to devote much space to Christmas Island, Team members' report will provide information about agriculture, fisheries, etc. Further more plans for Christmas Island are currently being handled, widely and everyone is in a better picture of what is going on there.

The brine shrimps thrive in the saline lakes with very little capital investment and work involved. By chance I happened to meet Dr. Helfrich who attended the S.P.C. Conference in Rarotonga as representative of the Rockefeller Foundation in the Pacific region. I understand he is leaving the University of Hawaii but has continued his interest in the Brine Shrimp project. He was pleased with the importance we attach to this project. He keeps in constant contact with the G.M. and D.M. of the Development Authority and is very impressed with their effort so far.

What Christmas Island need is a development package. No one denies this. I understand U.K. aid funds are being sought to finance a survey of the infrastructure required to support the various proposed ventures on the island. So far as I know the ventures proposed under the package are as follows:

brine shrimp, big sports fishing, tourism, rock lobsters, lagoon fish, deep sea and pelagic stocks enterprises. Plans for the first 4 projects--including the survey of the infrastructure and the necessary communication net work are being carried out by the Development Authority. The rest of the projects listed are being handled by the Fisheries Survey Unit under my Ministry. The Unit has collected considerable data on the tuna resource and the consultants from London thought the information would attract foreign investment. We have since approached a number of foreign fishing companies but have had a negative reply, even from those who are already operating in the Pacific area. A tuna enterprise would be a major contributor to the Christmas Island package, but we are stuck with this project to the disappointment of everyone, not least the Fisheries staff both on Christmas Island and Betio. I have arranged to call a meeting of all parties concerned to discuss not only fisheries (how to exploit the tuna resource primarily) but also the overall Christmas Island development strategy. The longer we wait the better it would be for foreign fishing vessels which are operating in the area.

Southern Line

Five islands in the Southern Line have recently become part of the territory of the Gilbert and Ellice Islands, and for the first time they were officially visited during this trip.

Scientific and other data are provided in the team members' reports. I shall dwell here on general observations only.

Malden & Starbuck

These two islands are coral reef islands. They are fairly big by coral island standard, but the vegetation consist only of dying grass and beach shrub. The absence of trees is enough evidence of the islands being very dry and are subject to long periods of drought, perhaps more severe than conditions in the Southern Gilberts.

Colonies of birds of various species live and nest on the islands. For detailed information see Dr. Grossman's report. Pelagic fish are in abundance as well as shallow reef stocks. Clam shells and "Tenmatanen/Alili" are found in limited numbers. Lobster resource particularly at Starbuck, according to Capt. Watt, equals that of Christmas (see Capt. W. Report). Both islands are unsuitable for settlement.

Vostock

Vostock, a coral reef island is about half the size of Niulakita. The island is thickly wooded with tall "puka" trees and salt bush. Birds of all kinds nest on the trees and on the ground around the ocean side (see Dr. Grossman's report). Fish, both pelagic and shallow reef stocks, are in abundance. Crayfish - not much (see the Watt report).

Vostock is a nice little island which could support an extended family, but the absence of any edible crop on the island and its isolation makes it unsuitable for settlement at the moment.

Caroline

The island is a typical atoll of rare beauty. The lagoon is surrounded by islets and reef passages. On two of the larger islets grow coconut palms of varying ages (see Mr. Vicker's report on vegetation and soil). Coconut crabs are found everywhere.

Fish in the lagoon are not only numerous but tame. Clam shells of varying sizes live on coral heads in the lagoon in fantastic numbers. Turtles breed here as well. (see Watt's report on marine resources).

Colonies of birds concentrate on two islets. (see Dr. Grossmann's report).

Judging from the vegetation I don't think Caroline gets very much rain water. Underground water was not tested but I think it should prove favourable.

With all the surrounding islets planted with coconut trees, Caroline could absorb the present population of Aranuka and still maintain a higher standard of living purely on a subsistence level. Permanent settlement is not recommended for reasons given below.

Urgent

Vostock, Caroline and Flint, the best of the Southern Line, were leased to an American, Omer Darr, from the Western Pacific High Commission for 25 years beginning in November, 1964 to 1989. Since then the islands have been given to us and are now an integral part of the Gilbert and Ellice Islands. The half-yearly rent is £stg 87.50. The lessee employs Tahitians to cut copra on Caroline and Flint from time to time. The Tahitians take advantage of their presence to kill turtles that come up to breed on the beach for meat and the shells, they collect shells that are found on the coral reefs and have general access to all island resources. This situation should not be allowed to continue, and in view of what we propose to do with these islands, I recommend that the lease be terminated as quickly as we can. Under the terms of the lease termination can take effect after notice of 6 months has been given. The rental we get for the lease is peanuts compared with the unmanageable exploitation done to (particularly) marine resources and returns on copra and other commodity sales to foreigners.

I have discussed this with the Minister of State, who has agreed to take immediate action.

Flint

Flint is the last island to the south. It is a reef island of coral formation about the size of Niutao but longish. Coconut trees grow from point to point. Flint seemed to be the wettest of the lot. The vegetation is greener than elsewhere.

See team members' report on agriculture, fisheries, birds and hydrography.

General Comments

Caroline and Flint are the only two islands which can take up a number of settlers. They are however, so far away from subheadquarters at Christmas let alone from Tarawa that permanent settlement must be out of the question, at least, for the time being.

Dr. Grossmann would like to see all the islands in the South to be declared birds sanctuaries. This we can do but we will never be able to enforce the terms of the declaration fully. Foreign fishing vessels which ply in the waters round the islands often make calls for many reasons. Some of them kill birds for food.

Recommendations

1. The lease of Caroline, Vostock and Flint by Mr. Darr must be terminated having given six months notice (the Minister of State has agreed to this).
2. Development in the South cannot be considered until enterprises proposed for Christmas Island have been firmly established.
3. For the time being declare all islands reserved area for both birds and marine resources.
4. Future application for lease of any island or islands must be carefully considered to ensure that returns from such a lease, if granted, would not be a small fee as in the case of the present lease.
5. Caroline atoll with all its natural attractions would be an ideal place for "milking" the tourists. It is not far from the tourist route through Papeete. In this respect Caroline would need an airstrip and accommodation to suit the environment. If such venture is realised and careful management is applied, we would keep whatever benefit that may accrue from such undertaking and still leave the natural beauties of island almost unspoiled.

LINE ISLANDS EXPEDITION 1974

Report by R.E.H. Smith
Secretary for Natural Resources

October 1974

PREAMBLE

LINE ISLANDS EXPEDITION 1974

The expedition consisted of:-

Hon. Isakala Paeniu, Minister of Natural Resources	Tarawa-Line-Apia
R.E.H. Smith, Secretary for Natural Resources	Apia-Line-Phoenix- Tarawa
Mr. H.H. Vickers, Director of Agriculture - whole voyage	
Dr. H. Grossman, Ornithologist and Parasitologist - whole voyage	
Mrs. Grossman, Assitant to Parasitologist	" "
Mr. W. Cooke, Soft Corals	Line-Apia
Skipper J. Watt M.B.E., Fisheries	Line-Apia
Haroko, Fisheries Assistant	Line-Phoenix-Tarawa

in addition Capt. E.V. Ward M.B.E. of the "Teraaka" carried out navigational investigations.

The Itinerary was as follows:-

22 August	Depart Tarawa
27 - 29 August	Washington
29 August	Fanning
30 -31 August	Christmas
2-3 September	Halden
4-5 September	Starbuck
7-8 September	Vestock
9-10 September	Caroline
11-12 September	Flint
17-21 September	Apia, Western Samoa
26-29 September	Christmas
30 September - 2 October	Fanning
2-4 October	Washington
5-10 October	Christmas
13 October	Phoenix
14 October	Sydney (Manra)
15-16 October	Kull (Orona)
16-17 October	Gardner (Nikauaroro)
21 October	Arr. Tarawa

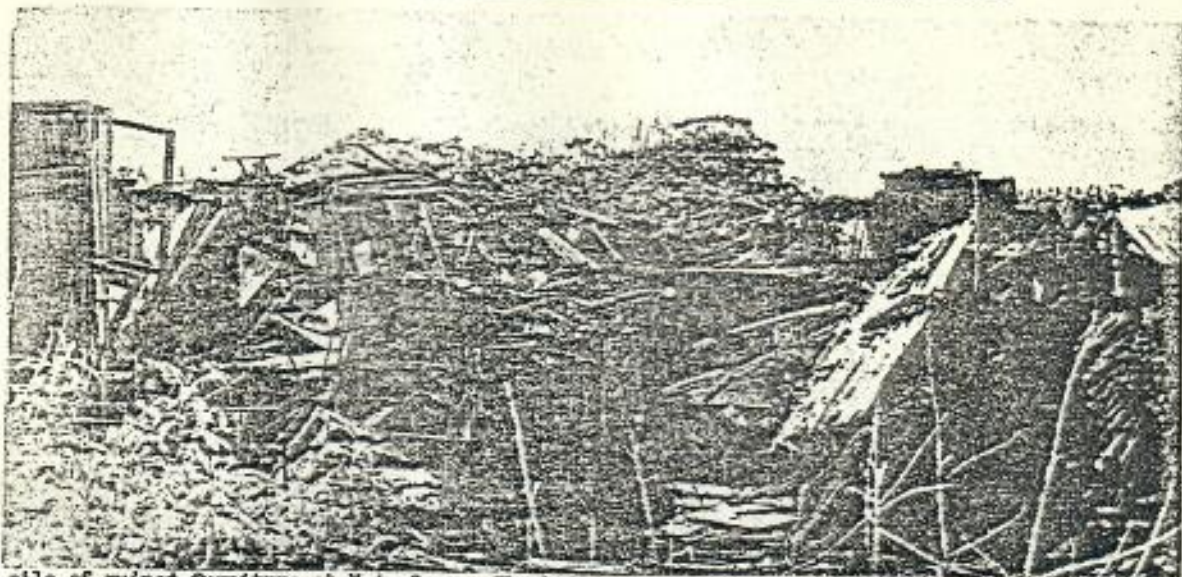
CHRISTMAS ISLAND

General

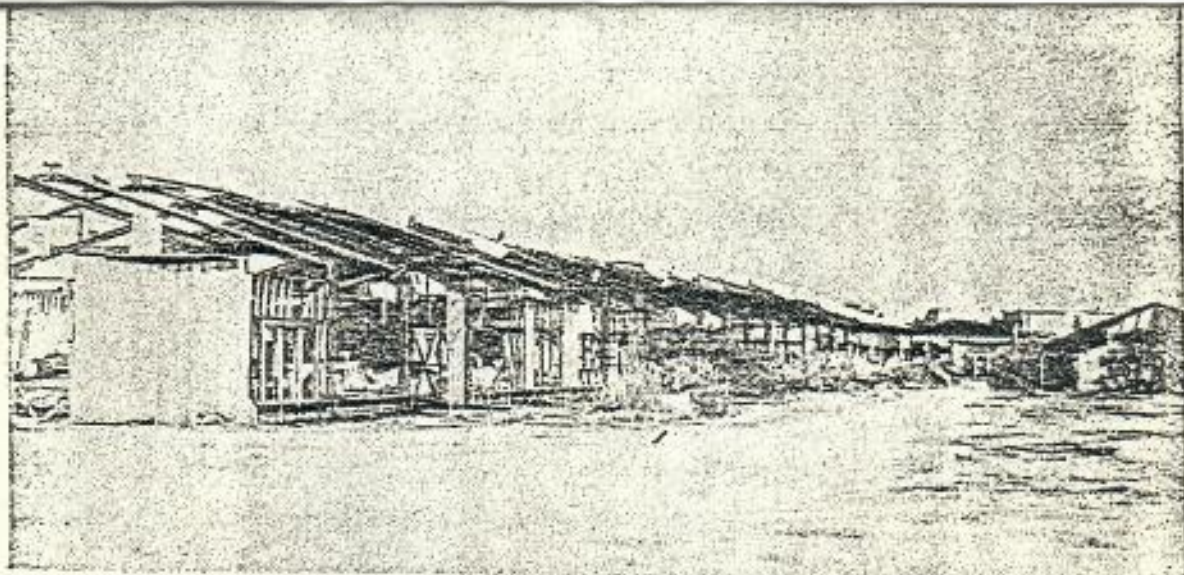
- 1.1 The first, and most lasting impression of Christmas Island is of a most culpable and deplorable neglect and indifference on the part of Government to a ten-million pound windfall. Of the Forces vast complex of installations hardly a building outside London remains intact. Port Camp and the J.O.C. are ravaged ghost towns, and the Main Camp is all but destroyed: great pyramids of ruined furniture and rusted beds mar the landscape and roofless skeletons of buildings are everywhere. Much of the devastation has been carried out by Government itself, and the local population and overseas of visiting Colony ships have joined in the carnage with enthusiasm. Any development of Christmas will now entail the shipment to the island of building materials and equipment at vast expense - when recently they were there in profusion.
- 1.2 There are 70 miles of excellent sealed roads, but even these are falling into disrepair, since the equipment to maintain them has been taken to Tarawa. The main airfield is deteriorating, and the buildings there becoming delapidated. The three storey Control Tower (the tallest government building in the Colony) was stripped by the P.W.D. and is decaying rapidly - yet it quite possibly will be needed within a few months.
- 1.3 The island is allegedly a bird sanctuary: this is a hollow myth: I have seen great heaps of slaughtered red-tailed tropic birds and others - killed wantonly for sport, and occasionally for food. Every year hundreds of thousands of birds eggs are stolen - even, in the past, by those whose duty it is to prevent this.
- 1.4 But with all this, it is also clear that the future of the island can be bright. The brine shrimp are flourishing, game fishing is promising, the plantations are coming into a considerable production and good basic facilities exist.
- 1.5 The island and indeed the rest of the Line Islands are badly served by Colony shipping and insufficiently visited by senior government officers: it is far too easy to say that one cannot possibly be away from Tarawa for three weeks - the pressures against touring are far stronger than those for it.

1.6 I recommend that a Colony vessel make not less than four voyages to the Line Islands each year, that senior officers be firmly persuaded to visit them, and that the drawback on Freight Levy be applied (if it is not so already.) If the recommendation in para 13.4 is accepted then one of the four voyages each year should be extended to include the Southern Line Islands: it would be essential for the wild life warden to travel on this voyage. All voyages must include stops at Fanning and Washington long enough to enable the District Officer, G-1-C Police and Medical Officer from Christmas to carry out their duties there.

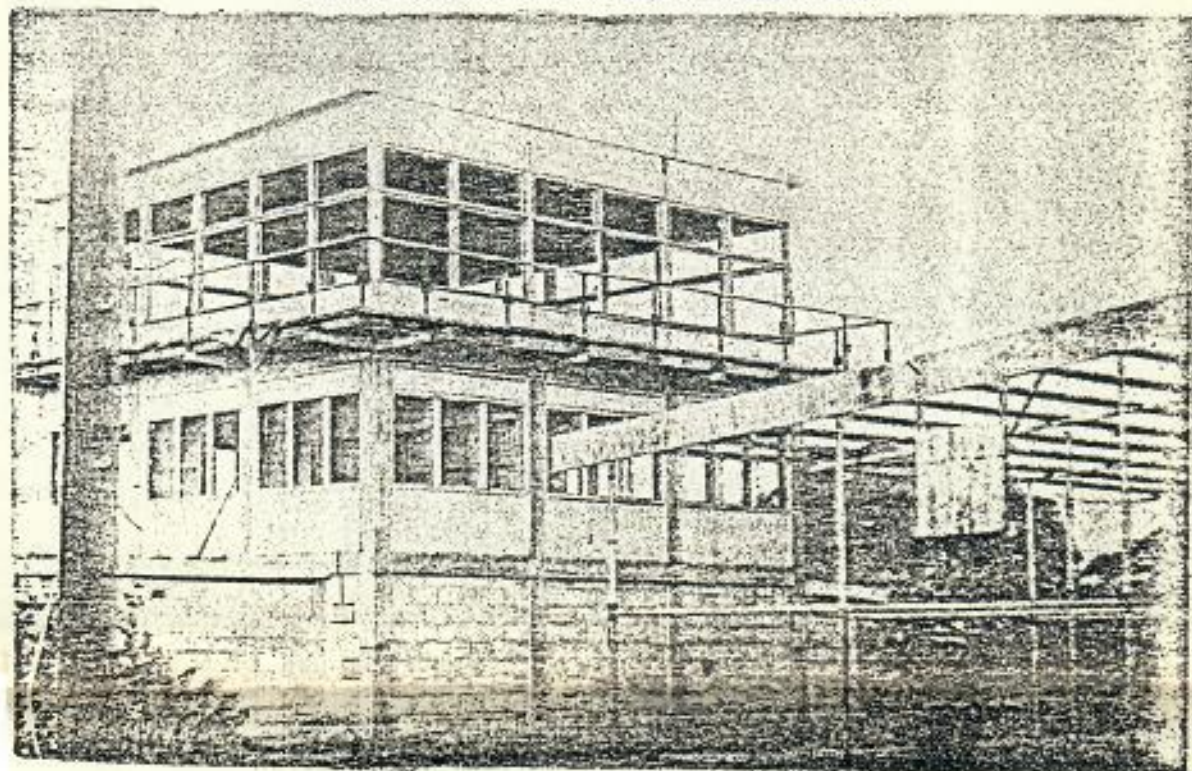
CHRISTMAS ISLAND RUINS



A pile of ruined furniture at Main Camp. The building has been pulled down around it and the furniture left to rot.



Ruined buildings at Main Camp, Christmas Island.



Control Tower at Cassidy Field, Christmas.

ADMINISTRATION

2.1 At the request of the Chief Minister's Office the opportunity was taken of examining the general administrative organisation on the island. It became immediately obvious that the island has been suffering from an inadequate and confused administrative set-up for far too long - at one time the posts of Agricultural Officer, C.I.P. Manager and District Commissioner were all combined in one Agricultural Officer with a subsequent blurring of functions: now the entire administrative staff consists of the District Officer (an S.E.O.) and a junior clerk. This is quite inadequate for the needs of the Line Islands, and the burden on the clerk is unwarrantably heavy. He is the sub-accountant - which in September entailed issuing 234 receipts totalling \$32000, and paid out 40 Payment Vouchers to the value of \$31600, handling all documents and cash himself: he is Court Clerk, typist, filing clerk, stores Officer, keeps the registers of Births, Marriages and Deaths, Vote Book and deals with enquiries: he also toured for a week with the District Officer to Fanning and Washington in September, and will necessarily do this as often as opportunity offers.

2.2 I most strongly recommend that the establishment be increased immediately by an Executive Officer and a typist. The Executive Officer would be Sub-accountant, with normal duties of that post, but should also be responsible for the Vote Book, not only of the District Office, but also of the Fisheries Unit on Christmas. As will be seen (para), much of the financial troubles of the Fisheries Unit stem from the total lack of any officer in that unit with even a smattering of knowledge of Government accounting procedures. It may be unusual from an officer of one Ministry to oversee the expenditure of a unit of another but I would support this: the size of the Fisheries Unit does not at present warrant qualified clerical staff.

2.3 The Executive Officer would also be in charge of the station in the absence of the District Officer; at present the office has to close down, no payments can be made, and considerable inconvenience to the public ensues.

2.4 The typist would do all the typing for District, Fisheries, Customs and Agriculture (as long as an Agriculture section remains there), and would also help out with the Police. None of the Government offices has a typist at all.

2.5 I would also recommend that the post of District Officer be upgraded, and that within the not too distant future that it be a full Administrative Officer post. With the impending development of Christmas Island it will be most necessary to have an officer of senior status at post.

LIQUOR LICENSING

3.1 There are two licensed clubs (as well as the CIP store) - the Captain Cook and the Tuna clubs. The former is the 'staff' club, and has excellent premises with a long bar, billiards table and table tennis table. The Tuna Club, mainly for fisheries personnel, is smaller but also in good condition with bar and table tennis table. The 'London' club is in disuse and disrepair - there are no plans to re-open it. An application has been made for another "club" - the Temenin. This is in fact a private venture by Ambo Keepa, C.I.P. foreman, to turn his private house into a club, and should not be encouraged: there is no reason however why a public bar in suitable premises and on a good site should not be established. Two clubs are quite adequate for Christmas: I do not see any good reason for more and recommend that any further club licence applications be very closely examined.

ROADS

4.1 The C.I.P has been only interested (naturally enough) in plantation roads, and the excellent 70 miles tarmac system has been left to fend for itself. The double lane highway to the end of Cassidy Field is in fair condition, but bushes and other vegetation have started to encroach. The single lane road is in a similar condition as far as 'A' site, after which (as far as South East point) it is steadily being undermined by vegetation and is deteriorating more rapidly.

4.2 The first step to be taken is to remove or poison the encroaching vegetation: there is sufficient defoliant available on Christmas to treat the sealed roads and the airfield. Thereafter remedial work should be taken on the roads: although tar is available on Christmas, it is possible inadequate in quality or insufficient in quantity: in any case the machinery to process the tar was taken to Tarawa.

4.3 The responsibility for the repair and maintenance of the roads must be placed firmly on some-one, and I recommend that this be Atoll Plantations as the service body: the Development Authority as the parent body of A.P. is in a position to supply skilled staff and plant if these are required. The cost of this is not estimated, but presumably would need to be met from Colony funds.

EDUCATION

5.1 The schools at London and Poland appear satisfactory, but could do with some expenditure on maintenance.

5.2 Arrangements are being made for two buildings adjacent to the school to be converted into two 'B' type and one 'A' type house for the Headmaster and his staff. This will have the advantage of having staff at the school to discourage vandalism (only too rife), and will extend the school area to include a good netball court and space for games.

POLICE

6.1 I visited the Police Station: there are three constables, with one of them (P.C. Timon) in charge of the station and Washington and Fanning. I would suggest that the Commissioner of Police might care to consider the increase of establishment and upgrading of this post by one N.C.O., preferably a good sergeant: the position of the P.C. in charge is not an easy one: it requires a man with experience, especially when the awkward subjects of suppressing looting and bird killing have to be pressed. Looting has been ignored for some years, and even looked upon as a right (a constable returning to Tarawa had building material neatly packed and ready), and very firm action will be necessary.

6.2 The Police Station would be inadequate for four officers, and I would recommend that it move into the former Customs Office by the District Office - this would free the present station for use as a constable's quarters.

6.3 I was also surprised to find that the Police have no transport: this is quite wrong - Banana Waterhole with 150 people is 15 miles away, and Poland with 200 more is 45 miles distant. Regular patrols are necessary, not only to these settlements, but to the Airfield and around the island generally to prevent looting and bird slaughter. I would urge that a vehicle be sent to the island as early as possible.

6.4 There was a problem over the transmission to Betio prison of two prisoners, one of whom had been sentenced to two years imprisonment for indecent assault, and the other to 18 months for unlawful wounding of another prisoner. The Magistrate required their removal to Tarawa, but this was initially queried from the Commissioner of Police's Office. It should be understood that the eventual release of long-term convicts on Christmas Island is most inadvisable: they will not be employed by C.I.P. or Government, and will have no housing. The Magistrate has the power to order a convicted prisoner's removal from Christmas, and can be expected to exercise it, so that financial provision for prisoner and escort passages needs to be made.

MEDICAL

7.1 I visited the hospital; it consists of one building with two small airless wards, and one room that serves as office, clinic, dental surgery and store-room. There is an M.O's house and an orderly's quarter. There is no medical transport.

7.2 For an island of the size of Christmas, and with impending Development, I do not consider the facilities in any way adequate. Building material is available, and the C.I.P with assistance from the District Office has agreed to erect immediately a simple medical centre adjoining the existing hospital, and containing a waiting room, surgery/office, operating surgery, dental surgery, MCH clinic, store-room and a self contained private ward. It is as well to include this last item now, as it is becoming increasingly popular on the part of fishing vessels, and others to put injured crewmen ashore, and also since with the probable installation of a game fishing camp and a brine fishery there will undoubtedly be accidents where a patient will need to be held in a ward until he can be flown out. One final consideration is that it is better to do this now, when materials are available gratis, rather than have them broken up for firewood. The existing medical building can be adapted locally into two adequate general wards, with toilets and an orderly's room.

7.3 The medical orderly is provided and paid for by C.I.P.: an unusual arrangement, but one which can well continue for the time being. The orderly is a good man, and has been partly trained by resident doctors, but I doubt if he would necessarily be acceptable as a full Medical Assistant on Government staff.

7.4 There is no nurse, and I would recommend most strongly that one be posted to Christmas immediately. With a doctor, orderly and nurse, the needs of the island would be catered for reasonably well.

7.5 There is a clinic at Poland, but it is extremely difficult for the doctor to get there. He has the most widely scattered clientele in the Colony - and no transport. I recommend most strongly that a vehicle capable of carrying a stretcher case (perhaps a Moke with the necessary fittings) be purchased and sent to the Island without delay. I am aware of the arguments against a 'medical' vehicle, but Christmas is a special case, and merits special treatment.

7.6 The dental chair is an antique, and the only engine a foot one: if it is at all possible these should be replaced. I would also suggest that a dentist visit the Line Islands as a matter of course every time a Colony ship visits. Certainly his visit this time, to Washington and Fanning as well as Christmas, was greatly appreciated.

7.7 The medical area appears to have been excluded from those areas not to be leased to Atoll Plantations, and this should be rectified.

LANDS

8.1 The areas allotted to Government Within the London area are generally adequate, but I would recommend

- a) that the hospital area be included (or removed from the A.P. lease.
- b) that the School area be extended to include the old laundry and net ball area.
- c) that the Fisheries area be adjusted to exclude the C.I.P (A.P.) wharf, and to include the two sheds adjoining the fisheries shed.
- d) that the Administration area be extended to include the long shed at the rear of the D.O.s office.

8.2 These alterations have been agreed in situs by C.I.P. and District, but would presumably need to be agreed by A.P. It is also for argument whether or no the Agricultural Officers house should go to Atchl Plantations or not: from a purely Natural Resources aspect I would be anxious to reserve it for a Wild Life Warden, but am well aware that there are other considerations.

AIRFIELDS

9.1 There are two excellent airfields - Cassidy (or Main) of 6000' of concrete, with extra runways, and Acon at the South eastern tip of the island.

9.2 The buildings at Cassidy Field still standing consist of

(a) Control Tower: a good three storied building, badly vandalized, and beginning to suffer from rain damage internally, but being built largely of concrete, basically sound.

(b) Hangar (all metal) very large and in good condition, but looters have already begun to strip the metal sides.

(c) Large all metal storage shed. In good condition, but full of badly disturbed aircraft and mechanical spares, plus two badly damaged new fire tenders.

(d) Large all metal storage shed in good condition, containing a few ruined vehicles.

(e) Large all metal workshop - with half the roofing stripped.

(f & g) Two reception buildings (wood under metal) in fair condition, but with doors and windows gone.

The runways are in good condition, but some vegetation needs removal.

9.3 This airfield and its buildings are a major national asset. No-one appears to be directly responsible for it, and I recommend

(a) That the District Officer be formally appointed Airport Manager with responsibility for repair and maintenance.

(b) That he be given enough funds to employ a carpenter and six labourers to repair the buildings and bring them up to a reasonable standard. A caretaker would also be advisable. I would estimate that for 1975 \$10000 would be adequate to employ these men and purchase necessary materials additional to those available in the island.

9.4 Aeon Field has a runway, and no buildings; it is at least 6000' (and possibly much more) of first rate concrete, and is alleged to have only been used for aircraft being in the Bomb. It is said to be far enough away from Cassidy to be an acceptable alternate. It will require little maintenance, but should be inspected regularly.

POSTS & TELECOMMUNICATIONS

10.1 The Radio Operator is not overworked, but the distribution of his work is awkward - he has morning and afternoon schedules seven days a week, which of course means that he never has a free day. I would suggest that this be examined - it is obviously incorrect for him to be on duty seven days a week.

10.2 The postal work is not heavy, except on the rare occasion a ship calls. On the 4th October the tourist liner 'Montcroy' called and good business was done in stamps. Although such visits are infrequent, it might be useful for the postal officer to have a 'sale' supply of FDCs and commemorative stamps for such contingencies.

10.3 If it is of any assistance, then it might be possible for the District Office (if and when strengthened) to take over the postal side as an agent of P & T.

AGRICULTURE

11.1 An account of agriculture on Christmas is contained in the report of the Director of Agriculture and in another recent report and I do not intend to duplicate this.

11.2 I was impressed by the amount of hard work and planning that has gone into the development of the C.I.P.; the infrastructure is well maintained and staff and labour quarters are of an excellent standard. Over the years some 9000 acres have been planted to coconuts, in adverse and often unpredictable conditions. The production (1000 + tons this year for the first time) has not been high, but it has taken much experiment and failure to find the most rewarding methods of planting. Of the acreage given some 600 acres are not yet in production, and these are the best planted of the lot.

11.3 Much credit is due to successive managers, especially Messrs Revell, Langston and Brydon for their very considerable efforts. The plantation is steadily improving, and the infrastructure is capable of offering most valuable services to any future development project.

FISHERIES UNIT

12.1 After its successful inshore survey last year, the Fisheries Unit has been concentrating its main efforts on the rock lobster potential. This is a valuable experiment, and, if the McKelvey expedition ever arrives, can well lead to a viable industry.

12.2 What is far from satisfactory however is the fishing aspect of this unit. The 'Angilelei' is hopelessly inadequate for anything other than close inshore work, and is wrongly engaged into the bargain. She is out of action, and will remain so until she gets a new engine. Mr. Watt is quite certain that there are very substantial fish resources off Christmas Island, (but beyond 'Angilelei's range) and in the Southern Line Islands, which it is essential to survey with an adequate vessel. The Chief Fisheries Officer will be requested to give the fullest consideration to sending the 'Tekokona' to Christmas early in the new year for a survey of offshore waters and the rest of the Line Islands, to take advantage of the presence of Mr. Watt, who is one of the worlds more experienced tuna fisherman. If 'Tekokona' is not available, then it may be necessary to hire or charter a suitable vessel.

12.3 A further aspect of Christmas Island that it would be valuable to investigate is the black lip pearl shell resource. It has been known for years that a considerable quantity of this shell exists on Christmas Island, but the location of the beds is imprecise. Mr. Watt is an experienced SCUBA diver, and is more than willing to undertake this work, training some of his men to work with him. The cost of such a survey would be comparatively minor, consisting mainly of equipment: a small compressor, six bottles, three regulators, and allied equipment - the total would probably be in the region of \$1500 or less, and this should be found without delay.

12.4 Salt fish is also capable of very considerable development (providing a market is found): high quality salt fish have been produced, using local salt resources. Depending on the season up to 60 bags of salt can be dug from one lagoon in one day.

12.5 The rock lobster survey has been continually hampered by unreliable transport: as the collection of lobsters entails travelling 200 miles and more in a night reliable transport is essential. The Unit has a Bedford 30 cwt in excellent condition but without an engine (this was ruined by visiting government looters running the engine on aviation fuel). A new engine must be obtained and shipped to Christmas on the first available ship.

12.6 The Unit also has a good freezer of approximately 270 cubic feet (a Smithfrige) without a unit: this should be obtained at once (Millers of Suva have such a unit) and the freezer put into commission. A blast freezer is required to complete the installations.

12.7 I found the scattered buildings of the Unit unsatisfactory, and have arranged with the C.I.P. for the Unit to give up its vehicle shed and receive in exchange the vehicle shed and an old Niasen hut adjoining the Unit's main shed, so that all its activities will be in one neat series of buildings and therefore susceptible of better control. Mr. Watt has built a large lobster "keeper" tank (about 60' x 10') and is resuscitating a pump to keep the water fresh.

12.8 The Auditor reports that financial control within the Unit is poor: this is not surprising, when the officer in charge is a practical deepsea fisherman, with no knowledge of accounting, and all his staff are local fishermen. There is no clerk and no typewriter. If my recommendation that an Executive Officer is posted to the District staff is accepted, then it would be sensible and reasonable for him to undertake vote book, stores and other financial assistance to the Fisheries Officer.

12.9 The University of Hawaii had a research vessel the "Townsend Cromwell" at Christmas in 1973, under the leadership of Dr. Jones, Mr. Watt tells me that copies of the research report were promised both to him and to Fisheries and the Ministry, but no copies have yet been received.

WILD BIRDS

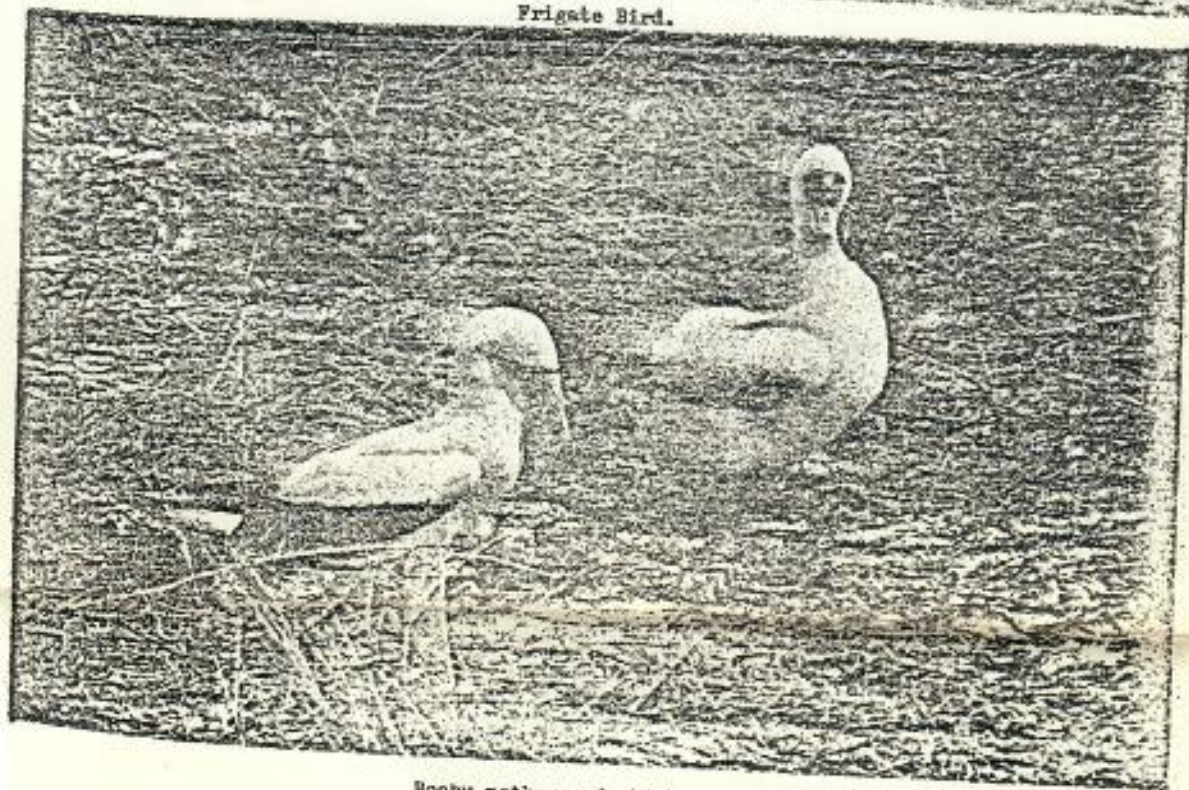
13.1 The situation over wild birds is perhaps the most depressing aspect of Christmas Island. The rare and beautiful red-tailed tropic birds, of which most on the ground and can be picked up by hand, have been plundered and murdered in their thousands, some for food and some for mere pleasure in killing. Their population has been reduced in less than a year from 8000 to about 2000. Great heaps of dead birds were seen by myself and others. Frigate birds rest on low bushes, and can be approached closely: this results in louts taking pleasure in breaking their wings and enjoying the sight of their crippled state. In the nesting season car loads of torn eggs are stolen by the labour force and population of the island.



Nestling chick.



Frigate Bird.



Booby mother and chick.

13.2 Yet Christmas Island is a bird sanctuary, and with proper conservation could be a tourist attraction on this alone: as it is any visitor could only comment in the most disparaging terms on the situation. We are in fact faced with the choice of alternatives, either to drop the whole idea of wild bird preservation, and let them be wiped out, or to make every effort to turn Christmas into a genuine bird sanctuary. The first is a counsel of despair; the second could result in a well worth while asset, that could be of world interest, and I most strongly urge that this course be taken.

13.3 It is not enough just to strengthen the police on Christmas: wild life preservation all over the world has necessarily become the province of organisations geared for this purpose.

13.4 I recommend that a small section be set up within the Ministry of Natural Resources, and based on Christmas Island. This section should consist of a wild life warden (an ornithologist) with two local assistants, with adequate transport. The ornithologist who might be obtained either through British or other national aid, or through the World Wild Life Trust should be appointed for not more than two years, and would need to have powers under the relevant (amended) ordinance to apprehend, arrest and search suspected offenders within the sanctuary. It might be objected that this would encroach on police powers, but it is the normal world-wide practice to give game wardens and rangers police powers (in respect of game control and protection only) within wild life reserves, and there is reason why Christmas Island should be different. At the termination of his tour of duty it should be possible to appoint honorary Bird Wardens on the island, to whom the two local assistants would work.

13.5 In addition the three islets of Cook Island, Motu Tabu and Motu Opua should be declared "closed", and landing prohibited without authority. It will be necessary to amend the Wild Birds Protection Ordinance for this purpose. It needs considerable amendment in any case - the maximum penalty is only a fine of \$10. If action of this nature is not taken very soon, then the bird life of Christmas will very probably be devastated beyond any hope of recovery.

13.6 At the same time a new approach in prevention should be adopted: the Wild Birds Preservation Ordinance is all but unknown to the public: It must be publicised widely, so that the general ignorance is abated. Paralleled with this should go wide education at the school level; it was pathetically obvious at the Government School on Christmas that neither the children nor the teachers had any knowledge of the matter. Wild birds, their value to the world, and their protection should be an important part of Environmental Studies.

FANNING ISLAND

This island was visited (by SNR) 30th September - 2nd October.

ADMINISTRATION

14.1 The officer-in-charge at Fanning is the Radio Operator, who doubles as sub-accountant, works foreman and representative of the D.O at Christmas. This is not an entirely happy arrangement as inevitably other officers sometimes jib at following the instructions of a junior officer of another department. It might well be worth considering the eventual creation of an Executive Officer post on the island, and this would certainly be necessary were Fanning Islands Plantations to get rid of the island to its inhabitants (see below para 15.2). There is a resthouse in fair condition at the Government station which is but little used, and could become an E.O.s house without difficulty.

GOVERNMENT STATION

14.2 This is an area of 22 acres: it is allegedly leased by Government from Fanning Islands Plantations, but the present manager, Mr. Cropp, says that no rent appears ever to have been paid.

The station has both power and water: an old Christmas Island generator has been installed and pumps water to the houses and also supplies light from 6.45-10pm daily. It cannot be said to be economic, as there are only 8 recipients of power who pay \$1.20 monthly, i.e. an annual revenue of \$15.20, as opposed to an expenditure of 8 drums of fuel annually (3343) and part of the wages of a labourer. The Protestant Mission has asked to have the power led to it.

FANNING ISLAND PLANTATION

15.1 The manager is Mr. Harold Cropp who is on a one tour of 21 months basis, and has a year to go. He is living in the assistant Manager's house, as the manager's house is in the last stages of decay. Mr. Palmer, the former manager left earlier this year after 30 years on Fanning.

15.2 The plantation itself is not impressive: the island is about 3000 acres; there are said to be 3000 acres under coconuts, but even the most cursory inspection reveals that they are all very mature palms: no new planting appears to have been undertaken in the last quarter century. Production is about 600 tons per annum. I gathered that F.I.P. are considering the possibility of giving, selling or leasing the island to the present labour force, and then confining their efforts to the purchase and shipping of copra. One of their reasons would undoubtedly be that they would largely get rid of their present union troubles, which are a continuous headache.

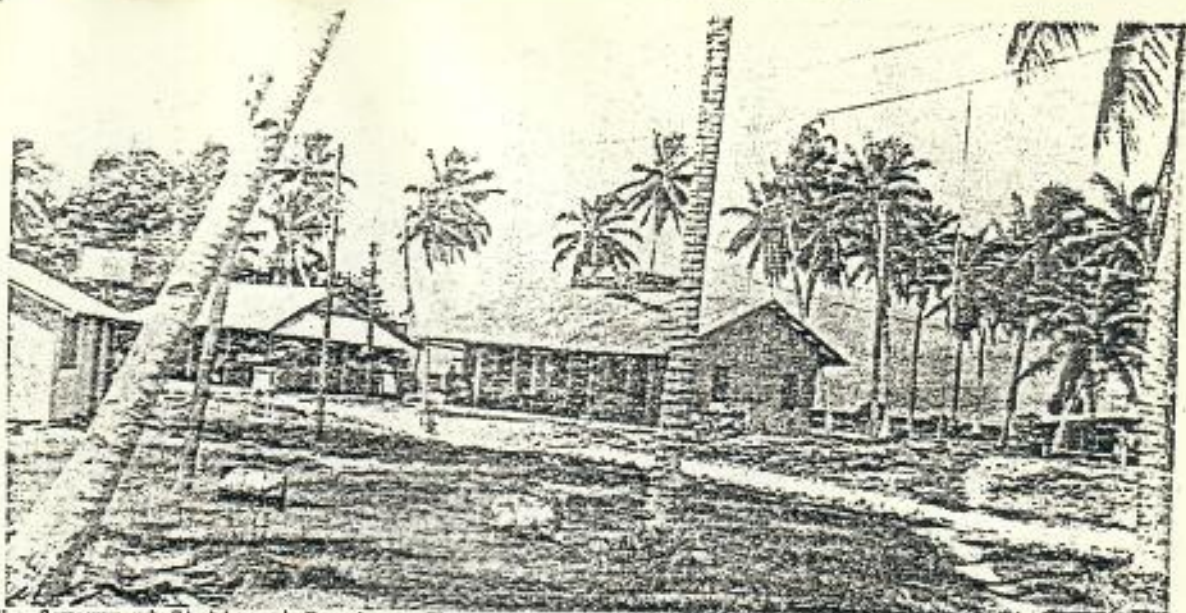
- 15.3 Certainly Fanning could well be settled as farm holdings, but I feel it would be far better for Government to step in at this point, it would be obviously of great advantage to lease the land to tenant farmers, with a non-subdivision clause in the lease, rather than to give or sell with all the evils of subdivision perpetrated now. I recommend that Government consider the very early acquisition of Fanning and Washington.
- 15.4 Mr. Cropp had several worries concerning Government, of which the unheralded arrival of unwelcome visitors was the main one. He would be grateful if any Colony vessel booking passengers to stay on Fanning would clear those passages with him, as the island is private property, and the passengers may not necessarily be permitted to remain ashore.
- 15.5 Another problem concerned services afforded to Government. Any government cargo is landed in F.I.P. boats and then carried by F.I.P. labour to the Government station. He estimated that since his arrival in February the cost of these services was about \$500: he is not claiming for this, but suggests that he should charge a flat rate of 10cent per cubic foot. Should he do this then D.O. L.I. will need a vote of \$000 to cover these costs.
- 15.6 A labour union is now highly operative, and a visit by a labour inspector would be useful. The work force is 72.

OLD CABLE & WIRELESS STATION

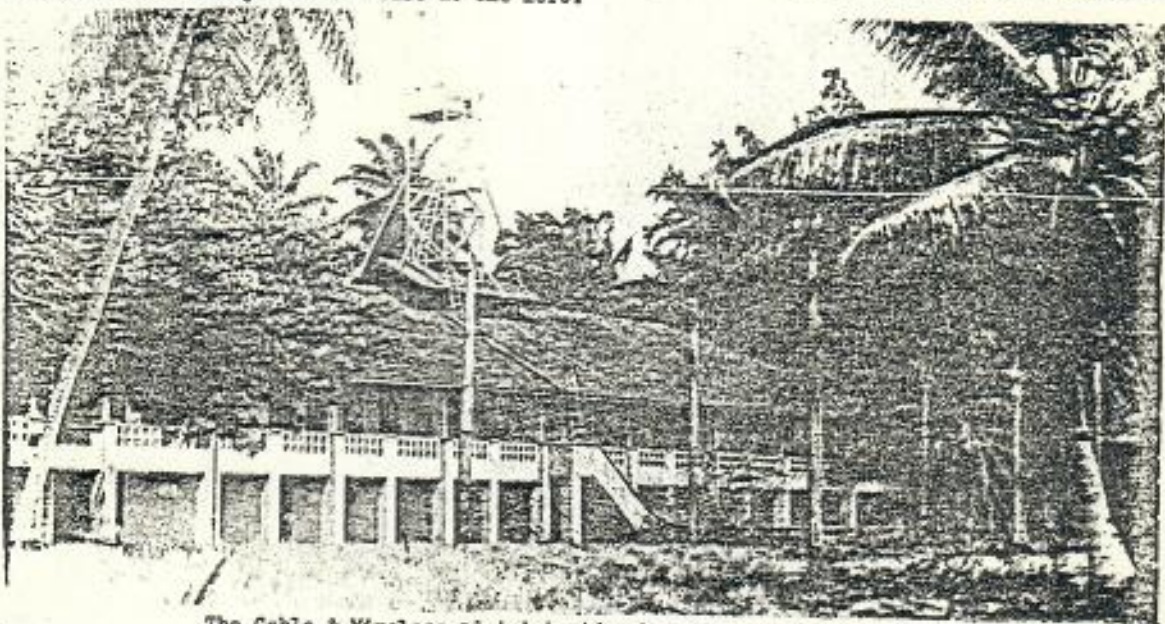
16.1 The University of Hawaii research unit at the old Cable and Wireless Station was visited. This is an astonishing place, as C. & W. are said to have spent £1000000 on renovation shortly before they withdrew in 1963. There are 3 large concrete and tile roof senior staff houses, a large bachelor mess for 6 officers and a truly mammoth administrative block, plus numerous ancillary buildings, tennis court and swimming pool.

16.2 This palatial establishment is now used by Dr. Martin Vitousek, his handyman Mr. R. Jeffcott with a permanent local work force of 6; students from Hawaii also visit occasionally. Without wishing to detract Dr. Vitousek's work, personality or love for Fanning (all of which are remarkable), the set up would be outstanding as an away-from-it all hotel, especially as there is a good mud airstrip 3000' long (with room for extension to 5000+) made by Dr. Vitousek only a mile away. There is another airstrip (Fil's Field) at Red Lagoon, about 5 miles South of the F.I.P. station, also built by Dr. Vitousek - it is also earth/mud, 2500' long and is capable of extension to 6000'. Dr. Vitousek has his own light aircraft which he flies himself. He has also acquired a large U.S. Navy tug and barge - which, laden with ex U.S. Navy surplus equipment, he sailed from Honolulu himself: a man of parts, pilot, ship's captain and scientist.

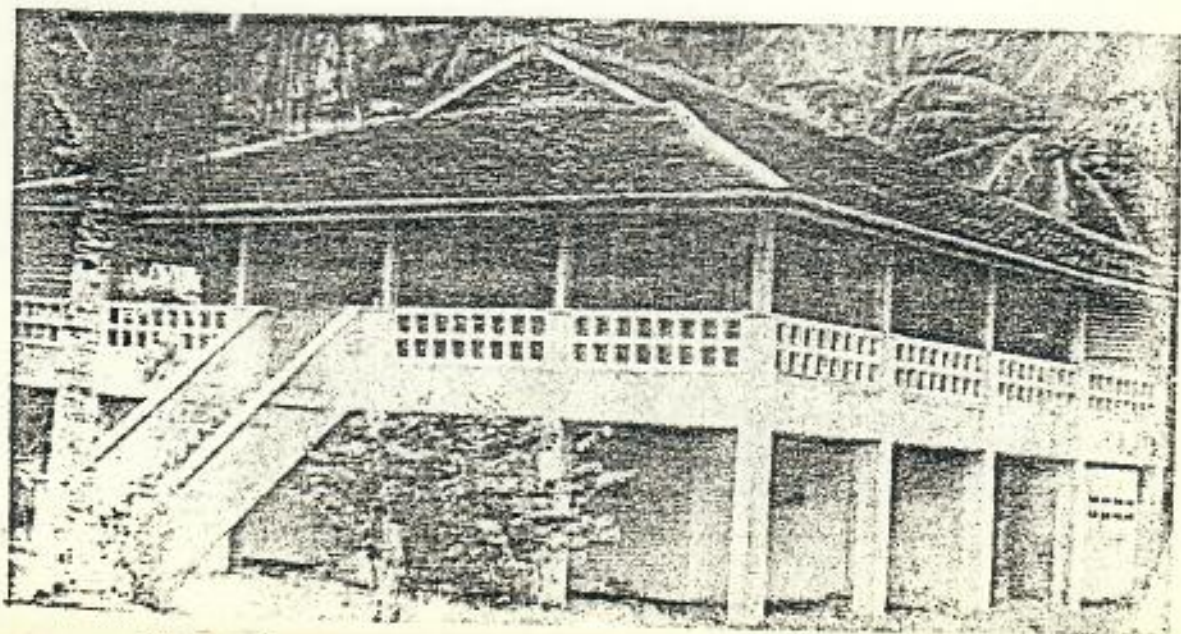
FANNING ISLAND



The Government Station at Fanning. The central building is the radio/administrative office, police station and dispensary. Court House at the left.



The Cable & Wireless administrative building at Fanning Island.



16.3 Half a mile past Vitousek Field is the wreck of a Korean fishing vessel the Sam Song 78, which drove up on the reef in February. The research station acquired much diesel fuel therefrom (after succouring the crew) and the wreck was "given" to the foreman Kan Chou. The University has a lease of the Cable Station (? from Government) which has eight years to run.

VISITORS

17.1 Fanning is even more blessed with cruising yachts than Christmas - there have been 16 since February, including one where the (mixed) crew astounded the island by going around stark naked.

WASHINGTON ISLAND

18.1 A remarkable island both physically and administratively. Visited (by SNR) 2-9th October). Physically it is lush and fertile: its 2000 acres self-sown coconuts produce 1000 tons of copra year. It has unlimited fresh water, as the central lake is potable, and a canal system to reach the plantations. Landing is difficult at the best of times, and loading copra can take many days - the last Bank ship had to drift off 17 days to load a few hundred tons. Work boats cannot be kept on the island but have to be brought from Fanning each time.

18.2 Administratively it is a private kingdom: Mr. Frew, the manager runs it very firmly and gently. Drink is only permitted to a few senior staff, and it is only two years since the cutting of toddy was allowed. The plantation buildings and quantities are neat and well maintained, as are paths and gardens - a strong contrast with Fanning.

18.3 The Union organiser from Christmas, Ngutu, travelled on the Teraka: not only was he refused permission to land, but two men who tried to go out by canoe to see him were prevented. Mr. Frew is well aware that a union will come, but is determined that it should be a Washington one, and not a Christmas one.

18.4 The District Officer heard three cases, put before him by the Police Constable: the Manager explained that this was unusual, as most breaches of the peace were normally settled by him - penalties being paid to the sports fund.

18.5 What Government administration there is consists of one lonely policeman: his house and station are spotless, but crimes are few and far between - and as previously said, not all reach the law.

The Plantation school is well built and maintained: it has no problems.

18.6 The fish in the large central lake have been badly affected by the introduction of tilapia, which have become a pest.

18.7 Mr. Frew was concerned at the copra loading rates required: at Washington it is 150 tons per diem, at Fanning 200 and Christmas 150, after which demurrage is payable. He feels it should be set at 100, 150 and 250. This may be so, but I was astonished to learn that these figures are allegedly set by the Copra Board - in nearly seven years on the Board I had never heard of this ruling, but Mr. Frew was adamant that Mr. Bolt, formerly Secretary of the Board have visited the islands and set this figure.

I think it more likely that if Mr. Bolt was concerned, he merely suggested the figures to the Bank Line. Since my return I have learned that the delay figures are in the contract with the Bank Line, and action is being taken to attempt to amend them.

PHOENIX GROUP

PHOENIX ISLAND

19.1 This island was visited on the 10th October. A small party landed with some difficulty, and had even more trouble in getting off, Mr. Vickers being thoroughly ducked. The island is a bird sanctuary, and should remain so: there were many thousands of birds - frigate, boobies, terns etc, in all stages of growth. There were also a number of rabbits, estimated at from 100-200. A U.S. survey beacon is in position, but no buildings.

SYDNEY ISLAND (NANRA)

20.1 This island was visited on the 14th October. The old village site is entirely in ruins and overgrown, apart from a concrete cistern, some 30' x 20' x 5' with an asbestos roof. This was full of water, even though the guttering is rotten and collapsed.

20.2 There is a U.S. Tracking station beacon to the north of the village.

20.3 The wreck of a Korean fishing vessel 270 Nam Hae from Inchon lies in two halves on the reef and shore about two miles north of the old settlement. The remains of the shipwrecked sailor's camp is nearby on the shore.

20.4 The island appears to have suffered from drought for a considerable period: the salt lagoon in the centre of the island has receded by a hundred years or more all round, and rotting algae and vegetation give off a most offensive odour. No traces of pigs, dogs or cats were seen, and even the rat damage to coconuts was old. Birds were not plentiful. In all, not a welcoming island.

20.5 The rock lobster team of three men, however, spent the night ashore and did reasonably well, with a catch of about 75lbs of panulirus penicillatus. The island is undoubtedly reasonably rich in, and suitable for the catching of, lobster.

HULL ISLAND (CROHA)

21.1 This island was visited on the 15th & 16th October. We were surprised to find a U.S. radar station on the island, not having been warned of it, but no more surprised than the supervisor of the station (Mr. Larry Menz). His first action was naturally, to contact the U.S. base at Canton for approval for us to land: this was given, albeit with some hesitation. The commander of SANTEC at Canton was on leave, and command had devolved upon a junior officer, 2nd/Lt Tworek, who arrived at Hull hot foot by helicopter, and put me through a searching inquisition - even though I assured him that our Phoenix group visit had political clearance (GM GEIDA telegram of 2nd October). He stated that the lease of Hull by the Colony to the U.S. Government gave the latter exclusive use of the island until 1900. He had a copy of the lease on Canton, and had reread it that morning. I found it most embarrassing that a young second lieutenant had seen the document, when I had not. He was reluctant to give permission for anyone to remain on shore overnight, but eventually gave way, and the lobster party, Dr. & Mrs. Grossmann, and myself stayed on shore, leaving the following morning at 5.30 a.m.

21.2 I stayed at the base, which is a complex of half a dozen air-conditioned residential containers with all conveniences. The staff consists of two men only, the supervisor and a Samoan assistant. They have a 'Bronco' vehicle and a miniature bull-dozer, both brought by helicopter, as are all their supplies. Two helicopters arrive every Friday, bringing fresh food, mail, and seven cinema films. The return flight removes all garbage to Canton, none being left on Hull. This is the subject of frequent inspections by an ecologist. The supervisor is a civilian (as is his assistant) on contract: Mr. Menge has already been on Hull for 15 months, and is becoming its strongest admirer.

21.3 The original reef passage has been re-blasted by U.S. forces, and is now large enough to take a landing craft: this was necessary to permit of the disembarkation of the housing units and equipment, but is not now used. A few yards from it is the wreck of a Korean fishing vessel dating from 1950.

21.4 Of the old village and government station only a few ruined buildings remain, apart from the big cistern, which the Americans have refurbished. A day or two prior to our visit and unknown and unseen vessel's crew landed, stole two water pumps from the cistern and inflicted superficial damage to it.

21.5 I was informed by the Americans that on Enderbury island are two Korean fishing boat wrecks no more than 75 yards apart, and both of which were captained by the same man. The second wreck actually took place when the Lloyd's inspector was on the island looking at the first wreck! I would be interested to know, however, who owns all these wrecks, or if our Receiver of

wrecks has any knowledge of them.

21.6 The lobster survey was not a success: a party of nine men caught no more than 30 lobster; the leader of the party did not rate the possibilities very highly.

21.7 I learned that at least two American sponsored scientific expeditions - one from the Smithsonian have visited not only Hull, but other islands in the Phoenix: it would be of value if their reports were available; Lt Twerck offered to take this up.

SARDLER ISLAND (NIKUMARORO)

22.1 This island was visited on the 16th & 17th October. It was the most attractive of the Phoenix group visited, having a beautiful lagoon and wide entrance passage (not passable to boats). The ruins of the old Government station were visited; the Radio Station is in fair repair, but the Resthouse is burned down. However both its cistern and kitchen (asbestos roofed) remain and the latter is still full of furniture in good condition-table, beds, cupboard, dressing table, book case, etc, and various tools, including cross cut saws. The old boboti is also standing, and in good condition.

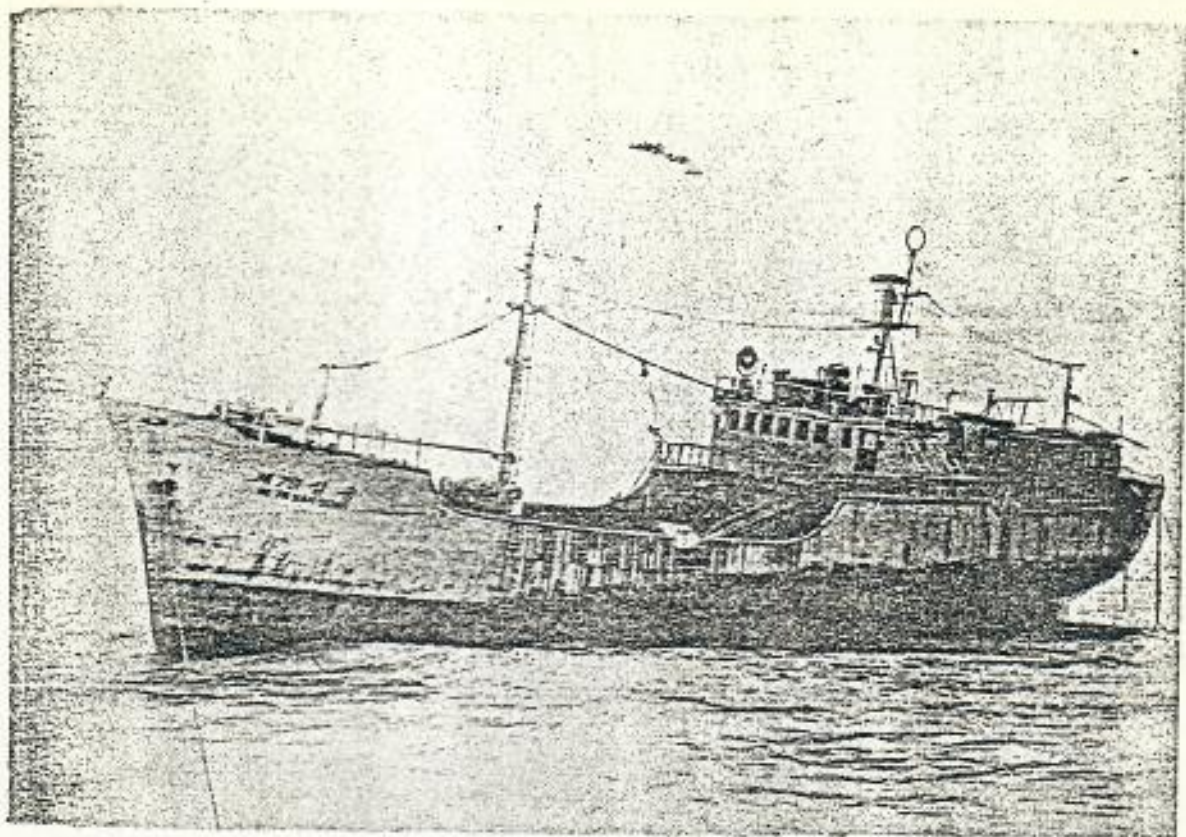
22.2 The old wreck of a Norwegian freighter lies in pieces on the reef: I was told that Colony small ships used to tie up to its stern shaft, which projects into deep water.

22.3 The lobster survey was not promising, only about 50 lobsters regarding a night's work.

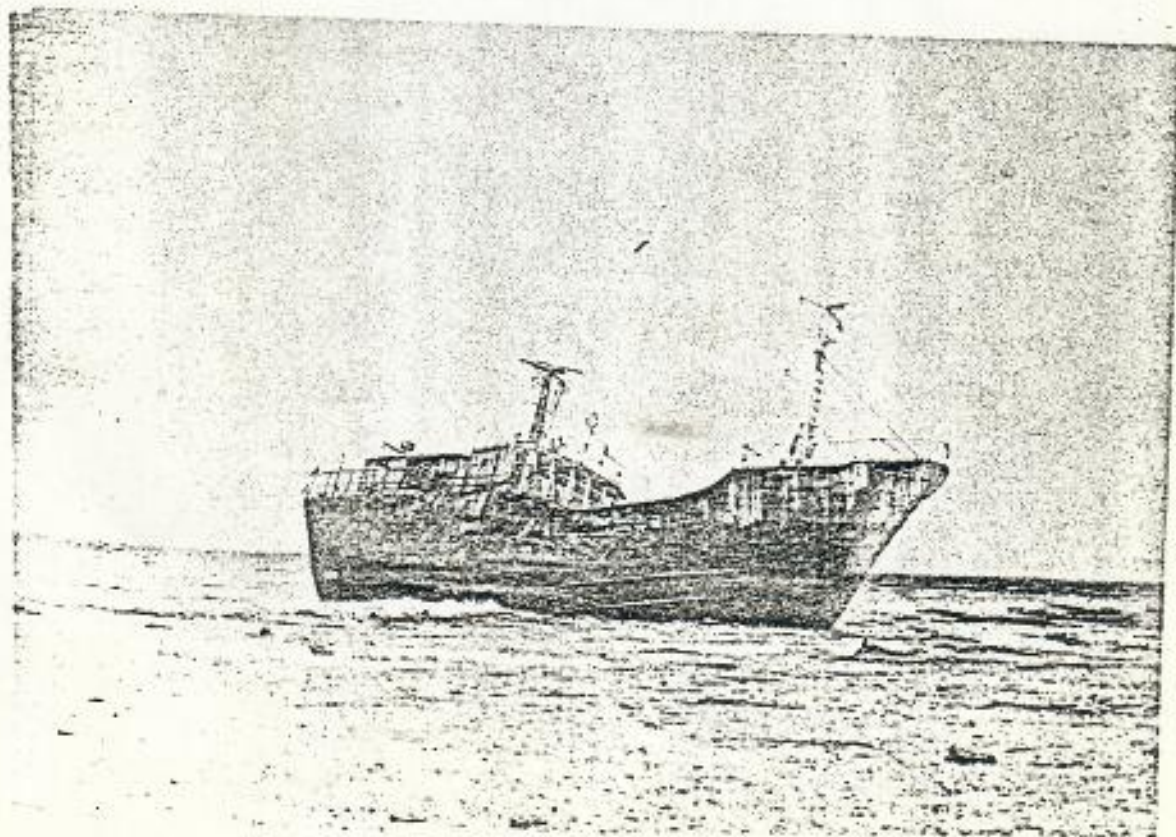
22.4 Agriculturally all three island (Sydney, Hull and Gardner) were disappointing - poor nuts on the trees and not much on the ground. A collecting expedition might be just about viable, but only if the nuts on Hull were included. It might be worth considering a prison expedition to the Phoenix; - a dozen prisoners with warders and provisions were to be landed on an island by a Colony vessel on its way to the Line, and retrieved on its next voyage, the colony would benefit from the copra, the prisoners from a less restricted existence than Botic prison, and the prison comforts fund by a reasonable sum.

22.5 Sport fishing might be possible on Gardner - Mr. Vickers caught eight snappers and a 4' black-tip shark in an hour's fishing with light rod and line.

12.6 Gardner would be a distinct possibility as an away-from-it all resort if there were an airfield - it is not all that distant from Mandi. All that is needed is good publicity, a modicum of imagination and about two million dollars. There are a number of major hotel organisations in world who might well be interested: beautiful, isolated, empty and available tropical islands are few and far between.



The wreck of a Korean fishing vessel, the 78 San Song stranded at Fanning Island in 1974.



Fishing vessel, believed to be Korean, wrecked at Hull Island.

3.1 SUMMARY OF RECOMMENDATIONS

General

Para. 1.6 That a Colony ship visits the Line Islands not less than four times a year. (R 1)

Administrative - Christmas

Para. 2.2 That the District Office staff be increase by an Executive Officer and a typist. (. 2)

Para. 2.5 That the post of District Officer be upgraded to Administrative Officer. (R. 3)

Para. 4.3 That Atoll Plantations Ltd., as the service body, be responsible for road maintenance. (R. 4)

Para. 6.1 That the Police establishment be increased by one senior N.C.O. (R. 5)

Para. 6.3 That a Police vehicle be supplied. (R. 6)

Para. 7.4 That a nurse be posted to Christmas Island (R. 7)

Para. 7.5 That a medical vehicle be supplied. (R. 8)

Para. 8.1 That various land lease boundaries be amended. (R.9)

Para. 9.2 That the District Officer be appointed Airfield Manager, and given funds to repair and maintain the airfield and its remaining buildings. (R. 10)

Para. 12.2 That the possibility of 'Tokokona' going to the Line Islands be examined urgently. (R. 11)

Para. 12.3 That equipment for a black lip pearl shell survey be acquired. (R. 12)

Para. 12.6 That the Fisheries freezer be rehabilitated and a blast freezer installed. (R. 13)

Para. 13.4 That a section be set up in the Ministry of Natural Resources, of a Wild Life Warden with two assistants and a vehicle, and based on Christmas. (R. 14)

Para. 13.5 That the islets of Cook Island, Motu Opua, Motu Tabu be declared "closed". (R. 15)

Administration - Fanning

Para. 14.1 That consideration be given to creating a post of Executive Officer, Fanning. (R. 16)

Para. 15.3 That consideration be given to the early acquisition of Fanning and Washington. (R. 17)

Phoenix Islands

- Para 22.4 That consideration be given to mounting a 'prison' expedition to cut copra. (R. 10)
- Para 22.6 That outside interests be sought for a possible airfield and hotel complex at Gardner. (R. 19)

Implementation of Recommendations

23.2 The nineteen recommendations in para 23.1 (referred to here by the letter R), fall with various categories i.e. administrative, general policy and legislative.

23.3 The purely administrative ones, i.e. R 1,2,3,5,7,11,16 and 18 are all susceptible of immediate action by the ministries concerned, and are drawn to their attention.

23.4 Those decisions involving ministerial policy, i.e. R 4,9,10,12,13,14, 15,17, and 19 are earnestly commended for consideration: 12-15 are already being acted upon in the Ministry of Natural Resources.

23.5 Several of the Recommendations, notably R 6,8,10,12,13 and 14, involve the provision of funds not in the estimates: it is suggested that Ministries should seek additional provision as soon as possible if the recommendations are acceptable to them.

23.6 I would also be very willing to meet with all ministries concerned to discuss the acceptance or otherwise of these recommendations and their possible implementation, and would suggest that a "round - up" would be of value.

REPORT OF DIRECTOR OF AGRICULTURE

CORRECTIONS

Page 5, para 3, line 2. after "buildings" sentence should read "on the western side of the island. The strip is made of compacted reef mud or....."

Page 6, last line, the first word is "black", not "blead".

Page 9, para 2, line 2. for "and" read "and" and insert "of" after "and".

Page 8, para 5, line 2. insert "in" after "Yellow".

Page 14, para 3, line 2. for "Dart" read "Darr".

Page 15, Under FISH, 4th word is 'tuna', not 'tms'.

Page 21, para 2, line 11. after "require" insert "from".

Page 23, para 1, line 2. the word is "considerably", not "considerable".

Page 24, para 1, line 1, for 'side' read 'wide'.

Page 25, para 3, line 4. half the sentence has been omitted (as on P. 5 above) the line should read "leeward side of the island - none being present on the windward side. It may"

Page 28, para 1, line 3, erase the first "noted".

AND SOME PHOENIX ISLANDS. 1974.

by

H. E. H. VICKERS, DIRECTOR OF AGRICULTURE, G.E.I.C.

During the period 22nd August to 21st October 1974 the Director of Agriculture in T.S. "Teraka" visited all the Line Islands and four of the Phoenix Islands according to the itinerary given below.

21st August		Departed Betio for Washington Island.
28th	"	a.m. Arrived Washington Island. Departed p.m. for Fanning.
29th	"	a.m. Arrived Fanning Island. Departed p.m. for Christmas.
30th	"	a.m. Arrived Christmas Island.
31st	"	At Christmas Island. Departed p.m. for Malden.
2nd September	a.m.	Arrived Malden.
3rd	"	Departed Malden Island p.m. for Starbuck.
4th	"	a.m. Arrived Starbuck Island.
5th	"	Departed Starbuck p.m. for Vostok.
7th	"	a.m. Arrived Vostok Island.
8th	"	Departed Vostok p.m. for Caroline.
9th	"	a.m. Arrived Caroline Island.
10th	"	Departed Caroline p.m. for Flint.
11th	"	a.m. Arrived Flint Island.
12th	"	Departed Flint p.m. for Apia (W. Samoa).
17th	"	a.m. Arrived Apia, Western Samoa.
21st	"	Departed Apia p.m.
26th	"	p.m. Arrived Christmas Island.
29th	"	Departed Christmas Island p.m. for Fanning.
30th	"	a.m. Arrived Fanning Island.
1st October		Departed Fanning p.m. for Washington
2nd	"	a.m. Arrived Washington.
3rd	"	Departed Washington p.m. for Fanning.
4th	"	a.m. Arrived Fanning. Departed p.m.
5th	"	a.m. Arrived Christmas Island.
10th	"	Departed Christmas p.m. for Phoenix Is.
13th	"	p.m. Arrived Phoenix Island. Departed p.m. for Sydney Island.
14th	"	a.m. Arrived Sydney Island.
15th	"	a.m. Departed Sydney. a.m. Arrived Hull Is.

16th October	a.m.	Departed Hull.	p.m.	Arrived Gardner Is.
17th	"	p.m.	Departed Gardner Island.	
21st	"	a.m.	Arrived Betio, Tarawa.	

The tour, over a period of two months, covered about 3,000 miles of the Pacific Ocean. Every landfall was made at exactly the time (and date) specified by Captain E.V. Ward, M.B.E. who, due to lack of qualified watchkeeping officers, navigated the ship entirely unaided throughout the voyage. To Captain Ward the highest possible praise is due for this feat of seamanship which must have imposed a heavy strain. His innumerable discourses on local navigation and lore, his flashing wit and every ready helpfulness made the voyage the success it was.

The Chief Engineer, Mr. Jack Muller kept "Toraaka" operational for the whole voyage; breakdowns were few and rapidly repaired, but some required a display of considerable ingenuity. The numerous outboard engines used to ferry expedition parties to and from their objectives were magnificently maintained. Not ^{one} single serious incident of outboard engine failure occurred and there were several occasions where a faulty engine could have endangered life. Jack Muller and his staff deserve the highest praise.

The new Chief Officer, Mr. M. Hall-Thompson who was in charge of cadet training was the gentleman physically responsible for discovering suitable landing points for members of the expedition. Great credit is due to him and to the various small boat coxswains for the fact that not one boat was overturned or damaged in the several possibly dangerous landings that were undertaken.

It was understood that the prime purpose of the expedition was to be a scientific study of the Line Islands. It was therefore a great pity that so few scientists were in fact present. A great deal more factual knowledge might have been gained if bodies such as the British Museum, the Smithsonian, and Universities had been approached at least twelve months before the ship was due to sail. The voyage was discussed in early 1973 but, as far as is known, none of these institutions was given notice of the proposed itinerary until 1974, which provided insufficient time for first rate men to make themselves available. It is strongly recommended that any future expedition of this nature should include a botanist and an entomologist of repute.

Since this voyage was intended primarily as a scientific one some thoroughly unscientific activities which occurred must, with great regret, be recorded. That they will be recorded elsewhere is certain, so that it is considered only right that they should be mentioned here in the hope that they can be avoided in the future. A most disgraceful and unnecessary slaughter of birds (tropic birds and boobies) took place on both HALDEN and VOSTOK - in the latter case specimens actually being studied by the guest ornithologists were killed within their vision. These birds, due to their lack of contact with predatory humans, are unafraid and remain on the ground when approached. The peat soil on VOSTOK was set alight by fires used to cook the slaughtered birds. The fire was eventually put out after 2½ hours work with a bucket gang. It is hoped that the fire remained doused. If it caught light again after "Teraka" sailed that evening there is a good chance that all vegetation on the island will have been destroyed.

The report which follows takes the reader down through the five least visited Southern Line Islands then to the better known Northern Line Islands and Phoenix Islands where descriptions are not necessary and comment is made mainly from an agricultural viewpoint.

In some of the reports on the Southern Line Islands reference is made to objects or facilities not found on this expedition. These remarks refer as a rule to historical notes made by visiting ships of the Royal New Zealand Navy in 1930, 1940 and 1950 and by Mr. H. E. Maude and others during and immediately after the second World War.

MALDEN ISLAND

(Lat. $4^{\circ} 03' S$, Long. $155^{\circ} 01' W$)

GENERAL DESCRIPTION:

Malden island is a flat, triangular island about 5 miles long at greatest length and possibly 4 miles in greatest breadth and covers a reputed 20,000 acres. "Teraka" reached the island at 0645 on Monday 2nd September 1974. There is no anchorage. The landing is about 300 yds. north of South West point via a 9 feet wide surge channel in the narrow reef. There is now no sign of any blasted channel, if there ever was one, or of any former pier. The beach at the landing point is steep-to and heavy surf over the reef makes for a hazardous disembarkation, the boats crew having to turn the boat round very smartly upon touching the beach. Stretching North and South from the landing point are the remains of C.G.S.I. sheds used during the 1962 bomb tests, all except one of these is in poor repairs. The tank on the water tower (which is a major landmark) has been dismantled and removed leaving a rickety platform 30 ft. high. The old phosphate company buildings, to the South of the military camp, are in ruins - no roofs exist and many of the coral slab walls have disintegrated. There is no sign whatsoever of any boats or other company gear except an auxiliary ship's wheel (large) and a few wire ropes and heavy chains, all in poor condition. There is no sign of any flagstaff and it is difficult to identify the cistern noted in 1930.

The small gauge tram track is still to be seen and a few bogys of guano trucks are lying near the track in places - the railway lines themselves are too rusty to be of any use now.

On the western side of the military camp are stocks of fuel consisting of at least 250 drums (44 gall.) of U.S. Navy Dieselino dated February 1962 - there are a few drums of petrol. All these drums are in perfect condition and untapped.

The island, which is about 30 ft. a.s.l. at the edge, appears to slope very slightly towards the central area marked as 'lagoon' on the chart. In fact, the 'lagoon' is at the extreme eastern end of the charted area the remainder being a salt pan, with free sodium chloride in small patches on the surface. The totally enclosed 'lagoon' is about 15 ft. a.s.l. one foot deep in water of exceedingly high salinity. Several depressions on the island which are presumably old phosphate diggings were shallowly filled with highly saline water as were the excavations used to form tram track embankments. There is thus a fresh water lens on Malden.

The only fresh water was found on the eastern side in a cave (old phosphate working?) into which a sloping track had been cut, presumably to haul away the phosphate originally contained in the cave. In this area one cat was seen - another cat was seen near the water tower. Near the North East point are more ruins, presumably used by the guano company and to the West of these ruins are four small groves of stunted Pisonia grandis trees 12-15ft. high and 2ft. in diameter. Most of the Eastern side of the island is taken up by old phosphate diggings. There is no sign at all of any coconut palms.

Travelling South East from South West point is a graveyard containing many Polynesian type graves and those of 8 Europeans. The marble headstones on 3 of the European graves are still in mint condition.

There is an overgrown airstrip running on a North/South bearing about 200yds. east of the main camp buildings on the mud or similar (not concrete) and is about 800-900yds. long. The Northern end of the strip is marked by a pole about 20ft. high and the line of the strip is indicated by 3 poles (others have fallen down) and fuel drums, one or two of which are painted red and white. The strip is sparsely covered with low clumps of Lecturus grass and Portulaca sp. succulents.

VEGETATION:

The circumference of the island has a fairly sparse cover of Sida fallax (2ft. high), Lecturus revens, Tribulus cistoides and another unidentified grass. Passing from this area towards the centre there is a wide zone consisting entirely of two species of Portulaca (yellow and white flowered) and more central still and about 150yds. before reaching the 'lagoon' is an area of pure Portulaca lutea. The 'lagoon' salt flats are bare of vegetation. The 4 clumps containing 6, 3, 3 and 9 stunted Pisonia trees near the North East point have already been noted. Rainfall is obviously very poor and probably very erratic.

SOIL:

The soil is entirely coral 'gravel' around the margin of the island with more finely divided coral sand toward the centre, interspersed with exposed coral rock where phosphate has been removed. The 'lagoon' is a brown coral sand with occasional small area of pure sodium chloride of maximum thickness of one inch.

BIRDS:

There are large numbers of sea birds including brown boobies, blue-faced (masked) boobies, red-tailed tropic birds and fairy terns. All nest on the island in peace and quietude until disturbed and slaughtered by the company of a visiting ship - which fortunately is a rare occurrence.

ANIMALS:

Cats, mice, polynesian rats (R. exulans).

DEVELOPMENT POSSIBILITIES:

As further phosphate working appears to be out of the question and as there is virtually no freely available fresh water the best possible use for Malden Island would probably be as a bird sanctuary. There is good fishing off the North West and South West Points - yellowfin tuna and kingfish being the main attractions. Due to the most inhospitable landing and narrow reef with no sand beaches any form of tourist venture is out of the question - even if the water problem could be overcome. This is a most bleak and depressing island.

STARBUCK ISLAND

(Lat. 5° 37' S, Long. 155° 55' W)

GENERAL DESCRIPTION:

Starbuck Island lies about 100 miles S.S.W. of Malden. It is about 5 miles long and 2½ miles wide at the widest point and covers a reputed 4000 acres. "Teraka" arrived at the island at 0700 on Wednesday 2nd September 1974. There is no anchorage.

The charted "boat passage" near the Western Point could not be found and the ship steamed round the island east about and eventually found exposed 300 yd. wide reef flats on the northern side - landing was made here through a wide surge channel and was a simple and safe procedure - quite the reverse of Malden.

The shore beyond the reef is a steep bank 20 to 30 ft. high composed of large, sharp coral fragments on the rampart. The ocean rampart drops about 3 ft. to the flat interior which is composed in the main of large areas of broken black coral pieces making for most uncomfortable walking. There are the remains of many, mostly old, wrecks of wooden ships on the northern side. These wrecks have been flung bodily over the rampart in various cataclysmic which have struck the island from time to time.

At the Western Point of the island are the old phosphate settlement ruins consisting of four houses made of coral slabs laid horizontally, the "foundations" of one other and what was probably a large storage shed. Roofs no longer exist on any buildings and some walls have collapsed. A short distance inland from the buildings a well was found, it was dry and the sides, previously shored up by baulks of timber, had collapsed, but could be excavated again - this indicates that there might be a fresh water lens on Starbuck. A large black cat was seen in the vicinity of the well although there were no indications of available fresh water.

To the east of the ruins is a stone slab cairn surmounted by a broken pole (or flagstaff); to the east of this again is a large hardwood "beacon" stake out to a point at the top, which may have marked the original boat entrance but may also have been a grave, as a small cross made of copper was found at the base of it and may formerly have been nailed to the timber. There is a wide surge channel in the reef nearly opposite this "beacon" which is impossible to see from outside the reef due to the heavy surf - it is possible to get a boat in here with guidance from the shore as the Chief Officer and the author demonstrated in practice. The experience was rather unpleasant and it was agreed that the northern coast reef where we originally landed was a more congenial spot despite the two mile walk to the Western tip.

VEGETATION:

Sparse; unidentified species of grass as at Malden, stunted Sida fallax, Bidens sp. (with yellow flower) and Portulaca sp. (with yellow flower), Tribulus cistoides (as at Malden) very stunted, Cordia subcordata (stunted) near Eastern lagoons. Introduced Ipomea sp. between ruined buildings.

WATER:

There may be a fresh water lens as noted above. There is no evidence of any freely available fresh water. At the eastern end of the island there are shallow totally enclosed lagoons which are highly saline.

SOIL:

Coral sand interspersed among large areas of coral rag and broken reef rock.

BIRDS:

Large breeding colonies of Sooty terns (possibly 1-5 million birds), Brown boobies, a few frigate birds, curlews - no blue-faced (masked) boobies were seen.

FISH:

An excellent reef for lobsters - a large quantity were caught on the Northern reef in a short time. Yellow tuna and kingfish abound.

DEVELOPMENT POSSIBILITIES:

This island is even drier than Malden and is a most uninspiring place. The bird colony is not impressive. The only foreseeable exploitation of Starbuck would be in its reef which abounds with lobsters and clabs.

VOSTOK ISLAND

(Lat. 10° 05'S, Long. 152° 23'W).

GENERAL DESCRIPTION:

Vostok Island lies about 305 miles S.S.E. of Malden. It is a very small coral island about 1400 yds. long, triangular in shape and covered in a dense forest of Pisonia grandis trees some of which reach a height of 30 feet. The island covers a reputed 164 acres.

'Toraka' reached the island at 0000 on 7th September 1974 - There is no anchorage.

The landing is made through a narrow cut in the reef about 150 yds. north of the West Point. There is the recent wreck of a wooden fishing vessel on the tip of the West Point. The coral beach at the landing is steep - to at an angle of about 35°.

The eastern part of the island consists of a broad flat ledge of black coral fragments, possibly 100 yds. wide on which there is a large nesting colony of brown boobies. The central and northern part of the island is Pisonia forest over a deep brown/black peat soil. There are no buildings of any sort. The beach crest is strewn with wreckage and Japanese (Taiwanese?) fishing floats.

VEGETATION:

Dense Pisonia forest as noted. On the coral flats there are patches of Doerhaavia repens and one low-growing unidentified succulent - the tiny white petalled tubular flower does not resemble Portulaca in any way. These are the only vascular plants on the island.

SOIL:

Coral sands on the periphery. Under the Pisonia is deep peat (moist at 12" depth) extending to a depth of at least 3 feet. THIS PEAT IS HIGHLY FLAMMABLE.

BIRDS:

Brown boobies nesting with eggs and young, Blue-faced (masked) boobies nesting in trees, frigate - birds nesting in trees, blue-grey terns, noddy terns, fairy terns. This place is a miniature aviary of sea-birds.

WATER:

No fresh water evident although rainfall is probably abundant if the Pisonia growth is any measure. The peat is of very fine texture and highly absorbent and it is doubtful if a satisfactory well could be dug to tap the absorbed moisture.

ANIMALS:

Mice and the ubiquitous Polynesian rat (R. exulans) only.

FISH:

Yellowfin tuna, kingfish and caranz sp. were caught and are of large size. Very few lobsters. Coconut crabs in profusion.

DEVELOPMENT POSSIBILITIES:

Virtually nil. This is a most beautiful little place from the point of view of forest and sea-bird colonies. Any human occupation would sooner or later set light to the peat (it took "Teraka's" company less than 12 hours to achieve this) and if the peat is burnt out the Pisonia forest would go for ever.

There is no fresh water. The island could be declared a bird sanctuary. Notices to interested bodies should stress that camping be confined to the eastern coral flats. This is the weather side of the island and this fact might help to deter a lengthy stay by humans.

CAROLINE ISLAND

(Lat. 10°00'S, Long. 150°14'W).

GENERAL DESCRIPTION:

Caroline Island is a small, narrow atoll with 24 islets. The total length is about 5½ miles and may be 1 mile in greatest width at the southern end. The land area is reputedly 560 acres.

'Teraka' arrived off Caroline at 0000 on 9th September 1974. Landing was made on South Island over a wide reef at a point marked by the shank of an anchor. There is no anchorage.

Only two islets have any number of coconut palms on them - the most northerly islet known as Nake Island and the most southerly islet known as South Island. South Island may have as much as 100 acres of palms which are a wild forest of mature palms, immature palms and heaps of uncut nuts and uncleared fronds. It is not possible to estimate the acreage of palms accurately as patches have died out here and there in the centre of the island. Overgrown ruins of a former settlement were found near the northern point of South Island but no well was found although there is a fresh water lens at a depth of about five feet in the central part of the island.

The northern islet (Nake Is.) is easily reached over the 100 yd. wide flat reef. Here there was evidence of the lessee's activities in the form of a temporary copra store containing about three tons of very poor grade copra in bags and a temporary shelter on the southern shore of the island. At first sight there appear to be a substantial number of palms on this islet, but this is an illusion - the periphery is covered by palm forest but the interior of the southern part of the island consists of an almost pure stand of Pandanus. The northern half of Nake Is. comprises a high beach crest with a black coral fragment flat form inland clothed sparsely by Messerschmidia bushes and the central part is forested with Pisonia trees, less dense and smaller than those on Vostok (perhaps 60 feet high) with the characteristic deep layer of peat below. The northern section of Nake Is. is a black broken coral platform with dense Messerschmidia bushes, almost impenetrable without bush knives.

A few of the other islets have small clumps of from 3 to 15 palms on them. All palms areas display symptoms of periodic drought, bottling of the trunk and skirts of dead fronds. Some palms have 'skirts' as heavy as those on Christmas Island. Nuts are small and average about 23 per palm, with only 3 or 4 nuts per inflorescence. The yield of copra must be very low. No copra appeared to have been cut on South Island for at least five years.

VEGETATION:

Normal species for an atoll, but Scaevola totally absent. Present and obvious are Messerschmidia, Cocos, Pandanus sp. (with small fruit bunches), Vigna luteola in clearings on S. Island, Pisonia on Make Island, Boerhavia, some Lepturus. A full report on the flora is in Atoll Research Bulletin, No.145 of 1971.

SOILS:

Coral sand beach, black coral rag behind the beach crest. In the centre of South Island a deep, brown humic sand in small pockets interspersed with coral rag. Deep brown/black finely divided peat under Pisonia on Make Island.

BIRDS:

Brown boobies nesting, frigate birds, sooty terns, fairy terns.

WATER:

No fresh water wells found. The lens on S. Island is about 5' down at one point.

ANIMALS:

Polynesian rat.

FISH etc:

Only 20 lobsters caught in one whole nights fishing. Black tip shark (v. numerous) are a menace to the reef walker here - some up to 4 ft. in length. Numerous large coconut crabs - which are probably the source of supply for Vostok. Many turtle tracks seen.

DEVELOPMENT POSSIBILITIES:

This is a beautiful miniature atoll - fish abound in the lagoon and there is a fresh water lens - of depth or yield unknown. Caroline might possibly be leased to a tourist venture of some sort, or to private persons. Situated about 500 miles from Papeete this would not be out of the question for those with money sufficient to build a hideaway home. The temptation to suggest that C.E.I.C.

people should be given the opportunity to settle on Caroline should be firmly resisted. It is too far away from the Gilberts - it is too far away from any administration there may be on Christmas Island. Rainfall is uncertain and there are obviously extended drought periods. Theoretically this little atoll could be vastly improve from the purely agricultural stand point, but in the opinion of the author it is quite beyond any consideration in practise - at least as far as the G.E.I.C. Government is concerned.

FLINT ISLAND

(Lat. $11^{\circ}25'S$, Long. $151^{\circ}43'W$).

GENERAL DESCRIPTION:

Flint is another small reef island reputedly covering 600 acres and is about $2\frac{1}{2}$ miles long and $\frac{1}{2}$ mile wide at the widest point. This is about $\frac{1}{3}$ down the length of the island from the northern most point (in fact, from the boat landing eastwards). The island tapers at both ends and its axis is about $330^{\circ}(T)$ to $150^{\circ}(T)$. There is no anchorage.

A long submerged reef extends from the northern tip of Flint so that the island is usually approached at its southern point. The boat passage is about $\frac{2}{3}$ of the distance along the western coast when approached in this manner. The passage is marked by a 30 ft. high concrete beacon on shore. The boat landing has been blasted or cut from the solid reef and is about 30 yds. long by 20 ft. wide and ends in a low coral wall about 1 ft. high. The surge at the seaward end of this channel is sufficient to send a small boat shooting towards its end at an alarming rate - the bowman and an accomplice are required to leap into the water at the last second to prevent the boat running the wall at the far end.

This island, with Caroline, is currently leased to Capt. Omar Dart for copra production. As it happened, five of his Tahitian employees were encamped near the landing beacon, their accommodation being a capacious tent and a tin shack, which contained about 25 tons of copra and 2 large greenback turtle shells. The copra was of poor quality and mouldy as no attempt was made to dry it in the sun - the coconut meat is cut out and immediately sacked with the inevitable result.

Inland from the boat passage is an overgrown forest of coconuts; a recent effort has been made to improve this situation by cutting down useless palms and excessive young palms in an area of 2 or 3 acres adjacent to the camp. The rest of the plantation is 'wild', with heaps of old uncut nuts covered by layers of fallen fronds which makes walking and inspection most difficult.

A short distance south-east of the boat landing is the remains of the tran track which in turn leads to the ruins of the old phosphate settlement buildings and a small wooden chapel (which is still in fairly good repair, complete with pews, altar and altar cloth). There are two large concrete cisterns in this area formerly

used to store rainwater from roof catchment. The covers of the cisterns have long since disappeared but they could be put into reasonable order fairly easily. It is estimated that the largest of these tanks could store about 10,000 gallons of water and the smaller about 5,000 gallons.

From the appearance of the palms and other vegetation it is plain that Flint receives more rainfall than Caroline; however, all the usual mineral deficiencies of a coral island are manifest. The palms, having been left in a wild state and all except the originals being self-sown, bear only a meagre crop of nuts - no palm was observed to have more than 27 nuts and the nuts were small.

VEGETATION:

Coccoloba, Messerschmidia, Pisonia (stunted to 40 ft.), Cordia subcordata, are the main and obvious flora.

SOILS:

Coral sand and gravel on the shore above the reef. Inland a humic brown deep sand. One small area of peat swamp was found accidentally, so that there may be more.

WATER:

There is evidence of a lens but the well to the south of the island remained undiscovered. Rainfall is obviously adequate so that roof catchment to the cisterns would probably be the most practical method of gaining fresh water.

BIRDS:

The usual range of boobies, terns, frigates, curlews and turnstones, but none nesting.

ANIMALS:

Large population of Polynesian rats.

FISH:

Large kingfish and tuna. Inside the reef the lobster population was disappointing. Much evidence of turtle egg-laying. Many coconut-crabs.

DEVELOPMENT POSSIBILITIES:

With the expenditure of effort and a little money the coconut forest could be vastly improved. Palm numbers could be reduced by about 60% to achieve a manageable stand of palms of all ages. There are several hundred times more coconuts lying on the ground than

have ever been cut for copra and the present system, if it can be called such, will never clear them up. In a time of high copra prices a team of 15 or 20 men based on the island for six months could effect a vast improvement; doubtless the lessee would benefit financially if carriage of copra 400 miles to the middleman in Papeete is not too heavy a factor in the cost of operation.

Flint, being a reef island with no lagoon, is not as attractive as Caroline but geographically may have the edge as it is 100 miles nearer Papeete. Any tourist development would require that the island be cleared of its present tangled vegetative state. Even if this were accomplished it is doubtful if any but the most devoted "get away from iters" would be interested; there is no beach for swimming - a pool or pools could be blasted out of the surrounding reef and, like Caroline, some method would have to be found of excluding the numbers of black-tip sharks which live between reef and shore. Bird life is not especially abundant and although a sanctuary could be declared it is doubtful if as much interest would be shown as in, say, Malden or Vostok.

It may be worthwhile to suggest that a much higher rent be paid by the lessee, thus forcing him to improve the estate and cut more copra - or if he refuses, to sell the island outright for as large a sum as can be obtained from whoever and for whatever purpose it is required. Flint can never be regarded as a Colony asset from any point of view.

WASHINGTON ISLAND

Washington is the most northerly of the Line Islands and is owned freehold by Burns Philp Ltd.

At the time of our visit the total population was 430. There were 77 estate workers, 1 policeman and 2 schoolteachers - the balance being dependant relatives. The Australian Manager is Mr. Bill Frew who has been on the island for 19 years and had just returned from leave after a period of 7 consecutive years on the island.

Washington is now a reef island, but must once have been an atoll as the lake in the centre (now containing potable fresh water) still contains sea water fish (Caranx sp. and Bonefish) and the large surrounding swamp contains sea shells in abundance which are exposed all along the banks of the man-made canals leading to the lake.

ACREAGE 2103 acres land; 524 acres lagoon. Total 2627 acres.

RAINFALL 120" average since 1937.

PLANTATION:

This is mainly of coconuts growing under forest conditions in peat. No attempt is made to "improve" cultural conditions and it is quite probable that, with the exception of a minimum of thinning here and there, little improvement can be made. The large peat 'swamp' would be prohibitively expensive to replant and provided the undergrowth of fern (Polypodium phymatodes) and the majority of germinated nuts are kept in check little more can be expected. Yields of copra have been steady at about 1000 tons per annum since 1937 and this from approximately 2000 acres of palms is a most creditable output. An estimated 300 tons of copra is lost each year due to nuts not found by copra cutters, most of these are hidden in the dense undergrowth or fall into the canals, swamp, or into the lake.

The plantation is divided by paths into 127 blocks of 18.5 acres each which are allocated to groups of 4 copra cutters as daily tasks. On looking at the map in the Manager's office one is immediately struck by the possibilities of the simple divisions for settlement that these blocks provide. During discussions with the Manager it came out that Burns Philp were, in fact, considering giving each copra cutter and family a block. The Company acting as a buying agency and providing settlement infrastructure. This has not gone

beyond the 'idea' stage yet.

Management allows each plantation worker an area of 50 square feet for use as a babai/taro pit. There are an abundance of broad-fruit trees, pawpaws and bananas growing in the settlement area. Pandanus grows wild on the island as does taro in the swamp area.

THE FUTURE:

Washington must always be considered with Fanning Island in any thoughts about the future. It is quite certain that Burns Philp, even if they wished to sell these islands at all, would never consider selling at a time of low copra prices. This was fairly obvious from independant discussions with Messrs Frew and Fleetwood. If Burns Philp are ever of a mind to sell then the Colony would be asked a fairly hefty price. What this sum might be at present is a matter for conjecture but it would be surprising if purchase could be made at less than 1½ million dollars for the two islands.

It must also be clearly recognised that Washington and Fanning are presently supporting over 600 Gilbert and Ellice islanders. Any plans for settlement that the Colony might have must take these 'residents' into account. Many of these people have lived on one or the other island for many years and consider them as 'home' - a generation of young people have grown up who have never seen any other island and are now true residents in every way.