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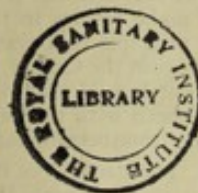


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LEGISLATIVE COUNCIL.
FIJI.



COUNCIL PAPER, No. 1.

Medical Department

(ANNUAL REPORT FOR 1946.)

THE DIRECTOR OF MEDICAL SERVICES TO THE HON. THE COLONIAL SECRETARY.

Suva, 10th June, 1947.

Sir,

I have the honour to submit, for the information of His Excellency the Governor, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary conditions prevailing in the Colony of Fiji for the year 1946, together with the returns appended thereto.

I have the honour to be,

Sir,

Your obedient servant,

J. C. R. BUCHANAN,
Director of Medical Services.

I—ADMINISTRATION.

(1) ESTABLISHMENT AND STAFF.

(a) MEDICAL DIRECTORATE.

Dr. G. Kinneard, O.B.E., the Director of Medical Services, was invalided from the Colony on the 23rd January and has since retired. Dr. H. S. Evans, substantive Assistant Director of Medical Services, acted as Director from that date until the 30th September when he proceeded on leave prior to retirement.

2. On the 1st October, with the concurrence of the New Zealand Government, the post of Director of Medical Services was amalgamated with that of Inspector-General, South Pacific Health Service and Dr. J. C. R. Buchanan, who holds the latter appointment, became also Director of Medical Services, Fiji.

3. Dr. R. J. Snodgrass acted as Assistant Director of Medical Services during the year. This appointment was up-graded to Deputy Director of Medical Services with retrospective effect to the 1st January, 1946, when the Report of the Salaries Revision Committee received the approval of Legislative Council in November.

4. The amalgamation of the posts of Inspector-General and Director of Medical Services was conditional on the strengthening of the Medical directorate staff by an administrative secretary, but it was not found possible to fill that post during 1946.

5. In the last quarter of the year the provision of additional accommodation made it possible to implement the change of Public Health administration foreshadowed in the Annual Medical Report for 1945 and transfer the office of the Chief Health Inspector, Mr. C. Kendrick, to the Medical Directorate.

6. The Nursing Superintendent, Miss D. T. Pederson, also served on the headquarters executive staff.

(b) MEDICAL, NURSING AND TECHNICAL STAFF.

7. The details of the departmental establishment and the principal appointments and postings are shown in Appendix I. Including the Director and Acting Director five Medical Officers retired, resigned or proceeded on leave prior to retirement, five Medical Officers were appointed to the permanent service and three were employed on a supernumery or temporary basis. In July four additional posts of Medical Officer were approved. The vacant post of Surgeon Specialist was filled by the arrival in the Colony of Mr. K. J. Gilchrist, F.R.C.S., in June, and at 31st December the position as regards Medical Officers on the effective strength or absent on vacation leave was: Established Posts, 26; Posts filled, 22; Vacancies, 4.

8. There were, on the 31st December, 61 established posts of qualified Nursing Sisters and Staff Nurses, including administrative, tutorial and health appointments but excluding 16 Nursing Sisters in the Central Leper Hospital at Makogai. The vast majority of these posts were filled by recruitment from New Zealand on an initial contract of two years and there were, naturally, many changes in personnel. Despite these changes, the numerical strength of the qualified nursing staff was well maintained and it was possible to fill most of the senior posts by nursing sisters who had previous island experience.

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9. It has been the policy of the department to make every endeavour to encourage nursing sisters to make service in the Islands their career and, to that end, the Government of Fiji has agreed in principle to a system sponsored by the South Pacific Health Service whereby, after two or more tours in the Colony, a Sister may be seconded to a New Zealand Hospital for a period of one year without loss of seniority. During this year the Sister will have an opportunity of keeping herself in touch with modern advances in nursing, and it is hoped that this privilege will tend to increase the numbers remaining in the Service.

10. The strength of the technical staff was improved by the return of two Health Inspectors from duty overseas with His Majesty's Armed Forces, and the Pharmacy and the Pathological Laboratory were adequately staffed. There was evidence, however, that the increasing demands on the technical services was putting considerable strain on the existing staff. The Malarial Engineer appointed in 1945 completed a survey of immediate and projected major engineering works in connexion with Malaria Control (Anopheles Prevention). He was seconded to the Public Works Department for other duties in June.

11. The Government of Fiji concurred in principle with a recommendation of the South Pacific Board of Health made in October that, in future, Native and Indian Medical Practitioners should be designated Assistant Medical Practitioners. It was recognized that this did not imply any change of status, but that it obviated a plurality of nomenclature in Fiji and other Pacific territories.

12. Five Fijians and one Indian graduated from the Central Medical School in December, bringing the total numbers of Assistant Medical Practitioners on the active strength to 69 Fijians and 10 Indians.

13. The number of locally trained nurses, predominantly Fijian, increased from 121 in 1945 to 130 in December, 1946. Of these 63 were employed in hospitals and dispensaries and 67 as district nurses in the field.

(2) LEGISLATION.

14. The following laws, regulations, etcetera, were enacted during the year:—
Ordinances—

- No. 12 of 1946—Town Planning.
- No. 14 of 1946—Sub-division of Land (Amendment).
- No. 20 of 1946—Quarantine (Amendment).

Regulations—

- Legal Notice No. 11—Town Building (Amendment) Regulations, 1946.
- Legal Notice No. 82—Town Building (Amendment) Regulations, 1946.
- Legal Notice No. 93—Quarantine (Aerial Navigation) Regulations 1946.
- Legal Notice No. 114—Defence (Dwelling-House) (Amendment) Regulations 1946.
- Legal Notice No. 158 to 161—Hospital (Amendment) Regulations.
- Legal Notice No. 195—Town Building (Amendment) Regulations.

By-laws—

- No. 17—Barbers' Shops.

(3) FINANCE.

15. The following table represents the finance of the Department during 1946, based on figures available on 31st March, 1947:—

Gross Expenditure	..	..	..	£230,177
Revenue	..	..	..	18,402
Nett Expenditure	..	..	..	211,775

16. The total expenditure includes allocations from Colonial Development and Welfare Funds of £14,430 for Mosquito Control (Anopheline Prevention) and £450 for a preliminary tuberculosis survey. Excluding these amounts and taking the revised estimate of the total expenditure of the Colony as £1,832,268 the gross cost of the Medical and Health Services was 12.56 per cent of the total Colony expenditure or 16s. 6.38d. per head of the population.

17. The rising cost of expenditure per head of the population in the past 10 years is shown in Table I. The service has expanded in many directions, but the increasing costs of stores, equipment and feeding of patients are mainly responsible for the increase.

TABLE I—COST OF MEDICAL SERVICES PER HEAD OF THE POPULATION.

Year.	Population.	Expenditure per Caputum.		Remarks.
		s.	d.	
1936	201,086	8	0.77	
1939	215,030	10	7.42	
1942	233,895	10	0.78	
1944	246,485	12	0.81	£30,614 free grant from C.D.W.F. deducted.
1945	254,676	14	1.67	£26,264 free grant from C.D.W.F. deducted.
1946	260,468	16	6.38	£14,880 free grant deducted; £5,000 for new x-ray plant included.

(4) MEDICAL STORES AND EQUIPMENT.

18. The supply of essential medical stores and equipment was well maintained throughout the year, and, although periodic delays in delivery of certain items caused anxiety from time to time, this never resulted in a serious inability to meet essential requirements.

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19. The necessity for large scale refurnishing and re-equipping in all units was very apparent, a result of the curtailment of all non-essential purchases during the war years which had resulted in a grave deficiency of many refinements and, indeed, essentials. Apart from expensive surgical appliances, microscopes and similar items, much of the material essential to the comfort of patients has become worn out and it has not been possible during this year to do much in the direction of relieving substantial additional expenditure which will become essential in the immediate future.

20. The total value of drugs, instruments, appliances, clothing, bedding and equipment issued from the Medical Store during 1946 was £39,281 14s. 3d. Of this total £117 0s. 9d. represented free issues to Missions and £2,358 6s. 8d. was issued on repayment to the Western Pacific High Commission territories and other private accounts. The 150 tuberculosis beds in Tamavua Hospital, a new commitment in 1946, was responsible for some £3,550 of the total issues.

21. In order to control the issue of drugs to rural medical units and to systematise indenting and stock-taking, a schedule of all items authorized for these units was devised and the revised system, which is expected to effect considerable economy, was in operation by the end of the year.

II—PUBLIC HEALTH.

(1) GENERAL REMARKS.

22. The general trend of morbidity in the mass of the population is represented by returns submitted by Assistant Medical Practitioners in charge of Rural Medical Units. The recording system in force is based on the diagnostic facilities generally available and does not envisage any fine diagnostic classification of general diseases. It is, nevertheless, designed to portray with reasonable accuracy the incidence of communicable and other notifiable diseases, to give a practical indication of morbidity trends and to portray the overall rate of minor sickness.

23. The returns from the Colonial War Memorial Hospital, Tamavua Tuberculosis Hospital and District Hospitals where medical officers are stationed follow the normal colonial system. They can be accepted as accurate, and with certain qualifications connected with racial distribution of population density to which reference is made below, are representative of the disease incidence in the Colony.

24. With the exception of outbreaks of measles, influenza and gastro-enteritis, the first of which assumed major epidemiological proportions, there was no untoward occurrence affecting the health of the population as a whole. In a world of tightened belts the peoples of Fiji can consider themselves fortunate that they were able to face these epidemics in a robust physical condition begotten of a plentiful and varied food supply and an equable—if at times in terms of rainfall in certain areas an exasperating—climate.

(2) GENERAL DISEASES.

25. All indications from returns submitted by rural units point to a satisfactory state as regards the primary and secondary manifestations of yaws, so much so, that it can be said with some assurance that the disease is rapidly coming under complete control. Skin diseases, especially the tinea ("Mata ni solo" of the Fijians) remain unpleasantly prevalent particularly in the more isolated areas. Hookworm, also, is undoubtedly common, but normal returns do not accurately represent the infestation rate, and no cross-section or mass surveys were carried out. Respiratory disorders, minor injuries, myalgias and the common run of minor maladies and injuries, constitute the bulk of the condition for which advice and treatment were sought in the rural units.

26. A return of diseases and deaths consolidated for the Colonial War Memorial Hospital, the Tamavua Tuberculosis Hospital and the District Hospitals of Labasa, Lautoka and Levuka are recorded in Appendix II, and a summary of out-patient attendances at, and inpatient admissions to, all hospitals and dispensaries together with a record of beds available is tabulated in Appendix II. There is a substantial increase in attendances over previous years, accounted for partly by epidemics but in the main by natural tendencies such as population increase, urbanization, improved transport facilities and a growing appreciation of hospital services. The comparative figures for 1945 and 1946 briefly summarized are:—

	1945.	1946.	Increase.
Total In-patient Admissions ..	13,210	16,622	3,412
Total Out-patient Attendances ..	232,800	254,900	22,100

27. In assessing the significance of the figures in respect of racial incidence, it has to be remembered that, with the exception of Levuka, and to some extent Suva which taps the heavy Fijian population of the Rewa Delta, the areas immediately surrounding the larger hospitals are those in which the Indian racial element predominates. For that reason elaborate correction should properly precede any analysis purporting to depict relative incidence of disease in the various racial components of the population of the Colony as a whole. Even without that refinement it does appear that there is a definite racial predisposition to certain conditions. In the anæmias, for instance, which account for 1.6 per cent of the total admissions 153 of the total of 161 cases were in Indians and in diabetes mellitus 1.26 per cent—of the total—the Indian cases predominated with 96 of a total of 125. These two diseases constitute a major problem in the out-patient departments as it is impossible to hospitalize any but the more severe cases and closer investigation is needed to clear up certain points in aetiology which may lead to a clarification of the general principles of prevention and after care. The toxæmias of pregnancy, and asthma also occur mainly in Indians. On the other hand in the diseases of the respiratory system—excluding asthma—and intestinal disorders the bias tends towards the Fijian element of the population, and until representative cross-section surveys prove or disprove it, the conclusion must remain that the Fijians are by far the most susceptible of any of the racial groups to pulmonary

tuberculosis. A pleasing feature at first sight is the virtual absence of gross hypovitaminosis, but acceptance of that impression should be guarded as there are definite indications that suboptimal conditions, especially in respect of protein and vitamin intake, exist.

(3) COMMUNICABLE DISEASES.

28. The total notifications of communicable diseases in racial groups and monthly incidence is shown in Appendix III. In these tables the obvious discrepancy in incidence of certain diseases in the two approximately equal, and numerically greatest racial groups, is immediately apparent. It has to be admitted that incomplete and at times, inaccurate notification has to be taken into account; but even so the differences, individual and total, are so great that it must be accepted that certain factors are operating which makes the Fijian more susceptible to certain infections than the Indian. There are varied opinions, and in some respects general agreement, as to the nature of these factors, but no specific investigations have been made during the year and it is inadvisable to do more than draw attention to the general pattern while commenting briefly on some diseases in the following paragraphs.

29. *Measles* was responsible for 4,814 out of the total of 13,565 notifications and it is certain that the cases reported are far short of the total number of persons who actually developed the disease. The disease was introduced into Fiji from New Zealand by school children returning for the Christmas holidays while in the incubation period, and during the early months of 1946 an epidemic developed and spread progressively throughout the Colony. The peak of the epidemic was reached in May, and thereafter there was a steady fall until, in December, only 16 cases were notified.

30. It has not been possible to classify the incidence in age groups nor accurately to record the case complications or mortality rates. All reports, however, indicate that complications were relatively rare and the death rate low. An impression of the general effect of the epidemic in a circumscribed area is gained from the figures recorded by the Assistant Medical Practitioner in medical charge in Rotuma: there the disease was confined to three village groups, and in a total of 696 cases there were only two deaths. It would appear, then, that an enhanced resistance has developed in the indigenous Fijian population although probably not yet to the same extent as exists in the Indian and other exotic races. It is true that the course of the epidemic is reflected in the increase in the crude death rate and the infant and child mortality rates, but taken by and large it seems justifiable to assume that measles has lost some of the terror it previously held as a killing disease in the Islands. How much that is due to increased resistance, how much to improved environmental conditions and how much to an increased knowledge of what not to do with any febrile ailment in children is for deliberate consideration in the light of future events and such closer examination of figures as may be possible. It is of interest to note parenthetically that the outbreaks which spread to the British Solomon Islands Protectorate from Fiji and arrived in the Gilbert and Ellice Islands Colony quite independently from Johnston Island in the North presented similar characteristics.

31. *Influenza* was fairly constantly notified although the true diagnosis was sometimes in doubt. In September, a sharp outbreak developed which persisted during October and gradually died down in November. The illness in this outbreak had all the clinical features of mild virus B influenza and ran true to type throughout. The sequelae and mortality were negligible.

32. *Gastro-enteritis and Infantile Diarrhoea* together provided 1,039 of the total of 13,565 notifications from all causes. The vast majority of these cases occurred in the first five months of the year, with a marked peak of incidence during the hot, humid month of February.

33. *Dengue* as is seen from Table A in Appendix III, showed an irregular incidence curve indicating general endemicity with an unexplained, but not serious, rise in October and a sharp fall in the months of November and December when there was, for Fiji, a low rainfall.

34. *The Dysenteries* are not yet accurately classified as it is only in the larger hospitals that the diagnosis is microscopically confirmed. Amœbic infection certainly does occur. Perhaps it is under-notified, but the fact that the total number recorded is so small in a country where it does exist must surely be placed on the credit side of the preventive medicine ledger.

35. *Trachoma* was on the whole of a mild variety with relatively few of the severe sequelae in evidence. There was no opportunity of recording the case rate in the population as a whole, or in selected groups, and in that a field for organized specialist investigation—especially in schools—exists. Until that is done, the figures must be accepted, but with great reserve.

36. *Typhoid* is endemic in Fiji and 80 cases were notified. Of these the densely populated Suva area accounted for 28; there were 20 in Tailevu and 15 were traced to insanitary conditions in a Solomon Islanders' Settlement in the township of Levuka. Monthly distribution was fairly level and in no case was there evidence that water or milk could be incriminated.

(4) VENEREAL DISEASE.

37. There is a slight increase in cases recorded of syphilis and gonorrhœa over the 1945 figures. This is not great, but it has to be regarded as a warning that progressive urbanization and sophistication may be tending to drag Fiji down from the elevated position she shares with other South Western Pacific island territories in regard to freedom from venereal disease. The diseases are notifiable by law, and as yet the extent to which they are treated without notification is not reacting unfavourably on the case incidence. Co-operation in the profession towards tracing of source cases is on a reasonable footing, and, although the warning note has been sounded, no special measures have been deemed necessary. In passing it might be noted that the yaws/syphilis

ratio in the Fijian and Indian race groups recorded in Table B of Appendix III has a significance for those who are interested in the debatable question of the identity or otherwise of the causal organisms of the framboesias.

(5) TUBERCULOSIS.

38. Notification of all forms of tuberculosis totalled .2 per mille of the total population with a Fijian/Indian ratio of 3/1. The smaller figures in the other racial groups make statistical deductions inaccurate, but work out approximately 1.8 per mille for part-European and .8 for Europeans.

39. With the object of facilitating advance arrangements for the comprehensive survey for which the sum of £14,000 had previously been allocated from the Colonial Development and Welfare Fund, Dr. C. A. Taylor, Director of the Division of Tuberculosis in the Department of Health, New Zealand, was invited to visit Fiji and advise on the type of survey likely to be applicable to local conditions, the type of equipment which would be most suitable and the preparatory work necessary before the survey proper could be undertaken. His formal report was presented in December.

40. In February, the Tuberculosis Hospital at Tamavua was opened and 150 of its potential of some 300 beds were filled with cases of tuberculosis from all parts of the Colony. The policy adopted was to regard this unit, which had been adapted for the purpose from a Military Hospital, as one to which cases in whom the disease was likely to be cured or rendered quiescent by specialized treatment, would be admitted. It was not possible to make available more than 150 beds for reasons of finance, equipping and difficulty in staffing, and it was felt that if advanced incurable cases were admitted, a great deal of the value of the unit would be lost. The question of organizing familial or local institutional isolation of source cases was not overlooked but the heavy demands on materials and labour for other reconstruction work has precluded much substantial headway being made.

(6) LEPROSY.

41. Dr. C. J. Austin, O.B.E., Medical Superintendent of Central Leprosy Hospital at Makogai has made a full report which will be found in Appendix VII. The figures recorded in the report will repay close study. They demonstrate how successful the application of a system of compulsory segregation can be when backed by optimum institutional facilities and a well-organized follow-up system. Weakness, when that exists, may be in the intensity of search for early cases, and all attention possible with the existing staff was given to this aspect.

42. Once more special recognition must be given to the generosity of the people of New Zealand, who, through the medium of the Leper Trust Board, do so much to improve the lot of the patients by providing comfort facilities, and even cash presentations on a most generous scale.

(7) FILARIASIS.

43. Under the enthusiastic leadership of Mr. D. W. Amos, Senior Mosquito Inspector, the campaign against Filariasis made substantial progress during the year. Financial provision did not allow for any great intensification of training during the year, but it was possible to train seven inspectors. This made five teams in the field who worked in the "Yasanas" (Provinces) of Lau, Tailevu, Lomaiviti, Rewa, Serua, Nausori, Kadavu and the Island of Rotuma. There can be no doubt that their work, coupled with intensive propaganda by word of mouth, wireless broadcasts and news sheets in the vernacular is fast convincing many of the responsible elements in the Fijian population that filariasis is a preventable disease.

44. The remedial measures (eradication by prevention) are based on the effective control of the vector of Filariasis in Fiji—*A. pseudo-scutellaris*—within and close around village areas. This mosquito has a very short flight range from breeding places (less than 150 yards) and it is a small container breeder. Tree rot holes, leaf axils of certain plants, coconut shells, discarded tins, bottles, and similar small containers being its typical breeding places. It does not breed in ponds, pools, or swamps, brackish or otherwise. The purpose of this campaign therefore is educative and aims at inspiring the people of Fiji to control mosquito breeding by keeping clean villages and maintaining the outskirts thereof, up to one hundred yards around, clear of bush, scrub and long grasses.

45. The figures prepared by the Senior Mosquito Inspector have been tabulated in schedule form and are of sufficient importance to record in full in Appendix V. They record the results of 28,487 individual tests for microfilaria and enable valuable deductions to be drawn. One observation does not appear to have been previously recorded: In the words of Mr. Amos " . . . if a person safely passes the age of 50 years without contracting elephantiasis, his chance of suffering that deformity becomes gradually less with advancing age ".

46. A note on "The Spread of Mosquito Types in Fiji" prepared by Mr. Amos is appended in Appendix V.

(8) DENTAL HEALTH.

47. Dental services in the Colony are in the charge of the Government Dental Officer, Ratu Vosailagi, who operates in rather primitive consulting rooms in a timber annex to the Colonial War Memorial Hospital in Suva where there is no electric equipment and conditions do not facilitate the highest standards of clinical, prosthetic or tutorial work. Table II records the total number of cases treated in this unit and during district tours.

TABLE II.

ATTENDANCES.

Race.		C.W.M.H.	Districts.	Total.
Europeans	.. ..	38	84	122
Fijians	.. ..	1,401	2,301	3,702
Indians	.. ..	233	482	715
Others	.. ..	184	498	682
Total	.. ..	1,856	3,365	5,221

TREATMENTS.

Race.		C.W.M.H.	Districts.	Total.
Examinations	.. ..	3,589	1,328	4,917
Extractions	.. ..	1,406	1,575	2,981
Fillings	.. ..	312	393	705
Other	.. ..	131	69	200
Total	.. ..	5,438	3,365	8,803

48. In addition the dental surgeon examined and treated the pupils in a number of schools and observations made in the course of these school examinations disclose that there is a very high incidence of dental caries in the European, part-European and Fijian school children while in Gilbertese pupils and Indians of the secondary school groups dental disease is proportionately rare.

49. The Gilbertese pupils are visitors to Fiji having spent their early childhood in their own atolls, and the Indian diet differs markedly from that of the Fijian in the amount of milk consumed. A dietetic influence in the disproportion in the state of dental health is therefore an obvious inference but the records so far available are not yet in sufficient detail to warrant more than this presumptive conclusion.

(9) DIETETICS AND NUTRITION.

50. No formal investigations into dietetic custom and the more scientific aspects of nutrition have been possible. All that can be reported with assurance is that the range of indigenous and imported food stuffs has remained varied and more than adequate. The danger, and it is becoming real, lies in the increasing consumption of white bread and tinned foods.

(10) VITAL STATISTICS.

51. A census was taken of the entire population resident in the Fiji Islands on the 2nd October, 1946. This disclosed that the population of the Colony had increased by 30.88 per cent in the decennial period 1936-46 with the total population and the racial distribution as under:—

Europeans	.. ..	4,594
Part-Europeans	.. ..	6,129
Fijians	.. ..	118,083
Indians	.. ..	120,414
Chinese	.. ..	2,874
Others	.. ..	7,544
Total	.. ..	259,638

52. Great as the importance of these figures may be to those responsible for forward social and economic planning, and obvious though some portents are, discussion in detail on population trends and many other points of demographic interest would be premature pending the publication of the full census report. For that reason comment is restricted to a brief examination of the figures given in Appendix IV and the graph therein which shows the birth, death and infantile mortality rates of the two largest racial groups in the past two decades.

53. Infant Mortality shows a slight upward flicker in Fijians, Rotumans and Indians. That this has occurred in a year when an epidemic of measles swept the country is not to be wondered at: that it is so small is a matter for congratulation. In the smaller racial groups the rate of the part-European community at 38 per mille, although only referring to a total of 6,140 souls is worthy of wide publicity, and the Chinese community with a rate of 33.3 have an even better record. The total rate for the Colony—63.93 as compared with 54.1 for 1945—can fairly be interpreted as a natural resilience and there is every reason to suppose that despite this slight reverse the downward trend from 109.76 in 1936 will be maintained in the long term graph.

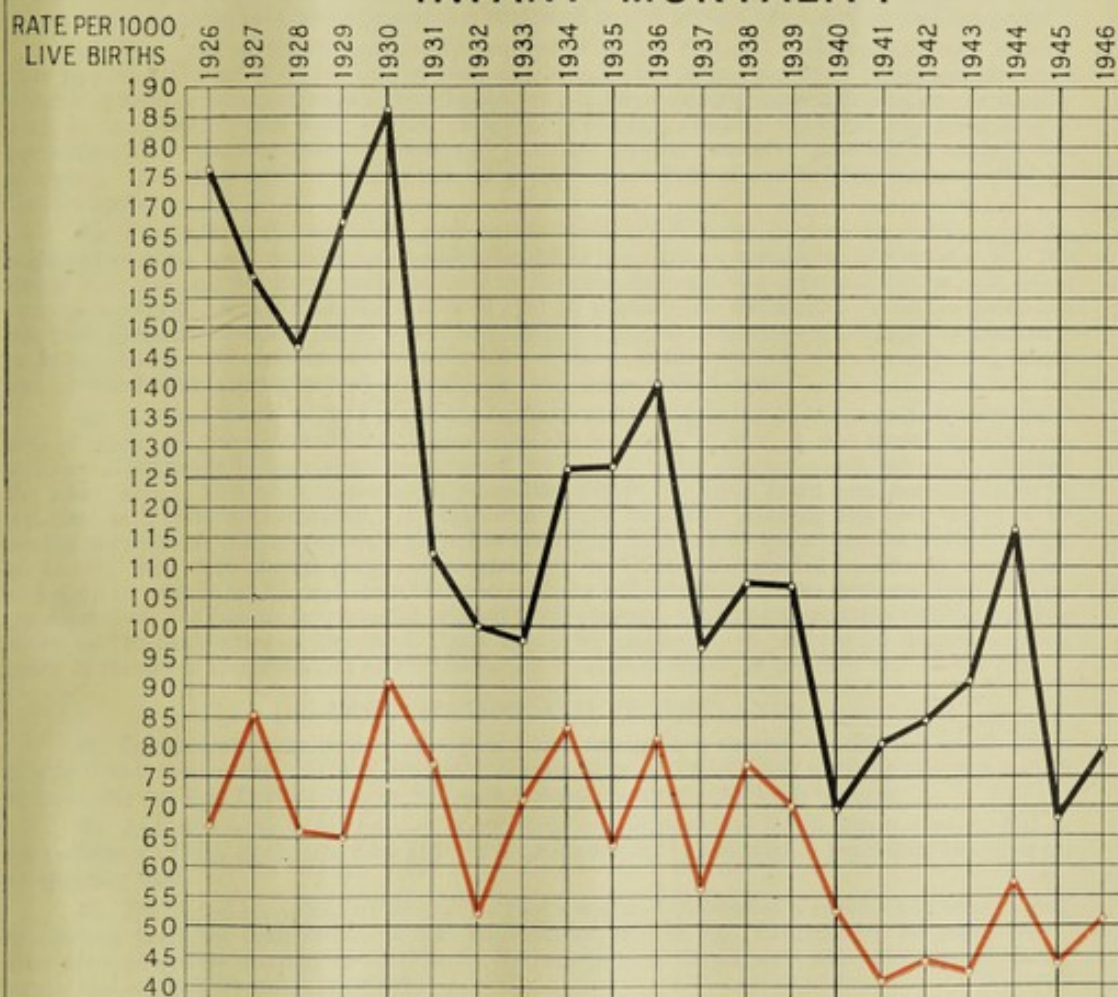
54. Birth and death rates show little significant change from the previous year. The slight general rise in the crude death rate has probably little permanent significance and the upward tendency in the birth rate, although not dramatic, is satisfactory.

55. Looking at the statistics in broad perspective over the past decade, an instability still appears to persist, although in general, the curves are becoming smoother and perhaps it can provisionally be accepted that there is a lessening of sensitivity, if not a growing immunity, to infection by, and the sequelae of, certain diseases which formerly had a devastating effect. Registration is, it is felt, improving in accuracy, but allowances must still be made for an uncertain margin of error which is bound to account in part for year to year variation.

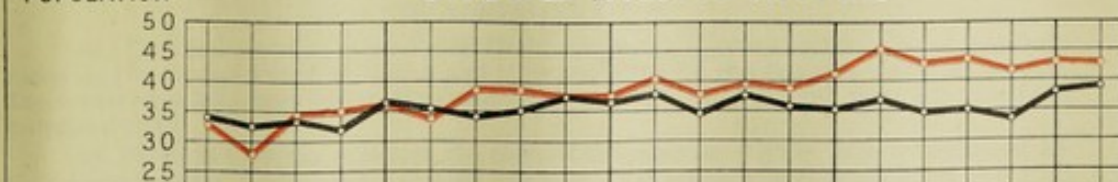
INFANT MORTALITY, CRUDE BIRTH & DEATH RATES. FIJIANS AND INDIANS. 1926-1946.

Fijians — Indians —

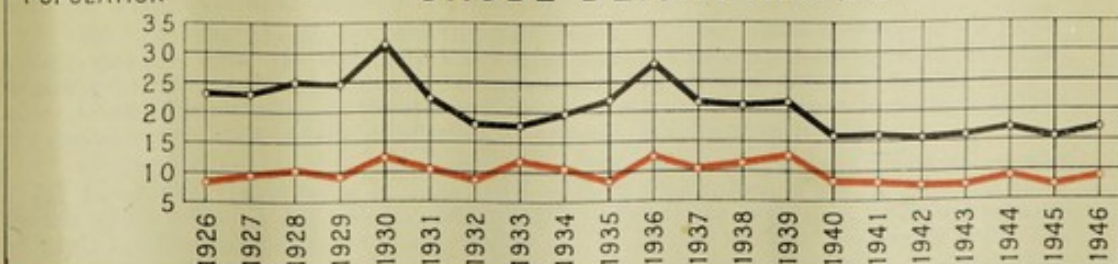
INFANT MORTALITY



CRUDE BIRTH RATES



CRUDE DEATH RATES



INFANT MORTALITY, CRUDE BIRTH & DEATH RATES

INDIANS AND INDIAN-AMERICANS

1925-1948

Indian Reservation

State

INFANT MORTALITY

Rate per 1,000 live births



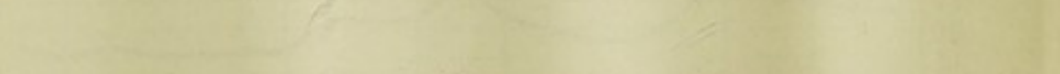
CRUDE BIRTH RATES

Rate per 1,000 population



CRUDE DEATH RATES

Rate per 1,000 population



(11) MALARIA CONTROL (ANOPHELINE PREVENTION).

56. Endemic Malaria and the anopheline mosquitoes which carry it, have not yet spread to the East of Longitude 170° E. Cases of malaria have been reported during the year under review, but these are all imported and the majority are relapse cases of benign tertian malaria—relics of the gallant excursion of the Fiji Military Forces to do battle in the Solomons during the recent war.

57. Regular peace-time interchanges of population between Fiji and the Solomons and other malarious areas make it virtually certain that there always will be the occasional gametocyte carrier in Fiji providing the tinder which will burst into an epidemic flare immediately the presence of anopheline mosquitoes provide the spark. For these very obvious reasons it has been necessary to continue energetic anopheline prevention measures in and around the main air and sea ports.

58. The sum of £65,000 originally granted from the Colonial Development and Welfare Vote had been expended by the end of 1945 and, though the large amount of permanent drainage which had been constructed went a considerable way towards making the position secure, subsidiary work in maintenance and some capital outlay in protecting existing works by regrading drains, preventing and repairing storm erosion and guarding against excessive scouring at outfalls was necessary. For these tasks a further sum of £14,430 was allocated and £13,300 was expended by 31st December.

59. The bulk of the work was done in the Nadi and Nausori Airports as neither could be neglected pending some decision as to which would be the sanitary aerodrome of the Colony. The Royal New Zealand Air Force seaplane base at Laucala Bay received only maintenance attention as a survey by the malarial engineer showed that to render even 400 meters round the perimeter free from potential breeding places would be prohibitive in cost. Reliance was placed, of necessity, on being able to hold aircraft on the water off the shore, until, or unless the airport health officer was satisfied that satisfactory disinsectization had been carried out.

60. In Suva Town work was mainly confined at the beginning of the year to a very small area of about 40 acres immediately adjacent to the wharves. Later, it was found necessary to include maintenance of previously constructed drains and water courses which indirectly affected the wharf area. This work of mosquito protection within the Suva Town area must come to be regarded as a civic responsibility. A great deal of the mosquito breeding has been found to be readily preventable but, regrettably, there has been little evidence to show that the general public realize the part they should play. Mosquitoes are traditionally regarded in Fiji as a nuisance and not a menace to health, and steps taken so far have not succeeded in awakening a true mosquito consciousness. It has to be recorded, almost with apology, that not one single prosecution was made by the authorities of the Suva Town Board for negligence in this regard despite a larval index in the town area standing at the dangerous level of between 19 per cent and 40 per cent.

(12) IMMUNIZATION AND PROPHYLAXIS.

61. Immunization in respect of typhoid and smallpox is carried out by the health staffs in urban and rural areas. It was necessary during the year to intensify anti-typhoid inoculation in Suva, Navua and Levuka but no full-scale Colony campaign has been necessary.

62. Anti-diphtheria immunization is available and is practised in the larger centres, but as the incidence of this disease in clinical form is insignificant, immunization procedure has been on a voluntary basis.

63. The use of convalescent serum in measles was not adopted as a routine procedure owing to obvious practical difficulties. It was successfully used in the Tuberculosis Hospital where, after one case had occurred in the institution, the remainder of the patients were given prophylactic serum and no further cases occurred.

III—HYGIENE AND SANITATION.

(1) ADMINISTRATION.

64. The administration of the Public Health Ordinance is vested by the terms of that Ordinance, in the Central Board of Health and is decentralized by the Board to Local Authorities. The system was fully described in the Annual Medical Report of 1945 and there has been little material change.

65. Prior to 1946 the affairs of the Suva Rural Sanitary District were administered by the Central Board of Health since, for some reason which is not entirely clear, no Local Authority for that heavily populated and important suburban area in the Suva Peninsula had ever been appointed. This was put right by the appointment, in March 1946, of a Local Authority charged with the administration of public health measures within the Sanitary District.

66. It was also possible to install the Chief Health Inspector, who is Secretary of the Board, in office premises within the Medical Directorate, so that the public health executive of the Colony is now centralized in the departmental headquarters and the Medical Officer of Health, Suva, is able to confine his attentions to the affairs of the town of Suva and the Suva Rural Area without the distraction of an ill-defined attachment to central, administrative functions.

67. During the year there have been healthy signs of growing activity among the smaller Local Authorities. Initiative is in many cases cramped by the lack of funds under the direct control of the Authority and office accommodation worthy of the name exists only in the towns of Suva, Lautoka and Levuka and the township of Ba. Clerical work for the smaller authorities is conducted by the technical health staff, a procedure which is wasteful of expert time and which must be replaced by a more orderly system as local Government activities expand.

68. The administration of public health measures in Fijian "Yasanas" (Provinces) and "Tikinas" (Districts) is governed by "Native Regulations". It cannot be said that these by any means fully meet modern health requirements, but they have been under review and revised regulations are expected to be promulgated in due course.

(2) MEAT INSPECTION AND CONTROL OF DAIRIES AND DAIRY HERDS.

69. The transfer of responsibility for meat inspection and control of dairies from the Medical to the Agricultural Department was one of the recommendations of the Watt-Lambie Report submitted to the Colony Government in 1943. In May 1946, the transfer of the duties of dairy inspection on the lines recommended was approved and has since become operative. It has not yet been possible for the Department of Agriculture to take over responsibility for meat inspection but plans to this end are being finalized.

(3) SEWAGE DISPOSAL.

70. The only water carriage sewerage system in the Colony is at Suva and this only serves part of the town. The crude sewage is discharged direct into tidal waters. There are still 233 premises served by the pan system in Suva and the method of disposal of night soil is by punt into the sea. Septic tanks are encouraged in parts of the town which are not connected with the sewerage system. In other parts of the Colony the disposal of night soil is by septic tanks and pit latrines.

71. It has become obvious that the septic tank system cannot be exploited much further in Lautoka on account of congestion and that in the Samabula Settlement area near Suva the disposal of effluent in an impervious soil will create inadmissible conditions immediately there is any great expansion. For both these important areas installation of a sewerage system has become an urgent need.

(4) WATER SUPPLIES.

72. All town and township public water supplies are under Government control. The Suva supply is chlorinated but receives no other treatment and after heavy rains discolouration of the water occurs. During the year 44 samples were bacteriologically examined and results showed that Suva water is not yet up to the desired standard. At Tavua there is, in addition to chlorination, a sedimentation and filtration plant. Sigatoka, Nadi, Vaileka, Ba and Labasa supplies are chlorinated. A water supply for the township of Nausori and its immediate surroundings is now being installed and the treatment will be similar to that at Tavua.

(5) SCHOOL HYGIENE.

73. Although there is no organized school medical service, general hygiene of schools is not neglected. Regular inspections are carried out in the mainland of Viti Levu by Health Sisters, and under them Fijian district nurses are trained to include school inspections as an important part of their duties. In the other islands the duty devolves on the Assistant Medical Practitioners, directed and supervised by the District Medical Officers, and assisted by district nurses. Inadequacies are realized, but policy is directed towards closer co-ordination of the work by departmental staff preparatory to integration by a school medical service at a later date.

74. In the Suva area milk had been supplied to certain schools under a subsidised system controlled by the Medical Officer of Health since 1943. Owing to inadequacy of the treatment plant this had to be suspended early in the year and was not again put into operation until the 10th September. From that date until the end of the year 19,925 half pint bottles were delivered. Extension of this service is limited by many factors—not the least of which is an adequate supply—and a reorganization was under close examination at the close of the year.

(6) HOUSING AND TOWN PLANNING.

75. A Town Planning Ordinance was enacted in the July session of Legislative Council. This important measure provides the mechanism for orderly development in settled areas which will enable many existing faults to be avoided in future expansion.

76. At present any report on housing conditions generally in the Colony must be adverse. There is a general state of congestion in the towns and in the closely settled township and suburban areas which amounts in many instances to gross over-crowding. The limitation of new building, reconstruction and repair work during the war years has resulted in a tawdry appearance of middle and poorer class dwellings, and the existing dearth of accommodation has made it necessary for all local authorities to exercise great discretion and enforce closing orders only in cases when there is gross dilapidation or where frankly intolerable insanitary conditions exist.

77. In the rural areas conditions as regards overcrowding were better, but there is still a long way to go before the agrarian Indian community is weaned from a predilection to tin or wooden shack housing conditions, inadequate in space and ventilation for the size of the average family. In Fijian villages the traditional "bure" type which is, normally, reasonably spacious still predominates.

78. The conditions under which labour employed by the two main industrial organizations of the Colony—the Colonial Sugar Refining Company and the Tavua Gold Mines—are catered for are satisfactory. Unfortunately the same cannot be said of those under which labour are employed in the copra industry. It is impossible to generalize as some employers have made a genuine attempt to provide up-to-date sanitary and comfortable conditions, but inspections carried out during the year disclosed that in a very great number of cases, especially perhaps on the island of Taveuni, neglect was the predominating feature.

IV—SEAPORT AND AIRPORT HEALTH AND QUARANTINE.

79. The sea ports of entry are Suva, Lautoka and Levuka and the air ports are Nadi, Nausori and Laucala Bay. The total number of ships and aircraft arriving at these ports from overseas during the year was as follows:—

SHIPS.			AIRCRAFT.		
Suva	..	131	Nadi	..	78
Lautoka	..	17	Nausori	..	195
Levuka	..	..	Laucala Bay	..	57

80. These figures are incomplete as they do not account for all service aircraft, but even so, it is obvious that with the development of air transport, and in consideration of the importance Fiji is rapidly assuming as a focal point in Pacific Air Services, the work of the quarantine officers of the department has increased very greatly since the cessation of hostilities. All the portents are that it will go on increasing. The commitment has so far been met without any increase in staff, but at considerable inconvenience since all airports are located some distance from the nearest Medical Station and scheduled times of arrival of aircraft have proved from time to time to be extremely inaccurate. Meanwhile, precautions cannot be neglected as Fiji is brought by air transport into close touch with endemic or epidemic centres of the five main convention diseases, and, as has been noted in Section II above the strictest precautions have to be observed against the ingress of anopheline mosquitoes by sea and air.

81. Thirteen overseas ships and 45 local vessels were fumigated by HCN fumigant and 13 international certificates of deratization were issued. No case of the "convention" quarantinable diseases was encountered in ships entering the ports of Fiji during the year.

V—MATERNITY AND CHILD WELFARE.

82. Care of infants and pre-school children has for many years been one of the activities of the Department to which special attention has been directed and it does seem as though it is bearing fruit. Admittedly there has been a slight rise in the infant mortality rate this year, but in view of the measles epidemic this cannot be regarded as serious. The child mortality in Fijians between the ages of one and five still gives cause for grave concern and here again there is an increase over the 1945 figures. Among the Indians, although there has been what is to be hoped will prove to be a temporary set-back, the mortality figures after the first year are in marked contrast to those of the Fijians and can, by ordinary standards, be accepted as being highly satisfactory.

83. On 31st December, five European Health Sisters and 67 Fijian nurses were engaged in public health work of which Maternity and Child Welfare work was regarded as the most important part. Unfortunately it was not found possible to maintain a health sister in Vanua Levu, but provision for a clinic in Labasa from which a health sister can work is placed high in departmental expansion priorities. In addition to the full time staff a trained nurse resident in Gau Island and a Catholic Sister in Rotuma assist in supervision on a part time basis. The work of the health sisters in a country such as Fiji is extremely arduous and difficulties of transport in the mountainous hinterlands of the main islands and by sea to the smaller groups make it necessary to rely largely on Fijian nurses in the more inaccessible parts. The mobile clinic operating in Suva and Rewa Delta areas has performed an extremely useful function. Popularity of stationary clinics also increased and representative figures for attendances at the main stationary centres are as shown in Table III below:—

TABLE III—ATTENDANCES AT CHILD WELFARE CENTRES.

	Suva.	Lautoka.	Total.
Europeans	1,979	200	2,179
Part-Europeans	1,018	145	1,163
Fijians	5,210	742	5,952
Indians	4,222	1,248	5,470
Others	514	91	605
Home Visits and District Clinics (all races) ..	8,481	10,838	19,319
Total	21,424	13,264	34,688

84. In the rural areas covered by health sisters based on Sigatoka, Ba and Nausori a total of 19,101 attendances are recorded. These areas involve a great deal of difficult travelling, but though much of the ultimate value of the service lies in the personal contact between the health nursing staff with the mothers in the villages and the teaching and propaganda imparted to—at times—not very receptive listeners the training of the Fijian nurse has to be regarded as the main factor on which future success will depend.

85. The Maternity Annexe to the Colonial War Memorial Hospital is a unit of 24 beds housed in a rather unsatisfactory building with quite inadequate arrangements for isolation of possible septic cases. The figures in Table IV indicate the work done:—

TABLE IV—RETURN OF MATERNITY CASES IN THE C.W.M.H.

	Fijians.	Indians.	Others.	Total.
Admissions	237	473	102	812
Not in Labour	55	147	29	231
Births—Male	107	156	47	310
Female	98	142	31	271
Ante Natal First Visits	262	371	83	716

86. A limited amount of obstetric work is carried out in the District and Rural Hospitals: limited, not by the wishes of the medical and nursing staff, but by inadequacy of accommodation and facilities.

VI—HOSPITALS AND DISPENSARIES.

A.—GENERAL REMARKS.

87. The Departmental Units described in this section are classified, as was explained in some detail in the Annual Medical Report for 1945, into General or Specialized Hospitals, Rural Hospitals and Rural Dispensaries. Each have their special functions and are equipped—so far as circumstances permit—to meet the requirements for which they are designed. Thus: the Colonial War Memorial Hospital in Suva is the main general and consulting hospital for the Colony and acts also as the District Hospital for Suva area and the South East region of Viti Levu. Tamavua Tuberculosis Hospital, located five miles from Suva, receives patients referred to it from all parts of the Colony, and offers modern facilities for the treatment of pulmonary tuberculosis: the Mental Hospital in Suva also receives patients of all races from all parts of the Colony. District hospitals at Lautoka, Labasa and Levuka have, by virtue of their relative isolation, to be prepared to meet all emergency demands when, and though they are not yet fully equipped for the task, they do it well; Rural hospitals are designed to serve as clearing stations or buffer units to District and General hospitals, and rural dispensaries essentially out-patient units with a few sick bay beds are destined to develop eventually into rural health centres.

88. Unfortunately it has not been possible to do very much during 1946 to make up the deficiencies in structure and equipment which occurred during the years of war, and a legacy of heavy debt in respect of essential replacement must, perforce, be passed on. There is hardly a rural or district unit which does not demand attention amounting in the cases of Labasa District Hospital and Nadroga Rural Hospital at Sigatoka virtually to complete reconstruction.

89. In addition to these Government units there are four small private hospitals in the Colony each of which receives a Government grant. They are: Nurse Morrison's Maternity Home, Suva; the Methodist Mission Indian Women's Hospital, Ba; the Cottage Hospital, Ba, and the Waiyevo Cottage Hospital, Taveuni.

90. The total attendances in the Government Hospitals and Dispensaries are recorded in Appendix II. The gross increase over 1945 being, as has been noted in Section II above, 3,412 in-patients and 22,100 out-patients.

91. Brief notes on the activities of the larger units are recorded in the following paragraphs.

B.—THE COLONIAL WAR MEMORIAL HOSPITAL.

92. This unit has a capacity of 250 general beds with an additional 24 beds in the obstetric annexe. The full capacity of 250 beds in the paying and non-paying wards implies use being made of verandahs for occupied beds and includes 17 in a temporary wooden hut ward. The average occupied bed rate during the year was 182.2, a figure which does not at first sight indicate over-crowding but which does, in fact, imply considerable inconvenience as there invariably tends to be an unequitable distribution of cases by sexes and in the paying and non-paying groups.

93. Dr. W. Worger was the medical officer in charge during the year, with Miss J. Sinclair as matron (temporarily relieved for part of the year by Miss H. M. Cleaver). Mr. K. J. Gilchrist, surgeon specialist, arrived in the Colony and took up his duties in July and in addition there were two medical officers, one dental surgeon, three assistant medical practitioner residents and a dietitian, radiographer, assistant radiographer, dispenser, steward and clerk, hospital mechanic, hospital carpenter, and full office, laundry and domestic staffs. The ophthalmologist left the Colony on completion of his temporary engagement in January 1946, and was not replaced. The nursing staff consisted of one matron, one assistant matron, 21 sisters, 14 nurses (locally trained) and 72 pupil nurses; equivalent to approximately one nurse to two patients.

94. A total of 963 surgical operations covering all fields of major surgery were performed, exclusive of 78 operations performed by assistant medical practitioner S. T. Uluilakeba who was in charge of the eye clinic. The X-ray department operated at full pressure with radiographic examinations carried out on 6,724 patients. This constitutes a decrease of 3,110 patients from 1945, accounted for by great reduction in routine military examinations. Prescriptions made up in the dispensary totalled 6,516 more than in 1945, the details were:—

Paying Out-Patient Department	4,110	prescriptions dispensed.
Non-paying Out-Patient Dept.—Indian	17,628	"
Fijian	7,200	"
Total	28,938	

95. The work in the obstetric annexe has been described in Section V above.

96. The hospital laundry took over the additional commitment of dealing with Tamavua washing this year and with a staff of one supervisor (Miss Ryder), nine machine boys and 26 laundresses, 790,641 articles were laundered. The coal consumption was 649.7 tons. An adverse mechanical report resulting from an examination made towards the end of the year gives a very definite indication that the days of much of the machinery are numbered, an omen of heavy financial commitment in the near future.

C.—TAMAVUA TUBERCULOSIS HOSPITAL.

97. The Tamavua Hospital for Tuberculosis was opened on the 5th February, 1946, with Dr. L. G. Poole in charge and Miss E. Butt as Matron. The hospital, a military unit during the war, is a well arranged unit in timber construction with five main ward pavilions leading off a central corridor which gives ready access to kitchens, X-ray room, operating theatre and administrative offices. The total capacity without use of verandahs is 278 beds, but finance and staff

considerations limited the number of occupied beds during the year to an average occupied bed rate of 153.1. The subordinate staff is supervised by nine nursing sisters and the medical officer in charge is also assisted by a steward, a dietitian and two assistant medical practitioners.

98. The figures for admissions, discharges and deaths in 1946 are as follows:—

			Fijian.	Indian.	Others.	Total.
Admissions	..	..	254	88	31	373
Discharges	..	..	97	56	11	164
Deaths	..	..	65	22	8	95

99. In the first few months after opening, patients were being sent to the Hospital from all over Fiji, and commonly in the last stages of the disease. This gradually righted itself in conformity with the policy referred to in paragraph 40 above to endeavour to restrict admission to cases in which quiescence or cure could be expected; but was responsible for the large number of deaths recorded.

100. It was not possible to arrange for the installation of the X-ray apparatus until December and all examinations were accordingly made in the Colonial War Memorial Hospital, a procedure which naturally handicapped the artificial pneumothorax routine.

101. A highly creditable diversional therapy unit was early established for male patients and many useful articles in light woodwork have been turned out. The room is not ideal for the purpose and it is intended to construct a separate unit in open-air native construction as and when circumstances permit. Provision of rehabilitation quarters in native type construction has also been planned.

102. An endeavour has been made to maintain in the hospital a central tuberculosis register for the Colony, and a follow-up system through district medical officers to assistant medical practitioners in rural areas is in force. Too much has not been expected of this system as yet, but it is likely to prove a most valuable prelude to the full scale organization which is now being planned.

103. Amenities for the patients have not been neglected and light recreational facilities are provided for those who have passed out of the rest period. A library is gradually being formed but perhaps the greatest asset is a cinematograph projector presented by a local resident (Mr. Proweller) which enables films *en route* to the Leprosarium at Makogai from New Zealand to be shown to patients and staff once a week.

104. The hospital is situated in 70 acres of Crown Land and extensive planting of food crops in suitable areas has been undertaken which should, in due course, materially reduce upkeep costs.

D.—CENTRAL LEPROSY HOSPITAL, MAKOGAI.

105. The work of this important unit which serves so many islands in the South West Pacific is fully described in the report by the Medical Superintendent, Dr. C. J. Austin, appended as Appendix VII.

E.—MENTAL HOSPITAL, SUVA.

106. Dr. D. W. Hoodless was the Physician in charge of the Mental Hospital during the year, with Mr. H. Leaver as Resident Head Attendant assisted by Mr. M. Fenn. The total number of patients treated during the year was 123, of which number 92 were patients remaining over from the previous year, while 31 were new admissions. Nineteen patients were discharged unconditionally. There were 16 deaths and on 31st December 88 patients remained in the hospital.

107. The sex and racial distribution of patients remaining on 31st December and the classification of total admissions by type of disease are shown in Table V.

TABLE V.

A.—RACIAL AND SEX DISTRIBUTION.

			Male.	Female.	Total.
European	..	..	2	2	4
Fijian	..	..	12	8	20
Indian	..	..	29	22	51
Other	..	..	9	4	13
			52	36	88

B.—DISTRIBUTION BY TYPE OF DISEASE.

			Cases.	Deaths.
Maniac Depressive Insanity	..	..	93	12
Paranor and* Paranoid States	..	..	13	1
Schizo-phrenia	..	..	3	..
Reactive and Toxoid Insanities..	..	..	1	..
Epilepsy	..	..	5	..
Mental Deficiency	..	..	6	3
Hysteria	..	..	2	..
			123	16

108. The amenities of the institution were improved by the construction of a waiting room for visitors and workshop and recreation hall for patients and staff, and a comment by His Excellency the Governor recorded in the visitors' book sums up the general impression given by the hospital—"I visited the Hospital to-day (25/3/46) and was impressed by the cleanliness and generally cheerful atmosphere: almost unique, I imagine, in an institution of its kind. It reflects great credit on the Head Attendant and his staff."

F.—DISTRICT AND RURAL MEDICAL UNITS.

109. A complete list of these units is given in Appendix XI and the outline map of the Colony attached to this Report indicates the distribution throughout the Group.

110. The figures representing admissions to, and attendances at, the three District Hospitals are shown in Appendix II and give some indication of the work done. The diseases treated are included in the consolidated statement in Appendix VIII.

G.—AIDED HOSPITALS.

111. *The Methodist Mission Hospital for Indian Women at Ba* is under the medical charge of Dr. (Mrs.) Dorothy Delbridge assisted by a staff of three nursing sisters and a subordinate staff. It has 17 adult beds and 10 cots and within the limits of its capacity it serves a most useful purpose catering for the medical and obstetric needs of Indians resident locally. A small number of Indian girls are fully trained as nurses. The following figures represent the institutional work done:—

Out-Patients treated	..	..	..	4,218
In-Patients treated	..	..	..	855
Obstetric cases	..	..	..	140

112. *The Cottage Hospital, Waiyevo, Taveuni*, is managed by a Committee of local residents and maintained by public subscription with a Government subsidy. It is situated close to the Rural Hospital and has a European Nursing Sister in charge. It has been recommended that it should be taken over by Government but a decision had not been reached by the end of the year. A total of 17 cases were admitted for treatment.

113. *Cottage Hospital, Ba*, has five beds and is in medical charge of the Company's Medical Officer assisted by a resident Nursing Sister.

114. *Nurse Morrison's Maternity Home in Suva*, with four beds, meets a very great want for maternity cases attended by private practitioners. There were 67 admissions and 66 births during the year, the admissions being: Admissions in labour: Europeans, 55; Part-Europeans and Others, 9; Chinese, 3.

H.—MEDICAL CENTRE, SUVA.

115. Reference was made in the Annual Medical Report of 1945 to this most important item in the Colony's Development Plan. There the hope was expressed that plans for the project would be finalized in 1946. That hope is unfulfilled. Much time and thought has been devoted to planning a centre which will meet all present requirements in the fields of prevention, cure and diagnosis and teaching while falling within reasonable financial limits and yet be capable of meeting the demands of inevitable future expansion. Now, the progress made justifies an expression of confidence that 1947 will see a final decision reached.

VII—LABORATORIES AND RESEARCH.

116. *The Pathological Laboratory, Suva*.—The normal executive staff of the Laboratory is the Pathologist (Dr. G. T. Barnes) and the Laboratory Superintendent (Mr. J. E. Pery-Johnston). Both were absent on leave during part of the year under review and temporary arrangements were made for the carrying on of their duties.

117. The laboratory is a modern unit equipped to undertake all normal requirements of clinical pathology, parasitology, bacteriology, biochemistry, forensic medicine and public health. T.A.B. and antigenous vaccines are prepared. Owing to the absence of the Pathologist and other circumstances, no set research project was carried out during the year.

118. The heaviest demands on the laboratory naturally came from the Colonial War Memorial Hospital in Suva, but specimens were also received from all parts of Fiji and every encouragement is given for the submission of specimens from other territories participating in the South Pacific Health Service. Table VI gives a brief analysis of the 27,149 laboratory procedures carried out:—

TABLE VI—LABORATORY PROCEDURES.

Post Mortem Examinations	..	..	38
Histology Preparations	..	..	168
Clinical Pathology	..	..	5,260
Parasitology	..	..	16,187
Bacteriology	..	..	4,139
Vaccines Prepared..	..	..	542
Biochemistry	..	..	316
Miscellaneous	..	..	499
			27,149

119. *Lautoka Laboratory*.—In March, Assistant Medical Practitioner Peni Tuidraki, who had been specially trained for some years in the laboratory, was transferred to Lautoka to work up the small laboratory which had been established in 1944. This laboratory handled 2,405 specimens during the year.

VIII—TRAINING.

A.—GENERAL.

120. It has become distressingly apparent during this first post-war year that expansion of medical services is limited (apart from financial considerations) by two main factors: availability of locally trained nursing and technical staff, and accommodation to house them. The latter can readily enough be overcome, but the former is a longer-term project and one in which shortcomings in the present will make themselves felt for years to come. For that reason an endeavour has been made to intensify training of all grades of medical and health personnel and, where immediate progress has been impossible, to plan to that end.

121. Medical students and nurses have their own schools and residential accommodation but there is no central hostel where dental, health, laboratory and pharmacy students can be accommodated and instructed in preliminary subjects common to all. These technical grades all undergo a three-year course of training and all qualify eventually for the same scale of emoluments: it would be proper, therefore, for them to be accommodated together in a common hostel during their training years. This has not as yet been possible to arrange but in spite of this and other handicaps fair progress has been made. Some aspects and results of training are briefly described in the following paragraphs.

B.—CENTRAL MEDICAL SCHOOL.

122. Extracts from the Annual Report by the Principal are attached to this report as Appendix IX. Comments on the Principal's remarks are unnecessary except, perhaps, to confirm that the high standard of education and conduct set in previous years has been well maintained and to summarize the numbers of students from the various administrations, which are as follows:—

Western Samoa	..	..	..	..	6
Eastern Samoa	..	..	..	..	1
Tonga	..	..	..	..	4
Cook Islands	..	..	..	..	3
Niue Islands	..	..	..	..	..
Gilbert and Ellice Islands Colony	..	..	..	..	5
British Solomon Islands Protectorate	..	..	..	..	4
New Hebrides	..	..	..	..	2
Fiji	..	..	..	..	20
Total	..	..	..	..	45

C.—ASSISTANT DENTAL PRACTITIONERS.

123. Although facilities are far below the desirable standard a three-year course in dentistry is arranged. Students take the pre-medical course in preliminary sciences and elementary anatomy and physiology with the medical students prior to the dental course proper conducted by the Dental Surgeon. There were three students in training and the first Assistant Dental Practitioner to qualify in Fiji passed the final examination in December.

D.—NURSES' TRAINING SCHOOLS.

124. The Central Nursing School in Suva is the largest training institution for nurses in the Colony. It operates in conjunction with the Colonial War Memorial Hospital for general and obstetric training with calls made on Tamavua for short periods of special tuberculosis nursing. The school and the Colony sustained a great loss by the sudden death of the Principal, Miss M. M. Cleary, on the 4th of April. Thereafter temporary appointments were made until Miss A. Storck was appointed Principal in September.

125. The Hostel for pupil nurses has become out-dated and the congestion in dormitories, refectories and lecture and demonstration rooms is a great handicap to the school. It is realized that little material improvement can be expected until plans for the Medical Centre have been put into effect.

126. There were on the average 81 pupil nurses and 16 trained nurses in residence during the year. Nineteen pupils graduated as trained nurses.

127. In *Lautoka* a new native nurses' hostel was opened in September. The old Nurses' quarters have been retained giving accommodation for a staff of 44 of whom on the average nine were fully trained and 35 were pupils. Three nurses qualified during the year. It is intended that this training school will be developed primarily as a training school for Indian nurses and preliminary arrangements to that end have been made.

128. *The Methodist Mission Hospital at Ba* is the only other training unit for nurses. There were on the average six pupils nurses in residence of whom two passed the final examinations.

129. In all training schools, tuition extends over a period of years in accordance with a syllabus, and to a standard, recommended by the South Pacific Board of Health. For many indisputable reasons no attempt was made to train nurses to a standard likely to be acceptable as registrable in the United Kingdom or the neighbouring Dominions, but every encouragement is given to persuade local girls to take a full course of training overseas.

E.—MEDICAL ORDERLIES (MALE).

130. Training of this very essential category of hospital and dispensary staff has never been developed on a systematic basis in Fiji. A certain number were absorbed from the Military Hospital into the Tamavua Hospital staff and desultory training has been carried out in District and Rural Hospitals. The casualties among female nurses for various reasons during the year,

inevitable and not unusual, has given a strong directive that the potential of recruiting educable youths in nursing and the elements of medicine, to reinforce the staffs of hospitals and dispensaries should be exploited.

F.—ASSISTANT HEALTH INSPECTORS.

131. An advance from the apprenticeship system of training to a more systematic and organized course of study has proved impracticable owing to the lack of suitable training quarters and instructional staff. A total of three were in training, all in their first year.

G.—ASSISTANT LABORATORY TECHNICIAN.

132. Deliberate training of well-educated youths in laboratory technicology was inaugurated by the Pathologist at the beginning of the year. Four students were in training and of these one could not make the grade and had to be discharged. One critical complication, and an important one from the point of view of direction of training, was that the students had to be taught the elements of physics and chemistry before they could be brought to appreciate the rationale of laboratory procedure. This, of course, is common to all technical training at present.

H.—ASSISTANT PHARMACISTS.

133. The Government Pharmacist undertakes the training of local youths as Assistant Pharmacists. A systematic course of lectures is given and practical work is provided in the Central Pharmacy and the Dispensary of the Colonial War Memorial Hospital. Three students were in training and of these the only one in the final year was successful in passing the qualifying examinations.

SECTION IX—METEOROLOGY.

134. A representative extract from the meteorological reports of the Colony is quoted in Appendix XII.

APPENDIX I.

A.—ESTABLISHMENT, 1946.

Director of Medical Services	1
Deputy Director of Medical Services	1
Surgeon Specialist	1
Medical Officer of Health, Suva	1
Principal Central Medical School	1
Pathologist	1
Medical Superintendent, Central Leper Hospital	1
Medical Officers	15
Medical Officers, Supernumerary	3
Assistant Medical Practitioners	82
Dental Surgeon	1
Storekeeper and Pharmacist	1
Assistant Pharmacist	1
Laboratory Superintendent	1
Health Inspectors and Health Assistants	32
Trained Nursing Staff—General and District Hospitals	61
Native Nurses (Certificated)	153
Radiographer and Assistants	3
Dietitians	2
Attendants Mental Hospital	17
Clerical Staff	22
Nursing Staff, Central Leper Hospital	26
Orderlies, Tuberculosis Hospital	52
Subordinate Staff	306
	785

B.—APPOINTMENTS, ETC., MEDICAL STAFF.

Posting of Officers.

The Medical Staff postings on 31st December, 1946, were:—

- J. C. R. Buchanan, M.D. (Edin.), F.R.C.P.(E.), D.T.M. & H. (Eng.), Director of Medical Services. Appointed 1st October.
- H. S. Evans, B.A. (Cantab.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), Deputy Director of Medical Services. On leave prior to retirement, 1st October to 31st December.
- K. J. Gilchrist, M.B., B.S. (Lond.), L.R.C.P., F.R.C.S., Surgeon Specialist, C.W.M.H. Appointed 21st June.
- T. A. U. Clunie, M.B., Ch.B. (Aberdeen), D.T.M. (Sydney), Medical Officer, Western.
- M. L. McCauley, B.A., M.B., Ch.B., B.A.O. (Dublin), Medical Officer, Northern. On leave 11th January to 7th November.
- R. J. Snodgrass, L.D.S. (Edin.), L.R.C.P. & S. (Edin.), F.R.F.P. & S. (Glasgow), Medical Officer, Acting Deputy Director of Medical Services. From 12th March.
- K. R. Steenson, M.B., Ch.B. (N.Z.), Medical Officer, Southern.
- C. J. Austin, O.B.E., M.B., Ch.B. (Edin.), Medical Superintendent, Leper Hospital, Makogai.
- G. T. Barnes, M.B., Ch.B. (Birm.), D.T.M. & H. (Eng.), Pathologist. On leave 11th January to 7th November.
- W. Worger, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Medical Officer in Charge, C.W.M.H.
- R. W. D. Maxwell, M.B., Ch.B., D.T.M. & H. (Eng.), Medical Officer. On leave from 24th August to 31st December.
- J. Taylor, M.B., Ch.B. (Glas.), D.P.H. (Lond.), D.T.M. & H. (Eng.), Medical Officer. On leave from 13th August to 31st December.
- W. L. I. Verrier, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Acting Medical Officer of Health, Suva.
- P. W. J. Searle, M.B., Ch.B. (Bristol), D.T.M. & H. (Eng.), Medical Officer, C.W.M.H. Appointed 24th July.
- F. R. T. Hollins, B.A., M.B., B.Ch., B.A.O. (Dublin), Medical Officer. Appointed 15th November.
- L. G. Poole, M.B., Ch.B. (Liverpool), Medical Officer in Charge, Tamavua Hospital.
- K. H. Black, M.B., Ch.B. (N.Z.), Medical Officer, Cakaudrove.
- P. G. Griffiths, M.C., B.Sc., M.B., Ch.B. (Manch.), Medical Officer, Eastern. Appointed 11th September.
- B. H. B. Upton, M.B., Ch.B. (Birm.), Medical Officer, C.W.M.H. Appointed 11th September.
- J. R. Reid, M.B., Ch.B. (Glas.), Medical Officer, C.W.M.H.
- D. W. Hoodless, B.Sc. (Lond.), L.M.S.S.A., Principal C.M.S. (Re-employed).
- A. S. Frater, M.B.E., M.B., B.S. (Melb.), D.T.M. (Sydney), Principal Designate, Central Medical School. Not yet arrived.
- F. Adam Thomson, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Temporary Medical Officer, C.W.M.H. Appointed 1st February.
- H. D. N. Livingstone, M.B., Ch.B. (N.Z.), Supernumerary, Medical Officer, Nadroga. Appointed 21st January.
- R. Branster, M.B., B.S. (Sydney), Supernumerary Medical Officer, Lautoka. Appointed 27th August.

APPENDIX II.

HOSPITALS AND DISPENSARIES—BEDS, ADMISSIONS AND ATTENDANCES, 1946.

IN-PATIENTS—RACIAL DISTRIBUTION.

Hospital.	Beds.	Occupied beds, daily average.	Admis- sions, 1946.	Race.	C.W.M.H.	Lau- toka.	Le- vuka.	La- basa.	Tama- vua.	Total.
General Hospital, C.W.M.H., Suva	274	182.2	4,978	Europeans and P.M.E.N.D.*	583	126	11	37	..	757
Tamavua Tuberculosis Hos- pital, Suva	162	153.1	373	Fijians ..	1,405	434	330	197	254	2,620
Three District Hospitals ..	182	122.9	4,586	Indians ..	2,393	2,101	30	1,040	88	5,652
Thirteen Rural Hospitals ..	282	219.0	9,937 6,685	Chinese and Others.	597	156	51	73	31	908
Total ..	900	677.2	16,622	Total ..	4,978	2,817	422	1,347	373	9,937

* Persons of Mixed European and Native Descent.

OUT-PATIENTS.

Race.	Hospitals.				Dispensaries.	
	C.W.M.H.	Three District Hospitals.	Tamavua.	Thirteen Rural Hospitals.	Thirty-five Rural Dispensaries.	Totals 1946.
Europeans and P.M.E.N.D. ..	4,126	477	167	700	3,005	8,475
Fijians	12,196	9,332	1,285	45,362	86,325	154,500
Indians	16,292	17,349	1,576	30,880	18,605	84,702
Chinese and Others	2,017	2,695	101	2,410	....	7,223
Total	34,631	29,853	3,129	79,352	107,935	254,900

APPENDIX III.

TABLE A.—INFECTIOUS DISEASE NOTIFICATION BY MONTHS.

Diseases.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
Cerebro Spinal Meningitis	1	1	2	..	..	1	..	..	2	..	..	2	9
Chicken Pox (Varicella) ..	15	6	1	2	..	..	21	13	1	4	3	..	66
Dengue Fever	10	25	33	10	17	6	10	5	24	53	1	..	194
Diphtheria	1	..	1	..	1	..	1	..	..	..	1	..	5
Dysentery—Amoebic	..	..	..	1	..	2	..	1	4	4	3	4	19
Bacillary	18	19	22	17	9	18	45	16	24	17	4	9	218
Unclassified	1	4	17	2	12	3	1	9	2	1	3	1	56
Typhoid Fever	3	1	7	5	2	11	12	13	6	8	11	1	80
Gastro Enteritis	28	285	220	135	87	22	24	14	3	15	12	8	853
Infantile Diarrhoea	44	7	1	..	6	..	9	..	3	45	50	21	186
Leprosy	3	3	2	3	4	1	5	4	2	5	10	4	46
Malaria	1	..	2	4	4	..	1	1	..	2	..	..	15
Measles	37	256	718	971	854	764	486	308	137	252	15	16	4,814
Measles (German)	..	..	..	..	..	..	..	..	..	..	1	..	1
Mumps	..	..	1	2	..	..	..	1	..	2	..	..	6
Puerperal Fever	1	3	6	2	5	4	4	5	3	..	..	1	34
Tetanus	2	1	1	1	2	2	1	2	2	6	1	1	22
Trachoma	6	12	1	1	..	5	7	5	4	3	13	5	62
Tuberculosis—Pulmonary	36	41	42	51	52	61	41	57	52	49	32	29	543
Tuberculosis—other forms	3	4	3	1	2	2	3	6	2	7	1	5	39
Whooping Cough	..	..	..	..	..	..	..	..	..	..	5	..	5
Yaws (all stages)	60	81	54	68	94	140	69	55	79	72	56	62	890
Gonorrhoea	14	17	14	13	15	16	14	22	19	17	16	14	191
Syphilis	..	3	3	..	..	3	6	5	1	6	10	3	40
Influenza	296	196	291	273	202	146	140	206	1,791	979	484	167	5,171
	580	965	1,442	1,562	1,368	1,207	900	748	2,161	1,547	732	353	13,565

TABLE B.—INFECTIOUS DISEASES NOTIFICATION BY RACES.

Diseases.	Europeans.	Part-Europeans.	Fijians.	Indians.	Others.	Total.
Cerebro Spinal Meningitis .. ..	....	....	5	2	2	9
Chicken Pox (Varicella)	3	3	34	6	20	66
Dengue Fever	8	....	104	66	16	194
Diphtheria .. ..	....	....	....	5	....	5
Dysentery Amoebic	2	2	5	8	2	19
Dysentery Bacillary	9	4	67	132	6	218
Dysentery Unclassified	3	....	22	28	3	56
Typhoid Fever .. ..	....	1	37	34	8	80
Gastro Enteritis	10	14	605	203	21	853
Infantile Diarrhoea .. ..	....	....	170	15	1	186
Leprosy .. ..	....	....	29	12	5	46
Malaria .. ..	....	....	15	....	....	15
Measles	116	44	3,940	521	193	4,814
Measles (German)	1	....	....	....	....	1
Mumps	2	1	....	3	....	6
Puerperal Fever .. ..	....	1	9	22	2	34
Tetanus .. ..	....	....	9	13	....	22
Trachoma .. ..	....	1	52	9	....	62
Tuberculosis Pulmonary	2	11	370	140	20	543
Tuberculosis (other forms) .. ..	....	....	31	8	....	39
Whooping Cough .. ..	....	....	5	....	....	5
Yaws (all stages) .. ..	....	....	874	....	16	890
Gonorrhoea	3	17	66	94	11	191
Syphilis	2	7	....	28	3	40
Influenza	109	135	3,016	1,841	70	5,171
	270	241	9,465	3,190	399	13,565

APPENDIX IV.

VITAL STATISTICS.

The estimated population at the end of 1945 and 1946 was:—

Race.	Males. 1946.	Females 1946.	Total 1946.	Total 1945.	Increase.	Increase per cent.	Decrease.	Decrease per cent.
Europeans	2,436	2,093	4,529	5,277	....	....	748	14.18
Euronesians	3,187	2,953	6,140	5,909	231	3.91	....	....
Fijians	60,055	58,391	118,446	115,724	2,722	2.35	....	....
Rotumans (all races)	1,698	1,617	3,315	3,432	....	....	117	3.41
East Indians	65,270	55,716	120,986	117,256	3,730	3.19	....	....
Polynesians	2,134	1,543	3,677	3,146	531	16.88	....	....
Chinese	2,094	767	2,861	2,490	371	14.90	....	....
Others	273	241	514	1,442	....	....	928	64.35
Total	137,147	123,321	260,468	254,676	7,585	2.98	1,793	.70

The number of births recorded during the last four years was:—

Race.	1943.	1944.	1945.	1946.	Crude birth-rate per 1,000, 1946.
Europeans	73	84	102	89	19.65
Euronesians	234	215	224	236	38.44
Fijians	3,899	3,808	4,317	4,644	39.21
Rotumans	130	123	139	161	48.57
East Indians	4,755	4,699	5,045	5,181	42.82
Polynesians	82	79	56	110	29.92
Chinese	65	78	102	90	31.46
Others	4	3	3	....	....
Total	9,242	9,089	9,988	10,511	40.35

The crude birth rate in 1945 was 39.22.

The number of deaths recorded during the last four years was:—

Race.	1943.	1944.	1945.	1946.	Crude death-rate per 1,000, 1946.
Europeans	23	22	21	33	7.29
Euronesians	40	37	43	52	8.47
Fijians	1,773	1,929	1,772	2,016	17.02
Rotumans	60	80	70	50	15.08
East Indians	826	1,029	879	1,095	9.05
Polynesians	33	41	41	97	26.38
Chinese	12	15	12	19	6.64
Others	1	1	2	....	....
Total	2,768	3,154	2,840	3,362	12.91

The crude death rate in 1945 was 11.15.

The marriages, births, deaths and natural increase for 1946 were:—

Race.	Marriages.	Births.	Deaths.	Increase.	Increase per 1,000.
Europeans	51	89	33	56	10.61
Euronesians	57	236	52	184	31.14
Fijians	1,012	4,644	2,016	2,628	22.71
Rotumans	42	161	50	111	32.34
East Indians	997	5,181	1,095	4,086	34.85
Polynesians	26	110	97	13	4.13
Chinese	16	90	19	71	28.51
Others .. .. .	....	....	....	....	....
Total ..	2,201	10,511	3,362	7,149	28.07

TABLE OF INFANT AND CHILD DEATHS, 1946.

Race.	Years					Total.
	Under 1 year.	1 and under 2.	2 and under 3.	3 and under 4.	4 and under 5.	
Fijians	370	201	69	42	28	710
Indians	264	32	17	12	5	330
Europeans	1	....	....	....	1	2
Euronesians	9	7	3	1	....	20
Polynesians	15	7	6	1	2	31
Rotumans	10	3	2	1	....	16
Chinese	3	1	....	....	....	4
Others .. .. .	....	....	....	....	....	....
Total ..	672	251	97	57	36	1,113

INFANTILE MORTALITY.

Race.	No. of births.	No of deaths under 1 year.	Rate per 1,000 births.
Europeans	89	1	11.24
P.M.E.N.D.*	236	9	38.13
Fijians	4,644	370	79.67
East Indians	5,181	264	50.95
Polynesians	110	15	136.36
Others	90	3	33.33
Rotumans	161	10	62.11
Total ..	10,511	672	63.93

* Persons of Mixed European and Native descent.

APPENDIX V.

THE SPREAD OF MOSQUITO TYPES IN FIJI.

It now appears there would be little point in preparing a "Mosquito Map" of the area surveyed up to the date of this report, for with the exception of *Aedes aegypti*, all main indigenous types are represented throughout, although with varying density.

Density of any type anywhere seems merely to be a matter of favourable opportunity available for breeding. This is well exemplified at Oneata and Vuaqava, Lau Province. The permanent lakes on these islands have become famous for the amount of—*Culex* mosquitoes they have produced (*C. annulirostris* and *C. sitiens*) all the year round. So great sometimes at Oneata that pigs and fowls have died as a result of the attacks of the mosquitoes. At least that is what the people who live there say, used to occur in days gone by. At the present time however conditions are better. For one thing *Anisops cleapatra* Dist. is thriving there and secondly the reduction of the bush and scrub all round the Koros, in order to control the filariasis carrier, has also eliminated greatly the density of the *Culex* types.

The depression in the interior of Namuka-i-Lau furnishes throughout the summer months, because of the heavy seasonal rains, a mosquito plague—*Culex annulirostris* and in certain places *C. sitiens* also. The so called lake disappears in the dry weather and of course so do the mosquitoes.

Another example of this is the "lake" and its pitted marshy surrounding at Nayavu, Tailevu. A wet season "lake" (used for rice cultivation) which at times furnished a plague of *Culex annulirostris* and *Aedes vexans* within the district. When the area is dry there are no mosquitoes.

Finally there is the example of the seasonal breeding on the rice flats between the town of Suva and the Suva Point area. In the summer time the pitted flats produces plagues of *Aedes vexans*. In the spring, *Culex annulirostris* is plentiful in the rice swamps, and in the winter in these same "trashy" swamps *Culex fatigans* becomes a nuisance.

With regard to the exception above quoted, i.e. *Aedes aegypti*—this mosquito has not so far been found in the Lau Province during the present survey and this can be said also of one of the Islands in the Lomaiviti Province, viz., Nairai. Manson-Bahr in his "Filariasis and Elephantiasis in Fiji" 1912 states that he "noted *stegomyia fasciata*" at Lomaloma and Lakeba, Lau Province. *Stegomyia fasciata* is a former name of *Aedes aegypti*.

Now it should be understood that *Aedes aegypti* is the domestic mosquito, and is therefore only found breeding in more or less small containers in or close around buildings occupied by human beings. When the Lau team commenced its work it had with it an experienced Town Inspector and his reports when he returned to Suva were clear, *Aedes aegypti* could not be found in Lakeba or in Lomaloma, although both towns were carefully inspected. This campaign report was later confirmed by the Government Entomologist who instituted a search for the insect on nine of the Islands of the Provinces of Lau and Lomaiviti.

Aedes (stegomyia) aegypti Linnaeus is not found extensively in the country, nevertheless it is unfortunately there, except in Lau and the Island of Nairai. The filariasis campaign may be the means of eradicating it, but, until towns like Suva, Levuka, Nausori, etc., are cleaned up there is not much chance of permanent eradication. The insect is carried so easily in ships and motor cars.

Culex fatigans Wied is found in the country areas but it is not common. Were it not for pit latrines or rather unprotected latrines it is possible it would very rarely be found there. The large towns with their strongly flavoured drains are the places for *Culex fatigans*.

Culex annulirostris Skuse, *Culex sitiens* Wied, *Culex albinervis* Edward.—These insects are regularly found in their more or less specialized breeding places throughout the group. *C. annulirostris* in grassy drains and rock pools (fresh water) and often in green algae.

C. Albinervis in grassy pools in which there is to be found brown or green algae, (*C. Albinervis* and *C. annulirostris* are often found together) and *C. sitiens* in brackish water pools.

Aedes (finlaya) kochi Donitz. The vadravadra tree (screw pine) is certainly the specialized breeding place of this insect in Fiji, and it is rarely found anywhere else. Occasionally it has been taken from the leaf axils of the Banana.

Aedes (aedimorphus) vexans Meigen. A summer time plague mosquito and it is well represented throughout Fiji. Swampy pitted land being its main breeding place.

A. (S) scutellaris Wlk. *pseudoscutellaris* Theo. There is no doubt about the general prevalence of this insect. It is the common mosquito of Fiji. A high density in any Koro simply means a high microfilarial infestation rate, and in Koros with little breeding the microfilarial rate is low: but the point is that this insect is spread throughout the whole group of the Islands of Fiji, and its density may be said to be due solely to the breeding opportunity afforded by the number of discarded containers lying about in the bush and scrub in and around Koros.

It is worth recording that in checks made on captured adults our catches occasionally produced extremely small specimens of *pseudo-scutellaris* (both male and female): at least our examination of the structure indicated definitely that identification. Eventually it was ascertained that the small size of the insect was apparently due solely to unfavourable breeding places. One unfavourable place discovered and proved, was the leaf axils of the vadravadra (the normal home of *Aedes kochi*). It is not often used by *pseudo-scutellaris* as a breeding place but it certainly produced small larvæ and diminutive adults, both male and female. These small adults, under laboratory conditions, produced full sized adults in two generations.

The following types were rarely found in the course of inspection or survey work in and around towns and villages. Most of them have special breeding places, and those special places are not normally found close to human habitation. To find them they must be specially sought for.

A. pseudo scutellaris horrescens Edw. normally only a forest tree hole breeder.

A. (Levua) geoskusea Amos. A "crab" hole breeder.

Uranotaenia colocasiae Edw. Although it is found in a variety of places its commonest breeding place is leaf axils.

U. Painei Edw. Found in rock pools and swamps.

Mansonia (coquilittidia) crassipes Vanderwulp. This insect is only found in swamps, i.e. swamps of a permanent nature.

Aedomyia catasticta Knab. Uncommon, but has been found breeding in rivers and swamps.

T. (tripteroides) purpurata Edw. Normally, and generally a tree rot hole breeder. Very often found breeding with *pseudo-scutellaris*.

DAVID W. AMOS.

APPENDIX VI.
ELEPHANTIASIS IN FIJI.

Blood test for microfilariae.			Persons with elephantiasis.		Elephantoid subjects with embryo in blood.		Time of occurrence of swelling.			Percentage of column 9.	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.		
Ages up to	No. exam.	Per-centage with micro-filariae.	No. Age at at time of test.	Per-centages to No. exam.	No.	Per-centage.	Age.	No.	Per-centage to No. exam. col. 2.	Nega-tive.	Posi-tive.
15	10,518	6.8	2	.109	....	....	5 10 15	1 1 6	.076	75	25
20	3,632	14.9	8	.22	2	25.0	20	12	.33		
30	6,070	23.0	42	.69	12	28.5	25 30	33 56	1.4		
40	3,616	30.6	80	2.2	32	40.0	35 40	54 79	3.6	59.5	40.4
50	2,349	35.3	108	4.5	48	44.4	45 50	57 57	4.8	52.1	47.8
60	1,520	38.9	97	6.3	47	48.4	55 60	22 16	2.5	56.0	44.0
70	782	42.2	63	8.0	28	44.4	65 70	5 1	.76	33.3	66.6
Total ..	28,487	19.1	400	1.4	169	42.2	....	400	....	....	....

APPENDIX VII.
CENTRAL LEPRO HOSPITAL, MAKOGAI.

ANNUAL REPORT 1946.

24th February, 1947.

I have the honour to forward the following report on the work of the Central Leper Hospital for the year 1946.

STAFF.

2. In addition to the Medical Superintendent and a Nursing Staff consisting of the Revd. Mother Agnes, M.B.E., and 15 Sisters of the Society of Mary, other assistants include a Clerk, Farm Overseer, Foreman Mechanic, Lorry Drivers, Carpenters, Bakers, Dairymen and sundry labour.

3. The four Sisters, evacuees from the Solomon Islands, who, as mentioned in last year's Report, had temporarily filled gaps in our Staff while gaining experience in Leprosy work, were enabled to return to the Solomons during the year. They were in turn replaced by Sister Mary Justina (American), Sister Mary Angelica (American), Sister Mary Kostka (English), and Sister Mary Felicitas (New Zealander).

4. The Sisters were highly gratified by the first visit of their Superior-General, Revd. Mother Marie de Chantal, from whom they have been completely cut off during the war years. As a result of her visit she will no doubt be in a much better position to realize the needs of her Sisters, and the qualifications required for the work. Her visit also enabled us to express our very real gratitude to the Society for the marvellous work carried out for so many years by its Sisters.

5. Table I giving statistics for the year 1946 indicates that our numbers have remained more or less stationary, and the following list shows the daily average total of all races as 607.42. In order to facilitate accounts the list is arranged according to the Administrations responsible for the various patients, rather than racially. It will be noted that Fiji itself is responsible for 67.85 per cent of the patients.

TABLE I.
STATISTICS FOR THE YEAR 1946.

	Euro-peans.		Euro-nians.		Solomon Islander.		Fijian.		Indian.		Rotuman.		Chinese.		Samoan.		Niue Islander.		Cook Islander.		Tongan.		Gilbert Islander.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
In Hospital 1st January, 1946	3	1	10	8	23	8	79	50	184	58	5	3	6	...	28	16	3	2	36	18	11	11	33	13	421	188
Admissions ..	...	...	1	1	5	...	11	12	17	6	1	1	1	...	3	4	1	1	8	7	5	2	4	...	57	34
Deaths ..	...	...	...	...	3	1	9	4	9	3	2	...	1	...	...	...	...	...	3	2	...	3	2	...	30	16
Conditional Discharges ..	...	...	1	1	2	2	5	4	10	3	...	...	...	...	1	...	...	...	6	1	...	...	...	1	25	12
Unconditional Discharges ..	...	...	...	...	...	...	1	2	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	3	6
In Hospital 31st December, 1946	3	1	10	8	23	5	75	52	182	58	4	4	6	...	28	19	4	2	35	22	16	10	34	10	420	191
Totals ..	4		18		28		127		240		8		6		47		6		57		26		44		611	

DAILY AVERAGE TOTAL OF PATIENTS.

New Zealand—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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TABLE II.
RACE IN RELATION TO TYPE OF LEPROSY.

Race.	N-1.		N-2.		N-3.		L-1.		L-2.		L-3.		Totals.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
European	...	...	...	...	...	...	...	...	3	1	...	...	3	1	4
Euronesian	...	2	1	1	...	...	2	1	7	4	...	...	10	8	18
Fijian	8	8	20	25	3	1	6	3	35	13	3	2	75	52	127
Indian	11	8	38	15	...	1	25	4	106	28	2	2	182	58	240
Solomon Islanders ..	1	1	11	2	...	...	...	1	10	1	1	...	23	5	28
Rotuman	...	...	1	...	...	...	...	...	3	3	...	1	4	4	8
Chinese	...	...	2	...	...	...	...	...	4	...	...	...	6	...	6
Samoan	2	1	6	3	...	...	5	4	12	10	3	1	28	19	47
Niue Islanders ..	1	...	...	...	...	...	...	...	2	2	1	...	4	2	6
Tongan	1	...	6	6	3	...	1	...	4	3	1	1	16	10	26
Cook Islanders ..	13	10	7	2	...	...	3	1	8	9	4	...	35	22	57
Gilbert Islanders ..	4	1	4	1	1	...	2	...	14	4	9	4	34	10	44
Totals	41	31	96	55	7	2	44	14	208	78	24	11	420	191	
	72		151		9		58		286		35		611		

6. Of the 611 patients present at the end of the year 379 were Lepromatous in type. Well over 60 per cent of our patients, therefore, are "open" or infective cases of Leprosy. The proportion of these open cases among the main groups is as follows:—

Gilbert Islanders	75	per cent of	44
Samoans	74.5	"	47
Indians	69.6	"	240
Fijians	48.8	"	127
Solomon Islanders	46.4	"	28
Cook Islanders	43.9	"	57
Tongans	38.5	"	26

TABLE III—PATIENTS ADMITTED DURING THE YEAR.

Race.	N-1.	N-2.	N-3.	L-1.	L-2.	L-3.	N-L.	Totals.
Euronesian	...	1	...	...	1	...	...	2
Solomon Islanders ..	...	2	...	...	3	...	...	5
Fijian	4	10	1	1	5	...	2	23
Indian	5	5	...	4	9	...	...	23
Chinese	...	1	...	...	...	...	...	1
Rotuman	...	1	...	...	1	...	...	2
Samoan	...	...	...	2	2	...	3	7
Niue	1	...	...	...	1	...	...	2
Cook Islanders	9	1	...	...	4	...	1	15
Gilbert Islanders ..	2	...	...	1	1	...	...	4
Tongan	...	6	...	...	1	...	...	7
Totals	21	27	1	8	28	...	6	91

7. The 91 patients admitted during the year and shown in Table III included ten re-admissions of previously discharged cases. Only six of these however were due to re-activation of their Leprosy, four being returned here for treatment of trophic ulcers only. As we have 371 surviving Discharged cases being reported on, this gives a Return Rate of 1.6 per cent. The trophic ulcers are of course due to previous nerve destruction by the leprotic process, and must be expected in fairly advanced Neural cases—a further argument, if one be needed, for the early diagnosis of the disease. Twenty-eight, or 30.8 per cent of the admissions were in the by no means early Lepromatous-2 stage and should certainly have been sent here before. Nine of these cases were from beyond Fiji, but there still remain 20.9 per cent of neglected cases from Fiji itself, which have probably left behind in their homes seed that will sooner or later bear fruit. If every Medical Officer and Assistant Medical Practitioner were to regard, as he should, the finding in his District of any case of active Leprosy beyond the earliest stage, as a slur upon the medical record of the District, and if a similar attitude could be induced among Provincial Councils and native officials, from Rokos to Turaga-ni-koros, a marked improvement would certainly result. In this regard, I would stress once again the vital importance of:—

- the further training of Assistant Medical Practitioners in the early diagnosis of Leprosy;
- the permanent (as distinct from "scraps of paper") recording and regular re-examination of all house contacts of every known case of Leprosy; and
- the regular inspection of all school-children with the idea of possible Leprosy diagnosis well to the fore.

TABLE IV—RACE IN RELATION TO PROGRESS OF LEPROSY.

Race.	Arrested.		Quiescent.		Improved.		Station.		Worse.		Late Admis's.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
European	...	...	...	1	1	...	1	...	1	...	...	...	3	1
Euronesian	...	...	...	1	4	2	5	2	1	3	...	...	10	8
Fijian	9	8	10	5	21	12	23	17	7	4	5	6	75	52
Indian	16	9	15	7	71	17	57	20	19	4	4	1	182	58
Solomon Islanders ..	2	2	...	1	8	1	5	...	5	1	3	...	23	5
Rotuman	...	...	1	...	1	1	...	...	1	2	1	1	4	4
Chinese	...	...	1	...	4	...	1	...	...	...	...	...	6	...
Samoan	...	...	1	1	7	6	15	9	5	3	...	...	28	19
Niue Islanders ..	...	...	...	...	2	...	2	...	...	...	...	...	4	2
Tongan	1	...	2	2	9	3	4	4	...	1	...	...	16	10
Cook Islanders ..	3	4	4	2	8	3	11	5	2	4	7	4	35	22
Gilbert Islanders ..	1	1	6	1	8	1	14	6	5	1	...	...	34	10
Totals	32	24	40	21	144	46	138	65	46	23	20	12	420	191
	56		61		190		203		69		32		611	

8. Table IV showing "race" in relation to progress of Leprosy is interesting from the point of view of comparison with possible prognosis based on Table II. Thus, on compiling a list of "improved" cases (i.e. all who have shown any degree of improvement, including those classified as "arrested", "quiescent", or "improved") we should anticipate a reversal of the list of the main racial groups given above, and on the whole this does occur, the percentages of improved cases being shown below:—

	<i>Per cent.</i>
Tongans	65.4
Indians	57.4 (omitting late admissions)
Fijians	56.03
Solomon Islanders ..	56.0
Cook Islanders ..	52.2
Gilbert Islanders ..	40.9
Samoans	31.9

9. The Gilbert Islanders and Samoans, as might be anticipated from their high proportion of Lepromatous cases, make a poor showing in the "improved" list, while the Tongans with their low percentage of Lepromatous cases, head the list. The Indians however have improved their position and show apparently better results under treatment than the Fijians, Solomon Islanders and Cook Islanders, all of which groups had a smaller proportion of Lepromatous cases than was found among the Indians. On the other hand it should be noted from Table IV that whereas 27.6 per cent of the Fijians have progressed to the Quiescent or Arrested stages, only 20 per cent of the Indians have done so. Taking the figures for those who attained the "Arrested" stage only, the percentages are 14.7 for Fijians and 10.6 for Indians.

TABLE V—PATIENTS DISCHARGED DURING THE YEAR.

Race.	N-1.	N-2.	N-3.	L-1.	L-2.	Totals.
Euronesian	1	1	...	...	...	2
Solomon Islanders ..	1	3	...	...	...	4
Fijian	3	5	...	...	1	9
Indian	3	6	...	...	4	13
Samoan	...	1	...	...	...	1
Cook Islanders ..	6	1	...	...	...	7
Gilbert Islanders ..	...	1	...	...	...	1
Totals	14	18	...	...	5	37

10. Reference to Table V giving those actually discharged during the year and regarding them as a percentage of the daily average number for each race, we find the same consistent ultimate superiority of Fijian results over Indian—in this case 7.03 per cent for Fijians and 5.4 per cent for Indians. Comments in previous Reports can therefore only be repeated without explanation, that whereas the Indian patients on admission are, as a whole, more advanced cases than the Fijians, a larger proportion of them soon join the "Improved" group, but a smaller proportion proceed to complete inactivity of their disease. Were their higher improvement rate due to the fact that their diet at Makogai is a greater improvement on their "outside" diet than is that of the Fijians, the "quiescent" and "arrested" degrees should be influenced to the same extent. Were there any true "racial" distinction—inborn or acquired—the same argument would seem to apply, but with or without explanation, the anomalous results have been recorded in too many of our Reports to be fortuitous.

11. Table VI shows the progress made during the year by patients in the various stages of Leprosy. To depict the position accurately however, it is necessary to include with the "Arrested" those actually discharged during the year and therefore not included with the 611 shown in the above tables.

TABLE VI—PROGRESS IN RELATION TO TYPE OF LEPROSY.

		N-1.	N-2.	N-3.	L-1.	L-2.	L-3.	Totals.
Arrested	.. ..	15	26	4	5	5	1	56
Quiescent	.. ..	17	31	..	2	11	..	61
Improved	.. ..	16	38	1	22	106	7	190
Stationary	.. ..	11	44	3	25	100	20	203
Worse ...	.. ..	2	3	1	4	53	6	69
Late Admissions	.. ..	11	9	..	..	11	1	32
Totals	.. ..	72	151	9	58	286	35	611

TABLE VII—PROGRESS OF LEPROSY SHOWN AS PERCENTAGE IN EACH TYPE.

Type.	Arrested.	Quiescent.	Improved.	Station.	Worse.
N-1	38.7	22.7	21.3	14.7	2.7
N-2	27.5	19.4	23.7	27.5	1.9
N-3	44.4	..	11.1	33.3	11.1
L-1	8.6	3.4	37.9	43.1	6.9
L-2	3.5	3.9	37.9	35.7	18.9
L-3	2.9	..	20.6	58.8	17.6

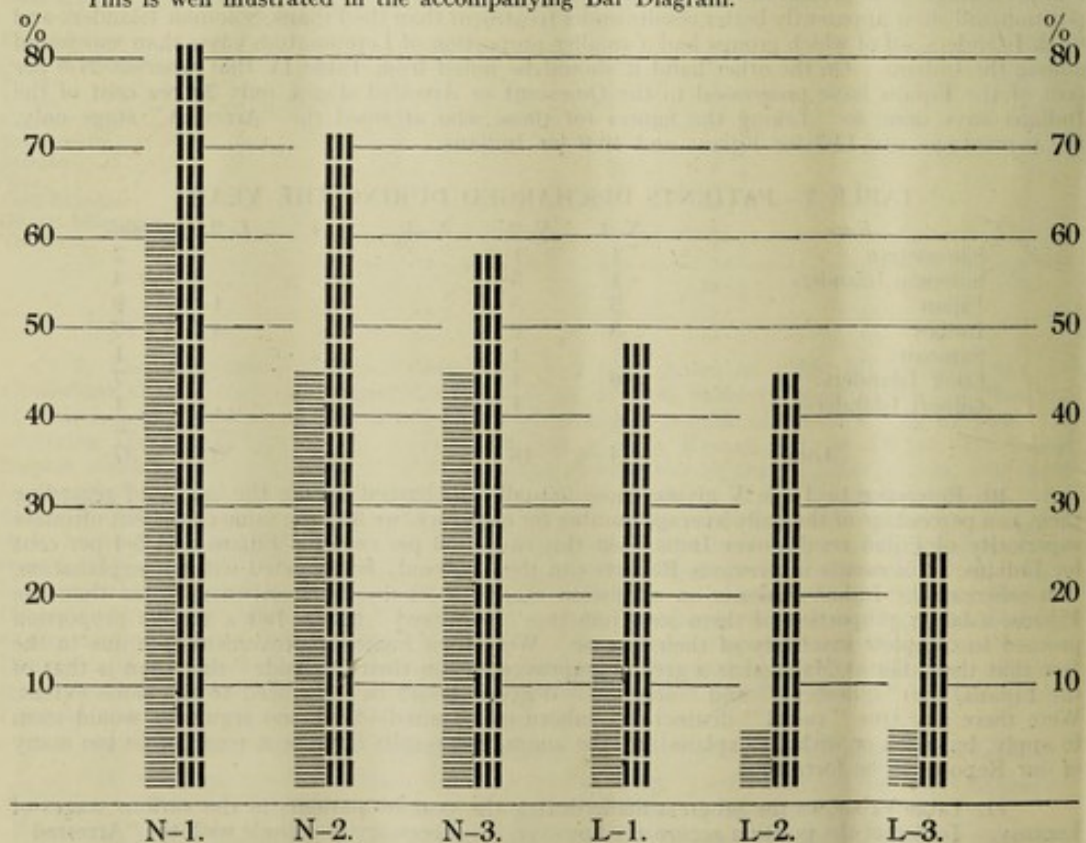
12. This is done in Table VII in which results are considered as percentages of each type of Leprosy. From this table it will be seen that by adding the percentages of "arrested" and "quiescent" cases together, we obtain a percentage of "inactive" cases in each stage, which gives the prognostic gradation we should expect:—

Neural-1	61.4 per cent
Neural-2	46.9 "
Neural-3	44.4 "
Lepromatous-1 ..	12.0 "
Lepromatous-2 ..	7.4 "
Lepromatous-3 ..	2.9 "

13. In the same way, by adding together the percentages of "Arrested", "Quiescent" and "Improved" cases, the total of improved cases expressed as a percentage in each stage provides a similar gradation:—

Neural-1	82.7 per cent
Neural-2	70.6 "
Neural-3	55.5 "
Lepromatous-1 ..	50.0 "
Lepromatous-2 ..	45.4 "
Lepromatous-3 ..	23.5 "

This is well illustrated in the accompanying Bar Diagram.



(Light equals percentage of "inactive" cases, and dark equals percentage of "improved" cases).

14. Nothing could better indicate the extreme importance of early diagnosis, and so emphasize once again the necessity of the three measures urged above—the further training of Assistant Medical Practitioners, the follow-up of contacts, and the regular examination of school children.

DEATHS.

15. Of the 46 deaths occurring during the year 36 were of patients classified as moderate or advanced Lepromatous cases. Twenty-three of the deaths were registered as directly due to Advanced Leprosy and a further six to Nephritis complicating Leprosy. Four were from "cerebral accidents"—two of Thrombosis and two of Hæmorrhage—and there were four deaths from Pulmonary Tuberculosis. It is noteworthy that Septicæmia, Pyæmia, or "Septic Absorption" which have hitherto ranked high as causes of death, claimed only one victim during the year.

X-RAY EXAMINATIONS.

16. When the question of a small X-ray apparatus (which was later presented to us, together with a very satisfactory concrete building by the Lepers Trust Board) was first raised, the main idea was to investigate the trophic changes of the bony extremities in Leprosy. For this purpose a 15 M.A. Watson-Victor machine was quite adequate, and it was not till later that we realized the crying need for chest examination for Tuberculosis, etc. It was with a great deal of diffidence therefore, that we made our first attempts in this direction, and with corresponding pleasure that we decided that the machine was very satisfactory for the extended purpose. When this was confirmed by Dr. Taylor, Director of the Tuberculosis Division of the New Zealand Health Department, who was dubious until he saw our results, we were able to go forward with much more confidence. I should mention that almost all X-ray work has been carried out by two of our Sisters, one of whom had worked for two months with the Radiographer in Suva, and one of whom was familiar with ordinary photographic development technique.

17. During the year 247 X-ray examinations were made, including 150 lung fields. Six cases of Pulmonary Tuberculosis were confirmed, in four of which the diagnosis was further corroborated at some later period by sputum examination. There were two cases of pleural effusion, and six suspicious cases which will be followed up by 3-monthly X-ray examinations. Seventeen "suggestive" cases are on the list for 6-monthly examinations. All school boys and girls have been X-rayed, all new cases are filmed, and we are very slowly working through the rest of the patients with a view to having a standard for each patient in case of subsequent signs suggestive of Tuberculosis.

18. Of the six definite cases, three are male—all young Gilbert Islanders, and three female—one Fijian, one Indian and one Solomon Islander. The pleural effusions occurred in late adolescence in each case—one Samoan and one Fijian. There is no evidence that type of Leprosy plays any essential part, three of the definite cases being Lepromatous-1 or 2 and three being Neural-1 or 2. The two pleural effusions were Neural-1 and Neural-2.

TABLE VIII—SUMMARY OF STATISTICS, 1911-46.

	Europeans.	Euronesians.	Solomon Islanders.	Fijians.	Indians.	Rotumans.	Chinese.	Samoans.	Niue Islanders.	Cook Islanders.	Tongans.	Gilbert Islanders.	Maoris.	Totals.
Admissions ..	19	43	205	784	1,176	98	25	93	13	234	46	105	4	2,845
Repatriations ..	1	..	..	..	435	..	..	..	..	..	..	..	..	436
Discharges ..	4	12	62	302	234	56	4	21	2	112	6	22	1	838
Deaths ..	10	13	115	355	267	34	15	25	5	65	14	39	3	960
Present inmates..	4	18	28	127	240	8	6	47	6	57	26	44	..	611

19. Table VIII, which is a summary of Makogai statistics covering the 35 years of its existence, has its points of interest. Indians easily lead in number of admissions, but on subtracting the number of those repatriated, Fijian admissions lead by 43. The Fijians also lead in discharges and deaths, with the result that their present numbers are little more than half those of Indians. The Indian repatriated patients were mainly mild cases who, had they remained, would certainly have swelled the numbers of Indian discharges and decreased the proportion of deaths.

20. It will be noted that 25.9 per cent of the 2,845 cases admitted were later discharged, after the statutory two years period of observation of inactive cases. These figures challenge comparison with any produced elsewhere—especially in view of the advanced nature of so many of our earlier cases—whether under a system of compulsory segregation or otherwise.

LOCAL PRODUCE.

12. An unusually dry season seriously interfered with the local gardens during the year, but in spite of this shortage patients were able to sell us over 800,000 lb of bananas and root or other vegetables for Hospital issue. As our idea is not only to improve the diet by this issue of fresh fruit and vegetables, but also to encourage the open air exercise involved in gardening, it

will be seen that the nearly £1,500 spent on these purchases certainly furnishes adequate incentive to the patients, though they were paid much less than the present market rate. Other purchases from patients included about £30 for fresh fish and over £26 to one patient who is breeding pigs for slaughter.

22. The *Hydnocarpus* trees continue to flourish and we have received over 30 gallons of oil from them during the year. We use it for injections in preference to the imported oil and the patients regard it as much superior to the imported oil, from the point of view of freedom from abscess formation and comparative lack of irritation and pain.

23. The Hospital fowl run has produced about 4,500 eggs and well over 200 fowls for use in the Hospital kitchen, and is regarded as a great assistance by the Sister Dietician. About 12 tons of beef and well over 50,000 gallons of milk have been supplied from the Nasau Farm. Tinned meat has been in very short supply and it has been impossible to supplement this shortage by importation of more cattle, so that we have been hard put to it to maintain the dietetic level from this point of view.

DISCIPLINE.

24. Our good disciplinary record received a rude set-back earlier in the year when a gang of Indians attacked their Sirdar with sticks and at least one knife. He received severe cuts about the head, a broken forearm sustained in attempting to protect his head, as well as severe bodily bruising.

25. The Chief Police Magistrate was sent over to investigate, and inflicted sentences ranging from six months to two years on the ringleaders, with exemplary effects. Gaol sentences have of course to be greatly mitigated in certain cases, but the sense of isolation from their fellow patients serves a very good purpose if only in making them realize that they are still subject to the law of the land.

26. As a result of the fracas, our untrained Punjabi "police" (a purely courtesy title) have been replaced by three trained Fijian Constables—a marked improvement. In addition to their duties as Police, they act also as Gaol Warders.

PUBLIC WORKS.

27. Lack of materials has severely delayed the commencement of the post-war building programme. This latter included additional accommodation in the Polynesian village, and when we were notified that a number of Tongan patients were to be expected shortly, we had no accommodation available for them. As it was obviously impossible for their new building to be ready in time we arranged for the Fijians to erect a native type of building, this was very well done and has provided quite satisfactory quarters for the time being.

28. The only major work carried out during the year was an open-sided Talkie and Concert Theatre, funds for which, amounting to over £4,000, were generously donated by the Lepers Trust Board of New Zealand. A concrete projection room, flanked by rooms for storage of films, re-winder, etc., occupies one end of the building, and at the other end is the raised stage complete with wings and dressing rooms. The back of the stage is completed by a white plastered cement wall which functions as an excellent "screen". The sloping of the floor has been carefully calculated to ensure good visibility from all angles, and a raised step at the rear, immediately below the projection room furnishes the only indication required by the patients that this area is reserved for the staff and visitors.

29. The twin "Kalee" Projectors donated by the Rotary Club in 1938 were installed at that time for open air projection by Mr. L. Noerr, joint proprietor with his brother, of the Regal Theatre, Suva. Mr. Noerr has regularly serviced the machines since then, and has now transferred and re-erected them in the new projection room. We are greatly indebted to Mr. Noerr for his ready assistance and advice at all times, as well as to his brother, Mr. A. E. Noerr, without whose ready co-operation it would have been impossible for him to absent himself from Suva on our behalf.

30. Shortage of paint, glass, galvanized iron roofing and perforated zinc or wire gauze for screening of buildings has given Makogai an unwonted air of shabbiness for the time being, but we trust that this may be remedied in the not too distant future.

31. *Visitors* to the Hospital, more than 100 of whom signed the Visitors' Book, included His Excellency Sir Alexander Grantham and Lady Grantham; Sir Henry Scott, K.C., Legal Adviser and Deputy Chairman of the Lepers Trust Board of Fiji, Sir Josiah Crosby; Hon. Dr. J. C. R. Buchanan, Inspector General of the South Pacific Medical Services and Mrs. Buchanan; Dr Taylor, Director of the Tuberculosis Division of the New Zealand Health Department; Dr. Gunther, D.M.S. of Papua; Mr. L. Noerr, Suva; Mr. W. E. Donovan, Acting Accountant-General, and Secretary of the Lepers Trust Board of Fiji; representatives of the Anglican, Catholic and Methodist Churches; representatives of the Administrative, Legal, Police, Education, Agriculture, and Public Works Departments, in addition to officers and men of H.M. Submarines *Tireless* and *Truncheon*, whose visit, being the first of its kind, was probably the most popular of the year.

C. J. AUSTIN,
Medical Superintendent, Makogai.

INJECTIONS, 1946.

1946.	Chaulm. Oil.	Salvarsan.	Dilesters.	Manga- nese.	Vitamin B.L.	Floures.	Various injections.	Total of injections.	Dressings.	Patients dressed.	Opera- tions.	X-ray exam.	Urine analyses.	Bacterio. exam.	Helm- inths.	Total of lab. exam.	Visitors.
January ..	1,327	4	5	2	....	14	59	1,411	8,064	4,032	2	16	118	42	....	160	....
February ..	1,064	12	12	3	27	22	75	1,215	7,168	3,408	....	14	65	84	15	164	5
March ..	1,147	7	9	10	24	10	56	1,263	6,868	3,417	2	19	28	61	8	97	9
April ..	705	6	1	24	6	6	69	817	7,758	3,798	2	21	23	39	17	79	23
May ..	1,396	3	4	13	3	33	72	1,464	8,160	3,927	2	31	16	64	9	89	3
June ..	1,033	2	7	2	44	16	41	1,145	7,650	3,842	7	25	18	23	9	50	....
July ..	1,241	6	10	5	10	25	69	1,366	7,470	3,780	1	....	23	73	9	105	9
August ..	1,376	6	6	20	6	23	54	1,489	7,920	3,618	2	....	23	80	18	121	13
September ..	1,403	3	3	4	4	21	65	1,503	8,160	3,842	1	46	24	81	8	113	19
October ..	1,172	8	9	5	17	30	38	1,279	8,640	4,086	3	17	31	55	28	114	14
November ..	1,345	5	4	8	26	14	162	1,564	8,057	4,165	5	52	27	74	21	122	3
December ..	796	5	....	11	24	4	207	1,047	8,634	4,182	1	6	12	17	....	29	18
Totals ..	13,945	67	68	107	191	218	967	15,563	94,549	46,097	28	247	408	693	142	1,243	116

RAINFALL 1946, MAKOGAI.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
12.86	15.83	12.86	1.58	2.86	1.56	.18	3.63	.35	6.11	9.68	4.50	73.90

APPENDIX VIII.

Diseases which did not occur are not listed.

Return of Diseases and Deaths for the year 1946, at the Colonial War Memorial Hospital, Labasa, Lautoka, Levuka and Tamavua Hospitals.

NOTE.—This classification is based on the International List of Causes of Death, 1929.

Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.	Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
I—INFECTIOUS AND PARASITIC DISEASES.							Brought forward	99	869	996	229	2193	189
Typhoid Fever	..	21	21	7	49	5	Other infectious or parasitic diseases—						
Paratyphoid Fever	1	..	..	..	1	..	(a) Vaccinia (Cowpox)	..	..	..	..	..	..
Undulant Fever	..	..	1	..	1	..	(b) Other sequelae of vaccination	..	..	1	..	1	..
Measles	12	90	78	34	214	2	(c) German measles (Rubella)	1	2	..	..	3	..
Diphtheria	1	..	2	..	3	2	(d) Chicken-pox (Varicella)	..	3	4	..	7	..
Influenza	11	114	184	39	348	..	(e) Mumps and its complications	2	1	3	..	6	..
Dysentery—							(f) Dengue	3	1	1	..	5	..
(a) Amœbic	14	14	19	11	58	..	(g) Glandular Fever	..	..	1	..	1	..
(b) Bacillary	11	14	40	6	71	6	(h) Others	1	1	2	..	4	..
(c) Mixed	..	..	..	..	..	..	Total	106	877	1008	229	2220	189
(d) Undefined or due to other causes	1	8	77	1	87	3	II—CANCER AND OTHER TUMOURS.						
Erysipelas	1	..	..	1	2	..	Cancer or other malignant diseases of the buccal cavity, pharynx and œsophagus	6	..	3	..	9	2
Cerebro-spinal Fever	..	2	..	..	2	1	Cancer or other malignant tumours of the digestive organs and peritoneum—						
Tetanus—							(a) Stomach	3	2	9	..	14	3
(a) Of the new born	..	2	2	..	4	4	(b) Liver and biliary passages	..	..	2	..	2	2
(b) Other forms	1	4	9	..	14	6	(c) Rectum	3	..	6	..	9	1
Tuberculosis of the Respiratory system	2	358	168	42	570	141	(d) Others	..	1	5	..	6	3
Tuberculosis of the Central Nervous system	..	4	1	..	5	3	Cancer or other malignant tumours of the respiratory organs	1	..	2	..	3	2
Tuberculosis of the Intestines or Peritoneum	..	3	2	..	5	2	Cancer or other malignant tumours of the uterus	2	..	13	..	15	1
Tuberculosis of the Vertebral column	..	10	6	..	16	2	Cancer or other malignant tumours of other female genital organs	..	2	1	1	4	1
Tuberculosis of other Bones and Joints	..	10	2	1	13	2	Cancer or other malignant tumours of the breast	1	..	2	..	3	..
Tuberculosis of the Skin or Subcutaneous tissue (Lupus)	..	2	..	..	2	..	Cancer or other malignant tumours of the male genito-urinary organs	1	1	4	1	7	1
Tuberculosis of the Lymphatic system	..	26	6	1	33	..	Cancer or other malignant tumours of the skin	3	2	2	..	7	..
Tuberculosis of the Genito-urinary system	..	..	1	..	1	..	Cancer or other malignant tumours of organs not specified	1	8	3	2	14	3
Tuberculosis disseminated	..	3	..	..	3	3	Non-malignant tumours—						
Leprosy	11	14	7	32	..	..	(a) Female genital organs	..	2	4	..	6	..
Syphilis—							(b) Other sites	3	6	6	2	17	1
(a) Primary	2	2	6	2	12	..	Tumours of undetermined nature—						
(b) Secondary	1	..	4	1	6	..	(a) Female genital organs	..	2	..	..	2	..
(c) Tertiary	2	1	22	..	25	..	(b) Other sites	1	2	3	..	6	1
(d) Congenital	..	..	6	4	10	1	Total	25	28	65	6	124	21
Other Venereal Diseases—							III—RHEUMATISM, DISEASES OF NUTRITION AND OF ENDOCRINE GLANDS AND OTHER GENERAL DISEASES.						
(a) Soft Chancre	..	1	..	..	1	..	Rheumatic Fever—						
(b) Gonorrhœa	17	47	77	19	160	..	(a) With cardiac involvement	..	1	14	2	17	..
(c) Gonorrhœal Ophthalmia	..	1	..	..	1	..	(b) Without cardiac involvement	2	7	32	2	43	..
(d) Other Gonorrhœal complications	..	2	7	1	10	..	(c) Subacute Rheumatism	..	7	35	..	42	..
(e) Granuloma Venereum	..	..	..	..	..	..	Rheumatism and non-Suppurative arthritis—						
(f) Tropical bubo (Lymphogranuloma Inguinale)	..	..	1	..	1	..	(a) Chronic Rheumatism	2	4	16	2	24	..
(g) Mixed Venereal infections	..	3	10	..	13	..	(b) Rheumatoid Arthritis	1	1	5	..	7	2
Purulent Infection—							(c) Osteo-arthritis	2	3	5	1	11	..
(a) Septicæmia	3	1	16	2	22	4	Diabetes Mellitus	10	11	96	8	125	9
(b) Pyæmia	..	..	1	..	1	1	Beri-beri including epidemic dropsy	..	..	..	1	1	..
(c) Gas Gangrene	..	..	..	..	..	..	Other diseases due to hypovitaminosis	..	2	13	..	15	..
Malaria—							Diseases of the thyroid and parathyroid glands—						
(a) Benign Tertian	1	12	..	5	18	..	(a) Simple goitre	..	1	10	..	11	..
(b) Quartan	1	..	..	1	2	..	(b) Exophthalmic goitre	3	..	1	..	4	..
(c) Sub-Tertian	..	..	..	..	..	..	(c) Myxœdema, cretinism	..	..	1	..	1	..
(d) Mixed	2	..	..	1	3	..	(d) Tetany	..	..	..	..	..	..
Other Diseases due to Protozoa—							(e) Others	..	..	1	..	1	..
(a) Framboesia (Yaws)	1	32	3	9	45	..	Other general diseases	1	8	4	1	14	..
(b) Spirochaetosis Ictero-hæmorrhagica	..	..	..	..	..	..	Total	21	45	233	17	316	11
Ankylostomiasis	11	40	166	16	233	..							
Hydatid cysts	..	..	4	..	4	..							
Other diseases due to Helminths—													
(a) Ascariasis	..	5	30	5	40	1							
(b) Filariasis	1	21	6	7	35	..							
(c) Taeniasis	..	1	..	2	3	..							
(d) Oxyuris Vermicularis	1	3	1	2	7	..							
(e) Others	1	1	3	2	7	..							
Carried forward	99	869	996	229	2193	189							

APPENDIX VIII—continued.

Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.	Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
IV—DISEASES OF BLOOD AND BLOOD-FORMING ORGANS.							VII—DISEASES OF THE CIRCULATORY SYSTEM.						
Anæmia—							Pericarditis			1	1	2	..
(a) Pernicious anæmia	3	..	4	..	7	3	Acute endocarditis—						
(b) Splenic anæmia	..	..	..	..	..	..	(a) Malignant	1	1	..	..	2	2
(c) Chlorosis	..	1	4	..	5	..	(c) Others not included elsewhere	..	..	1	..	1	..
(d) Secondary anæmia	4	2	128	..	134	11	Chronic endocarditis, valvular disease (except specific cause elsewhere stated)—						
(e) Others	1	..	21	..	22	..	(a) Aortic valve	..	..	1	1	2	1
Lukæmia, Aleukæmia—							(b) Mitral valve	..	4	19	..	23	..
(a) Chronic myeloid leukæmia ..	..	..	3	..	3	..	(c) Aortic and mitral valve ..	..	1	6	..	7	2
(b) Chronic lymphatic leukæmia ..	..	..	..	..	..	..	(d) Endocarditis not returned as acute or chronic	..	1	3	..	4	..
(c) Acute leukæmia	1	..	..	..	1	1	(e) Other or unspecified valve disease	..	..	..	..	..	..
(d) Multiple myeloma	..	..	..	..	..	..	Diseases of the myocardium (except due to specified cause stated elsewhere)—						
(e) Aleukæmia (lymphadenoma or Hodgkin's Disease) ..	2	..	1	..	3	1	(a) Acute myocarditis	1	1	4	1	7	4
Diseases of the spleen not elsewhere mentioned	..	..	1	..	1	..	(b) Myocardial Degeneration ..	8	11	159	9	187	66
Other diseases of the blood and blood-forming organs	..	..	1	..	1	..	Diseases of the coronary arteries—						
Total	11	3	163	..	177	16	(a) Angina Pectoris	1	..	2	..	3	..
V—CHRONIC POISONING.							(b) Coronary sclerosis and thrombosis and embolism	2	2	6	..	10	6
Alcoholism acute or chronic ..	..	..	1	1	2	..	Other diseases of the heart (except due to specified cause stated elsewhere)—						
Poisoning by other organic substances (not by violence)—							(a) Auricular fibrillation ..	..	..	3	..	3	..
(a) Opium habit	..	..	1	4	5	..	(b) Heart block	..	..	..	..	..	..
(b) Morphine habit	..	..	1	..	1	..	(d) Disordered action of the heart ..	..	..	7	..	7	2
(c) Others	..	2	1	..	3	..	(d) Others	..	1	2	1	4	1
Total	..	2	4	5	11	..	Arteriosclerosis	2	2	41	..	45	10
VI—DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.							Gangrene (other than gas gangrene) ..	1	15	..	..	16	8
Encephalitis (not including encephalitis lethargica)—							Diseases of the lymphatic system—						
(a) Cerebral abscess	..	1	3	..	4	1	(a) Lymphangitis	..	..	4	..	4	..
(b) Others	..	1	6	1	8	4	(b) Lymphadenitis	4	7	12	2	25	..
Meningitis (not including tuberculosis or meningococcal) ..	1	5	8	2	16	11	Diseases of the Veins—						
Tabs Dorsalis (locomotor ataxia) ..	..	..	1	..	1	..	(a) Varicose veins	3	2	1	1	7	..
Cerebral hæmorrhage, Apoplexy, etc.—							(b) Hæmorrhoids	3	2	30	3	38	..
(a) Cerebral hæmorrhage	1	1	9	3	14	9	(c) Phlebitis	1	..	3	1	5	..
(b) Cerebral embolism & thrombosis	1	3	..	2	6	1	(d) Thrombosis	..	1	4	..	5	..
(c) Hemiplegia and other paralyzes of unstated origin ..	..	5	19	..	24	3	(e) Others	..	..	..	..	..	..
Other forms of insanity—							Abnormalities of blood pressure—						
(a) Dementia Præcox	..	..	1	..	1	..	(a) High blood pressure	7	..	4	2	13	1
(b) Others	..	..	2	..	2	..	(b) Low blood pressure	..	..	..	..	..	..
Epilepsy—							Other diseases of the Circulatory System—						
(a) Major	1	1	3	1	6	..	(a) Epistaxis	..	..	..	1	1	..
(b) Minor	..	..	..	..	..	..	(b) Others (including unexplained hæmorrhages)	..	..	..	1	1	..
Infantile convulsions (under 5 yrs.)	1	10	39	6	56	17	Total	33	37	328	24	422	103
Other diseases of the Nervous System—							VIII—DISEASES OF THE RESPIRATORY SYSTEM.						
(a) Chorea	..	2	6	1	9	..	Diseases of the nasal Fossæ and annexa—						
(b) Neuritis, neuralgia	..	4	10	1	15	..	(a) Diseases of the nose	2	4	8	1	15	..
(c) Paralysis Agitans	..	1	..	1	2	..	(b) Diseases of the accessory nasal sinuses	5	2	6	2	15	..
(d) Disseminated Sclerosis	..	..	..	..	..	..	Diseases of the larynx—						
(e) Neurasthenia	2	..	5	..	7	..	(a) Laryngismus Stridulus ..	..	..	1	..	1	..
(f) Hysteria	2	..	4	..	6	..	(b) Laryngitis acute and chronic of non-specific ætiology ..	..	..	..	..	..	..
(g) Others	..	..	6	..	6	..	(c) Others	..	1	..	..	1	..
Diseases of the eye—							Bronchitis—						
(a) Conjunctivitis	2	11	15	1	29	..	(a) Acute	7	69	131	23	230	1
(b) Trachoma	..	3	3	..	6	..	(b) Chronic	4	9	22	2	37	1
(c) Corneal Ulcer	..	9	17	3	29	..	(c) Not defined as acute or chronic	7	25	38	23	93	2
(d) Cataract	1	12	28	2	43	..	Broncho-pneumonia	3	81	130	32	246	44
(e) Iritis	..	1	4	..	5	..	Lobar pneumonia	7	54	86	26	173	20
(f) Glaucoma	..	..	2	1	3	..	Pneumonia (not otherwise defined)	4	20	21	7	52	5
(g) Others	2	5	16	4	27	..	Pleurisy—						
Diseases of the Ear and Mastoid Sinus—							(a) Empyema	..	4	6	..	10	..
(a) Otitis externa	4	8	6	3	21	..	(b) Other pleurisy	6	20	18	4	48	..
(b) Otitis media	2	9	21	3	35	..	Asthma	14	20	126	19	179	5
(c) Mastoiditis	1	3	7	1	12	..	Carried forward	59	309	593	139	1100	78
(d) Others	..	2	5	1	8	..							
Total	21	97	246	37	401	46							

APPENDIX VIII—continued.

Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
Brought forward	59	309	593	139	1100	78
Other diseases of the Respiratory System—						
(a) Chronic interstitial pneumonia (including occupational diseases of the lung) ..	..	..	..	..	..	..
(b) Gangrene of the lung ..	..	..	..	..	..	..
(c) Abscess of the lung ..	1	1	1	..	3	1
(d) Bronchiectasis ..	2	2	2	..	6	1
(e) Others ..	..	1	1	1	3	..
Total	62	313	597	140	1112	80
IX—DISEASES OF THE DIGESTIVE SYSTEM.						
Diseases of the buccal cavity, pharynx, etc.—						
(a) Pyorrhoea and gingivitis ..	2	1	14	3	20	..
(b) Dental caries ..	1	7	18	3	29	..
(c) Stomatitis ..	2	..	5	1	8	..
(d) Vincent's Angina ..	..	1	1	..	2	..
(e) Ludwig's Angina ..	..	..	..	..	..	..
(f) Diseases of the tonsils ..	21	10	46	13	90	..
(g) Others including coryza, acute naso-pharyngitis, etc. ..	4	4	7	1	16	..
Diseases of the oesophagus ..	1	..	..	..	1	..
Ulcer of the stomach or duodenum—						
(a) Ulcer of the stomach ..	4	2	17	5	28	2
(b) Ulcer of the duodenum ..	7	1	5	2	15	..
Other diseases of the stomach—						
(a) Gastritis ..	7	9	88	4	108	..
(b) Others, e. g. functional dyspepsia ..	..	2	27	1	30	..
Diarrhoea and enteritis (under two years) ..	1	24	33	3	61	5
Diarrhoea and enteritis (two years and over)—						
(a) Colitis ..	4	9	12	2	27	2
(b) Otherwise defined including gastro-enteritis ..	14	121	168	19	322	5
Appendicitis ..	26	11	147	22	206	1
Hernia, Intestinal Obstruction—						
(a) Hernia ..	9	13	57	8	87	1
(b) Strangulated Hernia ..	1	5	5	2	13	..
(c) Intestinal obstruction including intussusception ..	1	2	3	1	7	2
Other diseases of the intestines—						
(a) Constipation, intestinal stasis ..	2	8	13	1	24	..
(b) Diverticulosis and diverticulitis ..	1	..	1	..	2	..
(c) Diseases of rectum or anus ..	6	4	28	..	38	..
(d) Others, e.g. intestinal colic ..	1	6	15	..	22	..
Cirrhosis of the liver (non-syphilitic)						
(a) Alcoholic ..	..	..	..	..	..	..
(b) Not returned as alcoholic ..	1	2	2	..	5	1
Other diseases of the liver—						
(a) Acute Yellow Atrophy ..	..	..	1	..	1	..
(b) Toxic Hepatitis ..	1	..	..	1	2	..
(c) Amoebic abscess & Hepatitis ..	4	8	3	2	17	1
(d) Others ..	..	..	2	1	3	2
Biliary calculi or biliary colic ..	3	..	7	..	10	..
Other diseases of the gall-bladder and ducts—						
(a) Cholecystitis without record of calculi ..	4	1	28	3	36	1
(b) Others, e.g. catarrhal jaundice ..	..	..	8	..	8	1
Diseases of the pancreas (excluding Diabetes Mellitus) ..	1	..	..	..	1	..
Peritonitis without stated cause—						
(a) Acute ..	..	2	5	..	7	4
(b) Chronic ..	..	1	..	..	1	1
Total	129	254	766	98	1247	29
X—DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).						
Acute Nephritis ..	..	4	7	..	11	..
Chronic Nephritis ..	..	8	18	1	27	2
Nephritis (undefined as acute or chronic) ..	..	4	8	2	14	..
Other diseases of the Kidney and annexa—						
(a) Pyelitis ..	23	15	105	11	154	2
(b) Others ..	2	1	5	2	10	..
Carried forward	25	32	143	16	216	4

Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
Brought forward	25	32	143	16	216	4
Calculi of the urinary passages—						
(a) Calculi of Kidney and ureter and renal colic ..	2	1	14	1	18	2
(b) Calculi of bladder and urethra ..	..	..	5	..	5	..
(c) Calculi of unstated site ..	..	..	..	..	..	..
Diseases of the Bladder—						
(a) Cystitis ..	2	..	18	3	23	..
(b) Others ..	1	..	4	..	5	1
Diseases of the urethra, urinary abscess, etc.—						
(a) Stricture ..	2	..	7	..	9	..
(b) Others ..	1	..	9	2	12	..
Diseases of the prostate ..	3	3	16	2	24	1
Diseases of the male genital organs—						
(a) Phimosis ..	1	..	4	1	6	..
(b) Epididymitis (excluding tuberculosis) ..	2	2	5	1	10	..
(c) Orchitis ..	3	2	4	..	9	..
(d) Hydrocele ..	..	21	26	2	49	..
(e) Elephantiasis of the scrotum ..	..	1	..	..	1	..
(f) Others ..	..	2	5	1	8	..
Diseases of the female genital organs—						
(a) Diseases of the ovary ..	1	1	11	1	14	..
(b) Diseases of the Fallopian tube ..	6	5	25	3	39	..
(c) Diseases of the parametrium ..	1	2	7	2	12	1
(d) Diseases of the uterus including menorrhagia and dysmenorrhoea ..	8	4	48	5	65	..
(e) Diseases of the breast ..	..	3	6	..	9	..
(f) Others, e.g. prolapse ..	16	5	41	7	69	..
Total	74	84	398	47	603	9
XI—DISEASES OF PREGNANCY, CHILDBIRTH AND THE PUERPERAL STATE.						
Post-abortive sepsis ..	1	2	1	1	5	..
Abortion not returned as septic ..	7	16	58	12	93	..
Ectopic gestation ..	2	1	5	3	11	..
Other accidents of pregnancy ..	3	4	23	1	31	..
Hæmorrhage connected with childbirth—						
(a) Placenta prævia ..	..	..	1	..	1	..
(b) Others ..	..	..	6	2	8	..
Puerperal Sepsis—						
(a) Puerperal septicæmia ..	..	..	4	..	4	..
(b) Puerperal sepsis not including septicæmia ..	..	1	12	1	14	1
Puerperal albuminuria and convulsions—						
(a) Eclampsia ..	..	..	10	..	10	1
(b) Albuminuria of pregnancy ..	2	..	12	3	17	2
(c) Pyelitis of pregnancy ..	..	..	..	..	..	..
(d) Others ..	..	..	1	..	1	..
Other Toxæmia of Pregnancy—						
(a) Hyperemesis Gravidarum ..	6	1	12	..	19	..
(b) Others ..	1	1	3	..	5	..
Puerperal phlegmasia, embolism and sudden death—						
(a) Puerperal phlegmasia alba dolens not returned as septic ..	..	..	1	..	1	..
(b) Puerperal embolism and sudden death ..	..	1	..	..	1	1
Conditions associated with labour—						
(a) Normal labour ..	8	29	234	18	289	..
(b) Abnormal labour, e.g. needing instrumental interference ..	..	2	4	..	6	..
(c) False labour ..	..	..	..	..	..	..
(d) Labour complicated by intercurrent disease ..	..	..	4	..	4	..
(e) Accidents of childbirth including still-births ..	..	5	15	1	21	..
Other or unspecified conditions of the puerperal state—						
(a) Puerperal insanity ..	..	..	3	..	3	..
(b) Puerperal diseases of the breast ..	..	..	1	..	1	..
(c) Not in labour ..	1	2	42	..	45	..
(d) Others ..	..	..	2	..	2	..
Total	31	65	454	42	592	5

APPENDIX VIII—continued.

Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
XII—DISEASES OF THE SKIN AND CELLULAR TISSUES.						
Carbuncle, boil	15	25	25	12	77	..
Cellulitis, acute abscess (except due to cause given elsewhere)—						
(a) Cellulitis	10	41	19	5	75	..
(b) Acute abscess	22	109	133	17	281	..
Other diseases of the skin, hair and nails—						
(a) Ulcers	2	20	25	..	47	1
(b) Dermal mycoses	5	5	9	2	21	..
(c) Herpes including Zoster	11	5	19	4	39	..
(d) Scabies	..	8	7	..	15	..
(e) Others	16	14	38	5	73	1
Total	81	227	275	45	628	2
XIII—DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.						
Acute or chronic infective osteomyelitis and periostitis except due to cause given elsewhere—						
(a) Acute Osteomyelitis	..	4	6	1	11	..
(b) Chronic Osteomyelitis	3	20	35	3	61	..
(c) Periostitis, acute or chronic	..	1	5	2	8	..
Other diseases of the bones	1	6	3	..	10	..
Diseases of the joints and other organs of locomotion—						
(a) Diseases of the joints (other than elsewhere stated)	4	4	13	3	24	..
(b) Diseases of the other organs of locomotion	..	4	..	2	6	..
Total	8	39	62	11	120	..
XIV—CONGENITAL MALFORMATIONS.						
Congenital malformations—						
(a) Congenital hydrocephalus	..	..	..	..	..	..
(b) Spina Bifida and Meningocele	..	..	6	1	7	2
(c) Congenital malformation of the heart	..	..	..	..	..	..
(d) Monstrosities	..	..	..	..	..	..
(e) Congenital hypertrophic pyloric stenosis	..	..	..	..	..	..
(f) Cleft palate, harelip	..	1	5	1	7	2
(g) Imperforate anus	..	1	4	..	5	1
(h) Other congenital malformations	..	6	8	2	16	1
Total	..	8	23	4	35	6
XV—DISEASES OF EARLY INFANCY.						
Congenital debility including marasmus of unknown cause	..	7	26	2	35	20
Premature birth	..	2	8	..	10	6
Injury at birth	..	1	7	..	8	5
Other diseases peculiar to early infancy—						
(a) Atelectasis Pulmonum	..	..	1	..	1	1
(b) Icterus neonatorum—						
(1) Mild	..	..	1	..	1	1
(2) Grave	..	..	..	..	..	..
(c) Affections of the umbilicus	..	2	3	..	5	3
(d) Pemphigus neonatorum	..	..	..	..	..	..
(e) Others	..	1	1	..	2	..
Total	..	13	47	2	62	36
Diseases.	Europeans.	Fijians.	Indians.	Others.	Total.	Deaths.
XVI—CONDITIONS ASSOCIATED WITH OLD AGE.						
Old age—						
(a) Senile Dementia	1	..	3	..	4	2
(b) Other forms of senile decay	1	2	11	2	16	10
Total	2	2	14	2	20	12
XVII—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.						
Suicide or attempted suicide by poisoning (including corrosive poisoning)	1	1	2	1	5	..
Suicide or attempted suicide by hanging or strangulation	..	..	1	..	1	..
Suicide or attempted suicide by drowning	..	..	..	1	1	..
Assault or homicide by firearms	..	..	3	..	3	..
Assault or homicide by cutting or piercing instruments	..	1	6	..	7	1
Assault or homicide by other means	2	13	30	4	49	..
Attacks by venomous animals	1	4	3	2	10	..
Food poisoning	2	3	1	..	6	..
Accidental absorption of irrespirable or poisonous gases	..	..	3	..	3	..
Other acute accidental poisoning	1	3	7	2	13	..
Accidental burns, conflagration excepted—						
(a) Burns by fire	1	8	15	3	27	4
(b) Scalds	..	4	11	2	17	..
(c) Burns by corrosive substances, external or internal	..	..	2	1	3	..
(d) Dermatitis due to exposure to sun	..	..	..	..	..	..
(e) Dermatitis due to exposure to other forms of radiation	..	..	..	..	..	..
Accidental injury by firearms	..	..	2	..	2	..
Accidental injury by cutting or piercing instruments	4	53	53	14	124	1
Accidental injury by fall, crushing, etc.—						
(a) By falling	26	91	101	26	244	1
(b) By machinery	..	3	5	1	9	..
(c) By motor vehicles	9	30	32	11	82	5
(d) By railway vehicles	..	4	5	1	10	..
(e) By other means	8	33	50	12	103	..
Injury by animals (except bites or stings of venomous reptiles or insects)	..	4	7	1	12	..
Hunger or thirst	..	..	1	..	1	1
Electricity	..	2	..	1	3	..
Other unstated forms of violence—						
(a) Inattention at birth	1	..	..	..	1	..
(b) Others, e.g. foreign body swallowed	..	1	5	..	6	..
Violence of an unstated nature, i.e. suicidal, accidental homicidal by poisoning or other means	1	2	..	1	4	..
Total	57	260	345	84	746	13
XVIII—ILL-DEFINED CONDITIONS.						
Sudden death, cause unknown	..	..	1	..	1	1
Cause of illness unstated or ill-defined	4	41	52	7	104	3
Diseases not included in this classification elsewhere	9	32	63	20	124	1
Cases admitted to hospital for observation as to mental condition	2	5	8	3	18	..
Cases admitted for observation not mental	65	79	138	52	334	1
Persons accompanying patients	16	107	361	34	518	..
Orphans	..	2	..	..	2	..
Total	96	266	623	116	1101	6
Grand Total	757	2620	5651	909	9,937	584

APPENDIX IX.

THE CENTRAL MEDICAL SCHOOL.

(ANNUAL REPORT, 1946.)

I—STUDENTS.

During the year 1946 there were 45 students in residence at the three dormitories and the following table shows the races of the different students in each year:—

	1st year.	2nd. year.	3rd. year.	4th year.	Post graduate.	Total.
Western Samoa	..	5	1	..	..	6
Eastern Samoa	..	..	..	1	..	1
Tonga	..	2	1	1	..	4
Cook Islands	..	2	..	1	..	3
Niue Island	..	..	..	..	..	..
Gilbert and Ellice Islands ..	..	3	1	1	..	5
British Solomon Islands ..	..	1	..	3	..	4
New Hebrides	..	..	1	1	..	2
Nauru	..	..	..	..	..	..
Fiji—Fijians	..	4	5	6	4	19
Rotumans	..	1	..	..	..	1
Indians	..	1	2	1	2	6
	..	19	11	15	6	51

2. The six post-graduates in the above list were qualified native medical practitioners, and none of them resident in the students' dormitories during 1946. Lectures were recommenced on Monday, 14th January, 1946, with a total of 45 students.

3. At the Advisory Board Meetings held on 10th January, the Board agreed that ex-students Uraia Nagasima and Tevita Fotu (both dismissed in September, 1939), be re-admitted and allowed to take their remaining final subjects. This was on account of their war services, and Uraia qualified as A.M.P. on 18th May, 1946, and Tevita Fotu on 22nd June, 1946. These two special students are not shown on the above table.

4. A complete list of the ten different Administrations sending students for medical training in Fiji has been given in the Annual Reports for 1943 and 1944. During 1946 there were no students from Nauru or Niue Island. Nauru with a native population of only 1,600 has now three qualified A.M.Ps. and will probably require only one or two native dental assistants in the immediate future. Niue Island has two students receiving preliminary education in New Zealand prior to entry to the Medical School in 1947.

II—STAFF.

5. This remained the same as in 1944–45, so that the teaching staff consisted of only one full-time officer who acted as Principal (Dr. D. W. Hoodless) together with 20 honorary part-time lecturers whose names are given in paragraph 7 of this report. Dr. A. S. Frater has now been selected to succeed Dr. Hoodless as Principal and he will assume his duties early in 1947. No assistant principal or science master has yet been selected.

III—HEALTH.

6. A mild epidemic of measles in January–February and an equally mild epidemic of influenza in July–August caused temporary absences from lectures and hospital duty among the students. During 1946 only three serious cases of illness arose. One Gilbertese student was found to be a very early case of leprosy (neural) and was transferred to Makogai and an Ellice student suffered from lobar pneumonia followed by a very tedious convalescence. The third case was a Cook Island student with pleurisy and complications.

7. As in former years, routine and anti-typhoid inoculations, vaccinations and anti-yaws injections were continued when necessary.

IV—DISCIPLINE.

8. Only one serious breach of discipline occurred during 1946. A Solomon Islands student was repeatedly absent from lectures and hospital duty and after being warned, was dismissed on 18th March, 1946. The occasional minor breaches of discipline were quickly dealt with and as a rule the two head students (Jone N. Mataika and Tevita Puloka 1945–46) were able to deal with any minor complaints without reference to the European staff.

V—EXAMINATIONS DURING 1946.

9. *Fourth Year Students.*—Of the 14 students in this final year one failed in medicine, three failed in surgery, two in obstetrics and five in forensic medicine at the first quarterly examinations in March, 1946, but these poor results were much improved at the second quarterly examinations in June when all the students passed in obstetrics and only one student failed in the remaining subjects. In July, 1946, this class commenced their final revision courses in medicine and surgery and all 14 qualified in surgery in September and completed their last subject (medicine) in December, 1946.

10. *Third Year Students*.—Of the 12 students in the class, all passed in surgery and anaesthetics at the March quarterly examinations, but two failed in medicine and six in forensic medicine. At the 2nd quarterly examinations in June, all passed in surgery and forensic medicine but only one failed in medicine and three in public health. At the 3rd quarterly examinations all passed in surgery and public health, but five failed in medicine and at the 4th quarterly examinations all passed in public health and eye diseases but three failed in surgery and five in medicine.

11. *Second Year Students*.—Of the 19 students in this class all passed in physiology and only one failed in anatomy at the March examinations. Again all passed physiology at the qualifying examinations in June 1946, but two failed in anatomy. Both these students were, however, successful at a "repeat" examination in July, so that all the 19 students in this class were able to commence their clinical training in the hospital.

12. At the 3rd quarterly examination four students failed in medicine, five in surgery, and three in materia medica, but all passed in bacteriology and anaesthetics. The results at the 4th quarterly examinations in December, 1946, were below average for four failed in medicine, five in surgery, two in bacteriology and five in materia medica.

13. It must be added that two students of this class who had failed several times in their own class examination, were severely "warned" at the Board meeting that they were liable to be dismissed unless their examination marks were considerably higher at subsequent examinations.

14. VI—GOLD MEDALS AND PRIZES FOR 1946.

B.M.A. (Fiji Branch) Medal in Surgery	Tevita Puloka (Tonga)
Mr. Alport Barker's Medal in Medicine	Tevita Puloka (Tonga)
Dr. A. H. B. Pearce's Medal in Obstetrics	Inoke Buadromo (Fiji)
Sir Maynard Hedstrom's Medal in Public Health ..	Inoke Buadromo (Fiji)
N.M.P. Ielu's (Samoan) Medal in Diseases of Children	Not awarded
Sir Henry Scott's Medal in Anatomy	Leopine Toleaki (Tonga)

CLASS PRIZES.

Fourth Year Students—			<i>Per cent.</i>
Medicine	Tevita Poluka (Tonga)	..	84
Surgery	Tevita Poluka (Tonga)	..	84
Obstetrics	Tevita Poluka (Tonga)	..	83
Forensic Medicine ..	Inoke Buadromo (Fiji)	..	81
Dentistry	Saipele Matogi (Eastern Samoa)	..	96
Third Year Students—			
Medicine	Semesa Seruvatu (Fiji) ..	..	76
Surgery	Penisiman Laluselu (Tonga) ..	..	80
Public Health	Semesa Seruvatu (Fiji) ..	..	89
Forensic Medicine ..	Semesa Seruvatu (Fiji) ..	..	81
Eye Diseases	Tapu Leola (Western Samoa) ..	..	84
Anaesthetics	T. Alatini Babiayau (Fiji) ..	..	85
Second Year Students—			
Anatomy	Leopino Toleaki (Tonga) ..	..	91
Physiology	Leopino Toleaki (Tonga) ..	..	90
Medicine	Leopino Toleaki (Tonga) ..	..	78
Surgery	Leopino Toleaki (Tonga) ..	..	86
Anaesthetics	Leopino Toleaki (Tonga) ..	..	91
Materia Medica ..	Faga Panapasa (Rotuma) ..	..	89
Bacteriology	Opeti Lahu (Tonga)	..	80

VII—LECTURERS DURING 1946.

15. The following list gives the names of the lecturers and the subject taken during 1946:—

Medicine	Dr. G. T. Barnes, Dr. P. W. J. Searle, Dr. F. A. Thomson, Dr. J. R. Reid, Dr. J. A. R. Dovi and Dr. K. H. Black.
Surgery	Mr. K. J. Gilchrist, Dr. R. W. D. Maxwell, Dr. W. Worger, Dr. R. J. Snodgrass.
Obstetrics	Dr. G. R. Hemming and Dr. H. D. N. Livingstone.
Public Health ..	Dr. J. Taylor and Dr. L. Verrier.
Disease of Children	Nil
Anaesthetics ..	A.M.P. Vilikesa
Forensic Medicine	Dr. J. A. R. Dovi and Dr. K. H. Black.
Bacteriology ..	Mr. E. J. Pery-Johnston and Mr. J. A. Samuel.
Materia Medica ..	Mr. J. C. R. Seager and Miss N. Ramsay.
Anatomy	Dr. D. W. Hoodless.
Physiology	Dr. D. W. Hoodless
Office Accountancy	Mr. A. S. Martin

A. S. FRATER,
Principal, Central Medical School.

APPENDIX X.

DISPOSITION OF MEDICAL UNITS.

General Hospital—

Colonial War Memorial Hospital, Suva.

Tuberculosis Hospital, Tamavua.

Forster House Obstetric Hospital, Suva.

District Hospitals—

Lautoka.

Levuka.

Labasa.

Central Leprosy Hospital, Makogai.

Rural Hospitals, 14.

Dispensaries, 36.

Subsidised Hospitals—

Methodist Mission Hospital, Ba.

Cottage Hospital, Ba.

Cottage Hospital, Waiyevo.

Nurse Morrison's Maternity Hosp., Suva.

Privately owned Hospital—

Colonial Sugar Refining Co., Rarawai, Ba.

Rural Hospitals—

Waiyevo (Taveuni).

Wainibokasi.

Vunidawa.

Penang, Ra.

Nailaga.

Nadi.

Koromumu.

Nabouwalu.

Vunisea, Kadavu.

Savu Savu.

Loma Loma.

Lakeba.

Matuku.

Rotuma.

Rural Dispensaries—

Nanukuloa.

Raralevu.

Nausori.

Korovou.

Lodoni.

Nayavu.

Lomanikoro.

Beqa.

Viria.

Namarai.

Tavua.

Nadarivatu.

Nasau.

Vatukoula.

Vitogo.

Naviti.

Momi.

Natuatucoko.

Korolevu.

Serua.

Navua.

Namosi.

Nakasaleka.

Gau.

Koro.

Lekutu.

Wainunu.

Naduri.

Dreketi.

Visoqo.

Udu.

Natewa.

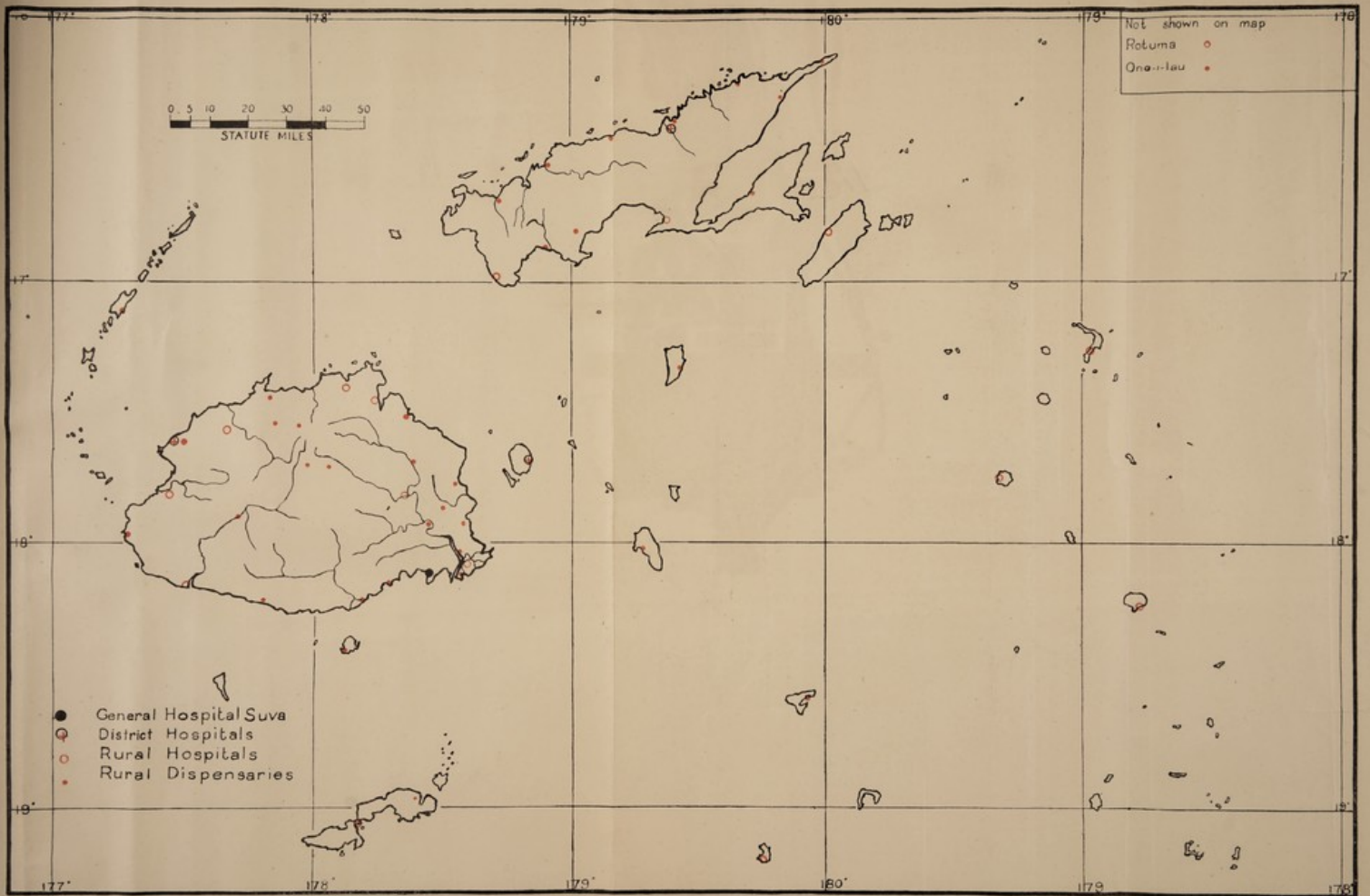
Saqani.

Yanawai.

Moala.

Rabi.

APPENDIX XI.





APPENDIX XII.

SUMMARY OF METEOROLOGICAL OBSERVATIONS
AT LAUCALA BAY FOR THE YEAR 1946

	MEAN SCREEN TEMPERATURES F. ^o							RAINFALL				WEATHER—No. of DAYS OF						Bright Sunshine (Total hours.)				
	Mean pressure in mb. (24 hourly values)	At 8 a.m.	Maximum.	Minimum.	Mean (Max. and Min.)	Highest maximum.	Date.	Lowest Minimum.	Date.	Mean Relative Humidity per cent (24 hourly values).	Mean Total cloud (24 hourly values)	Total.	Maximum in 24 hrs. ending 8 a.m.	Date	Rain 0.01" or more.	Hail.	Thunderstorms.		Lightning only.	Fog.	Dew.	Gales force 8 or more.
January	1007.5	80.9	85.3	74.8	80.1	89.3	1	70.6	14	83.7	7.2	14.42	2.47	30	23	0	1	1	0	0	0	0
February	1006.5	78.3	84.0	74.0	79.0	88.8	2	70.5	20	87.4	8.2	16.10	4.36	26	25	0	0	0	0	0	0	0
March	1009.2	79.1	85.1	74.6	79.9	88.8	3	71.8	30	86.8	7.6	21.64	3.85	26	22	0	0	1	0	0	0	0
April	1011.1	79.4	85.1	74.3	79.7	89.8	15	67.4	27	83.1	5.4	3.20	1.09	16	17	0	0	0	0	0	0	0
May	1011.1	76.5	82.2	70.2	76.2	86.5	22	64.8	22	83.2	5.8	6.12	2.32	28	16	0	0	0	0	1	0	0
June	1012.3	74.9	80.2	70.2	75.2	85.7	23	65.2	1	82.7	6.9	6.12	2.22	23	18	0	0	0	0	0	0	0
July	1013.4	71.1	77.1	66.7	71.9	83.4	5	60.6	13	76.6	7.1	3.68	1.34	12	15	0	0	0	0	0	0	0
August	1013.5	72.7	77.5	68.6	73.1	86.6	17	59.2	10	84.0	8.0	4.72	1.72	4	18	0	0	0	0	0	0	0
September	1013.6	74.2	78.4	69.5	74.0	84.4	27	65.0	24	79.1	7.8	1.62	0.73	16	14	0	0	0	0	0	0	0
October	1012.9	76.4	80.8	71.0	75.9	85.4	6	66.8	27	80.5	7.5	4.99	1.87	18	19	0	0	0	0	0	0	0
November	1011.2	77.2	81.0	71.9	76.5	87.6	17	64.3	9	82.5	7.4	8.96	3.69	4	17	0	0	3	0	0	1	0
December	1008.6	79.7	83.3	74.3	78.8	86.0	16	67.0	28	79.3	6.8	6.56	1.42	15	18	0	0	3	0	0	1	0
Year	1010.9	76.7	81.7	71.7	76.7	89.8	15/4/46	59.2	10/8/46	82.4	7.1	97.83	4.36	26/2/46	222	0	15	6	0	4	0	0

WIND DIRECTION SUMMARY

(FORCE 2 OR MORE)

PERCENTAGE FREQUENCY

	N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SSW.	SW.	WSW.	W.	WNW.	NW.	NNW.	Prevailing.	Percentage of Calms to force 1, 0-3 m.p.h.	Maximum velocity m.p.h.	From	Mean Velocity m.p.h.
January	2.1	6.6	6.4	11.1	11.2	30.6	20.4	8.0	0.8	0.4	0.0	0.2	0.4	0.6	0.6	0.6	ESE	31.3	48	NE.	6.9
February	8.0	5.8	6.5	5.8	4.5	12.3	19.4	8.2	3.2	3.0	6.3	5.2	7.0	3.0	0.9	0.9	SE.	31.1	32	SE.	6.4
March	3.9	5.6	9.7	18.7	29.8	10.9	6.6	5.8	1.0	1.2	1.7	1.2	1.0	1.2	0.7	1.0	E.	44.9	35	E.	6.1
April	0.0	2.1	5.0	10.9	25.9	22.4	21.0	4.0	4.0	2.9	0.6	0.2	0.4	0.2	0.4	0.0	E.	33.8	33	SE.	6.9
May	1.8	3.3	4.4	2.4	12.4	14.8	26.8	10.2	6.7	4.2	3.6	2.7	3.8	1.3	0.7	0.9	SE.	39.5	45	ESE.	6.1
June	2.4	4.4	12.4	16.2	11.3	20.7	9.8	5.2	0.7	4.4	5.0	2.0	2.4	1.8	0.9	0.4	ESE.	25.3	36	ESE.	10.2
July	2.7	4.2	7.8	4.0	6.8	20.5	17.9	14.1	10.4	5.3	2.5	0.9	1.1	0.4	0.8	0.6	SE.	29.3	38	S.	9.1
August	1.7	2.9	7.6	12.1	6.6	26.4	23.0	15.4	1.0	1.0	1.4	0.7	0.0	0.2	0.0	0.0	ESE.	21.8	32	ESE/NE	10.8
September	0.3	2.1	5.1	7.5	12.4	32.6	17.0	10.3	3.6	4.7	2.3	1.0	1.0	0.1	0.0	0.0	ESE.	14.6	31	SE.	11.6
October	0.3	1.6	5.6	8.1	9.7	32.3	31.6	6.8	1.0	1.3	0.5	0.0	0.8	0.0	0.3	0.1	ESE.	15.6	43	SE	12.2
November	1.1	2.3	3.2	5.7	8.1	34.4	32.1	5.3	2.1	2.1	1.4	0.0	0.4	1.2	0.4	0.2	ESE.	12.3	33	SSE.	8.6
December	0.6	0.5	0.8	2.1	7.9	57.2	27.6	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ESE.	5.1	36	E.	9.6
Year	1.9	3.3	6.0	8.5	11.7	27.7	21.6	8.1	2.7	2.5	2.0	1.1	1.4	0.8	0.4	0.3	ESE.	25.4	48	NE.	8.7

