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BRITISH HONDURAS.
ANNUAL
MEDICAL AND SANITARY REPORT
FOR THE YEAR ENDING
31 DECEMBER, 1937.

By

R. L. CHEVERTON

M.R.C.S., L.R.C.P.

Senior Medical Officer.

Printed by the Government Printer, British Honduras.



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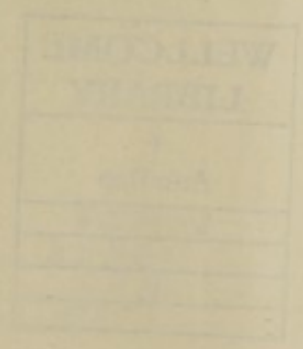
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BRITISH HONDURAS.

Medical Department,

Belize, 13th June, 1938.

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 of the Health of the Colony of British Honduras for the year 1937 together with Returns, etc., appended thereto.

I have the honour to be,

Sir,

Your obedient servant,

R. L. CHEVERTON,

Senior Medical Officer.

The Honourable,

The Colonial Secretary.

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BRITISH HONDURAS ANNUAL MEDICAL and SANITARY REPORT FOR THE YEAR ENDING 31st December, 1937.

I. ADMINISTRATION.

(a) STAFF.

The staff consists of a Senior Medical Officer and seven Medical Officers—two for Belize and one each for the Districts of Corozal, Orange Walk, Stann Creek, Toledo and El Cayo.

The Senior Medical Officer is allowed consulting practice.

The Medical Officers are allowed private practice in accordance with the regulations for Colonial Medical Service, except in Belize.

A Matron (European) controlling a locally recruited staff.

TABLE I. gives details of the Medical and Nursing Staff.

Dr. V. F. Anderson, 1st Medical Officer, acted Senior Medical Officer from 1st January to 21st March.

Dr. R. L. Cheverton, Senior Medical Officer, arrived in the Colony on 22nd March on transfer from the Falkland Islands and assumed duty on that date.

Dr. F. H. Killam, private practitioner, acted Medical Officer Belize, from 1st January to 15 March.

Dr. H. S. Rassim, arrived in the Colony on 8th March and assumed probationary duty as Medical Officer, Belize, on that date.

Dr. E. C. Savona was absent on leave from 19th March to 5th August. During his absence on leave, his duties were performed by Dr. D. W. Degazon, Medical Officer, Orange Walk. The duties of Medical Officer, Orange Walk were performed by Dr. W. A. S. George in conjunction with his own duties as Medical Officer, Corozal.

Dr. T. Patterson was absent on leave from 12th August to 31st December, 1937. Dr. W. A. S. George, Medical Officer, Corozal, was transferred to El Cayo and assumed duties as Medical Officer of that District.

The duties of Medical Officer, Corozal, were performed by Dr. D. W. Degazon Medical Officer, Orange Walk in conjunction with his own duties.

(b) LEGISLATION.

No legislation affecting Public Health was enacted during the year.

(c) FINANCIAL.

In this section the figures all refer to the year ending 31st December, 1937.

Medical Department.

Receipts, Hospital and Asylum Fees	\$7,729.15
Expenditure, Personal Emoluments	49,446.28
Other Charges	40,208.54
	\$89,654.82

The Institutions in respect of which the expenditure was incurred were as follows:—

INSTITUTIONS AND AVERAGE DAILY NUMBER OF INMATES.

Belize Hospital	60.00
Poor House	43.00
Lunatic Asylum	62.00

District Hospitals.

Corozal	9.00
Orange Walk	5.00
Stann Creek	16.00
Toledo	9.50
Cayo	8.00

The expenditure on dietary is shown in the following table:—

	Total amount	Av. daily number	Cost per head per diem
Belize Hospital	\$5,177.47	\$60.00	\$0.18
Lunatic Asylum & Poor House	7,579.67	105.00	0.18
Corozal Hospital	891.57	9.00	0.21
Orange Walk Hospital	578.39	5.00	0.23
Stann Creek Hospital	1,323.03	16.00	0.20
Toledo Hospital	726.59	9.50	0.20
Cayo Hospital	862.44	8.00	0.23

II. PUBLIC HEALTH.**(a) GENERAL REMARKS.**

There continues to be a slight improvement in the health of the colony, especially noticeable in the state of nutrition of the children attributable, no doubt, to the improvement in the economic status of the people.

The apparent increase in the number of persons treated in the various institutions is due in a large measure to the increasing confidence placed in the Medical Department.

The diseases which occupy the Department to the greatest extent are Malaria, Helminthiasis, Venereal Diseases, Malnutrition and Pulmonary Tuberculosis.

Malaria is a real economic problem. It has unfortunately received little attention from the Government and the employers of labour, consequently, the total loss of working days is enormous.

Helminthiasis is a potent source of chronic invalidism, especially amongst the Mayan and Spanish elements; most children seem to be subject to worm infestation with its concomitant debility.

Venereal Diseases have so far received spasmodic attention, partly owing to lack of funds for specific treatment, and more particularly owing to the inherent apathy of the average person in seeking for proper and adequate attention.

Malnutrition in its multiple forms is to be found in isolated groups and persons, but owing to the improved economic conditions during the last few years it cannot be said to be so rampant in the Colony.

The whole question of Nutrition has been discussed in a report recently submitted to the Secretary of State. The memorandum was prepared in collaboration with the Agricultural Department.

Pulmonary Tuberculosis continues to cause concern to the Department, but apart from the returns of certified deaths, it is difficult to estimate the extent of the disease.

Malaria, Helminthiasis and Malnutrition are all conditions which might be controlled by the Department, provided adequate funds for preventive medicine were available.

Charitable organizations and Government Relief Funds contributed to the relief of distress amongst the people of Belize and of the Districts.

Tours of Senior Medical Officer. During the year the Senior Medical Officer visited 79 places including the towns of Orange Walk, Corozal, El Cayo, Stann Creek and Punta Gorda.

In every place the children were examined and the spleen rate assessed, the highest figure found being 68.00%.

Malaria and hookworm appear to be economic as well as medical problems.

Much sanitary work requires attention. It is hoped that more money will be available to enable the Medical Officers to travel in their districts.

Certain proposals for the re-organization of the Medical Department have been submitted to the Government for consideration, these include the appointment of travelling district nurses, district compounders *cum* clerks, travelling sanitary inspectors and a travelling dentist.

Rockefeller Foundation. As foreshadowed in the annual report of 1936, a vigorous attitude to the problems of public health was deemed necessary.

It was thought that the advice of the International Health division of the Rockefeller Foundation, if it could be obtained, would be invaluable, since many of the problems of the Colony were those which the Foundation had so signally dealt with in other countries.

The invitation given by the administration was cordially received and in February of the year under review, Dr. Boyd of the Talahassee Malaria Experimental Station arrived in Belize. Dr. Boyd is not only a Malariologist of world-wide repute but a sanitarian of experience.

Before his arrival a comprehensive scheme of the Public Health problems of the Colony had been drawn up, with the projected method of meeting each particular problem. After a few days in Belize, during which Dr. Boyd examined a section of the school population for spleen rate and examined the general topography of the town, its water supplies, drainage &c., relative to the adjacent swamps, this scheme was laid before him and the general attitude of the Department explained. He approved the general outline and suggested that if the Government so desired, the services of an expert in each particular branch of Public Health and Sanitation could be asked of the Foundation to give assistance and advice in the detailed preparation of the programme.

The members of the Town Board and the elected members of the Legislative Council were invited to meet Dr. Boyd and expressed their appreciation of his visit. A remark of Dr. Boyd at this meeting was unfortunately misquoted in the Press and gave rise to misunderstanding.

In speaking of the problems of malarial vectors, he advised that the mangrove shading the swamp adjacent to the town should not be cut until it was possible immediately to fill the swamps as *Anopheles Albimanus* would not breed in shaded waters. In the Press, this was made to read "the swamps should not be cut", and the phrase is still used by the ignorant and the complacent to defend the status quo.

Dr. Boyd's visit may fairly be said to have had a most heartening effect, as he, from his great experience, appreciated the difficulties at once and spoke highly of the efforts he saw being made, especially of the filling of the Mesopotamia and Freetown areas of Belize and the construction of drains. He suggested the use of the "Culvert drain" so successfully applied in Costa Rica—but unfortunately for reasons outside the scope of the Department, these drains could not be used.

In October of the same year we were privileged to receive a visit from Dr. Washburn, Director of the Central American Section of the same Foundation. The object of his visit was to consider in what way the Foundation might show some practical interest in our various problems. During his four days visit he inspected certain schools, was conducted round the town of Belize by the Chairman of the Local Town Board and visited Stann Creek and Stann Creek Valley. Dr. Washburn seemed to be favourably impressed with the advances already made in Sanitation and with the possibilities of giving practical assistance. He undertook to place before his committee in New York the desirability of making a Tuberculosis Survey, a Malarial Survey, of sending down a sanitarian to advise on practical sanitation and of offering travel grants for the purpose of training Laboratory Technicians, Sanitary Inspectors and Nurses. He was in absolute agreement with the various schemes placed before Dr. Boyd for consideration.

Dr. Washburn was favourably impressed with the cleanliness of Belize, considering the adverse reports he had received. He remarked on the healthy conditions of children he saw in the schools and Infant Welfare Clinic as compared with the children he was accustomed to work amongst in Jamaica.

(1) GENERAL DISEASES.

Relapsing Fever—One case.

Deficiency Diseases are more apparent than previously, perhaps owing to the increased interest in this subject. Beri-beri 2 cases, Scurvy 4 cases, Pellagra 4 cases. Various other forms of avitaminosis appear from time to time.

Nephritis—sporadic outbreaks occurred amongst the children.

Anterior Poliomyelitis—one case; several cases have been reported by local practitioners.

Tetanus—Four cases were treated in the hospitals with good results.

Cancer—Fifty-four cases.

Diabetes—Fourteen cases.

Government Officials. Figures showing invaliding, and death rates of European and Native Officials are not available as these Officials are attended by Private Medical Practitioners.

Government officials do not receive attention from the Government Medical Officers.

Medical and Sanitary Reports from Districts. These are appended.

(2) COMMUNICABLE DISEASES.

(a) Mosquito or Insect-borne.

Malaria—The deaths from this disease during the past five years are as follows:—

1933—42 deaths or 9.3% of total certified deaths.
 1934—43 deaths or 10.8% of total certified deaths.
 1935—41 deaths or 6.9% of total certified deaths.
 1936—91 deaths or 0.1% of living population.
 1937—60 deaths or 0.1% of living population.

The number of cases of Malaria treated in the public hospitals of the colony during the past five years are as follows:—

	1933	1934	1935	1936	1937
Belize	296	150	193	289	245
Corozal	76	75	68	138	94
Stann Creek	115	137	111	165	167
Orange Walk	39	42	49	88	57
Cayo	113	70	74	59	41
Toledo	38	102	94	108	154
Total for Colony	587	576	589	547	758
Percentage of Total Hospital cases	25.42	22.41	20.3	21.5	23.7

The type of parasite most commonly encountered is the sub-tertian, or aestivo-autumnal.

The vector or vectors of malaria, their habitat and habits are unknown in British Honduras but *Anopheles Albimanus* is from its geographical distributions thought to be the principal vector.

Black-water Fever. 9 cases were treated in the hospitals, 2 in Corozal, 1 in El Cayo and 6 with 1 death in Stann Creek.

Yellow Fever—The last recorded case was in 1921. The increase in the index of domestic mosquitos in Belize since 1921 when the Rockefeller Sanitary Officials cleared the town, is to say the least of it alarming, and indicates the lack of interest in vital sanitary matters among the people of Belize.

(b) Epidemic and Infectious.

Enteric Fever—Nil.

Dysentery—Both bacillary and amoebic types occur, the latter is more predominant in El Cayo District.

108 cases were treated in the various hospitals during the year with 5 deaths. There were 7 uncertified deaths in which the cause is stated to have been "Dysentery, Diarrhoea and Bowels". Many of these are probably cases of dysentery.

Tuberculosis. Certified deaths from this disease are as follows:—

1933—50 deaths or 11.1 % of total certified.
1934—51 deaths or 12.9 % of total certified.
1935—41 deaths or 6.9 % of total certified.
1936—48 deaths or 0.08 % of living population.
1937—29 deaths or 0.05 % of living population.

There were also during the year 17 uncertified deaths in which the cause is stated to have been "Consumption", "Cough", or "Cold".

There were 49 cases of Tuberculosis treated in the various hospitals as against 13 last year.

Tuberculosis is prevalent, but accurate statistics are not available—it being the astonishing attitude of the people that tuberculosis has such a social stigma that patients do not seek treatment till the disease is hopelessly advanced.

Venereal Diseases are extremely prevalent, but cases are never cured only relieved, since, as soon as the acute symptoms are relieved the patient discontinues treatment until the next bout of unhappiness. Late lesions of vascular syphilis are common, of nerve syphilis, very rare.

There is a male Venereal Ward in the Belize Hospital which is always full—but no female Venereal Ward. The female infective and untreated population is the great reservoir of these diseases. The weekly Venereal Disease Clinic for out-patients has treated 662 cases during the year under review.

Small Pox—There were 57 cases of Variola Minor (Alastrim).

The Medical Officers vaccinated all contacts. The last case reported was in December. There is good reason to believe that the original infection came from Quitana Roo, Mexico. There is a frontier of several score miles along which, owing to financial stringency, it is impossible to put a sanitary cordon.

The total number of successful vaccinations under the age of five performed during the year is as follows:—

Belize	428
Corozal	170
Orange Walk	137
Stann Creek	89
Toledo	128
Cayo	80
Total for Colony	1,032

The figures for the past four years are:—

1933	1,262
1934	1,893
1935	1,101
1936	857

Skin Diseases—Scabies, ringworm, pyoderma are very prevalent. Leishmaniasis is occasionally seen. There are a large number of Mycoses which require more detailed investigation.

(c) Helminthic Diseases.

Ankylostomiasis—is prevalent in all districts, especially amongst Mayan Indians. Other helminthic diseases are common, giving rise to chronic ill-health amongst the children.

(b) VITAL STATISTICS.

The population of the Colony at the end of the year was estimated to be 56,893 as detailed in Table 3.

The average Birth Rate of the Colony exceeds the Death Rate by 14.4 per thousand. The Birth rate is highest in Toledo District and lowest in Stann Creek. The Death rate is highest in Toledo and lowest in Stann Creek.

Registration of Births and Deaths is compulsory. There is no registration of stillbirths.

Morbidity. The accompanying table on page 16 shows the number of deaths from all causes occurring in the various districts of the Colony during the four quarters of the year as compared with the previous year:—

INFANTILE MORTALITY.

Figures dealing with Infantile Mortality are shown in Table 4.

The Infantile Mortality Rate for the Colony is 122.6 as against 152.7 last year. It is highest in Corozal and lowest in Stann Creek.

III. SANITATION AND HYGIENE.

(i) ADMINISTRATIVE.

There is a Central Board of Health for the entire Colony, consisting of seven members. The Senior Medical Officer is Chairman of this Board and Medical Officer of Health for the Colony. In actual practice, the onus of sanitary work rests on the Senior Medical Officer.

The Colony is divided into six districts, each with a Local Authority. The Local Authority for the town of Belize is the Town Board of Belize.

In each of the Districts, the Medical Officer is the District Medical Officer of Health; but, owing to the District Commissioners being chairmen of the Local Authorities, a very unsatisfactory state of dual control exists.

(ii) PREVENTIVE MEASURES.

(a) Mosquito and Insect-borne Diseases.

Yellow Fever—Although more energetic measures have been adopted such as closing of wells, inspection of vats and other receptacles, area surveys still shew a high incidence of mosquito breeding. The present system of allowing the effluent water to flow into the street drains, which have only a very slight gradient, is a contributory factor in the breeding of domestic mosquitoes. It is hoped to increase the number of scavengers in order to keep the cement and earth drains in proper order.

Although the screening of vats and other water receptacles is the ideal method, it is found to be expensive owing to the short life of screen wire in the coastal towns.

Larvivorous fish are commonly used with good effect. Oiling is another measure adopted, but in future, requires closer supervision.

Arrivals in the Colony from Guatemala, Mexico and Spanish Honduras are all subjected to medical surveillance. Since the beginning of the year under review, regular air services are being run between this Colony, Mexico and Spanish Honduras. Previously the Pan American Airways only ran a side line from Merida (Mexico) to Belize.

Crab Destruction. The destruction of crabs by means of Cyanogas was continued during the year. There has been a considerable reduction in the number of land crabs in Belize, but it will be found necessary to increase the vote, if proper control is to be maintained. Crab holes may be partly responsible for the breeding of mosquitoes and sandflies.

Malaria. Preventive measures are totally inadequate through lack of funds and lack of knowledge of the habitat of the infective vector. The stagnant pools and swampy areas in Belize receive periodical oiling, but the system is not altogether effective owing to rank vegetation. It is proposed to introduce the spray system. Paris green is not used. Drainage in Belize is practically impossible owing to the small fall to the sea. If funds

were available, satisfactory drainage systems might easily be adopted in the district towns and certain larger villages where endemic malaria exists.

The Senior Medical Officer during his tours compiled a table of spleen rates of the more important towns and villages.

The so called "sand flies" are a source of annoyance, but of no known pathological interest, as they are *Culicoides Furens* belonging to the family of *Cerato pogoninae* and not the usual *Phlebotomus papatassii* responsible for Phlebotomus fever.

(b) Epidemic and Infectious Diseases.

Dysentery. Faulty methods of disposal of excreta, wells unprotected against surface water contamination, the use of certain rivers, creeks and water holes for drinking water are all contributory factors. In Belize, fly contamination from the primitive method of conservancy is the incriminating agent.

Small Pox. Alastrim is the only form seen, occurring in small epidemics and sporadic cases.

Vaccination. Regular vaccinations are carried out by Medical Officers and Public Vaccinators in all towns and villages.

Cholera and Plague are non-existent.

Tuberculosis. Disinfection of the room in which a person dies is carried out by a Sanitary Inspector. This disinfection is often difficult owing to the bad state of repairs of many of the houses in the towns. Accommodation in 12 single huts is available at the Poor House for destitute sufferers. This system is very unsatisfactory and is not viewed favourably by the public. A person known to be suffering from Tuberculosis is ostracized by his relatives and friends.

(c) Helminthic Diseases.

Ankylostomiasis. Owing to a lack of funds, no concerted effort is made to combat this disease, but the Medical Officers in their tours dispense worm oil to the villagers. The incidence of the various helminths is unknown. Heavy infestation with *Taenia Solium* is sometimes seen in slaughterhouses. *Bilharzia* is unknown.

(iii) GENERAL MEASURES.

(a) SEWAGE DISPOSAL.

(1) *The Town of Belize.* The bucket system is the method of adoption but not of choice. Each householder is responsible for emptying the buckets into the canals or the sea between 9.00 p. m. and 5.00 a. m. The system is unpleasant but appears to have no obvious detrimental effect on the health of the people of Belize.

The water closet system with septic tanks and soakage pits is being installed in the better class houses; but, owing to the high water level, the soakage pits give rise to much trouble in the wet season.

A new public water closet latrine has been constructed in the centre of the town.

(2) *In other parts of the Colony.* Pit latrines are more commonly used in district towns; the better class houses are beginning to instal water closets.

In the villages the more self-respecting villager has a pit latrine, but the majority of the villagers resort to the bush, thus maintaining the high incidence of ankylostomiasis.

(b) REMOVAL & DISPOSAL OF REFUSE.

The scavenging in the town of Belize and other towns in the Colony is performed by the Local Authorities under the direction of their Sanitary Inspectors. Refuse might be put to better use for filling in swampy areas in certain towns, the remainder are making good use of their rubbish. The domestic refuse requires more frequent removal, but the lack of funds prevents the purchase of proper carts and trucks and the employment of extra scavengers. Considerable improvement could be made in the disposal of refuse. In the villages no system has been adopted and many villages are in a filthy state.

(c) WATER SUPPLY.

Belize. Rain water stored in vats, tanks and other receptacles on premises of householders, is the usual source of drinking water.

There are still numerous wells, the water being used for domestic purposes only, but these are receiving close attention under the mosquito control measures, several having been closed and the remainder kept in a good state of repair.

The Town Board has 6 tanks, having a total capacity of 2,372,330 Imperial gallons, an emergency supply for the dry season.

Out-Districts. Vats are used to collect drinking water in the towns and larger villages, but Stann Creek and El Cayo use river water. Punta Gorda, Corozal and Orange Walk have wells, some of which are very unsatisfactory and would not stand the test of a detailed analysis. In the villages, wells, rivers, creeks and water holes are used. The water holes in particular are a very unsuitable source of drinking water. It is interesting to note that certain creeks and rivers are notorious for giving diarrhoea, therefore avoided by the villagers. The wells in the northern districts contain very hard water as these districts are in lime stone areas.

It should be possible to obtain good artesian wells by boring down to 100—300 feet. Unfortunately the necessary apparatus is not in the Colony.

(d) DRAINAGE.

In Belize considerable strides have been made in making cement drains, especially in the Mesopotamia area. Unfortunately, the gradients being so small, the least obstruction holds up the water and the scavengers are kept busy cleaning the drains.

With the exception of Stann Creek, it should be possible to construct adequate street drains in all Towns, but whatever work has been done in this way has been neglected and funds are too limited either to make extensions or carry out proper repairs. Stann Creek has its own problem in as much as the river overflows into the town during the flood season, also water pours in from a big swamp at the back of the town; although it would entail much labour, dykes and ditches should improve the existing conditions.

(e) FILLING IN OF LOTS.

Belize. On an average, 9,000 tons of mud and coral deposit are dumped every week onto low-lying lots. Under the Colonial Development Fund Scheme, Mesopotamia area is being raised and made suitable for building sites. In other parts of the town, building lots are being raised and the surface water now drains into the new concrete conduits.

Districts. Little work is being done to fill in low-lying lots except in Stann Creek.

(f) CLEARING OF BUSH.

The bush behind the town is no longer being cut down unless there is available rubbish to fill in, on the assumption that we are dealing with *Anopheles Albimanus*. During the year, a salt water channel has been opened into the swampy bush on the north-west side of the town to alter the salinity of this mosquito breeding area.

Overgrown lots in the town have been cleared of grass by the owners.

MEASURES TAKEN TO SPREAD THE KNOWLEDGE
OF HYGIENE AND SANITATION.

Infant Welfare Work.

Miss L. M. Roberts, M.B.E., Matron of the Belize Hospital runs the Belize Clinic, assisted by certain ladies in the town.

The Report for the year April 1937—1938, shows an increase in the attendance and in the work done at the Belize Clinic. The following table of comparison is interesting:—

	1935—36	1936—37	1937—38
Number of Clinics held	48	48	50
Total Attendances	5,807	6,398	7,524
Average Attendance at Clinics	121	133	150
Highest number at a Clinic	294	262	227
Deaths during the year	27	16	23

Members of Committee	20
Health Visitors	6
Clinic Workers	20

There have been during the year, 1,832 children on the Register (431 of these being New Babies). Of this number 333 have automatically been taken off the books as being over-age, 23 have died, leaving a balance of 1,476 on March 31st, 1938.

898 children are attending regularly; 578 have not attended for a year or more. These are visited frequently by the Health Visitors, and Government District Nurse and are well. For the ten years in which the Clinics have been running, 3,906 children have been entered—a yearly average of 390.6.

The work has increased enormously and although we have most willing and useful workers, it has been almost impossible to cope with the very large numbers attending regularly. In March, with five Clinics held, the attendances were 1,039 for the month. For the past six months, the average attendance has been 176.

744 nursing treatments were given (413 being strappings for umbilical herniae) and 3,648 medicines were issued during the year.

1,649 Health visits were paid, 1,056 by the Government District Nurse.

The Senior Medical Officer has started, since October 1937, an Out-patient Department at the Public Hospital where he sees Welfare babies once a week. Seventy-four have attended. In addition to this an operation day has been started and babies are circumcised when necessary.

This clinic keeps us in close touch with all children, as babies born in the Maternity Ward are sent on to the Welfare Clinic when they are a month old. Plans are under discussion to start a branch Clinic in the southern part of the town with a view to relieving the present congestion at the main Clinic, and as a means of getting hold of those mothers who find the distance too far to walk with their babies.

247 relief tickets have been issued during the year to indigent cases including 118 tins of "Betty" condensed milk, and 12 quarts of Cod Liver Oil and 44 tins of "Almata" were given out. "Lactogen" is still proving most beneficial for premature babies (110 tins were used).

Yeast has been issued to children having extensive skin rashes with most spectacular results. 72 children and 2 mothers received this treatment. The preparation being used is "Purosan", a gift from the Customs to the Medical Department. Calcium Emulsion is proving most beneficial.

The increase in death-rate from 16 the previous year to 23 this year has been due largely to malnutrition and prematurity. More marasmic babies appear to be visiting the Clinic.

A Creche with small hospital attached is badly needed where these babies may receive constant nursing care and supervision. The children's ward of 5 cots in the Hospital is usually filled with acute cases, so one seldom has the opportunity of admitting these undernourished babies and, although they are visited daily by the Government District Nurse, the mothers do not always carry out her instructions with the result that a baby is rushed to the hospital in a moribund condition—too late for anything except the death certificate.

Very few malarial spleens have been found amongst the Welfare children in Belize—anaemia being due chiefly to intestinal parasites. 238 worm oils were dispensed during the year.

Kahn tests are done on all pregnant women in the Maternity Ward, and anti-syphilitic treatment is given to mother and child when necessary.

DISTRICT INFANT WELFARE CLINICS.

All five districts have now established Infant Welfare Clinics. These are run by the Government Medical Officers and Head Nurses with assistance from ladies in the various districts.

All Clinics are held (with the exception of one) in some part of the hospital premises. Funds are collected locally by entertainments, donations &c.

- (a) Stann Creek—Average weekly attendance 20—25; 280 babies on the Register.
- (b) Orange Walk—Average weekly attendance 25—30.
- (c) Corozal—Average weekly attendance 30—55; 158 on the Register.
- (d) Punta Gorda—Average weekly attendance 48—50; 171 children on the Register.
- (e) El Cayo—Average weekly attendance 40; 200 children on the Register.

SCHOOL HYGIENE AND SCHOOL MEDICAL EXAMINATION.

A general Medical examination of school children was instituted in Belize and 2,119 were examined. It has been decided to adopt a card index system instead of the usual record sheets and, in as much as the first year's work has been in the nature of an experiment amongst children not accustomed to detailed medical examination, no figures as to the clinical findings will be given.

However, generally speaking, the condition of the children is good. Clinical evidence of malnutrition was limited. One school in particular showed obvious cases of defective nutrition but this was not surprising, considering the class of population from which these children were drawn.

It is interesting to note that the Spleen Rate for Belize is only 2.36%. The teeth on the whole are very good, especially amongst the Carib and Creole children, but a school dental clinic would rectify and lessen the incidence of dental caries.

Several cases of stenosis of the mitral valves of the heart were found and an unusual number of Cardiac murmurs, probably functional in origin.

There was evidence of clinical anaemia of a mild type but this requires a more careful checking with an haemoglobinometer, no doubt helminthiasis is the causative agent as the majority of children appear to have heavy infestations with the usual worms. Ankylostomiasis was seen in a few children and, on enquiry, it was found that they had come to Belize from the district.

Pyodermias seemed to be common.

Phrenoderma or toad's skin was seen in several schools.

Myopia was found to a limited extent amongst all classes. During the dry season, there was a large amount of follicular conjunctivitis.

Pediculus capitis was found amongst the Spanish girls but was absent amongst the Creole children.

The incidence of hypertrophic tonsils and adenoids appears to be high.

Under the new card index system, it is hoped that next year's report will contain a detailed analysis of the work in the schools.

Free quinine is being distributed to school children by the District Medical Officers. The teaching of hygiene and allied subject is left to the discretion of the denominational school managers.

RECOMMENDATIONS FOR FUTURE WORK.

1. A Tuberculosis Survey.
2. A Malarial Survey.
3. An anti-hookworm campaign.
4. Control of Sanitation to be under the Medical Department, together with training of a local Sanitary Staff.
5. Free issue of Quinine.
6. Re-organization of Medical Department in order to make each district a complete unit, having its own Sanitary Inspector, Travelling District Nurse, Compounder cum Clerk, in addition to the ordinary hospital staff under the control of the Medical Officer, who will be responsible to the Senior Medical Officer for all matters appertaining to general health.

7. Re-building of Belize and Punta Gorda Hospitals, and alterations to El Cayo Hospital.
8. Placing properly trained staff in all District Hospitals.
9. Health propaganda to emanate from the Department for the benefit of the schools and general public.
10. Extension of the Infant Welfare Clinic work into the larger villages and establishing a creche in Belize.
11. Travelling Dental Surgeon to work in the districts and in Belize Hospital.
12. Local Dietary Survey in relation to Nutrition.

HOUSING.

The houses are built of wood and iron. On the whole, the design of the houses is quite unsuitable for a hot humid climate; had the ideas of the aboriginal people, the Mayan Indians, been more closely followed, houses more suitable for the climatic conditions would have been constructed. Most houses are built on piles owing to the high water table. The extensive scheme of filling the low-lying lots will gradually raise the ground level. The idea of ceiling the roofs and providing under roof ventilation seems to be unknown, especially in the poorer class of houses.

In Belize, there are twenty slum areas wherein people are crowded together in hutments, which are in a bad state of repair and lacking a proper supply of water. The owners of these properties, for the most part, are neglectful of their duties to their tenants, consequently the condition becomes more aggravated from year to year. A scheme of slum clearance has been submitted to the Local Authority and it is hoped that it will receive favourable consideration. Naturally, before any drastic measures can be adopted, the occupants will have to be given accommodation in some other area, pending the operation of demolition.

The building regulations are being closely adhered to, but further powers are required in order to adopt a more energetic town-planning.

SANITARY INSPECTORS.

The Medical Department has not got a single sanitary inspector under its control. The Sanitary Inspectors are a charge on the Local Authorities, therefore, under the direct control of laymen, on the Committee of the Local Authorities, who may or may not be guided by the advice of the Medical Officer, an anomalous and impossible position.

HEALTH PROPAGANDA.

Lectures &c. Public lectures and health propaganda are for the time being in abeyance owing to the lack of necessary funds and available staff for such work.

IV. PORT HEALTH WORK AND ADMINISTRATION.

During this year quarantine regulations were in force against Central American Republics. It has been the custom to place all passengers under medical surveillance for 14 days, quite regardless of their last port of call. However, this practice has been relaxed, in as much as it is quite impossible to place an adequate quarantine barrier in a country surrounded by unguarded frontiers. It is not the passengers who arrive by the usual port of entry, but the people who cross the frontiers at uncontrolled places, who are the source of danger.

The advent of air services connecting this Colony with Mexico and Spanish Honduras are likely to increase the quarantine problems in the near future, especially with regard to Yellow Fever.

All vessels arriving in the port of Belize are boarded by a Medical Officer, Belize.

During the year, no quarantinable disease occurred in the port.

V. HOSPITALS AND DISPENSARIES.

In Belize Hospital, in addition to the cases detailed in the classified returns appended to this report, there were 22,734 attendances at the Out-Patient Department during

the year. There were 145 major and 167 minor operations. In 224 cases, general anaesthesia, in 27 cases, spinal anaesthesia and in 61 cases, local anaesthesia was used.

1,480 visits were paid by mothers and expectant mothers attending as out-door patients in connexion with the Maternity Ward. There were nine circumcisions.

There is a dental clinic held twice a week at which patients in the Institutions are attended to, and in addition there were 280 non-paying out-door cases.

There is a constant demand for bed space. The present Belize hospital is too small for the needs of the town and the Colony. Owing to the advent of aerial transport, there are extra demands on this limited accommodation through urgent cases and accidents being sent in from the districts.

Almost all the surgical work in the Colony is being done by the Government Medical Officers in the Government Institutions.

Plans for a new and larger hospital in Belize are being prepared, with the object of building in reinforced concrete, this being hurricane proof.

EYE DEPARTMENT, BELIZE.

During the year 1937 this department was added to Belize Hospital. It was impossible to give the necessary care and treatment to eye cases in the ordinary Out-Patient Department, as that Department was growing with great rapidity.

The Eye Clinic differs in one respect from the ordinary Out-Patient Department in as much as it is open to all classes of the community.

The eye lesions treated are as follows:—

Pterygium is the commonest disease one meets in the Clinic and, when advanced, is treated by surgical means.

Conjunctivites, often of virulent type, specially gonorrhoeal in origin, are frequently met.

Cataract is very common amongst the older patients.

Corneal ulceration and iridocyclitis are fairly common.

In children, granular conjunctivitis is common.

Specific keratitis is not uncommon.

Most of the cases respond satisfactorily to the treatment.

Only one case of acute glaucoma and one suspicious case of trachoma were seen.

The results of the first year's work are very encouraging.

X—RAY DEPARTMENT, BELIZE.

During the year a big stride was taken in establishing a proper X—Ray Department. The new machine, which was installed by the late Senior Medical Officer, Dr. Moir, was called upon to help and confirm medical, surgical and gynaecological diagnoses.

The total number of patients examined could not be traced. During the latter part of the year a proper record was kept.

The number of cases attended in the Department from 12th October to 28th December was 98.

During the first part of the year the X—Ray photographic results were poor. Exposures were not reliable. The timing clock had to be altered to suit the moist tropical climate. The rubber buffer in the timing clock was replaced with a piece of cord and the machine retimed by a home made pendulum. After this alteration reliable exposure could be obtained; the photographic results then greatly improved.

During the year a fairly serious breakdown occurred. With the help of the Superintendent of the Electrical Department, this breakdown was traced to the low-tension cable of the machine. The insulation in this cable was burned out. A new cable was imported and the machine resumed its work.

For the purpose of economy, simple fractures were reduced in the X-Ray room and the position of the parts checked after reduction.

The machine was used for diagnosing every possible lesion that could be diagnosed by X-ray examination.

At some later date, it is hoped to fix a home made device for tomography.

The Eye and X-Ray Departments are under the supervision of Dr. H. S. Rassim.

THE LABORATORY, BELIZE.

The Laboratory which had been established at the end of the previous year began to play an increasing part in the life of the Department.

It has been hoped that two reactions for Syphilis would be done as a check against each other and that each patient in the hospital would have his blood examined. Neither of these ideals could be realised.

Of 1,421 bloods tested by the Kahn reaction, 36% were positive—but this figure would give an erroneous idea of the prevalence of syphilis in Belize, as a large proportion of the cases tested were clinically syphilitic, i.e., the cases were not selected by random sampling.

Of 194 blood films examined for malarial parasites, 28% were positive.

Of nearly 2,000 specimens of urine examined chemically and microscopically, trichomonas was discovered in 34 specimens. A surprising result was the number of trichomonas found in males. It has not been possible to trace any reference to the prevalence of trichomonas in males to such an extent of infection as to amount to 1/6th that of females.

The laboratory has a gradually increasing scope and service—it is by no means yet stocked either with personnel, equipments or reagents and it is obvious that it will at the present rate of progress take at least three years before it will be equipped in any of the above particulars.

Dr. V. F. Anderson is in charge of the laboratory work.

HOSPITALS.

There are six hospitals in the Colony—one for each district. The hospital in the capital town, Belize, contains sixty-two beds and twelve cots. The number of beds in the other hospitals ranges from nineteen to six. In these hospitals treatment is afforded for medical, surgical and obstetrical cases. The poor and indigent receive free treatment in all the hospitals. For other classes, the fees range from 25 cents to \$3.00 a day for each person. Cases of tuberculosis are ordinarily not received for treatment in the hospitals. Accommodation for twelve destitute sufferers from this disease is provided at the Belize Poor House.

Each district and each hospital of the colony is in the charge of a Medical Officer under the Senior Medical Officer who is *ex officio* Medical Officer of Health for the entire colony. In the Belize Hospital there is one English-trained Matron, controlling a subordinate local nursing staff. Each district hospital has a Belize trained nurse and Ward-maids, who are supposed to assist in nursing in addition to their domestic duties. There is a course of training at the Belize Hospital extending over a period of three years for locally recruited nurses.

The probationary staff nurses are insufficient to meet the needs of the Hospital.

Trained nurses are gradually replacing the untrained ward maids in the district hospitals.

A four bed Maternity Ward with labour ward was added to the Stann Creek Hospital at the end of the year.

Several hospitals are in urgent need of radical repairs.

VI. PRISONS AND LUNATIC ASYLUM.

The Prison is a well-managed institution; the grounds and individual cells and out-buildings have been maintained in an excellent condition.

The diet is plentiful and well cooked.

The average daily number of prisoners during the year was 49, as compared with 50.54 in 1936.

The Lunatic Asylum:—

Patients remaining at end of 1936—

Males	36
Females	26
	—
	62

Patients admitted during 1937—

Males	16
Females	5
	—
	21

Patients discharged during 1937—

Males	12
Females	4
	—
	16

Deaths during 1937—

Males	6
Females	1
	—
	7

Patients remaining at end of 1937—

Males	34
Females	26
	—
	60

Attempts at occupational therapy had some small success. The number of patients is so small that classes for instruction cannot be arranged amongst those who can respond to this activity; gardening and the preparation of coconut fibre have met with some small response.

Table 1.
SUMMARY OF METEOROLOGICAL OBSERVATIONS FOR 1937, TAKEN AT BELIZE, BRITISH HONDURAS.

1937 MONTH	BAROMETER		THERMOMETERS (Fahrenheit)		RELATIVE HUMIDITY	WIND Maximum Velocity and Direction	RAINFALL Inches
	Highest	Lowest	Highest	Lowest			
January		27.780	86.0	54.0	94	36—S.E.	.569
February		29.820	86.0	64.0	92	36—S.E.	1.05
March		29.820	88.0	63.0	93	36—S.E.	3.95
April		29.750	88.0	63.0	94	36—S.E.	5.08
May		29.758	90.0	67.0	94	36—S.E. & E.	2.51
June		29.750	90.0	67.0	94	36—S.E.	11.26
July		29.840	89.0	65.0	95	36—S.E. and E.	10.55
August		29.800	90.5	68.0	95	36—S.E.	6.41
September		29.790	90.5	66.0	94	36—S.E.	10.69
October		29.760	90.0	65.0	94	42—S.E.	8.29
November		29.740	88.0	58.0	93	36—N.E.	4.87
December		29.820	88.0	59.0	93	24—S.E. and N.W.	5.08
Total Sums		357.428	1064.0	759.0	1125	— —	75.43
Mean		29.785	88.6	63.2	94	— —	

REMARKS :—

Observations are taken at 6a.m. only from January to May, and the month of December; and at 6a.m. and 6p.m. from June to November, Meridian of Longitude adopted for calculation of time adopted as standard in the Colony 90° W.

Hours slow of Greenwich mean time ;—6 hours: Longitude of the station ;— 88° Latitude of the Station ;—80° 11' W. and Latitude 17° 31' N. Barometer Cistern 17 feet above Mean Sea Level. Anemometer above ground 45.7 feet. Rain gauge top above ground 3 feet. Thermometers above ground 5.6 feet.

Table 2.

Table showing number of Deaths from all causes in various Districts during four quarters of the Year as compared with previous year.

District	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Total	
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937
Belize	98	99	95	101	96	103	91	115	380	418
Corozal	72	49	60	42	70	42	43	48	245	181
Orange Walk	54	29	68	28	52	34	33	26	207	117
Stann Creek ..	30	21	30	15	15	7	27	34	102	77
Toledo	34	39	50	41	38	33	45	39	167	152
Cayo	60	24	37	26	32	35	26	24	155	109
Total	348	261	340	253	303	254	265	286	1,256	1,054

Of the total number of deaths, 48.5% were certified by a Medical Practitioner as against 41.0% in 1936.

TABLE 3.

COMPARATIVE STATEMENT OF POPULATION BY DISTRICTS, 1934-1937 WITH BIRTH AND DEATH RATE PER THOUSAND.

District	Population				Births			Deaths				
	1934	1935	1936	1937	1934	1935	1936	1937	1934	1935	1936	1937
Belize ..	20,930	21,309	21,683	22,015	743	788	744	750	282	409	326	418
Corozal ..	8,017	8,095	8,119	8,199	261	321	279	261	189	243	211	181
Orange Walk ..	6,457	6,487	6,447	6,153	200	210	195	183	156	180	173	117
Stann Creek ..	6,062	6,151	6,250	6,349	206	203	194	176	103	114	109	77
Toledo ..	6,228	6,223	6,308	6,430	301	272	231	274	131	277	163	152
Cayo ..	7,050	7,183	7,264	7,387	234	287	236	232	110	154	91	109
Total ..	54,754	55,448	56,071	56,893	1,945	2,081	1,879	1,876	971	1,377	1,256	1,054

District	Birth-rate per thousand				Death-rate per thousand			
	1934	1935	1936	1937	1934	1935	1936	1937
Belize ..	35.4	36.9	34.8	34.0	13.4	19.1	17.5	18.9
Corozal ..	32.5	39.6	33.1	31.8	23.5	30.0	30.2	22.0
Orange Walk ..	30.9	32.3	25.9	28.0	24.1	27.7	32.1	17.9
Stann Creek ..	33.9	33.0	32.4	27.7	16.9	18.5	16.3	12.1
Toledo ..	48.3	43.7	39.9	42.6	21.0	44.5	26.5	23.6
Cayo ..	33.1	39.9	32.4	31.4	15.6	21.4	21.3	14.7
Average ..	35.5	37.5	33.5	32.9	19.2	24.8	20.2	18.5

TABLE 4.—INFANTILE MORTALITY TABLE.

*Number of children born alive and
dying within one year*

DISTRICT	1934	1935	1936	1937
Belize	54	93	78	94
Corozal	40	76	64	49
Orange Walk ..	29	52	47	20
Stann Creek ..	24	24	19	15
Toledo	34	64	30	28
Cayo	20	45	49	24
Total	201	354	287	230

Death-rate per thousand

1934	1935	1936	1937
72.6	118.0	103.4	125.3
153.2	236.7	237.9	187.7
130.0	247.6	281.4	109.2
126.2	108.3	90.0	85.2
112.9	235.3	119.0	102.1
85.4	156.7	207.6	103.4
102.8	170.1	152.7	122.6

TABLE 5.—MEDICAL STAFF.

Senior Medical Officer	R. L. Cheverton, M.R.C.S. (Eng.), L.R.C.P. (Lond.)
First Medical Officer, Belize	V. F. Anderson, M.D., B.S., D.P.H. (Lond.), M.R.C.S. (Eng.), D.T.M. (Liverpool).
Medical Officer, Belize	H. S. Rassim, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.R.M.E.
Medical Officer, Corozal	W. A. S. George, L.R.C.P. & S. (Edin.), L.R.F.P. & S. (Glasgow).
Medical Officer, Orange Walk	D. W. A. Degazon, M.B., B.S. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.)
Medical Officer, Stann Creek	L. M. Ram, M.D., B.S. (Punjab), M.R.C.P. (Edin.), D.P.H. (Lond.)
Medical Officer, Toledo	E. C. Savona, M.D. (Malta), D.T.M. & H. (Eng.) <i>Absent on leave—19.3.37.—5.8.37.</i>
Medical Officer, Cayo	T. Patterson, M.B., Ch. B. (Oxon.) <i>Absent on leave—12.8.37.—31.12.37.</i>

TABLE 5. A.—EUROPEAN NURSING STAFF.

Matron, Public Hospital, Belize	Miss L. M. Roberts, S.R.N., M.B.E.
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TABLE 5. B.—SUBORDINATE MEDICAL STAFF.*Medical Office.*

First Class Clerk	J. F. Romero <i>Absent on leave—14.4.37.—8.5.37.</i> <i>Mr. Romero died whilst on leave on 8.5.37.</i>
First Class Clerk	E. Trapp— <i>appointed</i> 1.7.37.
Second Class Clerk	G. T. McKesey— <i>appointed</i> 1.7.37.
Typist and Clerk to Central Board of Health	Miss W. Ysaguirre <i>Absent on leave—22.6.37.—21.12.37.</i>
Messenger	L. Trumbach

(2) Public Hospital, Belize.

Dispenser and Storekeeper	P. A. Hyde
Laboratory Assistant and Dresser	H. L. Bennett
Student Dispensers—	L. Trench, N. Young, H. Young.
Staff Nurses—	A. Jordon, B. McNeil, E. Haylock.
Male Attendants—	H. Franklin, J. Christie.
Staff Probationer Nurses—E. Broaster, K. Longworth, I. Leslie, C. Tatum, O. Brown, A. Goodrich.	
Student Nurses—M. Weir, T. Gill, E. Humes, H. Banner, V. Card, M. McField, J. Coop- er, M. Andrews, D. Phillips, D. Leslie, N. Maheia.	

(3) Lunatic Asylum, Belize.

Head Attendant	F. Clarke <i>Absent on leave 20.5.37.—18.6.37.</i>
Male Attendants—S. Adolphus, V. Guild, R. King, S. Ricketts, H. Buckley.	
Female Attendants—G. Aikman, E. Reyes, A. Smith, G. Menzies.	

(4) *Poor House, Belize.*

Attendants—R. Andrews, J. Burgess.

Nurse-in-Charge M. Jackson

Probationer I. Smith

(5) *District Public Hospitals.*

(a) Corozal—Nurse-in-Charge L. Arnold

(Until 31.8.37.)

Staff Nurse O. Anderson

(Acting from 1.9.37. to 31.12.37.)

1 probationer, 1 Ward Maid.

(b) Orange Walk—Nurse-in-Charge A. Card

1 Ward Maid.

(c) Stann Creek—Nurse-in-Charge G. Humphrey

(Absent on leave, 24.3.37.—9.9.37.)

Staff Probationer Nurse K. Longworth

(Acting from 24.3.37.—9.9.37.)

2 Ward Maids.

(d) Toledo—Nurse-in-Charge C. Pilgrim

1 Ward Maid.

(e) El Cayo—Nurse-in-Charge E. Haylock

(Until 5.9.37.)

Staff Nurse E. Felix

(Acting from 6.9.37.—31.12.37.)

1 Probationer, 1 Ward Maid.

EL CAYO DISTRICT, MEDICAL AND SANITARY REPORT.

DR. W. A. S. GEORGE, MEDICAL OFFICER.

I. ADMINISTRATION.

Staff.

The Staff consists of a;

Medical Officer

Nurse-in-Charge

District Probationer

Ward Maid

Cook

Attendant.

Dr. Patterson held charge until the middle of August when Dr. George took over.
Nurse Felix took over charge from Nurse Haylock in September.

II. PUBLIC HEALTH.

General Remarks.

Vaccinations. Eighty vaccinations for the year.

Chief Diseases. Malaria was the chief disease, followed by helminthiasis, scabies, ringworm, dysentery and venereal disease, particularly gonorrhoea.

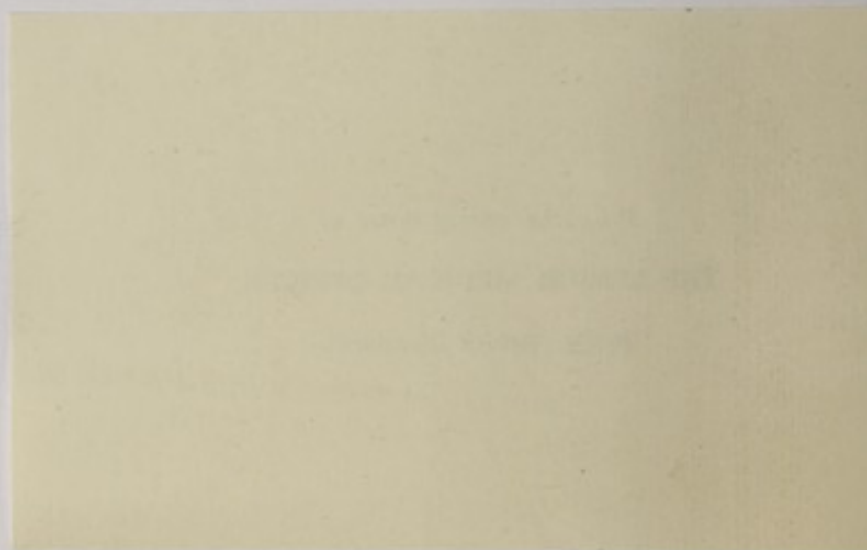
Vital Statistics.

Total Births 232

Total Deaths 109

Infantile Mortality. Mortality of children under one year was 8.0%.

With the compliments of
THE SENIOR MEDICAL OFFICER
Belize, British Honduras.



III. HYGIENE & SANITATION.

Sewage disposal. Pit latrines predominate and appear to work satisfactorily. There are a few septic tanks.

Scavenging. The Towns of Cayo and Benque Viejo both employ a mule cart. Refuse is carried to a dump, which is fired periodically.

Inspection. Both towns are inspected monthly by the Sanitary Inspector.

The Medical Officer visits Benque Viejo weekly and inspects out-lying villages when opportunity affords.

School Hygiene. School inspection of the two schools in Cayo was carried out during the last quarter of the year. On the whole, the children were very well nourished, of fair physique, and very low spleen index.

Water Supply. Rain water kept in vats and drums, but most of the people drink river water. As there are numerous small villages and camps along the upper reaches of the river, there is always the fear of contamination.

Drains. The Towns of Cayo and Benque Viejo both lend themselves to natural drainage. This is especially the case with Cayo which is built on the slopes of a hill. Both towns are fairly well supplied with ditches and drains.

IV. HOSPITAL.

Number of beds—

Male	7
Female	4
Private	1
	—
Total	12
Daily Average	7.83
Total cases treated	235.
Total Deaths	7.
Percentage of deaths	2.9%

Sufficiency of accommodation. The whole hospital needs enlarging with the introduction of proper sewerage and bath systems.

Lighting. Kerosene oil lamps are in use. A small 12 volt electric light plant would be an asset.

V. PRISON.

The prison was kept in a clean state and the health of the prisoners good.

TOLEDO DISTRICT, MEDICAL AND SANITARY REPORT.

DR. E. C. SAVONA, MEDICAL OFFICER.

I. ADMINISTRATION.

(a) Staff.

The staff consists of a;

Medical Officer
Nurse-in-Charge
District Probationer
Ward Maid
Messenger
Cook.

Dr. E. C. Savona was absent on leave from 19th March to 5th August, 1937. During his absence, his duties were performed by Dr. D. W. A. Degazon.

One Probationary Nurse has been added and while useful as a Ward-maid, her employment does not relieve matters on the nursing side—always very rushed.

(b) Finance.

279 patients received treatment in the hospital during 1937 at an average cost per head of twenty-five cents. This represents an increase of 72 more patients over last year and an increase of one cent on the expense of treating and bedding. Of these 297 patients, 166 (59%) were IV class patients and 12, III class. Of the pauper class there were 101 (36%) which is less by 4% on last year. The receipts amounted to \$364.60 and the outstanding debts amounted to \$444.25 on the 31st December. Action is at the moment being taken to recover these dues in the Court.

II. PUBLIC HEALTH.

(a) General Remarks.

Malaria. One hundred and forty-seven cases malaria were treated at the hospital with seven deaths. Of these, 3 were cerebral in type and accounted for two deaths. A lot of hepatitis associated with a marasmic condition is very prevalent. A tendency to bleeding (renal and bowel) has been observed and in some cases ultimately developing blackwater fever manifesting signs of allergy urticaria. On the other hand, it is difficult to place some cases of grave jaundice (leptospirosis silent area of Yellow Fever)? The same resistance to treatment was again observed this year. Quinine and arsenic having little or no effect on the parasites.

Helminthiasis. These are usually clinical cases of Hookworm disease, no attempt being made to determine the type or degree of infection. If the case is not too severe, the case is treated as Out-patient and given iron; if severe, hospitalization is insisted on and the anaemia treated with iron and liver if the patient can afford it. In many cases the results have been so good as to make one want to extend the liver treatment to all patients. The good results secured in the hospital are, however, seldom kept up owing to a multiplicity of causes amongst which nutritional imbalance on return to work, and re-infection from faulty methods of sanitation in the home seem to preponderate. It is idle to suggest to these patients that they should wear shoes; if they do, it will more often than not be of the "tennis" variety. It is not sufficiently grasped at all that the infection is in the soil and in one's excreta.

Tropical Ulceration. Many and more cases have been treated at the hospital with varying results. Intravenous calcium, disinfestation from worms and a balanced diet seem to do little good. Where a septic infection (streptococcal) can be made out clinically, the exhibition of sulphanamide seems to do a lot of good even in healing up the ulcer which is usually skin grafted.

Venereal Disease. Very few male patients attended during the year. With female patients it is the reverse and these attend till discharged. There is in my impression a lot of quack treatments being given by unauthorised persons, usually of the midwife class. The abatement of these diseases is not a subject that can be handled unaided by Government and application to the Rockefeller or Carnegie Foundations to implement

- (i) a clinic proper with trained orderlies and nurses,
- (ii) proper diagnostic and therapeutic equipment,
- (iii) propaganda, and
- (iv) education of a type higher than obtains at present.

Tuberculosis. Four cases of this disease were seen during the year with one death out of a total number of 7 registered. These were all of the pulmonary type. These cases are not admitted for treatment at the hospital or if inadvertently so are discharged as soon as diagnosed. There is a sorry plight, as they are shunned by their own; if brought to the hospital at all it is more from a wish to get rid of them when the disease is far advanced than to give them any benefit.

Nutritional Anaemia and Macrocytic anaemia of pregnancy is very common. Whether these cases have a basis of hookworm infection in all cases is not made out, but the frequency of pregnant women getting anaemia would point out to a deficiency in the diet.

The Outdistrict. The work done here is almost nil barring vaccination and occasional mass treatment for hookworm disease when on tour. The population rely on the hospital for treatment and as the accommodation is meagre, cases have necessarily to

be denied admission. Malaria and Helminthiasis and occasional cases of phthisis seem to be the prevalent diseases in the out-district. The abatement of these, the provision of potable water and some instruction in the rudiments of nutrition coupled with a certain amount of village sanitation is all that can be done in the absence of funds and supervision.

The villages were inspected at odd intervals during the year but with the exception of Monkey River it is impossible, in the absence of a travelling vote for the Sanitary Inspector and means of conveyance or the payment of delegate in each village to institute anything of a lasting benefit. The new sanitary re-organisation, if given expression along the lines suggested, might do something for village work, but it is going to be a costly affair. Very little use will accrue from any such measure if the labour camps are not also brought into line and the present commerce with undesirables from outside the villages be not checked.

(b) *Vital Statistics.*

There were 152 deaths in the district of which only 29 were certified. Of the uncertified.

39 were returned as due to "Fever"

5 were returned as due to "Fits"

24 were returned as due to "Diarrhoea"

7 were returned as due to "Tuberculosis" (4 certified).

Counting the 7 who died of malaria in the hospital (2 cerebral, 1 algid, 1 dysenteric) and regarding fever, fits and diarrhoea as presumably due in the first instance to malaria, it is seen that as much as 49% of all deaths in the district are due to this disease alone.

III. HYGIENE & SANITATION.

(a) *Administration.*

The question of the reorganisation of the sanitary services is under consideration and it is hoped that with the restoration of the Sanitary Inspector under the Medical Department, something effective will be done in the near future.

(b) *General Measures.*

Disposal of refuse. A scavenger-dustman goes round the town at periodical intervals and collects rubbish from the district Board Refuse Bins—perforated kerosene drums—set on the public road without a cement foundation. There are some 75 of these in town, not always easily accessible during the wet weather. All this is grossly inadequate, the dustman not being able to clean the whole town more than twice a week, so that an accumulation of three days' rubbish is the rule. This rubbish is now used to fill the low-lying lots, but no system of controlled tipping is practised, so that rat harbourages are created. In spite of this, disposal of rubbish goes on at all points along the shore and leads to unsightly and malodorous dumps.

Oiling of the town as an anti-anopheline measure. Still less of this is done than previously. Only two drums were used during the year. While this may be a good practice to keep up, it is not done intelligently as the result of the investigation into the anopheline vector involved. This oiling is done spasmodically and no sooner done is washed out by heavy rains. As Punta Gorda enjoys a good fall, it were more practicable to concentrate on drainage.

Latrines. Indifferent in repair, they are also insufficient in number in the town. More should be built of the sea-latrines type which should be encouraged. More white-washing is necessary in the case of the public latrines. In the out-district, it is very unusual to find people using any latrines at all, and if so, it is almost invariably of the pit-latrines type. This is insanitary on all counts unless in undulating country if on hill crests as in San Antonio. It does not appear that any better type can be introduced, the bored-hole latrine being out of the question in the low-lying areas devoid of any soil.

Slaughter-House. This has been overhauled, a vat has been laid, and an animal pen is under construction. When all the work will be finished, there will be also an incinerator-boiler to provide facility for boiling water.

With this, Bye-Laws have been passed to stop all slaughter of animals outside of the Slaughter House proper, as has happened hitherto. The Inspector is being instructed in meat inspection and it is hoped when the whole matter is reorganised, to prevent any sale of unsound meat.

The Cemetery consists of two sections—an east and west. The east section was cleared of rank vegetation and tidied up. The west was stumped, cleared and surveyed and finally pegged out to enable proper burial and a record of burials to be kept. The Cemetery Keeper was instructed in this and a Register made out for all relevant particulars. There remains to number the pegs and to drain the south and west sides of the cemetery to a depth of 6 feet; in this way it will be prevented from being water-logged and will ensure the more fast dissolution of bodies.

Rank Vegetation continued to be the major difficulty and the heaviest expense on the sanitary programme, hence its neglect, which leads to all manner of sanitary evasion. The funds admit of its being done twice a year only and this is far from sufficient. It is hoped that in future experimentation with a special weed burner now on the market might eventuate in a cheaper and more effective way of dealing with the matter. During the latter part of the year, the whole town received a cleaning and the macheted grass was removed instead of being allowed to serve as a fertiliser for the next crop. This was by way of an innovation but it showed, at an expense, how much older practice of leaving the cuttings in situ contributed to its regrowth.

Bakeries. There are three in town and none can be said to conform to the regulations in force and apart from the medical examination of the bakers themselves, nothing is done to ensure a hygienic product. There are no professional bakers.

(c) *Preventive Measures.*

Vaccination. One hundred and twenty-eight persons were vaccinated during the year. This is a difficult matter to place on a satisfactory basis because of the non-facility of reaching the different vaccinators when lymph is on hand and the difficulty of securing the re-inspection of those vaccinated. A proper vaccination list is now made out and the provision of a travelling vote for the Sanitary Inspector who is to be made a Public Vaccinator will help this matter when he is on tour.

Quarantine. Very few people applied for the provision of M.P. 714—34 during the year, but the number of people reporting for quarantine has dropped considerably in recent years; 841 people attended quarantine and 524 boats were boarded and examined during the year. Surveillance as now done does not achieve the end in view and wholesale vaccination after medical inspection of boats on arrival would appear to be the more practical measure in so far as the introduction of small pox is concerned: it will have the further beneficial effect of ensuring vaccination for those who have so far dodged it.

As to the other quarantinable diseases, the Sanitary Inspector on his rounds is the person to check on their possible presence. Plague is a possibility with the unratproofed new rice mill in the town, with yellow fever, typhus and cholera as well as plague.

(d) *Maternity & Child Welfare.*

It is an extraordinary fact that with the poor midwifery obtaining in the district, no more gross infection at childbirth takes place. As a rule, no puerperal fever is seen as severe as one comes across in Europe, cases of uterine infection being limited to Sepsaemia. It has been sought to attract as many accouchments at the Hospital as possible but the non-provision of space and the meagreness of the trained staff precludes any such extension of medical benefit to mothers. The idea underlying confinement in hospital is largely that of education, primiparae being given general lines as how to care for themselves and their babies. A few cases of complicated labours came to the hospital and then only when well nigh past treatment. One case of Eclampsia was seen during the year and one of Septicaemia. There were also two cases of Puerperal Insanity following abortion from Malaria.

There is a good lot of irregular midwifery being practiced in the district. While no intent can be shown to short-circuit medical supervision this is manifestly the case and can be put down to ignorance of the midwife in her duties. A knowledge of antiseptics and cleanliness is not known and they are innocent of the use of the thermometer. It

is not enough to catch these benighted women occasionally and attempt by instruction or intimidation or both to secure their efficiency: the provision of a trained midwife-visitor answerable to the Department to check the work of the professional and jerking them regularly might do something better than the prevalent custom of employing these expensive helps.

It is fervently hoped that with the rebuilding of the hospital under consideration, this question will be taken up and a maternity ward be included.

Infant Welfare. A start was made during the year to give the mothers of the district some instruction in child-craft and the babies treatment for minor ailments leading to infantile mortality. The provision of suitable space for this work and the lack of any civic spirit in the town are great impediments to this becoming a really useful branch of health work and not simply an excuse for a social gathering. Backing by the administration is necessary in the absence of interested ladies in the town.

The births for the year under review were 272: of these, 30 died in their first year of life which shows rather a high figure of infantile mortality.

IV. HOSPITALS & DISPENSARIES.

The accommodation is poor and inadequate: eight beds are allotted to the 8,000 inhabitants in the district, it is no rebuke to have had turned away applicants for admission. The resentment to hospitalization seems to have somewhat broken down, judging by the increased admission this year, but there is still a lot of desertion due to the unpopularity of a long stay in the hospital. It is difficult accordingly to do the complete job as is reflected in the many malarial relapses one has to treat after discharge from the hospital. The policy is to treat as many as possible at the hospital to ensure full results that otherwise would not be achieved by home treatment since only a meagre minimum follow advice. With lack of space at the hospital and the bad example set by persons who should know better and be compelled to support and back the department, this policy will succeed in a very small way, as has indeed happened so far.

The equipment suffices for the bare needs of the community but precludes any extension of progressive medical benefit work. Some regularization of supplies is necessary.

279 patients received treatment in the hospital during 1937.

Some 2,000 patients were treated free of charge in Out-Patients department. These were mostly ambulant cases of malaria, helminthiasis, and some venereal disease.

STANN CREEK DISTRICT, MEDICAL AND SANITARY REPORT.

DR. L. M. RAM, MEDICAL OFFICER.

I. ADMINISTRATION.

(a) Staff.

The Staff consists of;

- One Medical Officer
- One Nurse-in-Charge
- One District Probationer
- Three Ward Maids
- One Cook
- One Messenger.

II. PUBLIC HEALTH.

(a) General Remarks.

I should like to begin this report with a note of optimism. Both from Medical and Sanitary points of view a satisfactory progress, consistent with the means at the disposal of the Department, has been maintained, and Fates have been kind. Except for a little flare-up of Amoebic Dysentery in February, and increased incidence of Malaria towards the end of the year, there has been no outbreak of any infectious or endemic disease in epidemic form. The Death-rate in the District has been the lowest ever recorded at least during the last ten years. If declining Birth-rate is any index to increasing or higher

Civilization, then Stann Creek has taken a step forward, as it too is the lowest recorded. Infant Mortality, considered by some as the best index of endemicity of Malaria, by others of Tuberculosis, and by the rest, of social welfare and sanitary circumstances of an area, has also been less than last year when it was the lowest in the Colony.

A Maternity ward with four beds and an Isolation room, as well as an Infant Welfare Clinic with seating accommodation for waiting mothers, have been new additions to the Hospital during the year. The "shabby" structure—the so-called Quarantine Office—which used to offend the eye of the visitor to the Hospital, has been removed to a more convenient place in the hospital compound and entirely renovated. More sanitary concrete shallow wells were put in the out-stations, and all provided with mosquito-proof covers. Further experimentation with concrete refuse bins has resulted in an improved type of bin, but funds allowed only one such to be built during the year. An experimental latrine (pit) with a concrete culvert has been put up and its soundness or otherwise is being investigated.

Two new Public Health problems deserve mention. Free medical examination of school children has been started and a preliminary report on the Nutritional problem of the district has been submitted. The village of Seine Bight—notorious for Pulmonary Tuberculosis, had a special report on the nutritional condition of the populace and the sanitary circumstances of the area.

The eternal problem of all tropical countries viz, the control of Malaria, Tuberculosis, Venereal Diseases, and Helminthiasis have been engaging the attention of the Department, and the visit of Dr. Washburn—the head of Rockefeller Foundation in the West Indies—in this connection has been most welcome. I am hoping for a Malarial Survey of Stann Creek district in 1938.

(i) *Malaria.* Out of 173 cases of Malaria, 19 were of cerebral type of whom 5 succumbed mostly within the first 24 hours. There were 6 cases of Blackwater fever with one death. From a Public Health point of view, this disease not only kills more people but leads to greater physical, social, and economic difficulties than any other. The position of a Medical Officer is not enviable when he has to deal with Malaria in a locality, where the anophelines of the area are unknown, the various species that carry malaria are unknown, and no technical assistance available to examine blood films of every patient. Yet for Malarial Survey, he has to know the amount of malaria, its distribution during the year, variation of species of parasite during the year, and whether malaria is becoming or likely to become worse or better if nothing is done. Before trying to answer these questions, a few words about the topography and meteorology of the district would not be out of place.

The district has an area of 840 square miles with a density of 7.44 persons per sq. mile. The Inhabited areas are generally the towns, the settled villages, the land bordering the coast and the comparatively narrow margins along the banks of the rivers. Large areas in the interior, owing to absence of means of communication, are entirely devoid of population. The town of Stann Creek, approximately 270 acres, has more than half the population and is the 2nd biggest town in the Colony. It is a flat low-lying town, about 3 feet above sea-level. The Stann Creek River which traverses the town, divides it into two parts, and is always causing fresh erosions due to the various "cayes" formed in its courses. During rainy season it is flooded, and a large part of the town goes under water. The town is also traversed by 4 creeks, and there appears to have been surface drains in the past which are now in a neglected condition. There is a very large standing swamp at the back of the town.

The mean annual rainfall during the last ten years averages about 85 inches, but the average of 1936 and 1937 works out to be 122 inches per annum. January, February, March, April and sometimes May and December are the comparatively dry months. December and January are often cold months. The range of temperature varies between 53—85 Fahr. Relative Humidity is nearly always over 90%.

Amount of Malaria: For the time being, it can be judged best from:

1. Hospital Records.
2. Splenic Index amongst School Children.
3. Mortality Registration.

1. *Hospital Records:* In 1936, 168 in-patients, and 618 out-patients were treated in

the Hospital. In 1937, 173 in-patients, and 651 out-patients received treatment. Over 60% of these have been from July—November i.e. in 5 months.

2. *Splenic Index*: Eight hundred and forty-one school children, belonging to Stann Creek and Mullins River were examined during the year. Of these 22.59% had enlarged spleens. If this is taken as an index for the district, then it would be termed "Moderately Endemic" area. Generally the standing method of spleen palpation was adopted, except in a few doubtful cases when a recumbent position was utilised. Children from the age of 2—15 years only have been included.

3. *Mortality Registration*. All deaths in the district (certified and otherwise) due to fever have been as follows:—

	Total Deaths.	Malarial Deaths.	Infant Deaths.
1936	102	34	19
1937	77	22	15

The estimated population of Stann Creek district at the end of 1936 was 6250, and at the end of 1937, 6349.

From the facts and figures given above, it would appear that during 1937, 287 people out of every thousand sought treatment at the Hospital, 130 of whom were cases of Malaria. In other words, 45% of the sick suffered from Malaria. 3 per 1000 living died of Malaria. In 1936, 126 per thousand of population were treated at the hospital as cases of Malaria and 5 per thousand living died of the disease. These figures do not include private, self-treated, or untreated cases. Personally, I believe there are very few who escape an attack of fever during the year.

It is also evident that generally speaking, the latter half of the year is the period of active spread of infection, and the first half of relapses, as the weather is drier and cooler during these months, and so inimical to the breeding of mosquitoes. The respective Public Health measures for control, become clearly indicated during these two periods.

It would be assuming too much to say which species of parasite is dominant during these two periods of the year, as very few microscopic examinations have been made. Clinically speaking, subtertian appear to be more prominent during the "active spread period", while benign-tertian becomes quite noticeable during the period of "relapses". Very few cases of quartan are met with.

Now let me attempt to answer the question if malaria is likely to become worse or better. "A community unlikely to change in constitution, or a locality unlikely to change in topography, be the malarial incidence what it will, no change is to be apprehended". In 1937, some refugees from Spanish Honduras, and some business people from other parts of the Colony, took permanent residence in Stann Creek. The topography was indirectly changed to some extent, as the neglected drains and the neglected low-lying lots, provided extra mosquito-breeding places. The incidence of malaria was a little higher than in 1936, and was quite noticeable among these "emigres". In a community that is gradually taking up agricultural pursuits, or in an endemic locality in which engineering operations are to be initiated, as long as local labour is employed, little change is to be expected, unless proposed works involve changes in the nature of the water system of the country, or deforestation likely to let in a dangerous species. If non-immunes are imported in quantity, a flare-up is certain if enough breeding is present. These conditions are prevalent to a certain extent in Stann Creek valley, and would be much more in evidence next year when work is commenced on the Road-cum-railway project. If the "man-made" malaria is not controlled, even the "fever-proof" economy of the local labour may be terribly upset.

While endemic malaria, comparatively, is always of low fatality, epidemic is devastating, as witnessed recently in Ceylon. I resist the temptation of discussing various measures of control or clinical side of the picture, for fear of making the report too lengthy and cumbersome.

Venereal Diseases. Having devoted the best part of my professional career to the diagnosis and treatment in Malaya, I was naturally much interested in their prevalence in this part of the globe. Now that facilities for Kahn Test are available in Belize, and a Maternity ward put up in Stann Creek, it may be possible in a year or two to surmise their extent. For the time being, one has to content oneself with a few clinical manifes-

tations and observations. Both in the infant welfare and school children, one is struck with the paucity of signs of congenital syphilis. Only two cases of florid secondary syphilis have come to my notice during the last two years. Tertiary skin manifestations are rare, while three cases of aneurism have been seen. Salpingitis, Iritis, Ophthalmia, arthritis, and epididymitis are quite common complications of gonorrhoea. Infant mortality figures do not seem to reveal any undue mortality due to syphilis. Late primary cases form the bulk who report for treatment. No facilities for free and efficient treatment being available, a small private clinic has been set up, both to test new remedies as well as to afford treatment without publicity to the willing. Prontosil has been tried in ten cases with very satisfactory results. Due to the limited means of my patients, I have not given the doses recommended by various authorities, as they are costly. My routine mostly has been as follows:—

1. Irrigation with Pot. Permang. and acriflavine or protargol instillation, once daily, for a fortnight. Trypaflavine intravenously (to control discharge) twice a week.

2. Prontosil soluble 3 injections, once daily after the first fortnight. Local treatment continues.

3. Prontosil tablets 6 per day (45 grs.) for 6 days. Local treatment continues and slide examined daily. As G.C. begins to disappear, irrigation started with Mercury oxy-cyanide.

4. During the next two weeks, sounds are passed and Prostatic massage given (both three times).

Out of ten cases, only one did not respond, and another had gastric upset and an erythematous rash. There were no other signs of intolerance. Most of the cases before used to respond in 3—8 weeks. With Prontosil the period is considerably reduced—3—5 weeks. The difficulty in small places is that one has to base one's experience on observation of such small number of cases, which from a statistical or scientific point of view, are useless. Still, that is the best one could do under the circumstances.

Is the rarity of secondaries due to a special strain of the spirochaete, or immunisation of the community? Another interesting observation was that the rash in three typical alastrim cases took over 5 weeks to disappear, all three were Kahn Positive, and one N.A.B. injection helped to clear the lesions. With so much gonorrhoea in women untreated, one is surprised to have come across only one case of vulvo-vaginitis of children.

Of all the communicable diseases, syphilis and gonorrhoea are the most prevalent in the world. Although they are not immediately killing diseases, they are responsible for great (preventable) unhappiness and inefficiency of humanity. No measures educational or otherwise are being taken against them at present in Stann Creek. One has to depend on the natural course of the maladies for control. One has to thank Ehrlich, because in syphilis, even a few injections make the patient non-infectious for the time being. Syphilitic infection by sexual intercourse is spread for the most part within the first five years of infection, and chronic gonorrhoea especially in women is only intermittently infectious. Some partial immunity to the local strains may be another protective factor.

Tuberculosis & Helminthiasis. Tuberculosis is all pulmonary. There is no local dairy-farming, so no fresh milk taken and hence no glandular tuberculosis seen. Seine Bight is reputed to be the most unhealthy spot in this respect. No Tuberculin Survey has been possible, and few Caribs have been seen to show much resistance to its onslaught. If they learn it is T.B., they just give in. As any scheme of control must be very costly and centralised, one thinks it redundant to discuss it in a district report. Seventy-five per cent of the problem after all is economic, and malaria and venereal diseases take precedence in other respects.

Helminthiasis. Clinically, ascariasis seems to predominate. With very few exceptions, ankylostomiasis is nothing so severe as one comes across in the East, where the typical swollen white appearance of the sufferer is so characteristic. The solution is again economic one, as both private latrines and wearing of shoes require money.

Nutrition. A few words on the subject would not be out of place. Some idea about the nutritional state of the populace may be obtained from,

- (1) Nature of the diet eaten by the people.

- (2) Existence of "deficiency" diseases.
- (3) Nutrition of individuals, as determined by physical measurements.

1. *Nature of Diet.* The population of Stann Creek may be broadly divided into two main groups: Caribs and Creoles.

Caribs. They are not the ferocious and cannibalistic Caribs of the Guianas of history, but a class of Negro people (due to inter-racial intercourse) who came from the West Indies. Chief articles of their diet are roots and tubers like cassava, yams, coco, and sweet potato; vegetables and fruits like green plantains, bananas, plantains, lemon, lime, grape-fruit, orange, mango, papaya, pineapple, and coconut; flesh foods like fish (both fresh and corned), crabs, game, beef salted or fresh occasionally, chicken and egg. Rice and refined wheat-flour are the only cereals they partake of sometimes. Most of their sugar they take from fresh sugar-cane. To their children after the age of three months, they begin to give flour-paste (labb), mashed ripe banana, and arrow-root starch. The popular beverage is brewed from lime leaves, fever grass leaves, or provision bark, and sweetened with cane-juice. Conch soup is a favourite dish taken as an aphrodisiac, and logger-head turtle as a delicacy. As the economic status of a Carib improves, he begins to make a more liberal use of rice, red kidney beans, milk (condensed), margarine and cheese &c. The calorie value of the daily fare of a poor Carib works out to about 1800—1900, with fats and proteins each less than 40 grams.

Creoles. They include the native-born negro, and persons of mixed descent, usually with European ancestry on one side. They are better off economically, with rice and wheat as their staple cereals. Beans, port, potatoes, local spinach, cabbage and tomatoes, tinned milk, margarine and cheese, make valuable additions to their diet. Lard is mostly used for cooking purposes. Both Caribs and Creoles whenever they can afford it, make a free use of local rum.

2. *Existence of "Deficiency" Diseases.* The classes in a community which are peculiarly liable to suffer from these if the diet be defective are infants, growing children, expectant and nursing mothers. Going through the records of the Infant Welfare Centre, one hardly comes across a case of delayed dentition or walking; rickets, scurvy, xerophthalmia and keratomalacia are conspicuous by their absence. Anaemia as judged from the colour of mucous membranes is present in about 65% of the children, and about a dozen showed soreness of the angles of the mouth. Although 40% of school children showed signs of poor nutrition, only 11 cases of angular stomatitis were detected and about 25% with dental defects. No case of osteomalacia has been seen in expectant or nursing mothers. Some degree of anaemia is common, with a few cases of megalocytic anaemia of pregnancy.

3. *Nutrition as judged from physical measurements:* From the tables of height and weight and of other measurements (see pages 33, 34 and 35) of infant welfare and school children, it would be readily seen, that they compare favourably with those of other tropical countries. To make this point clear, I am attaching graphs of height and weight of Ceylon children from secondary schools, Stann Creek, Pomona, and American children. (See page 36).

4. *Effect on Nutrition with the addition of Extras:* Fortunately some evidence to this effect is available although no experiments have been carried out. The diet of inmates of Industrial School at Pomona is none too satisfactory from the modern point of view, as milk and eggs, and till lately even margarine were practically absent from the diet sheet, but the calorie value was about 2800; the result is interesting. Age for age, the Pomona boys are heavier and taller than Stann Creek school boys. Giving full credit to other factors, such as, open-air life, regular habits, and constant medical supervision and attention &c., one has to attribute the result to better food to some extent. There is another small but valuable piece of evidence. During the year there have been 14 admissions in the local prison; 11 had been discharged by the end of the year. All of them except one gained weight on prison diet—the average gain being just over 4 pounds. But even amongst such underfed adults, no case of beri-beri, pellagra, or scurvy &c. was found.

I leave the conclusion towards the end of the report.

Social and Economic Conditions: I think they deserve a mention, as they are so intimately connected with the Health and Welfare of the people. The economic crops of the district are mainly grape-fruit, bananas, coconut and cassava. The market was not

favourable for the first three products towards the end of the year. The production of cassava has been stimulated by the operations of The Empire Starch Products Co., about 400 acres being planted last year by the Company itself. There were two mahogany camps in the district. The Government (Canada-Hill Road Project, and Railway), the Citrus Association, the Mahogany Contractors, and the District Board were the chief employers of labour. The Government gave a grant of 2,200 acres of land to the Caribs. A children's play-ground with Band-stand and swings was a welcome and useful addition; the Foot-ball field, tennis court, and the Court-House grounds were all improved. Cricket made its debut not only in Stann Creek town and valley but also in out-stations like Sittee River and Seine Bight. A spirit of optimism seemed to prevail throughout the year (perhaps due to Rail-cum-Road Project), and people spent freely on Socials and Church Bazaars held in connection with Coronation, Colony Day, Pomona Boys Shows and Children Fair. All these activities helped to break the monotonous rut of these lonely places, making life happier and more cheerful and tending towards reconciliation with Man and God.

General Sanitation: Except what has been mentioned at the beginning, nothing more could be added to last year's report. There have been 4 cases of Alastrim (sporadic), with no death. 1047 persons reported for quarantine observation during the year. 74 children were vaccinated at the hospital, and 26 contacts in connection with Alastrim cases.

Vital Statistics.

	1936	1937
Total population	6250	6349
Total Births	201	176
Total Deaths	102	77
Crude Birth rate	32.4 per 1,000	27.7 per 1,000
Crude Death rate	16.3 per 1,000	12.1 per 1,000
Deaths under 1 year	19	15
Infant Mortality	90 per 1,000	85.2 per 1,000
Morbidity rate (from Hospital figures)		287 per 1,000
Malarial Morbidity (from Hospital figures)		130 per 1,000
Malaria Fatality Rate (District)		3 per 1,000

The estimation of population is arrived at by deducting the number of deaths from births at the end the year. This is the Registrar General's method for the whole Colony.

III. HYGIENE & SANITATION.

Infant Welfare Clinic: Let me now pass on to a more positive side of Public Health work. This clinic, which was started in June 1936, is run without the help of any lay lady workers. The clinic is held every fortnight, when new children are examined by the Medical Officer, and a record of the date of birth, time of teething, walking, and talking, previous illnesses, height, weight, and chest and head measurements is kept. The general state of nutrition, and abnormalities present are noted. Mothers with sick babies are not encouraged to attend on clinic days for fear of spreading infection to the healthy ones. They are treated as out-patients in the mornings. The new Clinic room serves as a good demonstration room, as all necessary equipment from feeding bottles to baths and cribs are suitably displayed, and their effect enhanced by the display of instructive Pictorial Posters. The part-time health visitor, and the nurse-in-charge of the hospital, run the show, while the District Commissioner's wife kindly acts as a secretary-treasurer and looks after the finance.

There are now 280 children on the Register, most of them, naturally, are Caribs. Anaemia, phimosis, and umbilical hernia are the chief defects found. They are remarkably free from skin diseases, deficiency and ear and eye disorders. Malaria and ascariasis are their chief maladies, closely followed by "fresh cold" and bronchitis.

A table of measurements of 202 children (male and female) is appended.

School Children: 841 students belonging to Stann Creek and Mullins River Schools were examined during the year; 425 were males and 416 were female children. Their ages varied from 2—15 years. The following were the chief defects found.

Defect.	Male.	%	Female.	%
Poor Nutrition	172	40.5	161	38.7
Enlarged Spleen	115	27.1	75	18.0
Carious Teeth	100	23.5	104	24.9
Enlarged Tonsils	49	11.5	52	12.5
Enlarged Glands	30	7.1	21	5.1
Follicular Conjunc:	26	6.1	17	4.1
Without shoes	385	90.6	305	75.3

Other defects included 15 cases of clinically recognisable hookworm, 6 of trachoma, 6 of pinta and impetigo and 3 hernias. 11 children showed angular stomatitis.

The number of Carib children was 532, and others 299. Further analysis of the figures shows that Carib girls show the lowest spleen rate (16.8), Creole males the highest (38.1), Creole girls show the least amount of poor nutrition (34%) and are the largest users of shoes (64%). Caribs both male and female have better teeth, the dental defects in Creole being just the double.

A table (excluding poor nutrition cases) of average weights and heights of 224 boys and 239 girls with ages varying from 5—15 years is attached herewith.

Industrial School, Pomona. The situation of the school (14 miles up the Stann Creek Valley), with its grape-fruit orchards and tropical flora, is very picturesque. A visitor from London put it as "Kew Gardens of British Honduras", in the Visitor's book. This is a reformatory school for juvenile offenders, and the inmates averaged about 45 during the year. The school has got a piped water supply from hills nearby, and has a water-closet system of sanitation. A hospital with 6 beds, in charge of a trained nurse is attached to it. There have been 200 admissions in the hospital (127 due to malaria), and 500 out-patient attendances. The buildings are in a state of disrepair, and the hospital is the only screened building. The spleen rate at one time was 20%, but towards the end of the year, it was hardly 5%.

A table of heights and weights has been compiled from the records of about 180 boys over a period of ten years.

IV. HOSPITAL.

Including the Maternity Ward which was opened in October, it contains 20 beds, accommodating 8 males and 12 female patients. The total number of patients admitted during the year was 480 of whom 254 were males and 226 females. The principal diseases and causes of death were as follows:—

Disease.	No. of Cases.	Deaths.
1. Malaria & Black water	173	11
2. Other Diseases	50	1
3. Skin, bone, cellular tissue	45	—
4. Venereal	40	1
5. Puerperal	36	1
6. Respiratory	26	2
7. Dysentery	19	1
8. General Diseases	18	1
9. Nervous	16	1
10. Genito-urinary	15	—
11. Circulatory System	14	1
12. Pulmonary Tuberculosis	8	1
13. Digestive	7	1
14. Other Infectious Diseases	5	—
15. Births	8	—

Mortality rate in the Hospital: 4.58%.

The daily average number of patients in the hospital was 16. 1340 patients attended the out-patient department, of whom 647 were children below the age of 10. The total number of attendances was 3,360.

The staff remained the same except towards the end of the year when a junior trained nurse was loaned from Belize Hospital to assist in the Maternity Ward.

Summary and Conclusion: A malarial survey without working out the anophelines of the place has been attempted. Stann Creek is a moderately endemic area, where Carib children begin acquire immunity quicker than others (Carib boys and girls spleen rate beini 20.8, and 16.8 respectively, Creoles 38 and 20). Morbidity rate for Malaria is very high, although fatality is comparatively low. The girls are better looked after. They are better fed and better clad (64% of Crole girls wear shoes). From the age of 10—14 years they are taller and heavier than the boys. In weight they beat the boys up to 15 (by no means a weaker sex at that age). Both boys and girls of Stann Creek are heavier than secondary school boys and girls of Ceylon but not taller. Pomona boys are heavier and taller than both of them.

No proper dietary surveys have been made, but the Carib diets seem to be of low calorie value, deficient in fats, vitamin "B2", and Iron. Although milk and leafy vegetables are missing, yet they show no sign of calcium deficiency. As Vitamin "A" cannot be stored for long periods in the body, it is liable to be low during certain seasons. Well marked deficiency diseases including night-blindness, nutritional oedema (War-oedema of the Germans), urinary lithiasis &c., are a rarity. The commonest nutritional disorders are anaemia, constipation, angular stomatitis, and individual cases of pyoderma and phrynoderma; "fresh" cold and bronchitis of children, and low resistance of adults towards pneumonia and tuberculosis, point to some lack of the factors mentioned above. It is safe to conclude that there are no signs of gross malnutrition present in the populace. Minor degrees of malnutrition are common which could easily be overcome by better education, better agriculture, and better economic conditions. Even with the help of clinical and physiological tests, it is hard to standardise optimum nutrition.

Except guess from clinical impression, the extent of prevalence of syphilis is hard to surmise. Only three of the ten gonorrhoea cases mentioned above had their first attack, there was no restriction of fluids, and all were ambulatory.

The object of this report has been to focus attention on the Public Health problems of the district in as few words as possible. The clinical side of the picture which has been left in the background can be painted at some future occasion.

Table 6.
Table Showing Average and Total Height and Weight of Male and Female Children Respectively, Attending
Stann Creek Elementary Public Schools.

M A L E S						F E M A L E S							
Age	No.	Total Height	Average Height	Total Weight	Average Weight	Carib	Age	No.	Total Height	Average Height	Total Weight	Average Weight	Carib
5	12	499.50	41.63	455.00	37.92	9	5	14	573.00	40.93	496.00	35.43	8
6	15	644.75	42.98	596.25	39.75	10	6	24	999.25	41.645	999.50	41.65	11
7	26	1157.50	44.52	1159.75	44.60	17	7	28	1282.00	45.79	1219.50	43.55	16
8	25	1221.75	48.87	1290.00	51.60	10	8	20	962.75	48.14	995.25	49.76	10
9	17	824.75	48.52	896.00	52.70	10	9	21	1038.75	49.46	1079.50	51.41	12
10	20	1006.00	50.30	1311.00	56.59	11	10	26	1335.75	51.38	1508.50	58.02	16
11	23	1186.75	51.60	1447.00	62.91	14	11	25	1324.5	52.98	1611.25	64.45	12
12	29	1586.25	54.70	1990.00	68.62	17	12	38	2134.25	56.16	2833.75	74.57	22
13	21	1186.50	56.50	1591.00	75.78	15	13	18	1037.75	57.76	1522.00	84.56	12
14	18	1022.50	56.81	1403.75	77.99	7	14	14	816.00	58.29	1232.00	88.00	11
15	18	1090.00	60.55	1734.50	96.36	11	15	11	658.00	59.82	1090.25	99.13	8
—	224	—	—	—	—	131	—	239	—	—	—	—	138

Weight measured in inches.

Weight measured in pounds.

Weight measured in pounds.

Height measured in inches.

Table 7.

Table Showing Average and Total Height and Weight of Inmates at Government Industrial School.

Age	Number	Total Height	Average Height	Total Weight	Average Weight
9	5	255	51.00	294	58.80
10	12	633	52.75	816	68.00
11	18	977	54.76	1291	71.16
12	28	1547	55.25	2155	77.00
13	33	1867	56.58	2725	82.57
14	18	1078	59.88	1656	92.00
15	27	1671	61.88	2764	102.37
16	18	1131	62.83	1955	108.33
17	7	454	64.86	886	126.43

Height measured in inches.

Weight measured in pounds.

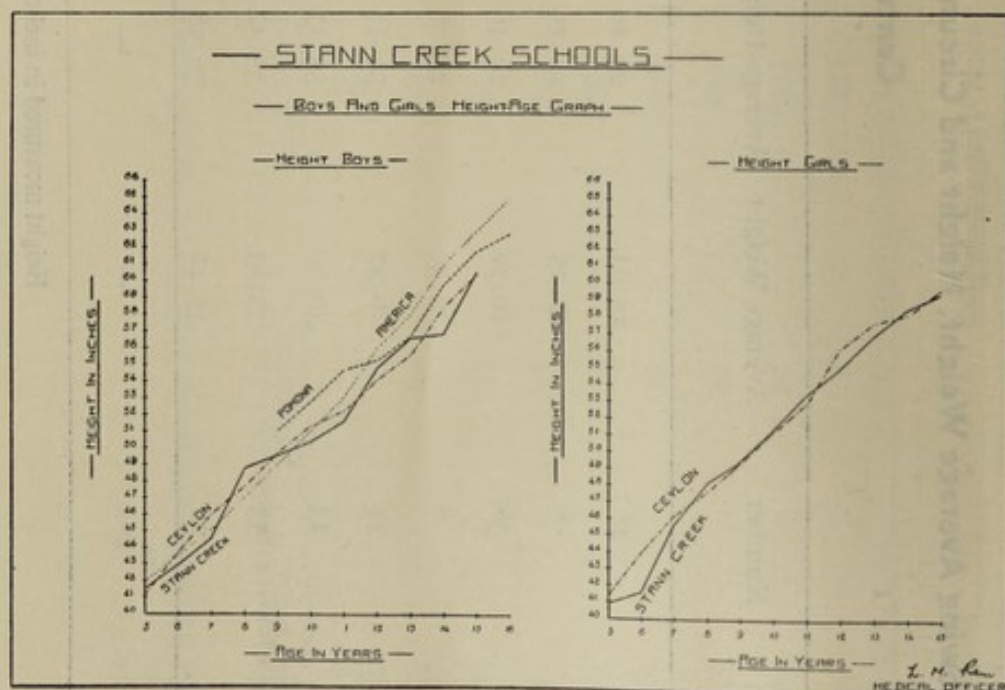
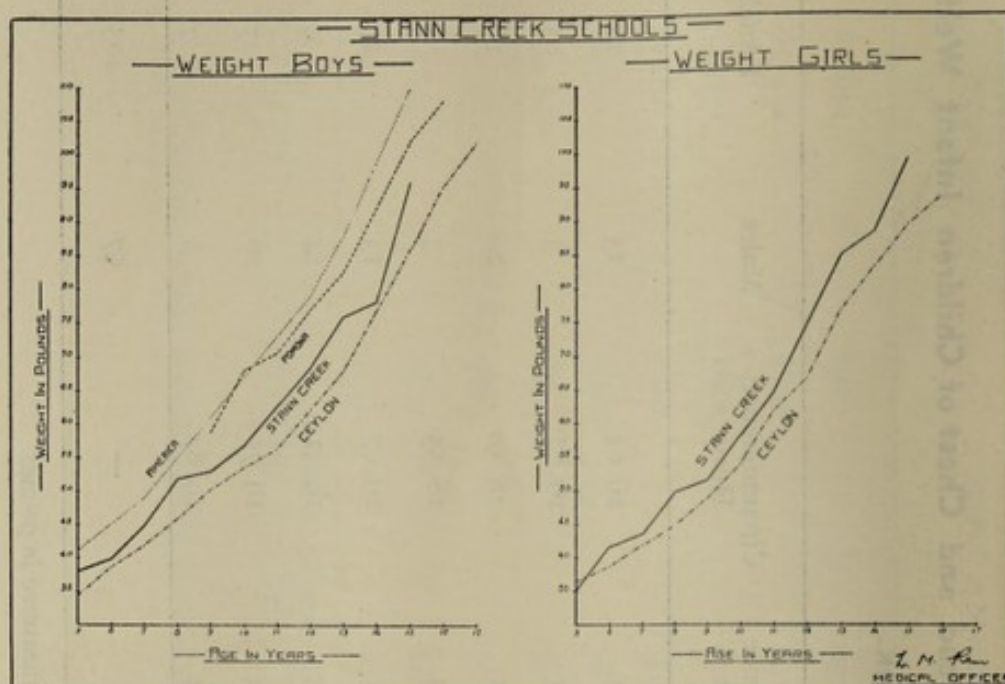
Table 8.

**Table Showing Average Weight, Height and Circumference of Head and Chest of Children Infant Welfare
Centre, Stann Creek.**

Age	Number	Average Weight	Average Height	Circumference Chest	Circumference Head	Males	Females
6 months	28	15.04	24.10	16.34	16.64	13	15
8 "	8	17.25	24.75	16.87	16.87	3	5
12 "	36	20.70	26.36	18.11	18.30	20	16
18 "	8	22.50	28.00	18.44	18.55	3	5
24 "	34	26.37	30.49	19.37	19.07	13	21
36 "	23	30.00	33.17	20.33	19.41	14	9
48 "	53	33.13	35.34	20.33	19.70	26	27
60 "	12	35.41	36.58	20.54	19.87	5	7
Total Children	202	—	—	—	—	97	105

Height measured in inches.

Weight measured in pounds.



COROZAL DISTRICT, MEDICAL AND SANITARY REPORT.

DR. D. W. DEGAZON, MEDICAL OFFICER.

The district of Corozal has an area of 718 square miles and an estimated population of 8,199. The population is 11.3 per square mile.

The total rainfall for 1937 was 69.3 inches.

After Belize, this district is the most densely populated. All the outlying villages, with the exception of three, are accessible to motor traffic for over six months of the year.

There are no private practitioners resident in the district; the Medical Officer is allowed private practice.

I. ADMINISTRATION.

(a) Staff.

The Staff consists of a

Medical Officer.
Nurse-in-Charge
Probationer
Ward Maid
Cook
Messenger

The duties of the Medical Officer, Corozal, were performed by Dr. George from 1st January to 28th July; by Dr. Rassim from 28 July to 17th August, and by Dr. Degazon from 17th August to the end of the year. Excepting for the period from 1st January to 19th March, when there was a resident Medical Officer in Orange Walk, the duties have been performed by the Medical Officer, Corozal, in conjunction with his own duties.

Nurse Arnold was transferred to Belize on 1st September and was relieved by Nurse Anderson who acted as Nurse-in-Charge until the end of the year.

There is no dispenser or clerk on the hospital staff; compounding has to be done by the Medical Officer, while hospital fees and accounts are collected by the Staff Nurse, both very unsatisfactory arrangements.

(b) Finance.

One hundred and seventy-six of the admissions to the Hospital were paying patients, and 144 were treated as paupers. A total of \$462.50 was collected in hospital fees by the end of the year and \$34.25 were outstanding.

II. PUBLIC HEALTH.

(a) General Remarks.

Malaria, Anaemias and Deficiency Diseases. These are discussed under one heading as our experience of these conditions in this district leads us to consider that they are merely stages in the pathological life history of the majority of our patients.

Malaria. Six hundred and eighteen cases were treated in the course of the year. Blood smears from 31 patients were examined. *Plasmodium falciparum* was found in 6 cases, and *Plasmodium Vivax* in 3.

No etomological work has yet been undertaken to identify the local species of anopheline.

Cerebral and Algid forms of Malaria were responsible for 10 deaths.

Two cases of Blackwater Fever occurred with no deaths.

An increasing incidence of Malarial Nephritis has been noted.

The clinical manifestations are comparatively mild, and antimalarial therapy is followed by rapid clinical improvement and disappearance of albumen from the urine. Nine cases of this type were treated in hospital.

Anaemias and Deficiency Diseases. In every Maya Indian village, the majority of the population present a characteristic appearance viz; pallor of the skin and mucous

membranes, and expressionless faces. A senile appearance characterises all individuals over the age of thirty-five. A closer inspection reveals the presence of smooth atrophic tongues, pyorrhoea of the gums, and dry inelastic skins. This anaemic appearance is usually more pronounced in women, and particularly so in pregnant women, and very frequently associated with the presence of an enlarged spleen. Many of the people complain of lassitude, poor appetites, intermittent mild attacks of fever, diarrhoea, and occasionally of blood and mucus in their stools. The death rate among the villagers is high, and the expectation of life short.

It would appear that three factors contribute in varying proportions to the production of this clinical picture:—

- i. Malaria.
- ii. Nutritional deficiencies.
- iii. Helminthiasis.

The spleen rate in most of these villages is high both among children and adults; in some villages it is over 60 per cent. It would appear that a majority of the population have never been free from malarial infection from childhood.

Village diet consists largely of corn treated with lime to make "tortillas". Pork and milk are consumed infrequently; eggs and green vegetables are almost never eaten.

With the extremely limited laboratory facilities available, a few investigations were carried out on 10 of these cases which were treated in Hospital. All the cases were anaemic and had chronic malaria, two (both females) had oedema, and two had a small degree of hepatomegaly. The investigation consisted of:—

i. Blood: erythrocyte, haemoglobin estimation (Dare), estimation of the average diameter of the red blood cells with an Eve's halometer.

- ii. Fractional test meals.
- iii. Examination of the stools for ova.

While the investigations were not sufficiently extensive to warrant any definite conclusions, the following observations were made:—

i. In every case the red blood cells showed a varying degree of macrocytosis. Anisocytosis, poikilocytosis, and polythromatophilia were not observed. The lowest red cell counts and haemoglobin values, and the greatest macrocytosis were found in two pregnant women.

- ii. Gastric hypoacidity was found in all the cases; achlorhyria in three cases.
- iii. In two cases, treatment with quinine alone was sufficient to produce a reticulocyte crisis, and improvement in the blood picture. In the other cases Campolon and Marmite had to be given as well. The combination of an antimalarial specific, liver extract, and marmite never failed to produce marked improvement in these cases.

iv. Ankylostoma were found in three stools, and ascaris in two cases.

Avitamosis.

Phrynoderma is seen occasionally, particularly among Creole children.

We have seen 3 cases in pellagra in the course of the year.

Beri-beri is very seldom seen in its classical forms.

The typical case of scurvy with subperiosteal haematomata and diminished capillary resistance is rarely seen; a form of pyorrhoea with soft, inflamed gums is, however, extremely prevalent and improves rapidly on administration of orange juice. We have noted similar improvement in several fretful babies with normal healthy gums.

Rickets is definitely rare, we have only seen one case which showed a characteristic rachitic deformity.

Ulceration of the legs is common. The majority of cases that we see may be aetiologicaly classified as follows;

- i. Due to nutritional deficiencies.
- ii. Syphilitic.
- iii. Due to varicose veins.

i. is a common variety. The patients usually have chronic malaria and anaemia as well. The best results in treatment are obtained by hospitalisation of the patients, calcium gluconate injections, and elastoplast bandaging. We have not had any success in skin-grafting these ulcers.

Deficiency conditions abound in this district, although it is difficult to identify them completely with any of the well recognised avitaminoses. In the present state of our knowledge, we have to regard them, for practical purposes, as mixed subclinical forms. The commonest deficiencies appear to be in the extrinsic factor of Calcium, iron, the vitamin B complex, and vitamin C. There is some reason to believe that they are, to a large extent, conditioned deficiencies. The ubiquitous association of malaria as nearly all these cases suggests is that it may act both as a predisposing and as a precipitating factor, possibly by impairing intestinal absorption. There is a wide field for local research on this subject.

Influenza. The incidence of this disease is confined almost entirely to the period from November to March. During this time of the year, the direction of the prevailing wind is frequently from the north-west. The lowest daily recorded temperatures vary from 52 F. to 62 F., and the highest from 86 to 89 F. The average daily variation of temperature during these months is 28.6 degrees Fahr. During the other months of the year, the maximum daily variation of temperature recorded was 23 degrees Fahr.

Clinically the epidemic was characterised by respiratory infections associated with malarial relapses, with an incidence of pneumonia in 5 per cent of the cases.

Pulmonary Tuberculosis. Thirteen cases of this disease were seen and three deaths from it were certified. Undoubtedly a larger number of cases exist which do not present themselves for treatment.

Dysentery. The common forms are amoebic, dysenteric malaria, and bacillary dysentery.

Venereal Diseases. There has been a considerable increase in the incidence of these diseases in hospital practice. This may be attributed to;

i. The increased amount of labour employed in mahogany operations this year has caused an influx of labourers from Belize and from the neighbouring republics.

ii. A larger number of people from this district have been employed this year in chicle operations in the adjacent Mexican territory of Quintana Roo. As a result these diseases are now seen quite commonly among the Mayan and Yucatecan population.

Syphilis. Gonorrhoea, soft sores and Climatic bubo are the common diseases met with.

The systematic treatment of syphilis and gonorrhoea cannot be undertaken at the hospital for lack of specific drugs, a male orderly, and equipment. We have had considerable success in the treatment of climatic bubo with T.A.B. vaccine, but the treatment of lymphadenitis associated with soft sore has proved a failure by this method.

(b) Vital Statistics.

	1937.	1936.
Total number of births	261	269
Total number of deaths	181	245
Birth rate per 1000 population	32.5	33.1
Death rate per 1000 population	22.5	30.
Deaths under the age of 1 year	49	64
Infant mortality per 1000 live births	188.9	237.9
There is no registration of still births.		

Prevalent diseases.

Malaria	618
Influenza	192
Pneumonia	49
Dysentery	35
Pulmonary Tuberculosis	13
Alastrim	54

Causes of death.

Malaria	10	15
Enteral Diseases	10	15
Respiratory Diseases	13	19.7
including		
Pulmonary Tuberculosis	3	4.5
Prematurity, Senility		
and Congenital debility	10	15
Malignant Diseases	9	13.5
Cardiovascular diseases	4	6
Toxaemias of pregnancy,		
Childbirth, Puerperal Fever	1	1.5
Injuries	3	4.5
Diabetes	1	1.5
Deficiency diseases	4	4

These figures apply to cases which received medical treatment. Thirty-six per cent of the total number of deaths were certified by the Medical Officer.

III. HYGIENE & SANITATION.

(a) *Administrative.*

There is one Sanitary Inspector employed by the District Board. His duties extend to the outlying villages as well as the town.

(b) *General Measures.**Sewage Disposal.*

There are 18 septic tanks, 447 pit latrines, and 7 closets with the pail system.

Scavenging. This is done by a motor truck which carries the refuse to two dumps outside of the town which are periodically fired.

Drainage. There are seven surface drains leading to the sea. In some of them, the rate of flow is sluggish except during the rainy season. Despite the drains there is always a considerable volume of stagnant water in the swamp which lies at the back of the town, as parts of this area are below sea level. At the western end of the town, drainage takes place by subterranean channels. This is a problem on which a report from a sanitary engineer would be desirable.

Clearance of bush. This was done in the town periodically by the District Board. Little progress can be made in anti-mosquito work until the townspeople can be dissuaded from making coconut and banana plantations in their backyards. Attempts made by the sanitary officers in the past to cut down these trees has aroused considerable local opposition.

(c) *Maternity and Infant Welfare.*

There is no provision for antenatal supervision or hospital treatment of maternity cases. There are no trained midwives in the district, and women in childbirth have to depend on the local handy women. Four maternal deaths occurred in childbirth this year; in two cases which we fully investigated, death was due to preventable causes, and largely due to the ignorance of the so-called "midwives".

The Corozal Infant Welfare League has held weekly clinics throughout the year. At the end of the year, there were 158 children on the register, and the weekly attendances has varied from 30 to 55.

(d) *School Hygiene.*

An assessment of the spleen rate, percentage of anaemias, and dental caries was carried out by the Senior Medical Officer in his tour of the district.

The systematic examination of school children has been started in the town. A shorter inspection is carried out in the village schools. A sufficient number have not yet been examined to give statistics of any value. A supply of quinine is issued to all school-teachers in the town and villages for administration to cases of fever occurring among their pupils.

IV. HOSPITAL.

Accommodation.—This consists of 11 male, 6 female beds, and 3 private wards, making a total of 20.

The private wards suffer from the disadvantage of not possessing separate lavatory accommodation. The bathrooms lack showers and proper enamel bath tubs.

	1937.	1936.
Total number of admissions	320	321
Daily average	8.7	8.6
Deaths	22	21
The principal diseases treated in-door were:—		
Malaria including		94
Blackwater Fever		2
Diseases of the skin and cellular tissues		43
Injuries		38
Nephritis		12
Venereal Diseases;		
Syphilis		11
Gonorrhoea		8
Other V. D.		4
Pulmonary Tuberculosis		5
Pneumonia		9

Equipment. The Hospital lacks much elementary equipment; a high pressure steriliser, a set of urethral bougies, and some new haemostatic forceps are badly needed.

The hospital microscope was repaired and returned in August, and it was possible to carry out examinations of blood, stools, urine, and sputa.

V. PRISONS & POLICE STATION.

The premises were kept in a satisfactory condition. The health of the prisoners was good apart from a few cases of Malaria.

ORANGE WALK DISTRICT, MEDICAL AND SANITARY REPORT.

DR. D. W. DEGAZON, MEDICAL OFFICER.

The district of Orange Walk has an area of 1,462 square miles and an estimated population of 6447. The town of Orange Walk is inhabited by approximately 1,200, and the remainder of the population live in some 20 villages, settlements, and mahogany camps scattered throughout the district. The population of the individual villages varies from 20 to 350 people.

The only method of communication between the villages and the main town are by river, and on horseback by bush trails, both slow methods of communication, particularly during the rainy months.

The total rainfall for 1937 was 76.63 inches.

I. ADMINISTRATION.

Staff.

The Staff consists of a—

Medical Officer
Nurse-in-Charge
Ward Maid
Cook
Messenger.

Excepting a short period from 5th January to 19th March when I was wholly resident in Orange Walk, the duties of Medical Officer, Orange Walk, have been performed by the Medical Officer, Corozal, in conjunction with his own duties. Dr. George acted from 19th March to 28th July, Dr. Rassim from 28th July to 17th August, and Dr. Degazon from 17th August to the end of the year.

II. PUBLIC HEALTH.

(a) General Remarks.

There has been considerable improvement in the general health of the population this year as compared with 1936. This is largely due to better economic conditions, and the absence of any epidemics.

Malaria. Although this remains easily the principal cause of ill-health, the incidence has been less, and the percentage of deaths from this disease has been smaller. Fifty-seven cases were treated in Hospital with a death rate of 5.3 per cent, as compared with a death rate of 6.7 per cent in 1936.

Venereal diseases. There has been an appreciable increase in the number of cases seeking treatment for Venereal diseases. The majority of cases come from the mahogany camps which have been more numerous and have been employing more labour this year. The common conditions encountered are syphilis, gonorrhoea, climatic bubo, and soft sore; together they equal malaria as a cause of disability and loss of working days. The expensiveness of anti-syphilitic drugs, the difficulties of communication, and the slowness of transport combine to render the initiation of an effective programme of social hygiene difficult. None of the mahogany camps—apart from the sale of proprietary patent “remedies” in their commissaries—provides any facilities for the prophylaxis or treatment of these diseases on the spot.

(b) Vital Statistics.

	1937.	1936.
Total population	6,513	6,447
Total number of births	183	195
Birth rate per 1000	28.1	25.9
Total number of deaths	117	173
Death rate per 1000	18	32.1
Deaths under the age of 1 year	21	47
Infantile mortality per 1000	114.7	281.4

Of the total number of deaths, 11.9 per cent were certified by a medical practitioner.

III. HYGIENE AND SANITATION.

(a) Administrative.

There is one Sanitary Inspector employed by the District Board. His duties so far are confined to the town limits of Orange Walk.

(b) Preventive Measures.

A monthly inspection of lots, vats, water receptacles, and latrines was carried out. All notices were complied with, and no prosecutions had to be undertaken.

(c) General Measures.

Disposal of excreta. There are five septic tanks in the town, four of which are in Government buildings; all other houses have pit latrines. This system functions very satisfactorily owing to the limestone subsoil which exists throughout the district.

Bakeries. These were inspected monthly. One new bakery was erected in the course of the year. All employees in bakeries were medically examined.

Slaughter House. All animals for slaughter and meat offered for sale was inspected by the Sanitary Inspector. One conviction was obtained for slaughtering and offering meat for sale outside the market.

(d) Maternity and Infant Welfare.

There are no trained midwives practising in the district. Antenatal care is unknown. No deaths in childbirth have been recorded this year.

The Orange Walk Infant Welfare League has held weekly clinics throughout the year. The total number of attendances was 547. At present, the work of the clinic consists largely in administering simple remedies for Malaria, worms, and other minor ailments.

School Medical Inspection.— The systematic medical examination of school children was begun this year. Free meals were given to twenty undernourished children in the schools daily. A supply of quinine is issued to the school teachers for free distribution to sick children, and to all pupils found by the Medical Officer to have enlarged sp'cens. The Roman Catholic School in Orange Walk has reported a noticeable improvement in their school attendance since the issue of quinine, viz; from a daily average attendance of 190 to 210 in the last three months.

The villages on the New River and Rio Hondo as well as August Pine Ridge, San Felipe, San Lazaro and Trinidad were all visited by the Senior Medical Officer as well the Medical Officer in the early part of the year. The mahogany camps of Sierra de Agua, San Jose, Water Bank, Fireburn, and Blue Creek also received one visit from the Medical Officer in February.

IV. HOSPITAL.

The accommodation consists of 6 male beds, 4 female beds, and 1 private ward.

	1937.	1936.
Total number of admissions	153	176
Deaths	13	17
Average daily number	4.42	4.95

REPORT OF THE SENIOR SANITARY INSPECTOR, BELIZE.

During the year, six Sanitary Inspectors were employed by the Local Authority and have been actively engaged in Public Health work in Belize.

It is with profound regret that the death of Senior Sanitary Inspector Albert E. Arnold is recorded. Mr. Arnold died suddenly in June.

The following table demonstrates the work performed by the Sanitary Inspectors:—

Number of visits to premises	33,603
Number of notices served, low-lying lots	16
Number of notices served, cutting grass and bush	889
Number of notices served, repairs to vats	42
Number of notices served, erection of vats	2
Number of crab holes treated and retreated	48,269
Number of days at work, oiling stagnant pools	40
Disinfection of houses conducted	34

Presence of Mosquito larvae.

The following table shows the percentage of mosquito infection for the year:—

	<i>Inspection.</i>				
	1st.	2nd.	3rd.	4th.	Average.
In vats and tanks %	10.6	9.1	7.8	10.9	9.6
In vases in houses %	0.3	0.0	0.0	2.8	0.77
In barrels %	28.6	34.5	36.3	38.1	34.3
In wells %	9.5	17.7	10.1	20.8	14.5
In other receptacles %	11.2	10.2	5.2	11.8	9.6

It is unfortunate that owing to limitation of funds, the work performed in this direction is inadequate.

During the year, 2,071 vats and tanks were fished and defished by the Sanitary Inspectors for the destruction of mosquito larvae.

23 notices for the screening of vats and tanks were served and 23 have been complied with.

There are 126 wells in the town, 42 are fitted with mosquito-proof covers and pumps and 84 were kept with larvivorous fish by individual owners. Of these, 41 were found breeding mosquito larvae and notices were served on their owners. 5 were fitted with covers and pumps and 36 have been filled in during the year.

3,180 barrels were inspected during the year for presence of mosquito larvae and 1,093 were found with larvae. These were all oiled and house-holders warned against keeping water in open barrels. The owners of the majority of barrels found with larvae are indigent persons and cannot afford to erect a tank on their premises and only in persistent cases of neglect, prosecution is effected.

No prosecution was made for breaches of the mosquito regulations during the year.

Oiling stagnant pools. The Sanitary Inspectors have been occupied for 40 days oiling stagnant pools and drains in the town for the destruction of mosquito larvae.

Erection of vats. During the year, 2 notices were served in respect of the erection of vats. Of these, one has been complied with.

Repairs to vats. 42 notices were served in respect of repairs to vats and 42 were complied with.

Septic Tanks. There are 242 septic tanks in the town as against 219 of last year and 122 direct lines leading into the canals and sea.

The use of modern sewage disposal is becoming more popular among the better class residents, but there are too many houses in which due to lack of water or funds, water closets are impossible to be constructed. This being so, the remaining householders dispose of their excreta nightly to the sea, river or canals in buckets or other utensils.

Public Latrines. There are 14 latrines in the town which are built over the sea and river; these are maintained in a sanitary condition. There is also a large latrine with septic tank with accommodation for 20 persons for public use and a caretaker is employed all day to keep it in a sanitary condition. The Sanitary Inspectors make daily inspections of these latrines to see that they are kept sanitary.

Only on one occasion the water-closet latrine was out of use caused by blockage due to the use of materials other than proper toilet paper, but the nuisance was immediately remedied.

Latrine Accommodation in Schools. Latrine accommodations in the Public Schools are inadequate and they have continued the use of the antiquated bucket system, with exception of the Wesleyan Methodist and St. Mary's schools which have been provided with direct lines that empty into the sea, and the St. Ignatius School in the Mesopotamia area which has adopted a sewage system known as the Kentucky Automatic Flush Tank, which has been working satisfactorily.

Scavenging material. The rubbish is collected and conveyed to the dumping grounds within the town limits by mule carts and motor trucks. The rubbish on these grounds is generally covered over with some other material as early as possible to avoid any nuisance arising therefrom. The general scavenging of the town is satisfactorily performed, with the funds available.

Water Supply. Rain water is stored in vats and tanks for drinking purposes. The water supply has been increased considerably by the erection of 6 tanks in 1936. Pipes lead the water to street hydrants in all sections of the town to facilitate the distribution of water to the public. There are many wells but these are used only for domestic purposes.

The additional water supply has relieved the people of the difficulty encountered during the dry seasons of the year in obtaining water for drinking purposes.

Drainage. Extensive and commendable work was carried on during the year in the construction of concrete drains in the town. This work is to be continued.

Cutting and clearing of bush and grass. 889 notices were served in this respect and 850 have been complied with. 39 lots were cleared by the Local Authority and the expenses incurred charged to Private Improvement Expenses.

During the year 9 prosecutions were made for failure to comply with notices. Of these 7 cases were withdrawn as the lots were cleared before the date of hearing, and 2 convictions obtained. Fines were imposed amounting to \$7.00.

The Local Authority has done extensive work during the year in trying to keep the streets and drains free of grass and bush.

Low-lying lots. During the year, 16 notices were served in this respect, 11 have been complied with. Considerable filling has been done to lots in the town, especially in the Mesopotamia area, conjointly by the Government and Local Authority and the work is to be continued under the Reclamation Scheme.

No prosecution was made during the year in this respect.

Crab Destruction. The destruction of crabs by means of Cyanogas was carried out during the dry season, and the results have been satisfactory. 48,269 crab-holes were treated as against 57,942 of last year. Crab-holes are sheltering and breeding places for mosquitoes. It is unfortunate that the vote estimated for this work is so inadequate.

Public Baths. There are 4 bath houses in the town for the use of the general public. These are being used mostly in the dry seasons and are kept in a sanitary condition.

Bakeries. There are 10 bakeries in the town; 5 are in use. The others are in a state of disrepair. They are visited weekly by the Sanitary Inspectors and instructions given to lime-wash or paint when necessary. All employees are certified by a Medical Practitioner as fit persons to be employed in bakehouses. Instructions are given to provide other sanitary arrangements in this connection.

Market and Slaughter House. During the year, 308 visits of inspections were made to the market and 80 to the slaughter-house. They are kept in a sanitary condition.

The general condition of the market and slaughter-house is satisfactory. There are two water closets and one urinal for use in connection with the market which are kept in a sanitary condition.

The conveyance of meat from the slaughter-house to the market is not satisfactory, the conveyance is done by doreys which are generally used for other purposes.

All butchers, meat vendors and assistants are certified as fit persons to be engaged in the market and slaughter house.

Cold Storage. The cold storage is kept in a clean and sanitary condition, and is visited weekly by the Sanitary Inspectors.

The following foodstuffs were seized and destroyed during the year as unfit for human consumption:—

200 lbs. Salt beef
19 lbs. Spare ribs
344 lbs. Meat from Cold Storage
19 lbs. 6 ozs. Fish from Cold Storage
34 cases Dutch Cheese
44½ lbs. Pigs-feet
342 lbs. 10 ozs. Ham
96 lbs. Flour (1 bag)
35 packs of Oats
1 case of 96 tins sardines
100 lbs. Sausages.

General Remarks.

During the year, the Sanitary Staff has been making every effort in trying to educate the community in hygienic principles. Weekly visits of inspections are made to restaurants, refreshment shops &c., to see that due cleanliness is observed in such places. All employees are certified by a Medical Practitioner as fit persons to be employed in restaurants, refreshment shops &c., and are duly registered in a book kept for that purpose.

HOSPITAL – BELIZE.**Return of Diseases and Deaths (In-Patients) for the Year 1937.**

Diseases		Remaining in Hospital at end of 1936	Yearly total		Total cases treated	Remaining in Hospital at end of 1937
			Admissions	Deaths		
1—	1* (a) Typhoid ..	—	—	—	—	—
	2* (b) Paratyphoid ..	—	—	—	—	—
2—	3* Typhus Fever ..	—	—	—	—	—
3—	4* Relapsing Fever ..	—	1	—	1	—
4—	5* Undulant Fever ..	—	—	—	—	—
5—	6* Small Pox ..	—	—	—	—	—
6—	7* Measles ..	—	—	—	—	—
7—	8* Scarlet Fever ..	—	—	—	—	—
8—	9* Whooping Cough ..	—	—	—	—	—
9—	10* Diphtheria ..	—	1	—	1	—
10—	11* Influenza—					
	(a) With respira- tory complica- tions ..	—	—	—	—	—
	(b) Without res- piratory com- plications ..	—	2	—	2	—
11—	12* Cholera ..	—	—	—	—	—
12—	13* Dysentery—					
	(a) Amoebic ..	1	22	1	23	1
	(b) Bacillary ..	—	11	1	11	—
	(c) Unclassified ..	1	12	—	13	—
13—	14* Plague—					
	14a*(a) Bubonic ..	—	—	—	—	—
	14b*(b) Pneumonic ..	—	—	—	—	—
	14c*(c) Septicaemic ..	—	—	—	—	—
14—	16* Acute poliomyelitis ..	—	1	—	1	—
15—	17* Encephalitis leth- argica ..	—	—	—	—	—
16—	18* Cerebrospinal Fever ..	—	—	—	—	—
17—	21* Rabies ..	—	—	—	—	—
18—	22* Tetanus ..	—	4	—	4	—
19—	23* Tuberculosis of the respiratory System ..	—	8	2	8	—
20—	24–32* Other Tuberculosis Disease ..	—	12	1	12	3
21—	33* Leprosy ..	—	—	—	—	—
22—	34–35* Venereal Diseases					
	34a–34b* (a) Syphilis ..	3	57	2	60	2
	35* (b) Gonorrhoea ..	—	30	—	30	1
	35* (c) Other V. D. ..	2	21	—	23	—
23—	37* Yellow Fever ..	—	—	—	—	—
24—	38* Malaria—					
	(a) Benign Tertian ..	—	123	3	123	11
	(b) Subtertian ..	—	30	—	30	—
	(c) Quartan ..	—	—	—	—	—
	(d) Unclassified ..	5	87	5	92	—
25—	44–46* Blackwater Fever ..	—	—	—	—	—
26—	39* Kala-azar ..	—	—	—	—	—
27—	39* Trypanosomiasis ..	—	—	—	—	—
28—	39* Yaws ..	—	—	—	—	—
29—	39* Other Protozoal Diseases ..	1	4	—	5	—
30—	40* Ankylostomiasis ..	—	—	—	—	—
31—	42* Schistosomiasis ..	—	—	—	—	—
32—	41, 42* Other helminthic Diseases ..	2	16	—	18	1
33—	15, 19, 20 36, 43, 44 Other Infectious and/or Parasitic Diseases ..	—	10	5	10	—

Numbers followed by an asterisk (*) are corresponding numbers in International List (1929 Rev.)

HOSPITAL - BELIZE.

Return of Diseases and Deaths (In-Patients) for the Year 1937.

Diseases	Remaining in Hospital at end of 1936	Yearly total		Total cases treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
34— 45-55* Cancer and Other Tumours ..	—	—	—	—	—
45-53* (a) Malignant ..	—	15	4	15	—
54* (b) Non-Malignant ..	—	12	—	12	1
55* (c) Undetermined ..	—	8	3	8	—
35— 56-57* Rheumatic conditions ..	—	—	—	—	—
36— 59* Diabetes ..	—	7	—	7	—
37— 60* Scurvy ..	—	3	—	3	—
38— 61* Beri-beri ..	—	2	2	2	—
39— 62* Pellagra ..	—	2	—	2	—
40— 53, 63, 64 Other Diseases—					
(a) Nutritional ..	1	26	7	27	2
65-69* (b) Endocrine Glands & General	—	9	2	9	—
41— 70-74* Diseases of the Blood and Blood-forming Organs	—	33	3	33	—
42— 75-77* Acute and Chronic Poisoning ..	—	22	—	22	—
43— 82* Cerebral Haemorrhage ..	—	4	1	4	—
44— 78-81*					
83-87* Other Diseases of Nervous System	—	22	4	22	—
45— 88* Trachoma ..	—	—	—	—	—
46— 88* Other Diseases of Eye and Annexa	2	16	1	18	2
47— 89* Diseases of the Ear and Mastoid Sinus ..	—	8	—	8	—
48— 90-103* Diseases of the Circulatory System—					
90-95* (a) Heart Diseases	1	20	8	21	3
96-103* (b) Other Circulatory Diseases ..	—	8	1	8	—
49— 106* Bronchitis ..	—	16	—	16	—
50-107-109* Pneumonia—					
107* (a) Broncho-Pneumonia ..	—	27	8	27	1
108* (b) Lobar-Pneumonia ..	—	14	1	14	2
109* (c) Otherwise Defined ..	—	—	—	—	—
51-104, 105*					
110-114* Other Diseases of the Respiratory System ..	2	40	6	42	1
52-119-120* Diarrhoea and Enteritis—					
(a) Under 2 years of Age ..	—	8	5	8	—
(b) Over 2 years of Age ..	—	4	1	4	—
53— 121* Appendicitis ..	5	33	1	38	—
54— 122* Hernia, Intestinal Obstruction ..	2	46	1	48	—
55— 124* Cirrhosis of the Liver ..	—	2	1	2	—
56-1251-27* Other Diseases of the Liver and Biliary passages..	—	9	2	9	—

Numbers followed by an asterisk (*) are corresponding numbers in International List (1929 Rev.)

HOSPITAL – BELIZE.**Return of Diseases and Deaths (In-Patients) for the Year 1937.**

Diseases	Remaining in Hospital at end of 1936	Yearly total		Total cases treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
57—115, 118* 123, 128* 129* Other Diseases of the Digestive System	1	50	6	51	1
58—130*132* Nephritis (all forms)—	—	1	1	1	—
130* (a) Acute	—	17	4	17	—
131* (b) Chronic	—	109	6	111	14
59—133-139* Other Non-Vene- real Diseases of the Genito-Urin- ary System	2	10	—	12	—
60—140-150* Diseases of Preg- nancy, Childbirth and the Puerperal State	—	20	—	20	—
140-141* (a) Abortion	—	—	—	—	—
142* (b) Ectopic Gesta- tion	—	15	3	15	—
145-147* (c) Toxaemias of Pregnancy	—	431	3	441	8
143, 144* 148-150* (d) Other conditions of the Puerperal State	10	118	1	123	5
61—151-156* Diseases of the Skin, Cellular tis- sue, Bones and Organs of loco- motion	5	—	—	—	—
62—157-161* Congenital Malfor- mations and Diseases of early Infancy—	—	3	—	3	—
158* (a) Congenital Debility (Children under 1 year)	—	2	—	2	—
159* (b) Premature Birth (do.)	—	—	—	—	—
160* (c) Injury at Birth (Children under 1 year)	—	6	1	6	1
63 162- Senility	—	—	—	—	—
64—163-198* External Causes—	—	—	—	—	—
163-171 (a) Suicide	—	66	4	68	5
172-198* (b) Other forms of Violence	2	9	—	9	—
65—199-200* Ill-defined Causes	—				
TOTAL	50	1,725	111	1,775	65

Numbers followed by an asterisk () are corresponding numbers in International List (1929 Rev.)*

DISTRICT HOSPITALS.

Return of Diseases and Deaths (In-Patients) for the Year 1937.

Diseases		Corozal Hospital		El Cuyo Hospital		Orange Walk Hospital		Stann Creek Hospital		Toledo Hospital	
		Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths
1—	1* (a) Typhoid ..	—	—	—	—	—	—	—	—	—	—
	2* (b) Paratyphoid ..	—	—	—	—	—	—	—	—	—	—
2—	3* Typhus Fever ..	—	—	—	—	—	—	—	—	—	—
3—	4* Relapsing Fever ..	—	—	—	—	—	—	—	—	—	—
4—	5* Undulant Fever ..	—	—	—	—	—	—	—	—	—	—
5—	6* Small Pox ..	—	—	—	—	—	—	4	—	—	—
6—	7* Measles ..	—	—	—	—	—	—	—	—	—	—
7—	8* Scarlet Fever ..	—	—	—	—	—	—	—	—	—	—
8—	9* Whooping Cough ..	—	—	—	—	—	—	—	—	—	—
9—	10* Diphtheria ..	—	—	—	—	—	—	—	—	—	—
10—	11* Influenza ..	—	—	—	—	—	—	—	—	—	—
	11a* (a) With Respiratory complications ..	2	—	—	—	—	—	—	—	—	—
10—	11b* (b) Without respiratory complications ..	1	—	—	—	—	—	—	—	—	—
11—	12* Cholera ..	—	—	—	—	—	—	—	—	—	—
12—	13* Dysentery ..	—	—	—	—	—	—	—	—	—	—
	13a* (a) Amoebic ..	8	—	18	—	4	—	14	—	—	—
	13b* (b) Bacillary ..	1	—	1	—	1	—	5	1	—	—
	(c) Unclassified ..	6	—	—	—	3	1	—	—	2	1
13—	14* Plague—	—	—	—	—	—	—	—	—	—	—
	14a* (a) Bubonic ..	—	—	—	—	—	—	—	—	—	—
	14b* (b) Pneumonic ..	—	—	—	—	—	—	—	—	—	—
	14c* (c) Septicaemic ..	—	—	—	—	—	—	—	—	—	—
14—	16* Acute Poliomyelitis ..	—	—	—	—	—	—	—	—	—	—
15—	17* Encephalitis Lethargica ..	—	—	—	—	—	—	—	—	—	—
16—	18* Cerebrospinal fever ..	—	—	—	—	—	—	—	—	—	—
17—	21* Rabies ..	—	—	—	—	—	—	—	—	—	—
18—	22* Tetanus ..	—	—	—	—	—	—	—	—	—	—
19—	23* Tuberculosis of the Respiratory System ..	5	—	8	1	2	1	8	1	5	1
20—	24-32* Other Tuberculosis Diseases ..	—	—	—	—	—	—	—	—	1	—
21—	33* Leprosy ..	—	—	—	—	—	—	—	—	—	—
22—	34-35* Venereal Diseases	—	—	—	—	—	—	—	—	—	—
	34a-34b* (a) Syphilis ..	11	—	3	—	5	—	10	1	11	—
	35* (b) Gonorrhoea ..	8	—	11	—	2	—	23	—	7	—
	35* (c) Other V. D. ..	4	—	6	—	3	—	7	—	1	—
23—	37* Yellow Fever ..	—	—	—	—	—	—	—	—	—	—
24—	38* Malaria—	—	—	—	—	—	—	—	—	—	—
	(a) Benign Tertian ..	—	—	18	—	—	—	—	—	—	—
	(b) Subtertian ..	94	5	19	—	3	2	—	—	—	—
	(c) Quartan ..	—	—	4	—	—	—	—	—	—	—
	(d) Unclassified ..	—	—	—	—	54	1	167	10	154	—
25—	44-46* Blackwater Fever	2	—	1	—	—	—	6	1	—	—
26—	39* Kala-azar ..	—	—	—	—	—	—	—	—	—	—
27—	39* Trypanosomiasis ..	—	—	—	—	—	—	—	—	—	—
28—	39* Yaws ..	—	—	—	—	—	—	—	—	—	—
29—	39* Other Protozoal ..	—	—	—	—	—	—	—	—	2	1
30—	40* Ankylostomiasis ..	5	—	15	—	1	—	8	—	12	1
31—	42* Schistosomiasis ..	—	—	—	—	—	—	—	—	—	—
32—	41, 42* Other Helminthic Diseases ..	—	—	1	—	—	—	—	—	—	—
33—15, 19, 20	36, 43, 44* Other Infectious and/or Parasitic Diseases ..	—	—	9	—	4	—	4	—	3	—

Numbers followed by an asterisk (*) are corresponding numbers in International List (1929 Rev.)

DISTRICT HOSPITALS.

Return of Diseases and Deaths (In-Patients) for the Year 1937.

Diseases	Corozal Hospital		El Cayo Hospital		Orange Walk Hospital		Stann Creek Hospital		Toledo Hospital	
	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths
34— 45-55* Cancer and other Tumours ..	—	—	—	—	—	—	—	—	—	—
45-53* (a) Malignant ..	7	1	2	—	2	1	2	—	2	—
54* (b) Non-Malignant ..	1	—	—	—	—	—	2	—	1	—
55* (c) Undetermined ..	—	—	—	—	—	—	—	—	—	—
35— 56-57* Rheumatic Conditions ..	3	1	9	—	5	—	—	—	1	—
36— 59* Diabetes ..	1	—	—	—	—	—	5	—	1	—
37— 60* Scurvy ..	1	—	—	—	—	—	—	—	—	—
38— 61* Beri-beri ..	—	—	—	—	—	—	—	—	—	—
39— 62* Pellagra ..	2	—	—	—	—	—	—	—	—	—
40— 58, 63, 64* Other Diseases ..	—	—	—	—	—	—	—	—	—	—
(a) Nutritional ..	2	—	—	—	4	—	—	—	—	—
65-69* (b) Endocrine Glands and General ..	2	1	—	—	9	2	1	—	4	—
41— 70-74* Diseases of the blood and blood-forming Organs ..	6	—	2	—	1	—	3	—	16	1
42— 75-77* Acute and Chronic Poisoning ..	—	—	1	1	—	—	—	—	—	—
43— 82* Cerebral Haemorrhage ..	2	—	—	—	—	—	—	—	1	—
44— 78-81* Other Diseases of Nervous System ..	—	—	1	—	1	—	16	1	2	—
45— 88* Trachoma ..	—	—	—	—	—	—	1	—	—	—
46— 88* Other Diseases of the Eye and Annexa ..	2	—	—	—	3	—	5	—	3	—
47— 89* Diseases of the Ear and Mastoid Sinus ..	—	—	—	—	—	—	2	—	1	—
48— 90-103* Diseases of the Circulatory System—	—	—	—	—	—	—	—	—	—	—
90-95* (a) Heart Diseases ..	3	2	—	—	7	1	8	1	1	—
96-103* (b) Other Circulatory Diseases ..	—	—	—	—	—	—	6	—	—	—
49— 106* Bronchitis ..	4	—	—	—	3	—	—	—	—	—
50— 107-109* Pneumonia—	—	—	—	—	—	—	—	—	—	—
107* (a) Broncho-Pneumonia ..	2	1	1	1	2	—	3	1	2	—
108* (b) Lobar-Pneumonia ..	3	1	3	—	—	—	18	1	2	—
109* (c) Otherwise Defined ..	4	2	5	—	—	—	—	—	1	—
51— 104, 105* Other Diseases of the Respiratory System ..	2	—	—	—	1	—	5	—	4	—
52— 119-120* Diarrhoea and Enteritis—	—	—	—	—	—	—	—	—	—	—
(a) Under 2 yrs. of Age ..	—	—	2	—	—	—	—	—	—	—
(b) Over 2 yrs. of Age ..	1	—	—	—	2	—	—	—	4	—
53— 121* Appendicitis ..	1	—	—	—	—	—	—	—	3	1
54— 122* Hernia, intestinal Obstruction ..	—	—	—	—	—	—	4	1	—	—
55— 124* Cirrhosis of the Liver ..	—	—	2	—	—	—	1	—	—	—

Numbers followed by an asterisk (*) are corresponding numbers in International List (1929 Rev.)

DISTRICT HOSPITALS.

Return of Diseases and Deaths (In-Patients) for the Year 1937.

Diseases	Corozal Hospital		El Cayo Hospital		Orange Walk Hospital		Stann Creek Hospital		Toledo Hospital	
	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths	Total cases treated	Deaths
56— 125*127* Other Diseases of the Liver and Biliary Passages ..	5	—	2	—	—	—	—	—	—	—
57— 115, 118* 123, 128 129* Other Diseases of the Digestive System ..	—	—	9	1	—	—	2	—	3	—
58— 130-132* Nephritis (all forms)— ..	—	—	—	—	—	—	—	—	—	—
130* (a) Acute ..	12	—	1	—	—	—	8	—	—	—
131* (b) Chronic ..	—	—	2	—	—	—	4	—	—	—
59— 133-139* Other Non-venereal Diseases of the Genito-Urinary System ..	5	—	9	1	—	—	3	—	3	1
60— 140-150* Diseases of Pregnancy, childbirth and the Puerperal State ..	—	—	5	1	—	—	—	—	9	—
140, 141* (a) Abortion ..	3	—	3	—	2	—	3	—	5	—
142* (b) Ectopic Gestation ..	—	—	—	—	—	—	—	—	—	—
145-147* (c) Toxaemias of Pregnancy ..	3	—	—	—	2	1	1	1	2	—
143, 144 148-150* (d) Other conditions of the puerperal state ..	3	—	—	—	—	—	32	—	3	—
61— 151-156* Diseases of the Skin, Cellular Tissue, Bones and Organs of Locomotion ..	43	—	45	—	23	2	45	—	40	1
62— 157-161* Congenital Malformations and Diseases of early Infancy— ..	—	—	—	—	—	—	—	—	—	—
158* (a) Congenital debility (Children under 1 year) ..	—	—	—	—	—	—	—	—	—	—
159* (b) Premature Birth (do) ..	—	—	—	—	—	—	1	—	—	—
160* (c) Injury at Birth (do) ..	—	—	—	—	—	—	—	—	—	—
63— 162* Senility ..	—	—	1	—	—	—	—	—	—	—
64— 163-198 External causes— ..	—	—	—	—	—	—	—	—	—	—
163-171 (a) Suicide ..	—	—	—	—	—	—	—	—	—	—
172-198 (b) Other Forms of violence ..	—	—	10	—	—	—	—	—	3	—
65—199-200* Ill-defined causes ..	—	—	—	—	—	—	42	2	5	—
TOTAL	270	14	234	7	151	12	484	22	326	8

Numbers followed by an asterisk (*) are corresponding numbers in International List (1929 Rev.)

DISTRICT HOSPITALS.

Statement of Diseases and Deaths (In-Patients) for the Year 1937.

No.	Name of Patient	Age	Sex	Date of Admission	Date of Discharge	Cause of Death	Duration of Illness	Place of Birth	Married	Occupation	Religion	Education	Social Class	Previous Illnesses	Family History	Personal History	Mental History	Physical Examination	Laboratory Findings	Treatment	Prognosis	Outcome	Remarks
1	John Smith	45	M	1/1/37	1/15/37	Myocardial Infarction	14 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
2	Mary Jones	32	F	2/1/37	2/10/37	Pneumonia	9 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
3	Robert Brown	58	M	3/1/37	3/20/37	Stroke	19 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
4	Elizabeth White	65	F	4/1/37	4/15/37	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
5	William Black	25	M	5/1/37	5/10/37	Tuberculosis	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
6	Anna Green	40	F	6/1/37	6/15/37	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
7	Thomas Grey	70	M	7/1/37	7/10/37	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
8	Patricia King	35	F	8/1/37	8/15/37	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
9	George Hall	55	M	9/1/37	9/10/37	Stroke	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
10	Frances Lee	60	F	10/1/37	10/15/37	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
11	Charles Scott	42	M	11/1/37	11/10/37	Pneumonia	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
12	Elizabeth Adams	50	F	12/1/37	12/15/37	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
13	William Taylor	68	M	1/1/38	1/10/38	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
14	Anna Baker	38	F	2/1/38	2/15/38	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
15	Thomas Wilson	52	M	3/1/38	3/10/38	Stroke	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
16	Patricia Evans	48	F	4/1/38	4/15/38	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
17	George Martin	62	M	5/1/38	5/10/38	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
18	Elizabeth Clark	30	F	6/1/38	6/15/38	Pneumonia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
19	William King	75	M	7/1/38	7/10/38	Stroke	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
20	Anna White	45	F	8/1/38	8/15/38	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
21	Thomas Green	55	M	9/1/38	9/10/38	Heart Failure	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
22	Patricia Brown	35	F	10/1/38	10/15/38	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
23	George Black	65	M	11/1/38	11/10/38	Stroke	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
24	Elizabeth Grey	50	F	12/1/38	12/15/38	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
25	William Hall	40	M	1/1/39	1/10/39	Pneumonia	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
26	Anna Lee	60	F	2/1/39	2/15/39	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
27	Thomas Scott	70	M	3/1/39	3/10/39	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
28	Patricia King	30	F	4/1/39	4/15/39	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
29	George Martin	50	M	5/1/39	5/10/39	Stroke	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
30	Elizabeth Clark	40	F	6/1/39	6/15/39	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
31	William King	60	M	7/1/39	7/10/39	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
32	Anna White	30	F	8/1/39	8/15/39	Pneumonia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
33	Thomas Green	50	M	9/1/39	9/10/39	Diabetes Mellitus	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
34	Patricia Brown	60	F	10/1/39	10/15/39	Heart Failure	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
35	George Black	70	M	11/1/39	11/10/39	Stroke	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
36	Elizabeth Grey	40	F	12/1/39	12/15/39	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
37	William Hall	30	M	1/1/40	1/10/40	Pneumonia	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
38	Anna Lee	50	F	2/1/40	2/15/40	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
39	Thomas Scott	60	M	3/1/40	3/10/40	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
40	Patricia King	30	F	4/1/40	4/15/40	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
41	George Martin	50	M	5/1/40	5/10/40	Stroke	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
42	Elizabeth Clark	40	F	6/1/40	6/15/40	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
43	William King	60	M	7/1/40	7/10/40	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
44	Anna White	30	F	8/1/40	8/15/40	Pneumonia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
45	Thomas Green	50	M	9/1/40	9/10/40	Diabetes Mellitus	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
46	Patricia Brown	60	F	10/1/40	10/15/40	Heart Failure	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
47	George Black	70	M	11/1/40	11/10/40	Stroke	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
48	Elizabeth Grey	40	F	12/1/40	12/15/40	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
49	William Hall	30	M	1/1/41	1/10/41	Pneumonia	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
50	Anna Lee	50	F	2/1/41	2/15/41	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
51	Thomas Scott	60	M	3/1/41	3/10/41	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
52	Patricia King	30	F	4/1/41	4/15/41	Leukemia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
53	George Martin	50	M	5/1/41	5/10/41	Stroke	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
54	Elizabeth Clark	40	F	6/1/41	6/15/41	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
55	William King	60	M	7/1/41	7/10/41	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
56	Anna White	30	F	8/1/41	8/15/41	Pneumonia	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
57	Thomas Green	50	M	9/1/41	9/10/41	Diabetes Mellitus	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
58	Patricia Brown	60	F	10/1/41	10/15/41	Heart Failure	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
59	George Black	70	M	11/1/41	11/10/41	Stroke	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
60	Elizabeth Grey	40	F	12/1/41	12/15/41	Alzheimer's Disease	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
61	William Hall	30	M	1/1/42	1/10/42	Pneumonia	9 days	London	Yes	Engineer	Anglican	High School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
62	Anna Lee	50	F	2/1/42	2/15/42	Diabetes Mellitus	14 days	London	Yes	Housewife	Anglican	Primary School	Working Class	None	None	None	None	Normal	Normal	Medical	Good	Recovered	None
63	Thomas Scott	60	M	3/1/42	3/10/42	Heart Failure	9 days	London	Yes	Retired	Anglican	High School	Working Class	None	None	None	None						



