

# LEPROSY REVIEW.

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## EDITORIAL

### LEPROSY CONTROL IN THE WEST INDIES

The West Indian Colonies have from the first been regarded by B.E.L.R.A. as specially favourable for the successful application of modern methods of controlling, and eventually stamping out, leprosy. Unfortunately the results of the visits to this area of two former B.E.L.R.A. secretaries, to urge the adoption of these methods, proved very disappointing owing to the fact that few of their recommendations were carried out by the island authorities. This was doubtless partly due to financial stringency, although this has not prevented the successful use of these methods in British Guiana by Dr. F. G. Rose, as recorded in our last issue. The recent visits of Dr. E. Muir to a number of the West Indies Islands and his work and recommendations reported in detail in our present issue are very timely in view of the financial assistance which is likely to be provided in the post-war era by the Colonial Development Fund.

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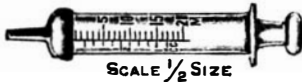



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or two ago the Chacachacare Leprosy Island settlement (where Dr. Muir has been working since the outbreak of the war) in place of an old prison-like asylum in the capital town. Surveys of areas in Trinidad by Dr. Muir have led to the adoption of the long advocated and essential measure of providing weekly hospital and dispensary clinics, where early uninfected cases are treated without segregation, and it is hoped when the surveys are completed to make provision for such economical treatment of all suitable cases.

The report on the large island of Jamaica, on the other hand, shows very little progress in leprosy control since the visit of the writer of this article to the Spanish Town Leper Asylum almost twenty years ago, except in the recent important provision of nursing sisters. Both overcrowding and the accommodation of early and advanced cases in the same dormitories still persist, and plans for improving matters still await funds for carrying them out. It is to be hoped that Dr. Muir's advice on these and other matters will receive effective support, for this comparatively large colony should set a good example to other smaller and poorer West Indian Islands, in some of which a beginning has yet to be made in the adoption of modern methods of leprosy control and treatment.

The following recommendations for remedying defects such as those pointed out in Dr. Muir's reports are those successfully adopted in India and also in British Guiana: The ground should be prepared by surveys to ascertain the prevalence of the disease and by propaganda to remove the ignorance that so greatly handicaps progress. Next and most important is the introduction of clinics for early cases and the release of, or the provision of separate accommodation for, advanced uninfected crippled nerve cases, thus enabling all infected ones to be admitted while still amenable to treatment in a hopeful atmosphere. Periodic examination of all school children should be made to ensure that early cases, and especially infected ones, are detected among contacts. All known contacts and discharged recovered cases should be examined every few months for several years to enable new cases and relapses to be discovered. For this purpose at least one medical officer, and preferably all the health officers, should in turn be given a few months training at either the Trinidad or the British Guiana settlements. When these and the other practical recommendations of Dr. Muir have been systematically carried out for a decade or two the leprosy problem in the West Indies will be well on the way to a successful solution.

## REPORT ON LEPROSY IN JAMAICA

E. MUIR

At the request of the Director of Medical Services and on behalf of the British Empire Leprosy Relief Association, I visited Jamaica from the 5th to the 26th of August, 1942. The visit was also made at the request of the Medical Adviser to the Comptroller for Development and Welfare in the West Indies.

### OBJECTS OF VISIT.

The objects of the visit were to study leprosy as it is found in the island, and to make any recommendations thought necessary towards the control and relief of the disease.

Six days were spent at the Leper Asylum at Spanish Town, during which each case was inspected and classified, an attempt being made as far as possible to trace the source of infection. The visiting Medical Attendant and the Sisters were advised regarding methods of treatment, special cases being prescribed for.

I was present at a meeting of the Official Visiting Board and discussed with the members the proposals for improving the Leper Asylum. I also gave a talk to the patients on the nature of leprosy and the ways in which they themselves may facilitate their recovery.

Visits were made to the parishes of Clarendon, Trelawny and St. Ann and most of the cases living at home in the latter two parishes were seen and discussed with the Medical Officers of Health.

A lecture-demonstration was arranged by the Jamaica Branch of the British Medical Association, at which about 45 Doctors, Health Nurses and Sanitary Inspectors were present, and a further demonstration was given at the Leper Asylum to the Medical Officers of Health and other doctors, which was also attended by the Sisters. A public meeting was to be held in Kingston, but had to be cancelled because of the weather.

### LEPER ASYLUM.

#### SITE, STAFF, DIET.

The Leper Asylum is situated on the outskirts of Spanish Town, the old capital of Jamaica, about 13 miles from Kingston. It is surrounded by a concrete wall and sheet-iron

fence, and the male and female quarters are separated by a sheet-iron fence. The patients are housed in dormitories which are considerably congested, and no arrangement has been made to separate the different types (neural and lepromatous) of cases. The staff consists of a part-time visiting medical attendant and six Sisters, who are responsible for administration and treatment. Recently several acres of adjoining land have been acquired for new buildings and for patients' gardens. I understand that it is proposed to relinquish the present male dormitories for the additional use of female patients. I understand that money has been voted by Government for this purpose, but that delay is caused by the difficulty of obtaining materials at the present time.

The Sisters belong to a Catholic Order. They were installed about two years ago, and it is obvious that considerable improvements have taken place during that time.

The patients are supplied, except for one or two paying patients, with free diet, which, as far as I could gather, appears to be adequate both in quality and quantity.

#### CLASSIFICATION OF PATIENTS.

One hundred and seventy-five of the patients were examined and classified as in Table I. Two male patients had been sent away for punishment.

*Table 1.*

			<i>Male</i>	<i>Female</i>	<i>Total</i>
Lepromatous (L-3)	Open	Cases	48	38	86
	(L-2)	„ „	5	6	11
	(L-1)	„ „	7	1	8
Neural (N-3)	„	„	5	19	24
	(N-2)	„ „	5	7	12
	(N-1)	„ „	—	2	2
Disease Arrested			16	13	29
Not suffering from Leprosy			—	3	3
			86	89	175

To simplify the classification, mixed cases have been counted as lepromatous. It will be noticed that though the sexes are equal in number there were 60 lepromatous males to 45 females, and 10 neural males to 28 females, indicating that, as is generally the case, leprosy is less serious among women.

In three female patients I could find no indication that there had ever been leprosy. These three and many of the

29 arrested cases might, with advantage, be discharged so as to make room for admission of other open cases outside who are at present a danger to the community.

Several of the neural cases would probably become arrested in a few months' time if they were treated with intradermal injections, and their subsequent discharge would afford further room.

Provision would have to be made for many of the discharged patients, especially those who are crippled and disfigured as the result of the disease. I suggest that as far as possible they be quartered near their relatives. A small grant might be made for the erection of a hut and five shillings a week provided for food, an occasional sum being given for clothes. I understand that relatives often refuse to provide for ex-lepers; but probably most of their objections would disappear if the above provisions were made. Also much of the unpopularity of the Leper Home would vanish if people realised that admission to the home does not necessarily mean exile for life. Such a scheme would not only be more popular but considerably cheaper than one based upon a separate institution for lodging discharged lepers in one place. More work might be thrown upon the Medical Officer of Health, in supervision of discharged patients, but the supervision of ex-neural cases would only involve very occasional visits, and the number of ex-lepromatous cases requiring more frequent visits would be small.

Besides the need for more and better accommodation there are many other things urgently required which I have found supplied in all but smallest and most primitive leprosy institutions. A few of the necessities are enumerated below.

(1) An operation room and surgical instruments and appliances. Many of the cases are badly in need of surgical attention and much suffering and maiming might be prevented if proper provision were made for surgical care.

(2) A laboratory with microscope, stains and other appliances. It is important that frequent bacteriological examinations be made, and laboratory and clinical findings be co-ordinated, if individual study of cases and suitable treatment are to be attempted. Laboratory work could be undertaken by one of the Sisters under the supervision of the doctor.

(3) *Dental Clinic.* One of the most serious complicating conditions in leprosy is septic teeth and gums. As

in the Trinidad leprosarium this work could be undertaken by one of the Sisters after she had undergone training in dental work.

(4) *A Motor Van.* This could be used as an ambulance for bringing in patients from outlying districts. It could also be used for taking patients out into the country and especially to the seaside. Anyone visiting the Leper Asylum, and particularly the women's quarters, cannot help realising the cramped conditions in which the patients are confined. Visits to the seaside would to a certain extent alleviate this defect and improve the patients' health.

(5) Provision for employment, such as a suitable workshop, etc. As in other leprosy institutions, the patients should be encouraged to employ themselves in useful activities. Occupation therapy is the most important factor in the treatment of leprosy. The Sisters have already made a beginning in this direction, but their efforts are handicapped by want of appliances.

I have read the recommendations recently made by the Board of Visitors, and I should like to endorse and emphasise the need for increased accommodation. There should be as far as possible separate cubicles, or at least small cottages for not more than 4 or 6 patients. It is small wonder that better class patients object to herding together for years on end in large dormitories.

I consider it important that "closed" cases should be housed in separate quarters and not be allowed to mix, at least at nights, with "open" cases. This would be particularly important if, as is suggested below, early neural cases, especially those found among schoolchildren, are admitted for short periods of treatment.

Formerly children born in the Leper Asylum were not removed and some of them became infected with the disease. The present arrangement is an excellent one, by which children are removed at birth and sent to the Salvation Army Home. Since 1928 no fewer than 25 children have been sent there; of these 6 have died. I examined the remaining 19 children at the Home and found them all in good health and showing no signs of leprosy.

I consider that the patients should be given the full wholesale value for their garden produce, but that production should be limited to and in accordance with, the vegetables required for the institution.

I consider that every open case of leprosy should be compulsorily isolated in the institution, with only a few exceptions in cases approved by the Director of Medical Services and under very careful supervision. Suitable accommodation would, however, have to be arranged for better-class patients.

I agree with the Board's recommendations regarding an incinerator, nightsoil and sewage disposal, erecting of more suitable fences, and draining of the surrounding land.

I consider that it should be possible, as in other similar institutions, for the Medical Officer (subject to the approval of the Director of Medical Services) to enforce discipline for small offences by immediate punishment, using either fines or cell detention. The knowledge by the patients that he had such powers would tend to lessen the need for their exercise.

The site of the Leper Asylum is undoubtedly a most unsuitable one. There are five requirements for a suitable site :

(1) It must be healthy or capable of being made healthy. I understand that malaria is common in the present site, and malaria is one of the most serious impediments in the effective treatment of leprosy. The humidity and high temperature of Spanish Town also render it unsuitable.

(2) A leprosy institution should be far enough away from surrounding dwellings to render mixing with healthy people difficult or impossible. The present site is far too near to Spanish Town.

(3) Plenty of agricultural land.

(4) Easy communication for bringing in supplies, and for the relief of the staff.

(5) Abundant water supply for domestic and agricultural purposes.

I understand that in these last three respects the present site is not unsuitable. Doubtless, removal of the institution to a more healthy and better isolated place is impracticable at the present time, and everything possible should be done to improve the present site and buildings on a temporary basis. I have studied the plans for the improvement of the Asylum and consider that many of the present deficiencies will be relieved when the new buildings are erected and the old ones repaired.



## SPREAD OF INFECTION.

Questioning of the 172 leprosy patients examined in the Leper Asylum elicited a definite history of what might be considered effective contact in 74 cases and of the probable source of infection in 21 others. In 77 cases no history of contact with open cases could be discovered in the short time available for the examination of each patient, though further investigations would probably have considerably lowered this number.

Patients were divided into three categories: (a) those who had spent some years in Cuba or Panama, (b) those who had spent some years in Kingston but had never been abroad, (c) those who had lived only in rural areas and never been in Kingston or abroad. Table II shows the proportion of definite, probable and negative histories in each of these groups.

*Table II.*

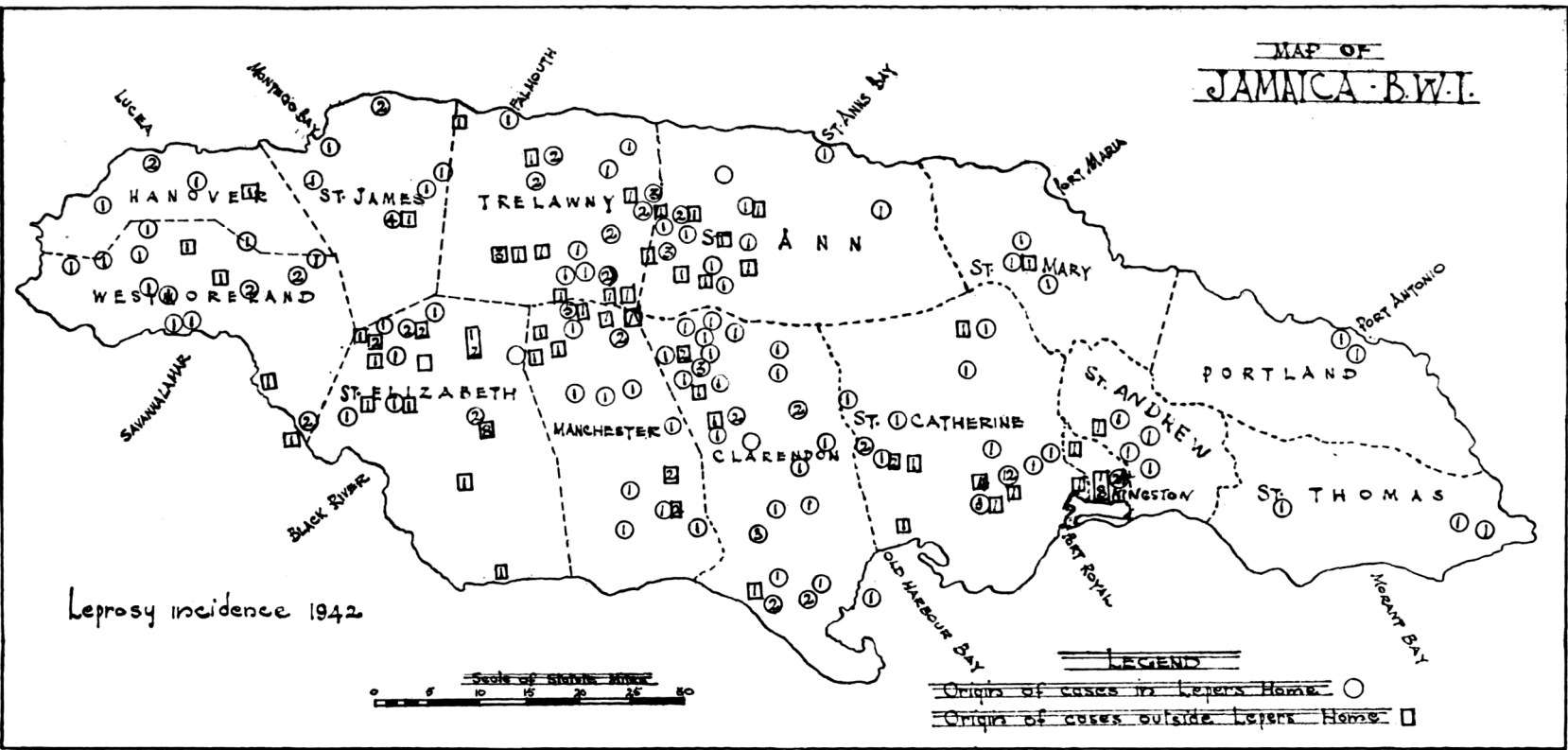
	<i>Cuba etc.</i>	<i>Kingston</i>	<i>Rural Areas</i>	<i>Totals</i>
Definite History	3 (17%)	10 (42%)	61 (47%)	74
Probable History	2 (11%)	3 (13%)	16 (12%)	21
Negative History	13 (72%)	11 (45%)	53 (41%)	77
	—	—	—	—
Totals	18	24	130	172
	—	—	—	—

It will be noticed that the proportion of definite histories is much less among those who have lived abroad. It seems probable that in most, if not all, of the 13 negative histories of this group infection was acquired abroad, and this is a source of infection which should be guarded against.

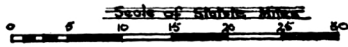
## LEPROSY OUTSIDE THE LEPER ASYLUM.

Spot maps of Jamaica show that in rural areas leprosy is a focal disease. These have been particularly well traced out in the Trelawny parish by the Medical Officer of Health, and, as he points out, the disease began in the mountainous area to the south-west of the parish and is now tending to spread north-east to the lower areas (see spot-map of Trelawny). The group of foci in north-east Trelawny corresponds with similar groups in the adjoining areas of the neighbouring parishes of St. Ann, Manchester and Clarendon. The reason for grouping of these foci in this particular area between the two parishes is worthy of investigation. It has been suggested that it followed on the immigration of a certain group of settlers many years ago (see spot-map of Jamaica).

MAP OF  
JAMAICA - B.W.I.



Leprosy incidence 1942



**LEGEND**  
 Origin of cases in Lepers Home ○  
 Origin of cases outside Lepers Home □

Table III shows the distribution of notified outside cases in the 14 parishes of Jamaica, along with the population of each parish :

*Table III.*

<i>Parish</i>	<i>Female</i>	<i>Male</i>	<i>Total</i>	<i>Population</i>
Kingston ...	3	—	3	85,906
St. Andrew ...	1	4	5	65,281
St. Thomas ...	—	1	1	53,331
Portland ...	—	1	1	64,159
St. Mary ...	—	1	1	94,530
St. Ann ...	3	7	10	103,570
Trelawny ...	7	3	10	48,796
St. James ...	1	—	1	60,312
Hanover ...	1	1	2	54,094
Westmoreland ...	3	—	3	95,685
St. Elizabeth ...	6	12	18	113,756
Manchester ...	5	7	12	92,899
Clarendon ...	5	5	10	120,223
St. Catherine ...	7	5	12	125,943
	—	—	—	—
	42	47	89	1,178,485
	—	—	—	—

That this list is not by any means complete is shown by a one-day visit I paid to the Trelawny parish. In company with the Medical Officer of Health I saw 14 cases, but had not time to see another three known to the Medical Officer of Health. Three of the 14 cases were seen for the first time, one being found in examination of the 64 pupils present in a school, another in the cottage of a previously known case, and the third previously suspected but not seen by the Medical Officer of Health. Of the 14 cases seen, one showed no signs of having leprosy but was suffering from *tinea flava* resembling leprosy; another showed no signs of leprosy; four were cases of arrested disease with deformity; two were early neural (N-1) cases; five were more advanced (N-2) cases; one was an advanced neural case with positive nasal findings (I.-1, N-3). Of the three which were not seen, the description indicated that one was an open, lepromatous case, and the other two probably had arrested disease with deformity.

The visit to Trelawny parish shows: (a) the need for examination of schoolchildren, especially in known endemic areas; (b) that doctors, and especially Medical Officers of Health, should be familiar with the complex clinical signs of



impracticable. It would be better to arrange for their admission to the Spanish Town institution for a few months, but it would be necessary to allot special quarters for their reception so as to avoid as far as possible mixing with infectious patients and the danger of superinfection.

Examination for leprosy in schools should form part of general health examinations, and those undertaking such examinations should be familiar with the early signs of leprosy. Children should be entirely stripped, otherwise lesions may be overlooked.

Care should be specially concentrated on the effective isolation of all "open" cases. I made a separate examination of 19 patients who were admitted to the institution during the last 12 months. Of these, 12 were open cases, and I calculated that each of these must have been a potential spreader of infection for from two to five years before admission. Many "open" cases living in their own homes are in outlandish places where the Medical Officer of Health, with all his other duties, can only visit them at long intervals. Not infrequently after a long journey on foot he finds them "not at home." Perusal of the records shows that some of these cases have been responsible for handing on the disease from generation to generation to relations and neighbours. I have dealt below with the laws regulating leprosy, but I consider that the regulations controlling "open" cases should be strengthened, and rigorously enforced when necessary.

Another difficulty in the path of control is the unpopularity of the Leper Asylum. I am told that none of the present patients have sought voluntary admission, with the exception of a few who have been forced in by extreme poverty. This is very different from the Trinidad leprosarium, where the majority seek voluntary admission and the law has seldom to be invoked.

### LEPROSY LAWS.

The control of leprosy in Jamaica is governed by two separate laws: the unrevised Leper Asylum Law of 1896, and the Public Health Law amended up to 1942.

According to the former, leprosy patients can be admitted in one of three ways:

- (a) Under Section 6 the removal of leprosy patients to the Asylum is in the hands of the Resident Magistrate, who upon its being certified to him by a registered Medical Practitioner that a person is a leper, and by two Justices

of the Peace that he is too poor to look after himself, may make an order that he is to be admitted to the Leper Asylum.

(b) Under Section 7, the Resident Magistrate may take proceedings against anyone afflicted with leprosy, if he is proved to have been wandering about, begging, collecting alms, seeking precarious support or exposing himself in public places. Upon the oath of any registered Medical Practitioner that this person is afflicted with leprosy, it is lawful for the Magistrate to make an order, subject to the approval of the Governor, for his removal to a Leper Asylum, unless security is given by a bond with one or more sureties to the amount of £20 that he shall be properly maintained and treated in private, and shall not be permitted to be at large.

(c) Voluntary patients who are able to contribute to their support can be admitted without reference to a Magistrate.

The discharge of a patient from the Leper Asylum is governed by his ability to provide or have provided a security of £20 similar to that above.

Under the Public Health Law, leprosy is included among infectious diseases which have to be notified by all registered medical practitioners to either the Local, or the Central, Board of Health. Under this Law the person suffering from the infectious disease may (a) be isolated at his home if it is considered suitable, or can be rendered suitable by appropriate means, or (b), if this is not considered practicable, he may be removed, if necessary by force, to an isolation station or hospital.

Under the Leper Asylum Law, the criterion for removal to isolation is a "means test," the ability of the patient to maintain himself according to a certain standard. Under the Public Health Law the criterion is one of infectiousness and the danger of the spread of disease to the public. There is a conflict between the two laws in that power to isolate under the Public Health Law does not give power to isolate in the Leper Asylum, since admission to the Leper Asylum is governed by a separate law.

Since 1896, when the Leper Asylum Law was drafted, ideas about leprosy have changed. It is now realised that the deformed leper begging in the street, though revolting to look upon, is not an important source of infection. In him the

disease may have died out, leaving only scars, and he may be no more able to transmit leprosy than a pock-marked person can transmit smallpox. The chief danger is from the "open" case which, as the disease advances, is recognised by nodules and thickenings, especially of the face and ears, but which, to begin with, may show no easily recognised signs. Moreover, the place of danger is not the street but the home. Leprosy is spread by close contact to the child in arms, and then in a diminishing degree to those who share the bed, the room, the house, and those who come into occupational or social contact.

The Leper Asylum Law deals with leprosy either as an infirmity or an offence, to be controlled by the Poor Relief Agent or the police. The Public Health Law regards leprosy as an infectious disease, but, as far as isolating patients in the Leper Asylum and discharging them again, the special law functions.

In British Guiana, Trinidad and other British West Indies the Leprosy Act arranges for the removal of all cases to the leprosy institution. Only cases in which the disease is slight and of the "closed" (neural) type are permitted to remain outside. Moreover, the control of leprosy in these colonies is in the hands of the Public Health Authorities. Recently, an up-to-date, revised draft of the Trinidad Leprosy Act has been prepared; I suggest that the Jamaica Leprosy Law be based upon similar lines. Meanwhile, perhaps, rules might be made to facilitate the admission and make more difficult the discharge or abscondence of "open" cases.

I would suggest that a complete confidential list be made of persons in Jamaica suffering or formerly suffering from leprosy, classifying them under the following groups:

- (a) "Open," L-1, L-2, L-3; "closed," N-1, N-2, N-3; arrested.
- (b) Segregated in the Leper Home; living outside the Leper Home.
- (c) Division according to parishes and districts.
- (d) Contacts of infectious cases, and a record of their repeated examinations.
- (e) A list of new cases found each year, especially among contacts and on school examination.

It might be the duty of one officer specially trained in this work, in consultation with the Medical Officer of Health, to keep these lists up to date.

## STAFF, TRAINING AND EDUCATION.

The *sine qua non* of leprosy control is the provision of one doctor who would be given an opportunity of at least three months' training in a well-organised leprosy institution such as that in Trinidad. This man on his return to Jamaica would undertake an island survey and be placed in charge of the Leper Asylum.

In addition to this, arrangement should be made for health officers to undergo a short period of training, say three months, at the Leper Asylum with this officer. Such an arrangement at present exists in Trinidad, where it has already been found to be most valuable in the control of the disease.

The Sisters in charge of the Leper Home have suggested that one of their number should spend a similar period at Chacachacare, where she could study dentistry, laboratory methods and the routine work of the leprosarium. I shall be glad to give facilities if this can be arranged.

As elsewhere, one of the chief difficulties in the control of leprosy is the misconceptions which are present regarding leprosy. The general public consider the disease hereditary and are fatalistic about the spread of infection. Doctors and educated members of the public tend, on the other hand, to have an undue fear of the disease quite out of proportion to any danger involved when simple precautions are observed. Education of the public through an enlightened medical profession, and especially through the Medical Officers of Health, should gradually remove these misconceptions.

## CONCLUSIONS.

Strictly, from the standpoint of morbidity and mortality, leprosy is not a major disease in Jamaica. Leprosy remains endemic below a certain level of sanitation and standard of living. In some parts of Jamaica this level has been surmounted, in others it has not. But those at the higher level must suffer the danger as long as those at the lower level remain.

There are two main reasons why leprosy should be treated as more important than its mortality and morbidity would seem to warrant. It is held in far more horror than other more fatal diseases, indeed its non-fatality and the long, living death to which it sentences its victims make it more dreaded than any other disease. The other reason is the comparative ease with which leprosy could be controlled if a definite persistent policy were adopted along the right lines.



In the above pages I have made suggestions in accordance with my experience of leprosy in other countries and my short study of conditions in Jamaica. They may be summarized as follows :

1. There is urgent need for improvements in the Leper Asylum. In the past it has been an Asylum, a place of refuge for those suffering from a hopeless infirmity. What is required is a leprosy sanatorium or leprosarium where cases can be admitted as soon as possible with even more hope of recovery than in a well-conducted tuberculosis sanatorium. The site is wrong, the buildings are unsuitable and congested, but much can be done to improve these short of the (at present) difficult task of erecting a new institution on a fresh site. For the last two years definite improvements have been made under the care of the sisters, and they should be given every possible facility and help. A whole-time doctor for leprosy work who has had a chance of studying leprosy elsewhere is essential. Occupation and living interests are needed as the most important part of treatment and render more cheerful the life of the patients.

The improvement of the institution along such lines should render it more attractive and gradually lead to more voluntary admissions and better discipline.

2. A clearer distinction should be made between "open" and "closed" cases. The former should be allowed to live outside the institution only when certain strict rules are complied with and adequate medical supervision is possible to prevent the spread of infection. The law should be amended so as to give adequate power to the Public Health Authorities. Considerable room could be created in the Leper Home by discharging patients in whom the disease has died out and, later, others who would reach this condition in a short time by means of treatment. These could be quartered near their relatives, assistance being given for their maintenance.
3. A survey is required with special regard to the contacts of "open" cases and schoolchildren. Record of all cases and contacts should be made in consultation with the Medical Officers of Health and the lists kept up to date. All doctors should be given an opportunity to familiarise themselves with the diagnosis and classification of leprosy and the means of control. The public should be educated in the nature and dangers of leprosy.

## ACKNOWLEDGMENTS.

I wish to thank the Director and Assistant Director of Medical Services, the Government Bacteriologist and other Medical Officers for the arrangements that they made for my studies in Jamaica, and the Medical Officer of the Leper Asylum and Sisters for all the help they have given at that institution. I wish also to acknowledge with thanks the financial arrangements made by the Comptroller and his Medical Adviser. I found the assistance of Mr. I. E. Davies of considerable value

## REPORT ON LEPROSY IN BARBADOS

E. MUIR

At the request of the British Empire Leprosy Relief Association, I visited Barbados, arriving on the 13th January, 1942. A previous visit was made by my predecessor, Dr. Robert Cochrane, in September, 1934. As arranged by the Chief Medical Officer, I gave a series of talks and demonstrations on leprosy to between 17 and 19 doctors, and addressed a public meeting at which His Excellency the Governor presided and about 700 were present.

All anti-leprosy measures in Barbados centre round the "Lazaretto," which is situated some three miles north of the centre of Bridgetown, the capital. I visited this institution in company with the Chief Medical Officer, the Visiting Physician and the Superintendent.

## LAZARETTO.

This institution stands on a site of 32½ acres. The buildings are of permanent stone and cement structure, and I found everything very clean and tidy. The patients are lodged in wards, some of which are sub-divided with wood and canvas into separate dormitories. Some of the wards have been closed, as the number of patients is now far less than formerly. There are separate male and female quarters, each of which is surrounded by a high wall surmounted with barbed wire. Patients are not allowed to go outside, but friends are allowed

to visit them three days a week, precautions being taken to avoid infection.

*The Staff* consists of a part-time visiting physician, who visits the institution daily, a superintendent, an assistant steward, 16 attendants, and a matron.

*Patients.* There are at present 28 male and 28 female patients. The following table shows the number of patients, admissions, discharges and deaths for the last 17 years :

ADMISSIONS.

Year.	First admissions.	Relapses	On compassionate grounds.	TOTAL.	Discharges	Re-discharges.	Deaths.	In residence at end of year.
1924	0	0	0	0	0	0	0	173
1925	7	0	0	7	3	0	6	171
1926	8	0	0	8	14	0	7	158
1927	9	1	0	10	17	0	10	141
1928	5	2	0	7	9	0	9	130
1929	6	0	2	8	13	0	10	115
1930	6	2	3	11	8	0	6	112
1931	6	0	2	8	9	0	9	102
1932	5	0	1	6	7	0	12	89
1933	8	0	2	10	5	0	8	86
1934	1	2	1	4	5	0	10	75
1935	5	2	5	12	0	3	5	79
1936	2	8	1	11	3	0	13	74
1937	2	2	0	4	2	0	7	69
1938	6	5	0	11	2	0	8	70
1939	1	0	0	1	2	0	11	58
1940	5	2	0	7	1	0	7	57
1941	4	1	5	10	0	3	7	56
	86	27	22	135	100	6	145	

It will be noticed that the number of patients is now only a third of that in the end of 1924. Those admitted "on compassionate grounds" are ex-lepers who have contracted trophic lesions or other ailments without any return of active leprosy. They are taken in for a short period and fed and nursed until they are fit to go out again.

It is noticeable that while the number of deaths during the first seven years of this period is 0.77 times that of discharges, during the last 10 years the number of deaths is about 3.26 times that of discharges. The main reason for this appears to be that in the former years there were many hopeful cases which recovered, but in the latter years a residue of irrecoverable cases has gradually accumulated, while new admissions of hopeful cases have been less and less.

This fact has an important bearing on the mental atmosphere of the institution. Once hope of recovery has been lost there is a tendency for the mental outlook to become circumscribed and narrow, and this is the more so when patients become crippled and increasingly incapable of taking part in active work. It is easily understood that the minority of less advanced cases, who under favourable circumstances might hope to recover, are adversely influenced by this depressing mental atmosphere.

Also the smallness of the number of active and hopeful cases make it difficult to organise communal or social activities for their benefit. This is a matter of extreme importance, as one of the most important requirements for recovery is cheerfulness and mental and physical activity.

The general atmosphere of the Lazaretto is further indicated by the frequent complaints which the patients make about food, conduct of the staff and other matters. Trivial occurrences are exaggerated into serious matters, and life is made bitter by a feeling of discontent.

The remedy for this kind of conduct is not repeated concessions, but provision for more opportunities of activity and self-expression.

As regards the hopeful cases, it would be well if provision could be made for them to be transferred to some larger leprosarium such as that in Trinidad or British Guiana, where there is whole-time expert medical supervision and where the prevalent atmosphere is one of hopefulness and activity. There are many difficulties in the way of such a scheme and special legislation would first be necessary.

An alternative method would be to segregate the hopeful patients in a separate part of the institution and make special arrangements for employment, exercise and other forms of treatment along modern lines.

#### PRESENT STATE OF LEPROSY IN THE COLONY.

While the marked diminution of admissions to the Lazaretto shewn in the above table seems to indicate that leprosy is diminishing in the Colony, this indication must be taken with reserve for the following reasons :

- (a) The Lazaretto, as we have just indicated, has become less and less attractive as the prevailing type of inmate became increasingly hopeless and disabled.
- (b) Only those lepers who are convicted of plying certain

trades, or using hotels or other public buildings, or are found begging in the streets, are liable to compulsory internment. Thus all who have a competence of their own or have friends who are willing to support them can remain at home, and they are not likely to seek voluntary admission to the Lazaretto. Indeed, I am informed by the visiting physician that voluntary admissions are very rare indeed.

- (c) Leprosy is a disease which is not difficult to hide. This is especially so during the first few years of the more severe and dangerous type. Examination of the patients admitted during the previous three years showed nine females and six males. Of these fifteen, seven have been admitted for less than one year, and six for less than two years. With one exception all were infectious cases, and twelve were highly infectious. Thus twelve must have had opportunities of spreading leprosy for three or more years before internment.

We have to confess, therefore, that we have at present no reliable data for calculating the amount of leprosy in the Colony or for estimating whether or to what extent it is diminishing under the present methods used for its control. I have discussed this matter with the doctors who attended the course of demonstrations referred to above, and it seems to be their unanimous opinion that there is a great deal of leprosy at large in Barbados and that the present control system is quite inadequate.

#### DISTRIBUTION OF LEPROSY IN BARBADOS.

Our only figures for determining which parts of the Island are most affected are the records of admission to the Lazaretto. The following table shows the number of lepers admitted from each parish during the last 40 years.

Parish.	Lepers admitted.	Total population of parish in thousands.	Lepers per thousand admitted.
St. Michael	245	79	3.00
Christ Church	57	27	2.11
St. Philip	48	14	3.43
St. George	19	14	1.36
St. John	20	9	2.22
St. James	22	11	2.00
St. Thomas	6	9	0.66
St. Peter	18	9	2.00
St. Lucy	13	7	1.86
St. Joseph	7	7	1.00
St. Andrew	2	7	0.29

While more than half the lepers came from St. Michael's

parish including Bridgetown, it is to be noted that St. Philip furnished a larger number per thousand of the population.

When the admission figures are looked into more particularly it is found that there were 28 admissions from Black Rock, 18 from Nelson Street and Golden Square, 14 from Cheapside and Lakes Folly, 14 from Wharf, 13 from Beckles Road, 9 each from Carrington's Village and Chapman's Lane.

It is found, moreover, that 378 of the total 457 cases come from 79 foci and that 209 come from 28 foci.

A few points of importance can be deduced from the above figures :

- (1) The fact that leprosy tends to concentrate in towns as shown by the large number in St. Michael's parish.
- (2) That in spite of this leprosy is a disease of villages and small communities as shown by the high incidence per thousand in a remote rural area like St. Philip.
- (3) Although leprosy is not a hereditary disease it tends to concentrate in small social foci such as a family or group of neighbouring families.

From this we may deduce the importance of thorough and repeated examination of contacts of all known cases; and, as leprosy is a disease which may take years to develop, these examinations should, at least in some cases, be repeated for a number of years.

#### SUGGESTIONS FOR THE CONTROL OF LEPROSY IN BARBADOS.

I would suggest the use of the method which was developed in India and which in various modifications has been adopted in many parts of the tropics and sub-tropics. This is a triple system including education, treatment and survey.

##### (1) *Education.*

One of the difficulties in the way of control is the ignorance of the public regarding leprosy, and various misconceptions that they have about the disease. Once they come to realise its true nature, that in most cases it can be got rid of if treated early, then they are likely to come forward for early treatment and not as at present conceal it as long as they are able. Concealment has two disastrous effects: the disease passes on beyond the early remediable stage without effectual treatment, and others are infected by contact since the patient takes no steps to isolate himself.

##### (2) *Treatment.*

The majority of early cases are generally found to be

suitable for out-patient or domiciliary treatment before they have reached the infectious stage. It is the dread of the Lazaretto and the stigma of being known to the public as a leper that drives to concealment.

(3) *Survey.*

From what is written above it seems obvious that all contacts with known cases should be examined thoroughly and repeatedly, and at the same time the nature of leprosy should be particularly explained to them so that they may understand the dangers and may come forward at once for medical examination as soon as any suspicious signs begin to appear. It is important also that all physicians, health officers, sanitary inspectors, and health nurses should be familiar with the early signs of leprosy.

In order to carry out the above programme, the following would be necessary :

(1) Provision of a doctor who, after making an intensive study of leprosy, would be responsible for anti-leprosy activity in the Colony and act as leprosy specialist. The duties involved would entail a large amount of work to begin with, but after this period was over only part-time service would be required. I would suggest that the intensive study of leprosy might be made at Chacachacare (Trinidad) and Mahaica (British Guiana) and should extend over a period of three or four months.

(2) Amendment of the Lepers Act so that examination of contacts would become compulsory. If the scheme were successfully worked, however, it should generally not be necessary to invoke the law for this purpose.

(3) Provision of suitable quarters for hopeful cases who, on account of infectiousness or need of careful treatment, require residence in an institution. These quarters would either be at the present Lazaretto or elsewhere, but in any case would be entirely shut off from the quarters of the hopeless incurable cases. The place would be made as attractive as possible, and would provide for occupational therapy and other treatment along modern lines, so that patients would seek voluntary admission with a view to recovery.

(3a) A much more satisfactory alternative to providing quarters for hopeful cases in Barbados itself would be an arrangement for such cases to be sent to a large leprosarium such as that in Trinidad or British Guiana, where they could have the advantage of modern treatment under

favourable circumstances; expenses would be met by the Government of Barbados or by the West Indian Development and Social Welfare Fund. To arrange this, however, three difficulties would have to be overcome :

- (i) The law forbidding the entrance of non-domiciled lepers to these countries would have to be amended.
- (ii) Patients might object to being exiled so far from home and relatives.
- (iii) It might be difficult to arrange for suitable transport.

(4) Facilities in one or more clinics for the treatment of early non-infectious cases. Such clinics could be held once a week at the Hospital, almshouses or other suitable places and would be under the charge of the Leprosy Specialist. In Trinidad such clinics are proving very popular and some patients have recovered within a few months.

(5) I would suggest the formation of the Barbados Branch of the British Empire Leprosy Relief Association along the lines of the Branch in British Guiana. This might suitably be an expansion of the existing After-Care Committee which looks after the interests of discharged patients. Its functions would be :

- (a) To arrange for lectures and other means of informing the public about the nature of leprosy.
- (b) To take an interest in and afford help to, the patients in the Lazaretto by arranging entertainments and providing literature and comforts.
- (c) To help as far as possible discharged patients and look after their welfare.

Objection is often made to taking active measures for the control of leprosy on the ground that there are other much more serious problems such as tuberculosis and malnutrition. But, if leprosy is a lesser problem, that is all the more reason why a strong effort should be made to solve it rapidly. Also an attack on leprosy along the lines indicated above will tend to clear the way for dealing with such conditions as tuberculosis and malnutrition, which, though more serious and widespread, are less feared by the public.

I wish to express my gratitude to His Excellency the Governor for the interest he has taken in the objects of my visit, and to the Chief Medical Officer who planned my programme and spared no effort towards making it a success.



## REPORT ON LEPROSY IN ST. LUCIA

E. MUIR

On behalf of the British Empire Leprosy Relief Association I visited St. Lucia, arriving at Castries, the principal town, on the 19th February, 1942. The majority of those known to have leprosy are segregated in the Leper Home, but the Senior Medical Officer took me to see four patients, all of them severe lepomatous cases, who are isolated in an apparently satisfactory manner in their own homes.

On the 23rd February I set out with Dr. Weatherhead, the Senior Medical Officer, to visit the Leper Home at Malgre-toute. This is situated on the south-west of the island, about two miles from Soufriere, at the foot of the mountain known as Petit Piton. Soufriere can be reached by launch from Castries in about two hours, but we went by motor, a journey of about four hours. This afforded an opportunity of seeing the island and examining on the way the children of two schools. I examined also a school in Soufriere the next day. On the 24th we spent four and a half hours examining the patients in the Leper Home.

## LEPER HOME.

The Poor House and Leper Home lie a few hundred yards from each other, the latter being shut off and surrounded by a wire-netting fence. This has the disadvantage of adding the distinctly depressing atmosphere of the paupers to that of the lepers; whereas, if recovery from leprosy is aimed at, everything should be done to make the Leper Home as bright and cheerful as possible. There is, however, considerable saving in supervision, as the two institutions are under the same doctor, steward and head nurse. The Medical Officer of District III acts as the visiting Medical Superintendent.

*Accommodation.*

The male patients are lodged chiefly in one long ward, with a smaller ward for the more hopeful cases. Up the hill and shut off by a separate fence is the female ward, with accommodation for eight patients. Both male and female main wards, but especially the latter, are dark and gloomy. The arrangement is inferior to that at Antigua and St. Kitts, where there are two-roomed cottages with a separate room for each patient.

Water is supplied by pipes from Soufriere to the male

wards, and it is advisable that similar arrangements be made for the female ward.

On the slope below the cottages there is plenty of land which is cultivated by the patients, this forming their chief form of activity.

#### *Diet.*

I inspected the food, which in many respects appears to be adequate when supplemented by the produce of their own gardens. It would be well, however, if the patients were encouraged to grow more fruit, such as papaw, and green vegetables such as lettuce. The food supplied by the institution is prepared by a cook in the kitchen, while the patients cook their own produce for themselves in the back galleries of their wards. There is an adjoining citrus orchard, but the trees have become diseased and unproductive. I understand that this is to be replanted, but would recommend that in the meantime oranges or grapefruit be supplied to the patients as much as possible.

#### *Staff.*

As mentioned above, there is a visiting Medical Superintendent, a Steward and a Head Nurse (not fully trained) in combined charge of the Poor House and Leper Home. In the Leper Home there are also two nurses (untrained), a cook, a wardmaid, and a male attendant. I consider it very advisable that there should be someone more fully trained to look after the dressings and nursing, and living on the spot. One of the outside patients, a fully-trained and highly experienced nurse, herself suffering from leprosy but at present in good general health, would, I understand, be willing to live in the home and look after this side of the work. I strongly recommend that she be employed, a suitable salary and accommodation being given. With such an addition to the staff the activities of the female patients could be developed, their lives could be made more cheerful and the institution more attractive.

#### *Patients.*

I found 29 inmates in the institution and had an opportunity of examining each of them separately and classifying them according to the type of disease. I also went into their histories as far as possible with special regard to their probable sources of infection.

One factor appears to have an important bearing on the latter, viz., family or other connections with French Guiana, in which country the incidence of leprosy is known to be par-

ticularly high. Of the 29 inmates, 6 had resided in Cayenne and 12 more had had indirect contact with that country through relatives. Only in 11 was there no history of such direct or indirect contact.

The importance of this contact is shown by the history of J.L. He went to Cayenne about 26 years ago. He acquired leprosy and died in the Leper Home about 10 years ago. Five of his sons and daughters and one grandchild are now in the Leper Home. The following table shows three generations:

Generations:	I.	II.	III.
J.L. (L-3)	(D.C.C.) (Dead)	O.J. (L-3) (I.C.C.)	{ M. ? M. ?
		W.J. (L-3) (I.C.C.)	{ M. ?
		F.J. (L-3) (I.C.C.)	—
		A.E. (I.C.C.) (?)	{ R. ?
			{ B. ?
			{ E. ? M. ?
			{ M. ? M. ?
			{ T. ? V. ?
		A.C. (I.C.C.) (?)	{ M. ? L. ?
			{ E. ? N. ?
			{ R. ? F. ?
		B.G. (?)	A. (L-3)
		A.J. (Dead)	—
		L.L. (L-3)	—
		M.L. (L-3)	—

[“L” indicates the lepromatous or severe infectious type, and “N” indicates the neural or non-infectious type of leprosy, the figures following “L” and “N” indicate the degree of the disease. D.C.C. indicates “Direct Cayenne Contact” and I.C.C. “Indirect Cayenne Contact.” Contacts requiring periodic examinations for leprosy are indicated by a query mark.]

The above table accounts for six of the present patients in the Leper Home. The following list mentions the remaining 22 lepers and ex-lepers in the Home:

- A.G. (30) (N-3) was in contact with M.J. (L-3) (Dead).  
 A.E. (70) (L-2) (D.C.C.) was in Cayenne for 2 years at 30 years of age. Leprosy appeared 12 years later.  
 J.W. (67) (N-3). No source of infection traced.  
 A.L. (28) (L-3). No source of infection traced.  
 A.D. (33) (D.C.C.) (Disease arrested), worked with G.J. (L-3) (Dead)  
 P.F. (67) (I.C.C.) (Disease arrested). Contact with E.P., uncle of C.F. (L-3).  
 E.P. (52) (N-3) (D.C.C.). In Cayenne 1907-1921. Contact with C. and P.F.  
 P.B. (35) (L-3), worked within half-a-mile of Leper Home, his children are T. ? L. ? F. ?  
 N.G. (25) (L-3). His brother and sisters are C. ? S. ? A. ?  
 F.V. (55) (L-3) (D.C.C.). In Cayenne from 1907-1910.  
 C.G. (17) (L-3) (I.C.C.). Contact D.M. (L-3).  
 N.H. (48) (L-3) (D.C.C.) was in Cayenne 1914-1917, 1925-27, 1932-34.  
 Children: R. ? E. ? C. ? Brothers and sisters are E. ? A. ? U. ? I. ?  
 D.M. (22) (L-3) (I.C.C.). Father in Cayenne for 34 years.  
 P.B. (38) (L-3). Brothers and sisters are T. ? D. ? F. ? H. ? G. ? C. ?  
 D.L. (53) (N-2). No source of infection traced.  
 E.F. (18) (L-3) (D.C.C.). Came at age of one from Cayenne. Aunt is M. ?  
 Children of M. are C. ? H. ? D. ? M. ? L. ?  
 C.C. (30) (L-3) (I.C.C.). Father in Cayenne 1800-1902.  
 O.M. (21) (Disease arrested). Father had leprosy and died 14 years ago.

- B.L. (38) (L-3). No source of infection traced.  
 C.F. (44) (L-3) (I.C.C.)—See P.F. above.  
 I.R. (29) (L-3) (I.C.C.). When 15 years old acted as maid to (L-3) case.  
 R.J. (50) (L-1). Daughter is L.G.?

[The figures in brackets immediately after the initials indicate the present age of each patient. For the meanings of other letters and figures see the note in brackets above.]

Examining the above table and list, which include 25 lepers and 3 ex-lepers, it is seen that 21 are of the "open" lepromatous type "L," 19 being of the severe degree "L-3," and 2 less severe "L-1" and "L-2." Only 4 are of the "closed" or non-infectious neural type, while in 3 the disease has died out or become arrested. In the only remaining inmate of the Home no sign that leprosy had existed could be found.

#### CONTACT LIST.

In most countries where leprosy is endemic it is usual to find a number of comparatively slight neural cases at least equal to, and generally much larger than, the number of lepromatous or "open" cases. Many of the 19 severe "open" cases must have been potential spreaders of infection for months or years before they reached the stage at which they were recognised as having leprosy and were interned. The danger of this is amply shown in the case of J.I. recorded above. It is important, therefore, that as full as possible a list of contacts of all known present and past "open" cases should be made, emphasis being given to child contacts, as children are known to be particularly susceptible to leprosy. The cases marked with queries in the above table and list might become the nucleus of the Contact List, the number being gradually increased as further enquiries are made.

All those on the list should be examined for the earliest signs of leprosy every three to six months. As leprosy may take many years to develop, these examinations should continue over a period of several years.

It will be noticed that in 15 out of the 28 cases it was possible to trace the probable source of infection. In many of the remaining 13 further enquiry would probably elicit the source. In this way other cases might be brought to light.

Considering the apparent importance of connection with Cavenne as the source of infection, it would be well to add to the contact list individuals or families having a close contact with that country. I also found two non-infectious lepers living in their own houses, one a boy and the other an adult,

both of whom had spent many years in Cayenne and obviously contracted the disease there.

The recognition of leprosy should always be included in examinations of schoolchildren.

#### RECOGNITION OF LEPROSY.

A couple of talks on leprosy and demonstrations were given to Doctors in the Hospital at Castries; Sanitary Inspectors and Nurses were also present. It is important that all those coming in contact with possible sufferers from the disease should be thoroughly acquainted with its nature and especially with the recognition of early signs.

A public lecture was also given at which His Honour the Administrator presided.

#### ACKNOWLEDGMENTS.

I wish to convey my thanks to His Honour the Administrator for the interest he has taken in my visit, and especially to the Senior Medical Officer for arranging my programme and for the time and trouble he has taken in helping me to carry it out.

## REPORT ON LEPROSY IN ST. KITTS AND NEVIS

E. MUIR

I arrived in St. Kitts on the 5th February, 1942, and was met by Dr. J. W. Thomson, who had kindly invited me to stay with him. On the next day Dr. Thomson took me out to the Leper Home, about 10 miles from Basseterre, the principal town of St. Kitts. I spent the day with Dr. Solomon, who is temporarily in charge, examining and classifying the patients and inspecting the Home.

#### LEPER HOME.

The *Staff* consists of a visiting Medical Superintendent, a Master who, under the Medical Superintendent, is in charge of administration and is assisted by two petty officers, a part-

tune dispenser and clerical assistant, an untrained nurse, a kitchen maid and a cook.

*Patients.* After examination I classified the patients according to the different types of leprosy :

Type.	Males.	Females.	Total.
L-1 .....	1	0	1
L-2 .....	0	2	2
L-3 .....	14	10	24
N-1 .....	0	0	0
N-2 .....	4	3	7
N-3 .....	2	2	4
Inactive .....	4	4	8
Not Leprosy .....	1	1	2
	<hr/>	<hr/>	<hr/>
	26	22	48
	<hr/>	<hr/>	<hr/>

[“ L ” represents the lepromatous, that is the severe infectious type, and “ N ” the neural, that is the non-infectious type in which the nerve symptoms are predominant. The figures attached to L and N indicate the degree or advancement of the disease.]

It will be noticed that there is still active leprosy in 38 cases, and in 10 the disease has either died out or been non-existent from the beginning. Of the 38 active cases, 27 (73%) are of the lepromatous type, 24 being of the most severe degree.

#### *Running Expenses.*

The annual expenditure last year, apart from the staff, was £1,690 or about £34 per patient. Of this, £1,210 was for food, giving about 1s. 4d. per patient per day. This latter is much higher than the expenditure in Trinidad, where it is about 1s. per day, or in British Guiana, where it is 9d. per day. Able-bodied patients cultivate gardens and are able in this way to add fresh vegetables to their diet. I understand, however, that the present diet supplied to the patients leaves room for considerable improvement. Too much salt and tinned food is supplied. There should be more fresh greens, eggs, milk, fresh meat and fish. This would require a careful study of what can be obtained locally and, if possible, patients should have facilities for producing more such food themselves.

#### *Activities of Patients.*

As far as I could judge from information received, this might with advantage be further developed. Most of the patients are able-bodied and they have little to occupy their time apart from their small gardens. In leprosy occupational therapy is one of the most important parts of treatment. The mind and body are kept active, the patient's self-respect is restored and he ceases to brood on his condition. At the same

time his general health is improved by exercise, so that as his muscles become firmer the disease tends to diminish.

Reference is made above to the need of more fresh food in the diet. It would be well if the patients' activities could be directed towards producing more such food themselves by keeping poultry and growing more greens, or by fishing. Attempts have been made in these directions in the past, but such activities should be expanded. I understand that a new Master is to be appointed to administer the Leper Home. It is important that he should be a man capable of developing such activities among the patients. He should be carefully selected with this in view and should be sent for training either to Trinidad or British Guiana, or to both places.

#### *Treatment.*

Reference is made above to occupational therapy. Besides this it is very necessary that accompanying other diseases should be diagnosed and treated. For special treatment with either hydnocarpus oil or its esters (such as Moogrol) should be used. In lepromatous cases these should be given intramuscularly, and nodules can often be diminished by abrasions of the ears, face, arms and legs, painting with caustics and by intradermal injections of the above drugs. In neural cases the leprides should be injected especially at the margins. This will often produce rapid arrest of the disease. Painting with 1 in 3 solution of trichloroacetic acid accelerates the effect.

#### OUTSIDE PATIENTS.

About 21 patients are at present allowed to live outside the Leper Home. Six of these are in a small settlement just outside the walls of the Leper Home. In all of these the disease is arrested. In company with Dr. Solomon I visited 13 others in their own homes. Eleven of these were either arrested cases or non-infectious. Two were highly infectious and one of these will now enter the Leper Home. The other infectious case might be allowed to remain outside the Home, provided he conforms with certain safeguards, including weekly attendance at the clinic.

In most countries where thorough surveys have been carried out, there is found to be a number of early neural cases which have been infected by contact with the severe lepromatous cases. Considering the large proportion of the latter type in the Leper Home, many of whom were for years potential spreaders of infection outside before being admitted, one

would expect that a survey of St. Kitts and Nevis would reveal a number of early neural cases among their former contacts. Whether or not such cases exist remains to be found out. I had time to examine more or less thoroughly the children of only six schools, and found leprosy in only one child. I hope that it will be possible for the medical officers gradually to complete this survey.

#### EDUCATIONAL.

I gave two talks on leprosy which were attended by the Medical Officers and the Sanitary Inspectors, and also addressed a public meeting under the chairmanship of the Administrator, at which about 120 were present.

#### LEPER ORDINANCE.

This is based upon the similar Ordinance in British Guiana. It provides for the examination of all known to be, or suspected of being, lepers, and the segregation of all those suffering from the disease except in certain exemptions at the discretion of the Administrator. No cognizance is taken of whether the type of leprosy is infectious or not. As I have mentioned in detail in my Report on Leprosy in Antigua, I consider that, while the Act and the Rules under the Act should be relaxed as regards the segregation of the non-infectious, it should be made more strict in regulating the segregation of infectious cases.

#### SUGGESTED STEPS FOR CONTROL.

1. Compulsory segregation of all open or infectious cases except those who can and do conform to the rules suggested in the Antigua Report.
2. A list to be kept of all contacts with infectious cases, and the inspection of these contacts once in three months over a period of three or more years.
3. Weekly inspection and treatment of all active cases outside the Leper Home whether open or closed.
4. Examination for leprosy of all schoolchildren at least every six months. This could, with advantage, be included in a general examination for all diseases.

#### NEVIS.

I visited the island of Nevis on 12th February, 1942, in company with Drs. Jones and Lake, the Medical Officers. They showed me a number of cases living in their own homes.



In most of these the disease was found to have become arrested, but in one or two it was still active though they were closed cases.

Searching the records of the St. Kitts' Leper Home, it was found that 11 cases had been admitted from Nevis between 1922 and 1932, but only 3 cases in the last decade. One infectious case had been admitted to the Nevis Hospital in a dying condition during the last month, but enquiry showed that he had lived in effective isolation for many years back. Only during the last three months had he been attended during the illness from which he died by a neighbouring woman.

I examined two schools situated in the area from which most of the patients had been admitted to the Leper Home, but found no definite signs of leprosy in any of the children. It would appear therefore that :

- (1) Leprosy is not at all common in the island of Nevis.
- (2) That as compared with 20 years ago it has very much diminished.
- (3) That the present known unsegregated cases are either arrested or non-infectious.

A careful look-out should be kept, however, for further cases by the Doctors and Sanitary Inspectors. The degree of malnutrition and insanitation existing in the island leads one to think that unisolated foci of the disease might lead to its spread.

#### ACKNOWLEDGMENTS.

I wish to express my gratitude to the Senior Medical Officer for arranging my visit to St. Kitts and Nevis, and to thank him and the other Medical Officers for their help in drawing up and carrying out the programme.

## REPORT ON LEPROSY IN ANTIGUA

E. MUIR

On behalf of the British Empire Leprosy Relief Association, I paid a visit to Antigua to study leprosy in the island and advise as to measures for its control. I arrived on the 28th of January and left on the 3rd of February, 1942.

According to a programme drawn up by Dr. John Wright, the Senior Medical Officer, I visited the Leper Home in company with Dr. Stevens, the visiting physician of the Home, gave a couple of talks and demonstrations of leprosy to the doctors, examined a number of leprosy patients who are not interned in the Leper Home and their contacts, and addressed a public meeting.

#### LEPER HOME.

This institution, which was formerly on Rat Island in St. John's Harbour, is now at Pearns, on the west coast, to the S.W. of St. John's, from which it is about six miles distant by road.

#### ACCOMMODATION.

This consists of a number of two-roomed buildings each with a gallery. Each patient has a separate room. The walls and roofs are built of asbestos sheeting, the latter being lined with wood. The patients complain that they are too cold in cold weather and too hot in hot weather. Two new buildings have been added recently, each consisting of six rooms, of which the three in front back on the three behind. This seems to be a bad arrangement, as the middle room on each side has no through ventilation.

There is a kitchen, where the food is prepared by two female cooks and a kitchen maid. Meals are served either in the dining shed or in the patients' own rooms. The diet seems to be fairly good, especially as fresh vegetables are obtained from the patients' gardens and as fresh fish is frequently given.

#### PATIENTS.

I examined the 21 male and 17 female patients and classified them roughly as follows:

Type.	Male.	Female.	Total.
N-1 with minor tuberculoid lesions ...	1	0	1
N-2 do. ...	3	1	4
N-3 do. ...	3	2	5
N-3 with simple lesions ... ..	1	0	1
L-1, ... ..	0	1	1
L-3 ... ..	9	7	16
L-1, N-3 ... ..	0	1	1
Disease arrested ... ..	3	5	8
Not leprosy ... ..	0	1	1
Total ...	20	18	38

[“ N ” represents neural and “ L ” represents lepromatous. The figures indicate the degree of the disease.]

The majority, 20 of the whole, are non-infectious cases, but a number of these are hopelessly crippled, some of them being permanently confined to their rooms.

## OCCUPATION.

One of the most important parts of the treatment of leprosy is exercise and mental and physical activity. Some 25 of the patients cultivate their own gardens and sell the produce to the Home. In this way they each earn an average of about 2½ cents a day. Also, 10 men and 8 women are able to earn about \$1.25 a month on an average by sweeping, scavenging, washing and mending clothes, etc. But these activities are small compared with the capacity of the patients for work.

Many of the buildings, roads, drains and other structures in and around the Home are in need of repair, reconstruction or extension, and I understand that these works have often been held up for want of labour.

On enquiry I found that there are among the patients a builder and two carpenters, and that they would be glad to undertake such work; also six to ten other able-bodied patients would be willing to assist. Such an arrangement would allow for improvement of the institution at a much cheaper rate than could be done by outside labour, and, still more important, it would be very beneficial to the patients by removing the mental and physical stagnation in which they spend much of their time.

In the leprosaria in Trinidad, British Guiana and most of the larger leprosy institutions such work is done by the patients with great benefit. At the same time it would be well if a social worker of the right type could be appointed, part of whose duties would be to organise the work and social life of the patients. I refer again to this later.

## THE MEDICAL SIDE.

At present this is attended to by a physician who visits once a week. Dressings and general care of the patients are looked after by three untrained women who act as nurses. The Superintendent formerly belonged to the Government Printing Department, but has, I understand, no training in tending the sick.

The visits of the physician are hampered by the bad condition of the branch road joining up the main road with the Home. This might be remedied at small cost by employing patient labour in repairs. Unlike the custom in the other Government Leper Homes I have visited, the physician receives no extra remuneration for his services.

I think it important that the physician in charge should have an opportunity of studying leprosy for two months in a suitable centre such as that in Trinidad.

In place of one of the female nurses a better educated and trained male nurse might be appointed, who would also organise social and other activities of the patients. Such a man would necessarily be carefully selected, an important qualification being that he was interested in the patients and their welfare. He might be given special training in dispensing, dressing, etc., at the hospital, and might with advantage be sent for a period of training to one of the larger leprosaria.

It is important that all patients should be examined and treated for complicating diseases, the presence of which often prevents improvement under special anti-leprosy treatment.

If these improvements and those mentioned under "Occupation" were carried out, the Leper Home would become a much more attractive place, and patients would be more likely to seek voluntary admission.

#### LEPROSY CONTROL.

##### *Segregation and Domiciliary Isolation.*

Under the Leper Act, as amended in 1937, provision is made for compulsory segregation in the Leper Home of those duly certified as suffering from leprosy. An exception, however, may be made "if the person suffering from leprosy is, in the opinion of the Governor, able to provide for himself outside a Leper Home, effective isolation in accordance with rules made under the Act and subject to security being given by bond" in a sum of £50.

In Antigua apparently great use has been made of this provision, and I am informed that a large number of lepers have been allowed to remain at their own residences.

There are two objects for which a leper is sent to a Leper Home: the public object of preventing him from spreading infection, and the personal one of securing for him proper treatment, care and nourishment.

In the Leper Act there is no recognition of the important difference between "open" or infectious cases, and "closed" or non-infectious cases. As the latter do not spread infection, they are sent to the Leper Home, for their personal care alone. It is noted above that 20 out of the 38 cases at present in the Home come under this category. Of these, the patients able to provide for their own care and treatment at home might safely be discharged.

The provision which allows for domiciliary isolation of cases at their own homes, whether they are "open" or not, requires very careful consideration and revision. A distinction should be made between the two categories.

The "closed" cases (that is to say, those giving negative findings on repeated examinations by the routine methods of skin and nasal mucous membrane) will not spread infection, and need not be compulsorily segregated. They should, however, be kept under suitable inspection in case they should become infectious in future.

"Open" cases, however, are in a very different position. The Leper Act of this Colony is based upon that of British Guiana, where there is a whole-time leprosy expert who is not only the Medical Superintendent of the Leper Home, but has for many years been in touch with all the cases under treatment outside. Moreover, in the British Guiana leprosy institution special provision is made for suitably housing better-class patients who are also attracted by the experience of others over many years that hope of recovery is much greater inside than outside the institution.

Unfortunately this cannot be said of Antigua, chiefly on account of the fact that the Leper Home is too small to allow for the provision of a whole-time physician. The visiting physician has innumerable other duties, so that he can rarely visit more than once a week, nor has he had time or opportunity to acquire the experience necessary in treating so difficult a disease as leprosy.

A suggestion has been made that hopeful cases should be sent for treatment to one of the larger leprosaria; the difficulties in the way of this are: arrangements for transport, amending of laws preventing immigration of lepers, the hardship of distant separation from relatives.

#### *Recommendations.*

I recommend that:

- (1) All cases be divided into "open" and "closed" categories;
- (2) Only those "closed" cases to be sent to the Leper Home who are unable or unwilling to make suitable arrangements at home.

The patient remaining at home should either be visited once a week by a medical officer appointed by the Senior Medical Officer or attend weekly at a place appointed by the Senior Medical Officer. He should remain under inspection and treatment as long as signs of active disease persist. Thereafter he should be inspected at least once in three months for a period of three years.

- (3) The "open" case should be sent to the Leper Home unless he remain under the following rules:
- (a) Furnish security as under the present Act;
  - (b) Be visited for inspection and treatment at his home once a week by a medical officer appointed by the Senior Medical Officer;
  - (c) Live in a house easily accessible to the visiting medical officer, but at an approved distance from the nearest other dwelling. The medical officer will be satisfied that the house is kept clean and hygienic inside and in its surroundings. There will be separate sanitary and bathing arrangements for the patient not used by his attendants or others. The patient's room, furniture, linen, eating and drinking utensils will not be used by others. There will be at least one adult attendant of over 30 years of age, who has been approved by the visiting medical officer as suitable. Adults will be allowed to visit the patient, but no children under 15 years of age. The attendants and visitors will be warned by the medical officer of the danger of close contact or of using furniture, utensils, etc., used by the patient.
- (4) The "open" patient will not enter any shop or building except his own home. He may take exercise in the open country as approved by the medical officer.
- (5) If the medical officer finds that the patient is not co-operating and taking the precautions prescribed, he will report to the Senior Medical Officer.
- (6) Previous contacts of the patient, especially children will be put on a list for periodic inspection for leprosy.

#### LEPROSY SURVEY.

Before this can be satisfactorily undertaken two things seem necessary:

- (a) That at least one medical officer should spend about one or more months in Trinidad or British Guiana studying leprosy and the methods of its control;
- (b) The setting up of the Health Unit System as proposed by the Medical Adviser to the Comptroller of the West Indies Welfare Fund.

It would then be possible gradually to carry out a leprosy

survey, by placing contacts of lepers, especially children, on a list for periodic examinations, by including the detection of leprosy in examination of schoolchildren.

#### CONCLUSION.

Leprosy is not one of the most serious problems in the Presidency. There are, however, two reasons why it should receive precedence in an attempt to eradicate it :

- (1) The horror and mental suffering which it produces ;
- (2) The fact that by taking energetic measures along the right lines it could be eradicated in a comparatively short time.

#### ACKNOWLEDGMENTS.

I wish to thank His Excellency the Governor for the interest and help he has given, the Senior Medical Officer and his staff and others for assistance in planning my visit to Antigua and carrying out its objects.

## LEPROSY CONTROL IN TRINIDAD

E. MUIR

(Reprinted from *Caribbean Medical Journal*, Vol. IV, No. 3, 1942, p. 83.)

Leprosy cannot be regarded as one of the major diseases in Trinidad, that is to say, it is not comparable in morbidity and mortality with such conditions as malaria, tuberculosis, venereal diseases, ankylostomiasis and malnutrition. The number of cases is probably not great; a rough estimate might place them at about a thousand, though it is difficult to form any accurate idea because of the tendency towards concealment. The mortality is not high; but mortality is not a true criterion of the seriousness of leprosy, which is far more dreaded than other fatal diseases.

There are three main reasons for treating leprosy more seriously and giving it more attention than its low morbidity and mortality would seem to warrant: (a) it is regarded with great dread by the public; (b) given the necessary support by

the health authorities and the medical profession, it could be controlled and eradicated in a comparatively short time; and (c) the public health measures which are advocated in this paper for the control of leprosy have considerable collateral value in the control of other diseases.

Until recently, little was done to control leprosy beyond segregation in Chacachacare of those patients who either voluntarily presented themselves or were detected from time to time by physicians in their practice. Thus only the more obvious cases were brought in, and many of them had previous to their isolation been potential spreaders of the disease for long periods. Not infrequently, under a mistaken diagnosis, subjects of leprosy have been treated as suffering from syphilis and other diseases, and the earlier or less severe cases have escaped detection or been diagnosed as those of ringworm, psoriasis or similar skin diseases. For these mistakes in diagnosis I do not blame the medical profession. It is only recently that leprosy has become recognised as a remediable disease, and those who have qualified as doctors in Britain or America, and even those who have taken the Diploma of Tropical Medicine, have had scant facilities for becoming acquainted with the appearance and nature of leprosy.

*Medical Education.* One of the first steps in the campaign against leprosy was therefore the carrying out of an educational programme. Courses attended by most of the doctors in the Colony were held in Port of Spain and San Fernando. The Medical Officers of Health are each in turn spending three or more months at Chacachacare so as to undergo a period of intensive study of leprosy. Other physicians have expressed a desire for similar intensive study, and it is hoped that arrangements may be made for this later. A series of five articles was published in the *Caribbean Medical Journal*. Short courses of intensive study have been arranged for sanitary inspectors and public health nurses, dentists and others.

*Public Education.* Large numbers of public meetings are being held with the object of educating the public, and articles have been published in the lay press. The public meetings have been held chiefly in schools, and have been, on the whole, well attended. Generally an opportunity for asking questions is given at these meetings, and the discussions raised have shown the great interest taken by the intelligent public.

It is questionable if there is any other important disease



about which the public have so many and such serious misconceptions as they have about leprosy. Almost invariably great surprise is expressed, even by well-educated citizens, on being told that leprosy is a contagious and not a hereditary disease. Even more surprise is shown on hearing that a large portion of early cases will speedily yield to treatment. A great deal of confusion exists as to how leprosy is transmitted, and the idea that some cases are infectious and others not, and especially that crippled and deformed cases are not as a rule the most dangerous disease-spreaders, excites a good deal of astonishment.

The education of the public is thus a most important item in the campaign against leprosy.

*Frequency of Leprosy.* I understand that up to last year no attempt had been made to estimate the amount of leprosy in the Colony. Notification is compulsory according to the 1915 Lepers Ordinance. But it is not difficult to escape detection and there is strong inducement to attempt to do so, as both the leper himself and also his family are looked upon as tainted and shunned by the public. Moreover, up to a certain stage, leprosy is not difficult to conceal; and those admitted to Chacachacare have often reached a stage which shows that they have been potential spreaders of the disease for years before admission. It seemed clear therefore that the system in vogue was not likely to control or abolish leprosy in the Colony, and that if an advance was to be made it would be necessary to find out and control the infection-spreaders who were at large.

It has been the experience in other countries that in proportion as force and compulsion are used in carrying out a survey the attempt is rendered ineffective by driving to concealment. A certain amount of compulsion has to be used, but the bad effects of compulsion should be cancelled as far as possible by the education of the community and by attracting patients to come forward voluntarily in the early stages in the hope of recovery through treatment. The triple Propaganda-Treatment-Survey system (P.T.S. for short) was first used in India, and has been adopted in other countries with equal success, notably in British Guiana. Under this method the public is enlightened regarding the nature of leprosy, treatment is offered in as attractive a form as possible, and as confidence and enlightenment are thus gained a survey is gradually completed.

In Trinidad there are certain difficulties in utilizing this system.

1. The fear of the ostracism connected with leprosy tends to concealment. In India and Africa, where people wear few clothes, and where people remain in one village all their lives, leprosy is more difficult to conceal. But in Trinidad, where the whole body except the face and hands is covered with clothing, it is not difficult to hide the disease during the earlier stages. The clinical signs of the open lepromatous type are often masked for years; and leprosy, apart from a careful clinical inspection and bacteriological examination, would pass unnoticed even by an expert doctor. Such patients are potential spreaders of infection both in their own households and among those with whom they come in contact at work or when travelling in public vehicles.

2. People in Trinidad tend to travel from one place to another and frequently shift their place of residence. Thus, even if they are suspected of leprosy in one town or village, they can escape suspicion in their new abode.

3. The dearth of labour in this island makes it easy to get work without employers insisting on careful medical examination or without their enquiring into references or the precedents of their employees. Thus patients not infrequently abscond from Chacachacare and find work in the American Bases, the oilfields or elsewhere.

4. The public of Trinidad have not yet become what is styled "leprosy conscious"; they know little about the appearance of leprosy. Even doctors not infrequently miss cases which have passed beyond the earlier stages.

5. The common early neural lesions of leprosy are not likely to be spotted unless they happen to be located on the unclothed parts of the body. In making examinations of schoolchildren I have frequently found such lesions, and doctors and nurses who have not undergone a special course of leprosy have been astonished when I made a diagnosis of leprosy, supposing the leprides to be some form of ringworm or other less serious skin disease.

*Methods of Survey used.* In India leprosy is a very common disease. It is estimated that there are from one to one and a half million sufferers from the disease, making an average of about three or four per mile. But the distribution is not by any means equal, and in many places it rises to as much as 3 per cent. of the population. The method used there in carrying out a survey is to institute a leprosy clinic. Soon

many cases are gathered together voluntarily for treatment. These people are followed up to their village, contacts are examined, and then the survey is gradually completed. At the same time instruction is given as to the nature of leprosy and the precautions that have to be made to prevent its spread. Thus in the course of months or years people gradually become "leprosy conscious." In the province of Madras alone there are at present more than 450 leprosy clinics.

In Trinidad leprosy is not nearly so common, and the P.T.S. method has to be adapted to local conditions. The chief reliance has been laid on the examination of schools. Up to the 22nd of May, 1942, I had examined 178 schools and found 83 cases of leprosy distributed as follows:

	Number of Schools examined.	East Indians.	Number of cases found. Africans.	Totals.
St. Patrick County ...	23	3	20	23
San Fernando ...	8	5	8	13
Victoria County ...	44	3	6	9
Caroni ...	36	13	14	27
Tobago ...	33	0	1	1
St. David County ...	10	0	0	0
St. Andrew County	12	0	1	1
Arima (town and rural)	11	1	5	6
St. Joseph ...	1	0	3	3
Total	178	25 (30%)	58 (70%)	83

It will be noticed that 70% of the cases discovered are African (two of these were of mixed European and African origin), and only 30% East Indians. Only in Caroni County does the number of Indians approach that of the Africans affected.

This is contrary to the commonly held idea that leprosy is more common among Indians. Even allowing that there may be twice as many Africans in the Colony as there are of Indians, these figures still show a higher proportionate incidence in the former.

The school examinations were not by any means exhaustive. Often nearly half the children were absent. Not infrequently one finds that several of the children present abscond when they see the doctor, either from fear engendered by their experience of previous visitors who have come to give injections, or, possibly in some cases, because they know or suspect that they have leprosy and have been told by their parents to avoid medical inspection.

Not infrequently the follow-up of cases discovered in schools had led to discovery of the disease among contacts. Thus the investigation of the contacts of one girl showed up five other cases, and those of one boy showed up eight others.

So far I have found only one open or infectious case in the schools. Most of them showed tuberculoid or simple leprides of the neural type.

I have not yet had time to examine the schools in what appears, judging by the number of leprosy patients it sends to Chacachacare, to be the most leprosy part of the Colony, that is Port of Spain and the region along the Eastern Road.

Particularly striking was the infrequency of leprosy in the island of Tobago. Before making the survey there I examined the seven cases from Tobago at present in Chacachacare. From the records it appeared that all of them had had ample opportunities for acquiring the disease either in the island of Trinidad or in other endemic countries. In the thirty-three schools examined no leprosy was found except for a tuberculoid patch of the size of a shilling on one little girl. On enquiry she turned out to be the niece of one of the cases in Chacachacare. The same infrequency of leprosy was found in the St. David and St. Andrew Counties. In St. David no leprosy was found. In St. Andrew only in one school was a case found, a boy whose cousin was a former Chacachacare patient who had been discharged some years before and is now working in the American Base at Cumuto. This boy had arrived only recently from San Juan, where there is reason to believe that the incidence of leprosy is comparatively high. Examination of records showed that the number of lepers admitted from St. David and St. Andrew is very low, and I failed to find more than one other case.

The low incidence of leprosy in Tobago, St. David and St. Andrew, as compared with that in such places as Port of Spain, the Eastern Road, San Fernando, Princes Town and Caroni County, makes an interesting study. It is particularly interesting to find seven lepers from Tobago, most of them lepromatous open cases, admitted to and now resident at Chacachacare; and yet, with one slight exception, not a single case to be found, as far as investigation went, at present on the island. This confirms the idea that these seven lepers acquired the disease abroad and not in Tobago; and that because of the present conditions in that island they were quickly detected and sent away for segregation. Those of you who are familiar with Tobago know that the conditions there

are what may be described as primitive and the people unsophisticated. Compared with Trinidad there is little industrialism, people remain in their village and hamlets and are well known to one another and consequently to the doctors. Leprosy being an exotic disease imported from outside, is likely, because of its unusual appearance, to become known to the health authorities. It thus has little chance of being spread; the potential spreaders are quickly spotted and sent away for segregation. Although the average population per square mile is, or was till lately, higher in Tobago than in Trinidad, yet the people are more evenly spread, and there is less crowding and consequently less chance of infection. The same applies also to the Counties of St. David and St. Andrew.

In Trinidad, on the other hand, and especially in the industrialised areas I have mentioned, the people are constantly moving from one place to another and are little known to one another. Rents are high and there is much more crowding together. These two factors, the shifting of population and overcrowding are perhaps the most important in the distribution of the disease.

It is also interesting to note that signs of malnutrition are as a rule more common in children in industrial than in rural areas. In the former there may be more money, but the children, especially the younger ones, are more neglected, whereas the people in the rural areas, such as Tobago, St. David and St. Andrew, though poorer, have their own cultivation plots and look after the young children better. It is generally agreed that malnutrition is an important predisposing factor in leprosy, and this may partly account for the greater frequency of leprosy in the industrial areas.

How long Tobago and other rural areas will remain comparatively free from leprosy is difficult to say, for in recent years and especially in the last twelve months much more movement of population has begun, the young men seeking employment in the oilfields and especially in the American Bases.

*Health Services and Leprosy.* In the control of leprosy in Trinidad the health services will necessarily play the most important part. I wish to acknowledge the splendid work done by the Medical Officers of Health who have studied leprosy at Chacachacare. Considerable assistance has also been given by some of the District Medical Officers. In this work I have also been helped by the Sanitary Inspectors and Health Nurses who

have accompanied me in examining the schools and have themselves detected cases among adults. Most of the Health Nurses have attended courses in Chacachacare and it is hoped to complete the courses of training of the Sanitary Inspectors before the end of July.

I hope to finish the first rough survey of Trinidad and Tobago by the end of this year; but a survey of this kind will in itself be of little value in controlling leprosy. A complete survey can only be gradually completed throughout a series of years; and this must necessarily be done through the machinery of those constantly on the spot, that is by the M.O.H.'s, D.M.O.'s, Sanitary Inspectors and Health Nurses. My chief object in my rough survey is to set the machinery in motion.

*Leprosy Clinics.* The idea that many cases are non-infectious and are suitable for out-patient treatment is a new one in Trinidad. In St. Patrick's County the M.O.H. has for the last year been treating such cases successfully in their own homes, while in San Fernando and Couva the M.O.H.'s have been treating them in special clinics held every week. It is remarkable to see the look of relief on a parent's face, when I tell him that his child will not have to leave home and go "down to the islands," but will be treated locally. They are also told that if they do not attend regularly the disease may get worse, and then they may have to leave home. The fear of this possible eventuality is generally sufficient to secure regular attendance.

I hope that by the time the first survey is completed satisfactory arrangements for the out-patient treatment of all suitable cases will have been made.

*Leprosy Board.* The study of leprosy in Trinidad makes it clear that there should be a "Leprosy Board" which will be responsible for the co-ordination and thorough carrying out of the campaign against leprosy throughout the Colony. One of the duties of this Board would be to compile a complete, confidential list of all those who have, or have had, leprosy. This list would be kept up to date, and, as far as possible, all possible sources of infection would be mapped out.

The Board would also see that there were facilities for out-patient treatment of all those who could be thus suitably treated and that attendances for treatment were regular. There would be a special list of all absconders from Chacachacare and arrangements would be made for seeking out such persons and seeing that they were sent back.

In the past there has not been a satisfactory follow-up of "discharges" from the Leprosarium. During the last 18 months many of these have been readmitted in a condition which showed that after their discharge they had relapsed and had then been for some years potential spreaders of the disease. It would be one of the duties of the Leprosy Board to go through past records, find as many of these discharged cases as possible and see that there was satisfactory three-monthly inspection of all discharged cases.

*Leper Ordinance.* The present Ordinance and Rules were passed in 1915, and, as much advance has taken place in our knowledge of leprosy since then, they are now in many respects quite out of date. It is hoped to have them revised in the near future and brought into line with our present knowledge of the nature of leprosy and the best means for its control. This is a matter which I have in hand at present.

Lastly, I wish to appeal to the Medical Profession in this Colony as represented by you to help in the campaign against leprosy. Many of you have already given me very considerable help and encouragement in the last 18 months, and I feel sure that with your full assistance it will be possible in the course of a few years gradually to bring this disease under control.

Paper read at a meeting of the Northern Section of the Trinidad and Tobago Branch of the B.M.A., and published with the consent of the Director of Medical Services.

## REPORTS

### **Report of the Director of Medical Services, Hongkong, for 1940.**

A brief statement in this report records that a dilapidated building for 144 lepers has been completely renovated, but suffers from constant overcrowding. The patients residing at the end of the year numbered 226 compared with 175 in 1939.

### **Reports of the Senior Medical Officer, Central Province, Tanganyika, for 1941.**

(1) This report records the work at the Mkalama Leprosy Settlement. Although it is only visited by an European officer

good work has been done. Those fit enough work at cultivation. The number of cases has increased from 135 to 270 with nearly equal numbers of males and females. The admissions numbered 111. Eleven died, 113 were discharged to be treated as out-patients and 17 absconded. The treated during the year totalled 248.

(2) A further report for 1941 on the Mwakete Leprosy Settlement in the Southern Highlands Province of Tanganyika Territory records that the work has been reorganised by Mr. Lambert of B.E.L.R.A. with the help of the Nuns of The White Fathers Mission. Among 700 persons discharged from the settlement were some "burnt-out" cases, and others uninfected, of whom no less than 850 were reported to be living in the settlement in March, 1941, including 216 wives of husbands of infected persons who cannot be discharged. It has not yet been possible to remove 339 uninfected children from their parents' charge. Admissions numbered 123 and 889 leprosy patients were resident in the settlement, 275 of whom are seriously crippled. Uninfected children over seven years of age now sleep in houses apart from their infected parents. The injections given during the year numbered 10,000; records are now being kept up to date and new cultivation is being undertaken. The cost of upkeep is defrayed by the Government.

**Union of South Africa Annual Report of the Department of Public Health for the year ending 30th June, 1941.**

This report stresses the increasing number of the patients voluntarily submitting to treatment. The proportion of the whole varies from 65% in one, 77 to 79% in two, and 90 to 99% in the other two. Intradermal injection of iodised ethyl esters is the most effective method. In some early cases the lesions may clear up in two months; consequently such patients are now being released after six months' further watching, and the general outlook of the patients has become a much more hopeful one. The new admissions for the year numbered 699 and recrudescient cases 80; 215 died and 722 were discharged. No less than 72.5% of the known cases have now passed through the settlements and been discharged as uninfected.