

AN INVESTIGATION CENTER FOR THE STUDY OF CHILDHOOD LEPROSY

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Purpose of the center.—The purpose of the recently established Silver Jubilee Children's Clinic, Saidapet, near Madras City, is to conduct as complete an investigation as possible into the problem of leprosy with special reference to the child. The importance of childhood leprosy has been emphasized for some years by many authorities, but as yet we know of no investigation center which is organized chiefly for the purpose of making a special study of the disease in children.

Foundation of the center.—One of the aims of the senior writer on his return to India was the establishment, in a suitable area, of such an investigation center to study the incidence and spread of leprosy in childhood. A preliminary survey of Saidapet in 1933 revealed a high incidence of leprosy, especially among children, and it was therefore considered that that locality would be a suitable one for an investigation. This decision was confirmed because: (a) the municipal authorities were interested and showed approval of the scheme; (b) an active Health Association had been formed, through which follow-up-work could be done; (c) voluntary effort in house-to-house visitations could be obtained; and (d) Saidapet is connected by a good motor road with the Lady Willingdon Leper Settlement, where the senior writer lives.

The early history of Saidapet, a municipality six miles from Madras, is obscure but by the time of the Honourable East India Company it was well known. The administration of Saidapet is in the hands of a council, with a commissioner who is its executive authority. The 1931 census gives the following details of population: total 33,037, males 17,129, females 15,908. The following communities are represented: Hindus

30,501, Muhammedans 1,341, Christians 1,099, others 96. There are 2,837 houses, of which 1,813—more than 50 percent—have no latrines. Antenatal and child welfare work is undertaken by the Saidapet Health Association. Because of open wells and the lack of drainage, mosquitoes are prevalent, and filariasis is very common.

A gift of six thousand rupees from the King George Silver Jubilee Fund, and private gifts, made it possible to construct and equip a building for the new work. The expenses for maintenance have so far been obtained largely from the government, and partly from private sources. On December 5th, 1936, Sir Frank Connor, Surgeon General with the Government of Madras, laid the foundation stone of the clinic. On March 20, 1937, her Excellency Lady Marjorie Eraskine opened the clinic, which was named the Silver Jubilee Children's Clinic.

The clinic building and staff.—The clinic is situated on the main trunk road from Madras to the south, in the compound of the Government Dispensary, and therefore is easily accessible. The building (Plates 22 and 23) consists of a central treatment hall, out of which open a doctor's room, a clerk's room, an injection room, a laboratory room, a compounder's room, and a dressing room. There is a large veranda in front, and the hall is closed by iron gates at both ends.

The staff is necessarily larger than would be required if it were only a treatment center. To provide for the many lines of inquiry being undertaken it consists of a medical officer (L.M.P.), a compounder who also acts as record-keeper, a clerk, a government-trained technician and a male nursing orderly.

Description of work and its development.—In July, 1936, a preliminary survey of the school children was undertaken and all the schools in the municipal area were visited; the names were taken of all pupils who had definite or suspicious lesions, and as soon as the clinic was opened they were called up and examined. If the diagnosis was confirmed the child was admitted and a survey card filled in. If treatment was found to be necessary the case was recorded on a treatment card.

Incidence of leprosy in the schools and analysis of cases.—The number of pupils and the incidence of leprosy in the schools examined are given in Table 1. Every child examined was placed in one of the following categories:

- A. Cases with suspicious lesions, to be watched every 6 months.
- B. Cases with more definite lesions, to be watched every 3 months.
- C. Cases with definite lesions, but treatment not considered necessary; to be observed monthly.
- D. Closed cases under treatment.
- E. Open cases under treatment.

TABLE 1.—Numbers of pupils attending the Saidapet schools and of those found to have leprosy lesions.

| School | Pupils with definite or suspicious lesions | | | | Total |
|------------------------------|--|-------------------|----------------|---------------|-------|
| | Number of pupils | Probably leprotic | Early leprotic | Late leprotic | |
| Municipal Boys' | 270 | 18 | 14 | 1 | 33 |
| Vydyasagar Brotherhood | 88 | 6 | 3 | — | 9 |
| Ganapathi National | 228 | 10 | 3 | 2 | 15 |
| Saraswathi Elementary | 120 | 2 | — | — | 2 |
| Mambalam Municipal | 160 | 8 | — | — | 8 |
| S. S. M. | 50 | 2 | — | — | 2 |
| Model | 211 | 10 | 6 | — | 16 |
| Methodist Mission | 105 | 1 | 5 | — | 6 |
| Municipal Girls' | 203 | 2 | — | — | 2 |
| Mettupalayam Municipal | 184 | 5 | 6 | — | 11 |
| Mambalam Cheri | 52 | 1 | 3 | — | 4 |
| TOTAL | 1,671 | 65 | 40 | 3 | 108 |

The distribution in the above categories of the children attending the clinic up to September 1st, 1937, by sex and in total, is given in Table 2. The analysis of the types of leprosy, by age, is shown in Table 3.

Classification used.—The classification used in Table 3 needs a little explanation. It will be noted that the N-1 type is subdivided into four categories, viz: simple neural, major tuberculoid, minor tuberculoid and precutaneous. The "simple neural" lesions are described in the report of the Manila Conference (1931) and need no further description. The contributions of Wade (5, 6) and Lowe (3) on tuberculoid leprosy have dealt so well with the major and minor varieties of that condition that any description of them would be superfluous.

The precutaneous category of the N-1 type may, however, cause confusion. There are certain lesions which we believe cannot rightly be placed in the neural group, although at present there is no alternative but to do so. We feel that this statement is justified on clinical grounds, and that these lesions are more akin to cutaneous leprosy than neural. The following is a brief summary of their characteristics:

- (1) They always occur in children, practically always before the age of fourteen.
- (2) They are multiple, and hypopigmented or very slightly erythematous.
- (3) Peripherally they are not distinct, and they fade imperceptibly into the normal skin; i.e., the center is more definite than the edge.
- (4) They are seen better in good oblique than in direct light.
- (5) They show no loss of tactile, thermal or pinprick sensation.
- (6) There is no nerve enlargement or anesthesia of the extremities.
- (7) Bacilli cannot be found by usual methods.
- (8) The leprolin test is always negative.
- (9) A history of contact with an open case (usually C-2 or C-3) can practically invariably be obtained.
- (10) Black and white photographs are unsatisfactory; color photographs show the lesions clearly.

These lesions usually occur in children fourteen years of age, because after puberty the child probably has definitely developed either the cutaneous or the neural type of leprosy. We consider these lesions to be precursors of cutaneous leprosy, and that they indicate a massive infection. Of the 16 cases in this group, 12 have a history of close and continuous contact with open cases. In the other 4 adequate information could not be obtained. A detailed histological study of these lesions is contemplated, for we feel that of all the leprosy lesions in children these are the most serious. We believe that they are practically identical with Muir's "juvenile leprosy" (4).

TABLE 2.—*Categories of cases attending the clinic, by sex and in total.*

| Class of Case | Males | Females | Total |
|-----------------------------|-------|---------|-------|
| A. Suspicious..... | 18 | 7 | 25 |
| B. More definite..... | 36 | 20 | 56 |
| C. Definite, untreated..... | 35 | 13 | 48 |
| D. Closed, treated..... | 33 | 16 | 49 |
| E. Open, treated..... | 20 | 8 | 28 |
| TOTAL..... | 142 | 64 | 206 |

Two points will be noted in the tables: first, the large proportion of children under fourteen, and second, the preponderance of males over females. Until a house-to-house survey is completed and the parents become more confident, it will be impossible to corroborate or refute the statement one of us made in a recent article (2) about the sex incidence in children below puberty. It is very difficult to discover girls with suspicious lesions, but we hope that, with the help of a lady health visitor and a lady doctor, more girls can be examined

without offense to public feeling and thus to ascertain more accurately whether the Ceylon statistics (1) can be verified here.

TABLE 3.—*Analysis of types of leprosy in cases attending the clinic, by sex and age.*

| Type | Number in group | Age and Sex | | | | | | | |
|-----------------------------------|-----------------------|-------------|----|---------|----|----------|----|----------|----|
| | | 0 to 5 | | 6 to 10 | | 11 to 13 | | 14 to 17 | |
| | | M. | F. | M. | F. | M. | F. | M. | F. |
| <i>Children under observation</i> | | | | | | | | | |
| N-1 (Simple neural)..... | 51 | 5 | — | 16 | 11 | 15 | 2 | 2 | — |
| N-1 (Minor tuberculoid)..... | 30 | 1 | 3 | 14 | 7 | 3 | 2 | — | — |
| N-1 (Major tuberculoid)..... | 5 | 2 | — | 1 | 1 | 1 | — | — | — |
| N-1 (Precutaneous)..... | 8 | 2 | 2 | 3 | 1 | — | — | — | — |
| C (Cutaneous) ^a | 1 | — | 1 | — | — | — | — | — | — |
| Indefinite lesions..... | 36 | — | — | — | — | — | — | — | — |
| TOTAL..... | 131 | 10 | 6 | 34 | 20 | 19 | 4 | 2 | — |
| <i>Children under treatment</i> | | | | | | | | | |
| N-1 (Simple neural)..... | 28 | 1 | 2 | 7 | 4 | 8 | 4 | 2 | — |
| N-1 (Minor tuberculoid)..... | 8 | — | — | 3 | 1 | — | 1 | 2 | 1 |
| N-1 (Major tuberculoid)..... | 1 | — | — | — | — | — | 1 | — | — |
| N-1 (Precutaneous)..... | 8 | — | — | 2 | 2 | 3 | — | 1 | — |
| C (Cutaneous)..... | 30 | — | 1 | 6 | 4 | 12 | 3 | 4 | — |
| Indefinite lesions..... | — | — | — | — | — | — | — | — | — |
| TOTAL..... | 75 | 1 | 3 | 18 | 11 | 23 | 9 | 9 | 1 |

^aPatient too small to treat. Clinically precutaneous, but the lesion is slightly positive.

Distribution of leprosy in Saidapet and special lines of investigation.—As a result of the school survey and examination of school children, it has been found that in certain areas the incidence is heavier than in others. Each area will be taken in turn for special investigation. Through the enthusiastic cooperation of several organizations a detailed house visitation and economic survey is being organized. It is hoped that in the course of several months valuable data will be gathered, giving us possibly some answer to the question why certain areas should be more heavily infected than others.

In addition to this we have, attached to the clinic, a special officer sent by the Department of Health to investigate the incidence of filariasis in the municipality. With his cooperation we may be led into further avenues of investigation. Another piece of work recently begun is the study of dietetic conditions in the children and the effect of added factors (e.g., skimmed milk) on the course and the treatment of leprosy.

CONCLUSIONS AND ACKNOWLEDGMENTS

It is our endeavor to develop an efficient center for the study of the development, treatment and control of childhood leprosy, for we are convinced of its importance. We hope that as result of this investigation further epidemiological factors will be brought to light, and thus to contribute towards the control of the scourge among children. We are convinced that herein lies one of the chief solutions to the difficult problem of leprosy control and prevention.

Acknowledgments.—Our thanks are due to all cooperating agencies, especially to Dr. Aykroyd of the Nutritional Research Institute, Coonoor, to the Saidapet Health Association, to the Department of Health, Government of Madras and to the Indian Research Fund Association, without whose aid the center could not have developed so many lines of investigation.

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DESCRIPTION OF PLATES

PLATE 22

- FIG. 1. The Silver Jubilee Children's Clinic, Saidapet.
FIG. 2. Central hall, showing the side rooms.
FIG. 3. Central hall and treatment room.



PLATE 22

PLATE 23

FIG. 4. Doctor's room, Silver Jubilee Children's Clinic.

FIG. 5. Dispensary.

FIG. 6. Laboratory.

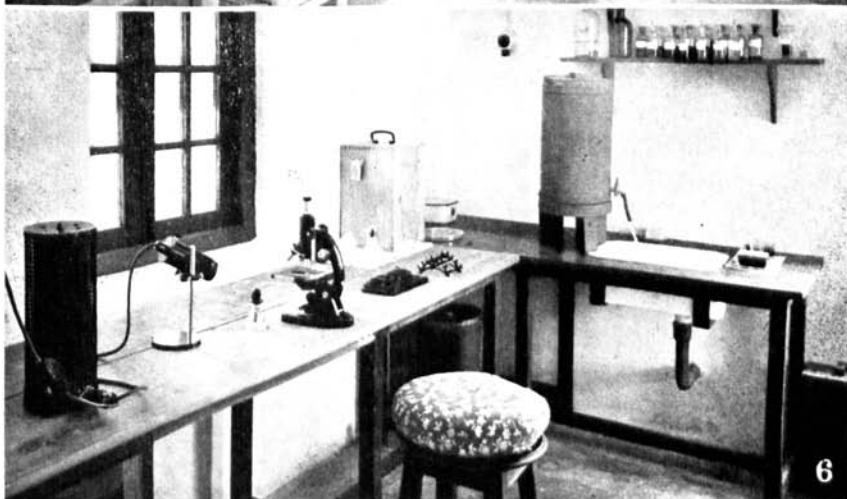


PLATE 23