A NOTE ON LEPROSY IN LIBERIA

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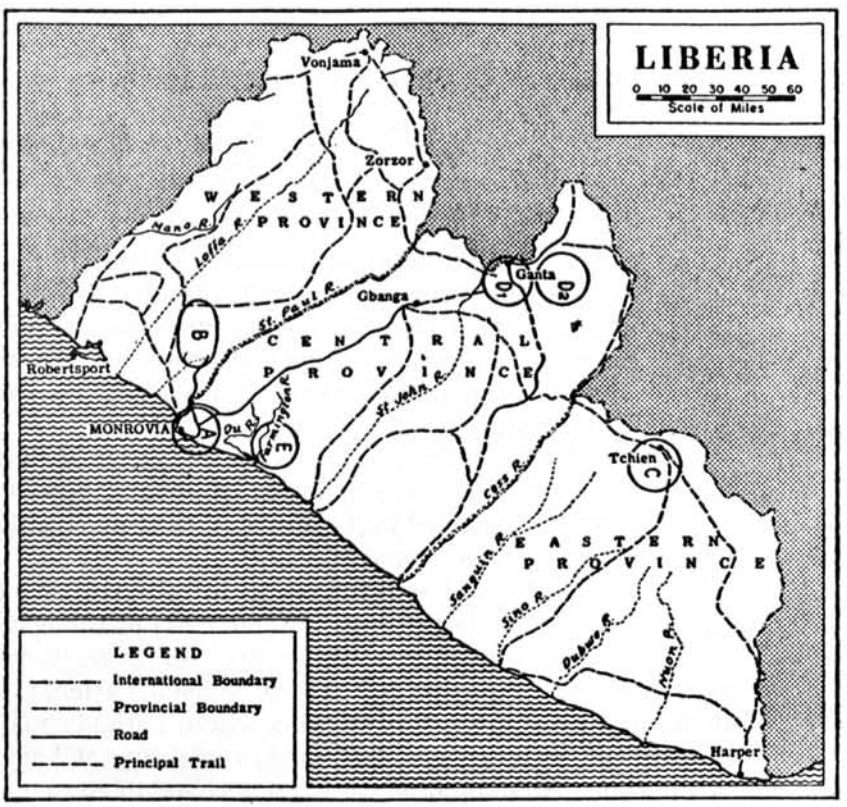
In the work of the U. S. Public Health Service Mission in this country, a region of about 43,000 square miles located between 4.5° and 8.5° north latitude, I have for some years concentrated on epidemiological surveys in the counties and provinces. These surveys, which have been made in several representative areas (1), have included leprosy.

There are about 1,000 professionally recognized cases of that disease, or 0.5 per thousand in a population of about 2,000,000 people. It may safely be assumed that there is at least an equally large number of unrecognized cases.

There is no hospital in Liberia set aside for the treatment of leprosy, and segregation is not enforced, not even of the newborn from the diseased mothers. There are, however, three leprosy colonies or villages with 200 to 300 resident patients in each of them, and several smaller stations where patients may come for treatment once or twice per week, remaining at home the rest of the time. All diagnosed cases are advised to go to one of the three larger centers for treatment, and they generally comply readily. Consequently, most of the known cases have received treatment at one or another of these places.

It has been my privilege as an epidemiologist to spend five months at one time, and one month of interrupted days at another time, at the village-dispensary at Ganta, in the Sanoquelle District, studying the resident patients and those coming there twice a week for treatment. There were 259 inmates at Ganta during my stay there, drawn from several parts of the Central Province and from adjacent French Guiana. The location of this place is in the area marked "D2" in Text-figure 1; "D1" pertains to the Ganta Mission Dispensary.

This village is operated under the Methodist Board Mission at Ganta, of which Dr. George W. Harley is superintendent, and it was through his courtesy that during my six months at Ganta I was able to examine in detail the patients receiving treatment there. This examination included more than twenty different entries, including scrapings from skin lesions, nasal smears, biopsies, and a series of blood, urine and stool examinations. The



TEXT-FIG. 1. Outline map of Liberia, showing the areas in which the surveys of the U. S. Public Health Service Mission have been made. The Ganta Leprosy Colony is located in the area designated "D2."

analysis of these observations has not been completed, but *Mycobacterium leprae* was demonstrated microscopically from local lesions or nasal scrapings in all of the lepromatous cases and in 39 per cent of those of the neural (maculo-anesthetic) type. As for classification, according to the criteria adopted by the Cairo congress the 230 cases which have been classified are distributed as follows:

N1a	39	L1-N2b	4
N1b	18	L1-N3b	5
N1c	2	L2	1
N2a	38	L2-N2a	1
N2b	20	L2-N2b	1
N3b	81	L2-N3b	1
L1-N1a	4	L3	5
L1-N2a	9	L3-N1b	1

In the Ganta village-dispensary male patients exceed females in a ratio of 3 to 2. Among the resident patients, 9 per cent were infants of mothers with leprosy, none showing evidence of infection.

In pursuance of the general objectives of the surveys, these patients were submitted to various laboratory examinations. As previously reported (1) for 150 of them, 94 per cent were positive for helminths in stools or urine, 31 per cent for treponemiasis, 30 per cent for bacterial diarrheal diseases, 36 per cent for amebiasis, most of them having intermittent bouts of diarrhea or dysentery, 33 per cent for malaria, 11 per cent for trypanosomiasis, most frequently diagnosed by gland puncture, and less than 1 per cent for filariasis. The Sanoquelle District is the area of greatest concentration of both trypanosomiasis and schistosomiasis in Liberia, and the ova of *Schistosoma hematobium* were found in the urines of 16 per cent of these patients, and of *S. mansoni* in 2 per cent of their stools.

Prior to January 1949, only 12 patients in Liberia were known to be receiving sulfone therapy, with another 25 being given diasone after that date. More than 95 per cent of the cases under professional medical care were still receiving the older and less specific chaulmoogra oil or its esters. This delay in using the more modern and superior drug was primarily due to the economic status of the patients and the community. The local public health budget set aside for the care of leprosy patients is quite inadequate.

Observations and analyses of records of the 230 cases receiving chaulmoogra oil injections at the Ganta village-dispensary showed that 61 per cent had had some therapeutic complication during the preceding twelve months. These complications are as follows:

Local abscess or severe myositis	48 per cent
Edema of extremities, with or without albuminuria	10 per cent
Dermatitis and/or adenitis	8 per cent
Headache and/or dizziness	8 per cent
Palpitation and/or tachycardia	7 per cent
Nausea and vomiting	3 per cent
Sore eye and/or sore throat	3 per cent
Albuminuria alone	3 per cent
Acute nonsurgical abdominal pain	2 per cent

Besides the disadvantages represented by these complications and by the pain of the injections, the use of chaulmoogra oil for 200 to 300 patients per day requires the service of one physician, one nurse, three technicians and two cleaners, and a consider-

able amount of equipment. Diasone could be administered with much less staff and equipment, and with more cooperation on the part of the patients.

Of the twelve patients who have been receiving diasone, only one has shown any therapeutic complication indicating intolerance to the drug. This patient shows severe albuminuria and anemia when given more than one tablet (0.3 gm.) per day, an amount which is not effective therapeutically. If this rate of complications is representative, it is in marked contrast to the high one of chaulmoogra treatment. There is reason to hope that, in the near future, funds and organization will be available for the management of leprosy cases in a manner more in keeping with recent advancement in the field. For the present diasone would be preferred to promin or any other sulfone requiring injections.

ADDENDUM

At present there are six separate units operating leprosy colonies in Liberia. The location of these colonies together with the agency responsible for each and the number of patients under care are as follows:

Province/County	Name of station	Unit	Approximate number of patients
Uppr. Cent'l. Prov.	Ganta	Methodist Board	300
Maryland Co.	Pleebo and Barrabo	Assembly of God Mission	250
Cape Mt. Co.	Maasatin and Mbaloma	Protestant Episcopal Mission	200
Mid. Cent'l. Prov.	Suakoko and Garplay	Liberian Mid Inlands Mission	150
Western Prov.	Belefani	United Lutheran Mission	150
Bassa County	Lower Buchanan	Gov't., R. L.	100
		Total	1,150

REFERENCE

1. POINDEXTER, H. A. A laboratory epidemiological study of certain infectious diseases in Liberia. American J. Trop. Med. **29** (1949) 435-442.