will play in the provision of public health laboratory services in the future, one should also take into consideration the functions of local public and private laboratories, including State branch laboratories.

Local laboratories constitute the work centers of the national laboratory system. It is in them that all simple, routine, well-established tests should be performed. The State laboratory should be the guardian of this group, should determine the efficiency of their work, and provide consultation for the solution of most common problems. The State not only should encourage these laboratories scientifically, but should provide subsidies in order that laboratory work may be available for persons unable to meet the cost of private laboratory service.

In addition to the above functions, the State laboratory has a responsibility for other aid at the State level that the Communicable Disease Center shares at the interstate or Federal level. It should be responsible in the future for the uniformity and accuracy of laboratory techniques at the local level. It should perform the more difficult, costly, and unusual tests requested at the local level. In addition, the State should provide a reasonably complete intrastate reference service.

The primary function of the Federal Government, acting through the Communicable Disease Center, is that of furnishing consultation to State laboratories and, upon request of the latter, to public and private local laboratories. This broad consultative service should extend to several fields. It should contemplate the development and periodic utilization of methods to insure the quality of laboratory test performance as described above. It should launch a program of methodology research to improve existing techniques and to develop new ones. It should serve as a national reference diagnostic center for the latest information on the examination of difficult and unusual laboratory specimens submitted from State laboratories, and provide also for the performance of more expensive and difficult laboratory tests when requested by State laboratories.

The public health laboratory will continue in the next generation to be one of the most important services offered by the health department. Its individual reports may too frequently be given an inerrant interpretation by the clinician in spite of all reasonable efforts to discourage this practice. The fallibility of laboratory tests must be continually emphasized, yet the State health departments and the U. S. Public Health Service should take every possible step to insure the quality and optimum efficiency of laboratory work.

The provision of competent laboratory service for this Nation in the future is one of the greatest tasks facing organized public health. It will require ample financial support. It will require real team work in a well organized laboratory. And to cover the Nation adequately, it will require a complete and operable liaison of local, State and Federal laboratories.



HISTORY

Leprosy (Hansen's disease) is one of the oldest diseases known to man. Historians have conceded that the disease was known to the ancient Chinese, Indians, and Egyptians; however, its origin has been lost in antiquity.

Reliable evidence as to when the disease made its first appearance in what is now continental United States is lacking. The earliest available reference to the disease has been found in Romans' Concise Natural History of East and West Florida published in 1776, in which reference is made to the occurrence of leprosy in the province as early as 1758. By 1766 the disease had become sufficiently prevalent to cause the Spanish Governor to establish a hospital near the mouth of the Mississippi River for the care of individuals afflicted with the disease.

*In charge, Leprosy Control Section, Epidemiologic Services.

From this evidence it may be assumed that Hansen's disease has existed in the United States for 200 or more years. Early cases were introduced principally from Europe and Africa, and later from Asia. However, following the acquisition by the United States of extraterritorial possessions in the Carribean and Pacific, more and more cases have been introduced.

IMPORTED CASES

The majority of the imported cases which have appeared in the Atlantic Coast States entered from Europe, Africa, and the West Indies; in the Gulf States, from Africa, the West Indies, and Mexico; in the West Coast States, from Mexico, the islands of the Pacific, and Asia; and in the North Central States, from Norway. The comparatively few imported cases which have occurred in other sections have entered the United States from various countries.

It must not be assumed that, in each instance, the individual of foreign birth contracted the disease in his native country. It is quite likely that in some instances the disease was contracted from an infected associate after arrival in the United States.

Also, it must be recognized that in some instances the disease may have been contracted in countries other than those of birth. Occasionally an individual has left his native country to live for a time, before entering the United States, in a country in which the disease is endemic.

The number of cases of Hansen's disease imported into the country cannot be determined; but an idea as to the number imported during recent years can be obtained from the records of the National Leprosarium at Carville, La., which was established in 1921. These records contain information only on those imported cases which have been admitted to that institution. Many imported cases have not been admitted.

In addition to these cases which have occurred in foreign-born individuals, cases of Hansen's disease have been noted in persons born in the United States but who contracted the disease outside the country – missionaries, members of the military, and others.

It is thus evident that, over a period of years, a rather large number of cases of Hansen's disease, contracted abroad, have occurred in the United States. Yet, in spite of this large importation, the disease has become established in but four sections of the country to such an extent that it has been considered as endemic in those sections.

INCIDENCE IN UNITED STATES

The extent of the incidence of leprosy at present in the United States is difficult to determine since many cases are not recognized; many recognized cases are not reported; and no country-wide casefinding program has been conducted. Again, we must refer to the records of the National Leprosarium and base any estimate as to the number of cases at present in the country on the number of admissions to that institution during the approximately 30 years that it has been in operation. These admissions are shown in table 1.

It will be noted that a majority - 70.8 percentof the cases occurring in foreign-born individuals were admitted from the three States of California, New York, and Texas. Of a total of 593 cases occurring in foreign-born individuals, 33.5 percent was in individuals born in Mexico.

Of the 770 American-born individuals admitted to Carville, 650 - 84.4 percent - were admitted from the four States of California, Florida, Louisiana. and Texas. Of those admitted from these four States, 573 - 88.1 percent - were natives of those States. In addition to those admitted from the four States, 62 additional cases, born in those four States, were admitted from other States. Thus 712 - 92.4 percent - of all the cases occurring in American-born admitted to the National Leprosarium, were either born in one of the four States or admitted from one of them. However, it must be recognized that some of these cases, although born in or admitted from one of the four States. contracted the infection from sources of infection outside these States.

With approximately 1,400 cases admitted since 1921, and many cases not admitted, one must recognize that the disease is a public health problem in the United States, particularly in limited areas. One must also recognize the importance of the disease as it relates to the patient and his family.

The current trend of the disease in the country is not known but available evidence suggests that, with the exception of one or two areas, it is downward. It has been felt by those interested in the problem that the apparent downward trend could be accelerated by a well-organized and active control program and that such a program, conducted for Table 1

States from which Admitted	Cases in Foreign- Born	Case in American- Born	Total	States from which Admitted	Cases in Foreign- Born	Cases in American- Born	Total
Alabama	otla mirio	2	2	Nevada	and in - cra	to been-a bip	usbr (L)
Arizona	3	gian do4 an e	7	New Hampshire	a (ii) i , ait a	anades , hi k	and the
Arkansas	the san-min	5	5	New Jersey	6	propriate to	6
California	217	44	261	New Mexico	1	1	2
Colorado	9	4.000	13	New York	131	17	148
Connecticut	ing.bo-obs	man - gale		North Carolina	1	1	2
Delaware	and Sit at	and the -shirts	aria-1	North Dakota	1	1.00	2
District of	of the second	6	7	Ohio	5	3	8
Florida	12	82	94	Oklahoma	-	4	4
Georgia	1	6	7	Oregon	4	2	6
Idaho	thomas in the	_		Pennsylvania	9	2	11
Illinois	22	11	33	Bhode Island	1	Santa Tata	1
Indiana	3	1	4	South Carolina		5	5
Iowa	MARCES.	and the set	_	South Dakota	2		2
Kansas	2	3	5	Tennessee	-	3	3
Kentucky	1	1	2	Texas	72	213	285
Louisiana	20	311	331	Utah	-	-	-
Maine	10000 - 200	15. 行为二 注注	10-00	Vermont	-		-
Maryland	4	4	8	Virginia	4	1	5
Massachusetts	20	2	22	Washington	9	3	12
Michigan	14	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	. 14	West Virginia	2	-	2
Minnesota	3	2	5	Wisconsin	2	3	5
Mississippi	3	13	16	Wyoming	1	-	1
Missouri	5	7	12				
Montana	1	2	3	Total	593	770	1, 363
Nebraska	1	1	2	Percent	43.5	56.4	99.9

ADMISSIONS TO THE NATIONAL LEPROSARIUM*

*Through August, 1950.

a sufficient period of years, would lead ultimately to near-eradication.

CONTROL PROGRAM

There never has been conducted in the United States a well-organized leprosy control program; and, until recently, no attempt had been made to inaugurate a program on a scale extensive enough to cause hope for desired results.

Leprosy is a communicable disease transmitted by contact from infectious cases to well individuals. A control program must be directed toward the prevention of such contact. The prevention of such contact is dependent upon an intensive program of case finding and the protection of well persons from infectious cases of the disease which serve as sources of infection. These measures of control are identical with those of a tuberculosis control program and are not peculiar to Hansen's disease.

The first step in a leprosy control program is, therefore, that of case finding. The object of a case-finding program is not only that of finding the cases, but of finding them early. When detected early, many cases are bacteriologically negative with very slight clinical manifestations. Treatment at this stage may prevent such cases from becoming bacteriologically positive and progressing clinically. Other cases detected early may be bacteriologically positive and yet have but slight clinical manifestations. Treatment of these cases may cause a remission from positive to negative and arrest of clinical activity.

It is believed that, if such a program of early

case finding and early treatment had been conducted in the past in certain areas of the country, it would not have been necessary for some of the patients now at Carville to be admitted to that institution.

The objects of a case-finding program are: (1) identification of possible sources of infection, (2) early detection, and (3) early treatment. For such a program to be productive, thorough cooperation must be established among the health authorities, the practicing physicians, and the patients at Carville and members of their families. The cooperation of the patients and their families is most important. By withholding information, they may be indirectly responsible for a case progressing to such an extent that it is sent to Carville. By cooperation they may be responsible for getting a patient under treatment early and preventing the disease from progressing. Early diagnosis and early treatment are important in the control of leprosy.

The second step in a leprosy control program is the prevention of the contact of well persons with open (bacteriologically positive) cases. Such contact can be prevented by (1) isolation of all open cases, (2) follow-up of arrested and negative cases for early detection of reversion from negative to positive bacteriologically, (3) treatment of arrested cases; such treatment may prevent reactivation, and (4) follow-up of doubtful cases for early detection of definite signs that may appear.

Treatment may be considered the third step in a control program. The importance of treatment has increased since the use of the sulfone drugs which are the most efficient therapeutic agent at present available. In addition to active open cases, closed and arrested cases should be treated. Numerous cases have become bacteriologically negative or clinically arrested under the accepted methods of treatment; however, a number of these cases have later reactivated. Continuation of treatment while the disease is arrested may prevent reactivation.

Current control measures are influenced by the accepted beliefs relative to the epidemiology of leprosy, and some of those accepted beliefs appear to be hypotheses not based on unquestionable proof. A control program should include investigations which might lead to better knowledge of the epidemiological factors of the disease.

Laboratory investigations, which might lead to diagnostic, immunologic, and therapeutic measures, also are considered as part of an organized control program.

A limited control program has been activated in three of the States in which definite leprosy problems exist and has been organized on a cooperative basis with the State boards of health, the Public Health Service, and the Leonard Wood Memorial.

During 1950, a survey was made in Florida to determine the extent of the problem in that State. The survey was conducted by a commissioned officer of the Service, trained in leprosy, who was detailed by the Communicable Disease Center to the Florida State Board of Health for that purpose.

In October 1949 a physician of the Leonard Wood Memorial, a special consultant of CDC, was assigned to the State Board of Health of Texas for the purpose of supervising control activities and epidemiological investigations in that State.

A Public Health nurse, trained in leprosy, was detailed by CDC to the Louisiana State Board of Health in August 1948 to assist in the leprosy activities of that State. During the previous year this nurse had been detailed to Louisiana by the Hospital Division of Public Health Service. In addition to this nurse, CDC recently detailed an officer of the Service, experienced in leprosy, to the State to supervise the leprosy activities within the State.