

Leprosy Research: An International Problem

Dr. Stanhope Bayne-Jones

Mr. Crowther, Dr. Long, Dr. Binford, General Blumberg, Dr. Karsner, Dr. Cochran, members of the conference, ladies and gentlemen—I am rather overwhelmed by what my friend, Esmond Long, has just said about me, in his generous introduction, and it unnerves me. It's like what George Washington said about a drink of alcohol—he said: "It unstrings me." I was prepared to say something vigorous about his treatment of me, in connection with this address, but as I must say, this is not only a great honor, but it is also what I would call a disparity for me to be in this elevated position as your dinner speaker, and in view of this paradox I should explain why I am here. The influence resulting in my translation descended upon me in March emanating from our charming

co-chairman, Dr. Esmond Long. With flattering blandishments he appealed to two of my vices—one, my inability to say no, and second, my vanity. With regard to the latter, however, I can say: "If it is a sin to covet honor, I am a most offending soul." Then, just two months ago, Dr. Long confirmed this invitation in a letter which included such specific information as: "The meeting will be quite informal." Look at it! "We had in mind a ten-minute talk, or longer (the one way I can defeat him is to talk longer than ten minutes) on the significance of leprosy as a worldwide problem, and the need for improved research in meeting it." Through bureaucratic metamorphosis in Dr. Binford's office, the title became as it appears on the program: "Leprosy Research. An International Prob-

lem." This has a little different slant from the phrases of Dr. Long's letter, and I have told Dr. Binford that I was not quite sure from the syntax whether "leprosy research" or internationalism were the problems to be discussed. Be that as it may, it would not take ten minutes to give a categorical true statement on both subjects. Leprosy is a worldwide problem—ever has been so and never so much as in these days. The need for improved and increased research in meeting the problem has long been recognized,—never more so than in these days. This conference bears witness to the truth of both statements. At this point I might adopt the motto just given you by General Blumberg and sit down!

I cannot be informal in this meeting. I have been too deeply impressed by the seriousness of your meeting here to want to appear informal. Besides, lacking the wit to follow in the foot pads of Dr. Shepard and Dr. Rees, I do not know how to be jocular in the midst of your grim preoccupations. Believing that you will recognize me for what I am,—the least among you—and that you will be charitable toward me, I shall venture to address you.

Returning now to the invitation from Dr. Long. I will tell you that he said that one of his reasons for choosing me was that he had heard me "do all right" at a symposium on Human Paleopathology held under the auspices of the Division of Medical Sciences of the National Research Council, on January 14, 1965. He said I had spoken well without knowing much about the subject. To the audience down at the NRC-NAS building I explained that I was there through hereditary good luck and not from any competence of my own. My grandfather, Dr. Joseph Jones, just after the Civil War, dug up the aboriginal remains of Tennessee in the Harpeth River Valley and in 1876 he published a Smithsonian Monograph on his findings. In this he included a claim that he had found in those old Indian bones evidence of pre-Columbian syphilis, starting a controversy that has continued to this day.

Perhaps the same hereditary influence is operating here tonight. This same grandfather began to study leprosy in Louisiana

in the 1870's; he made quite an extensive investigation of leprosy in the Bayou Lafourche region in 1880. His reports of 1880 and 1887 characteristically discuss a number of diseases from ainhum to yaws, and from elephantiasis arabum (filariasis) to elephantiasis graecorum (leprosy). Dr. Browne's opening paper on Tuesday about the variegated clinical pattern of leprosy and the problems of differential diagnosis reminded me of my grandfather's treatment of the subject.

Also, in 1880, he published observations on "*Bacillus leprae*" which he found in material from lesions, and he included in his report excerpts from the writings of Hansen and others. He was sure that the bacillus that he saw was "motile." The mention of my grandfather moves me to mention other members of my family who were concerned with leprosy. I do this to satisfy my wish to be further identified with you. One was my cousin, General Gorgas, who took me to visit the leprosy colony on Palo Seco in Panama in 1912, and the other was my brother-in-law, Dr. Ralph Hopkins, New Orleans, La., who was for many years a visiting dermatologist physician at Carville, and who with Dr. Faget made epidemiologic investigations of familial leprosy in New Orleans. I was very happy to find that Dr. Cochrane remembers Ralph Hopkins, remembers him favorably, having met him at Carville in the 1930's. Now these are my hereditary credentials.

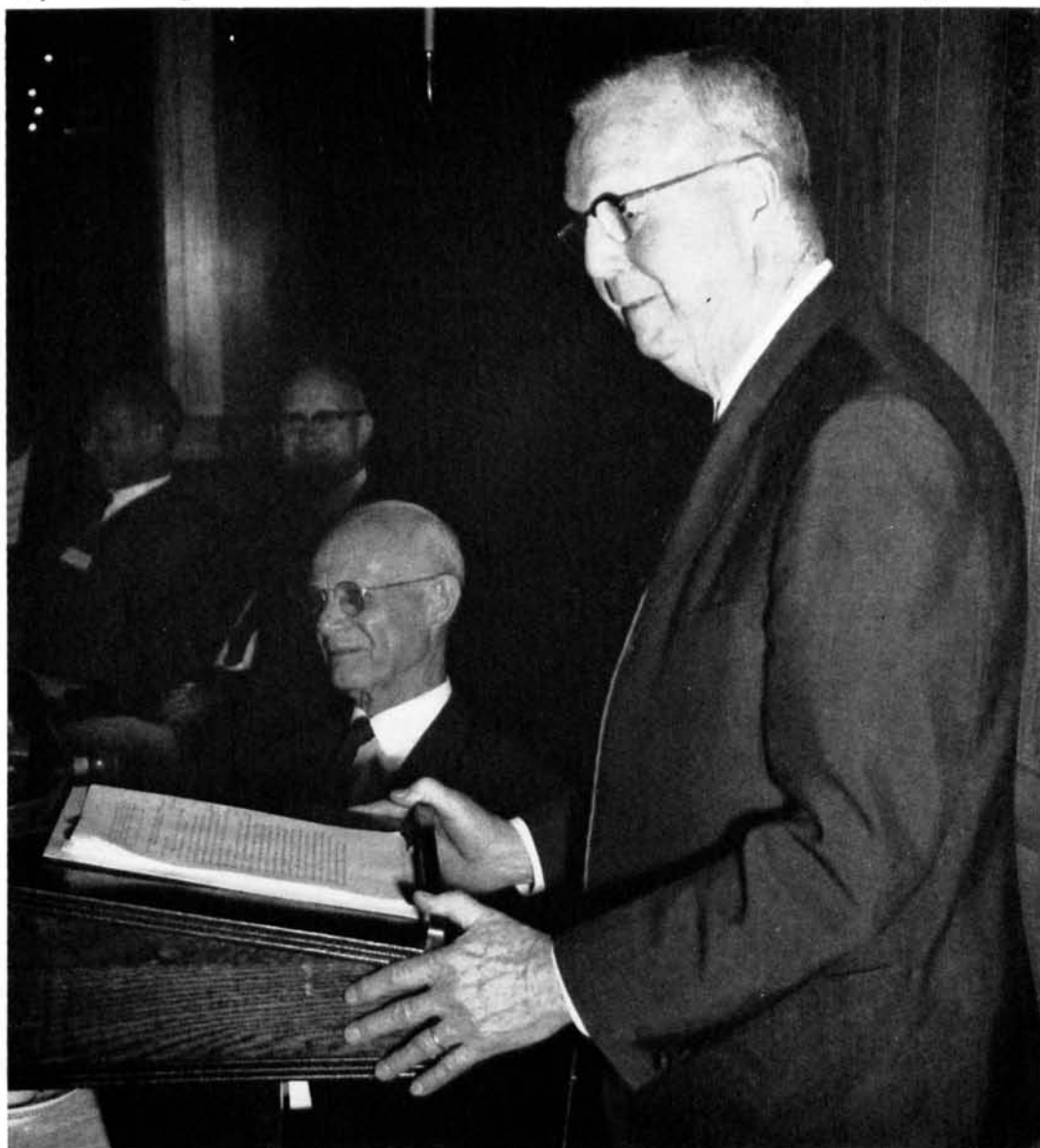
My real education in leprosy came in the 1930's when I was elected as a member of the Advisory Medical Board of the Leonard Wood Memorial for the Eradication of Leprosy. I will emphasize that word eradication in just a moment, because I want to come back to it later on in my talk with you. This educational process has been continued by various degrees of association with the members of the staff of the Memorial during the past 30 years.

Before going ahead now, it will be well to try to define a word which is a part of the title of my talk, and that is the word "international." I find that in the environment of General Blumberg you have to be careful with words. For instance, yesterday, after Dr. Browne's talk, I wanted to find out something about the sea coast of

Nigeria. So I went to the main information desk at the AFIP and said: "Do you have an atlas?" They told me to go down to the first floor to room 16, and I went to room 16 and said: "Do you have an atlas?" They said: "Yes, what tumor are you interested in?" Apparently all they consider to be atlases in this place are atlases of pathology.

What is meant by international? It's a very interesting word and I don't know

whether the Leonard Wood Memorial has kept up with the change in the connotation of the word since the Memorial was established in the 1930's. In the past third of a century the word international has developed a series of meanings that it didn't have before. As the relation between states became more complex the number of subjects studied under the designation of international relations increased. Before the 20th century, to most



Dr. Stanhope Bayne-Jones of Washington, D. C. delivering dinner address at the Leonard Wood Memorial-Armed Forces Institute of Pathology Conference on Research Problems in Leprosy, 13 May 1965. Maj. Gen. Joe M. Blumberg, Dr. V. Møller-Christensen and Dr. E. R. Long, left to right, in background.

students, the field comprised chiefly law, diplomacy and military affairs. Today, it may be said that any subject is appropriately considered part of international relations if it simultaneously affects two or more states. Trade, communications, exchange, and control of crime are obvious examples. The recognition of the great complexity of this subject has called for substantial efforts to study the problem, and in the United States there are facilities to deal with these international relations and problems.

Now, it struck me that there were at least three types of international relations that bear on our subject. Basically and originally, the word meant affairs or events that were of concern simultaneously to two or more nations—the primary example is international law. A second meaning comprehended anything of interest to many nations, both the governments and the people of the nations, whether they voluntarily or involuntarily, consciously or unconsciously, deliberately or accidentally, were affected by events or conditions, ideas and activities. This includes, obviously, a host of matters. The third use of the word international is employment by a single organization, a government or a group of civilian citizens, to characterize the activities which they carry on in foreign countries, from a base in their own country. An example is the International Health Division of the Rockefeller Foundation. That Division, which is centered in New York, had few real foreign representatives on it, and yet it was called international. The International Leprosy Foundation, in my opinion, is another example. You have representatives, but you are centered in one place, and try as a group of civilians to handle the problems of other countries. The International Cancer Research Foundation was one of the most closed international organizations you and I know anything about.

I think that the Leonard Wood Memorial, inspired as it was by Dr. Wade's talk in the early 1930's, and even 10 years before that when he began to talk about an international journal of leprosy, had in mind a conception of a foundation or an

organization in one country that did work in many other countries, was staffed largely by the parent country and financed by the parent country, and hoped to do something abroad. I think you ought to examine very carefully in this Foundation your conceptions of international relationships and whether it is international for one country to undertake to do things in foreign countries. Now that has been very effective. You could say it might be international in the United States to eradicate hookworm from the south, which is another nation, or eradicate yellow fever in Brazil or parts of Brazil. I am going to come to that again because it is in the title of this theme. But those things interest me very much, and I think that the connotations and conceptions that you give in your official title have an extraordinary influence upon your activities; they bear upon you through your thalamus in your sleep, and through your conferences with a presiding officer.

As I said, the Leonard Wood Memorial for the Eradication of Leprosy belongs, in my opinion, to the last group, because it is based in one country, the United States; its staff and services are derived principally from this country; it does include nationals, funds and facilities supplied by several other countries, and it deals with a disease of worldwide occurrence and importance, viz., leprosy—a truly international disease, an international problem, and a subject of international research. And this understanding is implicit and expressed in the Memorial's philosophy, plans, aims and activities—the purpose of the organization.

What I mean to suggest is that in the international relationships of this Foundation there should be a consortium of effort. The best expression of this that I know of has been given recently by Mr. Harrar, President of the Rockefeller Foundation, in his annual report of December 1964, as follows:

"Today a number of foundations cooperate with governmental and international agencies in programs affecting the well-being of people in many nations where basic needs in food supply, health and edu-

cation are still acute. This consortium of effort, often involving United Nations agencies, international development banks, the United States Agency for International Development, local institutions of research and education, and private foundations, has made possible more rapid progress than any single agency, working alone, could achieve."

A mere glance now at the map of the world showing the distribution and prevalence of leprosy is sufficient to illuminate the international importance of the disease. You need hardly do more than look at the maps that have been put out in the present journals, your journal, and others. The disease has existed and does exist in many countries in the eastern and western hemispheres, tropical and subtropical lands, even in some northern areas. Lately, however, although the disease-distribution has not changed much—little if at all—in the last half century or more, the nations afflicted by it have multiplied manifold. There is an enormous change in the international aspects of leprosy by the emergence in the last twenty years of the new nations of Central Africa. Most of these are tropical, underdeveloped, poorly nourished, deficient in sanitary measures, deficient in preventive medicine, and countries having an incidence of leprosy usually up to about 5 per 1,000. Nobody knows with certainty the morbidity of leprosy. Later I shall read statements on this subject from a recent letter from Dr. Charles C. Shepard.

If leprosy was an important international matter before the end of World War II, it has become vastly more international since 1945, because there are more nations. I do not think this has been stressed sufficiently in the approaches that have been made to the subject.

Now, with respect to the morbidity from leprosy, I would like to give you something from Dr. Shepard, who helped me by sending me some material. He wrote concerning the figures of leprosy morbidity, that it is difficult to make an estimate of their accuracy. They underestimate the actual incidence. Rarely is a diagnosis of leprosy made incorrectly, but it is very common that leprosy is called something else. The

number of cases reported from the important endemic centers seems to reflect the degree of interest in the state. Dr. Shepard stated that the recent increase in Texas and California seems to coincide with the increased participation by interested personnel, and the decrease in Louisiana occurred when the epidemiologic nurse was assigned elsewhere. Anybody who has been in the Army knows just what Dr. Shepard meant by that. We frequently had to deal with what we called "administrative epidemics." The Inspector General comes through and he says: "Oh, that's not cat fever (as Dr. Karsner would have called it in the Navy)—it's flu." And suddenly you have an epidemic of influenza. According to Dr. Shepard the population of inpatients at Carville runs now to about 350, but the average length of stay is much shorter than it used to be. "There seems to be every reason to expect a gradual increase in the number of cases of leprosy in the United States as an accompaniment of the increased number of Americans living in the tropics, and the increased number of people from tropical countries residing in the United States." Now that is a very serious problem. It was so in the Army in World War II, when we considered the possibility of the importation of infection by returning troops from the far Pacific or anywhere else. Fortunately, we did not have many cases. "It's even more difficult," Dr. Shepard wrote, "to get an idea of leprosy morbidity in the world. WHO has made some informal estimates of 12 to 20 million cases on the basis of intensive surveys of randomly selected small areas," but he thinks that is an underestimate. In my opinion, with figures of such magnitude before you, you do not have to go any further to recognize the international importance of leprosy, and the importance of research on leprosy. There are still many areas that are not well studied.

I remember that in World War II we got Mr. Perry Burgess to make a worldwide survey of leprosy, which was published in your JOURNAL. I was amazed to find that the Island of Nauru, or one of those places, had relatively large numbers of cases of leprosy and was also amazed to find that

the Island of Mauritius somehow or other got rid of all of them.

Well, it is more logical to strengthen international activities of the older health organizations such as the World Health Organization and the National Institutes of Health, for example, than to bring in one or two new ones. I was much interested to read a dispatch in the *Washington Post* of April 21, 1965. It gives a report with respect to war upon disease in Asia. Apparently, when Ambassador Sato was here from Japan he talked to President Johnson about this subject. Within a day they had set up a new Commission. The dispatch states: "American and Japanese medical scientists today agreed to recommend the establishment of a committee to combat diseases in Asia to their governments. The diseases include cholera, tuberculosis, leprosy, certain virus diseases, and the parasitic diseases schistosomiasis and filariasis." Well, it was interesting to see leprosy there. The first conference is to be held in Honolulu in October, and our friend Dr. James Watt of the Public Health Service is already out in the Pacific area dealing with one of these plans for some new move to handle leprosy on an international basis.

The International Cooperation Year (I.C.Y.) might be of importance for work on leprosy. I happen to be a member of one of its citizens' committees on health. The United States observance of I.C.Y. has been turned into something new by President Johnson. Originally they were going to celebrate International Cooperation Year this year by sitting around and admiring themselves and saying what they have been doing and the wonderful work on international cooperation, uninhibited by Vietnam or Santo Domingo. Well, they are going ahead with new plans, very bravely and in spite of realization of tragedies and defeats. The President turned it around from a narcissus type of exercise to a project that would produce some new ideas of what should be done in international cooperation. Therefore, he established two groups (among others)—namely, governmental groups to deal with suggested plans for international cooperation, instead of just looking over what had been

done, and a National Citizens' Commission to take part in this effort. Health, naturally, is one of the important matters to be considered. There is to be, in Washington, on November 29-December 2, 1965, a Presidential White House Conference on international cooperation in which many new ideas will be brought forward. I will tell you that one thing I have had to do thus far was to say something about the need of further international cooperation in dealing with the worldwide health problems, both economically as well as medically. I have suggested that leprosy should be mentioned prominently. I don't know if anything will come of it, but certainly it is in the hopper to be dealt with.

Now, in conclusion, I want to say one or two things, and I want to go back to the word eradication. Fortunately, at the National Library of Medicine, where I have been allotted a study room, I have been in contact with a very remarkable and great man, Dr. Fred L. Soper, whom many of you know, and we have talked a lot about eradication and the concept of eradication. It's not a new phrase. I can remember that when General Gorgas talked to me about eradication of malaria and yellow fever in Panama, he said if you can eradicate this, wouldn't it be like a dinosaur—it would never come back. Well, he didn't know about jungle yellow fever at that time, and really he needed further knowledge. But urban yellow fever has been completely eradicated in those regions, and the *Aedes aegypti* mosquito has been eradicated from Mexico, Central America, Panama, and all of South America except the northern fringe of Colombia, Venezuela and the Guianas. Smallpox has been eradicated in the United States for well over a decade. There has been no reported transmission of smallpox in this country since 1949. It is possible that the concept of eradication could be further revived. I got to thinking about it after listening to Dr. Browne, who impressed me very much in his talk about Nigeria. That sent me to look for an atlas of Nigeria.

What I am now going to say is spoken on my own responsibility without previous consultation with Dr. Browne or any other

authority. One of the things to note in the concept of eradication is that you will be defeated, and turned to despair, if you attempt at once to effect worldwide eradication. However, if you select a country such as Nigeria, you should have a manageable situation. Nigeria has a seacoast; so the entry of leprosy could easily be controlled on the southern border, with a base of operations at Lagos. The boundaries, or perimeters of Dahomey, Niger and the desert, Chad and the Cameroons make naturally limiting areas, although the people will cross these boundaries. It is not necessary to wait for an infrastructure of public health organization. There are now a number of leprologists and others in the public health service of Nigeria. A team from the Leonard Wood Memorial, and a team from London, might go into Nigeria, make diagnoses, and persuade the government to handle the infected people, segregate them. You would have to build more leprosaria, and take care of the people that you will have segregated, with humanitarian interest in peoples' lives. I think if you took a state as big as Nigeria and could eradicate leprosy there, and then work from that center out to the other districts, you would gradually acquire a pride in accomplishment and a momentum of achievement that would be very important, whereas if you scatter the effort over a vast area like the whole of Central and Middle Africa, you are bound to be either defeated or confined in your activity for a long time. The concept of eradication implied in this is to take a circumscribed area, do a job, and keep spreading the work outward in the periphery.

Now, I don't know why the Leonard Wood Memorial, with the word eradication in its title, should not seriously consider something like this. However, I do not know from reading the Leonard Wood Memorial history how much thought was given to the word eradication in those days, somewhere in the 1930's. At one time talk of eradication was regarded as

foolish, but now that the concept of eradication can be defined, and you can do something very definite about it, and since eradication of some diseases from large areas of the world has actually been accomplished, it is no longer foolish to promote the concept of eradication. It would involve research, research would improve eradication, and eradication would make more research possible.

Finally, one reason for thinking about Nigeria was the statement that Nigeria has 8.8 per cent of the total world number of cases of leprosy, and there is plenty to do.

In conclusion, I have found my whole address given in a brief statement by Dr. Binford. He said, at the opening ceremonies of the Leonard Wood Memorial-Eversley Childs Sanitarium Research Laboratory on February 15, 1964: "... the many unsolved problems in leprosy especially—the unsolved problem of the cultivation of the leprosy bacillus; the unsolved problem of the transmission of human leprosy to animals; [more power to chimpanzees, more power to Covington] the unsolved problem of the method by which leprosy spreads from one person to another; the unsolved problem of the secret of why some people contract leprosy and others do not, and finally . . . the development of better drugs and improved methods of treatment." When I asked Dr. Feldman what I might say here, he said: "Don't say anything except that they need a better drug," and certainly you would put emphasis on the chemotherapy of leprosy as a part of your control program.

Well, that summarizes it, and I would say finally that I cannot hope that I have contributed anything to your information or thinking. But that matters little in the midst of this extraordinary conference. Here, the expression of thought and the exchange of ideas and data have been conspicuous and brilliant. Certainly all who have been present in this gathering of experts will have been enriched intellectually and spiritually. Thank you very much.