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OF THE

AMERICAN MOSQUITO CONTROL ASSOCIATION

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PART II

INTERNATIONAL COURSE IN MALARIA ERADICATION TECHNIQUES

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Mosquito control workers everywhere were undoubtedly surprised and pleased to read this statement in President Eisenhower's "State of the Union" message to Congress in January 1958: "We now have it within our power to eradicate from the face of the earth that age-old scourge of mankind: malaria." In the 60 years since the discovery that this disease was transmitted by mosquitoes of the genus *Anopheles*, public health workers throughout the world have dreamed periodically about wiping out malaria, with new drugs such as primaquin and chloroquine, or with new insecticides like DDT and dieldrin. The initial impetus to the present program for malaria eradication throughout the world began in earnest with the campaign that eradicated the African malarial mosquito (*Anopheles gambiae*) from northeastern Brazil in 1940 (Soper and Wilson, 1943) and received strong support in the late 1940's as other countries in this hemisphere such as Puerto Rico, United States, Venezuela, and Chile demonstrated great reductions in malaria transmission, chiefly

through DDT residual spray programs. The progress toward the goal of complete eradication has been documented by Paul Russell in a series of papers, such as his fine 1957 article entitled "Malaria in the World Today."

A distinguished group of malaria experts from many countries met in Athens, Greece from June 20-28, 1956 and wrote the Sixth Report of the Expert Committee on Malaria of the World Health Organization. This stated clearly that it was now practical to work intensively on a world-wide program of malaria eradication (completely wiping out the disease in the human population by a campaign limited in time) as distinct either from mosquito eradication (as in the *Aedes aegypti* eradication in the New World) or conventional malaria control (keeping the disease at the lowest possible level but with continuing budgets over an indefinite number of years). This Sixth Report recommended that (1) the world malaria eradication program should be accelerated immediately because an increasing number of important malaria mosquitoes were showing significant resistance to insecticides, and (2) that training courses of two to three months duration be held for all professional people working on this campaign.

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The present world-wide malaria eradication program, supported by the International Cooperation Administration, U. S. Public Health Service, World Health Organization, Pan American Sanitary Bureau, United Nations Children's Fund and other organizations, requires far more trained malaria specialists than presently are available. Formerly, a large well organized group of such personnel was available in the United States, but as a result of the programs which have almost eradicated malaria in this country, these entomologists, parasitologists, physicians, sanitarians and sanitary engineers have become engaged in other pursuits.

The Pan American Sanitary Bureau has supported Spanish language training centers in malaria eradication techniques in Mexico and Venezuela, but a similar course in the English language has not been held in the Western Hemisphere. For this reason, the Pan American Sanitary Bureau sponsored as a semi-emergency measure a course for urgently-needed technical personnel from October 14–December 21, 1957. The first eleven weeks were held in Guatemala City, and the last week was spent in El Salvador.

This course, under the directorship of Dr. Firmino de Oliveira Lima, was staffed almost entirely by visiting lecturers who were staff members of the Pan American Sanitary Bureau, U. S. Public Health Service, International Cooperation Administration, United Nations Children's Fund and other organizations. The group from the United States included many people who are members of the American Mosquito Control Association: L. L. Williams, Donald Pletsch, Patrick Owens, George Bevier, Lawrence Hall, Donald R. Johnson, and Harry D. Pratt, long associated with malaria programs. The course was designed primarily for physicians, entomologists and sanitary engineers, but was open also to sanitary inspectors. The twelve weeks were devoted to all phases of malaria eradication: entomology, statistics, parasitology, epidemiology, public health education, chemotherapy, public health ad-

ministration, vehicle management and maintenance, engineering and spraying operations. Classroom lectures, laboratory assignments and actual field operations gave all participants a well rounded program of activity. Engineers studied malaria parasites, physicians identified anopheline mosquitoes, and entomologists became conversant with chemotherapy. All weighed and mixed insecticides and sprayed houses until thoroughly familiar with techniques used.

The thirty "students" came from sixteen different countries and territories of every region and continent of the world: Argentina, Australia, British Honduras, Colombia, Ethiopia, Grenada, Haiti, India, Italy, Jamaica, Mexico, Philippines, Saint Lucia, Trinidad, West Germany, and the United States. They included fellow members of this organization such as Russell Fontaine, Carlton D. Gilkes, Pantelis Milous, T. A. Omardeen, and M. Sta. Maria. All have since gone on to other countries where they now are actively engaged in a common effort to eradicate malaria.

The Guatemala-El Salvador course was only the first of a series of English language courses which will continue at least through 1961. The training center is being reestablished, under the joint auspices of Pan American Sanitary Bureau and International Cooperation Administration, in Kingston, Jamaica. The first course for senior officials was scheduled for May 19 to August 5, 1958. A separate shorter course for sanitarians was scheduled for August 4–September 27. A second course for senior officials will be presented from September 15–December 6, 1958. The resident staff for this center will include Walter C. Earle, M.D. as Director, Dr. Paul L. Rice as Associate Director, and several other persons experienced in malaria eradication activities.

This staff will be augmented by visiting lecturers from the various agencies mentioned above. In addition to the regular courses, special seminars and study sessions are planned as may be required.

It is anticipated that approximately twenty persons can be accommodated per course. The students will be selected by International Cooperation Administration, World Health Organization and Pan American Sanitary Bureau. Employees engaged in antimalaria work of these organizations, as well as key personnel of national malaria programs are eligible to attend.

The amazing reduction in malaria in the past fifteen years in the Western Hemisphere and in many other countries such as Italy, India, and the Philippines, has raised hopes that this disease may be wiped out completely by a concerted campaign directed in each country by a team of well-trained supervisory personnel. The World Health Organization, International Coop-

eration Administration, Pan American Sanitary Bureau, United Nations Children's Fund, and cooperating agencies are aiming at total eradication of malaria throughout the world in five to ten years with the exception of residual foci in inaccessible areas such as portions of tropical Africa and the upper Amazon basin.

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MAINTENANCE EQUIPMENT USED ON MARYLAND SALT MARSHES, INCLUDING A NEW DITCHER

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Within the tidewater region of Maryland there are around 300,000 acres of marsh, with a large percentage of this vast acreage capable of producing salt-marsh mosquitoes, whenever proper conditions prevail. In the early thirties two CCC companies were engaged in mosquito work in Worcester County, but during the interval of time they were engaged in this work only fifteen or twenty thousand acres of salt marsh were ditched. In the last twenty or so years, no maintenance work has been done to the ditches constructed by the CCC forces, nor has there been any mosquito work of importance accomplished elsewhere in the state during this interval of time.

In Maryland, a new mosquito program was made effective July 1, 1956 with funds

available for both temporary and permanent work. The portion of the law relating to permanent work stipulates that work shall be undertaken only upon the condition that the municipality or special taxing area involved shall agree to defray at least 25 percent of the total cost of such work.

In order to set up an economical maintenance or ditching program for the various interested groups, it has been necessary to rely principally upon machine work, because the grade of labor obtainable for this purpose is generally poor, and if used at today's rates the cost would be prohibitive. In order for us to make any real progress in the next few years, on the vast acreage involved, we would have to rely largely on good, efficient machinery.