

A.I.D. BIBLIOGRAPHY SERIES:  
HEALTH NO. 2

JULY 15, 1969

# **MALARIA ERADICATION**

**A Selected List of References for A.I.D. Technicians**

**Prepared by  
Health Service  
Office of the War On Hunger  
in cooperation with  
A.I.D. Reference Center**

**Agency for International Development  
Department of State  
Washington, D. C. 20523**

M A L A R I A      E R A D I C A T I O N

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## INTRODUCTION

This bibliography is one of a series designed as a guide to the publications of AID and other agencies working in the field of development assistance. While AID reports and documents are the primary focus of this bibliography, materials on work by private organizations and international agencies are included to a limited extent.

AID employees should be able to benefit by the Agency's past experience. One method of benefitting from this experience is the reading of reports on past activities. The annotated listing in this particular bulletin reflect the experience of AID and other agencies with malaria eradication programs.

### To Obtain Retention or Loan Copies

A number of the reports listed in this bibliography were issued only in limited quantities. Reference copies of most of them are available in the Malaria Eradication Branch and the AID Reference Center. An effort has been made to secure an extra loan copy whenever possible.

If a technician wishes to obtain a publication issued by the AID mission for his own files, he should address his request directly to the mission. If the desired publication was issued by AID/Washington, the technician should address his request to:

Health Service  
Office of the War on Hunger  
Agency for International Development  
Washington, D.C. 20523

For loan service, overseas technicians should also address their requests to the Malaria Eradication Branch, which will supply the material from its own collection or make arrangements with the AID Reference Center for a loan copy. Washington staff members may pick up loan materials at the AID Reference Center in Room 1656 New State.

### Guides to Use of This Bibliography

1. A first point of reference should be the bibliographic classifications used in the table of contents to see if any topics of particular interest to the technician are included.
2. The annotations of some of the more general publications will sometimes indicate coverage of a specific topic which may be of interest.

3. Within each of the classifications, documents are arranged in chronological order with the most recent material listed first.
4. There has been a special effort to identify evaluative documents which report on past AID experience from the standpoint of what worked or didn't work, and why. Because of this, they are likely to provide useful guidelines to future action. In this bibliography the materials coming most directly within this classification are Nos. 19, 24, 27-35, 37, 38, 40, 42-44.
5. Technical advisors concerned with criteria for evaluating malaria eradication programs will find helpful material in the WHO Technical Report Series, see Note following item No. 25 (Reports No. 8 and 9).
6. Technicians who are going overseas on assignment to a particular country may find information, not only in Part IV Country Programs, but also in the Part II Worldwide Program and Part III Regional Programs. Check the tables of contents of items No. 24-28.

#### Other Sources of Information

AID technicians concerned with malaria eradication who are in Washington on home leave or for orientation prior to going overseas may want to visit the following two agencies:

1. The headquarters of the Pan American Health Organization located next to the State Department at 24th St. and Virginia Ave. PAHO is a regional agency of the World Health Organization. This organization issues a number of training manuals, technical handbooks, status reports and other helpful publications. Technicians should visit this agency not only to obtain publications but also to consult with specialists in their own area of professional interest or from the country to which they are assigned.

2. The National Library of Medicine located on the grounds of the National Institutes of Health in Bethesda, Maryland.

#### Send In Your Ideas

Suggestions as to distribution or format of this bibliography, or of additional publications to be included in it (along with two copies of each), should be addressed to the Program and Technical Information Staff as follows:

PPC/PRB/PTIS  
Agency for International Development  
Washington, D. C. 20523

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PART I. MATERIALS BY GENERAL SUBJECT

ADMINISTRATION

1. PREVENTION OF THE REINTRODUCTION OF MALARIA, REPORT OF A WHO MEETING. Technical Report Series No. 374. 1967, 32 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.532, W927a.\*

In the light of substantial success in malaria eradication, problems of reintroduction are discussed. Emphasis is placed on screening travellers, international coordination of immigration and health authorities, the interpretation of international sanitary regulations, and training programs.

2. REPORT ON THE THIRD ASIAN MALARIA CONFERENCE. SEA/Mal/16. 1967, 69 pp. World Health Organization, Regional Office for Southeast Asia, New Delhi, India. ARC Catalog No. 614.532, W927b.

Administration was an important topic of discussion. Topics covered lines of responsibility, staffing, salaries, allowances, logistics, community health education, and legislation. Training, supervision, reporting, chemotherapy, resistance and surveillance were also discussed and conference recommendations were made. Texts of addresses given on the opening day are included as well as country summaries on the status of malaria eradication in Southeast Asia.

3. Griffith, Melvin E., "The Worldwide Malaria Eradication Program." BULLETIN OF THE ENTOMOLOGICAL SOCIETY OF AMERICA, Vol. 12, Number 2, June 1966, pp. 130-136. ARC Catalog No. 614.532, G854.

Traces the history of the malaria eradication program beginning in 1955, and the roles played in this program by the United States, the World Health Organization, the United Nations Children's Fund and voluntary agencies. Points of attack are identified and related to insecticides and drugs, and to the resistance associated with malaria vectors and malaria parasites. The phases and organizational aspects of a national program are discussed as well as training and the need for cooperation at the international level.

4. Worthington, Amos D. Jr., ADMINISTRATION MANAGEMENT WITHIN THE MALARIA ERADICATION PROGRAM OF THE KINGDOM OF THAILAND. 1963, 27 pp. USOM/Thailand, Bangkok. ARC Catalog No. TI 614.532, W933.

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\* ARC is the abbreviation for AID Reference Center located in Room 1656 New State Building, AID/Washington.

Report outlines the administrative management system of the malaria eradication program in Thailand. Cost data and budget estimates are given. Problems of personnel management, including positions, salary and per diem rates are discussed. Also described are supply management requirements such as furnishing supplies, scheduling deliveries, maintaining records and use of vehicles.

5. MANUAL ON PREPARATION OF MALARIA ERADICATION PROGRAMMES. WHO/MEM/3. July 1961, 74 pp. World Health Organization, Division of Malaria Eradication, Geneva, Switzerland. ARC Catalog No. 614.532, W927.

Manual gives guidance on the planning and organization of malaria eradication programs. The scope, implications and sequence of work for a preeradication survey are discussed. A complete outline is given for a program proposal which, if approved, can serve as a plan of operations.

6. Soper, Fred L., Justin A. Andrews, Karl F. Bode, G. Robert Coatney, Walter C. Earle, S. M. Keeny, E. F. Knipling, John A. Logan, Robert L. Metcalf, Kenneth D. Quarteman, Paul F. Russell and Louis L. Williams, REPORT AND RECOMMENDATIONS OF THE ICA EXPERT PANEL ON MALARIA. 1960, 117 pp. U.S. International Cooperation Administration, Washington. Also printed in AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE, Vol. 10, No. 4, pp. 451-502, July 1961, The Williams & Wilkins Co. ARC Catalog No. 614.532, I61.

Report summarizes U.S. policy on malaria eradication and traces the history and development of this program before the advent of DDT and during the early period of its use. Progress to date is discussed and future cost estimates are made. Technical considerations are discussed including subjects such as spraying, insecticide dosage and resistance, chemotherapy and drug resistance. The organization and administration of an eradication program were discussed. Political problems and social implications are described.

7. MALARIA CONFERENCE FOR THE WESTERN PACIFIC AND SOUTHEAST ASIA REGIONS, SECOND ASIAN MALARIA CONFERENCE, BAGUIO, PHILIPPINES, 15-24 November 1954. Technical Report Series No. 103. 1956, 44 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.532, W927d.

The control of vectors by use of DDT is discussed. Results of research are reported on entomology, parasitology, therapeutics, malaria control and epidemiology. Recommendations include a statement that the countries should intensify their malaria control programs to achieve actual eradication of this disease.

Cross References on ADMINISTRATION: See also items No. 11, 22, 24, 25, 28, 30, 31, 34, 36, 39, 40, 44.

#### CASE DETECTION

Cross References: See items No. 1, 22, 41, 42.

#### CHEMOTHERAPY

8. CHEMOTHERAPY OF MALARIA, REPORT OF A WHO SCIENTIFIC GROUP. Technical Report Series No. 375. 1967, 91 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 616.9362, W927.

Work on antimalarial drugs is reviewed and the availability and administration of drugs in the prevention and treatment of malaria are discussed. The resistance of human malaria parasites to drugs is described in regard to spectrum of response and geographical distribution. Procedures for assessing drug resistance and treatment response are considered. Ten annexes give tabular data on drug names, formulas, patterns of cross resistance, response to various drugs and some results on the use of chloroquine in treating falciparum malaria.

Cross References on CHEMOTHERAPY: See also items No. 2, 6, 7, 15, 17, 20, 22, 28, 36, 43.

#### DRUG USE

See CHEMOTHERAPY.

#### ENTOMOLOGY

9. Darsie, R. F., H. F. Kroening, A. P. Ray, L. A. Schinazi, T. F. McGowan, W. Alves, ADVANCED MALARIA ENTOMOLOGY. October, 1967, 482 pp. Malaria Eradication Training Center, Manila, Philippines. ARC Catalog No. 595.7, M237a.

The publication is one of a series prepared with support from WHO and USAID. It gives the complete lecture materials used in a four-week course on malaria entomology. Lectures and laboratory activities include a study of arthropods, parasitology, factors in the transmission of malaria, malarimetric surveys, entomological baseline data, insecticides, and surveillance.

10. MOSQUITO ECOLOGY, REPORT OF A WHO SCIENTIFIC GROUP. Technical Report Series No. 368. 1967, 22 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.4323, W927.

Report gives an appraisal of present knowledge of mosquito ecology and considers how this knowledge can be used in finding an effective means of controlling mosquitos. There is an analysis of methods of studying mosquito populations.

Cross References on ENTOMOLOGY: See also items No. 16, 20, 21, 30, 31, 37, 41, 44.

### EPIDEMIIOLOGY

11. Black, R. R., MANUAL OF EPIDEMIOLOGICAL SERVICES IN MALARIA PROGRAMMES. 1968, 223 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.49, W927.

This author is a member of the faculty at the School of Public Health and Tropical Medicine, University of Sydney, Australia. He discusses the role of the epidemiologist in malaria programs and surveillance operations, including blood examinations and laboratory services. Describes how to assess progress and suggests methods of reporting.

12. IMMUNOLOGY OF MALARIA, REPORT OF A WHO SCIENTIFIC GROUP. Technical Report Series No. 396. 1968, 50 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 616.9362, W727b.

An analysis is made of the relationship of immunity to the life cycle of parasites, and to the epidemiological aspects of malaria. Reviews basic immunological knowledge and outlines its application to research on malaria. Special consideration is given to methods of improving diagnostic tests.

13. Ray, A. P., H. F. Kroening, L. A. Schinazi, R. F. Darsie, and T. F. McGowan, ADVANCED MALARIA EPIDEMIOLOGY. April 1968, 299 pp. Malaria Eradication Training Center, Manila, Philippines. ARC Catalog No. 614.532, M237a.

This publication is one of a series prepared with support from WHO and USAID. It gives the complete lecture materials used in a two-week course on malaria epidemiology. Covers the concept of eradication, including factors in transmission, administrative aspects, sampling techniques and training.

Cross References on EPIDEMIOLOGY: See also items No. 1, 10, 20, 22, 29-31, 37, 41-44.

EQUIPMENT AND SUPPLIES

Cross References: See items No. 20, 36, 45.

EVALUATION

Cross References: See items No. 19, 24, 27-35, 38, 40, 42-44.

FINANCE

Cross References: See items No. 25, 26, 34.

HEALTH EDUCATION

Cross References: See items No. 20, 30, 35.

INSECTICIDES

14. INSECTICIDE RESISTANCE AND VECTOR CONTROL, THIRTEENTH REPORT OF THE WHO EXPERT COMMITTEE ON INSECTICIDES. Technical Report Series No. 265. 1963, 228 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.432, W927.

Discusses insect resistance to insecticides and some of the problems of vector control. Seventeen annexes deal with susceptibility of selected insects to insecticides, methods for determining susceptibility, and methods of vector control.

Cross References on INSECTICIDES: See also items No. 3, 6, 7, 15, 18, 20, 22, 25, 36.

LABORATORY OPERATION

Cross References: See items No. 1, 11, 12, 21, 22, 28, 31, 43.

LEGISLATION

Cross References: See items No. 2, 20, 30.

MANAGEMENT

See ADMINISTRATION.

PLANNING

Cross References: See items No. 5, 6, 20, 22, 25.

PARASITOLOGY

Cross References: See items No. 6, 16, 20, 22, 39.

PERSONNEL

Cross References: See items No. 36, 37, 39.

RESEARCH

15. REPORT OF ACTIVITIES FOR THE YEAR ENDING JUNE 30, 1968, CENTRAL AMERICA MALARIA RESEARCH STATION. PASA No. RA(HA) 2-67. 1968, 37 pp. National Communicable Disease Center, Public Health Service, U.S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. LAT 614.532, D419.

Describes the establishment of the Central America Malaria Research Station (CAMRS) at Colonia Montserrat, San Salvador. The Station was established under authority of a USAID Country Project Agreement dated June 2, 1967. Research programs are worked out in cooperation with UNICEF and PAHO. Initial projects deal with aerial application of insecticides, larvicides, thermal fogging application of insecticides and use of pyrimethamine and primaquine drugs.

16. REPORT OF ACTIVITIES FOR THE YEAR ENDING JUNE 30, 1968, THAILAND MALARIA OPERATIONAL RESEARCH UNIT. PASA No. RA(HA) 2-67. 1968, 37 pp. National Communicable Disease Center, Public Health Service, U.S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. TI 614.532, D419a.

Describes the establishment and first year of operation of the Thailand Malaria Operational Research Unit (TMORU), Bangkok, Thailand. Initial research was done on entomologic and parasitologic studies.

Cross References on RESEARCH: See also items No. 12, 14, 17, 24, 27.

RESISTANCE, PARASITES

17. RESISTANCE OF MALARIA PARASITES TO DRUGS, REPORT OF A WHO SCIENTIFIC GROUP. Technical Report Series No. 296. 1965, 65 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 616.9362, W927.

Two principal points are covered: (1) assessment of resistance in malaria parasites, and (2) actions which can be taken as counter-measures when drug resistance is confirmed. There is a discussion of the criteria of resistance of malaria parasites to 4-amino-quinolines.

Cross References on RESISTANCE, PARASITES: See also items No. 6, 8, 12, 14.

### RESISTANCE, VECTOR

18. GENETICS OF VECTORS AND INSECTICIDE RESISTANCE, REPORT OF A WHO SCIENTIFIC GROUP. Technical Report Series No. 268. 1964, 40 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.43, W927.

The present state of knowledge on the genetics of vectors and insecticide resistance is reviewed. Genetic control problems are discussed and methods of using genetic knowledge to meet the resistance problem are recommended. The importance of international coordination in research with standardized procedures and techniques is pointed out.

Cross References on RESISTANCE, VECTOR: See also items No. 7, 10, 14, 27, 30, 35-37.

### SPRAYING OPERATIONS

Cross References: See items No. 6, 20, 22, 30, 31, 35, 37, 38, 40, 41, 43, 45.

### SURVEILLANCE

Cross References: See items No. 2, 11, 20, 22, 28, 29, 31-33, 38, 40, 43.

### SURVEYS

Cross References: See items No. 24-26.

### SUSCEPTIBILITY

See RESISTANCE, VECTOR.

### TRAINING

19. Kroening, H. F., A. P. Ray, L. A. Schinazi, T. F. McGowan, D. D. Bonnet, A. Kinney, and R. Bates, MALARIA ERADICATION TRAINING COURSE FOR INSTRUCTORS. May 1968, 223 pp. Malaria Eradication Training Center, Manila, Philippines. ARC Catalog No. 614.532, M237b.

A teaching manual which is one of a series used at the International Malaria Eradication Training Center (METC) under a program supported by WHO and USAID. The publication gives a three-week course outline, complete with lecture materials.

20. Ray, A. P., H. F. Kroening, W. Alves, T. F. McGowan, R. F. Darsie, L. A. Schinazi, and A. R. Amante, MALARIA ERADICATION TRAINING COURSE FOR PROFESSIONAL PERSONNEL, VOLUME I, BASIC SUBJECTS: VOLUME II, MALARIA ERADICATION PRINCIPLES AND PRACTICES. January-March, 1968, 926 pp. Malaria Eradication Training Center, Manila, Philippines. ARC Catalog No. 614.532, M237, V.I,II.

The above publication is one of a series of student manuals prepared for the International Malaria Eradication Training Center (METC), which receives its support from WHO and USAID. These two books form the curriculum for a three-month basic course on malaria eradication. Among the topics covered are: the philosophy and principles of malaria eradication, legal aspects, administration and budgeting, program planning, parasitology, epidemiology, entomology, laboratory operation, insecticides and insecticide resistance, health education, equipment, base-line data development, spraying operations, surveillance operations, research, training, and maintenance activities. Other manuals for specialized short courses which have been published include:

- |  |                               |
|--|-------------------------------|
| (a) ADVANCED MALARIA ENTOMOLOGY  | Oct. 3-27, 1967 (See No. 9)   |
| (b) ADVANCED MALARIA EPIDEMIOLOGY  | April 9-26, 1968 (See No. 13) |
| (c) MALARIA ERADICATION TRAINING COURSE FOR INSTRUCTORS                              | May 7-31, 1968 (See No. 19)   |
| (d) MALARIA TRAINING COURSE FOR PEACE CORPS VOLUNTEERS                               | April 2 to May 10, 1968       |
| (e) GROUP EDUCATION ACTIVITY ON MALARIA ERADICATION FOR PUBLIC HEALTH ADMINISTRATORS | Nov. 5 - Nov. 22, 1968        |
21. Darsie, Richard F. Jr., and Adela C. Ramos, LABORATORY MANUAL OF MALARIA ENTOMOLOGY. February 1968, 162 pp. Malaria Eradication Training Center, Manila, Philippines. ARC Catalog No. 595.7, M237.

Manual prepared for the Malaria Eradication Training Center (METC) which is supported by WHO and USAID. The publication is used in teaching laboratory techniques with emphasis on the morphology, identification and ovarian development of the anopheline mosquito and the testing of insecticide susceptibility.

22. Pampana, Emilio, A TEXTBOOK OF MALARIA ERADICATION. 1963, 508 pp. London and New York: Oxford University Press. ARC Catalog No. 614.532 P185.

This basic textbook by the former Director of the Division of Malaria Eradication of the World Health Organization is supplied to all students enrolled in the International Malaria Eradication Training Center in Manila. The three parts of the book are devoted to: (a) the epidemiological basis of malaria eradication, (b) the methods for interrupting malaria transmission, and (c) the steps in planning and carrying out an eradication campaign. Final chapters discuss the benefits which accrue from a successful campaign, common mistakes in planning and implementation of campaigns, and the responsibilities of government.

Cross References on TRAINING: See also items No. 1-3, 5, 9, 13, 25, 26, 30, 31, 37-39.

#### TRANSPORTATION

23. Lowry, Walter R., TRANSPORT MANUAL. Dec. 1962, 135 pp. plus two annexes. AID/Bangkok Thailand. ARC Catalog No. 614.532, L921.

A compilation of materials on motor transport prepared for use in the malaria eradication program of Thailand. Separate chapters are devoted to: (a) principles of transport management, (b) duties of the transport supervisor, (c) control records, (d) maintenance program, (e) parts inventory and shop facilities, (f) tires, batteries and lubricants, and (g) maintenance in tropical areas. Annex I deals with procurement procedures and forms. Annex II is a 39-page drivers handbook. Sample forms for record-keeping are included.

#### PART II. WORLDWIDE PROGRAM

24. THE NATIONAL COMMUNICABLE DISEASE CENTER MALARIA ERADICATION PROGRAM, 1968 ANNUAL REPORT. PASA No. TCR 2-66. 1968, 199 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare for AID/ Washington. ARC Catalog No. 614.532, D419, 1968.

Reports activities under this PASA in 18 countries by a field staff of 60 malaria eradication specialists. Sections are devoted to operations, evaluation, training and research. The activities in each country are covered in sections on geographic and malariologic data, history of antimalarial activities and the present status of the program.

25. WHO EXPERT COMMITTEE ON MALARIA: THIRTEENTH REPORT. Technical Report Series No. 357. 1967, 59 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.532, W927.

Reports that malaria eradication is an accomplished fact for 61.9 million people and that for 334 million more persons this disease is no longer a major problem. There is a detailed review of programs, region by region. Major factors affecting eradication programs are discussed under the headings:

(a) planning, (b) administration and finance, (c) personnel and training, (d) technical problems related to resistance to insecticides, and (e) operations. This latter section lists 8 factors essential for a successful eradication program, and rates programs on the basis of these factors. There is a brief discussion of pre-eradication programs under way in 23 countries being assisted by WHO, and a chapter titled "Approach to Malaria in the African Region."

Note: This publication is part of a continuing series. Reports one through five deal with malaria control while reports No. 6 up to the present deal with malaria eradication. In addition to status reports, each document emphasizes some highlight of the general program. Report No. 6 highlights the organization and the basic requirements for malaria eradication programs, No. 7 conducting such programs, No. 8 criteria for malaria eradication, No. 9 criteria for assessing projects, No. 10 epidemiological criteria, No. 11 entomological aspects, No. 12 maintenance and chemotherapy, No. 13 (see listing above), and No. 14 chemotherapy and diagnostic techniques, and a review of malaria eradication programs over the past 10 years.

26. THE NATIONAL COMMUNICABLE DISEASE CENTER MALARIA ERADICATION PROGRAM 1967 ANNUAL REPORT. PASA Control No. TCR 2.66. Circa 1967, 60 pp. National Communicable Disease Center, Public Health Service, U. S. Dept. of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. 614.532, D419, 1967.

Worldwide malaria eradication efforts are summarized with details on accomplishment, status, pending goals and problems. Special emphasis is placed on countries where the FY 67 program was active. These countries were Brazil, Costa Rica, Ecuador, El Salvador, Ethiopia, Guatemala, Haiti, Honduras, India, Jordan, Nepal, Nicaragua, Pakistan, Philippines, Thailand, and Viet-Nam. Funding and training activities are summarized.

## PART III. REGIONAL PROGRAMS

LATIN AMERICA

27. STATUS OF MALARIA ERADICATION IN THE AMERICAS. Report No. XVI. Sept. 1968, 121 pp. Pan American Health Organization, 525 23rd St., N. W., Washington, D. C. 20037. ARC Catalog No. LAT 614.532, P187.

Presents in text, tables, graphs and maps a clear picture of malaria eradication for the entire region and for each country as well. Sections are devoted to the phase of eradication attained, the technical problems of resistant strains of mosquitos and methods of dealing with them, current research projects, and the extent of international cooperation. Report is one of a continuing series.

28. Donaldson, Alan W., Richard Fay, Geoffrey M. Jeffery, Robert Kaiser, and Louis Ogden, REPORT OF THE CENTRAL AMERICA MALARIA ERADICATION ASSESSMENT TEAM. PASA Control No. TCR 2-56. March 1964, 83 pp. Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga. for AID/Washington. ARC Catalog No. LAT 614.532. D419.

Report based on data collected in El Salvador, Guatemala, and Nicaragua. Discusses the malaria eradication program carried on between 1956 and 1964. Progress is noted but the need for continuing activities is evident. One conclusion is that it is questionable whether total eradication is possible by using existing techniques. Drug use, laboratory operations and surveillance are discussed, and recommendations for achieving eradication are made. Regional aspects of the program are studied and separate chapters on each of the countries are also included. There are numerous charts, tables, and maps. As a part of the assessment team's work, Dr. Donaldson prepared a nine-page summary titled, HONDURAS MALARIA ERADICATION PROGRAM which was dated April 1964 (See item No. 34).

Cross Reference on LATIN AMERICA: See item No. 15.

AFRICA

Cross Reference: See item No. 25.

ASIA

Cross Reference: See item No. 2.

## PART IV. COUNTRY PROGRAMS

BRAZIL

29. Hinman, Alan R., David J. M. MacKenzie, Ladene H. Newton, Bruce F. Peters, Karl A. Western, and Victor M. Zalma, FIELD REVIEW OF SURVEILLANCE ACTIVITIES OF THE MALARIA ERADICATION PROGRAM, BRAZIL CR III AND RIO DE JANEIRO SECTORS. PASA Control No. TCR 2-66. January 17-February 21, 1968, 68 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. BL 614.532, D419.

Reviews the malaria control program begun in 1941 and the malaria eradication program begun in 1951. Report is limited to study of the program in two regions, Coordenacao Region III around Recife and the state of Rio de Janeiro. Maps depict areas. Emphasis is placed on epidemiology and surveillance operations.

30. Villalobos, Dr. Enrique C., Eloy A. Barreda, Dr. Jose Pedro Divet, Sheldon A. Miller, and G. Boyd Woods, EVALUATION OF THE MALARIA ERADICATION PROGRAM IN BRAZIL, 1964. Alliance for Progress Loan Agreement No. 512-L-021. Dec. 1964, 354 pp. Pan American Sanitary Bureau, Regional Office of the World Health Organization, Rio de Janeiro, Brazil. ARC Catalog No. BL 614.532, W927.

This evaluation was carried out between Sept. 25 and Dec. 7, 1964. The history of malaria eradication between 1931 and 1964 is summarized and the current status of eradication is discussed. Also covers legislation, organization and administration, spray operations, susceptibility, epidemiology, entomology, training, and health education. Appendices A through J give statistics, maps and descriptions of activities in various regions. Problem areas are noted and recommendations are made.

Cross References on BRAZIL: See also items No. 24, 26.

CEYLON

31. Rao, B. A., D. A. Muir, and W. Rooney, REPORT ON AN ASSESSMENT OF MALARIA ERADICATION PROGRAMME IN CEYLON. SEA/MAL/37. March 1964, 41 pp. Regional Office for Southeast Asia, World Health Organization, Bangkok. ARC Catalog No. CE 614.532, W927.

National malaria control program is discussed for period between 1945 and 1964. Epidemiology, entomology, institutional organization, spraying and surveillance operations are analyzed. Laboratory and training services are noted. Recommendations to improve efficiency and effectiveness are made. Population and other statistics are included.

#### COSTA RICA

Cross References: See items No. 24, 26.

#### ECUADOR

32. Hinman, Alan R., Jesse Hobbs, Robert S. Lawrence, K. C. Lianqand, and Donald H. Schliessmann, FIELD REVIEW OF SURVEILLANCE ACTIVITIES OF THE MALARIA ERADICATION PROGRAM, ECUADOR, SEPT. 10-22, 1967. PASA Control No. TCR 2-66. 1967, 6 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. EC 614.532, D419.

Ecuador is divided into four zones with respect to the prevalence of malaria. This is a status report on selected sub-zones. A brief history of the National Malaria Eradication Service (SNEM) covers the years from 1956 to 1967. Tables on review of surveillance activities and slide examinations constitute a large part of the report.

Cross References on ECUADOR: See also items No. 24, 26.

#### EL SALVADOR

Cross References: See items No. 24, 26, 28.

#### ETHIOPIA

Cross References: See items No. 24, 26.

#### GUATEMALA

Cross References: See items No. 24, 26, 28.

#### HAITI

33. Hinman, Alan R., David T. Allen, Robert S. Lawrence, and Theodore H. Weinstein, FIELD REVIEW OF SURVEILLANCE ACTIVITIES OF THE MALARIA ERADICATION PROGRAM, HAITI, NOV. 7-DEC. 2, 1967. PASA Control No. TCR 2-66. 1967, 35 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. HT 614.532, D149.

Describes current status of malaria eradication operations carried out by the National Malaria Eradication Program (SNEM) of Haiti and the effect this program has had on the incidence of malaria. Malarial areas are described within various zones of elevation. Surveillance activities are discussed. Numerous tables and charts are included.

Cross References on HAITI: See also items No. 24, 26.

#### HONDURAS

34. Donaldson, Alan W., HONDURAS MALARIA ERADICATION PROGRAM. April 1964, 9 pp. National Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga. for AID/Washington. ARC Catalog No. HO 614.532, D419.

The 1964 status of a program which was started in 1958 is reported. Funds expended are cited. Persistent causes of transmission are discussed. Alternatives to goal of eradication are set forth and recommendations for technical and administrative changes are suggested. Maps are included. (Report is sometimes issued as an appendix to the publication listed as item No. 28 of this bibliography.)

Cross References on HONDURAS: See also items No. 24, 26, 28.

#### INDIA

35. Hinman, E. Harold, F. E. Gartrell, and Donald J. Pletsch, A CRITICAL REVIEW OF THE NATIONAL MALARIA ERADICATION PROGRAM OF INDIA. Nov. 1960, 92 pp. Health Division, U. S. Technical Cooperation Mission to India, ICA/New Delhi, India. ARC Catalog No. IN 614.532, P726.

Report describes the malaria eradication program in India for the period between 1953 and 1960. Thirteen state programs were included in the evaluation. Spraying techniques, loss of susceptibility to residual insecticides, transport and public information aspects are discussed. Progress is noted and recommendations for continuance of the program are made.

36. MANUAL OF THE MALARIA ERADICATION OPERATION. 1960, 388 pp. National Malaria Eradication Programme, Ministry of Health, Government of India, 22 Alipur Road, Delhi, India. ARC Catalog No. IN 614.532, I39.

A government operational manual from a country where AID has been actively involved in giving technical assistance to a large-scale eradication program. Manual is based on experience with a five-year program. Gives a brief history of the program and outlines the organizational structure and duties of personnel at the regional and local levels. Other sections cover insecticides, resistance to insecticides, chemotherapy, and use and maintenance of spraying equipment. Over one-half of the manual is devoted to a detailed summary of the situation with respect to malaria control in each of the states of India. Provisions of the third Five Year Plan with respect to malaria eradication are included in a final chapter.

37. Hume, John C., John M. Henderson, M.D. Young, and L. J. Bruce-Chwatt, MALARIA ADVISORY TEAM REPORT ON A MISSION TO INDIA. April 1957, 159 pp. U. S. International Cooperation Administration, New Delhi, India. ARC Catalog No. IN 614.532,H921.

Working closely with the Malaria Institute of Delhi, India, this report examines the history of work on malaria control from 1924 to 1957. Different geographic areas of malaria incidence are identified. There is discussion of epidemiology, entomology, spraying, labor, training, insecticide resistance and population movements. Conclusions are drawn.

Cross References on INDIA: See also items No. 24, 26.

### IRAN

38. Frederiksen, Harald, Oscar Larrea, John W. McDowell and S. P. Ramakrishnan, REPORT OF THE IRAN MALARIA ERADICATION ASSESSMENT TEAM, WHO-USAID. Dec. 1963, 123 pp. AID/Teheran, Iran. ARC Catalog No. IR 614.532, F852.

Report prepared at the request of the Government of Iran for an unbiased, independent assessment of the malaria eradication program. History of the program is discussed with emphasis on U.S. assistance between 1953 and 1963. An analysis of the organization and administration of the program, as well as of training, spraying and surveillance operations is made. Recommendations for improvement of the program are included. Population figures are given as well as statistics on positive malaria cases and on the number of persons treated.

39. Brooke, M. M., REPORT ON THE ORGANIZATION AND OPERATION OF THE INSTITUTE OF PARASITOLOGY AND MALARIOLOGY. May 1963, 37 pp. Public Health Division, AID/Teheran, Iran. ARC Catalog No. IR 616.96, B872.

Part I summarizes broad, general policy recommendations by the surveying officer. Part II presents a brief history of the Institute and its organization, teaching program, personnel, finances and procurement, buildings and equipment, and the activities of its six divisions. Part III gives a number of specific recommendations on administrative matters addressed primarily to the Director of the Institute.

#### JORDAN

Cross References: See items No. 24, 26.

#### NEPAL

40. Bonnet, David, David Holden, Robert Lawrence, Gordon Moore and Merrill Wood, MALARIA PROGRAM REVIEW - NEPAL. PASA Control No. TCR 2-66. January 15-February 10, 1967, 37 pp. National Communicable Disease Center, Public Health Service, U.S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. NP 614.532, D419.

Review is made of malaria eradication program originated in 1955 with USAID assistance. Local organization, current status of eradication, surveillance and spray activities are discussed. Map depicts geographical subdivisions, and graphs are used to illustrate program trends. Thirteen conclusions are drawn.

Cross References on NEPAL: See also items No. 24, 26.

#### NICARAGUA

Cross References: See items No. 24, 26, 28.

#### PAKISTAN

41. Lobel, Hans O., George T. Carmichael, and John R. Gorham, STUDY OF URBAN MALARIA IN KARACHI, WEST PAKISTAN, AUGUST 12-SEPTEMBER 17, 1968. PASA Control No. TCR 2-66. 1968, 55 pp. National Communicable Disease Center, Public Health Service, U.S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. PK 614.532. D419a.

An analysis is made of the epidemiological, environmental, and entomological factors which influence the transmission of malaria in Karachi. Case detection and residual spraying are discussed, and needed control measures are recommended.

42. McDowell, John W., Donald W. Mitchell, Hans O. Lobel, Cyrus C. Hopkins, Charles M. Janeway and David W. Vastine, FIELD REVIEW OF THE MALARIA ERADICATION PROGRAM - WEST PAKISTAN. PASA Control No. TCR 2-66. Oct. 2-Nov. 2, 1967, 92 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. PK 614.532, D419.

History of malaria control and eradication programs since 1951 is outlined. West Pakistan is divided into 4 areas: Northwest Frontier, Baluchistan, Punjab and Sind. Special attention is given selected sub-sectors in order to obtain detailed information. These were Multan, Sanghar-Tharparkar, Kairpur, Sheikhpura, Hyderabad and Sialkot. Active and passive case-detection analysis was made, and epidemiology is discussed. One chapter deals with urban malaria. Maps, tables and charts are included.

Cross References on PAKISTAN: See also items No. 24, 26.

#### PANAMA

Cross Reference: See item No. 24.

#### PARAGUAY

Cross Reference: See item No. 24.

#### PHILIPPINES

Cross References: See items No. 24, 26.

#### THAILAND

43. MacKenzie, D. J. M., David Holden, Willian Chin, F. Marc LaForce, and John Mueller, MALARIA PROGRAM REVIEW - THAILAND. PASA Control No. TCR 2-66. March 4-25, 1967, 111 pp. National Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga. for AID/Washington. ARC Catalog No. TI 614.532, D419.

A review of malaria eradication program, which receives technical advice from WHO and USAID. History of epidemiology of malaria in Thailand is given. Country is divided into 5 geographical regions and each is surveyed with regard to current status of eradication, spraying operations, surveillance network, laboratory services and epidemiologic observations. Special attention is given to the chloroquine-resistance problem. Numerous maps and tables.

Cross References on THAILAND: See also items No. 16, 24, 26.

VIET-NAM

44. Hobbs, Jesse H., Henry F. Kroening, John W. McDowell and Myron Schultz, REPORT, MALARIA EVALUATION TEAM. 1964, 109 pp. AID/Saigon, Viet-Nam. ARC Catalog No. VS 614.532, ML38.

Reviews malaria eradication program from 1955 through 1964. Shows that 83% of South Viet-Nam has had an effective program. Organization, administration, spray operations, epidemiology and entomology are discussed. Geographic areas are defined and statistics showing incidence of disease are given. Recommendations for continuing and improving the program are made.

ADDENDUM

EQUIPMENT AND SUPPLIES

45. EQUIPMENT FOR VECTOR CONTROL. 1964, 200 pp. World Health Organization, Geneva, Switzerland. ARC Catalog No. 614.43, W927a.

Report is a guide to the major items of equipment used for the application of pesticides. There is a systematic classification of major items. Basic functions, technical characteristics and performance specifications are given. Report will be of assistance in selecting the best equipment for particular needs, based on field tests for durability, accuracy, comfort, safety, economy and efficiency. A guide is given for testing compression sprayers.