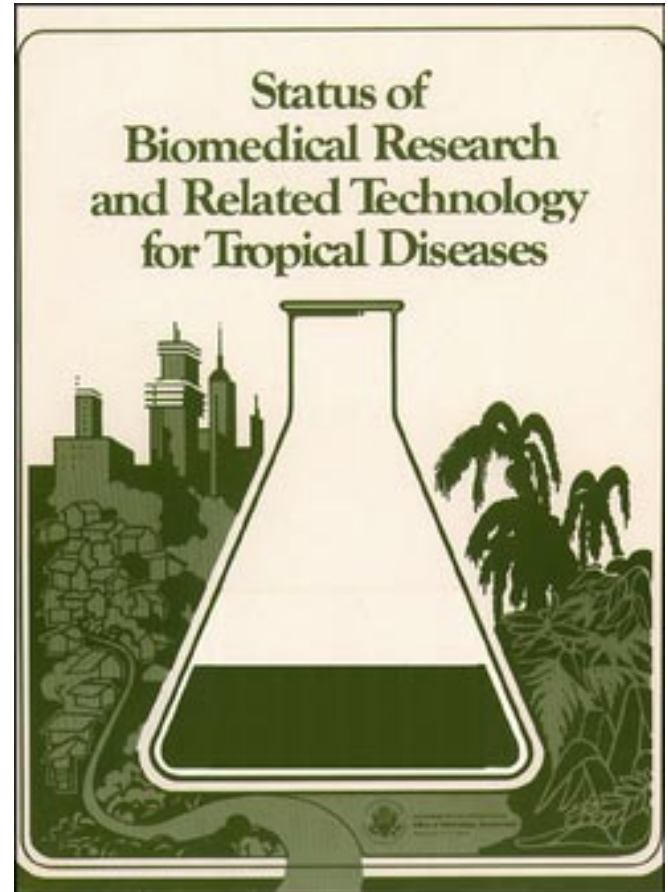


*Status of Biomedical Research and Related
Technology for Tropical Diseases*

September 1985

NTIS order #PB87-139614



Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Status of Biomedical Research and Related Technology for Tropical Diseases*, OTA-H-258 (Washington, DC: U.S. Government Printing Office, September 1985).

Library of Congress Catalog Card Number 85-600508

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, DC 20402

Foreword

Billions of people in less developed areas of the world and a small but growing number of inhabitants of the industrialized countries come into contact with infectious diseases generally characterized as "tropical." Though not necessarily geographically limited, these diseases are most common in the tropics because of the social and economic, as well as climatic, conditions that prevail there.

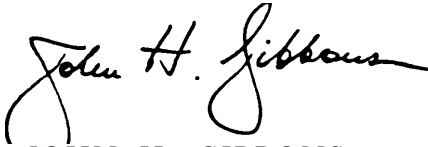
In combination with the traditional methods of parasitology and basic research, the new tools of biotechnology and immunology have opened doors to finding methods for controlling tropical diseases. Scientists using both traditional and recombinant DNA techniques are pursuing technologies for the control of insects that transmit diseases and the development of vaccines, diagnostic technologies, and new therapies for tropical diseases. The possibilities for making inroads into the overwhelming morbidity and mortality caused by these diseases have never been so promising.

The United States continues to make significant contributions toward controlling tropical diseases, even though the resources allotted to these efforts are small: in recent years, less than \$100 million per year has been spent by the U.S. Government on tropical disease research out of a total annual biomedical research budget of \$4 to \$5 billion. As one component of U.S. international activities, research in tropical diseases serves several objectives: social and humanitarian, political, economic, medical (including the protection of American citizens), and scientific. Opportunities for expanding U.S. influence and contributions in this field are great.

In the spring of 1983, the Senate Appropriations Committee asked OTA to examine the status of biomedical research and technologies for controlling tropical diseases. The request was precipitated by a question about continued funding of the Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc. and its operating arm, the Gorgas Memorial Laboratory in the Republic of Panama. An OTA technical memorandum, *Quality and Relevance of Research and Related Activities at the Gorgas Memorial Laboratory*, was released in August 1983 as a response to the immediate question. The larger question is addressed in this full assessment.

An advisory panel, chaired by Dieter Koch-Weser, provided guidance and assistance during the assessment. A large number of individuals from academia, the Federal Government, the private sector, and the public provided information and reviewed a draft of the report. Five contractors were essential to the completion of the assessment: Paul F. Basch surveyed the use of biotechnology in tropical disease research; Veronica Elliott compiled information about funding; Roger A. Bitar contributed the material on therapies for tropical diseases; and Myron M. Levine and Lydia Schindler prepared case studies on oral dehydration therapy for diarrheal diseases and on the development of a malaria vaccine, respectively.

The final responsibility for the content of the report rests with OTA. Key staff involved in the analysis and writing were Hellen Gelband, Kerry B. Kemp, Susan C. Tripp, and Steven S. Bjorge.


JOHN H. GIBBONS
Director

Advisory Panel for Status of Biomedical Research and Related Technology for Tropical Diseases

Dieter Koch-Weser, *Panel Chair*
Department of Preventive and Social Medicine
Harvard Medical School

Pedro Acha
Pan American Health Organization

George Alleyne
Pan American Health Organization

Karen Bell
Board on Science and Technology for
International Development
National Academy of Sciences

Richard Cash
Department of Tropical Public Health
Harvard School of Public Health

Barnett Cline
Department of Tropical Medicine
Tulane Medical Center

Joseph Cook
The Edna McConnell Clark Foundation

Robert Goodland
Office of Environmental Affairs
World Bank

Abraham Horwitz
Pan American Health Organization

Francisco Lopez-AntuFiano
Pan American Health Organization

Arnold Monto
School of Public Health
University of Michigan

Ruth Nussenzweig
Division of Parasitology
New York University School of Medicine

Richard Riegelman
Department of Health Care Sciences
George Washington University Medical Center

Gabriel Schmuidt
Pan American Health Organization

Thomas Simpson
Virginia State Health Department

Ronald Vogel
College of Business and Public Administration
University of Arizona

Kenneth Warren
The Rockefeller Foundation

OTA Project Staff—Status of Biomedical Research and Related Technology for Tropical Diseases

Roger C. Herdman, *Assistant Director, OTA
Health and Life Sciences Division*

Clyde J. Behney, *Health Program Manager*

Hellen Gelband, *Project Director*

Steven S. Bjorge, *Analyst*

Kerry Britten Kemp, *Health and Life Sciences Division Editor*

Susan C. Tripp, *Analyst*

Virginia Cwalina, *Administrative Assistant*

Beckie I. Erickson, *Word Processor/P. C. Specialist*

Carol Guntow, *Clerical Assistant*

Diann G. Hohenthanner, *Secretary/Word Processor Specialist*

Contractors

Paul F. Basch, Stanford University School of Medicine

Roger A. Bitar, The Johns Hopkins Hospital

Veronica Elliott, Alexandria, VA

Myron M. Levine, University of Maryland School of Medicine

Lydia Woods Schindler, Darnestown, MD