

BOOK REVIEW

BUILDING THE HEALTH BRIDGE—Selections from the works of Fred L. Soper, M.D. Edited by J. Austin Kerr. Indiana University Press, Bloomington, Indiana. 1970. xxxvii + 567 pp., illus. \$17.50.

This book consists of selections from the works of Dr. F. L. Soper edited by his long-time associate, Dr. J. Austin Kerr. The papers, published between the years 1925 and 1966, reflect the interests, concerns and changes in the art and science of epidemiology during that period. Dr. Soper was, for many years, associated with the Rockefeller Foundation and the Pan American Sanitary Bureau and much of the work was carried on in South America. It is arranged into sections by subject, more or less chronologically. Included are studies on hookworms in Brazil and Paraguay, yellow fever and *Aedes aegypti* in Brazil, the eradication of *Anopheles gambiae* from Brazil and Egypt, residual control of adult *Anopheles* with DDT in Italy, control of louse-borne typhus in Italy, the problems of international health administration and the philosophy and practice of eradication of parasitic diseases and their vectors.

From the beginning, Dr. Soper's work followed a sound basic pattern that might well be emulated by workers today. It consisted of first finding the best method of attacking the parasite or vector (usually chemical); second, careful experimentation to determine the chemical's most effective formulation and method of use under field conditions; third, careful analysis of methods of evaluating the results of control; fourth, development of efficient administrative supervision of the program, and finally a methodical, intensive campaign. This was followed by careful post-campaign epidemiological evaluation and surveillance.

The scope of some of these projects was very large, indeed; a field staff of 2,500 men was mobilized and trained for the *An. gambiae* eradication program in Brazil. The importance of meticulous evaluation and sound administrative procedures in these campaigns is clearly shown. Dr. Soper attempted to make the field reports as trustworthy and as certifiable as a financial report. Detailed job descriptions, definitions of individual responsibility for carefully mapped zones, regular itineraries, immediate entries on special forms of all work done, routine checking of all reports, registers posted in all houses visited and countersigned on all visits were designed toward this end.

In the course of the studies many advances in knowledge of the epidemiology and control of vector-borne diseases were made, e.g., the development of viscerotomy and neutralization tests as diagnostic procedures for yellow fever. These led ultimately to elucidation of the epidemiology of jungle yellow fever. The development of the 17D vaccine, the use of DDT as a residual adulti-

cide in malaria eradication programs, and the control of typhus by mass delousing procedures were some of the most important.

Dr. Soper is perhaps the outstanding proponent of rapid eradication. This concept, as applied to the control of parasitic diseases or their vectors, was discredited to a certain extent during the late 1920's by the failure of optimistic predictions regarding the eradication of hookworms, yellow fever, and malaria.

His remarkable successes in eradicating the highly effective vector of malaria, *Anopheles gambiae*, from Brazil in 1939-40 and later from Egypt as well as the eradication of *Aedes aegypti* from Brazil and other South American countries did much to rehabilitate the concept. They also undoubtedly predisposed him to champion malaria eradication. It should be noted, however, that both *An. gambiae* and *Ae. aegypti* are fastidious in their selection of larval breeding sites and the adults strongly endophilic, factors that greatly enhanced the likelihood of successful and rapid eradication.

Eradication as espoused by Dr. Soper requires a short (perhaps 3 years) intensive campaign with large initial expenditures of funds, considerable manpower and materials, and a continuation of expenditures and effort until eradication has been accomplished.

The rapid eradication concept probably reached its zenith of acceptance in the mid-1950's when the 8th World Health Assembly gave its approval to malaria eradication as a project of global interest. In 1958, President Eisenhower stated ". . . we now have it within our power to eradicate from the earth the age-old scourge of mankind: malaria. We are embarking with other nations in an all-out 5 year campaign to blot out the curse forever."

In practice, malaria eradication programs in tropical areas usually have reduced the incidence of malaria to a fraction of one percent very quickly, but that fraction has proved difficult to cope with. Though control usually was successful, eradication more often than not was a failure. Underdeveloped countries rightly have hesitated to commit scarce funds to the expensive malaria "eradication gamble" when a lesser amount can be used with some assurance to reduce the incidence of malaria to tolerable levels with money left over for other equally important and pressing health and education problems.

The book is well-edited and printed, highly interesting, stimulating, and timely especially in view of the current change in emphasis from rapid malaria eradication to malaria control and eradication by attrition.

HUGO A. JAMNBACK
Associate Scientist—Entomology
New York State Museum & Science Service
Albany, N.Y.