

SEATO MEDICAL RESEARCH STUDY ON ARBOVIRUSES

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General Information

During the period covered by this report, investigations of the epidemiology of dengue hemorrhagic fever of southeast Asia were continued. The departments of Virology, Medical Entomology and Epidemiology collaborated in a comprehensive research program. Recurrence of epidemic dengue fever on the island of Koh Samui in the Gulf of Thailand provided further opportunity for detailed epidemiologic and virologic studies of this illness in a relatively isolated situation. A companion study of the biology of Aedes mosquitoes and the results of an Aedes aegypti pilot control program on the island are reported under the SEATO Medical Research Study on Mosquitoes. A study of vectors of dengue viruses in the Republic of Vietnam was carried out through the cooperation of the US Army Medical Research Team (WRAIR), Vietnam and the Institute Pasteur, Vietnam.

Laboratory studies on dengue viruses included investigation of antigenic variation within serotypes by neutralization tests, studies of the biologic characteristics of low passage dengue viruses in tissue culture systems, and cross-protection studies in gibbons. In addition, a program to compare the infectivity of dengue viruses for Aedes aegypti and Aedes albopictus has been initiated.

The immunologic response to dengue virus infection in both man and experimental animals continues to be of major interest to this laboratory. Immunochemical techniques are being employed in a further effort to elucidate the immunologic processes which occur during the course of dengue induced illnesses.

Development of more efficient laboratory methods to widen the scope and improve the efficiency of field studies is an important part of the research program. Micromethods for arbovirus plaque reduction neutralization tests have been developed and evaluated.

Ecologic studies of arboviruses, especially Japanese encephalitis virus, were continued at the Bang Phra study area in cooperation with personnel of the Pasteur Institute, Thailand. An important observation was the finding of Wesselsbron virus in Aedes mosquitoes. In addition to Japanese encephalitis and Wesselsbron viruses, Tembusu, Sindbis, and Batai viruses have also been recovered from the study area at Bang Phra.