SEATO MEDICAL RESEARCH STUDY ON ARBOVIRUSES

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General Information

During the period covered by this report, studies on the epidemiology of dengue hemorrhagic fever in Thailand were continued in cooperation with the Departments of Entomology and Epidemiology of US Army Medical Component SEATO. An insular outbreak of hemorrhagic fever was studied in detail during the summer of 1966. In addition, through the assistance of the Public Health Division USAID and the Pasteur Institute, Vietnam, epidemiologic data on hemorrhagic fever in Saigon were obtained for comparison with similar data from Bangkok.

Laboratory studies on dengue virology included extensive investigation of a plaque reduction neutralization test and its applications for identification of dengue viruses and measurement of serum antibody. Investigation of cell culture methods for isolation and propagation of dengue viruses resulted in development of new and more sensitive techniques. Dengue infection in primates was studied for the purpose of determining the suitability of different species for cross-protection studies with dengue viruses and for production of reference antiserum.

A major effort has been made to develop the capability in this laboratory of studying in detail the immunoglobulin response in dengue fever and dengue hemorrhagic fever. Significant progress has been made in adaptation of density gradient centrifugation, gel filtration, ion-exchange chromatography, and immunoelectrophoresis methods to fit our requirements.

Studies of arbovirus diseases in Americans were concerned primarily with studies of fevers of unknown origin in US military personnel in the Republic of Vietnam. These studies were carried out in cooperation with personnel of the US Army Medical Research Team, Vietnam, and the Departments of Medicine at several evacuation hospitals and field hospitals in Vietnam. In addition to arbovirus diagnostic tests, the hemolytic test for leptospirosis was adapted to microtiter methods and routinely used. Serologic tests for scrub typhus were performed by the Thai Component of SMRL.

The preliminary phase of ecologic studies on Japanese encephalitis at Bang Phra, being carried out in cooperation with the Department of Entomology and the personnel of the Pasteur Institute, is nearing completion. The first year's program including mosquito collections, virus isolation attempts from mosquitoes, collection of serum from a large variety of vertebrates for virus isolation and serologic testing is completed. The laboratory phase of this program, identification of viral isolates and serologic testing of vertebrate sera, is as yet incomplete. The second phase of the field program which will be directed at a few highly suspect vertebrate species and their relationship to arthropod vectors is scheduled to begin in May or June 1967. Designs of these specific studies will depend on analysis of the as yet incomplete laboratory results,