

BODY OF REPORT

SEATO Medic Study No.44 Precipitin Tests of Mosquito Blood Meals

Project No. 3A 025601 A 811 Military Medical Research Program
S. E. Asia

Task 01: Military Medical Research Program
S. E. Asia

Subtask 01: Military Medical Research Program
SEASIA (Thailand)

Reporting Installation: US Army-SEATO Medical Research Laboratory
APO San Francisco 96346

 Division of Medical Research Laboratories

 Department of Medical Entomology

Period Covered by Report: 1 April 1964 to 31 March 1965

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Objective: To support various mosquito studies in progress by supplying data on the hosts of the mosquito species. To determine the natural host range of the mosquito species of Thailand.

Description: Blood engorged mosquitoes are collected during the course of studies on arthropod-borne virus and malaria. After identification, the abdominal contents of the species which show red blood in the gut are expressed on filter paper and the identifying collection data are written on the paper in pencil. When a number have been accumulated the smears are leached out in saline and the eluted serum proteins used as an antigen in a capillary tube precipitin test against a antisera prepared in rabbits. Antisera used in the Thailand tests are: human, cow, horse, pig, chicken, dog and monkey.

Progress: Several hundred additional smears were accumulated during the period,

(1) Departed for CONUS on PCS June 1964

(2) Arrived from CONUS on PCS July 1964

including some from malaria study sites and from jungle areas. A comparison is being made of the advantages of using saline extracts of frozen whole mosquitoes and dried specimens maintained at ambient temperatures as antigens in place of the older method of smears expressed on to filter paper. Some difficulties have been experienced with certain types of filter paper, for the serum proteins from some mosquito-blood meals apparently form insoluble bonds with the cellulose fibers and cannot be extracted with saline. During this period the antisera were titrated for strength and cross-reactions, using mosquitoes fed in the insectary on known blood sources. Several of the antisera which had been lyophilized were found to be completely non-reactive with homologous sera. New antisera are being prepared -- using chickens rather than rabbits as the source animals. Antisera obtained from chickens have been found to have higher precipitin titers and greater specificity than those from rabbits. The immunization time is also shorter in chickens than in rabbits. Precipitin tests were run on 50 engorged Anopheles sunaicus collected from houses and sheds in a malarious village near Ban Kram, Rayong Province. These tests indicated that 34 of the mosquitoes had fed on bovines, 2 on humans and 1 on pigs while no reaction was obtained with the remaining 22. The utilization of personnel on other projects necessitated a halt in further testing during this report period.

Conclusions: None are possible at this time.