Bangkok Dengue Vectors

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INTRODUCTION: The study described below was part of a collaborative investigation into the epidemiology of dengue hemorrhagic fever in the Bangkok–Thonburi metropolitan area carried out together with the Departments of Epidemiology and Virology. Pertinent epidemiological and virologic aspects of this study are to be found in the reports of the above departments.

OBJECTIVES: To determine the relative density of dengue vector populations in the vicinity of houses of dengue hemorrhagic fever patients admitted to Children's Hospital and to collect mosquitoes from these sites for virus isolation attempts.

DESCRIPTION: Collections of adult mosquitoes for virus isolation attempts were made in the houses of dengue hemorrhagic fever patients admitted to Bangkok Children's Hospitals and in at least nine houses adjoining or near the patients' houses. Indoor daylight collections of mosquitoes, were made by human biting collections and/or the pyrethrin–spray knockdown technique in these houses. Mosquitoes collected by these methods were identified, frozen in pools of suitable size and forwarded to the Virology Department for virus isolation attempts. All artificial containers inside and around all houses visited were examined for mosquito larvae and the number of infested containers and species of mosquito recorded. The sources of blood–meals taken by engorged mosquitoes in the pyrethrin–knockdown collections were determined by the agar–gel diffusion test.

PROGRESS: Between 11 April 1969 and 25 March 1970, 3952 pools containing a total of 6504 A. aegypti and 3927 pools containing a total of 84,339 C. quinquefasciatus, collected from houses in the Bangkok–Thonburi area, were submitted to the Virology Department for virus isolation attempts. These mosquitoes were collected from 3147 houses; 307 of these were houses of dengue hemorrhagic fever cases and the balance were houses adjoining or located nearby the case houses. Dengue viruses were isolated from 20 of the A. aegypti pools; 14 of these were dengue type 2 and the other were dengue type 3. One pool of C. quinquefasciatus yielded a strain of Sindbis virus. Only 5 of the above isolates came from case houses, while the balance of positive pools came from nearby houses, which were located at distances of from 1 to 30 meters from case houses. All of the isolations came from mosquitoes collected between May and November 1969, and the majority of isolations (16/20) were made from mosquitoes collected during the rainy season (June–October). Agar gel diffusion tests on engorged mosquitoes from pyrethrin–knockdown collection indicated that all 110 A. aegypti tested had fed on humans; 56 per cent of engorged C. quinquefasciatus had fed upon humans, 31 per cent on dogs and 6.5 per cent on chickens. Analysis of larval and adult mosquito population data accumulated during this study is presently underway.