A SURVEY OF THE MOSQUITO FAUNA IN ULITHI ATHOL, YAP STATE, FEDERATED STATES OF MICRONESIA

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Abstract

Surveys of larval mosquitoes were carried out in four Islands of Ulithi Athol, Mogmog, Falalop Asor, and Fassarai, in October 2001. Larval mosquitoes were collected at 56 habitats which are composed of coconut shells, cans, plastic vessels, metal vessels, a ceramic vessel, a plastic bucket, a shell, a tuckerbox, plastic water barrels, metal water barrels and a concrete water tank. Only two mosquito species, *Aedes (Stegomya) hensilli* and *Culex (Culex) quiquefasciatus*, were collected at various artificial habitats of four islands.

Keywords: mosquito fauna, Aedes hensilli, Ulithi Athol, Federated States of Micronesia

Introduction

The most important group of biting insect is the mosquitoes. Their biting is a considerable nuisance in many parts of the world. More importantly, mosquitoes are carriers of a number of diseases, mostly in the tropics, causing illness and death on a large scale. Dengue fever is caused by several closely related viruses, called dengue types 1, 2, 3 and 4. The disease is transmitted from person to person mainly by *Aedes aegypti*, but *Aedes albopictus* can also act as a vector. Two forms of the disease occur: dengue fever and dengue haemorrhagic fever. The disease is prevalent in the tropics and subtropics, particularly in Southeast Asia. The World Health Organization estimates that 2000 million people are at risk. Each year there are millions of infections and thousands of deaths. Recently, a dengue fever/dengue haemorrghagic fever outbreak in Yap State caused by dengue-4 virus was confirmed serologically and by virus isolation from serum samples. And entomologic investigations implicated the native mosquito species, *Aedes hensilli* as a previously unrecognized epidemic vector of dengue viruses (SAVAGE et al. 1998). We report here the fauna and breeding sites of mosquitoes in Ulithi Atoll, Yap State, Federated States of Micronesia.

Materials and Methods

Surveys of larval mosquitoes were carried out in four Islands of Ulithi Athol, Mogmog, Falalop, Asor, and Fassarai, on October 2001. Larval mosquitoes were collected at 56 habitats which are composed of coconut shells, cans, plastic vessels, metal vessels, a ceramic vessel, a plastic bucket, a shell, a tuckerbox, plastic water barrels, metal water barrels and a concrete water tank. Collected larvae were preserved in 70% ethanol for the identification.

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Results and Discussion

Table 1 presents the result of the mosquito collection. Only two mosquito species, *Aedes* (Stegomya) hensilli and Culex (Culex) quiquefasciatus, were collected at various artificial habitats of four islands. Four hundred seventy-three larvae of Ae. hensilli were collected from 51 habitats: coconut shells, cans, plastic vessels, metal vessels, a plastic bucket, a shell, a tuckerbox, plastic water barrels, and metal water barrels (Fig. 1). One hundred eighty-five Cx. quiquefasciatus were collected from 9 habitats; a ceramic vessel, a plastic vessel, a metal vessel, a tuckerbox, plastic water barrels, metal water barrels and a concrete water tank (Fig. 1).

Aedes larvae are container-breeders which thrive in both clean and organically rich water in both natural and artificial containers. On four islands, larvae of Ae. hensilli were collected from various sizes of artificial container. There are few natural habitats of mosquito larvae on the four islands. Mosquito larvae were not collected from the taro patch on Mogmog Island. Entomologic investigations implicated Ae. hensilli as a vector of dengue viruses (SAVAGE et al. 1998). For the prevention of dengue fever outbreak, the container management to reduce the sources of breeding habitats is one of the best approaches. If the containers are consider to be useless or non-essential, removal and destruction is desirable. If the population considers the containers to be useful or essential, the strategy employed will be the prevention of Aedes breeding in containers rather than the destruction or removal of the containers. These programmes should be conducted concurrently with health education programmes and communications to encourage community participation in the planning, execution and evaluation of container-management programmes (e.g. regular household sanitation or clean-up campaigns) (WHO 1997).

References

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Table 1. Number of mosquitoes collected in islands of Urithi Athol

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A. h.: Aedes (Stegomya) hensilli C. q.: Culex (Culex) quinquefasciatus

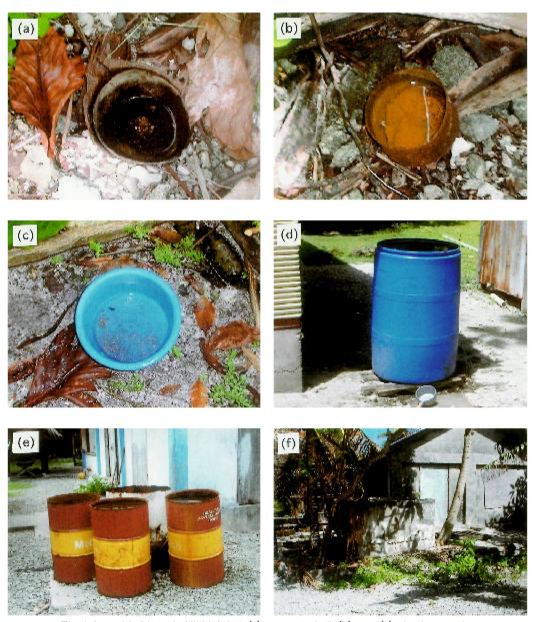


Fig. 1. Larval habitats in Ulithi Athol; (a) coconut shell, (b) can, (c) plastic vessel, (d) plastic water barrel, (e) metal water barrel, (f) concrete water tank.