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THE OCCURRENCE AND KNOWN HUMAN-DISEASE RELATIONSHIPS
OF MOSQUITOES ON USAF INSTALLATIONS
IN THE REPUBLIC OF VIETNAM

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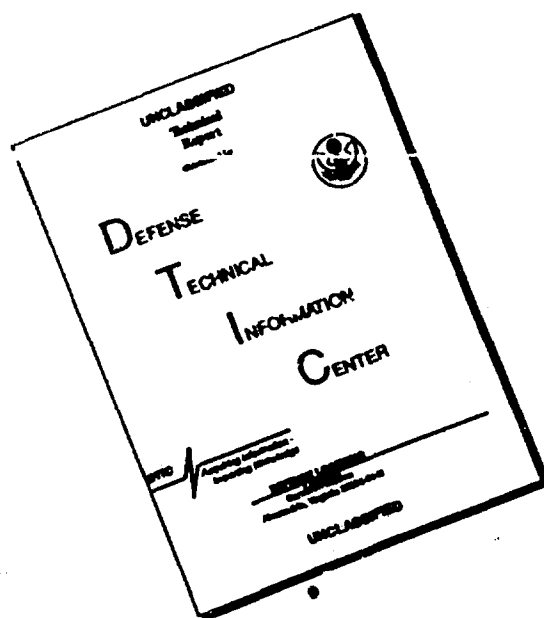
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**THE OCCURRENCE AND KNOWN HUMAN-DISEASE RELATIONSHIPS
OF MOSQUITOES ON USAF INSTALLATIONS
IN THE REPUBLIC OF VIETNAM**

DALE W. PARRISH, Major, USAF, BSC

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FOREWORD

This research was accomplished at the 5th Epidemiological Flight under Project 6321, Task 02, and is part of the program for support of USAF operations in Southeast Asia.

The author acknowledges the careful and skillful technical assistance of SMSgt John P. Burns, J. L. Libay and R. C. Basio.

This report has been reviewed and is accepted.

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ABSTRACT

Data are presented on the occurrence and human-disease relationships of mosquitoes on USAF installations located in the Republic of Vietnam.

The information contained in this report is based upon the identification of mosquito specimens collected and submitted to the USAF 5th Epidemiological Flight by USAF Military Public Health Service personnel from 10 USAF installations in RVN over a 24-month period between 1 June 1966 and 1 June 1968. Mosquito surveys were accomplished on a routine basis in connection with the conduct of disease-vector surveillance and control programs in compliance with the objectives of the USAF Aerospace Medicine Program to prevent and control vector-borne diseases.

A total of 93 different species of mosquitoes were identified from all collections. Of this number, 26 species or 27.9 percent, are known vectors of human disease.



FIGURE 1.

THE OCCURRENCE AND KNOWN HUMAN-DISEASE RELATIONSHIPS OF MOSQUITOES ON USAF INSTALLATIONS IN THE REPUBLIC OF VIETNAM

SECTION I

INTRODUCTION

The data presented herein are based upon the identification of mosquito specimens collected and submitted to the USAF 5th Epidemiological Flight by USAF Military Public Health Service Personnel from 10 U. S. Air Force Installations in the Republic of Vietnam over a 20-month period, between 1 June 1966 and 1 June 1968. The locations of installations participating in these surveys are shown in Figure I.

Mosquito surveys were accomplished on a routine basis in connection with the conduct of disease-vector surveillance and control programs in compliance with the objectives of the USAF Aerospace Medicine Program to prevent and control vector-borne diseases.

Information derived from these continuing surveys on the occurrence and seasonal abundance of specific species provides the Base Preventive Medicine Officer with the necessary data to evaluate the medical and economical importance of a species, to establish the vector-disease relationship, to maintain vigilance over potential vectors and to recommend effective and practical means of control.

SECTION II

METHODS

Adult and immature forms were collected at each installation on a routine basis utilizing standard entomological techniques. Immature forms were collected from two representative aquatic environments, while mosquito light traps were operated to collect adult mosquitoes at a minimum of two representative locations. Collected specimens were preserved, packaged and mailed to the 5th Epidemiological Flight in accordance with standard entomological procedures.

Stereoscopic examinations were made of all specimens and species determinations rendered by entomology specialists trained in mosquito taxonomy.

SECTION III

DISCUSSION

A total of 94 different species of mosquitoes were identified from all collections received from Air Force Installations in the Republic of Vietnam. (Table I). Of this number, 26 species or 27.9 percent are known vectors of human disease. (Table II). The occurrence of species by month over a 24-month period is listed in Table III.

Mosquito-borne diseases, with the exception of malaria, have not been as serious in Vietnam as had been expected. Dengue and encephalitis are present, but little or no filariasis or hemorrhagic fever has been reported. The total number of confirmed malaria cases in U. S. Forces during 1965-1966 has exceeded 10,000 (1).

The distribution of malaria in RVN is highly discontinuous. Incidence is very low in most of the coastal plain including the cities and delta. In parts of the foothills and highlands the attack rate is extremely high. Most of the military malaria is contracted outdoors rather than indoors and there is considerable evidence that the endophilic *Anopheles minimus* has not been a significant vector. The exophilic species, *A. aconitus*, *A. maculatus*, *A. jeyporiensis candidiensis*, and in limited areas, *A. balabacensis*, are believed to be the most important vectors affecting military personnel (1).

The extraordinary amount of personnel movements is causing a redistribution of malaria from the hyperendemic foci of the interior to all parts of RVN and beyond. Wherever suitable vectors occur malaria has increased as new reservoirs are established. The Navy reports that at least two cases of autochthonous malaria introduced from Vietnam have occurred on Guam. A major portion of the 517 cases of imported malaria reported in the United States during 1966 originated in Vietnam.

The amount of illness diagnosed as "fever of undetermined origin" (FUO) exceeds that of confirmed malaria and Army authorities have estimated that one-third or more of this may be dengue. The incidence of FUOs in military personnel of all military services in Southeast Asia has averaged 8% (2).

TABLE I
LIST OF MOSQUITO SPECIES COLLECTED IN THE REPUBLIC OF VIETNAM

INSTALLATION	SPECIES	
Bien Hoa	<i>Aedes mediolineatus</i>	<i>Culex fuscus</i>
	<i>Aedes poicilius</i>	<i>Culex fuscocephalus*</i>
	<i>Aedes vexans*</i>	<i>Culex gelidus*</i>
	<i>Anopheles annularis</i>	<i>Culex rubithoracis</i>
	<i>Anopheles lesteri</i>	<i>Culex pipiens quinquefasciatus*</i>
	<i>Anopheles peditaeniatus</i>	<i>Culex sinensis*</i>
	<i>Anopheles sinensis*</i>	<i>Culex tritaeniorhynchus*</i>
	<i>Anopheles splendidus</i>	<i>Culex whitmorei</i>
	<i>Anopheles subpictus</i>	<i>Ficalbia hybrida</i>
	<i>Anopheles vagus*</i>	<i>Ficalbia luzonensis</i>
	<i>Culex annulus*</i>	<i>Mansonia crassipes</i>
	<i>Culex bitaeniorhynchus*</i>	<i>Mansonia ochracea</i>
	<i>Culex brevipalpis</i>	<i>Mansonia uniformis*</i>
	Binh Thuy	<i>Aedes dux</i>
<i>Aedes lineatopennis*</i>		<i>Culex gelidus*</i>
<i>Aedes niveoscutellum</i>		<i>Culex pholeter</i>
<i>Aedes poicilius</i>		<i>Culex nigropunctatus</i>
<i>Aedeomyia catasticta</i>		<i>Culex pseudovishnui</i>
<i>Anopheles aconitus*</i>		<i>Culex pipiens quinquefasciatus*</i>
<i>Anopheles argyropus</i>		<i>Culex raptor</i>
<i>Anopheles barbirostris*</i>		<i>Culex sinensis*</i>
<i>Anopheles campestris*</i>		<i>Culex tritaeniorhynchus*</i>
<i>Anopheles crawfordi</i>		<i>Ficalbia chamberlaini</i>
<i>Anopheles indiensis</i>		<i>Ficalbia hybrida</i>
<i>Anopheles lesteri</i>		<i>Ficalbia luzonensis</i>
<i>Anopheles minimus*</i>		<i>Ficalbia minima</i>
<i>Anopheles nigerrimus*</i>		<i>Hodgesia malayi</i>
<i>Anopheles peditaeniatus</i>		<i>Mansonia annulifera*</i>
<i>Anopheles sinensis*</i>		<i>Mansonia crassipes</i>
<i>Anopheles subpictus</i>		<i>Mansonia nigrosignata</i>
<i>Anopheles tessellatus*</i>		<i>Mansonia ochracea</i>
<i>Anopheles umbrosus*</i>		<i>Mansonia uniformis*</i>
<i>Culex annulus*</i>		<i>Uranotaenia annandalei</i>
<i>Culex bitaeniorhynchus*</i>		<i>Uranotaenia campestris</i>
<i>Culex brevipalpis</i>	<i>Uranotaenia mazima</i>	
<i>Culex fuscus</i>	<i>Uranotaenia obscura</i>	
Cam Ranh Bay	<i>Aedes albolineatus</i>	<i>Anopheles lesteri</i>
	<i>Aedes albopictus*</i>	<i>Anopheles peditaeniatus</i>
	<i>Aedes imprimens</i>	<i>Anopheles sinensis*</i>
	<i>Aedes pseudoalbopictus</i>	<i>Anopheles subpictus</i>
	<i>Aedes vexans*</i>	<i>Culex annulus*</i>
	<i>Aedeomyia catasticta</i>	<i>Culex bitaeniorhynchus*</i>
	<i>Anopheles crawfordi</i>	<i>Culex fuscus</i>
	<i>Anopheles karwari</i>	<i>Culex fuscocephalus*</i>

	<p><i>Culex gelidus*</i> <i>Culex mimeticus</i> <i>Culex pseudosinensis</i> <i>Culex pseudovishnui</i> <i>Culex quadripalpis</i> <i>Culex pipiens quinquefasciatus*</i> <i>Culex tritaeniorhynchus*</i> <i>Culex whitei</i></p>	<p><i>Ficalbia chamberlaini</i> <i>Ficalbia luzonensis</i> <i>Mansonia crassipes</i> <i>Mansonia ochracea</i> <i>Mansonia uniformis*</i> <i>Toxorhynchites splendens</i> <i>Tripteroides aranoidea</i></p>
DaNang	<p><i>Anopheles aconitus</i> <i>Anopheles sinensis*</i> <i>Anopheles vagus*</i> <i>Culex annulus*</i> <i>Culex bitaeniorhynchus*</i> <i>Culex fuscianus</i></p>	<p><i>Culex fuscocephalus*</i> <i>Culex gelidus*</i> <i>Culex rubithoracis</i> <i>Culex pseudovishnui</i> <i>Culex pipiens quinquefasciatus*</i> <i>Culex tritaeniorhynchus*</i></p>
Nha Trang	<p><i>Aedes chrysolineatus</i> <i>Aedes dux</i> <i>Aedes gubernatoris</i> <i>Aedes lineatopennis*</i> <i>Aedes pseudoalbopictus</i> <i>Aedes vexans*</i> <i>Aedes vigilax*</i> <i>Anopheles aconitus*</i> <i>Anopheles annularis</i> <i>Anopheles argyropus</i> <i>Anopheles crawfordi</i> <i>Anopheles lesteri</i> <i>Anopheles minimus*</i> <i>Anopheles nigerrimus*</i> <i>Anopheles peditaeniatus</i> <i>Anopheles philippinensis</i> <i>Anopheles sinensis*</i> <i>Anopheles subpictus</i> <i>Anopheles tessellatus*</i> <i>Anopheles vagus*</i> <i>Culex annulus*</i> <i>Culex bitaeniorhynchus*</i></p>	<p><i>Culex brevipalpis</i> <i>Culex fuscocephalus*</i> <i>Culex gelidus*</i> <i>Culex khazani</i> <i>Culex pholeter</i> <i>Culex nigropunctatus</i> <i>Culex pseudosinensis</i> <i>Culex pseudovishnui</i> <i>Culex pipiens quinquefasciatus*</i> <i>Culex sinensis*</i> <i>Culex sitiens*</i> <i>Culex tritaeniorhynchus*</i> <i>Culex whitei</i> <i>Culex whitmorei</i> <i>Ficalbia chamberlaini</i> <i>Ficalbia luzonensis</i> <i>Malaya jacobsoni</i> <i>Mansonia crassipes</i> <i>Mansonia uniformis*</i> <i>Uranotaenia annandalei</i> <i>Uranotaenia campestris</i> <i>Uranotaenia macfarlanei</i></p>
Phan Rang	<p><i>Aedes albopictus*</i> <i>Aedes alboscuteUellatus</i> <i>Aedes dux</i> <i>Aedes lineatopennis*</i> <i>Aedes mediolineatus</i> <i>Aedes niveoscutellum</i> <i>Aedes pseudoalbopictus</i> <i>Aedes taeniorhynchoides</i> <i>Aedes vexans*</i> <i>Aedes vigilax*</i> <i>Aedromyia catasticta</i> <i>Anopheles aconitus*</i></p>	<p><i>Anopheles annularis</i> <i>Anopheles argyropus</i> <i>Anopheles crawfordi</i> <i>Anopheles indiensis</i> <i>Anopheles lesteri</i> <i>Anopheles minimus*</i> <i>Anopheles nigerrimus*</i> <i>Anopheles pallidus</i> <i>Anopheles peditaeniatus</i> <i>Anopheles philippinensis</i> <i>Anopheles sinensis*</i> <i>Anopheles subpictus</i></p>

*Anopheles tessellatus**
*Anopheles vagus**
*Culex annularis**
*Culex bitaeniorhynchus**
Culex fuscus
*Culex fuscocephalus**
*Culex gelidus**
Culex khazani
Culex minor
Culex pholeter
Culex reidi
Culex rubithoracis
Culex nigropunctatus

Culex pseudosinensis
Culex pseudovishnui
*Culex pipiens quinquefasciatus**
*Culex sitiens**
*Culex tritaeniorhynchus**
Culex whitmorei
Mansonia crassipes
Mansonia ochracea
*Mansonia uniformis**
Uranotaenia maxima
Uranotaenia obscura
Uranotaenia recondita

Pleiku

*Aedes albopictus**
Aedes gubernatoris
Aedes laniger
*Aedes lineatopennis**
Aedes mediolineatus
Aedes niveoscutellum
Aedes ostentatio
Aedes pseudoalbopictus
*Aedes vexans**
Aedes vittatus
Aedeomyia catasticta
*Anopheles aconitus**
Anopheles annularis
Anopheles argyropus
Anopheles crawfordi
Anopheles indiensis
Anopheles karwari
Anopheles lesteri
*Anopheles maculatus**
*Anopheles minimus**
*Anopheles nigerrimus**
Anopheles pallidus
Anopheles peditaeniatus
Anopheles philippinensis
*Anopheles sinensis**
Anopheles splendidus
Anopheles subpictus

*Anopheles vagus**
Armigeres flavus
*Armigeres subalbatus**
*Culex annulus**
*Culex bitaeniorhynchus**
Culex brevipalpis
Culex fuscus
*Culex fuscocephalus**
*Culex gelidus**
Culex pholeter
Culex nigropunctatus
Culex pseudosinensis
Culex pseudovishnui
*Culex pipiens quinquefasciatus**
*Culex sinensis**
*Culex sitiens**
*Culex tritaeniorhynchus**
Culex whitei
Culex whitmorei
Ficalbia chamberlaini
Hodgesia malayi
Mansonia crassipes
*Mansonia uniformis**
Uranotaenia annandalei
Uranotaenia macfarlanei
Uranotaenia maxima

Phu Cat

*Aedes aegypti**
Aedes amesi
*Aedes lineatopennis**
Aedes longirostris
Aedes mediolineatus
Aedes ostentatio
Aedes poicilius
Aedes vexans

Aedes vittatus
Aedeomyia catasticta
*Anopheles aconitus**
Anopheles annandalei interruptus
Anopheles annularis
Anopheles argyropus
*Anopheles barbirostris**
*Anopheles campestris**

Anopheles crawfordi
Anopheles indiensis
Anopheles jeyporiensis candidien-
*sis**
Anopheles karwari
Anopheles lesteri
*Anopheles minimus**
*Anopheles nigerimus**
Anopheles pallidus
Anopheles peditaeniatus
Anopheles philippinensis
*Anopheles sinensis**
Anopheles subpictus
*Anopheles tessellatus**
*Anopheles umbrosus**
*Anopheles vagus**
Anopheles varuna
*Armigeres subalbatu**
*Culex annulus**
*Culex bitaeniorhynchus**
Culex brevipalpis

Culex fuscus
*Culex fuscocephalus**
*Culex gelidus**
Culex khazani
Culex incomptus
Culex peytoni
Culex pholeter
Culex pseudosinensis
Culex pseudovishnui
*Culex pipiens quinquefasciatus**
*Culex sinensis**
*Culex tritaeniorhynchus**
Culex whitmorei
Ficalbia chamberlaini
Ficalbia luzonensis
Ficalbia minima
Mansonia crassipes
*Mansonia uniformis**
Uranotaenia campestris
Uranotaenia maxima
Uranotaenia obscura

Tan Son Nhut

Aedes aegypti
Aedes dux
Aedes vexans
*Anopheles aconitus**
Anopheles annularis
Anopheles crawfordi
Anopheles philippinensis
*Anopheles sinensis**
Anopheles subpictus
*Anopheles tessellatus**
*Anopheles vagus**
*Culex annulus**

Culex brevipalpis
Culex fuscus
*Culex fuscocephalus**
*Culex gelidus**
*Culex pipiens quinquefasciatus**
Culex raptor
*Culex sinensis**
*Culex tritaeniorhynchus**
Culex whitmorei
Ficalbia chamberlaini
Malaya jacobsoni

Tuy Hoa

Aedes dux
*Aedes lineatopennis**
Aedes longirostris
*Aedes vexans**
Aedeomyia catasticta
Anopheles annularis
Anopheles crawfordi
Anopheles peditaeniatus
*Anopheles sinensis**
Anopheles subpictus
*Anopheles vagus**

*Culex annulus**
*Culex bitaeniorhynchus**
*Culex gelidus**
*Culex pipiens quinquefasciatus**
*Culex tritaeniorhynchus**
Culex whitmorei
Mansonia crassipes
Mansonia ochracea
Mansonia uniformis
Tripteroides aranoi

* Disease Vectors

TABLE II
 KNOWN HUMAN DISEASE RELATIONSHIPS OF MOSQUITOES
 COLLECTED ON 7TH AIR FORCE INSTALLATIONS (RVN)

AEDES AEGYPTI

Disease Relationships: Primary vector of DENGUE and CHIKUNGUNYA FEVER; found naturally infected with *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

AEDES ALBOPICTUS

Disease Relationships: Primary vector of DENGUE and CHIKUNGUNYA FEVER; secondary vector of JAPANESE "B" ENCEPHALITIS; primary vector of *Dirofilaria immitis* (TROPICAL EOSINOPHILIA).

AEDES LINEATOPENNIS

Disease Relationships: Low potential vector of *Brugia malayi* (MALAYAN FILARIASIS) and *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

AEDES VEXANS

Disease Relationships: Primary vector of *Dirofilaria immitis* (TROPICAL EOSINOPHILIA); secondary vector of JAPANESE "B" ENCEPHALITIS.

AEDES VIGILAX

Disease Relationships: Primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS) and SINDBIS FEVER.

ANOPHELES ACONITUS

Disease Relationships: Secondary vector of MALARIA in the highlands.

ANOPHELES BARBIROSTRIS

Disease Relationships: Primary vector of *Brugia malayi* (MALAYAN FILARIASIS); secondary vector of *Brugia pahangi* (TROPICAL EOSINOPHILIA).

ANOPHELES CAMPESTRIS

Disease Relationships: Primary vector of *Brugia malayi* (MALAYAN FILARIASIS); secondary vector of *Brugia pahangi* (TROPICAL EOSINOPHILIA).

ANOPHELES JEYPORIENSIS CANDIDIENSIS

Disease Relationships: Primary vector of highland MALARIA. Possible vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

ANOPHELES MACULATUS

Disease Relationships: Secondary vector of MALARIA in the highlands.

ANOPHELES MINIMUS

Disease Relationships: Primary vector of highland MALARIA; secondary vector of coastal MALARIA (in sand dune seepage areas); primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

ANOPHELES NIGERRIMUS

Disease Relationships: May possibly transmit MALARIA. Some positive records represent confusion between this species and *Anopheles sinensis*.

ANOPHELES SINENSIS

Disease Relationships: Primary vector of MALARIA in delta and coastal areas. Primary vector of *Brugia malayi* (MALAYAN FILARIASIS) and *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

ANOPHELES TESSELLATUS

Disease Relationships: Secondary vector of MALARIA in delta and coastal areas.

ANOPHELES UMBROSUS

Disease Relationships: Possible jungle vector of MALARIA in the lowlands.

ANOPHELES VAGUS

Disease Relationships: Vector of MALARIA in delta and coastal areas.

ARMIGERES SUBALBATUS

Disease Relationships: Primary vector of *Brugia pahangi* (MALAYAN FILARIASIS).

CULEX ANNULUS

Disease Relationships: Vector of JAPANESE "B" ENCEPHALITIS.

CULEX BITAENIORHYNCHUS

Disease Relationships: Primary vector of SINDBIS FEVER; secondary vector of JAPANESE "B" ENCEPHALITIS.

CULEX FUSCOCEPHALUS

Disease Relationships: Primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

CULEX GELIDUS

Disease Relationships: Primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS), CHIKUNGUNYA FEVER, JAPANESE "B" ENCEPHALITIS and GETAH VIRUS.

CULEX PIPIENS QUINQUEFASCIATUS

Disease Relationships: Primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS), *Brugia malayi* (MALAYAN FILARIASIS), *Dirofilaria immitis* (TROPICAL EOSINOPHILIA); secondary vector of JAPANESE "B" ENCEPHALITIS.

CULEX SINENSIS

Disease Relationships: Low potential vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

CULEX SITIENS

Disease Relationships: Possible vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS) and, based upon small samplings, of *Brugia malayi* (MALAYAN FILARIASIS).

CULEX TRITAENIORHYNCHUS

Disease Relationships: Primary vector of JAPANESE "B" ENCEPHALITIS, CHIKUNGUNYA FEVER, SINDBIS FEVER, and GETAH VIRUS. Low potential vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS).

MANSONIA ANNULIFERA

Disease Relationships: Primary vector of *Brugia malayi* (MALAYAN FILARIASIS).

MANSONIA UNIFORMIS

Disease Relationships: Primary vector of *Wuchereria bancrofti* (BANCROFTIAN FILARIASIS), *Brugia malayi* (MALAYAN FILARIASIS), *Brugia pahangi* (TROPICAL EOSINOPHILIA) and CHIKUNGUNYA FEVER.

TABLE III - A

OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

BIEN HOA, VIETNAM

SPECIES	MONTHS																							
	1966						1967						1968											
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes mediotineatus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Aedes poicilius</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Aedes vexans</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles annularis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles lesteri</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles peditaeniatus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles sinensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles splendidus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles subpictus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Anopheles vagus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex annulus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex bitaeniorhynchus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex brevipalpis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex fuscans</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex fuscocephalus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex gelidus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex (Lophoceraomyia) rubitho- raxis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex pipiens quinquefasciatus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex sinensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex tritaeniorhynchus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Culex whitmorei</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Ficalbia hybrida</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Ficalbia luzonensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Mansonia crassipes</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Mansonia ochracea</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
<i>Mansonia uniformis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

P = Species collected
N = Species not collected
NA = No collections attempted

TABLE III - B
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS
 BINH THUY, VIETNAM

SPECIES	MONTHS																								
	1966						1967						1968												
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes dux</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes lineatopennis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes niveoscutellum</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes poicilius</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedeomyia catasticta</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles aconitus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles argyropus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles barbirostris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles campestris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles indiensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles lesteri</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles minimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles nigerrimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles peditaeniatius</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles tessellatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles umbrosus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles vagus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex annulus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex bitaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex brevipalpis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscianus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscocephalus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex gelidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex (Lophoceraomyia) pholeter</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

TABLE III - C
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS
 CAM RANH BAY, VIETNAM

SPECIES	MONTHS																							
	1966						1967						1968											
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes albolineatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Aedes albopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes imprimens</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes pseudoalbopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vexans</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedeomyia catantata</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles karwari</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles lesteri</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles pedtanauiatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex annulus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex bitaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscianus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscocephalus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex gelidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex mimeticus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex pseudosinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex pseudovishnui</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex quadripalpis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex pipiens quinquefasciatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex tritaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex whitei</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Ficulbia chamberlaini</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Ficulbia luzonensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Monsonia crassipes</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Monsonia ochracea</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Monsonia uniformis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Toxorhynchites splendens</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Tripteroides aranoioides</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

NA = No collections attempted

N = Species not collected

P = Species collected

TABLE III - D
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

DA NANG, VIETNAM

SPECIES	MONTHS																								
	1966						1967						1968												
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Anopheles aconitus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles vagus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex annulus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex bitaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscipes</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex gelidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex (Lophoceromyia) rubithoracis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex pseudorishnui</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex pipiens quinquefasciatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex tritaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

P = Species collected

Z = Species not collected

NA = No collections attempted

Culex nigropunctatus
Culex pseudosinensis
Culex pseudovishnui
Culex pipiens quinquefasciatus
Culex sinensis
Culex sitiens
Culex tritaeniorhynchus
Culex whitei
Culex whitmorei
Ficalbia chamberlaini
Ficalbia luzonensis
Malaya jacobsoni
Mansonia crassipes
Mansonia uniformis
Uranotaenia annandalei
Uranotaenia campestris
Uranotaenia macfarlanei

Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	Z	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	Z	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	P	P	P	P	P	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
P	Z	P	P	P	Z	P	P	P	Z	Z	Z	Z	P	Z	Z	Z	Z	Z	Z
Z	Z	P	P	Z	Z	P	Z	P	Z	Z	Z	Z	P	P	Z	Z	Z	Z	Z
Z	Z	P	P	Z	Z	P	Z	P	Z	P	Z	Z	P	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	Z	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	P	P	Z	Z	P	Z	Z	Z	Z	Z	Z	P	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	P	P	Z	Z	Z	Z	Z	P	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	Z	Z	P	Z	P	Z	Z	Z	Z	P	P	P	P	Z	Z	Z
Z	Z	Z	P	P	Z	P	Z	Z	Z	Z	P	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

† = Species collected N = Species not collected NA = No collections attempted

TABLE III - F
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS
 PHAN RANG, VIETNAM

SPECIES	MONTHS																								
	1966						1967						1968												
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes albopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes alboscudellatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes dur</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes lineatopennis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes mediovittatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes nivoscutellum</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes pseudalbopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes taeniorhynchoides</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vexans</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vigilax</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedeomyia catacticta</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles aconitus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles annularis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles argyropus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles indiensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles lesteri</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles minimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles nigerrimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles pallidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles peditaeniatius</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles philippinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles tessellatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles vagus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex annulus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

<i>Culex bitaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Culex fuscocephalus</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Culex gelidus</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Culex khazani</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Culex (Lophoceraomyia) minor</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex (Lophoceraomyia) pholeter</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex (Lophoceraomyia) reidi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex (Lophoceraomyia) rubithoracis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex nigropunctatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex pseudosinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex pseudovishnui</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex pipiens quinquefasciatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex sitiens</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex tritaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Culex whitmorei</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Mansonia crassipes</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Mansonia ochracea</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Mansonia uniformis</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<i>Uranotaenia maxima</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Uranotaenia obscura</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	
<i>Uranotaenia recondita</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	

P = Species collected

N = Species not collected

NA = No collections attempted

TABLE III - C
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

PLEIKU A. B. VIETNAM

SPECIES	MONTHS																																								
	1966												1967												1968																
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY																	
<i>Aedes albopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes gubernatoris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes laniger</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes lineatopennis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes mediotinnotus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes niveoscutellum</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes ostentatio</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes pseudoalbopictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vexans</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vittatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedeomyia catalaicta</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles acornutus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles annularis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles argyropus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles indiensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles karwari</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles lesteri</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles maculatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles minimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles nigerrimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles pallidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles pedinotatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles philippinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles splendidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

Anopheles vagus
Armigres flatus
Armigres subalatus
Culex annulus
Culex bitaeniorhynchus
Culex brevipalpis
Culex fuscus
Culex fuscocephalus
Culex gelidus
Culex (Lophoceraomyia) pholeter
Culex nigropunctatus
Culex pseudosinensis
Culex pseudovishnui
Culex pipiens quinquefasciatus
Culex sinensis
Culex sitiens
Culex tritaeniorhynchus
Culex whitei
Culex whitmorei
Ficalbia chamberlaini
Hodgesia malayi
Mansonia crassipes
Mansonia uniformis
Uranotaenia annandalei
Uranotaenia macfarlanei
Uranotaenia marima

P = Species collected

Z = Species not collected

NA = No collections attempted

Z	Z	Z	P	P	Z	Z	P	P	Z	P	P	P	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	P	Z	P	P	Z	Z	Z	P	P	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	P	Z	P	P	Z	Z	Z	Z	P	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	P	Z	P	P	Z	Z	Z	P	P	P	Z	Z	Z	Z	Z	Z	Z	P	P	Z	Z	Z	Z
Z	P	Z	P	P	P	P	P	Z	Z	P	P	P	P	Z	P	Z	P	P	Z	Z	P	P	P	P	P	Z
P	Z	Z	P	P	P	P	Z	P	P	P	P	P	Z	Z	P	P	Z	Z	P	P	Z	Z	Z	Z	Z	Z
P	Z	P	P	P	Z	P	P	P	Z	P	P	P	Z	Z	P	Z	P	Z	Z	Z	P	P	P	Z	P	Z
Z	P	P	P	P	Z	P	P	P	P	P	P	P	Z	Z	P	Z	P	Z	Z	Z	P	P	Z	Z	Z	Z
Z	Z	P	P	P	Z	P	P	P	Z	P	Z	Z	Z	P	Z	P	Z	Z	P	P	Z	Z	P	P	Z	P
P	Z	Z	P	P	Z	P	P	P	Z	Z	Z	P	Z	Z	P	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	P	P	P	Z	Z	P	Z	Z	Z	P	P	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	P	P	Z	Z	Z	Z	Z	Z	P	Z	Z	P	Z	P	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

TABLE III - H
 OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
 BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

PHU CAT, VIETNAM

SPECIES	MONTHS																								
	1966						1967						1968												
	JUN	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes aegypti</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes amesi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes lineatopennis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes longirostris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes mediolineatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes ostenlatic</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes poicilius</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes verrans</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedes vittatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Aedeomyia catasicta</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles aconitus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles annandalei interruptus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles annularis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles argyropus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles barbirostris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles campestris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles indiensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles jeyportiensis candiadiensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles karwari</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles lesteri</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles minimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles nigerrimus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles pallidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles peditaeniatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles philippinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
<i>Anopheles tessellatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

TABLE III - I

OCCURRENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

TAN SON NHUT, VIETNAM

SPECIES	MONTHS																								
	1966						1967						1968												
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	
<i>Aedes aegypti</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Aedes dur</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Aedes vexans</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles a. onitus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles annularis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles crawfordi</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles pl.ippinensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles sinensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles subpictus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles tessellatus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Anopheles vagus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex annulus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex brevipalpis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex fuscarus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex fuscocephalus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex gelidus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex pipiens quinquefasciatus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex raptor</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex sinensis</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex tritaeniorhynchus</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Culex whitmorei</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Ficalbia chamberlaini</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Malaya jacobsoni</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

P = Species collected

N = Species not collected

NA = No collections attempted

TABLE III - J

OCCURENCE OF MOSQUITO SPECIES BY MONTH OVER A 24-MONTH PERIOD
BASED ON LIGHT TRAP AND LARVAL COLLECTIONS

TUY HOA, VIETNAM

SPECIES	MONTHS																									
	1966												1967												1968	
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY		
<i>Aedes dur</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Aedes lineatopennis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Aedes longirostris</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Aedes vexans</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Aedeomyia catasicta</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles annularis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles crawfordi</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles peditaeniatius</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles sinensis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles subpictus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Anopheles vagus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex annulus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex bitaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex gelidus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex pipiens quinquefasciatus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex tritaeniorhynchus</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Culex whitmorei</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Mansonia crassipes</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Mansonia ochracea</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Mansonia uniformis</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		
<i>Tranteroides aranoioides</i>	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z		

P = Species collected

N = Species not collected

NA = No collections attempted

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13. ABSTRACT Data is presented on the occurrence and human disease relationships of mosquitoes on USAF installations located in the Republic of Vietnam. Information contained in this report is based upon the identification of mosquito specimens submitted to the USAF 5th Epidemiological Flight by USAF Military Public Health personnel from 10 USAF installations in RVN over a 24-month period between 1 June 1966 and 1 June 1968. Mosquito surveys were accomplished on a routine basis in connection with the objectives of the USAF Aerospace Medicine Program to prevent and control vector-borne diseases. A total of 94 different species of mosquitoes were identified from all collections. Of this number, 22 species or 23.4 percent, are known vectors of human disease.		

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