4. Title: Mosquito Vectors of Malaria

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MALARIA STUDIES

During this period mosquitoes were dissected and examined for malaria parasites in Buriram, Pathum Thani, Saraburi and Nakhon Ratchasima provinces (Table 11). A total of 689 specimens of 6 known or potential vector species, An. aconitus, An. balabacensis, An. maculatus, An. minimus, An. nivipes–philippinensis, and An. vagus, were dissected in Pathum Thani and Saraburi provinces during July–August 1968, and all were negative for malaria parasites. During the period 23–30 July 1968, an entomological study was made in Amphur Pak Thong Chai, Nakhon Ratchasima province following a reported malaria epidemic. Two weeks earlier, National Malaria Eradication Project personnel reported that approximately 21% of the inhabitants in this area had either P. falciparum and/or P. vivax infections: biting collections were made on man inside homes, outside homes ond in an adjacent jungle area. All anophelines collected were dissected. Four of 27 An. balabacensis dissected had oocysts and one of these had sporozoites in its salivary glands. While 101 man hours were expended in man–biting collections, only 50 anophelines were collected in this area. The collection rate for An. balabacensis was 0.27/man/hour. The peak period for An. balabacensis biting activity was 1900 to 2100 hours.

During January and March of 1969 anopheline collections were made in the vicinity of Canton Lam Duan, Amphur Krasang in northeastern Buriram province. Villages in the eastern part of this canton bordering on the Lam Chi river had had persistent foci of vivax malaria during 1967 and 1968. The majority of these cases each year were reported during the dry season. During the rainy season much of the area is flooded, but it is dry and dusty during the dry season. The Lam Chi river never completely dries, and there are permanent ponds near many of the villages in the area. Neither An. minimus nor An. balabacensis have been collected in this area in recent years. A total of 261 anophelines were collected biting man outside houses on the nights of 28–30 January 1969. The majority of those collected were species related to Anopheles hyrcanus, none of which are known to be of importance as malaria vectors in Southeast Asia. The next most abundant species, An. aconitus, has been found infected in the central plain of Thailand (Pathum Thani) where it is believed to be of some importance in the transmission of P. vivax malaria. This mosquito has also been found infected in South Viet–Nam and is a vector of malaria in parts of Indonesia. Sixty anophelines were dissected during January but none were found infected. The area was revisited and 73 anophelines were collected biting man on the nights of 19–21 March. This time the majority of those collected were An. aconitus and An. campestris, while relatively few members of the An. hyrcanus complex were collected. Fifty eight anophelines were dissected, but no infected mosquitoes were found. The vector of malaria in this region is still unknown.

Table 11. Results of anopheline dissections for malaria parasites*

	Species	Total Dissected	Gravid	Nulliparous	Parous	% ** Parous	Positive Gut	Positive Gland
Saraburi	aconitus	4	0	3	1	25.0	—	—
	balabacensis	7	0	4	3	42.8	—	—
	maculatus	229	11	140	78	34.1	—	—
	minimus	216	12	141	63	29.2	—	—
	nivipes—philippinensis	40	0	36	4	10.0	—	—
Pathum-Thani	aconitus	57	0	45	12	21.0	—	—
	nivipes—philippinensis	133	1	110	22	16.5	—	—
Nakhon Ratchasima	balabacensis	27	1	8	18	66.7	4	1
	campestris	11	0	10	1	9.1	—	—
Buriram	aconitus	67	32	23	12	17.9	—	—
	campestris	17	0	7	10	58.8	—	—
	nivipes—philippinensis	22**	2	4	15	68.2	—	—

* — species of unknown vector status and under 10 in number not included

** — not including gravid females