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STUDIES ON KARYOTYPE OF SOME MEMBERS OF THE
ANOPHELES LEUCOSPHERUS AND ANOPHELES MACULATUS SPECIES GROUPS
(DIPTERA : CULICIDAE) IN SOUTHEAST ASIA.

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
(ENVIRONMENTAL BIOLOGY)

IN THE
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY.

1987

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ABSTRACT.

A total of fifteen strains of Anopheles belonging to the An.leucosphyrus and An.maculatus species groups were studied. These two groups of Anopheles were known as primary human malaria vectors in Southeast Asia. It was studied the mitotic chromosomes that prepared from the neuroblast of the 4th stage larvae using the method of Baimai (1975), by staining with Giemsa and Hoechst 33258. These methods complement each other to differentiate the closely related species.

Giemsa and Hoechst techniques gave similar banding pattern. Some variations between Giemsa and H-33258 are due to different mitotic phases of the chromosome figures and/or different duration of cell fixation.

The karyotype of the sibling species of the An.dirus and An.maculatus complexes could be differentiated easily. This study also supported Green et al (1985) findings that there were three kinds of X-chromosome (X_1 , X_2 , and X_3) and four types of Y-chromosome (Y_1 , Y_2 , Y_3 , and Y_4) in the An.maculatus species group.

Quite distinct of the sex chromosome type and banding configuration between the An.leucosphyrus Jambi strain and the other two strains impose a question whether this taxon is a group of complex species.

The two strains of An.balabacensis that originated from the same island (Borneo) had similar karyotype configurations. It is suggested that they are two allopatric populations of the same species.

Almost all of the sex chromosomes of An.leucosphyrus groups had a telocentric type. Therefore, it was assumed that this type of sex chromosome is the ancestral form. The acrocentric sex chromosome as found in the An.leucosphyrus Jambi strain is likely to be due to acquisition of extra heterochromatin.