

Sibling species status of *Anopheles culicifacies* and *Anopheles subpictus* and their distribution in Sri Lanka

De Silva, B. G. D. N. K.,^{1,2} Munasinghe, M. P. C. S.,^{1,2} Weerasuriya, G. D. N. G.,^{1,2} Ariyawansa, W. G. S.,^{1,2} Wickramasinghe, M. B.,³ Karunanayake, E. H.²

- 1 Department of Zoology, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka.
- 2 Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo, Sri Lanka.
- 3 Former Entomologist, Anti-Malaria Campaign, Colombo 5.

ABSTRACT

Anopheles culicifacies is the most important vector and *An. subpictus* is considered to be a secondary vector of malaria in Sri Lanka. Two forms of *An. culicifacies* were found in Sri Lanka using mitotic karyotyping analysis and these were designated as species B (with an acrocentric Y chromosome) and species E (with a submetacentric Y chromosome). It was also found that species E (not B as previously recorded) is the major vector of malaria in the island. Species E appears to be predominant in most parts of the island, while species B is less common but sympatric with species E in some localities.

Cytogenetically identified species B and E of *An. culicifacies* were examined for sequence difference in ITS2 (Internal Transcribed Spacer 2) region. It was revealed that both species have exactly similar sequences (Sp. B, n=8 and Sp. E, n=12). However, it was possible to distinguish the two species using RAPD-PCR method.

Four types of sibling species named as A, B, C and D of *An. subpictus* were found based on morphological characters of eggs, larvae and adults. All four sibling species were recorded in inland areas while species B was found predominantly in the coastal areas of the dry zone in Sri Lanka.

Morphologically identified species A, B, C and D of *An. subpictus* were also examined with ITS2 specific primers. It was possible to distinguish Sp. A and C from Sp. B and D in a PCR assay.

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