

**A STUDY ON MATING COMPATIBILITY OF THE BIOTYPES OF
Anopheles stephensi.**

N. Liyanagedara* and S. N. Surendran

Department of Zoology, Faculty of Science, University of Jaffna, Sri Lanka
*nimashaliyanagedara@gmail.com

ABSTRACT

Malaria is a mosquito-borne disease that severely affects tropical and subtropical countries in Africa, Asia, and American continents. In 2017, *Anopheles stephensi*, a major malaria vector of urban malaria in Asia, was first detected in Mannar and later in 2018 in Jaffna. *Anopheles stephensi* exist as three biotypes viz type, intermediate, and mysorensis, which possess different vector potentiality and breeding preferences. The current study was performed to assess the mating compatibility of the biotypes. Biotypes were identified according to the egg morphology, such as the number of egg ridges, length of the eggs, and width of the eggs. The number of egg ridges in type, intermediate, and mysorensis was 14-22, 13-16, and 9-15 respectively. The type (T) and intermediate (I) biotypes were identified based on the number of egg ridges. They were maintained separately under laboratory conditions and subsequently used for cross-breeding experiments. Reciprocal breeding experiments were set up using 15 females and 8 males of each type. After a blood meal, eggs were collected on egg-laying surface and the number of egg ridges were counted for each cross. From T female (15) and I male (8) cross, 1 T and 3 I progeny were obtained. Where as in I female (15) and T male (8) cross, 2 T and 2 I progenies were obtained. These preliminary observations indicate that the biotypes are not reproductively isolated and can be regarded as ecotypes occupying different ecosystems. Further studies are warranted to establish this hypothesis.

Key words: *Anopheles stephensi*, Biotypes, Egg ridges, Reproductive isolation