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Breeding habitat preference and man biting habit of *Anopheles stephensi* in Island of Mannar in Sri Lanka

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Anopheles stephensi was recorded from the island of Mannar in the Northern Province in December 2016 for the first time in Sri Lanka. This mosquito species is an urban vector of malaria inneighboring countries and breeds predominantly in man-made container type habitats. Being an urban vector, appearance of *An. stephensi* in Sri Lanka has posed the newest challenge to the attempts taken to keep the country malaria free. Therefore, this longitudinal study was carried out in the island of Mannar to explore the breeding site preference and human biting behavior of *An. stephensi*. Entomological surveys were carried out in the period from December 2016 to May 2017 and a total of 1339 potential mosquito breeding sites has been sampled in six sampling zones located in island of Mannar. Of these sampled breeding sites, *An. stephensi* larvae were found to be primarily breeding in wells (97.6%, n=203). Other identified breeding sources are water storage barrels (1.4%, n=3), cement tanks (0.5%, n=1) and ponds (0.5%, n=1). A total of 2606 *An. stephensi* larvae has been found with highest mean larval density recorded in the month of May in 2017 (24 larvae per 100 dips). The full night human landing catches revealed out door man biting (0.26 bites per man per hour) was significantly higher than ($p<0.05$) indoor man biting (0.027 bites per man per hour). Peak biting was observed in 19 00 to 20 00 hours. According to the findings of this study, the nature of *An. stephensi* breeding in medium to large size man-made confined breeding habitats and outdoor human biting behaviour has posed the newest challenge to the current entomological monitoring and response system of malaria vectors in the country. Hence, in the process of eliminating *An. stephensi* from Sri Lanka, more emphasis should be given to the larval control activities mainly targeting wells. In adult control efforts outdoor vector control interventions should be targeted in the peak biting time considering the outdoor human habits of the local population in the island of Mannar.

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