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Comparative fecundity and age composition of two sibling species of the Anopheles culicifacies (Dipetera:Culicidae) complex in Sri Lanka

Fecundity and physiological age of two sibling species (B and E), belonging to the major malaria vector taxon *Anopheles culicifacies* complex in Sri Lanka, were investigated. Specimens of *An culicifacies s.l.* were collected from three malarious areas in Sri Lanka: the districts of Trincomalee, Monaragala and Puttalam. By using cattle-baited huts and cattle-baited traps, blood fed females of *An culicifacies s.l.* were obtained. Single female cultures were raised from collected females and from each culture late III and early IV instar male larvae were used for karyotyping. After egg laying, adults were transferred individually into cups. Eggs of females were numerated before being reared. Ovaries were dissected for age determination and remaining eggs were summed with laid eggs. Mothers of karyotyped larval progeny were used for age determination following Polovodova's method. Though, overall mean fecundity of species E was slightly higher than species B, mean egg production (fecundity) was not significantly different between the two populations; species E, 89.4±25.06 (n=128), species B, 78.81±14.30 (n=16) ($F=2.75$, $P= 0.1$). During the study period 148 females of species E and 19 females of species B were analyzed for age composition. Among species E, 14.2% (21/148) of field caught females had 3 or more dilatations while none (0/19) of the species B had 3 or more dilatations. The difference between species B and E was not statistically significant ($\chi 2= 1.6$), but more species B mosquitoes have to be examined. The older the female the greater is her epidemiological importance, as each blood meal provides additional opportunity of the vector being infected by the host or the host's acquiring infection from a vector. Of species E, 14.2% could support the extrinsic cycle of *Plasmodium vivax,* and *P falciparum*, entered the epidemiologicaly dangerous age. Therefore, proper vector control measures are needed to reduce the longevity of species E in order to interrupt the complete development of parasite in the mosquito. The present study also reveals that current anti mosquito insecticide spraying may not be effective in reducing the longevity of vector populations in order to prevent parasite transmission.