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Host preferences of frog-biting *Uranotaenia* mosquitoes in Sri Lanka

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Hematophagous insects often have particular host preferences to maximize their foraging efficiency that result in close ecological associations with their victims. Identification of host preference of blood feeding mosquitoes is vital to understand how disease causing pathogens transmit among wild- animals and from wild-animals to humans. The objective of the present study was to uncover the host preferences of frog-biting mosquitoes in Sri Lanka.

Feeding behaviour of frog-biting mosquitoes and calling activities of anurans (ground dwelling *Duttaphrynus melanostictus*, arboreal *Polypedates cruciger* and *Pseudophilautus rus*) were examined once a week from April 1st to June 30th 2016 at a home garden in Ranawana, Katugastota. Mosquitoes attracted to frog calls were collected at hourly intervals from 19.00 to midnight. Sound traps were also used to collect mosquitoes that responded to *D. melanostictus* calls. Collected mosquitoes belonged to the genus *Uranotaenia* and were identified as three morphotypes (*Ur.* sp1, *Ur.* sp2 and *Ur.* sp3). These *Uranotaenia* morphotypes had different host preferences towards anurans at the study site and shared temporal and spatial niche partitioning with their preferred host anurans. The highly abundant *Uranotaenia* sp1 (n=1271) was often found at ground level, and mostly attracted towards ground dwelling *D. melanostictus* (98.1%). The sound trap (n=5 traps) with *D. melanostictus* calls at natural intensities also attracted 100% *Ur.* sp1 (n=45) supporting the species specific interactions between them. Moderately abundant *Uranotaenia* sp2 (n=441) often inhabited an average height of 0.7 ± 0.1m, and mostly bite *P. rus* (98.6%) that was abundant at 0.7 ± 0.1m. The least abundant *Ur*. sp3 (n=42) was often found at an average height of 1.4m and was attracted to *P. cruciger* (97.6%). Peak activity hours of *Ur.* sp1 (22.00-23.00 hrs), *Ur.* sp2 (19.00-20.00 hrs) and *Ur.*sp3 (20.00-21.00 hrs) overlapped with active peak hours of *D. melanostictus*, *P. rus* and *P. cruciger* respectively. Our results revealed high species-specificity between the mosquitoes and their anuran host highlighting host niche partitioning in a relatively simple community for the first time in Sri Lanka. Future studies will explore the factors that influence the evolution of species-specific interactions between mosquitoes and anurans in Sri Lanka.

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