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Nectar Feeding Habits of Loten's Sunbird *Cinnyris lotenius* and Purple-rumped Sunbird *Leptocoma zeylonica* in the Royal Botanical Gardens, Peradeniya, Sri Lanka

Perera N.* and Wijesundara C.

Department of Zoology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
**nuwanthikacool@gmail.com*

Abstract

Sunbirds (Nectariniidae) are small passerines that feed largely on nectar. The aim of this work was to observe the relationship of the purple-rumped sunbird *Leptocoma zeylonica* and Loten's sunbird *Cinnyris lotenius* with their host flowers, and to examine their relationship with the glucose concentration of nectar, flower count and the length of corolla. The study was carried out in the Royal Botanical Gardens, Peradeniya, Sri Lanka, between February 2013 and September 2013. For each observation, plant species visited for nectar feeding, method of obtaining food, glucose concentration of nectar, length of corolla, and flower count were recorded. Both species of sunbirds visited *Hamelia patens*, *Sanchezia speciosa*, *Heliconia rostrata*, *Megaskepasma erythrochlamys*, *Strobilanthes flaccidifolius*, *Graptophyllum pictum* and *Pachystachys spicata*. The male Loten's sunbird's occurrence on a given flower is biased by the presence of female (Pearson correlation coefficient: 0.874; P-Value: <0.001). The Purple-rumped female's occurrence is biased by the presence of male (Pearson correlation coefficient: 0.819; P-Value: <0.001). The results also indicated that there was no significant correlation between the occurrence of the bird and the glucose concentration of the flower (Pearson correlation coefficients: -0.045; P-Value: 0.740; [Loten's male]; -0.094; P-Value: 0.489; [Loten's female]; -0.061; P-Value: 0.653; [Purple-rumped male]; 0.001; P-Value: 0.997; [Purple-rumped female]). Similarly, there was no significant correlation between the flower count with the occurrence of the bird (Pearson correlation coefficients: 0.160; P-Value: 0.239; [Loten's male], 0.171; P-Value: 0.208; [Loten's female]; 0.172; P-Value: 0.595; [Purple rumped male]; 0.211; P-Value: 0.118; [Purple-rumped female]). The Loten's sunbird has no significant correlation with flower corolla length (Pearson correlation coefficients: -0.240; P-Value: 0.075; [Loten's male]; -0.142; P-Value: 0.297; [Loten's female]). The Purple-rumped sunbird has a significant correlation with the flower corolla length. (Pearson correlation coefficient: -0.399; P-Value: 0.020; [Purple rumped male]; -0.452; P-Value: <0.001; [Purple-rumped female]). Depending on the length of corolla, the nectar obtaining method varied as probing or piercing.

Keywords: Sunbirds, Nectar, Glucose concentration, Corolla length, Flower count