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Temporal Variations of Interactions between Endemic *Pseudophilautus regius* (The Polonnaruwa Shrub Frog) and Two Carnivorous Plants in Sri Lanka**Wijesooriya, W.A.K.P. *, Suriyabandara, S.M.D., Dayawansa, P.N.***Department of Zoology and Environment Sciences, Faculty of Science,
University of Colombo, Colombo 03, Sri Lanka.***wijesooriya.pasan0312@gmail.com***Abstract**

The Polonnaruwa shrub frog, *Pseudophilautus regius* is an endemic Rhacophoridae species in Sri Lanka whose ecological interactions are crucial for its conservation. This study examined temporal variations in interactions between the Polonnaruwa shrub frog and two carnivorous plants, *Sarracenia flava* and *Nepenthes* in an open greenhouse in Polonnaruwa (7.946140N, 81.013930E). Associations of shrub frogs with pitchers of five *Sarracenia* and ten *Nepenthes* plants were studied. Focal animal sampling was employed to quantify the behaviour. Observations were conducted from August to November 2024 from 06:00 h to 22:00 h. Mean daytime (06:00 h to 18:00 h) and nighttime (18:00 h to 06:00 h) temperatures during the study were 33 °C and 26 °C, respectively. A total of 36 frogs were observed inside *Sarracenia* pitchers during daytime, with no observations after 18:00 h. Inside *Nepenthes* pitchers, frogs were mostly observed between 17:00 h and 19:00 h (2 individuals) and 20:00 h and 22:00 h (4 individuals), with no observations between 07:00 h and 16:00 h. All observed behaviours inside *Sarracenia* pitchers were resting (100%). In contrast, frogs inside *Nepenthes* spent 83.33% of the total observation time on foraging and 16.67% on resting. This significant difference in plant use indicates that frogs utilise *Sarracenia* pitchers for daytime roosting to avoid temperature variations and high light intensity and *Nepenthes* pitchers as a foraging platform during low light hours. These findings demonstrate the importance of both *Sarracenia* and *Nepenthes* for *P. regius* in terms of foraging, thermoregulation, and adaptability to environmental variations presented by novel plant species. This provides valuable insights into the adaptability of Polonnaruwa shrub frogs to such novel microhabitats.

Keywords: *Nepenthes*, *Polonnaruwa shrub frog*, *Pseudophilautus regius*, *Sarracenia*, *Temporal interactions*