

**STUDY OF BREEDING ECOLOGY OF *RAMANELLA OBSCURA* (ANURA: MICROHYLIDAE) IN NATURAL TREE HOLES, AT GANNORUWA FOREST RESERVE, SRI LANKA**

V. CHANDRASEGARAN AND K.B. RANAWANA

*Department of Zoology, Faculty of Science, University of Peradeniya*

*Ramanella obscura* Gunther (1864) is an endemic species, its natural habitat is tree-holes (tree panes) and some times, especially in rainy seasons, water puddles in the forests. Ability to survive in tree-hole conditions such as low dissolved oxygen concentration (DO) and high acidity were considered to be unique to this species. A study was carried out to investigate the breeding ecology of *Ramanella obscura*, in its natural habitat, tree holes and water puddles in Gannoruwa forest reserve, Kandy, Sri Lanka. Impacts of environmental factors such as the DO, Temperature, pH and water content of tree holes on the life cycle of *Ramanella obscura* were investigated during a nine-month study from May to November 2001. Three natural tree holes and two water puddles were selected for the study. Number of adults (Male and female), number of tadpoles in each stage was carefully monitored throughout the study. The water level of the tree hole was the main factor that determines the development of this species. They spawn immediately after the rain and thereafter several contiguous spawning could occur. Therefore, at any time during the reproductive season several different developmental stages could be found in a tree hole. The number of development stages decreased with the decreasing water level, and the number of eggs per clutch was also reduced when the rainfall is less. Tree hole water level fluctuated between 13cm (during rainy season) and 0.5 cm in the dry period. Total number of stages in a tree hole also deviated between 150 and 2 respectively. Therefore, it was very clear that the water level makes a significant impact on the life cycle of this species as well as on DO, pH, and temperature of the tree holes. It was observed that the number of eggs layed per clutch was reduced with decreasing water level. However it was found only 5% of the stages were survived up to adult stage. The results showed that *Ramanella obscura* follows a protracted breeding, with activity spreading over several months and accompanied with male parental care. The rainy seasons are favorable for spawning but tree hole conditions allow continuous development of stages even in the dry season. Experiments in captivity showed that this species is highly adaptable to new environments and could continue the life cycle even when translocated. The unique biology and breeding ecology of this species makes them especially vulnerable to changes in the habitat