



Section D

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Preliminary survey of the invertebrate fauna in “Wavul-Galge”, a natural cave in Sri Lanka

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Large natural caves are considered as unique ecosystems. Owing to their specific physiochemical conditions, they sustain a rich and unique assemblage of invertebrates and microbes. The present study reports, for the first time in Sri Lanka, invertebrate fauna of a cave environment and the environmental parameters associated with their diversity. The study was conducted from May to October 2017 in Wavul-Galge (6°40'-6°45'N; 81°00'-81°05'E), one of the largest natural caves in Sri Lanka. Four transects (10-15m in length and 0.5m in width) were set from the entrance to the deep end of the cave and sampling was done along these transects. Pitfall traps, hand picking by visual searching, quadrat sampling, light traps and soil sieving were employed in collecting faunal species. Speleoclimatic parameters such as cave ambient temperature, relative humidity and light intensity, and soil parameters such as soil temperature, soil pH and soil humidity were also measured with respect to the four different transects. During the study period, thirty species of invertebrates belonging to two phyla, Mollusca (1 species) and Arthropoda (29 species) were collected. The majority of the Arthropods were insects representing 6 orders (Blattodea, Coleoptera, Lepidoptera, Hemiptera, Diptera and Hymenoptera). The highest number of species was recorded for the transect 1 near the cave entrance and transect 4 in the deep end of the cave. The light intensity of the cave remained constant near zero lux, and the other parameters had very slight fluctuations when compared to the outside environment. When we consider from cave entrance to deeper cave area, transect one closer to the entrance was subjected to more fluctuations in speleoclimatic and soil parameters which interprets as less environmental stability. Transect 4 in the deeper end had very little or no fluctuations, depicting a highly stabilized environment. Even though species richness is expected to be less under highly stabilized environment, a high number of species was observed in transect 4 in the deep end of the cave, which had little or no fluctuations both in speleoclimatic and soil parameters.

Keywords: Natural cave, invertebrates, cave environment

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