

Comparison of Terrestrial Gastropod Diversity in Montane Zone Forests in the Five Divisional Secretariats of the Nuwara Eliya District, Sri Lanka

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The wet zone of Sri Lanka has the highest land mollusk's species richness and the highest number of endemics. The major vegetation types in the wet zone are wet and dry patana and lower and upper montane rainforests. Of these, montane rainforests have the highest land mollusk diversity. However, only a handful of studies have explored this rich gastropod diversity in montane rainforests in the NuwaraEliya district. Hence, this study was aimed at examining the gastropod diversity of montane rainforests in the five divisional secretariats in this district. A total of 60 sites covering lower and upper montane rainforests were sampled from July 2018 to June 2019. Sampling was based on ten 1 m² sampling plots per site. Species abundance, species richness, species density and the Shannon wiener index (H') were used to compare the land snail diversity in the five secretariats. A total of 1,224 individuals of 38 species (66% endemics) belonging to 15 families were recorded. The most diverse divisional secretariat was Hanguranketha ($H'=2.49$) and the least diverse was Ambagamuwa ($H'=1.83$). Species richness was highest in Nuwara Eliya (63%) and lowest in Ambagamuwa (24%). The highest number of endemic species was recorded from Hanguranketha (56%) and the lowest from Ambagamuwa (12%). The most abundant species in Ambagamuwa and Hanguranketha were two endemic species, *Euplecta elimina* (5%) and *Ruthvenia clathratula* (5%) respectively. In Walapane the most abundant snail was a native species, *Cryptozona bistrialis* (4%). However, in NuwaraEliya and Kothmale, the most abundant synanthropic snail species were the exotics, *Bradybaena similaris* (8%) and *Lissacchatina fulica* (5%). A third exotic species, the slug *Deroceros laeve* was also recorded from montane rainforests in Nuwara Eliya, albeit at low abundances (<1%). All three of the exotic species recorded in this study are agricultural pests. This study indicates that Hanguranketha montane rainforests supports the most species-rich mollusk fauna. The study also suggests that some exotic pest species have been able to invade natural forest systems. This could be a threat to the native fauna and flora if proper management plans are not developed.

Keywords: Terrestrial mollusks, diversity, Montane zone, rainforest, Nuwara Eliya