Patterns of biodiversity in Trinidadian spiders

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Trinidad is a continental island, which was isolated from South America about 10,000 years ago. Habitat types on Trinidad and the fauna they contain are therefore representative of the northeastern part of the neighbouring continent. Trinidad's small size makes studies of its biodiversity more manageable which can be used to infer results about South American biodiversity, which is little-known for most taxonomic groups.

For this study I looked at the biodiversity of three orb-weaving spider families, Araneidae, Nephilidae and Tetragnathidae, in natural habitats. This study also looked at how factors such as habitat classification and geographic location affected spider biodiversity. According to Beard (1946), the natural vegetation of Trinidad can be classified into six formations containing 16 habitat types. Data was collected using the visual search and sweep-netting methods at 46 localities throughout the island. Biodiversity was determined by examining the observed and estimated species richness, species distribution, distribution models and diversity indices between the formations and habitat types.

It was found there was a high proportion of rare species, and species of intermediate abundance were also frequent. Spider communities found in Trinidad were simple in nature and their ecology governed by a single factor, canopy cover, which seemed to have an effect on biodiversity with respect to species richness, diversity, evenness and dominance. Formation had influence on observed species richness, species diversity and dominance but neither formation nor habitat influenced evenness. Geographic factors such as latitude, longitude and altitude did not influence diversity. It is unlikely that climate change will affect species diversity but it may have some influence on species composition; this analysis is in progress.