

New study reveals hidden neotropical diversity

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Evidence of physically similar species hidden within plant tissues suggest that diversity of neotropical herbivorous insects may not simply be a function of plant architecture, but may also reflect the great age and area of the neotropics.

In an article published this week in *Science* Cornell College biology professor Marty Condon and coauthors turn current thought on plant-feeding insect diversity on its head. The study used an examination of fruit fly diversity in Latin America to conclude that typical niche diversity tracking can lead to undercounting of species. DNA analysis resulted in the discovery of multiple new species of fruit flies with overlapping niches.

The researchers found a greater specialization in plant feeding than previously thought. While some scientists believed that the diversity of plants would predict the diversity of insects that feed on plants, this study demonstrated that herbivorous insect diversity exceeds those expectations, because these flies also specialize on different plant parts. All but one of the 45 species raised for this study fed on only seeds or flowers, not both. Some ate only male or female flowers.

The study further found a surprising number of “hidden” species, species that were physically hidden inside the plants with little to no evidence of their presence, and hidden in the sense that they were nearly indistinguishable from other species without DNA analysis.

Most of the fly species were associated with only one host plant species. On the other hand, many of the plants hosted a range of species. One plant species supported at least 13 species of the fruit flies.

Location also played a role in the findings. Some of the fly species were geographically widespread. But others could only be found within a limited geographic range, even though the range of the host plant was much more extensive.

The team concluded that host plant and niche diversity plays a significant role in the extraordinary diversity of *Blepharoneura* flies. But geographical factors—and the passage of time—may play an even greater role.

Source: Cornell College

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