Identifying Costa Rican Moths & Butterflies Using DNA Barcoding

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Through decades of meticulous notes, photographs, ecological and biological observations and descriptions by taxonomists, we have created an inventory of over 100,000 specimens and over 15,000 species of moths and butterflies. Integration of DNA barcoding has enabled the description of species at a much higher rate and has revealed cryptic species.

Tissue samples are taken and the mitochondrial CO1 gene is sequenced, what we call DNA barcoding. By comparing the differences within this one gene, we can determine species as accurately as if we sequenced the entire genome.

DNA barcoding increases accuracy when identifying species of moths and butterflies. Species descriptions are strengthened by including all our field data as well as the taxonomic data. DNA barcoding is a vital tool in the tool belt of conservationists, ecologists, and taxonomists. Showcasing the high biodiversity of any region on the globe supports the argument that it has inherent value and should be conserved.

Study Site

This caterpillar is found in the forest

After a few days to weeks, it turns into a pupa

Then emerges into an adult

Biodiversity of Lepidoptera in Costa Rica

Larval, pupal, and adult life stages of an Udranomia species

Rincón de la Vieja Volcano National Park