

## STRATIFICATION OF NEOTROPICAL FOREST MICROHABITATS AND ASSOCIATED ARTHROPOD FAUNULES: A PROGRESS REPORT

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Casual observations of tropical forest collections indicate the possibility that discrete faunules of insects, at least beetles, array themselves among microhabitats. Sampling designed to test this possibility was begun in 1988; samples were collected each year (1988 to 1992) at Pakitza, Perú, using insecticidal fogging techniques. These samples included late dry season collections from suspended dry leaves from various tree species in various forest types (1991), adherent dry palm leaves (*Astrocaryum macrocalyx*) in upper floodplain forest (1991), 2 bamboo species' canopies (*Guadua weberbauri* and *Elytrostachys* sp.) (1991), riverside tall grass canopy (*Gynerium sagittarium*), various tree trunks with an array of textures (1992), complex tree canopies with numerous lianas (1989 to 1992) and 17 tree species canopy leaves (genera: *Allophyllus*, *Calophyllum*, *Celtis*, *Chrysochalmys*, *Drypetes*, *area*, *Inga*, *Laetia*, *Mabea*, *Pouteria*, *Pseudolmedia*, *Protium*, *Quararibea*, *Rinorea*, *Spondias*, *Virola*, and *Zanthoxylum*) (1988, 1989).

From a resultant 250 samples, approximately 250,000 beetles were extracted. In order to process these specimens and database their associations and numbers, special techniques were designed. For analyses, Microsoft's Excel for

Windows was adopted to record data and provide basic summations, means, and standard deviations. This information was formatted for import to a species accumulation curve program (Combined DBase III+ and BASIC) and to SYSTAT for ANOVA and multivariate analyses. An average of 10 hours is required to extract, sort, prepare, 'speciate' and codify, and input data to Excel for each sample.

A typical sample, from 1.7 m<sup>3</sup> of foliage weights 19.8 gm (dry weight), contains 514 individuals, 450 species in 50 families, and fills 4.5 cm of a 3 dram shell vial. The average size beetle is 3.0 mm in length. Cost for obtaining and making one specimen museum-ready is \$1.28. Preparation and analysis of the current dataset will require 2,500 manhours, but this does not result in museum-ready specimens.

If the hypothesis is supported, that different microhabitats have different and virtually discrete faunules, there will be a powerful tool to use in biodiversity estimation studies in that habitat residents might be estimated from more cost-effective surveys of only the quality and quantity of microhabitats rather than from species-by-species documentation.