

Fruit types and geographic range size in the genus *Burmeistera* (Campanulaceae)

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Burmeistera (Campanulaceae) is a genus of herbs, subshrubs and shrubs that grows in montane cloud forests in the Neotropics between 1000-3000 m in elevation. The genus comprises 117 species and is pollinated primarily by bats and hummingbirds. Two different fruit types have been observed in the genus, either brightly-colored, fleshy cylinders, or dull-green, inflated 'balloons' with the seeds held in a ball in the center. The former type appears adapted to bird dispersal, while dispersal in the latter is unknown, but ants or rodents could be involved. In this study we combined morphological records from herbarium specimens and locality data from online botanical databases to evaluate if fruit morphological traits have a relationship with the geographic ranges of species and/or if climatic conditions are influencing geographic distributions in *Burmeistera*. The questions we asked were: 1) Do plants with non-inflated fruits (i.e. berries) have larger geographic ranges sizes than those with inflated fruits?; and 2) What are the climatic conditions influencing the geographic distribution of *Burmeistera* species in different biogeographic regions? The length and width of the most developed fruit was measured for dried specimens of *Burmeistera*. Fruit type (inflated or non-inflated/berry) was designated for each species using field observations, herbarium specimens and available literature. Geographic occurrence was taken from geo-referenced herbarium specimens retrieved from three online data repositories, TROPICOS, GBIF and the New York Botanical Garden Herbarium (NY). Geographic range sizes were estimated as the Extent of Occurrence (EOO), and as the total area predicted as suitable using Maxent with 11 uncorrelated bioclimatic variables for *Burmeistera* species with more than 20 collections, for a total of 16 species climatic differences among biogeographic regions were examined using values extracted from the points of occurrence using DIVA GIS. Geographic range sizes do not seem to be different among plants with non-inflated fruits and inflated fruits. Bioclimatic conditions - temperature and precipitation - vary among biogeographic region, which in turn may influence the geographic distribution of *Burmeistera* species within the Neotropics.