

Brazilian *Drosera* and Molecular Phylogeny of the Droseraceae

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Four carnivorous plant genera occur in Brazil: *Drosera*, *Genlisea*, *Utricularia*, and *Heliamphora*. Of *Drosera*, there are circa twelve recognized species in Brazil south of the Amazon Basin, and anywhere between seven and fifteen in northern Brazil. Many more species are likely to be discovered in both these regions and several already have been, but have not yet been published.

Starting in 1990, I began studying carnivorous plants in their native habitats in Brazil south of the Amazon Basin. Except for *D. intermedia* HAYNE, all the *Drosera* taxa known to be native to this region were located and studied at innumerable natural populations. These are: *D. brevifolia* PURSH., *D. capillaris* POIR., *D. chrysolepis* TAUB., *D. colombiana* FERNANDEZ-PEREZ, *D. communis* ST. HIL., *D. graminifolia* ST. HIL., *D. graomogolensis* T. SILVA, *D. hirtella* ST. HIL. var. *hirtella*, *D. hirtella* var. *lutescens* ST. HIL., *D. montana* ST. HIL. var. *montana*, *D. montana* var. *schwackei* DIELS, *D. montana* var. *tomentosa* (ST. HIL.) DIELS, *D. sessilifolia* ST. HIL., and *D. villosa* ST. HIL.

Most of these *Drosera* grow on sandstone highlands, at 500-2500m of altitude, often in what is known as "campo rupestre" (rocky field) vegetation. This consists of herbaceous or low woody plants occurring in sandy soils, and is actually very similar to what is found on the famous Venezuelan tepuis. A few species are common in disturbed areas of rainforest-covered highlands of Eastern Brazil and three species are even found in coastal sandy swampy areas known as "restingas". Some are perennial but at least one species is annual. Several often go through a winter dormancy period (which corresponds to the dry season).

These and numerous other species of *Drosera* from around the world -- including also the closely related *Aldrovanda vesiculosa* L. and two species of *Genlisea* -- have been sequenced for rbcL, a chloroplast gene, for a phylogenetic study. The results so far obtained will be used to discuss -- together with the existing DNA sequencing data -- phylogenetic relationships of carnivorous plants, especially at the subgeneric and section level in the genus *Drosera*.

Ecology and Conservation of Bornean *Nepenthes* (Nepenthaceae)

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Borneo is the centre of diversity for *Nepenthes* with 31 species currently recognised (Clarke 1997, Jebb & Cheek 1997). This represents the largest assembly of *Nepenthes* for any single landmass, with 24 species endemic to the island. Diversity in Bornean *Nepenthes* is greatest in montane forests (those which generally occur above 1000 metres above sea level (a.s.l.)). The majority of the montane species persist as a few small populations isolated on mountain ridges or summits, whereas the lowland species tend to be more widespread. A small number of species are the subject of taxonomic debate and uncertainty--no opinion on these taxa is advanced here, but for obvious convenience the interpretations of Clarke (1997) are followed.

The ecology of *Nepenthes* is complex. Although generally confined to acidic, nutrient-deficient soils, they occur in a variety of habitats from maritime rocks and beaches to ericaceous scrub more than 3000 m a.s.l. Lowland habitats in which they are common include peat swamp forests, *kerangas* (heath forests), *padang* (cleared areas or those with sparse secondary vegetation) and limestone. *Kerangas* and *padang* vegetation are the strongholds for lowland *Nepenthes* in Borneo and can be used as indicators of their presence. Interactions with animals range from prey capture and digestion to the provision of habitats for invertebrates. Prey capture strategies vary among different species, but remain little-studied. The invertebrate faunas comprise a wide array of different metazoan types, the community structure of which