CARNIVOROUS PLANTS OF AUYANTEPUI IN VENEZUELA

Part 2

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Lithos donated by:
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Heliamphora minor on the Auyantepui is found so frequently that one has to take care not to walk on it. It grows in moist to wet peat, full sun to half-shade, and it can be found in dense colonies of more than 1 m². In protected places, the pitchers can reach a height of 20 cm. In addition to captured insects, *H. minor* is probably also nourished by the excrement of nocturnal frogs which hide during the day in the pitchers. I also watched a plunging spider which uses the pitchers for housing and as a food resource. The greenhouse cultivation of *H. minor* is rather simple. I plant them in course peat in plastic pots and make sure that they don't get too soggy. Only during sunny weather with sufficient air circulation do they get watered plentifully from above. That way the leaves can quickly dry to prevent rotting. From Spring to Fall, I fertilize them lightly once a month with Wuxal G. In suboptimal light levels, the lids develop very poorly. With temperatures between 17 and 30°C, my plants grow as nicely as in their natural habitat.

Brocchinia reducta belongs to a small group of plants which grow as well in the lowland savannah as on the plateau of the Tepuis. In the foothills, I found them in dense colonies in open swamps. On the plateau where the climate is regularly humid, the species grows in loose sand or peat layers and sometimes it even roots in its own leaf detritus on bare rock. Individuals of the lower sites mostly contain amazing numbers of insect carcasses. Higher up, I found less prey in the cylindrical rosettes, probably because fewer insects are living in higher altitudes. On the Tepui, the plants are more often inhabited by small frogs, spiders and snails which contribute to the nourishment of the plant. Though the flowers of *B. reducta* are not bird flowers, I often watched *Colibris* nibbling on them. Since *B. reducta* can colonize different habitats, cultivation is not very difficult. The most important factor is full and direct sunlight all day long. If light levels are insufficient, the leaves will turn green and spread apart. In culture, the plant will also survive with lesser light, but its overall appearance would not look like the natural *B. reducta* since it is always exposed to direct sunlight. Without fertilizer, *B. reducta* grows very slowly. If it gets enough nutrients, one can almost watch it growing. I cultivate my plants in clay pots in a peat-sand mix, 5:1, which I keep regularly slightly moist. In summer they stand outdoors with temperatures from 18 to 35°C and in winter I give as much light as possible with temperatures between 17 and 22°C.

Catopsis berterioniana. I found this Bromeliad at the foot of Auyantepui at an elevation of about 1000m. I was not able to determine this species properly, but I noticed immediatly that carnivory is involved for the following reasons:This epiphytic species grows in open shrub vegetation which produces very few deciduous leaves. Various species of *Aechmea, Guzmania,* and *Tillandsia* which grow in a few meters vicinity in a forest, fed by dead leaves, cannot grow with *C. berteroniana.* However, I found in the mentioned stands of *C. berterioniana* 5 different *Tillandsia* species which are all visually camouflaged and which are all inhabitated by ants. Four of them show characteristics of myrmecophile *Tillandsias.* It has been proven that myrmecophile *Tillandsias* profit by the detritus brought in by the ants. In contrast to these *Tillandsias,* the light yellowish leaves of *C. berteroniana,* of which the lower parts are covered with large amounts of white wax-powder, are conspicuous to the observer from a distance.

See **VENEZUELA** on page 51. Photos on pages 48-50.



Utricularia humboldtii growing in *Brocchinia tatei.*



Heliamphora minor



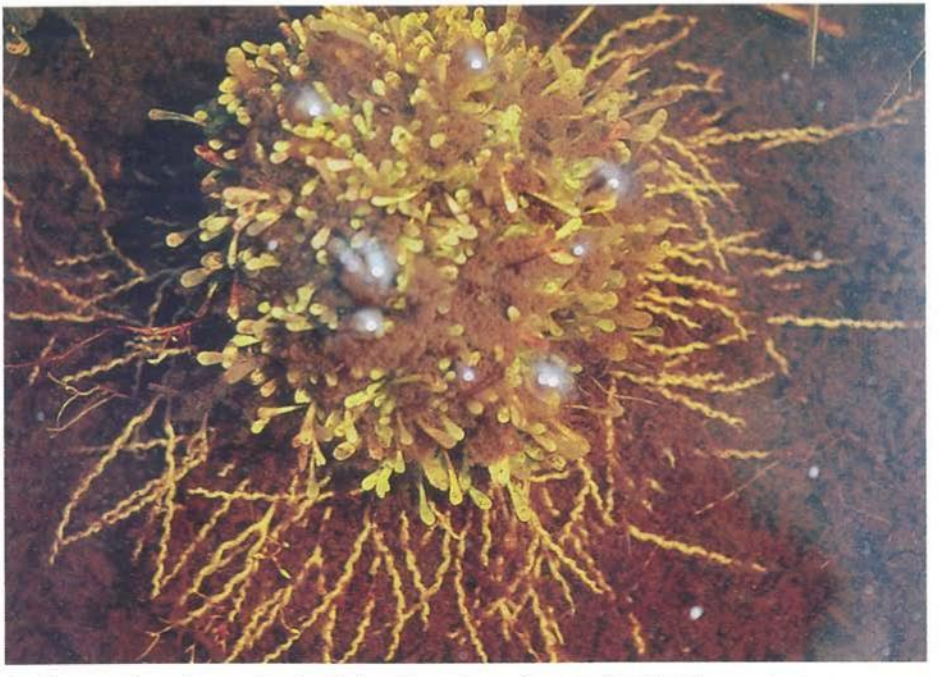
Prey in two leaves of *Catopsis berteroniana.*



Prey in the tubes of *Brocchinia reducta.*



Unidentified *Drosera* sp, growing in dry sand on Auyantepui.



Genlisea roraimensis, growing just below the water-surface on Auyantepui.

VENEZUELA continued from page 47.

In the remarkable book by V. Vareschi which is titled "Vegetationsokologie der Tropen", a *C. berterioniana,* erroneously under the name *Cottendorfia,* sits on a branch under an open sky. Typically, he uses this picture as an example of a plant in which the roots act only as fixing organs, while the leaf-rosette is responsible for the nourishment. How is this possible? If you open up a rosette, you get a clear answer shown in the photo.

Later, I found in a German paper, "Die Bromelie" 4/1986, in connection with a useless and theoretical discussion about *Brocchinia reducta* and whether it is carnivorous or non-carnivorous (E. Schott, Stellungnahme zu:Karnivorie der *B. reducta*), an interesting reference about a dissertation by D. Fish. He among other things dealt with the newly discovered carnivory of *Catopsis berteroniana.* (D. Fish, 1976:...discovery of an insectivorus bromeliad: Ph.D. diss. University of Florida, Gainesville.)

The cultivation of *C. berteroniana* is the same as the one for *Tillandsia* to which it is closely related. It needs a well ventilated place with much light and high temperature. even in half shade it retains its vase-shape. Within a year the roots will fully develop, adhering to coconut shells cut in half or to pieces of corkbark.

Most of the species discussed in this report are offered for sale or for an exchange of plants on the basis of equivalent rarity only. A free price-list is available from:

Dorothea Huber,
Allmendstr.28,
CH-3014
Bern, SWITZERLAND

We cannot mail any *Genlisea* or *Utricularia* species to countries which only permit import of plants that are free of soil (for example, the U.S.A.)

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Catopsis berteroniana, an insectivorous Bromeliad on the foot of Auyantepui, Venezuela.