I use fish tanks with lids and find this to be really good. Deep pots should be used for the sand and gravel growing kinds with a minimum depth of about 12 cm. (about 5 in.). The swamp ones are planted in a container with depth of 6-8 cm. (about 3 in.) and standing in about 1.5-2 cm. of water (3/4 in). I use only deionized or distilled water to prevent algae and scum build-up on the surface as most pygmies DO NOT grow in mossy areas but in clean, washed gravel sand conditions which are even free of visible humus.

Pygmy *Droseras* are worth the fuss and experiment. I have some unusual cases. *D. drummondi* is growing in live sphagnum moss in water and many seem to do well in sawdust in water or not or in *Pinus pinaster* leaf mold and sand. Others are in washed river sand, in washed quartz gravel (no humus) and many in straight peat moss (sand growing ones). Only a full growing year can tell of success.

In summer keep the plants shaded and humid except the one from Manypeaks.

When washing sand, I use ordinary water and wash until all fine silt has gone. Finally, rinse with deionized water and then mix in sieved peat moss. My mixes are usually about 2 parts sand to one peat, or less peat depending on species. I also knock the pot on the ground to settle the contents so that excess air is driven out. Then the surface is firmed down to bond the sand the peat so that watering the peat does not float over the tiny plants.

Regarding light, be your own judge since some prefer more shade than others, and I prefer to have a green *D. pulchella* than a dead red one. This even happens in the bush.

When the gemmae buds come or appear, sow them on a looser surface soil to enable root penetration and be careful not to ROT them. Some may have to be urged into the soil. Usually gemmae derived plants are stronger and cultivate more easily than collected mature plants by far. Certain species may only be cultivated this way.

NOTES ON A TRIP TO NORTH CAROLINA

by Les Kaufman

I must have been about eight years old when my father first brought home a Venus flytrap, and since that time it had remained a favorite daydream to go and see what they looked like in nature. Recently the dream was realized under the aegis of science, as I visited Beaufort, North Carolina, to continue work on the foraging of carnivorous plants. The science will have to wait until the data has been analyzed; here I wish to communicate my concern over the plants' survival based on what I saw in late October, 1976.

Most of my work was concentrated in a triangular region bordered by US Routes 24, 70, and Nine Foot Road. Within this area, one of the sites chosen for study coincided with a study area used by Roberts and Oosting in their classic treatment of *Dionaea* (1958). This, a small pocosin bordered by longleaf pine and sandy savannah, was still infested with *Dionaea* twenty years after their published work, and is today marked by a neat wooden marker, apparently erected by the University of North Carolina. The region along Nine Foot road is peppered with sphagnum dishes, mud pans and ponds, all inhabited by *Pinguicula*, *Drosera*, and *Utricularia* ssp., but the distribution of *Dionaea* is more closely related to older drainage ditches and logging roads than to its original habitat, the border of pocosin and drier savannah. Controlled burning, against a grid of *old* ditches and pocosin, will insure the survival of this plant on private and protected lands in this region. The private owners I met were aware of the need to protect *Dionaea*, and were extremely helpful in pointing out locations so long as I promised not to dig the plants up in large numbers. One nursery owner I spoke to, however, was surprised that I was purchasing *Sphagnum* when I could dig it up in the woods with as many flytraps as I wanted, just as they had been doing for years. They obligingly directed me to one of my recently chosen study areas, *on private land*, where they said they "always went to get them (flytraps) for selling."

Ranger Jan Smith of Camp Sam Hatcher was a refreshing new face. The tract of land he manages for boy scouts and other camping groups is a stronghold for *Dionaea* and other carnivores, including *Sarracenia flava* and *S. purpurea venosa*. To my surprise, I found old ditches running through second-growth woods to be filled, not only with *Sphagnum*, but with robust *Dionaea*, many with a strong tinge of red in the traps, and old withered flower scapes at their sides, all in what seemed like deep shade! Roberts and Oosting (1958) were of the opinion that *Dionaea* populations were viable mainly in their restricted ecotone, and that other populations were peripheral and of low reproductive potential. I am anxious to return to the wooded ditches in the spring and early summer, to estimate seed set in this "peripheral" (but increasingly widespread) artificial habitat.

As I poked about other potential CP sites, I made mental note of the kinds of disturbances that were going on, and tried to guess their effects over twenty or thirty years. Through some economic scenario that escapes me, mobile home parks are sprouting like weeds in the middle of nowhere. Medium-sized tracts of magnificent savannah are being destroyed with no apparent long-range planning in mind.

One afternoon I was lucky enough to accompany an employee of the Duke Marine Lab on a trip to the Open Grounds. This 45,000 acre tract of longleaf pine and pocosin is now slashed by V-shaped drainage ditches approximately two meters deep, sometimes deeper, cut through the wilderness to lower the water table in preparation for using the land as pasture. After the ground has oozed for nearly a year, bulldozers push the dying vegetation into long piles, and the ground is burned and limed. The scale of this transformation is beyond belief; in the words of one ranger at Croatan, the activities at the Open Grounds "look like somebody's garden" compared to two other tracts of land, larger by an order of magnitude, where the unique heathlands of North Carolina are also going to make more cows.

North of the Open Grounds is a tract owned by a paper company. A brief foray along the edge of their property revealed an abundance of *Drosera*, including some of the largest *D. intermedia* I have ever seen. I would guess that the central regions of the paper company's land will retain a high enough water table for CP's as long as the land is under present owndership . . . but it was a gnawing question during the whole trip: I simply didn't know the fate of the land, and my stomach turned at the thought of such a vast, unspoiled wilderness being transformed into farmland without a careful evaluation of the relative merits of agriculture versus a kind of wilderness that is not duplicated anywhere else in the world. The night before I left to return to Baltimore, I was browsing through the county library in Beaufort when I came across a book written in 1932 by B. W. Wells, *The Natural Gardens of North Carolina* (University of North Carolina Press, Chapel Hill). Here was a photograph of the Open Grounds at least forty five years earlier, pictures of flowering pocosin and savannah in all seasons, and a small complex of buildings representing an experimental agricultural station. I was struck by a sense of collapsed time, and the clear impression that Croatan is all that will remain of the coastal plain ecosystems unless there is a quick reappraisal of priorities.

Meanwhile, thousands of acres of bogland with scattered patches of *Sarracenia* are being "reborn" in another world. Perhaps we should obtain permission to explore these areas, and collect those plants which are valuable for scientific study and esthetic appreciation . . . we should at least get a grip on the doomed.

Literature Cited

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PROPAGATION OF NEPENTHES BY LAYERING

by Terry Brokenbro

Through personal correspondence, I have noticed that some CPNers (including myself at times) have trouble propagating *Nepenthes* from cuttings. During hot, sunny weather, plants (cuttings) and compost will often dry out far too quickly while at the other extreme, the compost stays too wet for too long and so the dreaded rot sets in. Therefore, for those "heavy handed" CPNers who have problems, the following two propagation methods may be of some help. Soil layering is probably the more successful method although the air method is best for those with less room available.

AIR LAYERING:

First, a mature branch (without formed pitchers) is selected for propagation. A section of leaves are removed and the stem is bruised by twisting and/or cutting a notch in it. This will then reduce the sap flow and promote the formation of roots. Rooting hormone powder is then applied to the area and sphagnum moos wrapped around thw wound and a plastic bag applied. (See Fig. 1a and 1b) In one or two months fine roots should then be seen through the plastic bag which can then be removed and the top plant section potted. This method is often used by professional nurserymen for the propagation of rubber plants *(Ficus elastica)* on a large scale.