

Growing CP Under Lights

By Jim Miller
2319 Ninth St.
Green Bay, WI 54304

A lot of enthusiasts seem to be growing carnivorous plants under artificial light these days, but surprisingly little has been written in these pages regarding this method of cultivation. Considering the nastiness of our Wisconsin winters, it seemed only logical to grow many of the tropical or sub-tropical species indoors where conditions may be more easily and less expensively controlled.

Prior to my move to these more northerly climes, I grew only two species indoors in Tallahassee, Florida year-round. These were *Drosera schizandra* and *D. adelae*. All other species seemed to prosper in culture outdoors in my greenhouse. But with the prospect of temperatures of twenty degrees below zero [F.] and possibly even lower, it seemed wise to gain as much knowledge as possible concerning artificial light cultivation. But, as mentioned, very little information was found on the subject. So it was mostly a matter of simple trial and error.

Now, after better than a year, I can certainly recommend this method of growing to others. Some of the plants growing in my indoor growing area are truly prospering, especially the Mexican *Pinguicula* species and *Darlingtonia californica*. For the most part, plants are from 25 to 40cm away from the lights depending on the pot depths. My growing area is located in my basement and began with two simple shop lights hung over a table made of spare lumber. The lights were equipped with two Grow Lux and two cool white 4 foot fluorescent tubes. This set-up has evolved to a nearly room-sized area with six banks of lights and more to be added soon.

Temperatures reach an average of 50-55 during the winter months and typically are in the seventies during the summer. Humidity runs between 40 and 60% and this is supplemented where necessary with a light misting twice a day. In these condi-

tions, most carnivorous plants may be grown in rather drier conditions than we usually associate with successful cultivation. The main problem lies in the area of fungus infections which seem to thrive in cool, overly-damp soils. Therefore care must be taken in maintaining a just-damp growing medium. I seem to have a bit of success in controlling the various fungus attacks by using vermiculite in my soil mixes as it tends to keep a more open, well-drained soil structure and is effectively a rather sterile medium in itself. It seems particularly suitable for *Pinguicula* species.

Generally, under my conditions, I need to water less than once a week. I use distilled water for this as it helps keep conditions more closely controlled and will not kill live sphagnum. Generally I use two gallons or less a week including the water used for misting. I pour a small amount of water into the trays the plants are growing in so that there is only a small amount around the base of each pot to be taken in by capillary action. This may be supplemented with some syringing of individual pots needing more water. I think most readers would be surprised at how dry most of the soils get between watering yet even such species as *Darlingtonia*, which in natural habitats thrives on water, seem to respond incredibly well to these decreased moisture levels.

The key seems to be the relatively cool temperatures and high humidity provided naturally in the basement and by misting. All *Drosera* species constantly display heavily dewed tentacles and while the leaves do not seem to be as large as on outdoor grown plants, the indoor plants seem to maintain a higher number of active leaves.

As for light levels, I do not supplement my lights with reflectors at all yet most plants color-up very well including *Dionaea*. My experience is that the cooler the tempera-

(Please see **GROWING CP** p. 97)

FLORIDA - continued from p. 92

mid 20's on occasion, two electric and two kerosene space heaters keep the temperature in the mid 50's. The *Sarracenia* and native *Drosera* do fine outside the year round.

Most of my propagation is done indoors using a covered 100 gal. aquarium fitted with two four foot plant lights. *Nepenthes* cuttings have half of their lower leaves removed, with two or three terminal leaves being left intact. The ends of the cuttings are dipped in Rootone F [with fungicide] and inserted into a handful of moist sphagnum, which is wired in place. The moss ball is then set atop a thin layer of vermiculite in a seed flat, placed in the aquarium, and misted frequently. When roots show through the moss [which may take three months or longer] the plants are potted up using a mixture of sphagnum, peat, and vermiculite. *Nepenthes* seed has yielded various results from good to poor, but is very slow and I would recommend cuttings to anyone wishing to try propagation.

All the mature CP are watered daily during warm sunny weather and less during winter or periods of cloudy weather. I have had good results fertilizing *Nepenthes* once a month alternating Peters 20-20-20 Orchid Special with fish emulsion, both cut to half strength recommended for *Cattleya* orchids which would become 1 tablespoon per gallon. *Cephalotus* responds well to dilute bi-

GROWING CP - continued from p. 94

tures are during the active growing season, the more light the plants seem to take in and subsequently traps assume the healthy-looking "natural" colors.

I am currently growing, and having success with the following species: *Drosera aliciae*, *D. hamiltonii*, *D. spathulata*, *D. prolifera*, *D. capensis*, *D. binata* [all forms], *D. adelae*, *D. schizandra*, *Cephalotus*, *Darlingtonia*, *Pinguicula caudata*, *P. x kewensis*, *P. gypsumicola*, *P. ionantha* and *P. planifolia*.

I maintain an eight to nine hour light cycle during the winter months and increase to sixteen hours during the summer.

monthly feedings of Miracid®, [¼ teaspoon per gal], as do *Sarracenia* and several *Drosera* spp. However Miracid® has stunted growth and inhibited pitcher formation in *Nepenthes*.

Pests and problems have been few and for the most part easily handled. The worst problem was heater failure on a very cold night which burned the leaves off the lowland *Nepenthes* and cut the *Droseras* back to the soil. Pests have included thrips [which were easily controlled with a rose dust], caterpillars, and wasps which bite off developing pitchers. Much worse are the Maidenhair Ferns [*Adiantum* spp.] that pop up now and then. Their very vigorous root system is capable of choking out a weaker plant. I found this out by letting some grow in a pot with an *Anthurium*. They should be destroyed as they appear.

Lastly I would like to thank Dr. Kiat Tan of Marie Selby Gardens, Patrick Nutt of Longwood, Joe Mazrimas and CPN, anonymous friend, and all the others who have spurred my interest in one of God's most unique creations, the Carnivorous Plants.

SPECIAL ANNOUNCEMENT

NEW WALL CHART AVAILABLE. Keith West, one of the foremost botanical artists of the world, is completing a series of 16 24"x31" full color wall charts depicting composite scenes from major US botanical regions, somewhat similar to the British Museum's series for Britain. The first four are completed, and one is on Southern Pinelands, included in the paintings, four species of *Sarracenia*, two *Droseras*, one *Pinguicula* and two *Utricularias*. Included in the scene are various pinelands orchids and other associated plants familiar to those who have botanized the eastern coastal plain. This chart is No. 306C, costs \$8.00 (plus \$1.50 postage) and is available from the New York Botanical Garden Shop, Bronx, NY 10458. The plants are all very well done as is the printing.