

THE SAVAGE GARDEN

“How To Torture a Carnivorous Plant”

by

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I'll tell you how.

You sowed a handful of *Drosophyllum* seed last spring. Many germinated. Then, sadly although almost expectedly, one by one they die off. Soon, in a couple of months; they're all dead - except for one. You're growing the sole survivor in a big clay pot of perlite, sand and vermiculite. The pot sits in a sunny place out on your deck. Summer comes, and it looks great. You water it once or twice a week, knowing its preference for drier conditions. It grows in Portugal, doesn't it? Soon it is eight inches tall, smells like honey and is black with flies. Autumn, still bigger. Friends admire it. It's the best dewy pine you've ever grown.

The autumn rains begin. By Thanksgiving, the soil in the pot has been wet for six weeks. Nights are dropping into the 30s. More rain. Wind. It's New Years and your *Drosophyllum* still looks okay. It has been wet for three months and the first light frost occurs. Your mini-maxi thermometer records a low of 29F. During the day it barely reaches 50F.

Late January. It still rains about 2 or 3 days a week. You're watching the weather channel. An "arctic express" is coming. By the following morning it's predicted to be 17F.

Now this is where the torture comes in.

You go to the window overlooking the deck. The sky is grey and blustery. The storm front has gone through and the rains have stopped. The temperature is dropping. You can see the thermometer a few feet away from your potted dewy pine. It's 32F. You know by the following morning it'll be below 20F. Is your dewy pine pleading with you? Is it begging to be brought into the kitchen, where it's a balmy 74F?

Tough. You close the blinds and go back to your TV. In a few hours you climb into your warm bed. You sink into slumber, down, down, down, just like the mercury in the outdoor thermometer. But your sleep is disturbed, as you dream of your dewy pine.

Awake. The heat has been going all night, but your house is cold. You throw on your robe as you hurry to the kitchen window. Everything outside is white. No, it didn't snow, but a thick layer of frost covers everything. The cat's water bowl is a block of ice. (The cat is safely inside.) And there your *Drosophyllum* sits, frozen solid. The tips of its thin leaves are drooping. The thermometer reads 18F. Your stomach is in a knot.

Hey, wait a minute. Who's being tortured here - the plant or the grower? Would you ever do such a thing to a poor, defenseless dewy pine? Would I?

Well... yes. Yes I would.

I can see my defense attorney now, arguing my case in front of a jury of carnivorous plant lovers. Four of the jurors have grown dewy pines in heated greenhouses. The other eight jurors never have grown one, but always wanted to. These eight Jurors never look me in the eye. The other four scribble notes angrily. The jury leaves to deliberate. They reach a verdict in seven minutes. "Guilty!" they cry, "Guilty of torturing a *Drosophyllum lusitanicum* under special circumstances of deep freeze!"

"But I did it for horticulture!" I plead, as I'm dragged out of court. The Judge looks like Charles Darwin, and he sentences me to six months in the south pole, where no CP can be grown! "See how you like it," Judge Darwin sneers.

(Of cause, in real life Charles Darwin tortured carnivorous plants unmercifully. Forget his burning *Drosera* leaves or dropping boiling water on them. He fed his hapless sundews unspeakable things just to see what they would eat. All in the name of science.)

But back to my poor *Drosophyllum* plant. Did it survive the deep freeze experiment? It most certainly did. As the days warmed up, its leaves straightened out. Soon spring came, and it flowered. I learned of the dewy pine's hardness to cold from Joe Mazrimas, another intrepid torturer of carnivorous plants. If I'm to be banished to the south pole, some growers like Joe should be sent to Pluto!

Back in the. days when carnivorous plants were impossible to find, back when the modern hobby started in the 1960s and 70s, the few growers around pampered their plants with terrariums and greenhouses, and rightly so. I remember my first *Nepenthes khasiana*. To me, a "cool growing" *Nepenthes* meant it could take temperatures down maybe into the 40s. It meant I could grow it in a tank in my house, where the nights in winter got that chilly. That first plant thrived under those conditions.

Years went by and soon I had a greenhouse and many *N. khasiana*, some quite large with eight foot stems. It became time to torture one. Maybe two. I decided to grow one on my screened-in porch, out here in Sonoma County, California, Just north of San Francisco on the coast.

Briefly, Sonoma County's climate is like this: Mediterranean, with warm, dry summers and cool, wet winters. A typical summer day will see a high of 83F and a low of a chilly 53F. In January the average low is 38F, high of about 58F. Extremes occur frequently. Lows in winter always hit the mid-20s for at least a couple of nights in mild winters, and much colder in big freezes. Highs in summer often top 100F. Humidity in winter is high, when all of our rain falls, usually from October to April. Summer afternoons the humidity can drop to 40%, 30% even as low as 15%. It is not unheard of in October, for instance, to see a low of 36F and a high of 92F all it one day! A far cry from a terrarium.

I grew my *N. khasiana* in that screened-in porch for three years. I found that it grew best in spring and in fall, when it pitched profusely. What it despised were weeks of hot, dry summer afternoons near 100F, and winter night temperatures below about

25F. From 27F to 89F, it was generally quite happy, if protected overhead from frost, and watered heavily in summer.

The worst temperature extremes I exposed *N. khasiana* to was in an unheated greenhouse during the big freeze of '89-90. Two huge plants with stems several feet long were frozen solid at about 15F. Highs for two weeks barely hit 40F. The plants turned black on the day after the first record low. The pots were frozen solid for a week. When the big freeze was over, I trimmed all the black, mushy leaves away. Deader than a doornail, I assumed.

Two months later green shoots appeared! Both plants survived and are now, once again, lush green giants.

Here are some other horrible tortures I've exposed some plants to. Most regard temperature extremes, and most were not intentional.

Nepenthes tobaica. I grew one on that same porch as the *khasiana*. It remained lush and green and with pitchers after a couple of lows at 29F. A week later it hit 27F, and the next day the plant turned black. It never returned, even after being moved indoors.

I lost several highland *Nepenthes* (*veitchii*, *stenophylla*, *rajah*) on the record breaking day in 1988 when outdoor temperatures hit 116F, and it was hotter in my sheet-covered greenhouse, where I stayed all day wetting down the plants. All other highland *Nepenthes* survived (*fusca*, *maxima*, and so on).

One-year-old *Sarracenia* seedlings. fully exposed outdoors during that deep freeze of '89-90. frozen solid for two weeks - all survived.

Pygmy sundews easily survive frosty nights in the mid-twenties, although they won't look too good until temperatures remain above freezing.

Again, that big freeze took a toll on tuberous sundews. Most plants were not yet at ground level when the pots froze solid. By spring nothing happened and I assumed they were dead. I dug them up, and found the stolons had grown up from the tubers, reversed themselves and had started to grow downward back into the soil! The tubers looked okay, so I repotted them. All plants (*D. stolonifera*, *macrophylla*, etc.) returned the following year, missing a whole growing season and considerable smaller, but they were back to normal the year after that.

Mexican butterworts do not care for winter lows below freezing, especially if wet. But *P. esseriana* is one that I froze at 20F for a brief time, and it appeared untouched. Several Mexican butterworts introduced into bogs in Mendocino County survived wet and frosty winters for several years, but all were killed off in the big '89-90 freeze when temperatures dropped into the mid-teens.

Drosera capensis is almost indestructible, as the roots will survive at least down to the low teens, briefly.

I have seen photos of *N. ((x mixta) x maxima)* grown for five years outdoors on the coast of southern California, surviving rare lows around 28F and surviving hot, dry Santa Ana devil winds in summer, although it probably loses its pitchers in the extremes.

Several growers in places like Ohio have reported satisfactory growth and survival of all *Sarracenia* species in both pots and bog gardens during typical winters. One fellow told me his wading-pool bog lifted out of its container every winter, frozen solid in Ohio. The American Pitcher Plants in such northerly climes may not be as robust or produce as many offshoots as in a warmer climate, but otherwise grow fairly well.

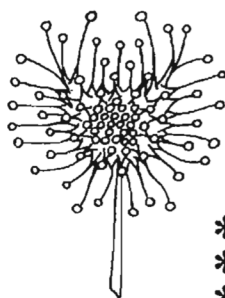
I have even tortured - unintentionally - *Heliamphora heterodoxa*, back in the days when the plants were quite rare. Frozen solid in an early surprise freeze in an unheated greenhouse in the early 1980s, they lost all pitchers but returned weeks later, although the plants remained dwarfed for a couple of years after.

There are several people growing a variety of highland *Nepenthes* outdoors in the San Francisco Bay Area, such as *N. ventricosa* and *x rokko*. Generally the plants do pretty well in frost-free areas that get plenty of cooling fog in the summer.

All of this does not mean you can expect to grow prize-winning carnivorous plants with such extremes of climate and temperature. The ideal is always greenhouse or terrariums where conditions can be controlled. But 15 years ago I never would have thought of growing, say, *Cephalotus* outdoors in a place like northern California. I must now admit that one of my better plants has sat for years on that torture-chamber screened-in porch of mine. It takes 22F lows and highs of 106F, although I did lose one in a bog garden at a low of 15F. I would never had discovered this had I not occasionally sacrificed an extra plant or two.

If you have tortured a carnivorous plant, and can add to this information, drop me a card with details. Next year I hope to do a piece on windowsill growing, and would love to hear from growers who've tried CP indoors. Some of the finest carnivores I've ever seen have been "houseplants", and some of the worst! Let's see if we can pass some of this information around.

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