GROWING SARRACENIAS

by D. E. Schnell

There are about as many guaranteed ways to grow Sarracenias as there are purported cures for warts and hiccups. When such a situation prevails, one is led to one of two conclusions: either none of the methods work, or they all work--at least to some degree. Happily, the latter case most closely approximates the situation with this genus. What follows, is necessarily a highly personalized discussion. I am sure there will be vigorous disagreement with some of the comments and suggestions. All I can say is that they have worked for me over a period of close to fifteen years. Rather than discuss each species individually, I think it would be more coherent to mention general principles and then mention only the inevitable exceptions by name.

DORMANCY. All members of this genus require a dormancy period. To deny this and force growth is to invite rot and disaster. If you are growing your plants outdoors or in a greenhouse, the shortening photoperiod of early fall and hard frosts with falling average daily temperatures will take care of dormancy. Do not forget to lower the greenhouse temperature to 40 or 50° F. at night. If you are growing in terrariums on window sills or under lights, you will have to beware high winter house temperatures in the former instance, and remember to shorten the photoperiod and lower temperatures in the latter.

TEMPERATURES. During the active growing period, Sarracenias are remarkably immune to high temperatures, providing they are not allowed to dry up and that humidity is also commensurately high. This should be no problem except in deserts, high plains or overly dry greenhouses where provisions for extra humidity will have to be made. Most other areas have sufficiently high humidity during summer months. There is one exception: after S. purpurea has reached maximum development in late spring, it requires semi-shading and cool root temperatures during hot summer months. But earlier, full sun is necessary for good flower and pitcher formation. How cold can you let a pitcher plant get? I leave most of my plants outdoors over winter here in central North Carolina where temps frequently drop to near zero F. And of course, S. purpurea naturally and S. flava as an introduction have survived ridiculously low temps in the north country. The secret is a moist growing medium all winter long and not allowing the roots to freeze. If you grow your plants in large tubs, I would suggest burying these in the ground to rim level over winter in the north, or place them in an area of partial protection such as a cold cellar. I have had pitcher plants survive -20°F. for four days running outdoors in little plastic refrigerator-type containers in Ohio, but not very well. Generally, the purely southern species (S. leucophylla, S. minor, S. psittacina, etc.) will withstand cold much less well than S. flava or S. purpurea. The plants may survive, but will be weakened and not at their robust the following summer, and over several seasons, will eventually die off. Protect these species in the north, but not too much!(remember dormancy).

WATER. Water all Sarracenias copiously; keep humidity high. In nature, it is true that S. purpurea and S. psittacina seem to prefer very wet areas while S. minor is found more often in drier areas, and the others in between. But there are complex ecologic and competitive factors at work in the field in these cases. If you balance all the other factors herein outlined, all of the genus can be grown quite wet, and will do better for it. There is much written about chlorinated and hard water vs. nice soft rain water or well water from granite bedrock. I have used mildly chlorinated rather hard city water with no ill effects that I could attribute to the water. I think in the past that there have been too many inductive leaps in reasoning due to not recognizing other variables. If you let city water stand for a few days, that will take care of the chlorine. But water from a water softener or from de-ionizers is certain death--the supposedly noxious calcium is removed, but more detrimental sodium is added. More important than total ions present may very well be what kind of ions are present. But to keep your thinking clear on the matter when you are first starting out and have many variables to content with, use dechlorinated and naturally soft or distilled or rain water, and experiment cautiously with handier tapwater later on.

HUMIDITY. (See Water above also). Remember that relative humidity is just that, relative. It is a percent of saturation of the air with water vapor at a particular temperature. With no addition to air water, falling temps tend to raise relative humidity, while rising temps lower it since warmer air is capable of holding more water vapor. Thus you can easily approach 100% relative humidity at nighttime temps of about 50°F., but in the day when temps may get to 90°F., 60-70% relative humidity is quite adequate and actually there is more total water vapor in the air than at the lower temp. The edges of pitcher plant "lids" will begin to brown first before gross wilting when relative humidity is chronically too low and/or there is too much air movement.

SOIL MEDIUM. Now we come to the crunch. Quite frankly, there is no substitute for growing all Sarracenias in live Sphagnum, the next best thing being dead "long fiber" sphagnum moss of the nursery trade. The Japanese for years have found this medium most satisfactory, and slowly, most of us in the U.S. and elsewhere are converting with very happy results. I grow my plants in plastic tubs or in three foot plastic-form children's wading pools, with no drainage holes. The medium stays very acid, most nearly approaches Sphagnum bogs and wet areas where most species of the genus in their best form are found in nature, and Sphagnum probably provides many benefits to the plants as yet undefined. There are hues and cries for pure sand, perlite and vermiculite combinations, sand mixed with ground peat, etc. But from what I have seen first hand and heard about such setups, the plants are subsisting rather than proliferating. Unless you are doing experiments in nutritional and digestive physiology, non-sphagnum mixtures are not recommended. Many plants are taken to greenhouses where they are to be grown in captivity so that various biosystematic studies can be followed closely and at leisure. But to grow a plant so that it is not likely to reach

its maximum development is to make some very poor comparisons and conclusions. Plants grown in subsistent media or where it is too cold or too dry, are all going to tend more and more toward a retrogressive common denominator in form, a backtracking to least defined and specialized morphology. Sure, you will still be able to tell S. psittacina from S. flava grossly, but many fine points and subtleties of differentiation that can easily be seen in the field will be poorly developed or absent. And these very points may have been of most interest to your observations. In addition, there will certainly be changes in color and chemistry.

FERTILIZERS. Not recommended and not needed when growing in Sphagnum, even without bugs!

SUMMARY. In my experience, anyone can grow Sarracenias if each of the above six factors are always taken into consideration in balance. If one or more is not right, then problems will surely develop.

(JOE MAZRIMAS has some further hints for dry inland areas of the west coast.)

"I would like to add a few words on growing Sarracenia and Darlingtonia in the Pacific states. The summer climate here is relatively hot, windy and dry which makes it unsuitable to grow pitcher plants that are normal in size and shape. This is especially apparent in the formation and growth of new pitchers which are soft and have a tendency to dry out before maturity under the influence of the above mentioned climate conditions. On the other hand, if growing pitchers can be protected either in a greenhouse or a suitable terrarium until the new pitchers have hardened, then the plants can be removed from either structure and allowed to capture insects as in nature.

"I use a plastic shoe box or sweater storage box which you can purchase in large department stores. I fill the bottom with perlite to a depth of 1-2 inches. Next, I add sphagnum moss to the top and plant the rhizomes of various pitcher plants. Then, four bamboo stakes are cut to the same size and each one is inserted into the corner and taped to the box with waterproof tape. Polyethylene sheeting is cut and wrapped around the stakes and taped. The plastic cover which comes with the storage box fits snugly on top supported by the stakes. This way the inside air remains humidified. Water is added to the box until the level reaches the top of the perlite layer.

"Set the box in a partially sunny area so that heat buildup is at a minimum. Usually, most of the new season's pitchers are formed in the spring so that after they have hardened the top of the plastic cover can be removed in order to capture insects."