The Flow Table

By Joe Mazrimas

Many of us would like to grow as many types of CP as we can but we are set back by trying to grow plants requiring widely different temperature ranges. Frequently, other problems arise such as trying to grow all these plants in a one-room greenhouse which has a limited temperature range under constant lighting conditions. So, what is a CP grower to do about this ? One answer would be to buy another greenhouse set with another temperature range. However, this is an expensive solution and so I would like to describe another method that is economical, simple to build and seems to work very well even in a small space.

This method utilizes a system called the flow table or flow step water fall depending on how it is set up. The materials for this method are:

A large plastic barrel or tank that can hold 20-40 gallons (80-160liters) of water. A sump pump or submergable pump, plastic pipe(PVC of 3/4 inch diameter), and a bench with 1 inch sides lined with linoleum or thick plastic. The bench is constructed with a slope that drops about 1/4th of an inch per linear foot from the horizontal or level position. If a leveling device is used, about one-half of a bubble from the true level position would be suitable. Instead of a table and where space is limited, one can make a staircase with each stair having a one inch lip and the water now cascades from one stair to the one below.

The water reservoir or barrel is buried in the ground to keep it as cool as possible. The large volume of water is needed to keep the temperature stable even on a hot day. Rain water or distilled water should be used to prevent mineral deposit buildup as the water does evaporate but rather slowly and needs to be replenished from time to time. The sump pump now is used and connected to the piping which in turn pumps the water to the highest point of the table or staircase. Now, the flow must be spread out over the table to be most effective. Several kinds of diffusers can be used but the flow rate will determine the width of the table needed since the cooling effect depends on a well-defined layer of water flowing in and around the pots of CP on the table. This flow of water should be slow and then collected at the lowest end into a pipe that runs back to the top of the reservoir. So, the pump takes the coldest water from the bottom of the tank and eventually this water is used to cool the pots of plants situated on the bench.

The warmer water that is heated by the sun and the temperature of the greenhouse air is returned to the tank to be cooled by the soil in contact with the container walls.

The technique described above has some advantages and disadvantages. On the plus side, plants that require cool day and night temperatures can be grown in strong sunlight without the fear that the soil medium will heat up. The cost of materials and electricity are minimal since many of the items can be made from recyclable materials. The space for this setup is minimal and plants of many genera can be grown together that require similar temperature and light requirements. Plants will also receive a constant and regulated suppy of water that should wick up into the pot surface It seems that highland-type *Nepenthes*, some Mexican Pinguiculas, *Darlingtonia* and South African Droseras would enjoy this method.

On the negative side, a recyclable water system exposed to sunlight always seems to have problems with algae growth. Perhaps a filtration system placed on the return side consisting of glass wool,sand, and activated charcoal will control this problem. Another potential problem is the spread of water-born diseases between the pots since they will be in continuous contact over a long period of time. There is not much that could be said about this except that scrupulous methods must be used at all times when

introducing a new plant to the colony. Sterilized soil media should be used and clean conditions should prevail at all times. A fine wire screen should be fastened to the top of the barrel or reservoir to keep out mosquitoes and debris.

Finally, I hope that this method will be tried and that further refinements will be made and published in CPN at a future date.

Flow Table. Photo by B. Stanley

Call for Carnivorous Plants for a New Botanical Garden in Victoria, Australia

By Robert Gassin (43 Frudal Cres., Knoxfield, 3180 Australia)

In 1989, a new botanical garden was opened in Victoria, the southernmost state of mainland Australia. This garden is exclusively for native Australian plants and an area of about 12 m. by 5 m. has been set aside for native CP. This area will be opened to the public in mid 1991. At present, attempts are being made to obtain as many species of native CP as possible, and the help of enthusiasts would be appreciated.

The CP area is a peaty sand flat adjoining a small pond, and there is a sandy slope rising from the flat to a walking track. The flat remains moist throughout the year and part of it is flooded during winter. *Drosera spatulata, D. pygmaea* and *Utricularia lateriflora* occur naturally in this small area. The sandy slope rises to about 2 m. above water level and should be suitable for several species of tuberous and pygmy drosera. There are plans for a raised wood walkway to be built across the pond and peaty sand flat to make observation of the plants easier.

My purpose with this project is as an advisor on behalf of the Victoria Carnivorous Plant Society, and also to help obtain plant material for the display. The Garden will only accept plants where the original collection site is known for certain, or direct descendents of plants whose collection site is known (such as plants grown from leaf or root cuttings, gemmae and seed).

The Garden is interested in obtaining as many species and subspecies of Australian native CP as possible in the form of whole plants, cuttings, gemmae or seed. The