

One of the larger plant constituents of the bog and thereby one of the main sources of peat material is sphagnum moss. As the sphagnum encompassing the lake grows gradually upwards, the great water absorption ability of the sphagnum causes the water table to rise above the lake. The lake in time becomes filled with decaying matter and overgrown by the acidic plants of the bog.

The depression before me was like a cross sectional slice through the bog. I could see clearly the live sphagnum at the surface and the peat below the sphagnum. There were places along the edges of the peat bottom of the depression where live sphagnum grew. Here could be found a few bright red D. rotundifolia. A half dozen or so S. purpurea, including a seedling, also found the depression a desirable habitat.

We examined another peat bog further north at Fundy National Park in Canada. This was actually a self-guided tour entitled "Les marécages et les betes qui y vivent" in French but more briefly in English "Bogs, Bugs and Beasts." There were plenty of all three with bugs being the hands down winner. The Fundy peat bog had a large lake with D. intermedia and D. rotundifolia growing around its perimeter. As with the Mt. Desert Island bog, S. purpurea was present, but here the sphagnum of the heath was light red! The tour was an excellent example of bog ecology and a boardwalk provided a dry platform across the damp heath.

On July 8, we made our last CP and bog stop. This was on the west side of Cape Breton Highlands National Park which is located near the tip of Nova Scotia. The highlands along the west rise to an elevation of about 1,000 feet and at the top of these highlands are seemingly endless heaths. The half mile hike we took to "Benjie's Lake" (a bog lake) I will always associate with extremes: the most northern peat bog visited (47th parallel); the most hot and humid; and plagued with what could have been the most vicious biting flies known to man. Some members of the party still contend that the flies actually bit harder when they detected insect repellent. Again, S. purpurea, D. rotundifolia and D. intermedia were to be found about twenty feet from the lake edge, D. intermedia preferring the wetter locations and S. purpurea in full bloom. Coloring of both Drosera in the region was red. Observations were short and difficult due to the almost continual hand waving required to fend off persistent flies.

South of Benjie's Lake along the main road, the park had contrived a bog exhibit, again with boardwalk and the CP triumvirate. This was a little more accessible to the average traveller and lacking a large body of water had fewer insects.

Though our trip ended in Nova Scotia, we all would have been interested in seeing the vast bogs of Newfoundland to the north--maybe next time. At least we now have some insight into the choice of S. purpurea as the provincial flower of Newfoundland.

#### PACKAGING CARNIVOROUS PLANTS FOR MAILING

by James C. Fife

Thanks to the Plant and Seed Exchange, we enthusiasts of carnivorous plants are able to establish friends the world over. One of the best ways to begin a friendship, as well as increase your collection, is to ship or receive a package of CP's. But there are certain procedures and techniques which will make the shipping of plants safer and more enjoyable.

Sooner or later, you will be the recipient of a plant package which will be in such a mangled, crushed, destroyed state you'll probably wish it was never sent! However, the reception of a damaged or "destroyed" package doesn't mean the carrier (whether the postal service, parcel delivery agencies, etc.) is to blame. In fact, the damage was probably due to improper packing methods. With the enormous amount of mail and parcels delivered today, the shipper MUST use the best method possible to prevent crushing. Therefore, here are some points to consider before you send a friend a package of CP's:

(1) Decide beforehand exactly what species and the quantity of each species you will send. Try to be generous if possible, as transplant loss is expected occasionally. Never send an "overly generous" supply of plants unless the recipient has informed you of his having ample space to house them. If you've been collecting in the natural habitat, don't forget conservation laws.

(2) Select a very strong cardboard box sufficiently large to safely house the species, corrugated cardboard cartons being the best. Too large a box, however, will not only waste space, cost extra for postage, and give the recipient an illusion of "great expectations", but will increase the likelihood of damage. Remember to allow some room for protective cushioning.

(3) Plants will quickly dehydrate in transit if not wrapped in plastic. Root balls or exposed roots will survive if wrapped in damp peat moss or sphagnum, wrapped in plastic. Never wrap a specimen in newspaper alone, the paper will absorb the moisture and probably desiccate the specimen. Therefore, make sure all damp parts are wrapped in plastic bags or wrap. Wax paper is an excellent substitute.

(4) Tall plants (such as Sarracenias) or ones with easily broken traps or leaves will ship best if sent with strong pieces of cardboard wrapped about them as reinforcement. The exact method of reinforcement is left up to the shipper, but a few moments of thought will reveal the possibilities are unlimited. Attach the wrapped specimen to a piece of flat cardboard; or fold cardboard into a protective sheath for tall pitchers. A stick from the branch of a tree can even be used. Added protection is easily obtained by wrapping the reinforced specimen in newspaper.

(5) Always label each specimen bag, on the outside please. Make sure the label is legible and not smeared by damp fingers. Refrain from placing more than one species in the same specimen bag.

(6) Pack the box. Try to arrange the specimens in such a manner as to reinforce the cardboard box. Open, unused spaces should be filled with crushed newspaper or a substitute cushioning medium. The packed carton should feel solid.

(7) It is always appreciated if a short note or letter is included with the specimen telling what specimens have been enclosed, where they came from, or any special instructions as to their care. Such a note will make the package more enjoyable and personal.

(8) Wrap the box. Use strong wrapping paper, freezer paper (dull side out), or if the box is small enough, you can use a paper grocery bag. Wrap the paper tightly, securing the folds with plenty of strong tape. Don't be stingy with your tape. Then tie thick string or twine about the carton tightly. Attach or print on the address labels, and it is ready to ship.

(9) Select the carrier: (a) Use AIRMAIL or AIR PARCEL POST for all packages sent outside the U.S. When sending plants to another country, check with the recipient as to whether special permits or procedures are necessary. Customs forms are available at the Post Office.

(b) AIRMAIL delivery within the U.S. takes the same time for delivery as First Class, and is expensive. United Parcel Service (UPS) is the least expensive and generally takes only three days for delivery. Air Parcel Post is a relatively inexpensive intermediate.

(10) A few cautions: (a) Try to ship packages early in the week to prevent them from sitting dormant over the weekend. (b) Avoid mailing packages during peak holiday rush periods, such as New Year's, Christmas, etc. (c) Never send small plants or cuttings by placing them in an envelope used for mailing. They are not in the least bit protected from crushing, and probably won't survive. Bubble plastic will afford some protection when envelopes are used, but crushing still occurs. Instead, use a small box.

I was told once that it is too time consuming and bothersome to go through all the above trouble each time you send a plant to someone. What is the use in sending your rare plants if they are killed in transit because you were too lazy to take the precautions against their damage!

### FEEDING CARNIVOROUS AQUATICS

by T. W. Brokenbro

1. UTRICULARIA -- Many CPNers find much difficulty in obtaining as well as keeping food for aquatic Utricularia (and their close allies Biovularia and Polypompholyx), so the following may be of interest. One food which Utrics readily accept is Daphnia and Cyclops which are easily bred with a little care. First, a culture must be started by placing crushed lettuce leaves and chicken or rabbit manure in a container, such as a bucket, in which there is rain water. This is then stood in strong sunlight and fresh air; the manure and lettuce are removed after two weeks. Fresh air is vital as spores of the infusoria which have dried by the side of some pond will settle into the bucket, in which the Daphnia will eventually feed.

This first process can be speeded up by first boiling the manure/lettuce mixture which is then allowed to cool and age for two or three days. The infusoria culture can then be added by obtaining a half pint of pond water or lake water. (I will exchange CP for a start of the culture if any CPNer wants any.) The bucket must now be given ample sunlight for the infusoria to breed correctly. I would not use bog water since it is too acid to yield a high culture content. This should take a matter of several days when the culture should turn a medium green color and the bottom of the bucket becomes slightly hazy. To check this, just take a drop and place it under a low power microscope and you should see it teeming with freshwater plankton. A visit to the local pet shop will secure your Daphnia and Cyclops although you can obtain them from a pond where there are many species of varying sizes suitable for different sized bladders of Utricularias.

A continuous culture is maintained and this is added to the present bucket as the water level goes down due to normal evaporation. Then as fall approaches, the Daphnia will appear to die off, yet there is no cause for alarm as males will be appearing (females appear only in spring and summer). They mate with the available females producing eggs. These hatch again during spring as heat and light increase thus repeating the process once more.