

used to keep the folds closed. You may now deposit your seed in the small pocket formed. Now fold the top flap down at least half an inch, creasing it firmly. The creasing tends to keep the envelope from opening up. Tape is not used, for in the event a few seeds work their way out, you wouldn't want them stuck on a piece of tape.

This small envelope is then placed in another envelope made the same way using identical materials, but this one should be slightly larger. On this outer envelope you may now use tape to secure the folds. I also use a small piece of adhesive (surgical) tape as a label, indicating the species and date seed were collected. The wax paper makes an envelope which is transparent, making a quick check of seed very simple. Also, the materials necessary to make these envelopes are very inexpensive and readily available. They can be made ahead of time for those who expect a large harvest or they may be made on the spot as needed. I have found them to work very well, and refrigeration doesn't hurt them at all.

NOTES ON PROPAGATION
by Sam Potter

I thought I would share some of my own propagating hints in short note form:

1. Many, not all, Droseras and Pinguiculas may be easily propagated on water. The method is very simple and effective. I float the leaves on bottled water (distilled or spring water) in clear plastic cups covered with "Stretch-n-Seal" and keep these within 6"-10" of double-tube 4' grow-lux wide spectrum set up on an 18-hour light cycle. Once the plantlets are formed, they may be separated and potted up or placed in terrariums.
2. I find that a mixture of 1 part German peat to 4 parts silica sand ("play sand") to be just as good as live sphagnum for growing most Drosera in closed containers.
3. "Tender Leaf" house plant spray by Dexol of Torrance, California can be used safely and effectively on Drosera, Pinguicula, Sarracenia, Cephalotus, Dionaea, and Utricularia (aquatics not tested).
4. By drawing on propagation knowledge in other plant families, I have discovered a method to get up to 25 plantlets out of a single Pinguicula leaf. A healthy leaf is gently removed and is sliced longitudinally with a razor blade for about 1/2 to 3/4 of its length starting at the proximal end (the end of attachment to the plant). I then place the leaf flat on live sphagnum, slightly covering the proximal end. "Rootone" can be used to advantage on the ventral (under) side and proximal end of the leaf, but is not necessary. Many plantlets will develop along the cut edges.
5. Leaves from resting Pinguicula buds may be used for propagation in the usual manner. This obviously takes up less space than the fully expanded vegetative leaves.
6. Pinguiculas do not like to have their root systems disturbed--Droseras and other CP are not so fussy. I find that if they have a good root system, Pinguiculas, in general, can be grown wet. In trying to establish a good root system, keep them only damp.
7. When trying to germinate Drosophyllum seeds, we often find very poor germination. Do not discard those ungerminated seeds. I am still getting germination on seeds that were planted one year ago and left untouched in a covered container.
8. Better germination of Drosophyllum seeds may be obtained by soaking the seeds overnight in a dishwashing solution of "Calgonite"--a surfactant. Many other surfactants would presumably work as well.
9. I find excellent response to foliar feeding of 1/6 strength "Spoonit" fertilizer.
10. The best mix I have come up with for epiphytic or semi-epiphytic Utricularias is: 4 parts silica sand ("play sand") and 1 part German peat moss. Water with 1/6 strength "Spoonit" fertilizer. Please note: there is a big difference in growth rate when using dilute fertilizer. This mixture is also the best I have found for seed germination of any CP.

DROSERA BURMANNI IN QUEENSLAND, AUSTRALIA
by George Ashley

This is a most unpredictable plant. My first encounter with it was the sixth month of 1966 when a friend in Melbourne asked me to look for it. I found it quite close to home, but after a few weeks it disappeared and I have not found it in that spot since. A quarter of a mile away I found another patch and again in August I found large patches after a lot of rain. These were small seedlings and grew under water; however, dry weather quickly dried them up and only one or two plants were left and flowered when only one-half inch in diameter.

This year I found another batch quite close to the others but unfortunately they are now under a large industrial building. The latest find are growing on a slight southern slope and there is a slight soakage coming through keeping the ground moist. Those do not grow very big, only about 1 1/4 inches across, and are a pale yellowish-green growing amongst short grass and often covered. The only way I have ever found them is by noticing the flower scape sticking up through the grass. Other times I have seen them growing up on ground out in full sun and

ften you will find young ones growing on a sand that has been washed down from above. The seed germinate quickly on this sand. Seed do not seem to have a set season for germinating as I found seedlings at all times of the year, summer and winter, but only after much rain. It would seem they require much moisture to aid germination.

I also found them at their best at Mooroochydore, about 65 miles north up the coast from Brisbane. Here, I have found them growing on the side of the road very prolifically where they are often mowed over. They reach two inches in diameter and are yellowish-green often with the tips of the leaves a bright orange or red. When you get one of our real dry spells which occur from time to time, they will then flower profusely and set seed followed by the plants shrivelling up and disappearing only to reappear with the first good rain. They also can grow within a few feet of high tide near the beach.

I also found the species growing at Stanthorpe which is 140 miles south of Brisbane at 2000 feet altitude. This is one area in Queensland that really gets cold, even down to zero degrees Centigrade. It often snows here in winter and the plant grows in places where there is constant seepage.

A few general ecological points about Drosera burmanni: it grows at temperatures from below freezing to over 100°F. and at altitudes from sea level to 2000 feet. Soil is peaty sand at the coast, black loam near home with a small amount of sand and decomposed granite at Stanthorpe. It needs constant moisture, not stagnant water as found in a swamp condition but water must be in motion. I also found it growing on rather dry ground; during wet weather it drains readily.

THE SEARCH FOR THE 27 POINT DROSERA BINATA

by George Ashley

My wife and I started off on our trip early to get the 8:30 bus to Stradbroke Island. The journey to Stradbroke takes two hours--about one hour ten minutes by bus and fifty minutes on the barge which carries the bus. The bus stops off by some shops and a cafe where we got off and bought a few things for lunch. We continued on foot for another half mile, and under a shady tree and nice soft grass, we unpacked and had a snack and a cup of tea. I then changed into waders and made for the swamp across the road.

The swamp is quite large--only the road and about twenty yards of grassy ground separate it from the beach. This is the swamp where I collected sphagnum moss along the margin. For about twenty to fifty yards grow many swamp trees. However, I decided to go into the swamp itself and finally reached the middle where it was mainly deep holes about waist deep and small hummocks of ground and thick with reeds and sedges. It was amongst these I found a few Drosera binata, not 16 points, but 18, 20, and 21 and, believe it or not, I saw what I took to be two leaves but it turned out to be one with 27 points. Around the base of these plants were growing thousands of seedling Utricularia species. I collected specimens of all plants and then returned to my wife and we had lunch and a rest.

Next, we walked up to the swamp I visited a while ago at Eastertime which was about 1/4 mile farther up the road. This swamp is between the road and the beach. D. binata grows almost to the edge where the salt water comes at high tide. Since the area had a fire through it a few months previous, all the long grass and reeds were burnt out, but the Drosera have regrown and are more robust. They are much shorter, compact plants now and have many thick short leaves, but I never found one with more than 18 points. To reach these, you climb down a ten-foot bank right off the roadside. This area would be about 120 yards from the beach to the road. Looking down from the road, the Drosera with their dewy leaves give the appearance of mist that is quite attractive. The leaves are deep red in color and are all much branched, quite different from the southern form. I might add that when collected amongst the long grass, the leaves tend to grow very long and very floppy being supported by the grass and reeds reaching nearly three feet and often have a green color due to being shaded from the sun. The dewy appearance first thing in the morning sunlight is a very attractive sight indeed before they dry up during the day.

Unfortunately, due to mining for mineral sands, this island is fast becoming spoiled and one large swamp right near where the barge lands has already been filled in and covered over with the waste sand after the minerals have been extracted.

I found several Utricularias about six inches tall with bright blue flowers as well as some D. spathulata. These are the only two Drosera that I have ever seen on the island.