

SARRACENIA PROPAGATION

by DE Schnell

Sarracenia propagation is accomplished by sexual and asexual (vegetative) means, although the latter is practically limited to rhizome division of various sorts. Since *Sarracenia*s can be brought to flowering size in three to five years from seed, and seeds and seedlings are relatively easy to handle, this method is emphasized.

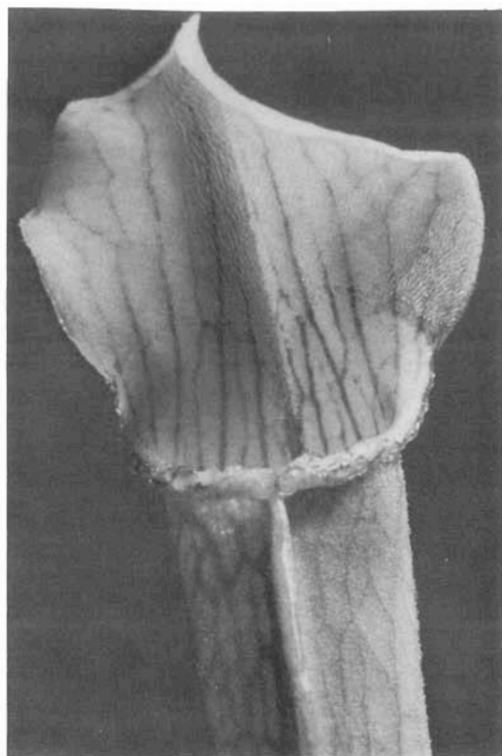
1) Sexual propagation

a) Pollination — This has been discussed with an illustration in a previous issue of CPN (CPN 2:40, 1973), but will be briefly reviewed here. Pollen of all species and hybrids of *Sarracenia* has been shown to be 95-100% fertile and there are no genetic barriers. Thus one can effectively self-pollinate any species or hybrid, and cross any pair of species or hybrids, with resulting fertile seed and healthy progeny. Pollination is best accomplished five days into anthesis. If the plants are outdoors and one wishes to control his results, the flowers must be covered as they open and until shedding of petals by a loose sack of cheesecloth or gauze snugged (not strangulated) around the scape to prevent insect pollination. Pollen is shed into the cup of the umbrella-like expansion of the style and a good quantity is available. At each of the five tips of the umbrella, at the base of a small v-shaped cleft at the tip, is a tiny projection or stigma lobe upon which the pollen must be placed. This is best accomplished by using the flat end of a toothpick which can then be disposed of after each use. The classical pollinator's brush retains too much pollen, is difficult to clean and too expensive to be thrown away. You want to try to prevent mixing of pollens in order to obtain meaningful results. Apply a small scoop of pollen to the stigma lobes of the same or another plant (same or other species or hybrid) by lightly touching the stigma with the pollen. Theoretically,

due to the anatomical structure of the stalk-like portion of the style that is connecting the umbrella to the swollen ovary, only one stigma lobe need be pollinated, but I usually do at least two or three to be certain. If you are trying to cross and not self-pollinate plants, be careful not to drop pollen on the stigma lobe of the flower from which you are removing the pollen. After pollination, carefully tag your flowers with any suitable coding system so you will have a record of what was done and which resulting seedpod is what. By the way, pollen can be stored *dry* in a wax paper wrap in the refrigerator for at least six weeks to accommodate experiments among species with differing flowering dates.

b) Seed — During the summer, the swollen ovary at the base of the flower will gradually ripen into a seedpod if pollination was accomplished properly. In the autumn, fully mature seed is indicated by the pod turning brown and somewhat hard, and/or splitting of the pod which may still appear yellow-green but is dry. Clip the pod from the scape and collect your seed over a sheet of paper in a still place by manually separating the partitions of the pod and letting the seed fall on the paper. Good seed will be plump, dry and colored from tan to a dusty lavender. Be careful not to mix seed from different experiments. If necessary, allow the seed to dry on the paper for a few hours, then store in a refrigerator in either polyethylene bags, wax paper wraps, or small screw-cap vials to keep the seed dry. Refrigerator storage, in my experience, can be as long as five years with little loss of viability, viability tending to slowly decrease after that. Seeds store much more poorly at room or warm temperatures. I do not recommend freezing.

c) Sowing — *Sarracenia* seed will germinate more promptly and vigorously if subjected to a process called stratification by horticulturalists. Stratification is less important with so-called southern



Sarracenia rubra.

Note the deposits of enticing nectar on the edge of the mouth of the pitcher and the downward pointing hairs.

Photo by Steven A. Frowine.
The Garden Center of
Greater Cleveland.

species, but still the process results in the quickest burst of germination and the greatest number of robust seedlings. Stratification simply mimics the cold, damp conditions to which autumn-shed seeds are exposed during winters in habitat. This is accomplished by sowing your seed (not too thickly) in pots of either chopped live green sphagnum, chopped wetted "long fiber" sphagnum purchased in gardening stores, or even wetted German or Canadian (*not* Michigan) peat. I have more fungus problems with the peats. Label the pots, then cover by placing in plastic bags or a moisture-tight plastic container, and place in the ordinary household refrigerator (*not* the freezer) for at least six weeks. A minimum of four weeks is required for some species, and it does no harm to prolong to 8-10 weeks. At the end of stratification, remove the pots from the plastic bags and place them in terraria under lights or in the greenhouse. Bottom heat

helps germination in cool weather. You should see activity in 7-10 days with complete germination in 14-16 days. Transplant after the first two true leaves appear.

d) Problems with seed — Sometimes you will come up with an empty seedpod, in which case pollination was not accomplished. Review your technique. Sometimes various insect larvae will feed on developing seedpods; inspect your plants regularly. Failure of germination is usually due to seed that is too old or improperly stored, lack of suitable germination temperature (use bottom heat of 72-74°F in cool weather), inviable seed (these are shriveled, dark brown and have an angular, small appearance) or lack of stratification. I have never had damping off of seedlings using sphagnum and proper light (full sunlight in greenhouse, fluorescent lights no more than six inches above pot surfaces in covered terraria).

(To be continued)