

Anthers mature before stigmata (protandry) in the same flower and frequently shed all their pollen, unless the air is quite still. Therefore, cross fertilization gives more certain results. One can pick out individual anther heads if he has excellent eyes and superb patience, but the easiest method is to simply press two flowers of two different plants face-to-face with a slight circular motion to effect cross contact of anthers and stigmata. By the way, during flowering Dionaea becomes a little "ragged"-looking with poor trap and leaf formation. This is normal and good traps will grow after flowering is completed, or you may simply clip the flower scape if you are not interested in the flower or seed.

Many Droseras are self-pollinable and in fact do so as they close at the end of their one day of life if a pollinator has not done the job earlier. But to be safe, it is best to use the method described for Dionaea.

Seed matures for both genera in six to eight weeks and is about the size and color as poppy seed in Dionaea, and almost dustlike in Droseras. Since this is summer maturing seed as opposed to autumn maturing seed, a cold pregermination period is not required. Seed is best sown immediately (unless stored under refrigeration) since it will germinate best at this point and will rapidly lose viability when stored under ordinary conditions.

Leaf cuttings. All of the Droseras can with ease, and Dionaea with some difficulty, be propagated by this means. Select fully emerged but preferably fresh spring leaves and clip them off at the petiole base. Dionaea leaves should be peeled back down to the bulb. Press the leaves onto the surface of moist live sphagnum so that total contact is made (check daily, buckling tends to occur the first few days), cover the container with plastic or glass and place in warm shade. In a few weeks, you will note young plant buds, usually many to a leaf. Let these grow until a good root system is under way and the mother leaf is nearly decomposed, then transplant.

COMMENTARY

by E. T. Wherry

(Dr. Wherry has sent us several interesting comments which we have combined into a short note--Ed.)

Nerve-like signals in plants. In the November, 1973, issue of Bioscience one of the "Biology Briefs" on page 672 is thus headed: "Stephen E. Williams, plant physiologist and instructor in biology at the N.Y. State College of Agriculture and Life Science, Cornell, reports finding that the tentacle-tip of a sundew contains cells which transmit nerve-like signals from one point to another. However, the signal in the sundew proved to travel as much as 10,000 times slower than in animal systems."

The value of the prey to carnivorous plants. In a book on Rare Wild Flowers of North America by Leonard Wiley a common misconception is written up in attractive fashion. Under Darlingtonia californica we read: "A popular fallacy is that these plants depend completely upon the insects they capture for their sustenance. Insects are no more important to Darlingtonia than orange marmalade is to you. Like all other chlorophyll-bearing plants, it gets most of its nourishment from the soil and air." And similar remarks are made under Dionaea muscipula.

The chlorophyll of higher green plants actually enables them to assimilate only carbon (dioxide) from the air. All other elements must be absorbed through the roots from the soil. Carnivorous plants grow in soil so sterile that the essential elements nitrogen, phosphorus and potassium, to say nothing of trace elements, are inadequately available to their roots. They accordingly obtain these elements from their prey.

Two bladderwort surprises. The recent note on a range extension of Pigmy Bladderwort (CPN II, p. 59), Utricularia olivacea, brought back memories. In September, 1959, Mrs. Ruth McVaugh Allen, a local botanical artist, sent me for identification sketches of a tiny bladderwort which had been discovered floating just under the surface of the "Goose Pond" southwest of Egg Harbor, New Jersey, by Frank and Robert Hirst, keen amateur botanists of Pleasantville. Unexpectedly it proved to correspond to Utricularia olivacea which was thus far known in the U.S. only from Sanford, Florida. Mrs. Allen wrote this up for Bartonia, and it was published in No. 29, dated December 16, 1959. Her illustrations seem to have been the first detailed ones made of this plant; they are reproduced on the cover of this CPN. Intermediate stations were subsequently discovered in North Carolina, but extreme range disjunction seems still represented. Carnivorous plant enthusiasts may well be on the lookout for it in intervening Coastal plain ponds.

The Inverted Bladderwort, Utricularia resupinata, is so rare in New Jersey that new stations are considered worth recording. Early one spring I was exploring the margins of the Big Cypress Swamp on southern Florida, and while looking down to make sure I was not stepping on a water moccasin, I noticed a profusion of tiny lavender flowers. They turned out to belong to this species--here so common that scores were crushed by every footstep.

An unacceptable Sarracenia lectotype. Linnaeus named the genus Sarracenia after a Quebec physician, Dr. Michel Sarrasin de l'Etang, who sent him specimens which regrettably failed to get preserved. Earlier diagnoses of Sarracenia purpurea L. by both northern and southern workers were cited. Rafinesque realized that the species is not geographically uniform; changing the genus name to Sarazina, he designated the northern extreme by one word quoted from Linnaeus' diagnosis, gibbosa, and the southern extreme by the descriptive word venosa.

The differences between the two seeming insufficient for species separation, the writer reduced them to subspecies, as ssp. gibbosa (Raf.) Wh. for the northern and ssp. venosa (Raf.) Wh. for the southern element. Unwilling to follow the International Code, Fernald changed these to varieties; then since it had become customary to repeat a species epithet for an infraspecific taxon including the type, or omit it entirely, the two became respectively S. purpurea (typical) and S. purpurea var. venosa (Raf.) Fern. in Gray's Manual, Ed. 8. Without explanation and in defiance of the fundamental principle of priority, McDaniels (Bull. Tall Timbers Res. Sta. No. 9, 1971) "selected" as lectotype for Linnaeus' species the illustration of the southern extreme in Catesby's volume on the plants of the Carolinas. The acceptance of this proposal is herewith disrecommended.

On Darlingtonia vs. Chrysamphora. In 1851, when John Torrey proposed to name the western pitcherplant in honor of Dr. William Darlington, he overlooked the fact that there was already in the literature a "Darlingtonia" applied to a wholly different plant, rendering his proposal invalid under the International Code of Nomenclature. The wholly new name Chrysamphora was accordingly proposed by Greene in 1891. From that date until 1954, this was the valid name for the plant, and should have been used by all writers. Then a committee of taxonomists was asked to study the matter, in which by the narrow vote of 6 to 5, the name Darlingtonia was conserved as reported in the journal TAXON 3, No. 4, May, 1954. By this slim margin, then, validity of Darlingtonia has now been established, and it should be used by all writers, unless and until the problem gets reconsidered.

SOME INTERESTING VARIATIONS IN DIONAEA MUSCIPULA

by Steve Clemesha

As Dionaea is a monotypic genus with a rather small natural distribution, it is fairly logical to think of the plant as being a very uniform one and as I have read nothing to the contrary, I believed this was so until I received plants from friends which clearly are different. Naturally, I was skeptical at first and encouraged to be so by my friends in the U.S.A., but after having the plants for more than one year and propagating new ones from small pieces, it is now clear that all except the last-to-be-mentioned variation is distinct and remains true to type. This could also prove to be true of the last-to-be-mentioned plant, but mine are not yet advanced enough for me to be sure.

In the case of all the plants mentioned below, except those I received from the U.S.A., I do not know if they were originally wild collected or have been selected in cultivation. Perhaps someone else can answer this question. I am fortunate to know where my plants came from even though all reached me indirectly.

The main form I have received from the U.S.A. produces a rosette of traps with a short petiole in early spring and late summer. These traps are prostrate. In the main part of the growing season, the traps are formed on petioles more than twice as long which are much more slender and erect. All my plants of direct U.S. origin have been like this and all with a fairly uniform degree of pigmentation (i.e., light red on the inside trap) except for one.

This plant is still small but clearly differs from all others in being much paler. Most of its traps lack any pigmentation and none is present on the petioles. The plant has an almost yellow-green appearance reminding one of Sarracenia purpurea forma heterophylla. However, at certain times of year, especially when we get a lot of cloudy weather, the plant's new traps color inside. This color does not persist long and soon fades out. It appeared among a batch of normal seedlings raised from wild collected seed.

About eighteen months ago, I received some plants of a Japanese cultivar, "Dionaea muscipula forma erecta." These plants appear the same as those I have received from the U.S.A., except they are deeper colored. Next, I received plants also of Japanese origin of "D. muscipula forma muscipula", i.e., the typical form. This is a very different plant from those I had received from the U.S.A. All traps are on a short petiole and the traps which are crowded close together and the petiole lie flat on the ground. It is a neat colorful form.

The next form is not a form at all. This is "D. muscipula forma filiformis" which has the basic habit of the "erecta" type but is a rather pale form and its traps are on a very long slender petiole and give the appearance of a plant growing in heavy shade. I do not know how tall it becomes as my original was accidentally pulled up and lost presumably by a bird.