



# north carolina botanical garden

chapel hill, 27514

by Rob Gardner\*

In the arresting humidity of the North Carolina noonday sun you stop to wipe the perspiration from your face. Your searching eye reveals the object of your search: partly concealed among the low grasses is a particularly fine clump of the native red pitcher plant, *Sarracenia rubra*. Closer examination of the nearby area turns up *Drosera capillaris*, *D. filiformis*, a scattered *S. purpurea* or two, several *Dionaea*, and then suddenly a whole patch of *Dionaea*, with unusually large, crimson-lined traps. In this same area you will eventually discover *S. minor*, *S. flava* in all its color forms, the rare pink-petaled form of *S. purpurea venosa* and much more. Are you, you wonder, in the great Green Swamp, located in the extreme SE corner of North Carolina? No, actually you are at the North Carolina Botanical Garden (NCBG) located in the center of the state in Chapel Hill.

This unique garden of native North Carolina and Southeastern U.S. plants, under the direction of Dr. C. R. Bell, is a living museum of plant material representing some of the major regions of N. C. organized and planted on a habitat concept. The visitor can stroll from a cool and shady representative planting of the Southern Appalachian Mountains directly to a much more open reconstruction of Coastal Plain savannahs studded with terrestrial orchids and all kinds of *Utricularia*, *Drosera*, *Sarracenia* and *Dionaea*. Adjacent to the coastal plant collection is a Sandhills region exhibit, characterized by long leaf pine, turkey oak, and wire grass. This collection also has its share of CP planted in the moist, low sphagnum mounds. The Piedmont region, located between the mountains and the coastal plain, is well represented by a nature trail system through much of the Garden's 307 acres.

Associated with the Botany Dept. of the Univ. of North Carolina, NCBG is a living outdoor classroom offering various

programs in natural science for grammar school children as well as adults interested in botany and horticulture. The Garden also provides research opportunities for botany and zoology graduate students and faculty.

Much of the energy expended at NCBG is invested in developing, promoting, and practicing an environmentally sound plant conservation and preservation ethic. NCBG regularly cooperates with the Nature Conservancy, the N. C. Wildflower Preservation Society, the Tennessee Native Plant Society, the Audubon Society, the N. C. Division of State Parks, and many other conservation-minded groups. The Garden is deeply committed to its conservation role through its many programs, lectures, workshops, tours, and other activities presented to a wide variety of groups. Under the personal guidance of Supt. Ken Moore, the NCBG staff practice an on-going program dedicated to discovering new and more efficient ways of propagating from seed, division, and cuttings, a multitude of our showy native plants worthy of consideration by the avid home gardener. We are particularly involved in efforts to learn

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\*Staff gardener and curator of CP

to propagate as many of the rare, endangered, and less common species, including CP's. At the same time the showy and easy to grow native wildflowers are being promoted, the Garden points out the great damage being done to natural populations of native plants by senseless field collecting either by individuals or by commercial sellers of wildflowers. This is in addition to the destructive activities brought on by development. Field collected plants usually exhibit greater "transplant shock" and require more effort to establish as garden plants than do propagated plants of the same species which have been grown from seed or cuttings and are essentially "cultivated" from the beginning of their existence.

Another manifestation of our concern to develop an ethical way of securing native plant material is our NCBG Volunteer Plant Rescue Team. It operates state-wide in cooperation with the highway department, Corps of Engineers, and private developers to remove plant material that is scheduled to be destroyed. These plants are shared with other gardens and are planted in our habitat collections or nursery areas.

One of the outstanding features of the Garden is its Carnivorous Plant collection. It is perhaps the finest collection of native CP on public display in the eastern United States. In addition to the naturally arranged habitat plantings displaying CP from N.C., it contains many other types from the Southeastern U.S. and other parts of the world. The heart of our CP collection are the *Sarracenia*, which are maintained in plastic pots. Some of the rarer plants in the collection include *S. alabamensis*, *S. oreophila*, *S. jonesii*, and *S. purpurea* forma *heterophylla* (all grown from seed provided by Fred Case) and the beautiful pink-petaled form of *S. purpurea venosa*. We also have an interesting group of *Sarracenia* hybrids, both natural and artificially produced here at the Garden. We now grow from seed all our CP's, both for

the collection and for the habitat plantings. The body of our collection is housed in several sub-irrigation nursery beds under slightly shaded conditions. Plants are drawn from this area or returned to it depending on their seasonal presentability. For example, during the fall, *S. flava* is beginning to show wear and tear so most of them from the display area are returned to the nursery and replaced by pots of *S. leucophylla* which are putting on a flush of vigorous growth at this time.

All hardy plants are kept outside for winter dormancy (minimum winter temperatures in Chapel Hill are usually about  $-12^{\circ}\text{C}$  ( $10^{\circ}\text{F}$ )). The pots are usually sunk to the rim in sawdust beds in the nursery. This dormancy requirement can be over-ridden if plants are grown in a greenhouse under lights, but in the long run, healthier and much longer-lived specimens result from observing their natural rest period.

Fresh seeds of all *Sarracenia* species are sown in the fall on whole-fiber sphagnum moss and placed outside in the nursery area for the winter. Stratification (cold and moist) of *Sarracenia* seeds is an absolute necessity to realize a high percentage of germination. Seeds begin to germinate in late April of the following spring. These seedlings are kept in their flats the entire first summer and through the next winter. Transplanting is usually done the spring of the second growing season. All CP's are germinated and grown in whole-fiber sphagnum moss. Several other growing media have been tried with satisfactory results, but sphagnum seems to be best. Pots of mature *Sarracenia* are top-dressed with living sphagnum. Similar propagation programs are conducted for a variety of *Drosera*, *Pinguicula*, *Dionaea*, and *Utricularia*. NCBG is a contributor to the CPN seed bank under the able direction of Patrick Dwyer. In the past we have been

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The fate of all too many stands of CP.

Photo by Rob Gardner



CP rescue team. We need more of them.

Photo by Rob Gardner



*Sarracenia psittacina*

Photo by Larry Mellichamp



CP Collection at North Carolina Botanical Garden.

Photo by Rob Gardner

able to donate quantities of *S. minor*, *S. jonesii*, *S. flava*, *Dionaea*, and other native CP. Please direct your seed requests to the CPN Seed Bank, NOT to NCBG.

The Garden offers a native plant seed exchange service for its members. Much of the cleaning, processing, recording and correspondence for this service is done by volunteers.

Although the great majority of our CP remain outside in the nursery for the colder months, we keep a small but representative collection of them to display in an unheated greenhouse. This helps meet their dormancy requirements while preventing the hard freezes from killing back the foliage and allows them still to be of interest. We begin to bring selections of our nursery collection into a heated greenhouse in January to initiate active growth. This, along with the early activity in the unheated greenhouse specimens, allows us to have some plants growing and flowering at different stages long before outside temperatures are suitable. (The average high temperature in our area in January is 42-44°F, but it quite often is below freezing for several days at a time.) This way we can have *Sarracenia* blooming from late February through the natural season to late May.

If you are planning to be in our area, you should definitely plan to include a

visit to the NCBG. The best time to visit our unique habitat-concept collections, as well as the CP display collection, is April-May. However, there is always something to see or do: maybe attend a spring or fall wildflower workshop, a winter botany hike, or venture on an NCBG-sponsored field trip. Such field trips even include tours of the world-famous Green Swamp where we jump over (or wade through) roadside ditches choked with water-lilies and pick our way through sphagnum mats trying to avoid treading on a literal carpet of sundews, pitcher plants and flytraps!

The staff and volunteers of the NCBG are proud to have for the education, convenience, and interest of the general public and its members these activities and collections; and to be fully committed to a progressive native plant conservation ethic. We invite you to join us!

For more information on the North Carolina Botanical Garden write:

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be avoided by using darker parents, though I have noticed a tendency for later hybrid generations to become pale. Both of these crosses were made by Adrian Slack who kindly sent me the seed.

Some back crosses and close to back crosses are interesting. I crossed *alata* x *leucophylla* with *leucophylla* in the hope of getting the vigour of one and beauty of the other. I did, but the wrong way round — dirty white *leucophylla*-like plants which did not increase quickly (fortunately!)

On the other hand *S. (flava x purpurea) x alata* has produced attractive

and quite varied offspring.

I feel in hybrids one needs to work on or around a given species, e.g., as Adrian Slack did with *S. x excellens* x *S. x wrightleyana* where *leucophylla* is a parent of both.

*S. (flava x purpurea) x alata* has emphasised the closely related *flava* and *alata*.

For colour, one only has *purpurea*, *minor*, *psittacina* and *leucophylla* — only one tall species. In my experience the others give pale progeny, but using selected dark varieties and with rigid culling, results should improve.