Sarracenia Species and their Habitats in the Southeastern United States

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There are some ten species, and numerous subspecies and forms, of carnivorous pitcher plants in the genus Sarracenia (Sarraceniaceae) endemic to the Southeastern United States. The species are S. alata, S. alabamensis (includes S. alabamensis subsp. wherryi), S. flava, S. jonesii, S. leucophylla, S. minor, S. oreophila, S. psittacina, and S. rubra. Sarracenia purpurea subsp. venosa also grows in this area although the range of the species is larger than just the southeastern states. They grow in open, sunny, moist, nutrient-poor meadows with grasses, wildflowers and long-leaf pine trees. These habitats must remain moist and must be periodically burned. The soils are usually highly organic and acidic, creating habitats that harbor rare orchids and a tremendous diversity of wildflowers. Other carnivorous plants occur there as well, such as Dionaea muscipula in North Carolina, and several species of Drosera, Pinguicula and Utricularia. Nowhere else in the world do so many different genera of carnivorous plants occur together. Many color forms of Sarracenia have been identified across the range, which extends from Virginia south to Florida, then west along the Gulf Coast and inland to eastern Texas. In many cases the habitats are disappearing due to development and draining. Several species are endangered; all are rare, their numbers declining annually. A rather unique feature of these species is that they freely hybridize with one another, and the hybrids produce backcrosses and hybrid swarms, especially in disturbed habitats. This ability has allowed the author, with Mr. Rob Gardener of the North Carolina Botanical Garden, to make artificial hybrids and select unusual clones for tissue culture for the horticulture trade. The plants that will be shown include the cultivar 'Dixie Lace' (description in press) and several other clones being studied for possible establishment as cultivars.

References


Pinguicula (Lentibulariaceae): The Cool Climate Species of the Northern Hemisphere - Distribution, Morphology, Habitat, Cultivation

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The distribution of the genus Pinguicula ranges from Eurasia including Greenland, Iceland and Japan to North, Central and South America. However Pinguicula does not exist in New Zealand, Australia, Indonesia and Africa (except in its northernmost corner).

Considering the growth type Pinguicula may be divided into four groups: tropical-homophyllous, tropical-heterophyllous, temperate-homophyllous, and temperate-heterophyllous. The plants of tropical growth type form assimilating leaves all the year through. The temperate types hibernate by means of hibernacula. In the homophyllous growth type only one rosette type is formed, i.e. all leaves of the rosettes have morphologically the same characteristics. The heterophyllous type forms two different rosettes - either a larger rosette in summer and a smaller, morphologically different rosette in winter (tropical-heterophyllous type) or a smaller generative spring rosette followed by a larger vegetative summer rosette with different leaf morphology, which later forms the hibernaculum (temperate-heterophyllous type).

This contribution is focused on the Pinguicula species of the temperate-cool, (sub)alpine and (sub)arctic climate regions of Eurasia including three species also distributed in northern North America.
They belong to the following subgenera: (1) Subgenus *Isoloba* (*P. lusitanica* and the *P. crystallina/hirtiflora* group); (2) Subgenus *Temnoceras* (*P. alpina, variegata, ramosa* and probably *algida*); (3) Subgenus *Pinguicula* (*P. balcanica, corsica, dertosensis* (*submediterranea*), *fiorii, grandiflora, leptoceras, longifolia, macroceras, mundi, nevadensis, villosa, vallisneriifolia, vulgaris* and two or three yet unidentified species).

Several species (e.g. *P. algida, variegata, ramosa* and *villosa*, but also *P. dertosensis, P. mundi* and the *P. longifolia* group) are somewhat difficult to associate within their subgenus and will possibly require taxonomical refinements on the section level. Recently S.J. Casper identified new chromosome numbers in the *P. crystallina/hirtiflora* group which might lead to nomenclatural modifications. The taxonomical value of *P. bohemica* and *P. fontiqueriana* is controversial.

All above named species are presented by color slides, their distribution and habitat conditions are described and their taxonomical relationships are discussed.

The long-term cultivation of the (sub)alpine and (sub)arctic *Pinguicula* species is rather difficult for the following reasons: (1) They are much less resistant to fungal infestations than the tropical species; (2) While it is easy and cheap to create dry- or wet- (sub)tropical climate conditions, the creation of a cool climate with high air humidity is difficult and expensive; (3) In many species the hibernaculum stage lasts considerably longer than the vegetation period. If the summer growing conditions are not optimal the plants form weak hibernacula which easily decay. This is particularly the case if the plants are kept too warm and/or if they lack sufficient air humidity and ultraviolet light; (4) In the temperate growth type the flowering period is usually short and if growing conditions are not adequate from the very beginning no flowers and/or no seeds are produced.

Cultivation guidelines are presented which have proven to be successful for over 20 years.

Atlanta Botanical Garden's Conservation Program

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Officially incorporated in 1976 on land belonging to the City of Atlanta in Piedmont Park (the city's largest communal park), the Garden's mission is to develop and maintain plant collections for the purposes of display, education, conservation, research and enjoyment. ABG is a private, non-profit botanical garden overseen by a Board of Trustees, with over 40 staff, upward of 300 volunteers, and a 10,000-strong membership base. The centerpiece of the Garden is the Dorothy Fuqua Chapman Conservatory. Opened to the public in 1989, the Conservatory covers 16,000 square feet. The collections focus on under-represented and endangered plant groups, including Old World desert collections, Old World island palms that follow an island biogeographical theme, and other conservation collections including tropical conifers, orchids, cycads and carnivorous plants. ABG also houses a collection of poison dart frogs from South America.

ABG's Conservation Program encompasses a number of regional and international projects. Based on a hands-on and project-driven approach, ABG strives to work directly with local landowners, to bring as many of the relevant agencies, botanical institutes and organizations into collaboration, and to disseminate the staff's horticultural and botanical expertise to as wide a field as possible. One of its major goals is to use low-cost restoration and recovery techniques.

ABG plays an active role in the monitoring, restoration and conservation of the unique and species-rich bog communities that are found throughout the Coastal Plain and Southern Appalachian Mountains of the southeastern USA. Impacted by agricultural runoff, land conversion, soil erosion, drainage, herbicide use, invasive exotic species and the exclusion of many processes, such as fire, many of these plant communities have been reduced to small, fragmented plots of land. Bog habitat restoration involves controlling invasive woody species, both native and non-native, which eventually shade out the herbaceous layer. Restoring the herbaceous layer provides the fuel to 'carry' the fires that are associated with maintaining these open, nutrient-poor, and species diverse habitats. Controlling woody species can