

CARNIVORES IN YOUR GARDEN!

by Frederick B. Essig

Unless your neighborhood was built in a bog, you're not likely to see many carnivorous plants used in landscaping. Nevertheless, these oddities of the vegetable world are gaining in popularity.

The one thing all carnivorous plants have in common is that they eat insects and other small animals. So having lots of them around can reduce the number of mosquitos, ants, flies, and other nuisance bugs around the yard.

Carnivorous plants come from a variety of plant families, and employ numerous trapping mechanisms. Some require highly specialized habitats, others will grow prolifically under the Florida sun or in a shade house. Florida and adjacent parts of Alabama and Georgia are home to more native species of carnivorous

plants than any other part of North America. The famous Venus' flytrap comes from the coastal plains of the Carolinas. Hundreds of species occur worldwide.

Pitcher plants have hollow, tubular leaves, usually with a flared or lid-like top. Water collects in these tubular "traps" which are colored conspicuously to attract insects and may produce nectar as an additional inducement. The walls are slippery and often lined with downward-pointing hairs that allow insects to slide in, but not to crawl out. In some species, digestive enzymes are secreted into the trap liquid and nutrients from the dissolving insect bodies are absorbed by the plant, allowing these plants to live in nutrient-poor soil.



photo by Frederick B. Essig

North Florida native, *Sarracenia flava*.



photo by Frederick B. Essig

Bog-dwelling carnivorous plants can be grown in clay pots set in trays of rain or deionized water.

Our native pitcher plants belong to the genus *Sarracenia*, found only in eastern North America. Six of these occur in Florida. Many can be seen on a road trip through the Apalachicola National Forest, particularly along Highway 65 in Liberty County, and in other parts of the Florida panhandle. *Sarracenia minor* can be found as far south as Okeechobee County. *Sarracenia flava* with tall greenish-yellow traps, *S. leucophylla* with tall whitish traps, and *S. purpurea* with short upwardly-curving traps are the most commonly cultivated.

All require moist-to-wet soil of low nutrient value. Like virtually all carnivorous plants, they should be watered with rain



The traps of Sarracenia purpurea arch upwards from a nearly horizontal position.

water or deionized water to avoid overloading them with mineral nutrients. Fertilizer, even water with too much calcium or iron in it, can cause leaf burn and poor growth. No need to feed them bugs either - plenty will stumble in on their own.

All native species are cold-tolerant. Most go dormant during cold weather and sprout new leaves in spring. They can be grown in pots set into shallow containers filled with rain or deionized water, or in an artificial bog made from a shallow lily pond or wading pool filled with sandy muck.

The most spectacular of all pitchers are the Asiatic pitcher plants in the genus *Nepenthes*. Unlike most carnivorous plants, these are not found in bogs or other wetland habitats, but in rain forests, where they scramble over rocks or hang from low-lying tree limbs. The traps hang

pendulously from the tips of ordinary leaves, rather than emerging directly from the soil line. *Nepenthes* can be grown in pots that hang outdoors most of the year, but are brought inside during cold spells.

Another major genus is *Drosera*, the sundews. Sundew leaves are covered with numerous short tentacles that exude a drop of sticky nectar from their tips. A healthy sundew plant is a little jewel that sparkles as sunlight bounces off the little droplets, particularly in the morning. The



Drosera capillaris is the most common sundew native to Florida.

droplets are deadly to small insects that get hopelessly tangled in the gluey exudate. Digestive enzymes are secreted after the prey has been caught and nutrients from the dissolving bodies are absorbed through the surface of the leaf.

Of the 5 species of sundew in Florida, tiny *D. capillaris* is the most abundant and widespread. It occurs in wet soil around the edges of ponds, swamps, and other damp depressions. The plants, tiny rosettes of spoon-shaped leaves, range in size from less than the diameter of a dime to a couple of inches. They can easily be kept in a pot of sandy soil set in a saucer full of rain or deionized water. They wither quickly if the soil dries out, and will die if inundated for more than a day or 2.

Somewhat more robust, *Drosera tracyi* has linear leaves a foot or more long. The roots are also longer, so they can take more drying out of the soil. They will do well in an artificial bog, as will the smaller *D. capillaris* if you can keep the moisture level just right without submerging them.

Over 200 species of *Drosera* are found primarily in nutrient-poor regions of Australia, South Africa, and the Brazilian highlands. While flowers of the native species are fairly plain, some exotic species have spectacular flowers that may be larger than the plant itself. The Venus' flytrap (*Dionaea muscipula*, a relative of *Drosera*), has the most spectacular trapping mechanism. The 2 sides



Spectacular Nepenthes species are found in rainforests, not bogs.

of the spine-edged leaf snap together in a fraction of a second when triggered.

Another large genus is *Utricularia*, the bladderworts. They are also found around the world, often in bogs, but sometimes totally submerged in standing water. Their snapdragon-like flowers are quite varied and attractive. The traps or "bladders" are hard to find, however, as they are held underwater or in damp soil. These tiny little traps suddenly expand when triggered by an approaching prey item, and literally suck it in. Prey include tiny aquatic crustaceans. *Aldrovanda* is another aquatic carnivorous plant with tiny traps that snap shut. *Pinguicula*, the genus of butterworts, is related to *Utricularia*, but with flat, sticky, flypaper-like leaves, and has several species native to Florida.

A few bromeliads from the high plateaus of South America have been found to be carnivorous. This is a natural extension of the habit of maintaining a pool of

water in the center of the leaf rosette. Also in South America is another genus of pitcher plants, *Heliamphora*, which are distantly related to *Sarracenia*.

For carnivorous plant sources and information, start with the Carnivorous Plant Database, with its vast photo gallery (www2.labs.agilent.com/bot/cp_home). Loads of carnivorous plants are available from specialized nurseries, botanical garden plant shops, individual hobbyists, and carnivorous plant clubs. There's a listserve to which you can subscribe, numerous books, and videotapes as well. (Look for the *Nature* episode called "Death Trap.") Another way to start is to visit the booth of a carnivorous plant club at the many plant festivals held around the state. (USF Botanical Garden in Tampa holds theirs the

second weekend of October and April.)

*Frederick B. Essig is an Associate Professor of Biology at USF in Tampa. He wrote about the winter-blooming bromeliad, *Quesnelia testudo*, in the Aug/Sep 2001 issue of Florida Gardening.*

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