

Little-leaf Redroot

by Nancy C. Coile

When grown in well-drained soil, Ceanothus microphyllus can be a lovely addition to the native plant garden.

A unique species of shrub, called little-leaf redroot, or bloodroot, grows in most of Florida, south Georgia, and a few southern counties of Alabama. The trait that makes the shrubs exceptional is that they bear the smallest leaves of any shrub in the United States.

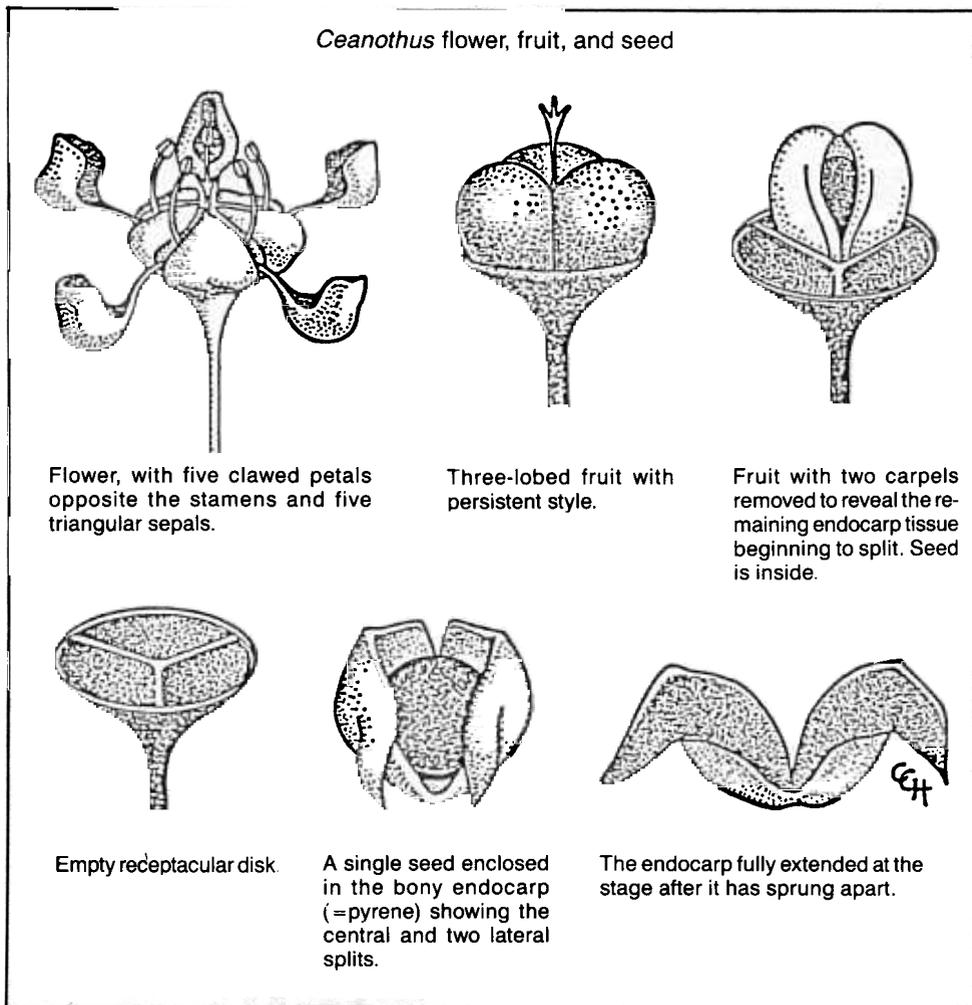
When Andre Michaux gave the scientific name to the species, *Ceanothus microphyllus*, he took these tiny leaves into account: the specific epithet of *microphyllus* means "tiny leaf". The leaves are usually 0.3 to 0.6 cm (less than ¼ inch) long, though occasionally a leaf may be up to 1 cm (less than ½ inch) long. The leaves are crowded on the stem and may be bunched together. Edges of the leaves will have glandular teeth, but with such a small leaf the toothing is hard to see without magnification.

Ceanothus microphyllus is not common, so that no common name is used by the general population. Two fabricated common names found in some books are little-leaf redroot, and bloodroot. These refer to the enlarged woody root, which is colored dark red-maroon.

A favorite habitat for *Ceanothus microphyllus* is the longleaf pine-wiregrass flatwoods. Longleaf pine-wiregrass habitat is maintained by frequent burning. *Ceanothus microphyllus* is well adapted to survive there, while species which are not fire-adapted will be damaged by fire. *C. microphyllus* resprouts after the fire has passed. If the fire is a normal quick-burning fire, the earth protects the root from damage, although above-ground portions may be charred. The large roots store enough energy to enable the plants to resprout and grow.

Since this type of habitat has diminished, the numbers of little-leaf redroot shrubs have also lessened. Little-leaf redroot also occurs on sandhills and in scrub oak habitats.

There are about 56 species of *Ceanothus*, and most of these are endemic to California. In Florida, *Ceanothus americanus*, or New Jersey tea, is the only other species of the genus. Rarely, hybrids will form between these two Florida species, though usually these



species do not bloom at the same time and therefore cannot exchange pollen. *Ceanothus* species in California are notorious for their ability to form hybrids with each other.

Flowers of all species of *Ceanothus* are remarkably similar, differing mainly in size and color. The petals are fused into a tubular corolla. The sepals are triangular and the same color as the petals. An unusual feature is the arrangement of the stamens, which are opposite the petals. This characteristic of stamens opposite petals is termed obdiplostemony, a word found in print but never in conversation. The petals are clawed, which means that they are constricted into a strap-like structure at their base and then expand to the flattened petal tips. When the bud first opens, the cup-like petal tips are

wrapped around and enfold the stamens. Usually the entire flower (pedicel, petal, sepals) will be the same color, either white, blue, or lavender. The flowers of *C. microphyllus* are white.

Another feature of the *Ceanothus* flower is the intrastaminal disc, a swollen tissue between the stamens and the pistil. This disc is persistent and is still visible long after the fruits have dispersed. The clusters of dried, flat, empty discs are a good field recognition character for the genus.

The fruits of *Ceanothus* are explosively dehiscent. In other words, the fruits split open with force. Mature fruits are dry and three-lobed, and each of the lobes has an M-shaped weak place that will split apart when the fruit is mature. These M-shaped fruit walls

act as catapults and fling the seeds away from the parent plant.

Another field characteristic for recognizing most species of *Ceanothus* is the three obvious veins at the base of the leaves. Even the tiny leaves of *C. microphyllus* have three strong veins at their base.

The species of *Ceanothus* grow in dry, poor soils. All species that have been tested are nitrogen fixers, which makes them more able to thrive in poor situations. Nitrogen is necessary for all plants in their regular growth processes, and growth may be limited by the lack of nitrogen. Nitrogen fixers are plants that can change unusable elemental nitrogen into nitrogen compounds that can be used by the plants. Most plants cannot fix nitrogen and, although these plants are surrounded by air containing about $\frac{3}{4}$ nitrogen, they are nitrogen poor in the midst of plenty and are limited in their growth potential. Most people know about the ability of legumes to fix nitrogen, but few are aware that *Ceanothus* also has this ability. The flowering plants that can fix nitrogen cannot do it alone, but depend on bacteria or fungi living symbiotically with the flowering plant. In the legumes, bacteria are the helpers; in *Ceanothus*, fungal mycorrhizae are the

usual helpers, with occasional occurrences of bacterial nodules.

When grown in well-drained soil, *C. microphyllus* can be a lovely addition to the native plant garden. It normally flowers from March to May, but may repeat bloom following summer rain. When grown in the garden in full sun, the plants will be compact and covered by a mass of tiny white flowers. In the greenhouse, the plants will flower all winter and spring, but will not set fruit. Pollinators are necessary for fruits to form. *C. microphyllus* is an entomologist's dream because of the many kinds

of insects that are attracted to the flowers.

This is just one of many Florida native plants suitable for horticulture. It is already adapted to our climate and soil conditions. Native plants such as this one are often overlooked, but *Ceanothus microphyllus* is available through nurseries, and would make a good addition to the native plant garden for its beauty and unique characteristics.

Nancy C. Coile, Ph.D., is a botanist for the Florida Department of Agriculture and Consumer Services in charge of plant identification.



GANN'S
Tropical Greenery

305-248-5529
22140 S.W. 152ND AVENUE
GOULDS, FLORIDA 33170

JOYCE AND DON GANN
'NATIVES GROWING NATIVES'