

Propagation and Production of Three Members of the Ericaceae Family—*Epigaea repens*, *Gaultheria procumbens* and *Vaccinium vitis-idaea* var. *minus*

Christopher S. Rogers

Weston Nurseries, Inc , P O Box 186, Hopkinton, Massachusetts 01748

In the past few years native plants have become increasingly popular. Pressures put on propagators to meet this demand are overwhelming, and it is too easy to collect or purchase collected material of many native species. I believe that it is important to propagate these plants whenever possible and not destroy their native populations.

Epigaea repens has been grown horticulturally for over 200 years; it was introduced in 1736. It is commonly known as the trailing arbutus, May-flower, or ground laurel. *Epigaea* is uncommon in gardens because of its tendency to fade away after transplanting from the wild. It grows best in a woodland setting on an acidic sandy loam. Once established, one can look forward to its extremely fragrant white to pink flowers that appear in March through May. The glossy evergreen foliage lies flat on the ground and plants can attain a size of 2 ft in diameter. *Epigaea repens* is the state flower of Massachusetts.

As soon as the fruits form, I cut them in half to see if the seeds inside have ripened. The immature seed is white. As the seed ripens, it darkens until it is black. It is written that the seed ripens at the same time as wild strawberries. In Hopkinton, Mass., the seed ripens at the end of May. If one does not quickly collect the fruit, ants will make off with them. Not all plants will produce fruit. *Epigaea* is dioecious with both male and female plants. Flowers tend to be larger and showier on the male plants. The fruits contain dozens of seeds. Fruits are collected and put in a paper bag to dry. In about a week, after the fruits have dried, a stone is used to crush the fruits through a tea strainer. The cleaned seed is then put in a sealed container in a 40°F cooler until sowing.

Gaultheria procumbens, referred to as the checkerberry, creeping wintergreen, or winterberry, is native to North America and it was introduced horticulturally in 1762. It can readily be found in dry or moist woodlands but prefers growing in the partial shade in an acidic soil. Commonly, it is dug up in the spring as sods and replanted into the landscape. It has a lot of landscape appeal due to its glossy evergreen foliage and persistent red berries. Because of its creeping habit it forms an evergreen groundcover.

The berries from *Gaultheria* can be collected in the fall or the spring. I have found that the seed needs no pretreatment to germinate, even though many sources suggest 90 days of cold stratification. The berries are dried for three weeks prior to cleaning. A stone is used to crush them through a strainer. The clean seed is put in a sealed container, in a 40°F cooler, until it is time to sow the seed.

Vaccinium vitis-idaea var. *minus* is native to the Northern U.S. and Canada and has been under cultivation since 1825. In its natural range it can be found growing in wet areas such as bogs or on mountain tops clinging to granite outcrops. Its

matlike growth rarely exceeds eight inches. The light pink to red blueberry-like flowers that appear in May give rise to red, cranberry-like fruits in August, hence the name mountain cranberry. It is also referred to as the lingonberry. Its glossy evergreen foliage turns mahogany tones in the autumn.

Since the 1930s, the Mezitt family and some close friends on the weekend of August the seventeenth have climbed Mt. Cardigan in New Hampshire to collect *v. vitis-idaea* var. *minus* fruits. Most of the berries are macerated and turned into jam. A little of the macerate is saved and sifted through many strainers. The cleaned seed is mixed with a moistened mixture of one-part sphagnum peat moss and one-part washed concrete sand, and put in a 40°F cooler for 90 days to stratify. Seed will germinate with no stratification, but higher percentages can be received with stratification.

The week between Christmas and New Year is when I sow all my ericaceous seeds, including *Epigaea*, *Gaultheria*, and *Vaccinium*. My sowing method was passed on to me by the late Edmund V. Mezitt. In the fall, before the ground freezes, I go into the woods under an oak canopy and collect the top 2 in. of decaying organic matter. This material is almost black in our area. The sods are broken apart with a Royer shredder and sifted through a 2-in. mesh screen attached to a conveyor. The organic matter falling off the conveyor is very coarse textured. A bushel of this organic matter is put on the potting bench for a few days to dry. The resulting semi-dry organic matter is hand screened through a 1/4-in. mesh.

Metal pans, which measure 3 ft × 6 ft × 6 in. are used for sowing. The pans are lined with polyethylene. At the corners of the pans 4-in. pipes 6 in. in length are placed vertically. The pipes have one inch holes drilled in the sides toward the bottom of the pans. Two inches of washed pea stone is placed in the bottoms of the pans, coarse perlite is then added to within one inch of the top of the pans. The very coarse textured organic matter is spread to a depth of 1/2 in. on top of the perlite. The whole pan is then packed, leveled, and 1/8 in. of screened organic matter is spread on top. The whole pan is again packed and leveled. After sowing, the pan is subirrigated through the 4-in pipes until the organic matter glistens with moisture.

A tent is constructed with 2-mil clear polyethylene. The pan is siphoned out the next morning. Clear 60-watt light bulbs are placed 2 ft above the pans; they come on between 1:00 and 3:00 a.m.

In two weeks the seeds begin to germinate. One has to watch out for damping-off at this time. Once the true leaves begin to appear, the seedlings are slowly hardened off. The plastic on the tent is pulled from the sides of the pan and air is allowed to flow through the tent. The tent is opened for a few hours and the time is gradually increased for 1 to 1 1/2 weeks. At the end of this time, the plastic tent is removed.

Seedlings are pricked off and planted into plug trays. Our mix contains 25% Weston Nurseries composted leaves, 25% coarse perlite, 25% sphagnum peat moss, and 25% composted southern pine bark. To one yard of soil mix a 13 oz. coffee can of Aqua-gro and one pound of Osmocote 14-14-14 fertilizer is added. This soil mix has a pH of 5.5. The plug trays are then placed into a dip tank and subirrigated. A supplemental liquid feeding of 20-10-20 at a rate of 200 ppm is done every 2 weeks. The greenhouse is maintained at 60°F. Clear 60-watt bulbs come on between 1:00 and 3:00 a.m.

Gaultheria responds well to fertilizer and the seedlings grow quickly. In 4 months from seed a full 2 1/4 in. pot plant can be produced with little effort.

Vaccinium grows slowly the first 6 months. If seedlings are brought back into a warm greenhouse for the following 6 months, they will triple in size.

The most picky of the plants to grow is the *Epigaea*. A full 1-qt potted plant requires two years from seed. After the second winter a ten percent loss is normal. A quarter of a teaspoon of Osmocote can be added to established pots in April. If fertilizer is put on too late in the season, many of the plants will come through the winter dead. Customers have commented both ways on the *Epigaea*—they grow or die. For those who have had problems growing this plant, I suggest it prefers a well drained sandy loam in the partial shade.

Overwintering these plants is done in a concrete block cold frame. The plants are covered with Remay (spun polyester) in December. White polyethylene is attached to the top of the cold frame and left there until March. The Remay is removed in the beginning of April. Snow fence is put on the frame for shade.

Weston Nurseries has chosen to produce these plants from seed because they are relatively inexpensive to produce. At time of sale, in quart pots, sixty cents worth of labor and materials went into each plant.

DICK BIR What was the temperature of the greenhouse when you were germinating the seeds?

CHRISTOPHER ROGERS: The house temperature is 60-65° F with the heat running under the bench.

JOE DALLON: You mentioned the collecting of humus from the woods. Do you think there may be a mycorrhizal association forming?

CHRISTOPHER ROGERS. I have heard such comments and that may be why we have not changed our methods.