

viously mentioned *Cytisus* and the evergreen *Cotoneaster* are good examples.

There are also plants where pruning accelerates or encourages continuation of bud break and growth. If the tips are pruned off of *Gaylussacia brachycera* just as each flush is fully extended, you will achieve several season's growth in one. *Daphne* has similar characteristics. The rooted cuttings are always slow to make that first break but this time can be made up quickly if the tips are pruned just before the flush of growth hardens off. Unlike the evergreen *Ilex* or *Kalmia latifolia*, you do not need to wait for dormant buds to form and mature to get multiple breaks.

A contradictory example is *Cassiope mertensiana*, the so-called mountain heather, from Bruce Briggs' country (the Pacific Northwest). You will achieve a better branched plant with more flowers at the end of the first season if you withhold all pinching or pruning. *Vaccinium macrocarpon* 'Hamilton', a delightful very dwarf form of cranberry, responds in similar fashion.

PROPAGATING ACER GRISEUM FROM CUTTINGS

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Acer griseum, the paper bark maple, is possibly one of the most beautiful and interesting small trees available to our trade. The leaves are trifoliate while possessing a delicate soft green texture. In certain locations, leaves will turn a good red color in the fall. The bark curls back to reveal the coppery trunk underneath on trees more than a couple of years old.

It has been reported that a definite flowering sequence problem exists with this particular tree which results in many sterile embryos. Therefore, most of the seed produced is non-viable. This is one reason that *Acer griseum* remains a relatively rare tree today. Grafting this species has been impractical, if not impossible.

Many years ago, my father, Case Hoogendoorn, became very interested in *Acer griseum* and purchased 500 two-year seedlings from Gulf Stream Nurseries, Inc., Wachapreague, Virginia. They were planted in a stock bed with the intent of using these plants for vegetative propagation purposes. We usually prune the stock plants in March to initiate vigorous

growth. As I mentioned, the stock plants are seedlings and there seems to be large clonal variations among the plants. This is most noticeable when plants are breaking dormancy in the spring.

Acer griseum is the first plant we propagate in the greenhouse approximately the third week of June. Timing is very important in the success or failure of this particular species. If you wait too long the cutting wood will become hard and poor results can be expected. The propagating bench is prepared with a coarse sand medium 6 in. in depth, which is firmed with a wooden pounder. In our experience a loose medium will generally lead to poor results. It may also be necessary to apply shading to the greenhouse at this time since the sun's rays can be very intense.

Cuttings are collected in the early morning hours, when the temperature remains relatively cool, and are put in wet boxes to prevent desiccation. While we are collecting the cuttings we hold them in the same direction in order to speed up the process. They are then taken to our refrigerated storage, watered thoroughly, and kept at 50°F to ensure the cuttings will be in a turgid, workable condition.

The following morning the cuttings are brought to the work area and prepared for sticking. The soft terminal tip is removed while the top two sets of leaves remains on the cutting. I might add that leaves are not cut during this operation due to their relatively small size. The cutting is made approximately 8 in. in length. In our experience, wounding has not proved beneficial. Cuttings are dipped in Hormodin #3 (0.8% IBA).

Cuttings are stuck in the medium to a depth of approximately 3 in. with 1½ in. between the cuttings and 2 in. between the rows. When a relatively large area has been completed the cuttings are watered in. An automatic mist system is turned on after all the cuttings are stuck. We set the mist control clock to come on at 8:30 a.m. and shut off at 6:00 p.m. The mist operates for 12 sec every 10 min. This gives the foliage a chance to dry before darkness to reduce disease problems. We apply Benlate and captan on an alternating spray schedule at the rate of 1 tbls/gal water. The solution is applied at daybreak with an Ortho Spray-ette proportioner (a portable sprayer that connects to a garden hose). The fungicide must have a sufficient time to dry before the mist is put on.

Greenhouse ventilators remain open during the daylight hours when the mist system is operating. However, during the night hours the ventilators are closed. Leaves of *Acer griseum*

are very tender and could burn if subjected to a substantial wind.

Cuttings should be rooted in approximately 8 to 10 weeks. They are lifted very carefully with a spading fork as the newly rooted cuttings have a very soft root. We usually attain approximately 60% rooting. The rooted cuttings are potted in 2¼ in. clay pots in soil, peat, and sand (1:1:1, v/v/v) mixture and set pot-to-pot in a greenhouse to reroot. We syringe these plants and give them bottom heat during cool periods as needed until rerooting has occurred. The pots should be checked for proper moisture content periodically. Cuttings remain in the greenhouse until they have rerooted sufficiently, which is usually toward the middle of October.

Potted cuttings are then moved to our deep pit storage house for the winter. They are set pot to pot and covered with approximately ½ in. peatmoss and watered in. This process enables potted cuttings to hold adequate moisture levels for extended periods of time. We find that 2 or 3 waterings are usually all that is necessary during the winter months under normal conditions. We like to keep dormant plants on the dry side. We reach a minimum temperature of 28°F in our deep pit storage house which is ideal for sensitive plants. The pit house provides the proper dormancy period and the plants respond by breaking extremely well in the spring. We open the door during mild periods to air the house. The potted cuttings are periodically checked for proper moisture content.

As the days lengthen and the outside temperatures rise, it is necessary to increase ventilation procedures. We have a 3 ft fan set in one end of the house for this purpose. However, it is necessary to remove four staggered filon panels on each side of the storage pit to increase air circulation. They are replaced with 50% lath shades. The remaining filon panels are sprayed with shading paint to break the intensity of the sun's rays. This enables the cuttings to be properly hardened off prior to transplanting.

By early June the rooted cuttings are ready for planting into outdoor nursery beds. If the cuttings are small or not particularly well rooted, it may be advisable to leave them in the pot for a year before transplanting. The cuttings are planted 6 to 8 in. apart and protected with 50% lath shade for the first year. After the third year they are harvested for our lining out stock trade or transplanted into field rows. They are planted on 3 ft rows with 2 ft spacing between the plants in the row. Plants are harvested for our ball and burlap trade after three growing seasons.

In conclusion, I would like to say that *Acer griseum* has been quite a challenge over the years. In the future we would like to develop a clone with outstanding characteristics, such as exceptional peeling bark and a desirable growth habit, which would propagate easily by cuttings.

SELECTING DAYLILIES WITH COMMERCIAL VALUE

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Selecting daylilies with commercial value is a perplexing problem for plant propagators because of the large number of registrations and introductions each year. In 1983 alone The American Hemerocallis Society (AHS) registered over 800 daylilies. Annual registrations since the society's formation in 1946 now include over 20,000 named cultivars (1).

In actuality only a very few of the plants registered become important commercially. There are several reasons for this: 1) many are not commercially superior to those previously introduced; 2) most breeder-introducers are not effective in marketing new plants over an extensive geographical area; 3) some hybridizers assign names for the convenience of breeders and friends, and do not consider their plants to have commercial value; and 4) slow plant increase has kept some cultivars off the market long enough so that they are rapidly superseded by newer and better cultivars.

With the advent of micropropagation, new cultivars can now be propagated rapidly and distributed in a short period of time (3). This method encourages judicious selection to avoid wasting expensive growing space and capital investments on inferior plants.

At present The American Hemerocallis Society has in place an awards and honors system to recognize the most outstanding cultivars (2). Basically the system has four steps: Junior Citation, Honorable Mention, Award of Merit, and Stout Metal. These awards are based on voting by AHS approved awards and honors judges. In 1984 the 4,500 member society had 445 judges.

The primary purpose of the award system is to recognize new daylilies with several desirable attributes such as: good foliage; graceful flower scapes, bright colored, heavy-substanced flowers; consistent flower form and size; and plants with overall distinction. Unfortunately, it is difficult to quanti-