Propagation of *Prunus maackii*

Alfred J. Fordham

The records of the Arnold Arboretum reveal that *Prunus maackii* is easily propagated by any one of four routine methods.

*Prunus maackii* can be propagated readily by seeds, cuttings, grafting, or budding. The records of the Arnold Arboretum show that early in 1961 we received fifteen scions of that species from the United States Plant Introduction Service, Glenn Dale, Maryland. At the time of year they arrived, grafting would have been the most appropriate method of propagating them. *Prunus avium*, commonly known as mazzard cherry, was listed as being a suitable rootstock for grafting *P. maackii* but was not available. We were able to get seedlings of *P. serrulata* (Oriental cherry), however; they proved to be excellent rootstocks.

To preserve the scions until we needed them, we placed them in a sealed polyethylene bag and stored them at 40 degrees Fahrenheit in a refrigerator. When it is handled in this way, woody-plant propagating material remains viable for many months. It should be inspected occasionally, however, to make certain it is not too wet or too dry, for either condition can cause it to deteriorate.

Whip-and-Tongue Grafting with Whole Rootstocks

As the name implies, a whole rootstock is the entire root system of a seedling. In autumn, before the ground freezes, seedlings are dug and placed in a deep frame, refrigerator, or cold-storage unit that is cold enough to keep them dormant, yet warm enough to prevent them from freezing, so that they will be available when they are needed.

In preparation for grafting, roots of the rootstocks were washed and trimmed to a uniform size. To accomplish grafting, the top of the seedling was removed, leaving about two inches of stem above the root system. Scions were about four inches long and contained three or four buds.

The stock and scion were joined by a whip-and-tongue grafting technique, making certain the cambial layers of each had as much contact as possible. The two components were then bound with rubber budding strips, which held them together with relentless tension.

Care after Grafting. When completed on March 29th, the grafts were placed in a medium of damp peatmoss on a greenhouse bench, making certain that the unions were well covered with peatmoss. Bottom heat of 70 degrees Fahrenheit was provided. This relatively high level of bottom heat leads to rapid callusing and growth.

By May 26th all grafts had succeeded, and the plants were in excellent growth. They next were transferred to one-gallon cans and placed on a greenhouse bench where they could be forced, to provide cutting wood for further propagation.

Propagation by Cuttings

By June 22nd, the growth had developed to a stage where it was ready to provide softwood cuttings. Twenty-six cuttings were taken, treated with a root-inducing substance containing eight milligrams of indolebutyric acid in a gram of talc. The cuttings were then placed under intermittent mist. By July 14th, twenty-one of them had developed excellent root systems and were potted. In the Boston
area, softwood cuttings taken during about the third week of June and placed under mist should root in high percentages. Hardwood cuttings do not root.

Propagation by Seeds

The natural dispersal of cherry seeds is largely accomplished by birds. As fruits of *Prunus maackii* ripen, they soften, becoming shiny black and attractive to birds. Since birds have no teeth, they gulp their food; therefore, the hard-coated seeds pass unharmed through their digestive systems and are scattered about the countryside in droppings. *Prunus maackii* fruits ripen around July 1st and must be watched carefully and collected before birds can get to them.

Nursery practice when dealing with *Prunus maackii* follows the chain of events as they occur in nature: the fruits are collected, their pulps removed, and the cleaned seeds then sown out-of-doors in prepared beds, where they are protected from rodents. The seeds of *Prunus maackii*, like those of many Temperate Zone woody plants, have dormancies—protective “barriers” that prevent them from germinating at times that would be unfavorable to the survival of the resulting seedlings. When the seeds are collected, cleaned, and sown without delay, seasonal changes overcome the barriers and germination occurs in spring.

An alternative, and simple, method of overcoming dormancy is to provide artificial “seasons.” A polyethylene bag makes an ideal container for this purpose. The seeds are combined with a dampened medium of sand, peat moss, or such. The volume of the medium should not be more than three to four times that of the seeds. Keeping the bulk small is important, for at sowing time the entire content of the bag is sown. Twisting the top of the bag and binding it with a rubber band makes it vapor-proof for the full pre-treatment period.

Propagating *Prunus maackii* by seed requires two stages, warm stratification and refrigeration. Warm stratification is provided by placing the container in a warm location, such as a windowsill, for four months. Full sun should be avoided as it could result in overheating. The container is then moved to a 40 degree Fahrenheit refrigerator for three months. Thus prepared, the seeds should germinate rapidly.

Propagation by Budding

Budding is an inexpensive way to propagate *Prunus maackii*, requiring neither the facilities nor skill, nor the meticulous aftercare, that grafting does. It is economical of propagating material, since only one bud is needed to produce a propagant.

To prepare for budding, line seedlings out in spring, spacing them about four inches apart in rows about twenty inches apart. They are ready for budding in the summer of their second growing season, when buds are inserted. The buds remain inserted until the next spring, when, before growth commences, the stocks are cut off just above the buds.

Alfred J Fordham was affiliated with the Arnold Arboretum for forty-eight years, retiring in 1977 as research horticulturist. A member of many professional societies, he has received numerous awards for his research on plant propagation.