

Juniperus davurica, started as a graft in 1951, is now two feet wide and 8-9' high. It is in all ways similar to Swedish Juniper except it is hardier and less subject to wind damage.

Juniperus horizontalis is native in all the northern states across the continent to the Rocky Mountains, and occurs in variations of color, height, foliage, and growth habits. The most popular in this group is "Andorra" with a green color in summer and a plum color in winter, a plant that matures at less than 2' high. The form *alpina* is the tallest with horizontal ground branches from which other branches grow vertically, becoming 3-4' high. It is not an attractive plant. 'Bar Harbor' is the lowest of all, less than a foot high with a year-round attractive green foliage. There are several good blue clones; "argenteus" has a fine blue color with long whipcord branches on a plant that becomes 18" tall; "venusta" is a darker blue and very low, less than a foot high at the center. 'Wiltoni' and "Blue Rug" are so similar they may all be the same plant. "Gray Carpet" has a gray-blue color with short branches, the mature plant 18" high. One of the most attractive plants in this group is one called J. h. "filicinus minimus" (small fern-like foliage). A twenty-five year old plant is 15" high in the center and 8' in diameter. The short branches have small and crowded foliage; the summer color is dark green, the winter color a bluish green.

Juniperus procumbens, Jap-garden Juniper, has long been popular and commonly grown. One plant is now 3' high in the center and 15' wide, very dense in growth with all branches turning upward slightly. The color is bluish green and all needles are sharp.

There are two hedges of Junipers. The oldest is 15 years and is made of staked common Pfitzer. The hedge is 4' high and 4' wide and in good condition with a good bottom line at the base. The other hedge is only 4 years old and planted with *Juniperus virginiana* "O'Conner." This originated as a witches' - broom on a *J. virginiana* f. *glauca* in the former Donaldson Nursery, Sparta, Kentucky. The plant has a natural globe shape; no leaders have been produced so far. The foliage is steel blue on rather long branches; it is a much faster growing plant than the parent. At the present time this is a fine looking hedge.

MODERATOR HILLENMEYER: Thank you very much, Mr. Nordine.

Our next speaker this morning is Mr. Alfred J. Fordham, of Arnold Arboretum, who will speak to us on Winter Survival of Some Difficult Cuttings.

WINTER SURVIVAL OF SOME DIFFICULT CUTTINGS

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Many kinds of cuttings which root easily present a survival problem during the subsequent winter, for when potted or flatted after rooting they go into a dormancy from which they never recover. In

an effort to avert this loss of material a method of handling these difficult cuttings without disturbing them was tried. Plastic flats were filled with rooting medium suitable for the material being tested, the cuttings inserted and the units placed in the propagating case. When rooted they were left in the flats, given a light liquid feeding, and hardened off. In November the units were transferred to cold storage and in March were returned to the greenhouse where new growth soon appeared.

Enkianthus cernuus rubens and *E. perulatus* are two subjects that have shown very poor winter survival. This slide shows 30 rooted cuttings of *E. cernuus rubens* which were left undisturbed before overwintering; all of them survived. Twenty-four cuttings of *E. perulatus* were treated similarly and of them 21 were planted out this spring and are in excellent condition. In contrast twenty-five excellently rooted cuttings of *E. perulatus* were transplanted to flats in the normal manner after rooting and in spring all were dead.

Rhododendron prunifolium which with us has always shown some losses in the first winter survived at the rate of 121 out of 130 cuttings.

Viburnum carlesii was also tried. Twenty cuttings were left undisturbed while 20 well rooted cuttings were potted. From start to finish these lots were kept side-by-side. Those not disturbed showed a complete survival while the control which was potted survived at the rate of 35% which for this plant is very good.

Not only was survival improved using this treatment, but by eliminating the intermediate steps of potting and handling time and labor were saved.

MODERATOR HILLENMEYER: Thank you, Mr. Fordham.

Our next speaker this morning is Mr. Case Mahlstedde of the Mahlstedde Brothers Nursery, Cleveland, Ohio, will speak to us on A New Technique in Grafting Blue Spruce.

A NEW TECHNIQUE IN GRAFTING BLUE SPRUCE

CASE MAHLSTEDDE

Mahlstedde Bros. Nursery
Cleveland, Ohio

Advantages of grafting blue spruce on unpotted understock are: Save the time of potting up and room in the greenhouse. You can put graft lower on the understock.

The disadvantage is that the graft does not make quite the growth as on potted stock.

To begin with, we ordered 500 transplanted Norway spruce about pencil thickness for early spring delivery. We like to graft as soon after the middle of March as the stock can be had, and start grafting right away, leaving the understock in the cool barn. Take out a bundle at the time, make it ready for grafting and put on a scion 1 year's growth when heavy enough; otherwise, a scion with two