

him. The constant effort to improve and to contribute are apparent to anyone who has worked with him. Ladies and gentlemen, it is a great honor for me to present the Eastern Region 1976 Award of Merit to the person who served as the Eastern Region President in 1970, Mr. Tom Pinney, Jr., Evergreen Nurseries, Sturgeon Bay, Wisconsin.

The banquet speaker was Mr. Phillip Alampi, Secretary of Agriculture for the State of New Jersey.

QUESTION BOX

The Question Box Session was convened at 8:15 p.m. immediately following the annual banquet. Mr. Ralph Shugert and Dr. William Snyder served as moderators.

MODERATOR SNYDER: Ben Davis, have you tried grafting peach cultivars onto *Prunus besseyi* or *P. tomentosa*?

BEN DAVIS: The paper I presented dealt with producing standard trees but we have used *P. besseyi* as a dwarfing rootstock. We have never tried grafting them; we T-bud them but when we used *P. tomentosa* we had very poor results so we now T-bud only on *P. besseyi*.

MODERATOR SNYDER: Were the bench grafts you made done by hand or machine?

BEN DAVIS: We bought one of those grafting machines and so we made them both ways; I had a count made but after looking at the figures I'm not sure they're correct. This year we made about 25% of our apple grafts on the machine and, as a rough figure, we got about 25 to 30% take as compared to 50 to 60% by hand grafting. We were saving \$19/1000 grafts in labor costs by using the machine but when we only get 25% take this isn't very good.

MODERATOR SHUGERT: Harold Stoner, what is the cost of your finished sewage sludge compost per cubic yard?

HAROLD STONER: This is still experimental and everything we use is given to us. The only cost we have is transporting the material from the treatment plant to our nursery and this amounts to about \$1/yd. I will probably have these figures for you next year but at present I just haven't figured it out.

MODERATOR SHUGERT: Could Bruce Briggs explain his pallet or box technique of sticking cuttings — size, depth, handling?

BRUCE BRIGGS: The size of the box was determined by the way they fit into the sheds and the way they are handled by the equipment. We began with a 4 × 8 foot box but are now using a 4 × 6 foot size. They are 6 inches deep and made of steel with 2 by 4's beneath to hold them off the floor. We are using

sawdust and perlite in the box as a medium because of the lightness; we use this for almost everything except conifers which we stick in straight perlite with sawdust beneath. The boxes are moved from one area to another with the forklift tractor. They are set down in the propagating area so that the openings beneath them line up and this forms two tunnels beneath them. The floor is heated and this traps heat beneath them. We have controls every 12 feet so you can change the conditions every 12 feet down the rows of boxes.

We are having a problem with algae on the floor because we are running the mist 12 and 14 hours a day. I don't know what would happen if we used the porous concrete which was mentioned today — that is whether the algae would eventually plug up even the porous concrete.

ELTON SMITH: The porous concrete needs to be only about 2 inches thick and we've had no trouble running small tractors over them. Also, the floor is cleaned with a small industrial cleaner and this is apparently taking care of any algae problem.

MODERATOR SHUGERT: Mark Cunningham, how many years are you away from producing clematis from tissue culture? And is your total *Gypsophila* 'Bristol Fairy' production by tissue culture?

MARK CUNNINGHAM: I don't know when we'll have a breakthrough on the clematis. I've been working on it for 2 years now and have produced large amounts of callus tissue but I have not been able to get the callus to break bud. With respect to the *Gypsophila* question, only our stock plants are produced by tissue culture.

MODERATOR SNYDER: Jake Tinga, has any experimental work been done using other than plain water in the radiation barrels?

JAKE TINGA: I have heard that in Maryland 6 inch rock and a gallon of anti-freeze in barrels is being used but I personally feel that if I have to go to this much trouble I would just as soon put in a second barrel and double my radiation.

MODERATOR SHUGERT: In a recent publication of the American Rhododendron Society there was an article stating that, contrary to popular belief, old rhododendron plants produced the best cuttings and that continued propagation from young plants will lead to the eventual decline of the cultivar. I would like to have some discussion on this point.

JIM WELLS: This is a reprint of an article written earlier by Guy Nehring and I was dismayed when I read it because I think it is repeating a fallacy — I think it is quite wrong. Most of the

standard rhododendron cultivars that we have today have been around for a long time, many going back to about 1850 in England. I can't speak for what the plants were like then as compared to now but I can say that in my 30 years of growing rhododendrons such as 'Roseum Elegans', I have seen no reduction in the vigor of the plants from what they were when I first started growing them 30 years ago. This proposition has also been put forward for other plants, such as roses and carnations, and I believe the deterioration that has been observed for such crops has been due to the infection of these crops with viruses in the past. But I must emphasize that during 30 years of working with rhododendrons I've observed no reduction in vigor of any of the cultivars.

ANDY KNAUER: Plants which are grown for many generations under many types of environmental conditions do have a propensity for somatic genetic change and I think that such changes, not necessarily "declines", can account for a number of changes which have been observed. When this occurs, we can end up with a multiplicity of clones all with the same name.

GUS MEHLQUIST: What Andy has said is true but I have observed another situation in the case of 'Roseum Elegans' because it was often grafted on 'Roseum Elegans' seedlings. Occasionally the rootstock would sprout and produce a plant so close to 'Roseum Elegans' that you could hardly tell them apart. I think that some of these, for instance 'Roseum Elegans Pink', have simply come up from the rootstock.

With respect to Mr. Nehring, I think he had something else in mind. He was influenced by an article he read which indicated that plants do deteriorate with rapid propagation. This is true with plants where virus is a factor but, thus far, there is no indication that viruses are a factor in rhododendron production. One point which Mr. Nehring explained to me and was not made clear in that article is that when you take cuttings repeatedly from fast growing plants you often have cuttings which do not have enough carbohydrates to make a good plant in the normal length of time. If you place such cuttings in a Nehring frame, which Mr. Nehring always used, you may end up with inferior plants because they never catch up. If these same cuttings are grown in a well-equipped greenhouse they will catch up.

MODERATOR SHUGERT: What is the best way to get rooted cuttings of *Acer*, *Viburnum*, *Prunus*, etc. through the first dormant period following rooting?

JIM WELLS: Use supplemental lighting.

PETER VERMEULEN: If you use supplemental light the

cuttings will flush and grow and there will be no dormant period; the question referred to getting them through the first dormant period following rooting and there may be some reason why this individual wants them to go into dormancy. We have experience with all three of these genera from softwood cuttings. We carry them through in a cool, controlled temperature structure at 36° to 40°F. They go into dormancy after rooting and are allowed to flush gradually in the spring.

JIM WELLS: In my brief respond "use supplemental lighting", I did not mean that this was the entire answer. I believe it is important for many plants that can be rooted and then do not come through the following year. The first thing needed is to get them to make a move towards growth; get the buds to swell or get some new growth on the top of the cutting. After the new growth has been obtained then you must do as Pete has said, carry them through in a controlled, cool environment — you can't just let them freeze.

BILL CURTIS: In our operation we hold the plants until they're well rooted and then put them out in a coolhouse and leave them until they start growing in the spring. As soon as they start pushing in the spring we pot them. We have very good luck using this method with the deciduous magnolias, viburnum and similar plants.

MODERATOR SNYDER: In visiting Princeton Nurseries yesterday, I understood that they fall sow *Cercis canadensis* with no scarification treatment. Could someone verify this for me?

BILL FLEMER: The seeds are not scarified; they are a very northern strain (from Wisconsin) and have a pronounced dormancy requirement, as opposed to those from more southern areas. They are sown when we receive them, about October 15, with no scarification. Their dormancy is satisfied in the open ground during the winter and they germinate very well in the spring.

MODERATOR SNYDER: Were those seeds hard or were they soft?

BILL FLEMER: We received the seeds in the pods and so they are not as hard as if you were to buy them from a seed dealer. We immediately removed them from the pods and sowed them in the field.

MODERATOR SNYDER: Another question for you, Bill: what is a reliable, safe herbicide to use prior to sowing seed in the fall (October)?

BILL FLEMER: I don't know of a safe one and I wouldn't use one in the seedbed areas. What we do, is to treat with Vapam in the fall to kill as many of the weed seeds as possible.

We apply the Vapam, till it in and then put on 2 inches of water from the irrigation lines to seal in the gas so that it will do its work. But I would be very much afraid to use any herbicide in the seedbed area. With deep-sown fall seed we have treated with Paraquat during warm spells in Jan. and Feb., but this should only be used on seed which are planted 1 inch or more beneath the soil.

BEN DAVIS: We use locally collected *Cercis* seed and find that we have to scarify them for 20 to 30 minutes with sulfuric acid and then stratify for 60 days.

With respect to the question about a herbicide for seed beds, we fumigate with methyl bromide. One thing we tried this year — not in seedbeds, but on peach seeds — was the use of Simazine at 2 lbs of 80W/A applied in an 18 inch band. We had fantastic weed control and the peach seedlings seemed to grow better than those which were not treated.

MODERATOR SNYDER: I would like some comments on rooting *kalmia* cuttings.

GERRY VERKADE: Dr. Jaynes doesn't feel that hormones will help in the rooting of *kalmia* but I do. It is also important that you stick them in a vapor proof chamber with a peat mix and bottom heat. Although Dr. Jaynes says that October is the best time to root them, I'm beginning to think November is better. One batch of cuttings which I stuck on October 15 and treated with 0.8% IBA gave 95% rooting by January but the big problem is to get them to break after rooting. About 60% of these cuttings have started growth but the others are just sitting there.

Dick sent me 12 cuttings of one clone with a note which said "impossible to root". This was a challenge to me so I treated two cuttings each with 5 different hormones or combinations and grafted two so I wouldn't lose the start. The 2 cuttings treated with Chloromone both rooted, so that's 100%. Those that didn't root were still alive so I grafted them also and will hope to try them again this year.

VOICE: I think it is very important, as Gerry has said, that you use a tent in which to root them and not mist; the rooting will go down considerably if you use mist. Also, it takes about 4 to 5 months for most *kalmia* to root but the rooting is very much dependent upon the particular clone. Dr. Jayne's No. 137 Redbud roots about 70% for me but others will root up to 90 to 95% using 1% IBA with a little Benlate and Manzate added.

MODERATOR SNYDER: Do we have a chemical that controls juvenility in woody plants?

DICK ZIMMERMAN: Gibberellins are the chemicals that have as great a role as any in controlling juvenility. There are

many different gibberellins and the chemical structure of the compound is very important to its action but we still have a long way to go to understanding its role and importance in controlling juvenility.

MODERATOR SNYDER: What standard is used for camper-down elm (*Ulmus* × *Vegeta* 'Camperdownii')?

BILL FLEMER: *Ulmus pumila*.

JORGE LEISS: *U. pumila* makes a terrible bole with camper-down elm. Use English elm (*U. procera*) or a hybrid if you can get it.

MODERATOR SNYDER: Is there a compatible rootstock for *Nyssa sylvatica*?

BILL FLEMER: Use *Nyssa* seedlings.

MODERATOR SNYDER: What is a good understock for *Corylus avellana* 'Contorta' that doesn't sucker?

BILL FLEMER: *C. colurna*.

JORGE LEISS: That will sucker; put *C. contorta* on its own roots and let it sucker.

BILL FLEMER: Jorge is right in that all *Corylus* understocks will sucker but there is a graduation. If you use *C. americana* it will sucker terribly, on *C. avellana* it will sucker quite a lot but we get the least suckering on *C. colurna*.

MODERATOR SHUGERT: Is anyone propagating *Alnus glutinosa* vegetatively?

JORGE LEISS: We have propagated by cuttings a cultivar called 'Imperialis', which is a nice cutleaf form. We use No. 2 Hormodin and it roots in about 10 to 12 days; it roots very easily but *A. glutinosa* is usually propagated by seed.

MODERATOR SHUGERT: Will Pete Vermeulen please explain how he reuses the plastic in his houses.

PETE VERMEULEN: Several people noticed that we were rolling our plastic off and we've been doing this now for 3 years. Our houses are of the quonset style, 15 feet wide and 125 feet long. The houses have a 2 × 4 furring strip along the bottom on each side. The poly is nailed on to the 2 × 4 with a 1 × 2 furring strip and the poly is run across the house, pulled drum tight and nailed to the other side. On the second side we nail the furring strip with double-headed nails. In spring we remove these double-headed nails; the furring strips used are 10 feet long and we have one person for each 10 foot section. We begin rolling the plastic, attempting to keep it straight and tight and we continue to roll right over the house and down to the other furring strip where it is tied down and then covered with black plastic to keep the sun off of it. These houses are running

east and west so we always roll from the south to the north side. When fall comes we simply reverse the process and roll the plastic back over to the other side and renail it. Some of the polyethylene we are using for the third year. We have tried several different plastics but the one that has proven best for us we obtain from Growing Systems, Inc., 2951 North Wells Street, Milwaukee, Wisconsin 53212.

MODERATOR SHUGERT: Dr. Snyder and I wish to thank all of you for your participation in the Question Box Session. It has been our pleasure to serve you as moderators and we will now adjourn.

Thursday Morning, August 26, 1976

The moderator for the morning's program was Richard Bosley.

UNUSUAL PLANTS IN JAPANESE NURSERIES

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Over the centuries Japanese horticulturists have developed an extraordinary number of cultivars and training techniques which are unfamiliar to American gardeners. In the spring of 1974 I spent several months in Japan visiting gardens, nurseries, botanic gardens, and natural areas in an effort to familiarize myself with the native and cultivated flora.

There are several nursery areas where unusual plants may be seen in abundance. Angyo, a few miles north of Tokyo, is one of the major centers. In this district may be found a great many small specialty nurseries, some of which may occupy 1/2 acre or less. Although in some cases the stock plants may be grown directly in the ground, more often all plants are grown in ornamental containers of varying size. Usually they have been carefully pruned and shaped as specimen plants. Most of these rare dwarf, contorted, or variegated plants will continue to be grown in this way when they leave the nursery. If they are used in the landscape, they may be planted as accents in small-scale compositions. Many similar nurseries are located in or near Ikeda and Yamamoto, south of Osaka. Among the specialties of these nurseries are bonsai and bonkei (tray land-