FRIDAY EVENING SESSION

December 6, 1968

PLANT PROPAGATORS' QUESTION BOX

The Question Box session convened at 7:40 p.m. in the Ontario Room. Mr. David Patterson was moderator.

DAVE PATTERSON MODERATOR: I'm delighted so many are here so early. I worried for two days that we wouldn't have enough questions; now I'm worried that we have so many we won't be able to cover them all. Without introductions of any kind I'm going to start right off with an easy question. What is the procedure for rooting *Pinus strobus?*

SID WAXMAN: I'm not going to give any recommendations as such but there are individual trees from which cuttings can be rooted. I know of one and have rooted cuttings taken in May wounded and treated with Hormodin 3 and Captan and placed in mist. They did take quite a while to root.

JOHN ROLLER: There are quite a few individual white pines that will root using Hormodin 2, mist and sand. I've noticed two Tanyosho Pines that in grafting it with moist peat around it, roots came out as quickly as the union is made. These were taken in early June from mature growth.

RON HUROV: There was a report from Japan several years ago where they rooted *Pinus strobus* using silver nitrate plus IBA. When they used IBA alone they didn't get the rooting.

MODERATOR PATTERSON: Two years ago someone told of rooting cuttings after leaving them in the trunk of a car for several days. Have there been any further developments in this area?

LEN STOLTZ: We ran a few tests using *Ilex, Taxus,* and *Osmanthus.* It appeared possible that there may have been some etiolation effect or some effect of high temperature. We used various combinations of high temperature, darkness and length of time stored. In all instances the treatments were a inferior to sticking the cuttings immediately.

MODERATOR PATTERSON: Please list a few cases or conditions in the grafting of pines where two needle on two needle, three on three needle, etc. does not always hold true.

GERRY VERKADE: I'm interested in this question also. Could anyone give me a stock for *Pinus cembra?* I've had no success with any stock I've tried.

BILL CURTIS: We don't pay any attention to the number of needles; we graft everything on *Pinus contorta.* One of our neighbors goes out in the summer and grafts this way with phenomenal success, so we now put everything on *P. contorta.*

ROY NORDINE: Some of the confusion here arises from the fact that not all five needle pines have five needles. They

belong in the five needle group but don't have five needles e.g. *P. bungeana* has three needles. You can't count the needles and tell which group it belongs to and I feel this is the basis of the problem.

JOE CESARINI: We graft *Pinus cembroides monophylla,* a one needle pine, on a five needle pine and it works quite well.

MODERATOR PATTERSON: But that is in the strobus or five needle class as Mr. Nordine just pointed out.

JOE CESARINI: I know I was giving it as an example.

VOICE: Those with one vascular bundle in the needle are compatible, those with two vascular bundles are not.

MODERATOR PATTERSON: Should the white shoots developing near the union on winter grafted crabapples be broken off before they are planted out or left on.

MARTIN VAN HOFF: Break them off.

MODERATOR PATTERSON: Will *Acer griseum* propagate from root cuttings.

AL FORDHAM: None of the trifoliate maples will reproduce from root cuttings.

MODERATOR PATTERSON: Can anyone give information on the budding of *Acer palmatum* or *Fagus sylvatica* varieties. What technique and timing are used.

BILL CURTIS: On the West Coast we bud maples in the greenhouse or field in August when the buds are hard enough to take. They are budded quite high using a double bud or bud stick and sometimes we get 6-8" of growth before frost comes.

JOERGE LIESS: In British Columbia one grower buds both maples and beeches in late August when they are quite hard and he has good success with both.

MODERATOR PATTERSON: Are there any weeping forms of *Acer* species other than the cutleaf Japanese Maple?

ANDY KNAUER: There is a weeping form of the Silver Maple, 'Beatie Weeping Maple', which is very weeping, it is not the same as 'Wieri.'

HARRY HOPPERTON: 'Beatie' is an improved 'Skinner' with a little larger leaf and better grower.

MODERATOR PATTERSON: Where can the vine *Schisandra* be obtained?

ANDY KNAUER: The Stribing Arboretum in San Francisco.

MODERATOR PATTERSON: What is the best method of germinating *Cedrus deodara?*

WALTER BROWN: On the West Coast we sow fresh seed without treatment in flats in either a cold frame or lath house and obtain reasonably good stands. The seed flats are then cold stratified to pick up any seed which didn't germinate.

JOHN ROLLER: Around the Gulf Coast area the seed germinate very well sown outdoors. Farther north they can be

planted in seed flats in the greenhouse or kept in cold storage and sown in the spring, but germination will not be as good as sowing outdoors immediately in the Gulf Coast area.

MODERATOR PATTERSON: How can *Fagus grandifolia* be vegetatively propagated?

DENNIS BRUCKEL: I rooted some this summer with no trouble, cuttings taken in late July and placed under intermittant mist in perlite.

BILL MARSING: I also rooted some this summer but the roots rotted off because of too much water in the medium after rooting.

CHARLEY HESS: The beech is often used as an example of the fact that the juvenile portion of the tree is at the base. If someone wants to try it, I'd suggest taking the cuttings from the lower portion of the tree which is theoretically more juvenile and may have a better chance to root.

AL FORDHAM: Why all the concern about rooting American Beech, are there any variants that are worthwhile.

MODERATE PATTERSON: I don't know; it is a rather stable species but I was assumming that someone must have had a reason for wanting to propagate it vegetatively, such as a variant.

LESLIE HANCOCK: Up here the squirrels get all our esed, so we can't get any.

MODERATOR PATTERSON: Is anything being done about the nomenclatural problem, specifically concerning dwarf conifer introductions?

ROY NORDINE: There is a committee in England working on this problem but it is difficult to get even two people to agree on any one common name. All taxonomic names are in constant change and let's just leave it there.

JOE CESARINI: I think maybe this organization ought to do something about it. I would be willing to donate my slides with the names on them that I have. I don't know if it is the proper name. With such contributions from other people from all over the world perhaps later we could get together and study the slides and descriptions and arrive at some proper nomenclature for these plants that we grow.

CASE HOOGENDOORN: Some of the mix-up comes from growers indiscriminately tacking names on plants they grow and sell.

MODERATOR PATTERSON: How can the dormancy requirements of *Stewartai pseudo-camellia* seed be broken?

AL FORDHAM: *Stewartia koreana* requires two pre-treatments, 5 months of warm followed by 3 months of cold. We presently have *S. peseudo-camellia* in test and I'll be able to give more specific information next year.

MODERATOR PATTERSON: Why can some things be grown from hardwood cuttings and others not?

CASE HOOGENDOORN: Why would you want to root anything from a hardwood cutting, you don't usually get as good

or as many breaks and they usually don't grow as fast.

CHARLEY HESS: Part of this is related to the ease of rooting. The more difficult-to-root materials require a softwood cutting since at this stage of growth there are more cells capable of forming root primordia, while in the hardwood stage the cells are more differentiated and it takes a lot more effort to de-differentiate these cells and form root initials.

MODERATOR PATTERSON: What is the best method of rooting and handling *Wisteria* cuttings?

AL FORDHAM: They root readily from softwood cuttings taken in June.

JOERG LIESS: We do ours in July and August and have no problems either.

JOHN ROLLER: There is also no problem with hardwood cuttings. Take them in December store them upside down and many will be rooted by the time you stick them out in the spring.

MODERATOR PATTERSON: What is a good understock for Mugho Pine?

ED MEZITT: Recently we've been grafting it on *P. nigra* but they change their character, they grow upright and lose the dwarf form.

JOE CESARINI: *Pinus contorta* is a very good, compatible understock for the dwarf Mugho Pines.

CASE HOOGENDOORN: I think the best solution to this is to root cuttings of selected plants of Mugho and use them for understock. John McGuire has rooted some of these and I think this is the only solution to keeping them dwarf. On any fast understock they're eventually going to "take-off."

MODERATOR PATTERSON: What is the best rootstock for *Populus tremula erecta* and can it be propagated from softwood or hardwood cuttings? I can answer part of this; we have rooted it from both hardwood and softwood cuttings and it roots rather easily.

JOERG LIESS: We graft the weeping form on *P. tremuloides* and it works quite well grafted high on a 6 foot stem.

MODERATOR PATTERSON: Can *Pieris floribunda* be rooted?

AL FORDHAM: It roots readily using 2,4,5-TP at about 5000 ppm on hardwood cuttings taken in the fall.

MODERATOR PATTERSON: What experience have members had with the growth habits of rooted cuttings taken from adult and juvenile wood?

BILL CURTIS: Several years ago I took cuttings close to the trunk and down low from a *C. deodara;* they rooted and I can see no difference in them and the parent tree I took them from except they are smaller.

CHARLEY HESS: This would depend upon the type of material you take it from. *Hedera helix* taken from the juvenile groundcover form will reproduce this form but if its taken from the mature portion of the plant you will get the shrub form. There may be in some plants, a more rapid expression

of the mature characters, such as flowering in apple, if it is taken from mature wood as opposed to a say, if taken from a watersprout.

MODERATOR PATTERSON: What are the pros and cons of using cuttings of fruit and nut trees as opposed to budding or grafting?

CHARLEY HESS: More interest is now being placed on dwarf rootstocks for fruit trees and you'd have a graft to obtain size control. On their own roots they would be of standard size.

RALPH SHUGERT: Another factor for fruit production in the plains and for climates which are severe in the winter is that many of the varieties on their own roots would never make it. Therefore root hardiness is an extremely important factor for grafting. Many apple varieties and clones are much hardier on some of the hardier crabapple varieties than they are on their own roots or even on seedling apple stocks.

MODERATOR PATTERSON: I believe this would apply to roses in some cases also. The next question is what advantages and/or disadvantages would result from propagating flowering crabapples from softwood cuttings from juvenile stoolbeds as is done for apple tree understocks?

PETER VERMEULEN: We have rooted crabapples from cutback parent plants. This enhanced juvenility on the new growth and they rooted rather readily. There is a varietal difference in rooting capability however. These plants when planted alongside of root grafts produced the same season grew 25-30% longer than the root grafts.

STU NELSON: One of the advantages is that a lot of the flowering crabapples have proved fairly susceptible to virus diseases, and the virus problem is promoted through clonal rootstocks. In England this summer they told me that when they took virus-free rootstock-scion combinations and put them back into a virus infested orchard, there was practically no transmission of the disease. They think the virus is spread primarily through clonal rootstocks. I would think that anything we could do to avoid the use of clonal rootstocks would be good.

HARRY HOPPERTON: Starks did this for a number of years but as they got older they blew over like the dwarf apples and they have since given it up.

JOHN ROLLER: Flowering crabapples are not too hard to root if you get the shoots down close to the bud union when they are 5-6″ long. They are very hard to root from hardwood cuttings but you can get some fantastic growth from them if they do root.

MODERATOR PATTERSON: Has anyone succeeded in rooting and growing on of *Hamamelis mollis?*

AL FORDHAM: Root them in a container from softwood cuttings taken in June. Do not disturb them after they have rooted but provide them a cold period. Then bring them into

the greenhouse and after they make some growth they can be moved quite successfully.

ED MEZITT: We also have no trouble rooting them. As for wintering them over, we pot them up and place them under mist, misting once every ½ hour or hour in a separate greenhouse. The mist is gradually reduced and they are stored in a 32-36° F house and they take off in the spring. I might ask if any of the members have tried *Hamamelis brevipatale;* I've quit growing *H. mollis* because this plant is far superior to it.

MODERATOR PATTERSON: Has anyone had any experience in potting and storing collected *Cypripedium,* the Pink Lady-slipper?

GUS MEHLQUIST: It can be readily transplanted to the kind of soil in which it is found growing in nature. If this is not done it just dies out after a year or two. This is undoubtedly a symbiotic relationship with some micro-organism in the soil which must be met. This apparently is not a problem with the white or yellow ones since they seem to replant with ease.

PHIL FISHER: In Michigan we find them only in old pine woods against old stumps in an acid soil. I've transplanted a few of them with only fair success.

MODERATOR PATTERSON: I have two questions which fit together so I'll read them both. What is the name of a good seed planter and what machines are available for the planting of small seed such as birch?

RALPH SHUGERT: The best seeder that I have ever used is a "Brillion" seeder; its a broadcast seeder. I'm currently using a "Planter-Jr" drill seeder which can be modified for numbers of rows per bed. For broadcast seeding I'd recommend the "Brillion", for drilling the "Planter-Jr"; it depends upon what you wish to do.

MODERATOR PATTERSON: Where can information be found on installation of low voltage heating? I'd like to use a 6″ x 6″ grid reinforcing wire.

AL LOWENFELS: There was an article in the Proceeding a while back on this.

CHARLEY HESS: Hans Peterson wrote an article on this about 1956 in the "New York Flower Grower" giving the equipment needed.

STU NELSON: The question mentioned 6″ x 6″ grid; this is defeating the purpose of low voltage heating which is being able to spread the heat out over more area by going to a smaller grid such as 1″ x 1″ grid.

CHARLEY HESS: A new product, which may not be on the market yet, is a flexible plastic which will conduct current. You can punch holes in it to provide drainage and give a uniform source of heat rather than a point source as a wire.

MODERATOR PATTERSON: Plastic houses have a great future in our industry. What are the merits of clear plastic and white plastic?

DICK VANDERBILT: If I had a choice I'd use white but it

seems that plastic manufacture is more art than science and they can't make the same product twice. This year we covered a house on November 15 and on November 16 it was in shambles so we're going back to clear plastic.

KNOX HENRY: Will you add any shading to this plastic?

DICK VANDERBILT: Yes.

KNOX HENRY: We've had a particular problem in the Toronto area with wintering over plants because of very sunny weather which gives us severe sunburn and desiccation. We are now using clear plastic with a white latex paint sprayed on with our power sprayer.

BEN DAVIS: We overwinter our lining out stock in the outdoor mist beds by covering them over with white plastic and we use it one full season and then pick through it and can use some of it a second season.

RON HUROV: Specifications on plastics are very important. We now have 10 variables which we have strict specifications for; one of the most important is the UV stabilizer. There is a U. S. Commerce Department publication which lists the specifications for plastics.

PETER VERMEULEN: We would like to stick with white plastic but couldn't get it last year. As I understand it, they didn't have enough orders and therefore couldn't tool up for it. But in using the clear plastic you must shade it because of the heat build-up under it and Klaas Van Hof has been using a very effective method of shading the clear plastic.

KLAAS VAN HOF: We dilute the latex paint about 4 to 1 with water and spray it on with a power sprayer. I think its a lot cheaper than the white plastic.

BRUCE BRIGGS: We dilute anywhere from 1 to 10 fold with water and the paint seems to prevent the breakdown of the clear plastic. We've used all different colors but are currently back using white.

ANDY ADAMS: I believe this plastic business is what is giving most of us our gray hair; two of our houses are ripped already this year. The problem appears to be quality, all of our breakage occurs down the seams of this material.

PETER VERMEULEN: The seam is the weak point and we overcame this by using a white plastc adhesive tape about 2″ wide. We cut small strips about 2″ long and stuck them across the seam every 4′ - 5′ inside or outside as soon as the house is covered. Then if the plastic does split at least you don't lose the whole house. You can get up there and repair it with this tape because it is stronger than the film and will hold it together even in a high wind.

MODERATOR PATTERSON: Is bottom heat necessary for an outdoor mist system?

MARTIN VAN HOF: Not necessary but it is beneficial.

STU NELSON: I agree with Martin but I think you can do it cheaper with hormones. Hormones and bottom heat do seem to be additive.

JOHN MCGUIRE: This probably depends upon your geographical location and in Rhode Island if you don't get around to making the cuttings when you should, you can take the cuttings later and not lose them during the winter if you use bottom heat. I think in this respect it is a distinct advantage.

PETER VERMEULEN: I agree also that bottom heat is beneficial but if you're in an area where electricity is costly, as we are, you might try hot water. We use ½" pipe about 6" below gound level, covered over with gravel (¾ - 1" gravel) and it seems to be working marvelously. The stone holds the heat and we get a uniform bottom temperature with circulated hot water.

MODERATOR PATTERSON: What about sphagnum moss for rooting of conifers?

JIM WELLS: I put the question in so I could answer it. A few years ago I reported that Hinoki Cypress would root very easily in sphagnum moss and this year I repeated it since anybody can do it once. Last January I filled a 4" flat with sphagnum and took about 30 cuttings treated them with 2% IBA and stuck them in the moss and placed them under the mist. They all rooted. My point is that it seems that sphagnum moss is a specific medium for this plant. I don't know why, but I think it ought to be tried on other conifers, I think it has potential.

VOICE: Is that shredded sphagnum?

JIM WELL: No, use it just as it comes out of the bale, moisten it, fill the flat and stick the cuttings.

MODERATOR PATTERSON: Now we have some questions in the area of herbicides. Has anyone found evidence of rooting retardation from the use of herbicides on stock plants of Rhododendrons or Azaleas?

JIM WELLS: We have used Casoron for a number of years on all grades of Rhododendrons and Azaleas and have yet to see one bit of a leaf affected by it.

MODERATOR PATTERSON: Any effects on cuttings?

JIM WELLS: No, not on any variety, at any stage or any age. We've used it on newly planted cuttings on up. We do use it at 75#/A which is half the recommended rate. I can always put on another 75# later but I can't take it off.

JOHN MCGUIRE: We have had some serious damage from Casoron on container grown plants with our light soils.

PHIL KOZEL: The effect of Casoron on container stock will depend upon the soil mix and the cultural practices. I used a heavier soil and had no problems with it on Rhododendrons this past summer but you will have to check this out on your own operations.

DR. PRIDHAM: We purposely tried to upset some plants with this material by adding a wetting agent and spraying it on. We did kill some Dogwoods and Taxus under summer conditions but where we used the granular form in the fall of the year we have had little if any damage at 10# active ma-

terial per acre; fall application of the granular form seems to be the safest way to use it.

ROY BROOKS: We put Casoron cloths on 3 well established *Thuya occidentalis pyramidalis nigra* in March and in June they were still weed free with no problem to the plants. On May 22 we applied them to 12 Polar Bear Azaleas at the time of potting but they did not survive. On July 1 we put the cloths on 12 more of the Polar Bear Azaleas potted on May 22 and the plants showed no ill effects as of July 30. We tried it on several other plants either at potting or after being established and have concluded that the cloths are apparently effective in controlling weeds but should be used only after the plants are well established.

BILL CURTIS: While we're talking about weed killers, the chemical people treated a bunch of my cans with Treflan using a coarse salt shaker after determining how much was needed per can. It worked very well on Juniper that had been canned for about a month. We had no weeds at the end of 2 months and no injury whatsoever.

PHIL CARPENTER: Injury has been reported on 7 species from Casoron this year. Leatherleaf Viburnum, Barberry, *Abies concolor* and *Euonymus coloratus* were four of these. You must keep Casoron out of the rootzone or it will kill the plant. I recommend that you follow the directions for the material you are going to use and if the plants to be treated are not on the label I wouldn't use it.

MODERATOR PATTERSON: What herbicide is recommended for control of grasses under shade trees being grown on for specimen sizes?

VOICE: Paraquat.

MODERATOR PATTERSON: This is a contact herbicide and might have to be applied more than once a year but it should be kept off the foliage; you can hit the trunk as long as it is not green.

MODERATOR PATTERSON: Has anyone had experience seeding directly into Treflan treated soil?

RALPH SHUGERT: A paper was presented in Fresno and will be in this issue of the Proceedings. I treated an acre of ground on August 28, 1967 and the first seeding was done on October 4 or 45-50 days after treating. Varieties seeded: *Prunus americana, Elaeagnus augustifolia, Corylus, Quercus palustris, Q alba, Juglans nigra, Lonicera tatarica, L. maacki podocarpa*, etc. seventeen species in all, fall seeded. The only ones showing injury as compared to the check were *Rosa multiflora, Lonicera tatarica* and *L. maacki podocarpa*. This year I've put in 3 acres and hope to maintain a weeding cost in seed rows of one man-day per acre per growing season. My program, if I can do it, will be to seed into Treflan in the fall, go over the top of the seedlings with Dacthol at 12#/A, 3 applications 45 days apart, cultivate, irrigate and hopefully reach my goal. I think it can be done in row seeded crops.

MODERATOR PATTERSON: If you have an unhealthy plant, is it possible to analyze to tell if the damage is from herbicides?

PHIL CARPENTER: You would have to do a bioassay by asking for information to find a very sensitive plant for the particular herbicide you suspect. Take the soil you suspect and plant this plant in it, also add activated carbon to a second lot of soil and seed into it also. What should happen is that with most herbicides the activated carbon will take care of it but the plant should die in the other. If this is the case the field could be treated with activated carbon.

MODERATOR PATTERSON: What is the effect of Ethrel on the regrowth of plants?

PHIL KOZEL: There is no information on this but I have heard of one report on roses and there were no adverse effects on roses; whether or not this would apply to other woody ornamental plants we'll have to wait and see.

MODERATOR PATTERSON: Is there any danger of applying this material to *Malus* in late September in the Midwest?

PHIL KOZEL: To date we have not noticed any adverse effects from 5.000 or 10,000 ppm rate.

DICK VANDERBILT: We tried this material on roses about a year ago and it did a good job at 5,000 and 10,000 ppm but they were hurt; evidenced by delay in breaking or death of the plant.

MODERATOR PATTERSON: Have the morphactins been used to retard the growth of grass?

PHIL KOZEL: Yes they have in Germany where they orginated. The morphactins have a very distinct advantage when applied to grass in that they retard terminal growth of grasses but promote tillering.

MODERATOR PATTERSON: If Off-Shoot-O is used at rates exceeding those recommended will it injury rhododendrons and azaleas?

PHIL KOZEL: Woody plants are not as suceptible to these compounds as are floriculture crops. Last year I used Off-Shoot-O at 8, 10, and 12% with no injury at all. You do not even have to wash this material off the foliage. The optimum concentration appears to be 10% used at the time the new growth is about ½" long. I have not used this material on outdoor grown materials but work out of Florida would indicate 5% Off-Shoot-O should be used. If your going to use this material I suggest you try it on a few plants first. Proper coverage is very essential on azaleas. Without good coverage you get shoot growth and it is just as difficult to go back and prune these off as it would have been to do the whole job manually.

MODERATOR PATTERSON: This question is addressed to Dr. Reed. Did B-9 used as a rooting hormone influence subsequent plant growth in any way?

PAUL READ: Not unfavorably, generally it did slow growth initially but because they rooted more rapidly they also started growing sooner and they will outgrow the B-9 treatment.

MODERATOR PATTERSON: How can Clematis wilt be prevented?

DICK VANDERBILT: It can be cleaned up with a combination of CM-19 and Parzate; one pint of CM-19 and 2 pounds of Parzate per 100 gallons of water. Sprayed weekly this will clean up even a very bad infestation. The fungus itself is an *Ascochyta* and if you'll avoid overhead watering you will do a lot to avoid the disease.

MODERATOR PATTERSON: What is the best fungicide to use in a bareroot refrigerator storage?

RALPH SHUGERT: Spray the floors, ceilings and walls with Bordeaux about 10 days before you start bringing the plants in as a preventive.