Generally speaking, working with some of these new seedlings is a real challenge to the poinsettias propagator and it appears that a great deal is going to have to be learned before this new crop of poinsettia seedlings can be handled without any problems.

## PROPAGATION OF HYDRANGEAS

WILSON MCCAHON
*McCahon & Dahlen*
*Half Moon Bay, California*

The two crops I would like to discuss with you are African Violets and Hydrangeas. Our production of Violets is a six months' program, and of the six months three and a half months are in the propagating house. The steps we take in preparing this house are:

1. Heavy shade in summer with cold-water paint. Winter rains will reduce the shade in the winter, but the glass is never allowed to become bare.
2. Sterilizing with steam all propagating mixes, flats, etc. Good sanitary house keeping procedure should follow.
3. Humidity is kept high by wetting walks and under the benches, but never on leaves.
4. Cuttings should be approximately three inches long and spaces sixty cuttings per flat, which is 23″ X 41″. They are left in flats until plants are large enough to shift into four inch pans for finishing.
5. Temperature — 68°, night
   80°, days
   Water temperature and house temperature never vary more than ten degrees.

Hydrangeas fit well into our program, and will work the same in most flowering pot plant ranges because they do not have to be put into greenhouses for forcing until January. They force easily for Easter and Mother's Day. Our methods of handling Hydrangeas are:

1. Cuttings taken right after Easter. The propagating house has to be heavily shaded.
2. Steam sterilize rooting medium, flat, etc.
3. Mist system for approximately two and a half weeks. Ready for potting in three and a half weeks.
4. Stub cuttings preferred.
5. Potted ino 4″ pots in May.
   Pinched in June.
   Field in September.

In order to grow our greenhouse crops efficiently and to maintain quality, it is very important to have planned production of a good assortment of crops so we may keep experienced help twelve months of the year. For example, during the slack Violet season we find Gloxinias and Aphelandra do well under

the same conditions; Hydrangeas fit well in the same greenhouses between the Easter lilies and Poinsettias.

DR. CLARKE: Is there any interest in that field in meristem propagation? Recently we had the question raised with respect to rhododendrons. We have a rhododendron foundation which is in the process of bringing over a great many rhododendron species from Europe. Some of them are pretty difficult to propagate. The question that's arisen is whether this method of propagation can be used for a woody plant like rhododendrons.

VOICE: Tell me what it is.

DR. CLARKE: Well, as I understand it, the orchid people have found that by taking a tiny bit of meristem out of the growing point that's just started to push and growing it in nutrient solution, it forms a tiny pseudocorm. It can be divided and divided and will continue to grow in a nutrient solution so that in a course of year or so a particular plant could be propagated into perhaps thousands of individuals. With orchids there's been two problems. One is if you produce a very fine hybrid it takes a great many years to propagate it and get enough for commercial production. Another factor has been virus. With this method growth seems to be able to get ahead of the virus. I understand there is a concern in Los Angeles now that's commercially propagating orchids on the basis, so much a plant. They'll give you a little plant, a dollar apiece, or something like that. A question has been raised as to whether this would work or not with rhododendrons and I presume to any woody plants.

DR. DALE KESTER: I'm not familiar specifically with rhododendrons, but I do know that in a number of woody plants, the propagation of this small meristem has not been possible. It's been done easily with strawberries and a number of things like carnations and geraniums that are relatively easy to propagate. For most of the woody plants where it's been tried, you can get the excised shoot to grow for a short time but some thing is required that is not known. So as far as I'm aware it's not been done with woody plants.

MR. BOB WEIDNER: Dr. Phillips from Maryland and Neal Stewart have been doing a lot of work on this. With the addition of intensive heat he can shoot these plants up. I don't see any woody ones there but he had a wide variety of plants. Intensive heat and intensive humidity can stretch a plant up rapidly.

DR. WESLEY HACKETT: We have tried this on *Hedera helix*, ivy. We found it is very difficult to do as compared to others like carnations or large stock (*Matthiola*) so there probably is a species difference. Carnations can only give one plant per apice. They establish a mother block of clean plants from this. It isn't quite like the orchid.

DR. ANDREW LEISER: Harry Kohl has tried it with azaleas but has not been successful yet. They live for a period of time, make little growth, and give up.

## II. Commercial Production of Fruit Trees

MODERATOR: Mr. Walter Krause

### DECIDUOUS JUNE BUD FRUIT TREES

WALTER MERTZ
*Armstrong Nurseries*
*Wasco, California*

Deciduous nurserymen are confronted with a myriad of problems, many of which are self inflicted. Not the least of these is our terminology or nursery jargon. I have always considered the terms "June bud" and "Yearling" as problems which the nursery industry has inflicted upon itself. A June bud may or may not be budded in June and a Yearling, which to the novice sounds like a year old tree, is actually a two year old nursery plant. Confusing as these terms are to some, they are the terms we use in the trade. Therefore, it might be fitting to start a discussion of deciduous June bud fruit trees with a working definition. I would like to suggest the following:

> The term "June Bud" refers to a budded deciduous fruit tree which is grown in a single season, achieved by early budding and rapid forcing techniques, produced primarily for the commercial orchardist who frequently contracts for the trees prior to budding.

To further clarify our understanding of the term "June Bud," as differentiated from a "Yearling," our discussion will center around several features which characterize this important type of deciduous nursery product and the techniques used in its propagation.

*The Deciduous Varieties Most Commonly June Budded*: The varieties of fruit trees which lend themselves most readily to June budding consist primarily of the stone-fruits including peaches, nectarines, almonds, apricots and plums. These are most commonly grown on peach seedlings, less often on plum cuttings and occasionally on almond rootstock. Our firm plants its seed and cuttings on a 3″ spacing, thinning to 6″ before budding. This is true of both June buds and Yearling stock.

*The Time of Budding*: The June bud is budded just as early as the understock and scion wood will permit. In our central valley of California such conditions are usually found by approximately May 15th. By this date, the understock may be 12″ or more in height and perhaps 1/8th″ caliper. The scion wood, which consists of the current year's growth, is usually large enough and mature enough by this date to permit budding.