when plants are moved from plastic houses to the outdoors, this does not seem to hold true for propagation material. Plants need an adjustment from one environment to another, the amount depending on the degree of change and the species of plant.

In summation, plastic houses can be as successful as glasshouses in propagation. Poor results in one or the other can generally be traced to improper attention to certain fundamentals of plant propagation.

Advantages of plastic can be listed as lower construction costs, construction by unskilled labor, less heat loss, less breakage repair and possibly a tax saving.

Disadvantages include necessity of careful ventilation, excessively high humidity, and yearly replacement of plastic.

The writer has had excellent results under glass, fiberglass, and plastics by following the proper basic plant propagation techniques.

MODERATOR BLANEY: Last night we promised you that we would have Bill Goddard talk about the propagation and growing of azaleas under artificial light. I see he has some very nice plants to show you down there. Frankly, I am very much interested in hearing what he has to say because this has been something that has interested me for quite some time. Any of you people who have attempted to grow or propagate deciduous azaleas and then grow them on from cuttings know what a problem it is. I think that all of you are looking forward to hearing Bill Goddard tell us his way of achieving the results he has on display right here before us in cans. Mr. Bill Goddard!

FORSTALLING DORMANCY AND INDUCING CONTINUOUS GROWTH OF AZALEA MOLLE WITH SUPPLEMENTARY LIGHT FOR WINTER PROPAGATION

WILLIAM GODDARD
Flora Vista Gardens
Victoria, B.C., Canada

The following is a resume of my experience in breaking dormancy and in winter propagation of *Azalea molle* with the aid of supplementary light which, until the past season, I have not been able to do under our climatic conditions.

Three hundred and sixty plants from June cuttings were used in this test. They were potted in 3-inch square plastic pots in August. The growing mixture by volume was 45% friable loam, 45% coarse nursery grade Canadian peat, and 10% coarse washed sand. From August to early October the potted plants were grown outdoors under heavy shade after which they were transferred to a heated plastic house. The minimum temperature was 45° F. Though air and soil were almost saturated with moisture, these conditions apparently had no ill effects on

the plants. At the time of housing, 60-watt incandescent lights at 3-foot centers were placed 20 inches above the tops of the plants. Within three weeks, it was apparent that growth was unsatisfactory, so it was decided to try Gro-Lux lamps[1] instead. There were a total of four pairs of 40-watt tubes mounted in standard fixtures supplied with reflectors. These were suspended 20 inches above the plants. The period of illumination was from dusk to dawn continuously till March. Under these conditions growth progressed at better than normal rate, necessitating a further potting into 4¼ inch square plastic pots in November. By February, the plants were in excellent condition so it was possible to take an average of three cuttings per plant. These cuttings rooted within 60 to 70 days — just as fast as the original cuttings taken in June. By May the February cuttings, which were rooted under normal light conditions, were first class, saleable 6-inch liners The stock plant propagated from the original cuttings were 18 inches high and well-branched.

Similar August-potted plants, not subjected to the supplementary light treatment but in the same plastic greenhouse. remained in a dormant state until April, approximately.

From the foregoing, it is obvious that the winter propagation of *Azalea molle* is possible with the aid of supplementary illumination.

Although these results are based on a continuous light period, it is readily realized that other possibilities exist in which supplementary illumination might be reduced without adversely affecting the growth of stock plants.

On the basis of encouraging results in other trials it is my intention to explore further possibilities of winter propagation of both rhododendron and azalea seedlings with supplementary illumination.

Now, a further observation. From the forcing which has been done considerably in Europe of the *Azalea mollis,* I see no reason why we cannot use *A. mollis,* by proper timing, as you do other plants, to bring them in as a winter flowering pot plant and have something out of the ordinary from the regular clone. This season we have so far taken around 1300 cuttings to test under lights. We put the lights on immediately after the cuttings are flatted up and placed under the mist. Previously the lights were not used. For quite a while they were rooted under the mist but with no additional light. The growth at this time this year is superior to our last year's production. Evidently this was due to the additional illumination. The rooting was faster and heavier. I noted one fact that we didn't notice at first. On the side of the lighted bench were flats of rhododendron, Jock and Elizabeth. It was strange to see that the Jock and Elizabeth plants were leaning north towards the source of artificial illumination rather than to the light that was directly

[1]Manufactured by Sylvania Electric Products, Inc.

overhead. I thought that was quite strange. Further, they made much more growth and were almost twice the size of normal Jock plants, which we find makes at least one flush of growth during the winter. Instead of that, under lights they make two, and start to bud on the ends of the terminals of the second flush of growth. Further than this, we have this year given our Experimental Farm 200 plants which have been potted in 3" square pots for the purpose of determining whether we need all this light and to find out the minimum light requirements of this deciduous group. This work is under the direction of Mr. Jack Crosley. Cuttings are being tried under at least I think, five or six photoperiods of various lengths We will know a lot more about it next spring. They have already been pinched back, by the way. The new growth on them is already ¾ inch to an inch long since the pinch. I don't know if any of you are familiar with the rhododendron, Robin Hood, which tends upon rooting to go into dormancy and sometimes will go through the summer without showing any growth whatever. So we put a few pots of this rhododendron under light and the response was instantaneous. We have also rooted for test under lights various species of azaleas. I'm quite interested to see how these will make out for fast propagation. However, the real intent of why I tried these lights was not for the intention of producing particularly a named clone to a faster or saleable plant. Rather I had the idea in mind of hybridizing some of our own named clones which are being introduced through the Dutch growers to see how fast I could push a generation through so that I could see the results of some of the breeding work in my life time and not in my son's. So I think, to a hybridizer, it offers tremendous possibilities for seeing some of their products, particularly of slow-growing rhododendrons that require such a long time to reach a flowering stage. The variety, Mrs. A. T. de la Mare, is one in mind. It certainly doesn't come up to size fast enough. In 1964 we will be having seed of our classes of azaleas which have been given different doses of irradiation for sowing under lights to see whether we have any mutations or differences occurring from possible alteration of the chromosomes.

MODERATOR BLANEY: Thank you, Mr. Goddard. Yesterday on the tour I didn't get a chance to see Jo Klupenger's place. I have seen it earlier. It was still under a stage of construction a year or so ago. I am just amazed every time I see the scope with which he is growing azaleas. I am sure we will all enjoy hearing and will benefit from what Joe has to say of his experience in growing azaleas under plastic. Joe Klupenger!