SATURDAY EVENING SESSION

October 5, 1963

This session convened at 8:00 P.M. with Moderator L. T. Blaney, presiding.

MODERATOR BLANEY: On the tour yesterday I noticed quite a lot of plastic houses. It brought back to my mind the fact that since the second World War we've really had quite a revolution in the technology and science of growing plants. We have plastic houses. We have growth-regulating chemicals. We have seen more and more the increased use of this marvelous thing which I, for years, have been interested in — the response of plants to photoperiod or length of day. We have this evening on the program several people who are going to talk about the use of plastics, these marvelous new products of the chemical laboratories. We also have a man who basically is going to be talking about the response of plants to photoperiod. We will start tonight by a talk from Mr. Ed Schultz on "Propagation in Plastic Houses", Ed!

PLANT PROPAGATION IN PLASTIC HOUSES

EDWARD W. SCHULTZ
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The use of plastic houses for propagation by our nursery is a method of keeping the cost of production down.

Two houses have been in use for the last six years. The smaller one has an overall dimension of 10′ X 40′ and the larger one is 20′ X 40′. They were placed in a north-south direction in order to utilize the more direct rays of the sun in the early morning and late afternoon. This may be a superior position for October and March. It did not allow enough sunlight during the four winter months when heat and light are at a minimum in this area. Future houses will be built in an east-west direction.

A 20′ X 40′ plastic house using a concrete foundation and rafters has a material cost of less than $200. A 32″ rafter spacing was designed for future use of fiberglass sheets for a permanent roof. Experiments with fiberglass the past three years proved to be very successful for propagation. It would be more adaptable to summer propagation when regular plastic becomes brittle.

At the present time we delay covering our propagation houses until September. By installing 4 mil plastic at that time of the year it remains intact until about July of the following year. Sometimes a slight shading of the plastic is given by

using a white, latex-base, paint which is thinned with water by as much as five parts water to one part paint. This is sprayed on the outside of the plastic with an insecticide sprayer. Later in the winter the rain removes most of this paint and the plastic is left relatively clear until warm spring weather warrants painting again.

Propagation beds are heated by electric cable. In one of the houses this was the only source of heat throughout the winter. In the larger plastic house a heater using fuel oil was set up to keep the air temperature higher during the rainy season.

In the plastic house without supplemental heat the propagation beds were kept at 70° F. and the air temperature varied according to the weather conditions. In general, the temperature remained around 60° F. during the rainy part of the winter. This is considered to be slightly lower than is desirable. During cold periods when the outside temperature fell below 25° F. frost often formed on the leaves of cuttings near the sides of the house. It did not appear to decrease the rooting percentage of most of the hardy nursery plants. It did delay the speed of rooting of cuttings.

In the plastic house with the additional heat, the temperature of the air was kept about 65° F. Since most of the heat rose to the top of the plastic house, an oscillating fan was used to keep the air circulating. This brings us to the major problem in plastic house propagation — adequate ventilation.

During the winter months our rainy and cloudy weather keeps humidity high both inside the house and out. Ventilation can be accomplished by the opening of the doors at each end.

Unlike a glasshouse that lets in a little air between the panes of glass, the plastic house is too airtight for optimum conditions for plants or cuttings. If it is too humid and airtight to grow a potted plant of any particular species, such as azaleas, one can be sure that cuttings of that species cannot root or even maintain a healthy condition for any period of time.

The pitch of the roof has a direct bearing on unfavorable damp conditions of the air and the cuttings. In a glasshouse, if the pitch is steep enough, water vapor forming on the underside of the blass will run off to the lowest point without dripping on the plants below. A plastic house will do the same on a still day. On a windy day the plastic has a whipping action that continually shakes moisture on the plants below. This constant cold mist is uncomfortable to people inside and probably has an adverse effect on rooting. Some varieties of plants defoliate under these conditions and others have a tendency to rot.

Air circulation by means of a fan inside the house is helpful in decreasing water condensation and its ultimate dropping. Upper vents or the use of double plastic could also help control this problem.

Although there have been reports of less plant "shock"

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

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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