

MODERATOR COLE: If there are no questions for Dr. Baumgartner, we will go right along to a talk by Tony Shammarello, A. M. Shammarello & Son, Nursery, South Euclid Ohio, on the subject of rhododendron propagation. He will tell us of his experiences with cuttings.

Mr. Shammarello presented his paper entitled "The Propagation of Rhododendrons by Stem Cuttings." (Applause)

THE PROPAGATION OF RHODODENDRONS BY STEM CUTTINGS

A M SHAMMARELLO

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I have been propagating rhododendrons from stem cuttings for the past 20 years. In the past it was a matter of luck in regard to the percentage of rooting obtained. However, with the aid of mist, polyethylene, and hormones, the percentage of rooting has increased and is consistent from year to year. Despite these new aids we have to adhere to the basic principles such as the time of taking the cuttings, the medium and amount of bottom heat applied.

I consider it of primary importance to have a stock block of plants to provide an ample number of healthy cuttings. We take our cuttings from mid November to mid December, since this time of the year seems to work out well for the rooting of most varieties. A cutting of about one quarter inch in thickness and from two to two and one half inches in length is used. Three or more medium sized leaves are generally left on a cutting, although if the leaves are quite large we trim off a portion of the leaf. Cuttings are then heavily wounded, dipped into 2 percent indolebutyric acid and inserted in the medium. The medium is prepared by thoroughly mixing together 80 per cent German peat, 10 per cent sharp, silica sand, and 10 per cent styrofoam. We maintain a temperature of 75 degrees in our rooting medium. At the time of sticking we thoroughly water the cuttings in, and usually they will require no further watering until they are lifted and potted. The greenhouse bench, which contains the cuttings has a 10 inch high polyethylene covered frame built over it. This cover, which is completely sealed is kept on the bench until the cuttings have rooted. Rooting usually takes place within 60 to 90 days.

We plant our rooted cuttings into a 3 inch peat pot and plunge these 4 inches apart in a 4 inch layer of Michigan peat in our greenhouse benches. They are then transplanted from the greenhouse after the 1st of June, and planted in beds 9 to 10 inches apart, under irrigation. This is the procedure which has enabled us to grow rhododendrons on a commercial scale. I hope this has been of some interest and I shall be glad to answer any questions which you may have later on. Thank you.

MR. ALBERT LOWENFELS (White Plains, N.Y.): What is the source of heat in your greenhouse propagation benches, electric cables?

MR. SHAMMARELLO: No, the heat is supplied by hot water pipes.

MR. MARTIN VAN HOF: Do you have any trouble with losses of transplants in the outdoor beds?

MR. SHAMMARELLO: No, they are planted in the late spring, and are usually well established when fall comes. We use very little fertilizer the first year, since we are not looking for a plant to grow to a height of 15 inches. We rather want a six to eight-inch plant which is good and hardy.

MR. LOWENFELS: I would like to ask one more question. Can you propagate all varieties, that is, the red varieties as well as the more easily rooted ones?

MR. SHAMMARELLO. I would say, yes. There are some clones that just won't root at all. We haven't been able to learn why.

MR. PETER VERMEULEN. Can you tell us how and where you wound your cuttings?

MR. SHAMMARELLO: We make a one inch wound on one side of the cuttings in such a way that we do not cut any part of the wood.

DR. REISCH: How high does the temperature go under the polyethylene covered frame which covers the bench?

MR. SHAMMARELLO: I would say the temperature under the polyethylene cover probably goes up to 80 or 90 degrees. It seems heat has never made any difference in the rooting response.

PRESIDENT VANDERBROOK. Do you put shade over your propagation bench?

MR. SHAMMARELLO: No, we do not, and in fact, we do not shade the greenhouse. The shade that results from water condensing on the inside of the polyethylene cover makes it unnecessary to shade the cuttings.

MR. HARVEY GRAY (Long Island Agricultural and Technical Institute, Farmingdale, N.Y.) I have a slide which illustrates the type of installation Mr Shammarello has discussed. With the permission of the chairman I would like to discuss this unit for a moment. We have modified an old grafting case. The polyethylene goes down inside the bench, across the bottom and up the other side. A wire, much like 2" x 4" mesh, turkey wire, is formed with a slight bow over the top of the bench. This is covered with a sheet of polyethylene. Plaster lath with a few shingle nails, keeps the material in place. Absolutely no inspection is required for a period of six weeks, at which time the cuttings are totally rooted. The type of cutting makes little difference, since we seem to get equal success with two per cent indolebutyric acid.

PRESIDENT VANDERBROOK: What is your source of bottom heat?

MR. GRAY: Hot water, circulated through a coil system set around 73°F. is used for the source of bottom heat. The peat in the bench is nothing but straight so-called, Dutch peat, or German peat. It should be uniformly moistened to the point that when you put pressure on it you will get only three or four drops of water coming from

it. If you moisten it to the point where water drains out freely, it is too wet.

MR. SHAMMARELLO: Thank you for showing your slide and for helping me discuss this subject, Mr. Gray.

(Editor's note). The following paper was not given at the meetings but has been submitted for publication in this section.

AN EFFICIENT NATURAL ELECTRONIC LEAF

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Last year at the annual meeting of the Plant Propagator's Society I mentioned the use of insect wings as a leaf for intermittent mist control. At that time I was rather hesitant to recommend its general use as it had only one season's trial. It was obvious that some improvements must be made to make it more efficient. To give the leaf a better proving ground, a permanent mist bed, 18' by 6' was constructed and a sectional wooden frame covered with polyethylene plastic was used for a cover. Burlap was used for shading. The nozzles used were the Florida 550A type, set a foot above the sand medium and about 40" apart. Water pressure was maintained between 40 and 60 pounds. Ventilation was given daily by raising the ends of the frames.

Materials used in the construction of the leaf included a piece of plastic 2½" in diameter by ⅜" thick, 2 flashlight battery carbons, waterproof glue and 2 bumble beewings, which were joined by their outer tips with a spot of glue. In addition, sufficient covered cable for leads to the control box and a metal rod to support the leaf in the medium were required. Holes, one inch apart were drilled in the plastic and the carbons inserted, exposing about ¾" on the upper side with the metal tips on the underside. The leads to the control box were soldered to these and covered with waterproof glue. Holes were drilled in the upper ends of the carbons and small tips of carbon were made to fit in them. The wing was placed under the edge of these tips suspending it between the two carbons.

The leaf was placed in the mist frame on June 17th and was kept in operation until October 24th. After the preliminary moving about to find the best location, the leaf was not disturbed during this 4 month period and worked efficiently at all times. It was finally located about 2' from the first nozzle. One observation I would like to pass on was the tendency of the leaf to show polarity around the carbons. One lead was free of deposits, suggesting that by alternating the hook up to one might practically eliminate deposits forming. As a matter of interest, from 3000 cuttings which included 125 species and varieties of woody plants, an overall average of 76% rooting was obtained.

PRESIDENT VANDERBROOK: I would like to extend my thanks to Chairman Bill Flemer and Bill Cole, as well as to the members of this panel. It was certainly an interesting afternoon. We now stand adjourned but will meet in the morning at 9:00 o'clock sharp.

The session recessed at 5:30 o'clock.