

in mid April or early May. If you wait until the accepted time for taking *Forsythia* cuttings your results will be very poor.

MR. HOOGENDOORN: That is my experience. You can't grow them from hardwood cuttings. Once I grafted but I didn't get 10 per cent.

MODERATOR COGGESHALL: For those of you who do not know Arnold Giant, it is a tetraploid *Forsythia* introduced by the Arnold Arboretum. It has not taken hold too well in this country, however, in England it is a favorite plant.

MR. WELLS: I was going to ask how the Arnold Arboretum No. 13 variety compared with Lynwood Gold or Spring Glory;

MODERATOR COGGESHALL: The No. 13 variety, I believe is the one they now call "Farrand", named after Mrs. Max Farrand of Bar Harbor, Maine. On the other comment, I can agree with Case, as far as the color is concerned.

MR. WELLS: That has always seemed to me to be a splendid forsythia and I couldn't see the value in the Lynwood Gold. I think the Arnold Arboretum varieties, which have been on our doorstep for a considerable time, deserve more attention.

MR. KLEINMAN: How do you make the basal cut on the forsythia in relation to a node?

MR. MONROE: We don't pay too much attention to the node. We don't find that is too important. *Forsythia* calluses very readily. By using Hormodin we don't have trouble with the roots growing anywhere except around the callus at the base of the stem.

MR. VANDERBROOK: Does anyone produce Lynwood Gold from hardwood cuttings out in the field, or hardwood cuttings in the greenhouse? We have produced Lynwood from hardwood cuttings in the field.

MR. MONROE: I have had limited experience with that. We tried Lynwood Gold from hardwood cutting this past spring. Unfortunately, our weather conditions were unusual to say the least and we got about 10 per cent.

MR. VANDERBROOK: We got about 100 per cent.

MODERATOR COGGESHALL: I am sorry but I must stop you now, we do not have any more time. Thank you very much.

The next speaker on our program is Mr. George P. Blythe from the McConnell Nursery Company in Port Burwell, Ontario. Mr. Blythe will speak to us on "*Rosa Hugonis* from Cuttings". Mr. Blythe.

## PROPAGATION OF ROSA HUGONIS BY HARDWOOD CUTTINGS

GEORGE P. BLYTHE

*McConnell Nursery Company, Port Burwell, Ontario*

Tonight we are particularly interested in one species of rose, called *Rosa Hugonis*. This exotic rose was found in Western China, and is sometimes called "Father Hugo's rose".

It is easily grown, and becomes a great and graceful shrub. Early in the season, the large, single, clear yellow flowers cover this species.

The propagation of *R. Hugonis*, from hard wood cuttings, has been a simple procedure with us, for the last 20 years. We tried budding them, but never got a good take. It was hard to remove the thorns. We even tried leaving the thorns on the sticks, but the budders did not appreciate this method. We used *Rosa multiflora japonica* understock grown from cuttings. We tried soft wood cuttings with only fair results. We have tried growing them from seed, but you can't be sure of a good supply, nor of germination. Our "seed trial" lasted several years, but we had only one good stand, and the seedlings took three years to develop into Number One plants.

Finally we decided to try hard wood cuttings and used several different methods before reaching a satisfactory one.

First we took cuttings in the fall, planted them in October and covered them with straw. In spite of this they heaved in the winter, and the results were only fair. We tried storing them in yellow sand, then planting in April, but found that many of the cuttings had turned black during the winter. This drastically reduced the number of cutting for planting. Then we tried storing cuttings in fine gravel sand. This was much better than using the yellow sand, but the gravel dried out too quickly. Both sand and gravel were too heavy for easy handling. Now we make our cuttings early in the winter. They are cut 6" long, using one year wood, from plants grown in the stool block, expressly for this purpose.

We like to use cutting wood, the size of a lead pencil, using only the center parts of the branch, as base cuttings are not satisfactory and the tips are usually too soft. One good sized plant in the stool block produces 250 to 300 cuttings. We store the cuttings in sawdust, upside-down, and in boxes 12 x 18 x 36 inches. We use this size for storage of all hardwood cuttings. These boxes will hold approximately 5,000 cuttings, and they can be handled by one man. We use this inverted method, because we found that cuttings stored in this manner had less bud growth and more basal callous. They are placed in common storage and held at temperatures from 28 to 32 degrees.

*Rosa Hugonis* cuttings are planted in April, just as soon as the land is ready. We plant on sandy loam, with a cool bottom, which holds moisture for a long time without rain. *Rosa Hugonis* as you know, likes a poor soil, and will grow almost any place. We usually have a stand from 75 to 80%. Fifty percent of these are large enough to use No. 1's the first year. If you want the Jumbo or 2-3 foot grade, it would be necessary to transplant and grow them for another year.

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MR. HOOGENDOORN: Don't you have trouble down there with Rose borer? I used to raise it and you get swelling.

MR. BLYTHE: We didn't seem to get it with *Hugonis*. You get some trouble with root galls. That is the only thing we have ever seen affected.

MR. LOWENFELS: Did you try growing any under mist? I did last year and rooted about 80 percent from softwood cuttings.

MR. BLYTHE: We haven't. We expect to try it next year.

MR. WELLS: What was the difference you noticed between cuttings taken in the center of the stem and the base?

MR. BLYTHE: I don't know that we paid particular attention when we first started. The tip cutting seemed to be smaller and immature. We left six inches off the bottom and started from there on up.

MR. VANDERBROOK: Do you people have greenhouses? If you do, try *Hugonis* in the greenhouse and you can get 100 per cent propagation for planting out in June.

MR. BLYTHE: We have no greenhouse.

MR. WILSON: What is the control for that stem borer that Mr. Hoogendoorn speaks of?

MR. BLYTHE: The only thing our Canadian specialists can tell us is to cut out and burn the affected canes.

MR. WILSON: Is there anybody here that has had experience with a borer and can tell me what have they done to control it?

MR. HOOGENDOORN: Years ago we used *Rosa Hugonis*. They were standard roses and they always seemed to be attacked. We used tobacco dust first. That controlled it some, but it didn't eliminate them completely.

MR. BLYTHE: I imagine you would have to give the treatment when the borers were flying.

MR. DE WILDE: I would say probably any borer can be controlled to a certain extent by getting DDT on your plants, preferably with a hydraulic sprayer and using a sticker, so it will be there when the nymphs are flying. If not DDT, then use Lindane, 25 per cent Lindane to 100 gallons, would probably control them to a great extent.

MR. WELLS: I am interested in this factor of putting hardwood cutting upside down in the callusing box. I know a lot of books advocate such a procedure. Is it really necessary? Does it produce something worth while? I doubt it and I wonder if other people have had any experience with it.

MR. JOHN B. ROLLER (Verhalen Nursery Co., Scottsville, Texas): If you store them right side up, our experience has been you get shoots coming out on the top before you plant them in the field.

MR. FILLMORE: I started 50 years ago working in Rochester, New York. We turned them upside down in the sand bank. Now I can understand that very early in the spring there would be a little sunshine and a certain amount of heat and you might get some callusing there that would be of advantage to you, but today when you store them at 32 or 35 degrees what difference is there whether they are upside down or right side up?

MR. BLYTHE: I don't know what the difference is. Occasionally, you get a variety with a little more moisture in it than should be and the terminal bud will start to shoot. I have noticed that time and time again. If they are upside down, the terminal bud doesn't.

MR. FILLMORE: There shouldn't be any budding at 32 degrees.

MR. METZLER: I would like to know a little more about the storage. You put the cuttings in the box upside down. How are you going to keep the temperature at 28 or 32?

MR. BLYTHE: We have automatic fans and thermostatic control and when the temperature comes down at night the fans let cold air in. When it warms up in the daytime, the fans shut off. That helps keep the storage temperatures. The fans cool it down again at night. It is insulated. It is just controlling the temperature with an automatic thermostat.

MR. VAN HOF: We store our hardwood cuttings in a homemade cold storage. We are kind of sloppy propagators. When we do put our bundles upside down - the bundles upside down means when you get a layer of peat, or whatever you use - it touches all the bottom and that, of course, will give you a callus formation. I think the main thing is to get your cuttings out in time. Stick them as deep as possible and see that the ground is pressed down firmly so there are no air pockets.

MR. BLYTHE: In planting we rotohoe the ground and push in the cuttings to a depth of about six inches.

MR. DOUGLAS BUTLER (Rosehall Nurseries, Brantford, Ontario): What kind of sawdust do you use?

MR. BLYTHE: It is a mixed sawdust from a small sawmill. It is a new elm hardwood. There is a sample in the other room.

MODERATOR COGGESHALL: I am sorry, but I must interrupt now, if you have additional questions you can see Mr. Blythe later.

I have saved our last speaker for a very definite reason. He is Mr. A. M. Shammarello, of Shammarello & Sons, South Euclid, Ohio. In corresponding with him, he indicated a hesitancy to come before you this evening to speak, due to the fact that results he has obtained from year to year have not been consistent. However, certainly the subject he is to speak on has been worked on by a great many of you in the audience and he may possibly get a solution here to some of his problems. Mr. Shammarello will speak on the "Propagation of Rhododendrons by Stem Cuttings".

## PROPAGATION OF RHODODENDRONS BY STEM CUTTINGS

A. M. SHAMMARELLO

*Shammarello & Sons, South Euclid, Ohio*

Ladies and gentlemen: The questionnaire we received this summer asked us to check plants we would be most interested in hearing someone talk about. I checked rhododendrons. Little did I realize at the time that I would be asked to tell you how to propagate rhododendrons by stem cuttings. I had hoped that some successful propagator would enlighten us on the subject. I am seeking information and I am sorry to say I do not have much to contribute.