

on them than the softer flush of growth.

MR. WELLS: We noticed a very great difference in the rooting ability between varieties. This is shown in Figure 2. No. 13 callused with great big gobs of callus, but rooted very indifferently at any concentration of Hormone, whereas, the other varieties rooted very easily indeed.

In talking with Harvey Templeton about this, he said he has a couple of varieties which he can't root at all. It would be interesting to work on some of these. There is a wide varietal difference.

MR. DeWILDE: I worked on them in France. This was back in 1926 in a propagating department of a nursery under the so-called glass bells. The same thing turned out. This would be before hormones or anything of the kind. They usually make very short heel tipped cuttings and so you would get a solid stand and some maybe only 20%, and some practically didn't root, but they raised about 35 or 40 varieties, as I remember, and there was a definite difference between each variety as far as rooting is concerned.

MODERATOR COGGESHALL: I am sorry, gentlemen, we must call a halt to these questions.

The next speaker will speak on a plant which is not too commonly grown or propagated, at least to my knowledge - Helleborus. Mr. Case Hoogendoorn, Hoogendoorn Nurseries, Newport, Rhode Island.

PROPAGATION OF HELLEBORUS

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Before I go into this subject I would like you to understand that I am no authority on Helleborus and I am going to tell you only my experiences with the limited variety we grow.

For the benefit of those members and guests who don't know Helleborus (also called Christmas Rose), I would like to tell you a little about this particular plant regarding its likes and dislikes so that you will understand more readily how we try to apply its proper environments to the propagation of this particular plant in order to grow it successfully.

To begin with, I would like you to understand that Helleborus is a perennial and because it is called Christmas Rose, it is not a rosebush as some people think.

We all know that Helleborus is a rather temperamental plant, but it is not too bad once you understand the plant. Helleborus is perfectly hardy as it originated from the Alps in Europe. It will never get winterkilled as it does not mind low temperatures at all but it might get summer-killed, as it resents heat and drought. Furthermore

it likes shade or partial shade and a well-drained, humus soil, which will retain moisture. A neutral to moderately alkaline soil is recommended although they will also grow well in a slightly acid soil.

Helleborus also likes to grow in a sheltered position, which will help to retain its foliage. So you see the best place to plant them is on the east side or north side of a building amongst other plants or on the north side of a shrub border, but never in the full hot sun with south or west exposure.

Being acquainted now with the likes and dislikes of Helleborus, I will go on and explain the propagation of it. We generally pick our own seed of Helleborus niger in June just before it pops open and we dry it in the greenhouse.

After a couple of weeks we clean it and put it in sand for stratification in clay pots or a box and keep it moist. Seed has to be handled promptly as it loses its germination power quickly.

In October or November we sow it in a well prepared frame with plenty of cow manure worked into the soil to provide humus. We cover the seed with a mixture of 50% peat moss and 50% sand, which we mix with a soil shredder and roll it down with a roller. After that we cover the seed-bed with burlap right on top of the soil to keep the peat and sand from blowing and washing, and to keep the seed from heaving out during freezing and thawing weather. Then we cover the frame with lath shades, which provide 50% shading. The following spring the seed will start to germinate sometime during April.

As soon as we notice germination, we remove the burlap. In case of a dry spell we help out by giving the seed bed a good watering. After the seedlings are up and well started, we raise the shades to about 18 inches to get more air circulation. The shades remain on the seed-bed all summer.

When the weather gets cooler during October, we pick up the seedlings and transplant them in heavy manured beds about 6 inches by 6 inches, which give them enough room to develop properly into saleable plants.

After the beds are planted we mulch them with sugar cane (also called servall) and cover the beds with lath shading on runners about 18 inches high. In case of dry weather we put on irrigation to water the seedlings in thoroughly. The sugar cane helps to maintain moisture and also prevents heaving during the winter. The lath shades stay on these beds winter and summer until the plants are dug and sold. If we should have a dry and hot spell during the summer we irrigate.

This concludes growing Helleborus from seed.

Now I will go into named varieties of Helleborus, which all originated by seedling selection, such as Buis, Keessen, etc.

In order to keep these true to name they have to be propagated by divisions. These plants can be divided either in the fall or early spring. Planting out these divisions and caring for them requires the same treatment as the seedlings I have just described.

Now we come to *Helleborus Orientalis* varieties. I have not had much experience with them. Some of them seem to come true from seed while others need to be grown from divisions.

About twenty five years ago I imported seed of *Helleborus niger* for the first time. I sowed it and it turned out to be *Helleborus Virides*. It has clusters of green flowers, which is the reason they call it St. Patrick's Rose. I noticed they all came true to name.

On the other hand we grow *Helleborus Orientalis Atrorubens*, so called Red Christmas Rose, and I have never seen that set seed yet, therefore we grow that from divisions.

As I mentioned before, once you plant out your divisions, the treatment of shading, watering, mulching, etc., is the same as that of seedlings.

This concludes my experiences with the propagation of *Helleborus*.

MODERATOR COGGESHALL: Roland DeWilde.

MR. ROLAND DeWILDE: Case, don't you have any disease problems with them? It seems to me when I used to play around with these things we had leaf troubles.

MR. HOOGENDOORN: You do, but that depends a good deal on the weather. There is a fungus and we used to spray during the summer with Captan and the fellow at the college said, "You are wasting your time." I said, "Why? If I keep spraying I would have control." He said, "No, these are spores and they only explode when the weather gets cold and wet. That is the time they get it." You look at these leaves, we had a beautiful fall. You don't see anything on these leaves. They haven't been sprayed at all. If you get a wet fall you will have more trouble with that.

MR. HUGH STEAVENSON: Sometimes they bloom at Christmas. Two years ago we were over at Bosley's on one of those tours and we were looking at the big hollies and all of a sudden I spotted a couple of clumps that big. First, they will turn white and after that when the flower gets older it has a pinkish cast and this was already pink and that was the beginning of December. I said, "What variety is that?" He said, "I don't know. It is *Helleborus*." I said, "but it is already through blooming". He said, "That is the first time it happened this year. It never happened before."

That is why I say it is a tempermental plant. No doubt all these things have a lot to do with it. Maybe they have a dry summer and set quicker, or it might have been a weather condition. The weather plays a big part. The reason I started this, when I was a youngster,

my father had them and that thing has stuck in the back of my mind. I never could understand how he could have in December these white flowers and the next day you would have the pink, and the flowers don't freeze. That is what fascinated me. That is the reason I am growing them, not because you get 500 blooms.

MODERATOR COGGESHALL: Thank you very much, Case.

We will now have a ten minute recess.

PRESIDENT VAN HOF: May I have your attention, please? Mr. John Vermeulen wishes to make an announcement at this time.

MR. JOHN VERMEULEN: One of our old charter members, Mr. Anderson, of Erie, had a very bad accident last spring. He is recuperating and I think it would be nice if anyone here would sign the card so he would know we are thinking of him.

MODERATOR COGGESHALL: The next speaker on the program is also a man who has traveled a considerable distance. He is going to speak to us on his experiences in plant propagation - Dr. Seymour Shapiro, University of Oregon, Eugene, Oregon. Dr. Shapiro.