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NEWS FROM YESTERYEAR

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STEAM STERILIZATION

In the early 1900's carnation growers were plagued with "stem rot." Two kinds, wet rot and dry rot, were described, and it was the opinion that a different fungus caused each. Wallace R. Pierson prepared a paper on the subject of steam sterilization, stating that there was a marked decrease in loss due to wet rot if the soil were sterilized. On the other hand, it seemed to have little effect against dry rot, which, he said, was perpetuated by taking cuttings from affected plants.

Authorities on steam sterilization at that time recommended 20 minutes of steaming, but in his tests Pierson steamed for 2 hours. He attempted to get the soil temperature as high as possible, having achieved a reading of 210 degrees during some tests.

Pierson thought one of the strongest points in favor of sterilization was reduction of weeds. Natural soil fertility was emphasized at that time, so consequently the pulling of several crops of weeds was viewed with disfavor, more because of the loss of fertility than because of time consumed.

He also pointed out that his houses were "comparatively free" from aphids (or green fly as it was called) and from red spider, both of which were thought to perhaps live in the soil.

When the question of cost arose, Pierson said his estimates were $20 for 1,000 cubic feet of soil. This was based on the assumptions that a half-ton of coal is used to get up steam in the boiler, and the steam is run through inch and a half pipe which has been perforated.

A sidelight on the subject came when another florist told of his system of baking the soil prior to use. He said his procedure was a modification of that used by tobacco growers. The soil was placed in a large covered tub over a fire, stirred occasionally until heated through. He explained that he had proposed the idea at a meeting of the Society of American Florists a few years earlier but "They said it was too expensive, boo-hooed it, and I sat down very much ashamed of myself."

Appearance of head lettuce grown on sterilized soil led scientific men of the day to suppose

/1 Mrs. Hull prepared these excerpts from old trade papers while a senior student in horticulture in 1956.

sterilization made nutrients more available to plants by breaking down the organic matter in the soil. Since manure and bonemeal were in widespread use as "artifical fertilizer," this theory of decomposition was probably well founded.

Whenever there was discussion on steam sterilization of soil, there was also talk of "if all bacteria are killed by the treatment, why do the plants do so well without the beneficial ones we know are essential for growth?" At the time the reply for this was, "Has it been proved that these nitrifying bacteria have been killed?" Whereupon an argument was launched as to the classification of bacteria. One stated that nitrifying bacteria are those which draw their nitrogen from the air, while those bacteria decomposing organic matter are not the same and recommended keeping "nitrifying" bacteria in the soil even if a legume were not grown in the bench along with the main crop.

IMPROVEMENT OF ROSES BY BUD SELECTION

When the American Rose Society held its fifth annual meeting and exhibition in Philadelphia in March, 1903, Professor L. C. Corbett, horticulturist for the Department of Agriculture, read a paper he had prepared on rose improvement through bud selection. The work was undertaken to settle a dispute among commercial rose growers as to the relative value of plants grown from flowering wood versus those from blind wood. The paper was prepared after 5 years of experimentation.

In beginning the experiment, Corbett took cuttings from both blind and flowering wood of five varieties, then subjected them to as near uniform conditions as possible. He reported little difference between the two types of cuttings toward callus formation and rooting. Likewise, there was not significant plant size difference after growth had begun.

The bloom record, however, showed quite marked differences. Only flowers produced between December 1 and July 1 were counted. A table compiled from the data showed more than double the number of flowers from plants of flowering wood than from plants of blind wood.

The same test was repeated the next 4 years in succession, always taking cuttings of blind wood, from plants grown from such a cutting, and vise-versa. This was done to give a constant selection in one direction, the idea being to secure plants with the maximum blooming capacity. Results from these tests showed a continued supremacy of the flowering wood plants over those grown from blind wood. Oddly enough there was no apparent cumulative effect from the selection of cuttings from flowering wood plants. Neither was there any marked degradation from the continuous use of blind wood.

At the end of the 5 years, it was also noted that there existed differences between varieties. One variety produced almost double the number of blooms from flowering wood plants compared to blind wood plants, while a second variety did not show such decided difference.

In conclusion, the experiment demonstrated the flowering habit of plants produced from flowering wood was not increased after 5 years over what it was originally. Also, plants repeatedly propagated from blind wood through 5 successive generations were not markedly less floriferous in the fifth than in the first generation.

It was therefore recommended that a commercial grower desiring economy take cuttings from blind wood. Where bloom rather than stock plants were desired the cuttings should by all means be taken from flowering wood.

Common practice of the day was to either plant new stock yearly; or dry the old plants in July, prune them heavily in August, and replace at least one-half the bench soil with fresh compost and soil, after which growth is slowly resumed and flower production begun in October.

To meet market demands, the grower in 1903 modified his practices by using either 1- or 2-year-old stock. The 2-year-old plants pruned as outlined above produced the heaviest crop in the fall and early winter. Plants taken from March cuttings produced the heaviest bloom later in the season (March to May).

STORING CARNATION FLOWERS

C. W. Ward of Queens, N. Y., published in 1903 a book, "The American Carnation," in which he gave some pointers on conditioning and refrigeration. He said, "The flowers must be picked when in the proper condition, the stems immediately plunged in water, and the receptacle placed in a cooling room, which should be scrupulously clean, and in which the temperature is uniformly carried at from 45 to 55 degrees."

He advised using vases of a size to avoid crowding or jamming and deep enough to hold two-thirds of the stem. Ward emphasized the necessity

for cleanliness throughout the operation, and advised that the vases be washed and filled with fresh water daily.

At the time the flowers were put in the vase, Ward said the water could be 10 to 15 degrees F. higher than the temperature of the room. "We have found it beneficial," he said, "when both the water and cool room stood at 55 to 60 degrees. After the morning pick was finished the room gradually cooled down to 48 to 50 degrees." Ward thought that the cooling down of water, room, and flowers together avoided sudden chilling to the blooms, a condition which sometimes resulted in the flowers "going to sleep."

TO DYE CARNATIONS GREEN

From a German authority in 1903 comes this formula for green carnation dye: Prepare a solution of 2 grams of tannin per quart of water and hold at 68 degrees F. A second solution is made from 18 grains alum per quart of water and enough malachite to give the desired shade of color. Carnation flowers are dipped first in the tannin solution and then in the second solution. They should not be washed in clear water following the treatment.

SUBSTITUTE FOR GLASS

In the June 20, 1903, issue of The Florists' Exchange, The Flexible Glass Company of Jackson, Mich., proposed to the trade a substitute for greenhouse glass. It was not called "plastic" nor any hint given of its chemical composition. The material was colorless and said to admit as much light as ordinary glass. Apparently unbreakable, the material could be laid in continuous strips from ridge to eaves and bent to any curve without breaking.

The company also offered a clouded grade of the flexible glass for glazing palm and other foliage houses. No prices were given as it was not available in large quantities. Up to that time it had not been widely tested and there remained some doubt as to its practicability.

INDEXING, NOW AND THEN

If any of you have ever done research for some particular problem, you might have been stumped as to where to find the information. Trade magazines, bulletins, and other such material are invaluable, but to avoid wasted time it is convenient to use the index. In my estimation, indexers have come a long way since the 1900's. As an example, let me quote from an index of the day:

Putty, Poor
Worms, Green on Ferns

And the one I think takes the prize:

House, Slugs in

LIGHTING

"Acetylene in the flower industry would certainly be a long stride in the right direction for anyone using artificial light," was a recent statement made by C. DeWitt Wines. He goes on to say that acetylene is not objectionable from the chemical standpoint in that combustion products are carbon dioxide and water, raw substances utilized by the plant in food manufacture. Progressive growers find no labor problem as workmen do not require special instruction on maintenance. W. N. Dunklee, Vermont, has used acetylene successfully for more than 2 years to light greenhouses, outbuildings, offices, and residences at nominal cost.

- from The Florists' Exchange, Dec. 27 and Feb. 21, 1903

PROPAGATING MEDIA

When rooting cuttings, consider substituting soft coal ashes for sand. The ashes are free from fungus and thoroughly sterilized. To prepare the propagating bed, sift the ashes through a fine sieve, moisten well and let stand overnight. Then pound them down and wash them, putting on enough water to thoroughly wet them and until the water begins to run through the bench. This operation removes injurious gases that may have clung to the ashes, and leaves them perfectly clean. Allow to stand a day or so before sticking the cuttings. Growers will find a stiff knife best for cutting the ashes. When removing the rooted cuttings, water thoroughly beforehand so as to loosen the ashes and prevent root breakage upon removal.

- from The Florists' Exchange, Jan. 24, 1903

POLLINATION

A writer in an English Exchange reports he has adopted a procedure economizing pollen, the ordinary camels' hair brush being wasteful. "If a stick of sealing-wax be rubbed briskly on the coat sleeve, as for electrical experiment, and then presented to the flower, the pollen flies to it and adheres. Every particle can thus be utilized far more easily than with a brush."

- from The Florists' Exchange, Feb. 14, 1903

RED SPIDER CONTROL

Recent treatments of dilute solutions of Ivory soap have given good control of red spider on carnations. Cuttings given a bath in such a solution were uninjured by the treatment. In the case of severe infestations it was found more satisfactory to apply the solution with a spray pump. The treatment was found to kill mature forms as well as eggs, but it is suggested that a light syringing follow treatment to remove the light film left on the plants, as the film clogs the pores.

Other tests run on cineraria, calceolaria, smilax, Easter lilies, and pelargoniums resulted in severe damage to those plants. The soap seemed to eat the leaf tissue, resulting in skeletonization.

- from The Florists' Exchange, Jan. 24 and Feb. 14, 1903

SLUG CONTROL

To get rid of snails, lime is the usual suggested remedy. Hammond's slug shot may also be used. To trap snails it is suggested that cabbage leaves be laid randomly over the bench between plants and in the morning the slugs will be found on the under sides of the leaves. They can then be destroyed by raking them into a box containing some fresh lime.

- from The Florists' Exchange, May 2, 1903

Your editor,

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FIRST CLASS