

The next speaker is Mr. Ray E. Halward, Royal Botanical Gardens, Hamilton, Ontario. He will discuss the propagation of *Cercidiphyllum japonicum* from cuttings.

Mr. Halward presented his paper entitled "The Propagation of *Cercidiphyllum japonicum* from cuttings in cold frames." (Applause).

## THE PROPAGATION OF *CERCIDIPHYLLUM JAPONICUM* FROM CUTTINGS IN COLD FRAMES

RAY E. HALWARD  
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*Hamilton, Ontario*

Having admired three beautiful upright specimens of *Cercidiphyllum japonicum* for sometime and knowing that they were the only three trees of their kind on our property, I decided to try and propagate them from softwood cuttings.

My first attempt in 1954 encouraged me to try again in 1955. I took the first cuttings on July 12, 1954. The spring and early summer were extremely hot and dry in our section and the new growth was quite firm by this time, which probably accounted for the low percentage of rooting. Of 50 cuttings, only one rooted.

On June 23, 1955 I took 50 more cuttings. They were tip cuttings about 6 inches in length, and cut just below a node and were quite soft when taken, I removed the foliage from the lower half of the cuttings. Having used no treatment the previous year I decided to try them again with no treatment as I had noticed the other cuttings were quite heavily calloused by late summer.

The rooting medium used was one I have used for a number of years with good results:  $\frac{1}{3}$  sandy loam,  $\frac{1}{3}$  peatmoss and  $\frac{1}{3}$  sharp sand with  $1\frac{1}{2}$ " of sharp sand on top of the mixture. About two days previous to sticking the cuttings, the medium was moistened and by the time I was ready to stick them the sand on top was quite dry. Thus, as the cuttings were stuck some of the sand dropped around them, giving them a clean, firm medium to begin the rooting process. When they were stuck and moistened, sash was put on and given a coat of white wash for shade.

The cuttings were syringed twice daily when the weather was hot, and sash kept closed for about three weeks. Following this, daily ventilation was given, that is to say the sash were opened a couple of inches to start with and gradually increased until they were entirely removed to give the cuttings a chance to harden before winter.

On September 1st, I checked the cuttings for rooting and found 38 out of 50 were well rooted and the remainder well calloused. The rooted cuttings were wintered in cold frames under glass and were set out in the lath-house in the spring of 1956.

In conclusion, knowing this tree to be dioecious, having male and female flowers on separate trees, I am not sure which sex I propagated as I have never seen the trees in flower. I have been lead to believe,

however, that the sex of the tree in this case can be determined by its growth characteristics. That is, that the male tree is quite upright and the female tree quite spreading

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MODERATOR COGGESHALL: Thank you, Ray, for this discussion.

MR. LESLIE HANCOCK (Woodland Nurseries, Cooksville, Ontario): I think this work of Mr Halward is very significant, especially in view of the splendid growth obtained the second year with the cuttings. It is difficult to get seed of a lot of foreign trees. Mr. Halward's results suggest that we should turn our attention to the production of shade trees by vegetative methods

MODERATOR COGGESHALL: At the Arnold Arboretum we have been propagating *Cercidiphyllum* by seeds. These cuttings are much larger than our two-year seedlings.

Our next speaker is William Flemer, III, of the Princeton Nurseries, Princeton, N J. His subject concerns the budding of *Sophora japonica*.

Mr. Flemer presented his paper, entitled "The Propagation of *Sophora japonica* by Budding." (Applause).

## THE PROPAGATION OF *SOPHORA JAPONICA* BY BUDDING

WILLIAM FLEMER, III

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The propagation of *Sophora japonica* by budding is by no means new to the nursery world. Back in the days of our Victorian ancestors when grotesque horticultural "novelties" were popular no matter how peculiar looking, it was common practice to bud *Sophora japonica pendula* on six or seven foot stems. This produced a tree similar to the weeping Ash (*Fraxinus excelsior pendula*) and certainly its equal in ugliness. Two more useful forms, *Sophora jap. columnaris* which was narrow and pyramidal in form and *Sophora japonica violaces* with lavender colored flowers, were also budded, but these have long since disappeared from the trade and have apparently been lost.

For many years *Sophora* was just another rather rare leguminous tree only occasionally used as a lawn specimen, usually on some Landscape Architect's specification. With the arrival of various serious tree diseases on the national scene, most of these lesser known trees were subjected to more careful scrutiny in the search for better shade trees. *Sophora* has received much favorable attention in recent years for this purpose, and we at Princeton have been enthusiastic in publicising its good qualities.

Eastern nurserymen who have had experience in growing the tree have noted how difficult it is to make it stretch out and grow during