

## THURSDAY AFTERNOON SESSION

November 30, 1967

The afternoon session convened at 1:30 p.m. and was concerned with the propagation of specific plant materials. Dr. H. B. Tukey, Jr. served as moderator.

MODERATOR TUKEY: The first speaker on the program this afternoon is Andy Klapis of the Kansas City School Department, Kansas City, Missouri.

### SEVEN YEARS WITH VIBURNUMS FROM SOFTWOODS

ANDREW T. KLAPIS JR.  
*Kansas City School District*  
*Kansas City, Mo.*

In a brief tour around my postage stamp backyard last week, I counted seven different varieties of viburnum. All these plants have been there for at least five years through temperatures ranging from 15° below zero to 110° above; and all are thriving and healthy. Because of their hardiness and versatility, viburnums are held in high esteem in our rigorous plains country. When I go East or South, my mouth waters and I'm envious of the beautiful broadleaf material which the nurseryman can grow and market with impunity. However, all of us can grow many of the viburnums, and experiences which we have had in propagating these plants both at Raytown Nursery and at the School Gardens of the Kansas City Missouri School District is the tale I wish to tell.

From the accompanying table you can see that initially the number and variety of the cuttings stuck was very limited. In 1958 plant propagation was a brand new field to me, and Ben Asjes gave me a list of material he wanted propagated, and off I went gungho with high hopes and "rots o' ruck". Well you know what happened. We used perlite for the rooting medium and Rootone as the hormone. We got a fair strike for such a haphazard operation, but luck played a very important role.

As we went along through 1959, 1960 and 1961, you'll notice the varieties and numbers change very little. Since our needs in a small landscape nursery were modest, the number of cuttings stuck was low. In 1962 and for several ensuing years, we widened the number of varieties considerably, although the number of cuttings of a given variety stayed relatively static. Due to the low number of cuttings per variety, this material may be of limited use to the big producer. However, some of the information concerning rooting mediums and overwintering may be of some use.

The system used for making viburnum cuttings was intermittent mist with a 12 minute tork repeating timer which

was regulated for frequency according to weather conditions. The mist house was outdoors, ten feet wide and 30 feet long, paved with gravel and tiled to ensure good drainage. This area is enclosed on four sides by wooden frame six feet high and covered with clear 4 mil polyethylene film. The top is open but in the past two years has been covered with saran screen which gives about  $\frac{1}{3}$  shade. The cuttings were stuck in tomato lug boxes filled with rooting medium to a depth of 6 inches. Rooting hormones used varied from Rootone to Jiffy-Gro.

The business of rooting mediums seemed to have a good deal of bearing on the survival of the cuttings after they had rooted. In 1958 when the rooting medium was perlite, we potted off the rooted cuttings and plunged them in sand in cold frames outdoors. During the ensuing fall and winter, 90% of them died. Some of this was freeze damage, but by far the largest part of the mortality couldn't be explained. This we wrote off to experience; but we didn't learn much, so in 1959 we repeated our operation with largely the same results. In talking with other nursery men in the area, I somehow got the idea of trying some different rooting media.

In 1962 we tried a mixture of peat and sand, peat and perlite and a third medium of long fibered sphagnum moss. Out of this bit of experimentation with viburnums we drew the conclusion that the long fibered sphagnum moss had very definitely proved to be the best medium in our hands. The root systems were larger and were distributed all up and down the stem of the cutting. Even though the moss tended to stay very wet under the mist, the cuttings stayed in good shape.

About this time something else occurred which led us to another discovery. Several flats of rooted viburnum cuttings in sphagnum moss had been placed under a bench in our cool greenhouse until I could get around to potting them off. This was around September 15 and of course, we got busy and when the flats were discovered, it was March. The flats had gotten some water through the winter but I don't believe any of it was on purpose. Now why do you suppose that those rooted cuttings survived almost 100% and came through without fungus problems or any other problems for that matter? This is what we wanted to know and tried to find out. Apparently the light watering which they received when the herbaceous plants on the bench above them were watered was enough to keep them in good condition throughout the winter. Also the anti-fungus entity which is apparently present in sphagnum moss kept them in good shape. To finish up this story; we potted them off, put them out in cold frames (this was about March 25) and they broke dormancy in the normal way and kept right on going.

Needless to say, we used long fibered sphagnum moss as the rooting medium for viburnum during the next season. We weren't convinced about the overwintering procedure, so we

split the viburnum cuttings putting half under the greenhouse bench in flats and potting off the other half—but leaving them in the cool greenhouse to overwinter in pots. Results: the group left in the original flats were potted off in late March with 95% breaking dormancy and growing. Those potted off in the fall and overwintered in the cool greenhouse only had about a 15% survival. One other conclusion we drew from this trial by error procedure was that the flats of rooted viburnum cuttings taken from the mist house must be kept dry. The winter before when the flats had stayed under the bench forgotten and neglected showed better results than when we checked the flats each day and decided they hadn't had quite enough water. The conclusion which we drew from this was that these flats of rooted viburnum cuttings should be run dry almost to the point of dessication when they are overwintered in a cool greenhouse.

In the years since 1962 we have followed this procedure pretty much at Raytown Nursery and at the Gardens of the School District of Kansas City, Missouri for viburnum cuttings:

TIME OF YEAR TAKEN—July and August

SIZE OF CUTTINGS—Varies from 2½ to 5 inches

TYPE SYSTEM—Intermittent mist, enclosed with polyethylene and ¼ shade on top. Mist heads are on 3 foot centers and pipes are 3 feet apart.

MEDIUM—Tomato lug flats are filled to 6" depth with long-fibered sphagnum moss.

HORMONE—Indole Butyric Acid (Hormodin #3, IBA 20 mg/gm of talc, Jiffy-Gro, or Chloromone). Cuttings of most varieties were wounded.

OVERWINTERING—Flats are taken from mist and placed under bench in a cool greenhouse (55-60 degrees). These should be placed so they get some direct sun for part of the day.

WATERING—As lightly as possible during winter months, just enough to prevent dessication of the cuttings.

POTTING—In late March or early April.

One of the continuing problems with this method of overwintering viburnum cuttings is the onset of fungus or bacterial disease if the flats are kept too wet. To combat this in the past two years we have been using a drench combining Dexon and Terachlor\*. So far this product has done a good job of prophylaxis.

\*Root & Crown Rot Control — Patterson Chemical Co.  
K.C., Mo.

Active ingredients

P-Dimethylaminobenzenediazo sodium sulfonate 5.0 %  
pentachloronitrobenzene (PCNB) 69.0 %

Inert Ingredients

26.0 %  
100.0 %

Over a seven year period from 1959 through 1966 we have worked with viburnum softwood cuttings. Several conclusions were reached concerning the success of propagating these plants in our hands:

1. Indole Butyric acid in several concentrations was an adequate hormone.
2. A specific rooting medium—long fibered sphagnum moss—gave significantly better rooting, qualitatively and quantitatively.
3. Overwintering rooted cuttings in cold greenhouse in the original flats is necessary to assure survival of rooted cuttings.

VIBURNUMS FROM SOFTWOOD CUTTINGS  
A SEVEN YEAR RESUME

Plant	Number Of Cuttings Stuck	Date Stuck	Hormone Used	Medium	Cuttings* Rooted
1958					
<i>Viburnum burkwoodi</i>	120	6-27-58	Rootone	Perlite	84
<i>Viburnum carlesii</i>	100	6-27-58	Rootone	Perlite	69
1959					
<i>Viburnum burkwoodi</i>	270	7-11-59	Rootone	Perlite	186
<i>Viburnum carlesii</i>	120	7-11-59	Rootone	Perlite	87
<i>Viburnum juddi</i>	60	7-11-59	Rootone	Perlite	28
1960					
<i>Viburnum burkwoodi</i>	215	7-5-60	Hormodin #3	Peatmoss	195
<i>Viburnum carlesii</i>	150	7-5-60	Hormodin #3	Peatmoss	93
<i>Viburnum rhytidophyllum</i>	70	7-5-60	Hormodin #3	Peatmoss	58
1961					
<i>Viburnum burkwoodi</i>	100	7-1-61	Hormodin #2	Perlite	72
<i>Viburnum juddi</i>	90	7-7-61	Hormodin #2	Perlite	46
<i>Viburnum rhytidophyllum</i>	60	7-7-61	Hormodin #2	Perlite	47
1962					
<i>Viburnum burkwoodi</i>	125	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	100
<i>Viburnum carlesii</i>	100	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	100
<i>Viburnum dentatum</i>	100	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	100
<i>Viburnum juddi</i>	100	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	72
<i>Viburnum lantana</i>	200	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	134

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\*All the totals in the last column labeled "cuttings rooted" indicate the number of cuttings potted off from flats. Prior to 1962 this was done in the fall with poor overwintering results and a high percentage of plants failed to break dormancy. After 1962 we potted off the cuttings in late March and early April and the plants broke dormancy and started growing normally.

VIBURNUMS FROM SOFTWOOD CUTTINGS  
A SEVEN YEAR RESUME (continued)

Plant	Number Of Cuttings Stuck	Date Stuck	Hormone Used	Medium	Cuttings* Rooted
<i>Viburnum lentago</i>	50	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	27
<i>Viburnum rhytidophylloides</i>	200	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	167
<i>Viburnum rhytidophyllum</i>	110	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	96
<i>Viburnum willowwood</i>	100	7-13-62	Chloromone 1:1 Dilution	Long Fibered Sphagnum Moss	77
1963					
<i>Viburnum carlesii</i>	310	7-16-63	IBA 12 MG/GM	Sphagnum Moss	277
<i>Viburnum rhytidophylloides</i>	77	8-22-62	IBA 12 MG/GM	Sphagnum Moss	69
<i>Viburnum rhytidophylloides</i>	170	9-10-63	Homodin #3	Sphagnum Moss	157
<i>Viburnum setigerum</i>	64	6-15-63	IBA 12 MG/GM	Sphagnum Moss	58
1964					
<i>Viburnum dentatum</i>	56	7-15-64	IBA 12 MG/GM	Sphagnum Moss	42
<i>Viburnum setigerum</i>	115	7-15-64	IBA 12 MG/GM	Sphagnum Moss	101
<i>Viburnum rhytidophylloides</i>	102	7-15-64	IBA 12 MG/GM	Sphagnum Moss	77
1965					
<i>Viburnum dentatum</i>	115	8-19-65	IBA 20 MG/GM	Sphagnum Moss	111
<i>Viburnum lentago</i>	65	8-6-65	IBA 20 MG/GM	Sphagnum Moss	49
<i>Viburnum rhytidocarpum</i>	90	7-9-65	IBA 20 MG/GM	Sphagnum Moss	69
<i>Viburnum sargentii</i>	55	8-19-65	IBA 20 MG/GM	Sphagnum Moss	51
<i>Viburnum setigerum</i>	97	8-19-65	IBA 20 MG/GM	Sphagnum Moss	83
<i>Viburnum tomentosum</i>	110	8-5-65	Jiffy Gro 10:1 Dilution	Sphagnum Moss	81
<i>Viburnum willowwood</i>	52	7-8-65	IBA 20 MG/GM	Sphagnum Moss	46
1966					
<i>Viburnum carlesii</i>	57	8-19-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	15
<i>Viburnum dentatum</i>	152	8-16-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	125
<i>Viburnum rhytidophyllum</i>	55	8-11-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	25
<i>Viburnum rhytidophylloides</i>	60	8-16-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	16
<i>Viburnum setigerum</i>	76	8-15-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	47
<i>Viburnum willowwood</i>	70	8-16-66	Jiffy Gro 10:1 Dilution	Sphagnum Moss	31
1967					
<i>Viburnum carlesii</i>	390	7-20-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—
<i>Viburnum dentatum</i>	394	7-19-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—
<i>Viburnum lantana</i>	170	7-18-67	Jiffy Gro 10:1 Dilution	Sphagnum Moss	—

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\*All the totals in the column labeled "cuttings rooted" indicate the number of cuttings potted off from flats. Prior to 1962 this was done in the fall with poor overwintering results and a high percentage of plants failed to break dormancy. After 1962 we potted off the cuttings in late March and early April and the plants broke dormancy and started growing normally.

VIBURNUMS FROM SOFTWOOD CUTTINGS  
A SEVEN YEAR RESUME (continued)

Plant	Number Of Cuttings Stuck	Date Stuck	Hormone Used	Medium	Cuttings* Rooted
<i>Viburnum lantana</i>	147	6-21-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—
<i>Viburnum lentago</i>	100	7-17-67	Jiffy Gro 10:1 Dilution	Milled Sphagnum	—
<i>Viburnum prunifolium</i>	140	7-17-67	Jiffy Gro 10:1 Dilution	Milled Sphagnum	—
<i>Viburnum rhynchophyllodes</i>	65	8-16-67	Jiffy Gro 10:1 Dilution	Milled Sphagnum	—
<i>Viburnum sciboldi</i>	92	7-24-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—
<i>Viburnum setigerum</i>	124	7-28-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—
<i>Viburnum tomentosum</i>	352	7-19-67	Jiffy Gro 10:1 Dilution	50% Peat 50% Perlite	—

MODERATOR TUKEY: It is always a real pleasure to introduce one of the patriarchs of our Society and I have that pleasure right now. Mr. John Vermeulen will speak on the "Propagation of *Franklinia alatamaha* from Softwoods".

### PROPAGATION OF FRANKLINIA ALATAMAHA FROM SOFTWOODS

JOHN VERMEULEN  
*John Vermeulen & Son, Inc.*  
*Neshanic Station, New Jersey*

It is fairly simple to grow *Franklinia alatamaha* from softwood. We take the cuttings in our area about the middle of July just before the new growth starts to get woody. We prefer the cuttings from older plants as these are more firm in texture. We therefore have a row of stock plants about 20 years old. They get a severe trimming every 3 years which makes for nice sturdy cuttings. We make our cuttings about 5 to 6 inches in length and take off all but 5 or 6 leaves which are cut in half.

The cuttings are stuck directly in 3" peatpots in a rooting media consisting of 53 parts peatmoss, 17½ parts #1 Perlite, 17½ parts styrofoam, 9 parts fine sand, 3 parts soil, firmly packed. We put 28 pots in a regular greenhouse flat. The flat is placed outdoors in a mist frame which is covered with cloth giving about 20% shade. This cloth is placed at an angle about 4' above the frame.

Intermittent mist is applied from about one hour after sunrise until about sunset. I cannot give you an exact timing for the mist as it depends mainly on weather conditions, but we use short periods at short intervals as this will keep the foliage cool.