

## MEMBERSHIPS AND SUBSCRIPTIONS—DECEMBER 2, 1970

		Totals
MEMBERSHIPS		607
Individual	513	
United States	400	
Canada	66	
Foreign	47	
Life	74	
United States	69	
Canada	2	
Foreign	3	
Hort. Societies & Fruit Grower Associations	19	
United States	16	
Canada	2	
Foreign	1	
Industrial	1	
SUBSCRIPTIONS TO FVHD		187
United States	24	
Canada	16	
Foreign	64	
Libraries	74	
Complimentary	9	
GRAND TOTAL, MEMBERSHIPS AND SUBSCRIPTIONS		794

## Some Thoughts on the Origin of Spur-Type Apple Mutations in the State of Washington

RONALD B. TUKEY\*

The severe freeze of 1955 killed a large number of trees in Washington. The freeze damage was particularly severe on young trees in a high state of vigor. Nursery trees as well as trees in the orchard in this condition died.

There were three situations at that time which could have effected the discovery of spur-type trees: (1) shortage of trees from nurseries because of the number of nursery trees killed; (2) high demand for Red and Golden Delicious trees of any kind or grade to replant orchards; and (3) a system of stump grafting developed as an emergency measure.

The high demand for trees, accompanied by a general shortage, tended to result in the sale and planting of

many trees which might otherwise have been destroyed. Similarly many of these weak or abnormal trees were nursed along and maintained in orchards. Under more normal conditions many of these trees might have been replaced.

That many of these weaker trees should later be recognized as a new type, a spur type tree, is no longer surprising. Spur type trees tend to be smaller and less vegetative when first planted. Often newly planted spur types do not grow well and resemble sick trees. Only with experience have we learned to prune such young trees hard, fertilize them heavily, and force them into good vegetative growth.

The stump grafting of trees was an

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other practice which tended to "create" new strains. Even with extreme care and close attention to details, some of these grafted trees later turned out to be seedlings, the result of sprouts from seedling roots. Many of the seedlings have Delicious parentage. It would not be surprising if a few of the "new strains" were actually seedlings.

However, and more likely, the new strains were the result of a shortage of scion wood. Most of the stump grafting was done by the growers themselves. The scion wood often came from other trees in the orchard rather than from stock plants such as nurseries use. This practice naturally resulted in many variations such as a shoot or limb into full trees, which were more readily recognized.

While it is true that more strains have developed as a result of the use of weaker trees, broken trees, and stump grafts, it is also interesting to note that most of the new strains which have been found are of Delicious rather than Winesap, Jonathan or Golden-Delicious. Undoubtedly this is the result of greater differences within the Delicious variety, a so-called "inherent variability" between trees, limbs, shoots and even fruit on different spurs. Delicious appears much more variable than the other varieties.

The freeze which struck the Washington industry in 1955 has resulted indirectly in the development of many new color strains and different growth habits. The same factors which produced them is also in effect today. It is the tremendous demand for trees caused by the rapid increase in planting and the marked increase in number of trees per acre. Where growers may in the past have planted some 5 or 10 acres of land with 150 to 300 trees, today large acreages with tremendous numbers of trees are not uncommon. These large blocks of 100,

200 and even up to 600 acres or more, consume 20,000, 40,000 and even hundreds of thousands of trees at one time.

Let us hope that such an evolution will result in more improved plant material and not the development of viruses, bark disorders or other maladies. The latter could result just as readily as not. It suggests exercising some caution in what trees are planted or where the scion wood is obtained. Growers propagating their own trees, rather than waiting for healthy trees from certified plant material such as the nurserymen maintain, can lead to problems in the future.

## Director of Swedish Breeding Institute Dies

Dr. Nils Nybom, Director of the Balsgard Fruit Breeding Institute, died July 9, 1970, after a brief illness. This is a serious loss to Swedish pomology. Dr. Nybom will be a difficult man to replace.

STATEMENT OF OWNERSHIP MANAGEMENT AND CIRCULATION		Page 1	
1. Name of publication (Printed name, full or short name, and address)		2. Issue date (Month, day, and year)	
Fruit Varieties and Horticultural Digest		October 1, 1970	
3. Issue frequency (Quarterly, monthly, etc.)		4. Issue number (of this issue)	
Quarterly (January, April, July, October)		1000	
5. Name and address of publisher (Printed name, full or short name, and address)		6. Name and address of editor (Printed name, full or short name, and address)	
Department of Horticulture, Michigan State University, East Lansing, Michigan 48824		George W. Nessler, Dept. of Horticulture, Mich. State Univ., East Lansing, Mich. 48824	
7. Name and address of printer (Printed name, full or short name, and address)		8. Name and address of distributor (Printed name, full or short name, and address)	
American Pomological Society, 121 Tyson Bldg., University Park, Penna. 16802		American Pomological Society, 121 Tyson Bldg., University Park, Penna. 16802	
9. Name and address of circulation agent (Printed name, full or short name, and address)		10. Name and address of circulation agent (Printed name, full or short name, and address)	
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