

and oblate. The flesh is amber-colored, firm, and slow-softening after picking. Flavor is good. The pit is small and free. The skin color is black when fully mature. The fruit have been practically free of growth cracks, compared to those of Nubiana.

Trees of Friar are very vigorous and productive. The flowers are self-unfruitful, and a pollinizer is required.

Since it blossoms nearly at the same time as Santa Rosa, effective pollinizers have been Santa Rosa, Late Santa Rosa, Laroda, Redroy, and Redheart. Friar was introduced as a replacement for Nubiana, which has been very subject to fruit growth cracks in some seasons. It should be planted only where Japanese plums grow satisfactorily.

Shenandoah and Roanoke, New Apple Varieties From Virginia

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Two new apple varieties developed from the apple breeding program at Virginia Polytechnic Institute were named and released recently. Both are early fall ripening varieties and were selected to fill a period in the ripening season before harvest of Delicious and its sports gets underway. Areas to which they appear adapted include the mountain and higher Piedmont sections of Virginia where Delicious, Rome, Winesap and Golden Delicious perform well. Possibly other areas which grow these varieties well may find Shenandoah and Roanoke of interest. Brief descriptions of their fruit and tree characteristics follow.

Shenandoah, formerly identified as V.P.I. 2, is a seedling of Winesap crossed with Opalescent in 1942 by R. C. Moore who was a member of the V.P.I. Horticulture Department for more than 40 years prior to his retirement in 1964. The first fruit was borne in 1948, and the original tree bore annually through 1952, when the land on which it grew was lost to other uses. Propagations of it have fruited since 1956. The average ripening date at Blacksburg has been September 15, or about ten days be-

fore Delicious. The round, conic fruits are remarkably smooth and symmetrical. They are of uniform size, averaging 2½ to 3 inches in diameter even when the trees are heavily loaded. The skin is of greater than average thickness and fairly tough, to make for good handling quality. The crisp, juicy flesh is of medium texture. The flavor is sprightly to slightly tart suggesting Winesap. The skin is heavily waxed, thus giving long storage life with very little tendency to shrivel. It was first selected for possible processing use. Its usefulness for sauce and canned slices was first demonstrated in trials conducted by Professor Robert LaBelle, of the New York State Agricultural Experiment Station's Food Science and Technology Department. Professor Charles Wood, of the V.P.I. Fruit and Vegetable Processing Laboratory later confirmed these observations. Tests conducted at North Carolina State University reported that Shenandoah had exceptional quality for frozen pie slices. Its flavor may be a bit sprightly for some tastes, but we consider it to be well within the range of consumer acceptability for fresh use.

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The tree is of average vigor. Its top is rounded with strong-angled, spreading crotches. It is a heavy producer of spurs. It has blossomed annually at Blacksburg and is classed as an early season bloomer about with Jonathan, Delicious, and Winesap. It is not an abundant producer of pollen, but the pollen germinates satisfactorily. On the basis of present knowledge, it appears that it requires cross-pollination to set good crops of fruit. Neither fruit nor foliage have shown any special susceptibility to plant diseases at Blacksburg; Stuart, Virginia; Geneva, New York; and Waynesville, North Carolina.

Roanoke, formerly identified as V.P.I. 4, is a seedling of Red Rome crossed with Schoharie. The latter is a Northern Spy seedling developed at the New York State Agricultural Experiment Station and has the late blooming habit of Northern Spy as well as firm, yellowish flesh, with some Spy flavor and aroma. Roanoke fruits ripen about September 20 at Blacksburg or about five days before Delicious. The fruits are round to round-conic in shape, and remarkably smooth and symmetrical. Fruit size usually averages a bit smaller than Rome Beauty on trees carrying comparable loads of fruit. The skin has nearly solid bright red color with fine finish. The flesh is of creamy color and has above average firmness. The texture is medium, crisp, and juicy. The flavor is mild sub-acid, with a suggestion of Northern Spy flavor and aroma. The quality for fresh use is rated well above that of its Rome parent. The fruits have retained good flavor and texture to late March in the V.P.I. storage. The round-topped tree has vigor similar to Rome, but does not have its willowy growth habit. The crotches are spreading with strong angles. It is a heavy producer of spurs. The blossoms open a day or two after Rome and produce

abundant pollen of good quality. In 1966 it was one of very few varieties or selections in the V.P.I. orchard that bore a full crop of fruit. The original tree bore 16 bushels of very attractive fruit in spite of the May 10 and 11 freezes. On the basis of present observations, it appears that it may need cross-pollination to set good crops of fruit. Neither fruit nor tree have shown any special susceptibility to attack by diseases or insects at Blacksburg or at Geneva, New York.

Trees of Shenandoah and Roanoke are available in limited numbers this winter from several nurseries. Scionwood only is available from V.P.I.

Grapes for Ohio

A drop in temperature to -20°F in January of 1963 and a frost of $24-25^{\circ}\text{F}$ in May, 1966 in Ohio, made possible some interesting observations by two horticulturists of the Ohio State University. G. H. Cahoon and J. F. Gallander were able to evaluate 39 grape cultivars at the Southern Branch of the Ohio Agr. Research and Development Center, near Ripley, for their ability to withstand severe winter cold and a serious spring frost. They reported their observations of vine injury and crop production for four years (1964-67) in Ohio Report, 53(1). Siebel 5279, Concord, Couderc 7120 and Van Buren were the only vines that showed no winter injury. The 10 most productive varieties, listed in descending order of yield, were Baco No. 1, Bath, S.V. 12-375, Blue Eye, Seibel 5279, Concord, Seibel 10878, Couderc 7120, Van Buren and Schuyler.