'Redfree'

'Redfree,' released in 1981, is the program's sixth cultivar. This apple has an attractive red color and a crisp, juicy flesh. It is a high-quality summer apple with a firm flesh and it does not drop easily from the tree. It retains its quality and firmness up to two weeks after maturity. When stored at 34°F(1°C), this apple can retain its quality up to two months. The original seedling was planted in 1966, and the tree bore first fruit in 1971. 'Redfree' matures two to three before 'Prima' and six to seven weeks before 'Red Delicious.' This apple seems to have broad climatic adaptation. The tree does not require fruit thinning. It has a semi-upright growth habit and sets good annual crops. The tree has moderate tolerance to fire blight and powdery mildew.

'MacShay'

'MacShay' was released in 1981, in cooperation with Oregon State University. This scab-resistant apple was released for Oregon growing conditions. This is a high quality, red apple (80 percent overcolor) with a juicy, fine-grained flesh. The fruit retains its quality and texture for two months or more when stored at 34°F(1°C). It ripens two weeks before 'Jonathan.' The tree is upright and vigorous and has good tolerance to powdery mildew.

Conclusion

All of the apple cultivars presented here are field immune to scab and require no fungicide sprays for this disease; they require reduced sprays for some of the other diseases mentioned. This feature reduces grower costs for both sprays and labor.

These apple cultivars can be purchased through various fruit nurseries around the United States (except for 'Priam,' which is sold mainly in France). Several scab-resistant apple cultivars will be released in the coming years and hundreds more remain under testing.

Fruit Varieties Journal 43(2)50-51 1989

The Tomentosa Cherry, *Prunus tomentosa* Thunb.

KALJU KASK*

Prunus tomentosa Thunb. is native to northern China, Korea, Japan, the Himalayas, and Turkestan. In North America it is known as Nanking or Hansen Bush Cherry. Professor Hansen of the South Dakota Agricultural Experiment Station was largely responsible for introducing and demonstrating the adaptability of this exotic species in America (3).

The Tomentosa Cherry is a spreading shrub to 2m high or rarely small tree (to 3m). Young branchlets are tomentose, leaves densely pubescent-tomentose (villous) beneath. Flowers with white petals, or slightly pinkish, are appearing just before leaves. Fruit is mostly light red, globular, the size of a small sour cherry, sessile or very short-stalked, slightly hairy. Its principal uses has been as an ornamental shrub.

Prunus tomentosa hybridizes with the western sand cherry, *P. besseyi*, apricot and some other *Prunus* species (2) and has been used to a limited extent in breeding programs of the Soviet Union and the United States. It has been tried as seedling rootstock for various *Prunus* species (1). Efforts have been made using it as a parent in interspecific hybridizations of clonal

*Polli Katsebaas, Nuia, Eesti NSV, 202944 U.S.S.R.

rootstock breeding (2): the hybrids VVA-1 (*P. tomentosa* x *P. cerasifera*) VVA-2 (open pollinated VVA-1), and VSV-1 (*P. incana* x *P. tomentosa*) are available from the Soviet breeding programs.

The Tomentosa Cherry is a very cold hardy species which can endure -40°C. It adapts to areas too cold and arid for sweet or sour cherries. Selection in the Far East region of the Soviet Union led to introduction of cultivars 'Ogonek,' 'Amurka,' 'Khabarovchanka,' 'Pionerka,' 'Leto,' 'Damanka' (the two latters are open-pollinated seedlings of a hybrid between *P. besseyi* and *P. tomentosa*) by G. Kazmin at Khabarovsk (5). 'Alisa,' 'Detskaya,' 'Natali,' 'Okeanskaya,' 'Smuglyanka,' 'Vostochnaya,' 'Chereshnevaya Rozovaya,' are selections of Vladivostok Experiment Station by V. Czarenko, beginning with 1971. Selection in *P. tomentosa* in the United States led to introduction of 'Drilea' by the Morden Station in 1938 and of 'Orient' by the Minnesota Station in 1949; a Canadian nursery introduced 'Eileen,' a hybrid between this species and sand cherry (3). Several superior selection of *P. tomentosa* are available from domestic selections.

P. tomentosa is reported requiring cross-pollination for best fruit set, although a few isolated bushes fruit regularly. Self-fruitfulness seems to be highly variable from clone to clone.

The cultivars produces crop of 5 to 8 kg per a plant, but the best bushes have produced 20 kg (5). Fruit texture is too soft for shipping, and shelf life is very short.

I suppose the Far East region of the Soviet Union is one of the largest producer of the Tomentosa cherries.

For more severe regions of the Urals and Siberia as well as in the prairie states and provinces of the United States and Canada winter-hardiness of the Tomentosa Cherry needs to be increased.

Winter damage of physiological nature is a very serious problem in areas with fluctuating winter temperatures. More injury to the trunk (especially to the hypocotyl) and branches is usually seen on the southeast side which may be due to greater temperature fluctuations compared to north side. The crown turns one-sided or the plant will be destroyed. Usually there is an entire failure to identify any pathogens within the phloem elements. On the dead branches only a saprophyte *Amphisphaeria saccardiana* Togn. was established (4). No cultivar was introduced in the Latvian and Estonian S.S.R. experiment stations.

Literature Cited

1. Cummins, J. 1979. Exotic rootstock for cherries. Fruit Var. J. 33:74-84.
2. Eremin, G. V. 1985. Otdalennaja gibridizaciya kostochkovyh plodovyh rastenij (in Russian: Interspecific hybridization of stone fruits). Moscow, USSR.
3. Fogle, H. W. 1975. Cherries. p. 348-366. In J. Janick and J. N. Moore (eds.). Advances in fruit breeding. Purdue Univ. Press, W. Laf., IN.
4. Kask, K. 1978. The prospects of cultivating *Cerasus tomentosa* in Estonia (in Estonian, with English abstract). Eesti Loodus: 360-361.
5. Kazmin, G. 1975. Voilochnaya vishnya (in Russian: Tomentosa Cherry). Khabarovsk, USSR.

From 1987 Apple Variety Trial

ROBERT L. STEBBINS

Midseason varieties which looked promising were: 'Gala,' 'Royal Gala,' which mature in early September and are sweet, juicy, crunchy, and attractive. In spite of tortuous storage conditions, they held up well. Among the mid-September midseason 'McIntosh' types, 'Spartan,' 'Cortland,' and 'Morspur McIntosh' looked good. 'Cox's O.P.' was badly water cored and broke down in storage, perhaps because the season was warmer than usual. 'Criterion' showed excellent quality and outstanding productiveness. 'Jonagold' was large, late to color, and broke down in storage.