long enough to determine its value. Neither variety can yet be recommended as far south as North Carolina.

Source of Plants

Plants are available from cooperating growers and nurseries. Neither the Bureau of Plant Industry nor the New Jersey Agricultural Experiment Station have plants of these varieties for sale. For such sources of supply, contact Mr. Franklin A. Gilbert, New Jersey Agricultural Experiment Station, New Brunswick, New Jersey.

NEW APPLES IN THE MIDWEST

By H. L. Lantz
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It was quite a number of years ago that at one of the A.P.S. meetings there was a large exhibit of both new and old apple varieties. In conversation with the late Mr. Howell a variety expert with Starks Nurseries, he made a very pertinent remark as we looked over the new varieties. Said Mr. Howell, "The world is full of good apples." Think this over, and you will know what he meant. That remark has always remained with me. It tended to make me more conservative in appraising new varieties. And rightly so, for a new variety has got to be superior in a least one respect, to other old varieties commonly grown, if it is to be successful.

In the midwest hardiness and superior production are paramount. But we know that varieties and groups of varieties are quite regional in their adaption. Haralson is a good example. Grown in Northern Iowa and Minnesota it develops good commercial size and fine red color and is a winter apple. Grown in central Iowa it fails to color well, the fruit drops freely and is ripe in November. Other instances of regional adaptation could be cited.

In the midwest a large number of trial plantings of new varieties from far and wide have been made during the past half century. As a general statement it can be said that so far as apples are concerned that the varieties which have performed well are those originated in the region. For example, the McIntosh seedlings such as Early McIntosh, Macoun, Milton, and Cortland are not well adapted to hot summers. Cortland finds a few friends farther north and along the rivers. The seedlings of Delicious, Orleans, Medina, Sweet Delicious, and Newfane are all short on hardiness. Melba, one of Canada's McIntosh seedlings is

highly respected as a home orchard apple. It ripens very unevenly and drops, but this does not disturb those who want this high quality summer apple.

The following comments are pertinent to this discussion to indicate how certain of the new apples have behaved which were originated in the Upper Mississippi valley.

Minnesota Introductions

Haralson—one of the best winter apples throughout northern Iowa and Minnesota. The hardiness of the tree is fully equal to the winter tests of this region. The fruit sizes well, colors well, and is a winter apple of moderately good quality.

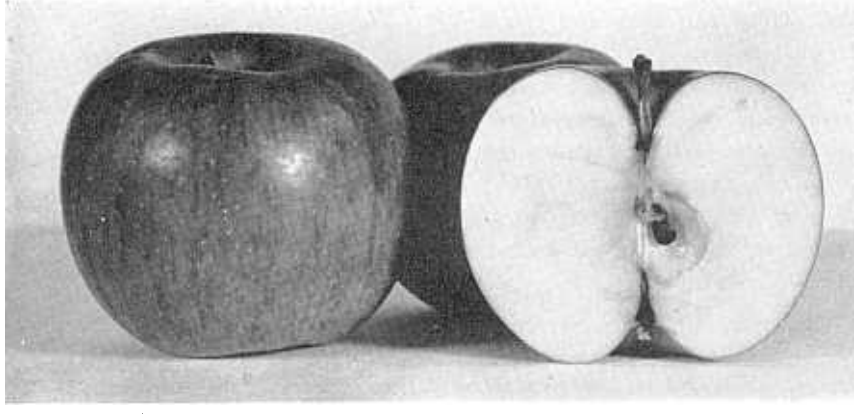
Beacon is a week or more later than Duchess. Tree is hardy and productive. The fruit is brightly colored with red. Some people object to Beacon because it is a little too mild, but Beacon appears to be destined to become an important summer apple.

Others from the Minnesota Fruit Breeding farm include **Minjon, Prairie Spy, Victor, Fireside, Redwell** and others. These are still too new to be appraised in this report.

Iowa Introductions

There were eleven introductions made during the 1920 to 1930 period. Some of them have already failed to make the grade. Those that have shown real promise as based upon growers experience in Iowa and neighboring states are discussed briefly.

Secor (Salome x Jonathan). This late keeping sort has been called the best apple of its season. Commercial growers are planting trees in limited numbers according to nurseries who are growing the trees for sale. The tree is judged to be hardier than Jonathan, and it appears to be well adapted to growing wherever Jonathan does well. The fruit is larger than Jonathan, roundish oblate; striped to full red when well grown; hangs to the tree



The Secor is a Salome x Jonathan cross which produces a high quality late-keeping apple.

and matures 10 days later than its red parent. The fruit stores well, is free of Jonathan spot and keeps through April. The flesh is firm, yet crisp and juicy. The sprightly flavor is judged by many to be the equal to Jonathan.

Secor has two faults. The trees are subject to fire blight, but no more so than its Jonathan parent. In some locations and in some years the fruit fails to develop satisfactory red color.

Sharon (McIntosh x Longfield). This is a strong vigorous tree that is somewhat choosy as to soil. It requires deep good apple soil if it is to do well. On the loose soils of the middle west it bears young and abundantly, while on the heavy corn soils it tends to come into bearing late.

Growers who have it in production find it a popular sort with their "drive-in" customers. The fruit sizes up and colors uniformly throughout the tree. It has the typical high McIntosh aroma, is mildly subacid and richly flavored, excellent to eat fresh and cooks well.

The chief faults with Sharon are several. The trees become biennial, and tend to overbear in the "on-year". There is a marked tendency to dropping which can be corrected in part with the stop drop sprays. The color is bright pale yellow with stripes of bright red. It makes an attractive pack for the color is clean, bright and attractive.

We have discovered several all-over red sports which are being watched. These should entirely replace the original type if the trees are productive.

Joan (Anisim x Jonathan) is a sensational apple so far as size and beauty of coloring are concerned. The tree bears a full crop every year. Joan lacks good quality, but does well as a kitchen apple. The season runs through November. The trees are not as hardy as they should be. While nurseries are listing this variety, it is felt that since it is lacking in desirable quality, its usefulness is very limited.

Hawkeye Greening. (Vermont seedling) is the most productive apple in the middle west. Trees load up to the breaking point every year. The fruit runs around 3 inches, is unfortuneately a greenish to yellow apple with only fair quality. The tree is hardy, and because it is so very productive it is recommended for farm orchard planting. The fruit is excellent for cooking and is ready to use in October, but has remarkable keeping quality. The season runs through March. Too bad this one doesn't have red color and better quality.

Large numbers of selected cross bred apple seedlings are being tested in the

midwest. The Experiment Stations in Minnesota, Illinois, Missouri and Iowa have hundreds of these selected seedlings. Some first class apples should emerge as a result of the breeding programs of these states.

FROST INJURY TO BLUEBERRIES

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Cultivated blueberries are often subject to low spring temperatures which injure or kill some of the buds or blossoms. Therefore, varietal susceptibility or resistance to spring frosts is of considerable importance. In the spring of 1949 an opportunity occurred at Amherst to get some information on this question.

On the night of April 28 the temperature dropped to 21° F. in a variety planting of mature bushes ranging in age from 15 to 17 years. The bushes were growing in sod which has been previously heavily mulched with hay and liberally fertilized so that the bushes were in fairly vigorous condition. The first blossoms opened on Cabot on April 30. On May 4, 10 buds on each of 5 bushes of each variety were cut with a razor blade and the percent injury estimated on the number of buds which contained injured blossom buds. Results are given in Table 1.

Table 1. Percentage of buds injured by 21° F. on April 21, 1949

Concord	10
Rubel	13
Rancocas	22
Cabot	28
Scammell	32
Stanley	42
Pioneer	44
Pemberson	52
Wareham	74

In another planting about 150 feet from this variety block and at practically the same level are a number of U. S. D. A. selections together with Rubel and Concord for comparison. The bushes are three to four years old and most of them had set fruit buds for their first real crop. The planting has been mulched with sawdust and liberally fertilized so that the bushes had made a vigorous growth in 1948. The percentage of injured buds is given in Table 2.

Table 2. Percentage of buds injured by 21° F. on April 28, 1949

Variety	No. of bushes	Pct. of Injury
Rubel	8	4
Concord	5	4
Berkeley (U-85)	5	85
Coville (DN-76)	7	35
DK-71	6	23
GN-87	3	3
A-91	6	36
V-20	3	52
F-72	5	32
V-25	4	50
X-58	4	60
BM-22	2	55