

# ALASKA PIONEER FRUIT GROWERS' NEWSLETTER

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## NEW MEETING PLACE FOR MONTHLY MEETING

The November meeting will be held at the regular time and date, 7 PM on Nov. 21., 1996, but at a new place: Boyer Photography. It is located at 2813 North Star, between Northern Lights and Gamble, a block west of Matanuska Dairy. We will have about 10 apples for tasting, mostly from Applesource, and a new video on apple pruning on loan from a fruit-growers group in Oregon.

## RESULTS OF 1996 ALASKA-GROWN APPLE-TASTING

by Dwight Bradley

The Annual tasting of Alaska-Grown apples was held at Bradley's in Peters Creek on September 26. About 30-35 people attended, and 26 turned in scoresheets. In all, we tasted 50 apples, including 40 different varieties and 10 repeats. Almost everyone agreed that this was an excellent group of apples — better than the last couple of seasons.

The winner was a Ginger Gold grown by Bob Boyer in his sheltered location in Spenard. Tom Marshall's Oriole, a perennial winner, came in a close second. Both of these were truly excellent, as good as apples ever get in Alaska. State Fair, 15th St. Mystery, and Parkland were close behind. Norland finished in the middle of the pack (way below its usual finish in the top five), presumably because all the Norlands had long since ripened when we held the tasting. Yellow Transparent and Geneva Early undoubtedly would have scored much higher a few weeks earlier as well. This was one of the better performances of the later-ripening varieties such as State Fair, Summerred, Canada Red, and 8th & M Mystery.

Variety (with initials of grower in some cases)	avg. score (1-10)
Ginger Gold BB	8.60
Oriole	8.52
State Fair	8.10
15th St.	7.75
Parkland	7.56
Summerred	7.41
Canada Red	7.27

Pristine	7.23
8th & M	7.17
Harris mystery	7.04
Yellow Jay	7.00
Hazen	6.98
Parkland	6.95
Westland KF	6.93
Vista Bella	6.88
Gravenstein	6.78
Mantet	5.92
Unknown Knik north	6.65
10th & E	6.63
Whitney	6.57
Golden Trans.	6.52
Red Trans.	6.48
Rosthern 12	6.44
Norland	6.33
Red Duchess	6.31
Red Duchess	6.28
Golden Trans.	6.25
Jersey Mac	6.24
Hazen	6.13
Heyer 12	6.04
Unknown huge green	6.03
Mantet	5.98
Root mystery	5.96
Ginger Gold FM	5.95
Summerred	5.92
Heyer 20	5.91
Joyce	5.88
Westland VV	5.87
Novosibirski	5.80
Adnac	5.78
Unknown Knik South	5.73
Westland LC	5.38
Centennial	5.38
Trailman	5.38
Unknown crab	5.26
Geneva Early	5.04
Yorks Greening	4.89
Y. Trans.	4.43
Yellow Trans. HH	3.98
Wealthy	3.94

## IN THIS ISSUE: TWO ARTICLES BY CURTIS DEARBORN ON APPLE VARIETIES SUITABLE FOR ALASKA.

These articles, published in *Agroborealis* in 1971 and 1979, describe Chinese Golden Early, Rescue, Summerred, and they also contain a wealth of historical information on early attempts to grow edible apples in Alaska. Thanks to Bob Purvis for sending copies, which are reproduced here on pages 4-7.

### APPLE ROOTSTOCK PERFORMANCE DURING THE WINTER OF 95-96 IN PALMER

Bert Gore reported to Bob Boyer that he lost quite a few apple trees last year in Palmer. He lost 100% of his trees on Antonovka rootstock, 50% on Prunifolia, 50% on Borowinka, 10% on Ranetka, and 0% on Baccatta. I wasn't able to get in touch with Bert to get more details or verify the numbers, but I recall that he has about 3 acres in apples, mostly planted since 1993. More on this in the next issue.

—Dwight Bradley

### APPLE-TREE MORTALITY DURING THE WINTERS OF 94-95 AND 95-96 IN PETERS CREEK

by Dwight Bradley

The winter of 1995-96 turned out to be a "test winter" for us in Peters Creek. It wasn't particularly cold (lowest was not quite -30°F), but the problem was that there was no snow. The first significant snowfall wasn't until January, by which time we had already had been through a three-week stretch when it never got above 0°F. Reportly, the ground was frozen to as deep as 14 feet in parts of Anchorage; water mains were bursting every day.

When spring finally came, at first it seemed that our 50 apple trees had gotten through with only moderate damage. A few trees were killed outright and never showed any sign of life: for example, Tetovski and Liveland Raspberry, which were both laden with fruit spurs and were ready to fruit heavily for the first time. Most of the doomed trees started to leaf out and bloom, but then suddenly wilted and died in early to mid-June. Strangely enough, a Yellow Transparent that ended up dying yielded several sticks of healthy, viable scionwood in March. Clearly it was the roots that were killed and not the top.

Some trees were set back quite severely but didn't die. For example, a 1992 Rescue on Antonovka set out about 100 blossoms, but the leaves were half normal size and the tree didn't grow a bit. The tree set a few fruits but these soon dropped. Things turned around in early August, when a new set of larger leaves grew, and the tree seemed to be its old vigorous self again. Strangely enough, it actually bloomed again around mid-August. (The same happened to a Norland that also had gotten off to a slow start).

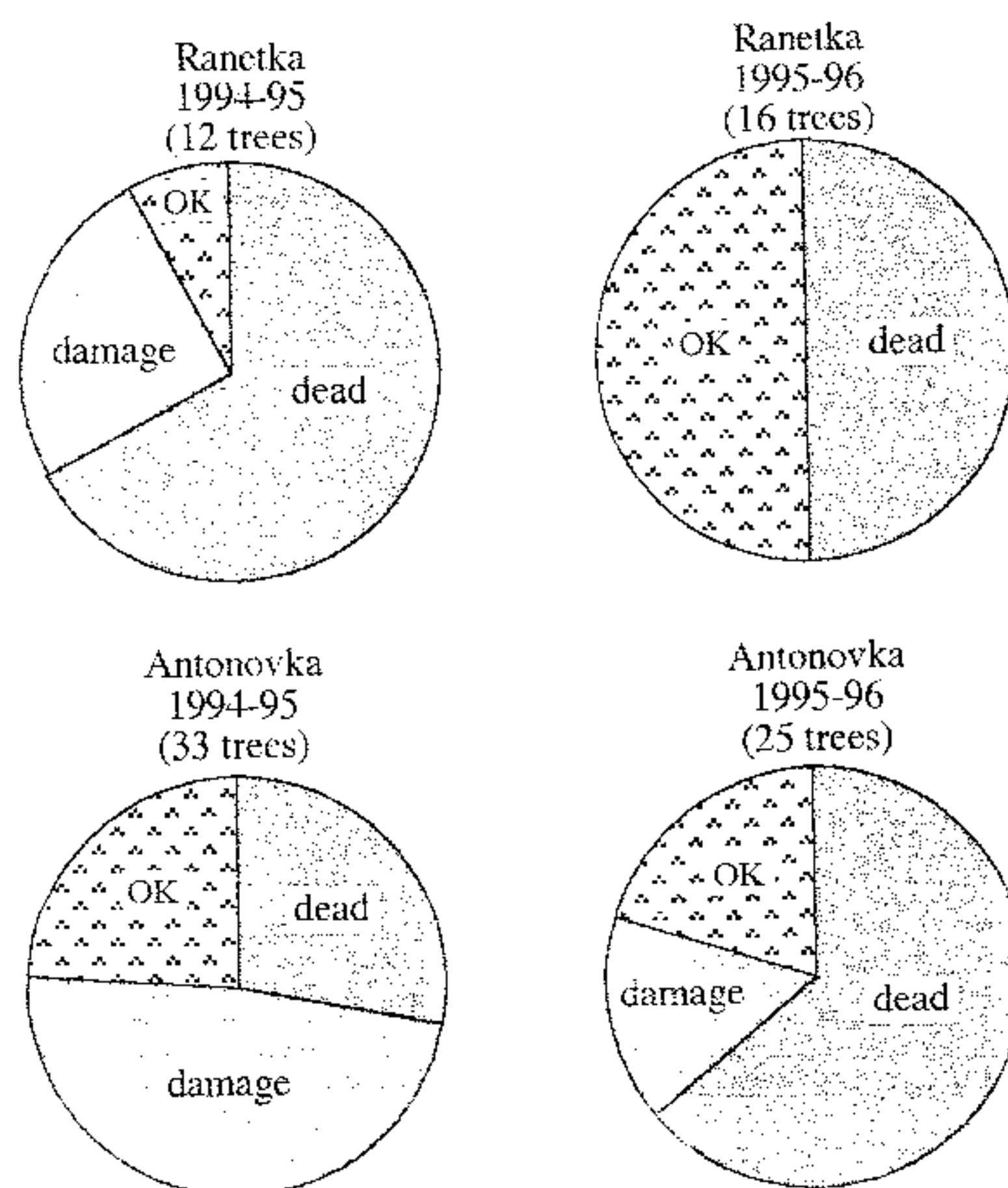
The winter before (94-95) was also a bad one for our apple trees, but the problem then was sunscald. Lots of snow fell in the early fall of 1994, before the ground had even frozen. Then, in March 1995, there was about a week of thaw when some trees began to draw sap from the barely-frozen ground. This

was followed by a short spell down around 0°F, which killed the cambium layer in many trees.

Needless to say, the last two winters have been very discouraging, but we're getting the hint and replacing whatever dies with the more reliable varieties, such as Parkland and Norland.

The pie diagrams below summarize the performances of Antonovka and Ranetka rootstock. Ranetka did significantly better than Antonovka in 95-96, but slightly worse in 94-95. Ranetka's poor showing in 94-95 is probably due to its earliness in breaking dormancy. This is something I've observed for several years in trees that winter over in my garage, which stays at 35-40°F. Varieties on Ranetka are always the first to begin to leaf out, well before Borowinka.

The table on the next page lists varieties that died, lived but suffered some damage, or came through without injury. Trees that were "Terminated" were still alive when replaced in the orchard, but had no hope of ever thriving again.





# WINTER INJURY IN PETERS CREEK, 1994-95 and 1995-96

Variety (* means tree has fruited)	Year propagated	Rootstock	94-95 response	95-96 response
Almata	91	Antonovka	damage	dead
Antonovka tree	92	Antonovka	damage	dead
Antonovka shoot	95	Antonovka	NA	dead
Antonovka shoot	95	Antonovka	NA	dead
Beacon	91	Antonovka	dead	NA
Breaky	93	Antonovka	damage	terminated
Burgundy	92	Antonovka	dead	NA
Carroll	91	Antonovka	okay	dead
Centennial	93	Ranetka	NA	dead
Chinese Golden Early*	91	Antonovka	damage	dead
Chinese Golden Early*	91	Antonovka	damage	dead
Crimson Beauty*	91	Antonovka	damage	okay
Duchess	91	Ranetka	dead	NA
Dudley*	91	Antonovka	dead	NA
Early Cortland	92	Antonovka	damage	okay
Early Joe	92	Ranetka	dead	NA
Fifteenth St. Mystery	93	Ranetka	damage	okay
Geneva Early	91	Ranetka	dead	NA
Geneva Early	94	Ranetka	dead	NA
Ginger Gold	94	Ranetka	dead	NA
Heyer 20*	91	Ranetka	okay	okay
Iowa Beauty	91	Antonovka	dead	NA
July Red*	93	Ranetka	dead	NA
Lodi	92	Antonovka	damage	dead
Mantet	90	Antonovka	damage	terminated
Melba*	91	Antonovka	dead	NA
Minnesota 1734*	87	Antonovka	okay	dead
Morden 359*	91	Antonovka	okay	damage
Norland*	92	Antonovka	okay	damage
Norland*	93	Antonovka ?	okay	damage
Northern Lights	92	Antonovka	dead	NA
Oriole*	87	Antonovka	damage	dead
Oriole	94	Borowinka	NA	dead
Oriole	94	Ranetka	NA	dead
Oriole	94	Ranetka	NA	okay
Quinte	91	Antonovka	damage	terminated
Parkland	90	Antonovka	okay	okay
Parkland	94	Borowinka	NA	okay
Parkland	94	Ranetka	dead	NA
Parkland* (4 trees)	94	Ranetka	NA	okay
Primate*	91	Ranetka	dead	NA
Ranetka shoot	91	Ranetka	NA	dead
Ranetka shoot (2 trees)	95	Ranetka	NA	dead
Red Astrachan	91	Antonovka	dead	NA
Red Astrachan	91	Antonovka	dead	NA
Red June	93	Ranetka	NA	dead
Rescue*	91	Antonovka	okay	damaged
Rosthern 15	93	Antonovka	damage	dead
Rosthern 18*	91	Antonovka	damage	okay
State Fair	87	Antonovka	okay	dead
Tetovsky	91	Antonovka	damage	dead
Unknown crab* (Centennial?)	94	Ranetka	NA	okay
Vista Bella	91	Ranetka	damage	dead
Wealthy*	91	Antonovka	dead	NA
Westland	90	Antonovka	damage	okay
Yeager Sweet	93	Ranetka	damage	dead
Yellow Jay*	89	?	dead	NA
Yellow Jay*	89	?	okay	okay
Yellow Transparent*	91	Antonovka	damage	dead

# Apples in Alaska

CURTIS H. DEARBORN  
Research Horticulturist

Apples are not native to Alaska even though there are areas along the coast with milder weather conditions than those where apples are grown in other regions of the world. Oregon crabapple (*Malus fusca*) of southeastern Alaska is the only member of the *Malus* genus indigenous to Alaska.

Early settlers in Alaska were eager to have apples in their new environment and efforts were made at the Sitka Agricultural Experiment Station in 1902 and 1903 to grow and propagate apple varieties of that era. By 1906 about 30 varieties, constituting 2716 apple trees, had been distributed to settlers to learn if they would be productive in their new locations. Crabapples were also studied and found to be hardy and productive. Inadequate transportation made it difficult to spread the material beyond communities accessible by water. As a result of this early work, a few fruits of Yellow Transparent, McIntosh, Jonathan, Northern Spy and other more recent varieties are grown in the Panhandle Region of Alaska, notably at Haines. Heavy rainfall and high humidity of this coastal region favor fungi that attack apple leaves and trunks so that fruit production there is not without its problems.

In the Auke Bay area, an old orchard of Yellow Transparent trees with trunks 6 to 10 inches in diameter was observed in the early "50's" heavily laden with moss growth typical of that found on forest trees of that region.

At Hope, on the south shore of Turnagain Arm where the climate is tempered considerably by the water and winds of Cook Inlet, apples have been fruiting for over 30 years. Anoka and Haralson were recognizable but these were destroyed by high tide-water following the 1964 earthquake.

Settlers on the Kenai Peninsula at Seward, Sterling, Kenai, Ninilchik, and Homer have attempted to grow apples. Trees of Wealthy and Yellow Transparent fruited once in the Sterling area and were subsequently destroyed



Figure 1  
Chinese Golden Early

by moose browsing. Apple trees set in the other communities have grown poorly. None have matured a crop of fruit and most trees have succumbed to unfavorable growing conditions including destruction by moose browsing, or girdling by mice and rabbits.

In the vicinity of 3rd Avenue and Christensen Drive in Anchorage, an apple and 2 crabapple trees have been growing and fruiting for over 30 years. The fruit spurs and the bark of the apple closely resemble that of Yellow Transparent; however, the fruits are not typical of this variety as it grows in other apple producing regions. The tree could be a seedling of Yellow Transparent developed during the early work at Sitka.

Further up Cook Inlet, at the Matanuska Research Center, testing of apple trees has been in progress since the early "20's." Apple trees have been set in other locations of Alaska, including the College Research Center; however, survival of the plantings and production of mature fruit have been rare. An extensive planting at the Matanuska Research Center in the early "30's" was doomed to failure at setting because the root systems had become very dry during the long period in transit from nurseries in the lower latitudes.

In 1949, 39 named and numbered varieties of apples were set at the Matanuska Research Center in 5-tree plots to determine their response to this environment. Tops of about 25 percent were still alive and showing weak growth characteristics in June of 1952. Not one group showed vigorous growth among the groups of 5 trees set of each variety. It was not apparent why the apples had died or declined in vigor, so cultural practices that might influence tree survival were tested. The first method was to provide good soil drainage. Trees were set over an area of well-drained soil, where drainage was assured by excavating to a depth of 2-1/2 feet, filling with a foot of small stones, covering with top soil, and setting the trees conventionally in these prepared holes.

The second method was to evaluate tree response to exposure in the open versus against a solid fence of inch boards nailed to a height of 6 feet on wood fence posts. Four posts were set at the corners of a 12' x 12' soil plot oriented so that the east and west board walls ran parallel to magnetic north. Apple trees were set inside the square against each wall and outside the square against each wall giving all possible directions of exposures to, and protections from, the elements. The third method was to set trees into a steep soil bank and mound soil over the excavated area, leaving their trunks protruding and in a horizontal position. Envelopes of 1/4 inch mesh hardware cloth were used to protect the tops



from rodents. The varieties Red Duchess and Yellow Transparent were used for these 3 studies.

These newly set trees grew normally in 1952, their first season. Buds broke irregularly in the spring of 1953 and all trees of both varieties were dead by mid-August. The answer to over-wintering apple trees had not been found through employing these protective practices. Twelve other new varieties were also set in 1952 in the conventional manner. Their growth was very disappointing in 1953 and all were dead at the close of the 1954 growing season.

With the passing of time, it has been observed that rootstocks of some trees, whose tops had winterkilled in earlier years, had regenerated a new top. When this material was traced to its origin, it was learned that the rootstocks in use by the propagators were from hardy stocks such as Columbia crabapple, or ornamental types, *M. baccata* and *M. Sieboldii*.

In 1960, the major emphasis was changed from testing the survival of nursery "whips" of commercial apple varieties to grafting scionwood onto sprouts of surviving rootstocks. Although it was recognized that USDA plant exploration excursions to other countries had brought new apples to the Plant Introduction Station at Glen Dale, Maryland, use of this new wood in Alaska was limited by a lack of trees in which grafts could be set. Each year the list of available accessions from Glen Dale was scanned for possible new varieties that might be expected to survive in the Cook Inlet environment. Since 1960, wood of 8 apples from Glen Dale has been grafted to available rootstocks. A few grew normally and developed a shoot 6 to 24 inches long.

Only a few scions have remained on the rootstocks long enough to produce fruit. Some winterkilled in the winter following setting, several succumbed during the second winter, and some were broken at the graft union by wind or carelessness in culture.

Three varieties with quite acceptable fruits are among the survivors that fruited for the first time in 1970. Chinese Golden Early (Figure 1), a yellow apple type, was grafted 25 May 1967 to *M. baccata* and it made a shoot 24 inches long during that growing season. In 1970 the tree was 7 feet tall and produced a profusion of large white flowers and 37 good fruits.

Yephorys Chernogous scionwood was grafted 3 June 1966 to *M. baccata*. It made excellent growth and form each year. Over 50 fruits set in 1970 from a profusion of light pink flowers. The fruits developed a dull red cheek and were of fair size as shown in Figure 2. The flavor and aroma resembled those of Gravenstein.

Laxton's Early Crimson was grafted 3 June 1966 to *M. Sieboldii*. Its first pink flowers were sparse and only 4 fruits developed. Three of these were damaged by magpies as the fruits began to color. The fruits were somewhat elongated, medium in size, and splashed with crimson on the side exposed to the sun. The flesh was white, crisp, juicy and had a pleasant flavor.

Each of these apples, new to Alaska, adds a new dimension to apple production in the Cook Inlet region where recognized varieties of apples are scarce. Several seasons of culture and fruiting will be required to learn if these varieties can survive in this climate following a season of fruiting. It is believed that they possess the necessary resistance to cold to survive, as the

budwood came from the cold regions of fruit production in the USSR. Fungicidal and insecticidal treatments have not been needed regularly thus far in the culture of apples. Occasionally, aphids on terminal shoots were numerous enough to warrant using a malathion spray several times in a season.

One of the limitations to expanding these or any other apples or crabapples in Alaska has been the scarcity of stocks on which new varieties can be budded or grafted. Oregon crabapple of southeastern Alaska was used at Sitka in early propagation work but was not a very satisfactory rootstock because of its prostrate habit of growth and small stem. When this crabapple is grown as far north as the Matanuska Valley its stems are even smaller and it assumes a thick shrub form. Mountain-Ash has been used as a rootstock for apple and this plant is native to the Cook Inlet region. Even so, the Mountain-Ash is a slow-growing, small-stemmed tree with a rather weak root system. Bearing apple trees in Alaska need a rootstock with sufficient stem to support a rapidly growing trunk above the graft unless provided with support. Mountain-Ash is believed to lack an adequately vigorous root system to nourish a good crop of fruit. Native plant materials suitable for apple rootstocks apparently are lacking in this region.

If the trees at Matanuska continue to grow as they have in the last 4 years, budwood soon will be available for more extensive trials. Persons with hardy rootstock material soon may have the opportunity to graft or bud some of these new varieties into their trees. Another alternative is to contract with a nurseryman to bud a few Columbia or ornamental apple rootstocks with one of these new varieties.

There are still many varieties of apples in other regions and at Glen Dale, Maryland that have not been tried in Alaska. It seems likely that even better apple varieties are available for Alaska. The small investment made so far has demonstrated clearly that good eating apples can be grown in some favorable locations in Alaska. Additional financial support will be necessary if the remaining untested apple stocks in other regions are to be evaluated systematically in Alaska.



Figure 2  
Yephorys Chernogous



# 'Summerred' Apple

## A Delightful Addition to 'Chinese Golden Early' and 'Rescue' Eating Applies for Southcentral Alaska

Curtis H. Dearborn\*

'Summerred' is the first apple of high eating quality ever to have developed ripe fruits on the tree in the Cook Inlet region of Alaska. Its flavor is a blend of 'McIntosh' and 'Delicious' and its fragrance exceeds that of 'McIntosh.' The texture of 'Summerred' resembles that of 'Golden Delicious,' except that 'Summerred' is firmer. 'Summerred' fruits were on display at the Alaska State Fair in Palmer from August 26 to September 5, 1977. Their bright-red color and large size attracted the attention of many fair goers (Figure 1). The purpose of this report is to acquaint prospective Alaskan fruit growers with the merits of 'Summerred' apple and how it may supplement earlier recommended apple varieties (1).

The 'Summerred' apple originated at Summerland, British Columbia, having been selected in 1961 by K. O. Lapins from seedlings of open-pollinated 'Summerland' S-4-8. 'Summerland' apple resulted from a cross of 'McIntosh' and 'Golden Delicious.'

During late winter of 1972-1973, scionwood of several apples was obtained from the USDA Plant Introduction Station at Glenn Dale, Maryland, and, in the spring of 1973, was grafted onto a five-year-old trunk of *Malus baccata*, a hardy ornamental apple first introduced to this region in early 1900. It was the only rootstock on hand at the time 'Summerred' scionwood was available for grafting. This scion produced the tree that first fruited in 1977. So far, winter injury has not been apparent on this tree of 'Summerred' even though it is growing without winter protection.

Summerred apple has been propagated on M 26 Dwarfing rootstock and standard seedling apple rootstocks by nurserymen in Washington and was listed for sale in 1978 by

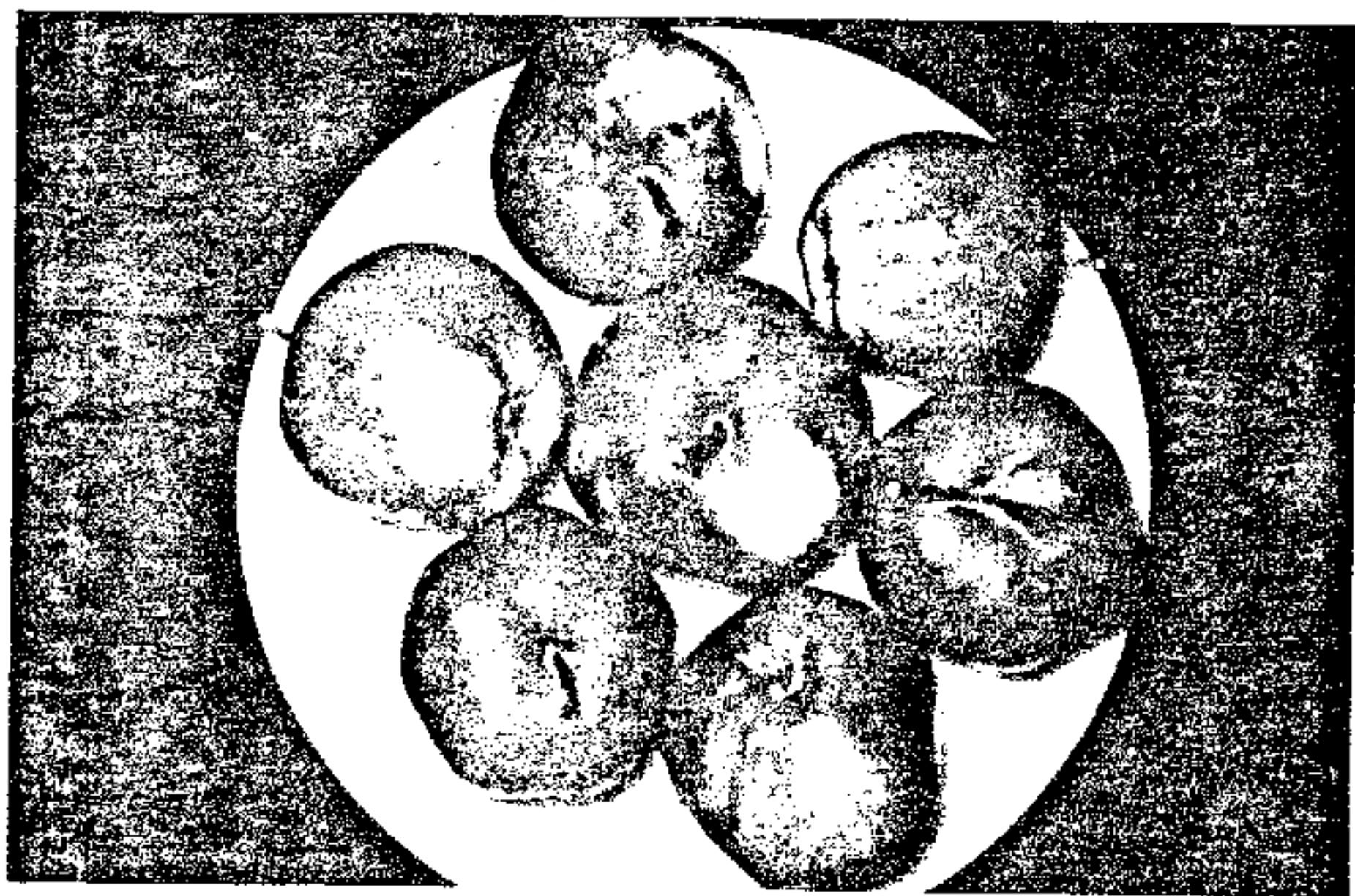


Figure 1. Fruits of Summerred apple grown for the first time in Alaska in 1977. Their size can be estimated in relation to the 9-inch diameter plate.

\* Research Horticulturist, Agricultural Research, Science and Education Administration, USDA, Palmer.



A four-year-old 'Summerred' apple tree ripened 87 standard-sized apples in the Matanuska Valley in September 1977. They were beautiful, large, red, excellent eating-quality apples.

C & O Nursery, Buckley Nursery, and Van Well Nursery. Other suppliers may exist. There is no assurance that 'Summerred' will survive in Alaska on M 26 rootstock. However, these are common nonhardy rootstocks on which other varieties of apples and crabapples are sold to Alaskan growers.

A short note released to the public in March of 1978 stimulated the operators of several plant outlets in the Cook Inlet region to obtain and sell trees of the 'Summerred' apple. From these local outlets and the out-of-state nurseries, customers have purchased trees and have planted them in a variety of locations. 'Summerred' apple, therefore, will be tested in a wide range of growing conditions in Alaska. In addition, ten cooperators at selected locations encompassing a wide range of environmental conditions from the Copper River Basin to Anvik on the Yukon River were each provided with a tree of 'Summerred' for evaluation.

Time will show whether the M 26 rootstock on which 'Summerred' was propagated has enough cold resistance to survive in Alaska. It is expected that some nurseries in Alaska soon will offer this and other desirable adapted varieties of apples on hardy rootstocks.

Related research in the Matanuska Valley was conducted in an effort to improve rootstocks. Seeds of *M. domestica*, the native apple of New England, from fruits of selected forest trees of New Hampshire, were planted in conjunction with seeds from 'McIntosh,' 'York Imperial,' 'Rescue,' 'Chinese Golden Early,' and 'Quality' crabapple. The 'Quality' crabapple was the only material that produced a significant percentage of winterhardy seedlings. Seedlings of *M. domestica* grew well in 1977 as shown in Figure 2, but their wood was not winterhardy, as can be seen in Figure 3. (Information gathered on these potential rootstock materials was obtained separate and distinct from the normal research program but is included here for guidance to others.)



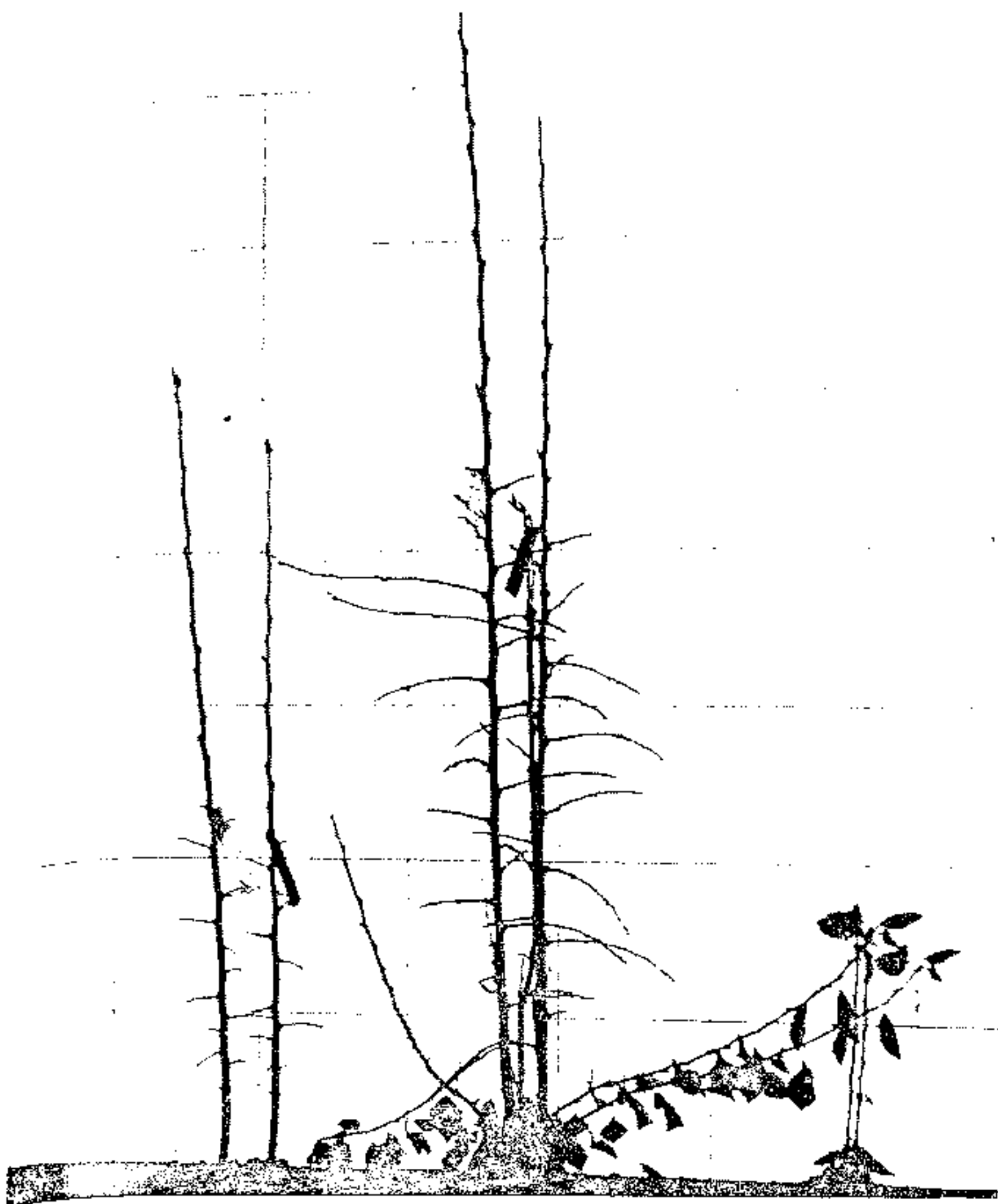


Figure 2. Seedling apple trees of *M. domestica* being grown for rootstock material. Some seedlings grew four feet tall.

The 'Summerred' that fruited for the first time in 1977 has set nearly as many fruit again in 1978, which is a very desirable fruiting characteristic. Some fruit trees do not fruit as heavily in the season following a large crop. Some apples do not set fruit with their own pollen. These points have not been tested in Alaska for 'Summerred' because nearby 'Chinese Golden Early' and 'Rescue' varieties were flowering when 'Summerred' was in bloom.

'Chinese Golden Early' is a very sweet, pleasantly flavored apple to eat out-of-hand. Its fruits are intermediate in size between those of 'Summerred' and 'Rescue.' It has been the earliest good-quality apple to mature on the tree. 'Chinese Golden Early' ripens at Palmer from August 18 to August 28 depending upon the season. Scionwood of this variety was obtained from the USDA Plant Introduction Station, Glenn Dale, Maryland, as PI 292930 and grafted to *Malus baccata* in 1967. 'Chinese Golden Early' fruited first in 1970 and in each year since. The ripening of this variety is always a pleasant beginning of the apple-ripening season in Alaska. Scionwood of this variety is available, in season, from the Alaska Agricul-

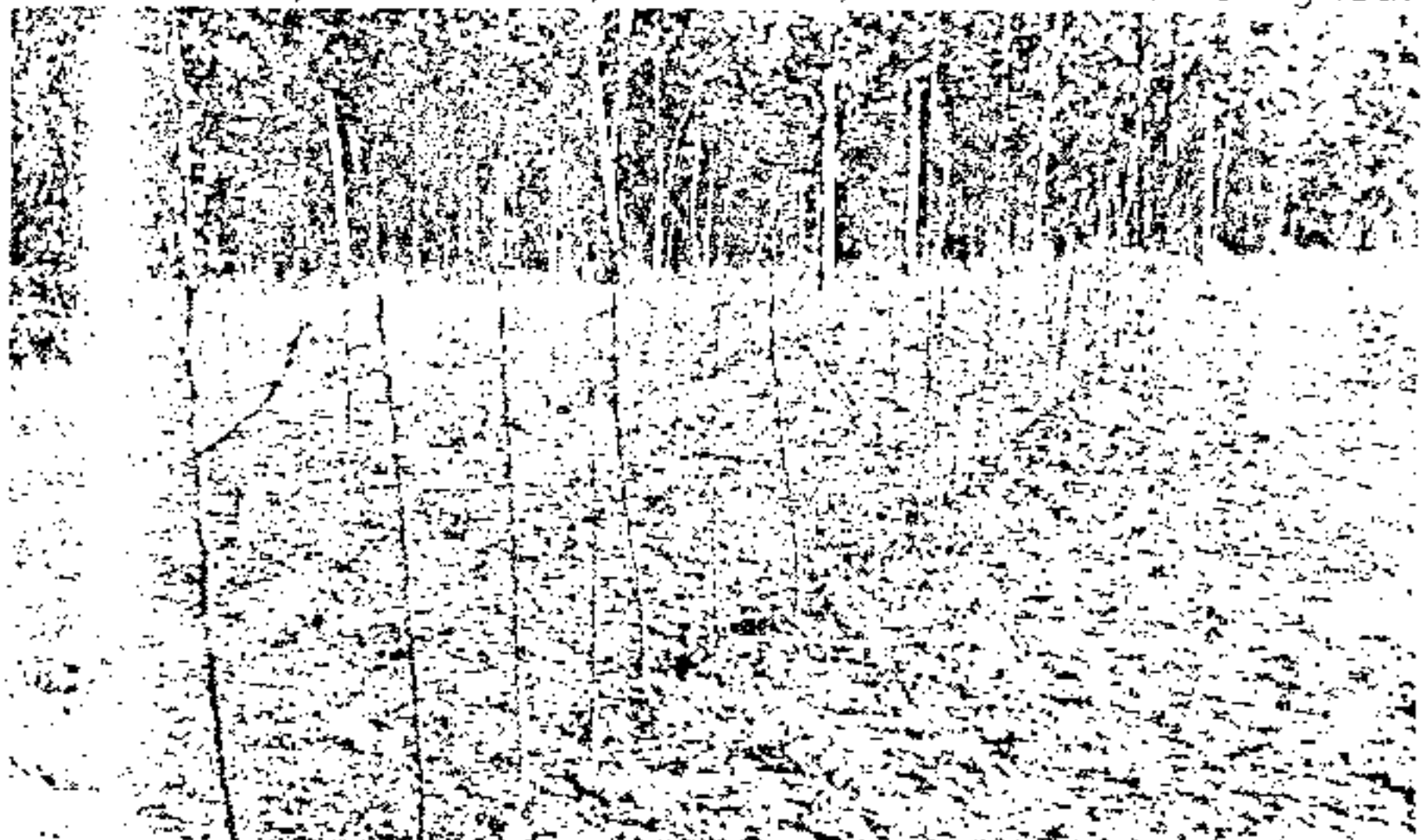


Figure 3. Dead seedling apple trees of *M. domestica* in the spring of 1978. Scarcely any survived the winter which was mild compared to most winters at Matanuska.



Figure 4. 'Rescue', and apple-crabapple cultivar that is winter-hardy, bearing heavily alternate years with some production in the off-season year. Although the fruits are small, their eating quality satisfies all children and most adults.



Figure 5. Distribution of 'Summerred' apples on a four-year-old top. The graft was made on a winterhardy rootstock.

tural Experiment Station, Palmer, Alaska. We have no information as to the availability of 'Chinese Golden Early' from commercial propagators.

'Rescue' is an apple-crabapple type, as shown in Figure 4. Its fruits are smaller than those of 'Summerred' (Figure 5). 'Rescue' usually is an annual bearer and has been bearing heavily at the Matanuska Station since 1955. Its fruits are nearly as large as 'Chinese Golden Early,' medium to dark red, sharp and spicy in flavor, and ripen on the tree about September 1. Scionwood of 'Rescue' is also available in season from the Experiment Station. We know of no other source of 'Rescue.' Neither 'Rescue' nor 'Chinese Golden Early' has shown evidence of significant winter injury. All three of these varieties were in the orchard during the -40°F temperature of January 4, 5, and 6, 1975.

Prospective Alaskan fruit growers looking for a better apple should find 'Summerred' an excellent choice as it adds a standard-sized, high-quality, storage-type apple to the very-desirable, early- and mid-season production of 'Chinese Golden Early' and 'Rescue.' □

#### REFERENCES

1. Dearborn, C. H. 1971. Apples in Alaska. Institute of Agricultural Sciences, University of Alaska, Fairbanks. *Agroborealis* 3(1):7-8.

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