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Cherries and cherry growing in Iowa.

H. C. Price
Iowa State College

E. E. Little
Iowa State College

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Cherries and Cherry Growing in Iowa.

H. C. PRICE.

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Price and Little: Cherries and cherry growing in Iowa.
I. GENERAL PROBLEMS.

1. INTRODUCTORY.

The cherry was one of the first fruits cultivated by the early settlers. It was brought with them from the eastern states and the historic cherry pie added to the luxuries of the new home. The plantings were made to supply the home demand and it has only been in recent years that it has been planted essentially for commercial purposes. South of the 42 degree of latitude little difficulty was experienced in growing the varieties of cherries brought from the east, but north of this their cultivation was uncertain and the test winters destroyed many of the trees. Attempts were made to secure hardier varieties. Seedlings were grown and the use of hardier stocks for propagating the cherry was attempted.

In 1883 a large importation of varieties of cherries was made from Russia by the Iowa Agricultural College and State Horticultural Society under the direction of Prof. J. L. Budd. They were propagated by the Experiment Station and disseminated very generally throughout the state. Tentative reports of the values of these varieties have been made but the time that has elapsed since their introduction and the experience of growers are sufficient to now give a final report on the qualities and values of the different varieties. There has been much confusion of these varieties and many of them are known under two or more names. In the descriptions that are here made, care has been taken to make them from authentic samples of the varieties that were grown in the station orchards except in the cases noted. In the preparation of this bulletin it has been the purpose to guard the prospective cherry grower against planting worthless varieties as well as to make known to him the most valuable. In the preparation of the photographs and drawings we wish to acknowledge the thorough and careful work of Miss C. M. King, the Station Artist.

2. THE STATUS OF CHERRY GROWING IN IOWA.

Statistics show that in 1890 there were less than two hundred thousand cherry trees growing in the state and that in 1900 the number had arisen to almost eight hundred thousand. An examination of the accompanying maps will show that the majority of the planting are in the southern half of the state and that very few cherry trees are found growing in the three northern tiers of counties. This is due to the fact that the climate of
the northern half of the state has been regarded as too severe for cherry growing.

The southeastern part of the state and counties bordering the Des Moines river contain the largest number of cherry trees. Pottawattamie and Polk counties are the banner counties and have eight to nine times as many trees in 1900 as they had in 1890.

The cherry is probably grown less for commercial purposes than any of our other orchard fruits, not because the profits of growing it are less but because the fruit ripens in midsummer and requires more work to harvest than any of the other fruits. The cherry is what might be called a home fruit. The tree is small growing and naturally ornamental and appropriate to plant in house yards and near buildings.

The demand for the fruit is staple and it is very seldom that a glut in the cherry market is heard of. It is a fruit that has been neglected by commercial fruit growers and deserves to be much more widely planted. The market of the northwest will have to be largely supplied with cherries grown in other states and aside from our home market in which the supply is not equal to the demand the Iowa fruit grower has an almost unlimited market in the northwest which is constantly expanding.

3. PROPAGATION.

The common method of propagating the cherry is by budding one year old seedlings. The two commercial stocks most commonly used in propagating the cherry are the Mahaleb and Mazzard.

The Mahaleb (Prunus Mahaleb) is a native of southern Europe. The seedlings are grown there in large quantities and are imported in large numbers by our nurserymen. It is used exclusively for budding and is of no value for root grafting. It is hardier than the Mazzard, especially in a dry climate, although too tender for the severely cold sections. It is best adapted to the sour varieties of cherries.

The Mazzard is a strong growing variety of the sweet cherry (Prunus Avium), and is a native of eastern Europe and western Asia. It is used exclusively in the east and in the warmer sections of the west as a stock for the sweet varieties. It is not sufficiently hardy for the severely cold sections.

This stock can be used for root grafting but this method is little practiced and is now used almost entirely for budding purposes.
On account of the severity of the winters in the northwest, these two stocks are not hardy and will not endure. In fact there is no really satisfactory cherry stock being used at present. The pie cherry or American Morello, as it is known to some, is a native of Germany and has been used for a stock in a limited way and from reports it seems to be fairly promising. There is no question but what this stock is more closely related to our sour cherries than the Mahaleb and that it forms a better union and is hardier, but the great drawback that is urged by nurserymen is the fact that it sprouts or suckers from the root after being planted in the orchard. Orchardists refuse to plant it for this reason. It is a hardy stock and planters can well afford to overlook this tendency to sprout for the increased hardiness they secure.

Fig. No. 2. Bird Cherry.

4. NATIVE STOCKS.

For many years propagators have searched for a stock that was hardy and some few have thought that the natives such as as Wild Bird Cherry, (Prunus Pennsylvanica), Sand Cherry (Prunus Besseyi) would be suitable for this region. Also the Wild Black and Choke cherries were suggested but the latter
two are not closely enough related to be of any value as a stock for our cultivated sorts. The Wild Bird Cherry and Sand Cherry have been tested in a meager way, and from the experience of the different propagators there are many conflicting reports. Nothing definite can be stated concerning the merits of these stocks until extensive experiments are conducted and they have been thoroughly tested. Both stocks are being tested at the Experiment Station at the present time and there is a possibility of them being of some value. For enthusiasts or experimenters the testing of these stock presents an interesting field of study.

5. **TOP GRAFTING.**

The cherry may be top grafted the same as the apple or the plum. It is very important that the work be performed very early in the spring before the sap begins to flow and while the scions are yet dormant. Unless the work is done at this time it is likely to result in failure. Any grower who may have trees that seem to be perfectly hardy in stock but tender in bud, can top graft with some hardy variety that will change the top of the tree in time to a hardy, productive sort. The Bessarabian, for example, is very tender in bud but hardy in stock, and may be valuable for top grafting. Many of the varieties that have been tested and found to be worthless could be changed to valuable varieties by top-grafting.

In top-grafting, the cherry limbs should be chosen for working well up in the tree so that the scions will not be overgrown by the top of the tree that is left. Either the cleft or side graft may be used and as a rule limbs that are not over one inch and a half in diameter should be grafted. It is very important that the buds be perfectly dormant on both the scion and stock and that all cut surfaces of both scion and stock are well covered with wax and wrapped.
II. CULTURAL PROBLEMS.

1. SITE.

In selecting a site for planting cherries the first consideration is that it must be well drained. The cherry will not thrive in wet or heavy land. This fact has been greatly impressed upon the growers of the state in the past two years where it has been so extremely wet. In planting cherries the heavier land should be set to plums and the lighter soil to cherries. The fruit buds of the cherry are often destroyed by spring frost and for that reason it is always advisable to choose the elevated site which is less liable to frost than a valley or low land. Often a difference of a few feet in elevation may save a crop of fruit and in selecting a site for planting, the top of knolls and the side of hills should be chosen.

When plantings are made near bodies of water or large streams they afford the same protection that is secured by elevation. They tend to keep the temperature uniform and in choosing a site for planting it should be chosen where the prevailing winds from the body of water will strike it. In late spring, when there is a sudden drop in the temperature and frost is threatened, the body of water, which cools off more slowly than the surrounding land tends to equalize the temperature and prevents the frost.

2. SOIL.

Cherries will thrive on almost any well drained soil, but they show a preference to a rather light gravelly or sandy loam. In very rich, black soil, they tend to an overproduction of wood and produce but few fruit buds. The uplands along the streams of the state are well adapted to cherry culture. A study of the maps showing the distribution of cherry planting in the state, is a comparatively safe index of the soils of the state best adapted to cherry growing. See maps, pages 46 and 47.

3. PLANTING.

If sod land is to be planted, it should be cultivated two or three seasons before planting to cherry trees. The land should be as well prepared as it would be for a crop of potatoes and under most conditions spring planting is preferable.

The distance apart that trees should be set depends upon the variety and soil. For thin land it need not be as far apart as in very rich land. Some prefer to plant the rows close one way and leave wide middles in the orchard running north and south,
while others prefer planting in squares. Whichever way is followed the tree should be given the same number of square feet of surface area. If trees are planted in rows 20 feet each way each tree would have 400 square feet of surface area. Then if the trees are planted 16 feet apart in the rows the rows should be 25 feet apart so that each tree will still have 400 square feet of surface area.

In soils of medium fertility the following distances should be taken as the minimum that should be allowed in planting varieties belonging to the following groups, and it should be added that the mistake is more likely to be made of planting them too close rather than too far apart. Varieties belonging to the Montmorency group, 18 ft. each way; Morello group, 16 ft. each way; Brusseler Braune, 20 ft. each way and Vladimir, 14 ft. each way. On very rich soil these distances should be increased accordingly. The trees should be planted very deep, ten inches to one foot deeper than they stood in the nursery.

4. CULTIVATION.

For the first five years the cherry orchard should be kept cultivated. But at the same time nearly enough vegetables, root crops or small fruits may be grown to pay for the cultivation. Potatoes, beans, beets, carrots and squashes make ideal crops for young orchards. They are low growing, require hand cultivation, and do not impoverish the land. Strawberries, raspberries and blackberries are sometimes successfully grown in young orchards. They should never be allowed to grow less than four feet from a tree and as the trees grow and take the ground, they should be removed from the orchard altogether. Oats, wheat or field corn should never be grown in a cherry orchard under any consideration.

For the cultivation of the orchard it is always an advantage to have the rows farther apart one way than they are the other. This only permits of cultivation one way but with a small amount of hand work the orchard can be kept clean.

After the first five years the cultivation of the orchard depends somewhat on circumstances. If the soil of the orchard is very rich and the trees are making too vigorous growth or the ground is so situated that it is liable to be washed by rains, it is best to seed the ground to clover, orchard grass or timothy and to keep it in sod for three or four years. In no case should a heavy blue grass sod be allowed in the orchard. While the orchard is seeded down the grass should be kept mowed and the trees heavily mulched.
If the ground is of medium fertility and is not subject to washing it is better to keep the orchard cultivated and after the fifth year nothing should be grown in the orchard. The ground should be plowed shallow or disked in the spring and kept stirred until the middle of July and then seed to a cover crop. One of the best implements for orchard cultivation is the extension disc harrow of which there are several makes. These permit working the ground close to the trunks of the trees without danger of injury from the harness or single trees rubbing the trees.

5. COVER CROPS.

The selection of the cover crop depends upon the land to be seeded. If it is low in fertility and needs additional nitrogen, one of the legumes should be used for the cover crop, vetches, cow peas, soy beans and crimson clover are among the best for this purpose.

If the ground is inclined to be sandy or light and especially in the southern portion of the state the hairy vetch (Vicia Villosa) should be used. If the winters are not unusually severe, it will stand the winter and if not plowed under in the spring will reseed the ground and last for several years. At Ames it has stood the winters in the orchards, especially under the trees and a small area that has been standing for three or four years for trial has reseeded the ground each year. The one drawback in its use thus far has been the cost of the seed which has almost prohibited its use on a commercial basis. The cow peas and soy beans grow more vigorously in the fall but are killed by the winters.

For land which is rich enough and does not need any additional nitrogen, one of the non-nitrogenous crops may be used. The two best crops for this purpose are oats and rape. They both make excellent growth in the fall when sown by the first of September and are not killed easily by frost, growing usually until the 15th of November before being killed down by frost. The seeds of both are comparatively inexpensive. Rye is often used but has the very serious disadvantage of not being killed by the winter and before it can be plowed under in the spring removes a great deal of moisture from the soil and requires a large amount of hand work to destroy it from among the trees.

6. PRUNING.

Before planting all broken or mangled roots should be removed. The top of the tree should be pruned into symmetrical
Fig. No. 3. Orchard View. Low Heading of Trees.
form removing any limbs that cross or that forms forks in the tree that would be liable to split down when tree is loaded with fruit. After the tree is properly shaped it will need very little pruning to make a tree of good form and to remove branches when they become too thick, is always allowable.

In shaping the young tree for planting the head should be made as low as possible on the tree and in order to get low headed trees it is necessary to plant young trees that have not been trimmed up in the nursery row and set them deep. The low heading of the tree protects the trunk from sun scald and it can be more effectively and cheaply done in this manner than in any other. Low heading also brings the fruit closer to the ground and makes it easier to gather which is an especially important point with the cherry where the harvesting of the fruit is such a large item. Fig. 3 shows a row of low headed cherry trees growing on the Experiment Station grounds, and illustrates the value of the low heading of the trunks. The trunks have never been affected with sun scald and a large part of the fruit can be gathered by standing on the ground.

7. Insect Enemies.

Fortunately the cherry does not have a large number of insect enemies, the most serious being the plum curculio which is the cause of the so-called wormy cherries. The adult is the well known snout or curculio beetle and lays its eggs in the fruit as soon as formed making a crescent-shaped incision into the fruit.
It seldom becomes so abundant on sour cherries that it requires treatment. The most successful method of combatting it is by the so-called "jarring" method. Early in the morning the beetles are dormant and a sharp blow on the trunk of the tree will jar them off and they can then be caught on sheets, spread on the ground and destroyed. A catcher made like an inverted umbrella and attached to a wheel barrow is the most practical method for a commercial grower to use.

It is a disputed question as to whether spraying is effective for the curculio but doubtless it destroys some of them as they feed on the foliage of the tree while depositing their eggs in the young fruit. Spraying with one of the arsenical sprays as Lead Arsenate or Paris Green just after the blossoms fall will be found beneficial. Other insect enemies, such as are common to other fruit trees sometimes occur in the cherry but do not justify special mention here. The cherry probably has fewer insect enemies than any of the other orchard fruits and this is one reason why it should be more commonly grown.

8. FUNGOUS DISEASES.

The cherry trees of the state have suffered very much from the leaf spot the last two seasons. It attacks the leaves causing a small brown spot about an eighth of an inch in diameter and later the leaves turn yellow and drop from the tree. Its prevalence during the past two seasons has probably been due to the excessively wet weather we have had.

![Leaf Spot](Fig. No. 5. Leaf Spot)

The English Morello cherry and varieties of that type have been most subject to its attacks. Its ravages have been so severe in some places that the trees have been completely defoliated in the middle of the summer and it has resulted in the killing of the trees. Mr. E. S. Welch of Shenandoah, Iowa, writes under date of July 18th, 1903, in regard to it:
"We were troubled a great deal with it last year both in orchards and nursery and it is more or less prevalent this year. A good many orchard trees of English Morello and Ostheim died as a result of last summers attack. The trees did not show that they were dead until early in the spring. I think though, that a great many were dead before winter on account of their having lost their foliage."

Many other cherry growers have written that they have lost large numbers of their trees from the attack of last summer and another serious outbreak coming this season is bound to kill large numbers of trees. For even though it does not kill the tree outright, it so weakens it that it is likely to succumb to a second attack.

The only satisfactory remedy is to spray with Bordeaux mixture or copper carbonate. By spraying with these we have saved our trees from the disease and prevented the most of our foliage from falling. It is important that the spraying be done early and we have sprayed each season before the trees have blossomed. Until the cherries begin to color spraying can be done with Bordeaux mixture but after this it should be done with copper carbonate as it will not stain the fruit. Spraying throughout the season as the occasion demands will hold the disease in check. In spraying use the standard formulas as given in the Spraying Calendar published by the Experiment Station and which can be secured by writing the director.

In some of the earlier publications of this Station, (Iowa Sta. Bulletin No. 13) this disease has been discussed by Dr. L. H. Pammel, Station Botanist.

The brown rot which sometimes destroys cherries will be held in check by the treatment prescribed for the leaf spot. Black knot when it affects the trees should be cut out and burned as soon as discovered.

9. PROTECTING FROM BIRDS.

Many things have been recommended to prevent the birds from getting the fruit. Some eastern growers have been successful in planting some of the earlier sweet varieties that are adapted to that section, thus allowing the birds to get their full share before the more important and late varieties ripen. The growers in the cold sections of the west cannot adopt this plan on account of the fact that the earlier sweet varieties cannot be grown there.

Another method to prevent the ravages of these pests is the planting of June berries and the Russian mulberries along the
outside of the orchard. The fruits of these plants are eaten by the birds while the cherries are not disturbed. Other growers advocate planting enough cherries for your own use and the birds' too. But the appetite of the birds seem unsatiable and in
small plantings there is nothing left for the owner after the birds get what they want. Others protect their trees with the shot gun but many of our most beneficial birds are exceedingly fond of cherries and their one error of satisfying their appetite to a slight extent does not merit their destruction.

The covering of trees by netting has been practiced in European countries for many years and found to be valuable in preventing the birds from destroying the crop. To determine the value of netting for covering of trees, we have used a netting imported from Germany. It is a sort of light weight block fish netting with openings too small for birds to get through. Some of the most productive varieties are selected and one tree was covered, one being left uncovered. The covering was put on early—just before the fruit began to color. Fig. 6 shows the tree with covering on. It was left till the fruit was ripe and then removed and the fruit was then picked. The trees bore normal crops of fruit. The covered tree yielded 52 quarts of fruit and the uncovered one yielded 38 quarts—a difference of 14 quarts for the year 1902. In 1903 the same trees were covered and uncovered. This year the results in the yield show the covered tree to have produced 20 quarts more of marketable fruit. This netting is stored as soon as the fruit is harvested and will last a life time when properly cared for. It is expensive and could not be made profitable in a commercial orchard but it is not in the commercial orchard that the birds are most destructive. In the large orchard there are enough cherries for the owner and the birds; but it is on the home place where only a few trees are raised to produce the home supply of fruit that the trees need protection from the birds and here the plan of covering the trees with netting will be found very satisfactory and efficient.

III. STUDY OF VARIETIES.

I. CLASSIFICATION.

Cultivated cherries are divided into two species: sweet cherries (*Prunus Avium*) and cherries which are sour (*Prunus Cerasus*). However, the sweet cherries are of little consequence to this state since they are more tender and less adapted to the climatic conditions than the sour varieties and can only be grown satisfactorily in the southern half of the state, and only the varieties that were introduced from Russia by this Station are mentioned in this bulletin.

The sour varieties are almost universally grown throughout
the state; they are hardier and more productive and less liable
to injury from insects and fungous diseases. In the classification
of sour cherries, the system adopted by Powell* has been fol­
lowed. This system divides the sour cherries into four groups:
Montmorency Group, Morello Group, Brusseler Braune Group,
and Vladimir Group. These groups seem fairly well defined
although there are gradations between them that could be placed
in either of two groups with equal propriety, yet it is the most
satisfactory classification made at the present time.

The Montmorency Group is characterized by the fruit being
light red, flesh light and juice colorless. The trees are inclined
to be spreading, leaves ovate, sometimes elliptical and usually
coarsely serrated. The Montmorency variety is the type of the
group.

The Morello group bears a dark colored fruit, flesh dark, juice
colored, season late. Trees are small, variable in form, and
usually open. Foliage medium to small, and subject to fungous
diseases. English Morello the type of the group.

*12th Annual Report of Delaware Experiment Station.
The Brusseler Branne group consists of Russian varieties. The trees are large, upright, compact and vigorous growing; branches long, foliage small, elliptical or obovate, finely serrated; fruit with long stem variable in size, mostly dark red flesh and juice usually colored.

The Vladimir group also consist of Russian varieties. The trees are pronouncedly compact with slender drooping branches, giving the tree a weeping appearance. Fruit dark colored, flesh firm, colored; juice highly colored.

2. DESCRIPTION OF VARIETIES.


Imported by Prof. Budd in 1883. Tree is large, upright and a spreading grower; branches stout; leaves very large, oval, leathery rough; free from leaf spot. Only moderately hardy and very unproductive. Variety was quite widely distributed by the department, and has proven of no value.

Fruit, oblate; size, medium large; cavity broad, shallow; stem 1 inch to 1 1/4 inches; apex flattened; skin smooth, thin; color bright red; flesh firm; juice uncolored; stone small; quality fair; flavor brisk acid. Season June 15th.
Amarelle. See June Amarelle.

Amarelle Hative* (Morello Hative) (Early Amarelle), Montmorency.

Imported by Prof. Budd and disseminated by him from the station, but at present it is not growing in the station orchards and it is found only sparsely scattered over the state. H. A. Terry of Crescent, Iowa, reports it as a good bearer, fruit resembling Early Richmond in appearance and very good for canning. It does not seem to possess any qualities which would justify its extensive planting or superseding varieties commonly grown.

Baldwin. Morello.

This variety was introduced by S. J. Baldwin of Seneca, Kans. He reports that it came from a sprout on a stock on which an Early Richmond was budded. It seems to be almost identical with the Northwest or Weir's No. 29 in fruit. In foliage and form of leaf there is a difference. The Baldwin has a thick rugose leaf with crenate margin and ovate in form. The leaf of the Northwest is obovate with serrate margin not as thick or rugose as the leaf of the Baldwin. The twigs are larger and tree more spreading in habit of growth than the Northwest.

Bessarabian. (No. 62.) Brusseler Braune.

Imported by Prof Budd in 1885, and has been widely disseminated under Number 62.

*Note—Synonyms are given in parenthesis while the groups are not.
Color dark red to almost black at maturity; size medium; stem long and slender 1 1/2 inches to 2 inches long. Cavity shallow and broad; suture very indistinct; skin tough and thin; apex slightly depressed; flesh colored and meaty; juice colored; quality good; flavor, acid with slight astringency; season, July 1st.

The fruit colors considerable some time before maturity, and if picked as soon as colored, is acid and astringent, but when ripened on the tree it has a pleasant flavor.

This variety is one of the most thrifty growers on the station grounds but has been a very poor yielder. Fruit buds set very abundantly but are killed by the winters, and are the most tender of any variety growing on the station grounds. It has proven to be a good stock on which to graft the common sour sorts.

**Boquet Amarelle (Boquet Morello), Montmorency.**

Imported by Prof. Budd in 1883. It is of same season as Early Richmond, but smaller and less productive.

Form, oblate, slightly roundish; size small to medium; cavity, medium deep, stem, slender, 1 1/2 inches; suture, a very faint line; apex, flattened, slightly depressed; skin, thin and tender; color, red; flesh moderately soft, tender, uncolored; juice, uncolored; stone, small to medium; quality, good; flavor, sprightly, sub-acid; tree, small, open, slightly upright and spreading.

**Boquet Morello.** See Boquet Amarelle.

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**Bowers' Seedlings, Unclassified.**

The following seedlings have been received from John Bowers.
Sigourney, Iowa, and give promise of being valuable.

No. 1. Seedling of Russian variety received from Prof. Budd. Size, medium; color dark red or red; juice, uncolored; quality fair; productive; promising.

No. 2. Size, large; form oblate, roundish; stem medium, long, slender; color, dark red; juice, uncolored; quality, fair; tree is hardy and regular bearer; season late; may be valuable.

No. 3. Size, large; color, red to dark red; juice, slightly colored; quality very good; mildy sub-acid; same origin as No. 1. Mr. Bowers says it is the best of the three seedlings.

Brusseler Braüne (Giotte du Nord), Brusseler Braüne.

Form, roundish, heart shaped; size medium to large; stem, moderately stout, long, \(1\frac{3}{4}\) to \(2\frac{1}{2}\) inches, cavity, narrow, deep, slightly lipped in some specimens; apex, roundish; flattened; skin, thin and tender; color, dark red; flesh firm, crisp with pinkish juice; quality, good; flavor, sprightly acid.

Fig. No. 10. Brusseler Braüne.

Tree medium to large, very upright, quite compact; branches long, slender, sometimes pendulous; twigs are light gray with numerous lenticles; leaf medium thick, slightly roughened; dark green on upper surface, much lighter below; narrow, obovate, sometimes elliptical, serrated; often poor bearer; very late in ripening, July 15 to 25.

Professor Budd introduced this variety in 1883 from Russia; and states it is greatly prized on the sandy plains of East Poland. There is great confusion in the nomenclature of this variety. The Lutovka, George Glass, Orel, No. 27, and Bessarabian
are sometimes mistaken for it, but they vary considerably, both in tree and fruit, and can be readily distinguished. The Brusseler Braune is more valuable than any of them, and in some localities, may prove to be a good, regular bearer, but now is a very uncertain, light bearer. In the station orchards the tree is hardy and vigorous and only fairly productive. This variety is being offered by some nurserymen, but should not be planted much until it has been further tested.

**Compass Cherry, *Prunus hortulana x Prunus Besseyi***.

Originated by H. Knudson, Springfield, Minn. A cross between the Miner plum and the Sand cherry. Fruit a little larger than medium cherry; color, red, round; skin moderately thick; flesh, firm; juicy, coarse; stone, medium; flavor, sub-acid; quality, good; good bearer; very hardy; the leaves resemble the Sand cherry as does the twig and the color of the bark. It is at present being widely distributed by the nurserymen. Of value in the sections of the northwest. Plum type in general appearance but in quality of fruit resembles the cherry. Season July 20 to 30.

**Corning, Morello x Brusseler Braune***.

Received from A. F. Collman, Corning, Iowa, who originated it. Fruit, heart shaped, medium or above; cavity, moderately deep and narrow; stem, medium, stout, 1 to 1¾ inches; suture, wanting; apex, slightly flattened; skin, moderately thick and tender; color, red; flesh, firm and breaking; juice, slightly colored; stone, medium,
ovate; quality, good; flavor, briskly, sub-acid; cross between Wragg and Lutovka; season, late; a promising sort; productive.

**Doplette Natte.**  *See Double Natte.*

**Double Natte (Riga 18.) (Doplette Natte.)** Morello.

Form, slightly oblate, obscurely heart shaped; size, large; cavity, broad in some specimens, very large, moderately deep, variable; stem, slender, 1 to \(\frac{3}{4}\) inches; suture, very indistinct; apex, very slightly depressed; skin, thin, tender; color, dark red, getting nearly black at maturity; flesh, firm, crisp, with deeply colored juice; stone nearly spherical; quality, very good; flavor, rich, mildly acid; ripens from June 22 to July 1st; tree of medium size, spreading and open; branches, moderate size and slightly drooping; very hardy and thrifty; productive; a very fine sort to eat out of hand.

On account of its productiveness, color and good quality of fruit it promises to be a good sort in this section. However, it would not be advisable to plant on a large scale until more thoroughly tested.

**Duchess de Anjouleme, Montmorency.**

Fruit, oblate; size, medium or above; cavity, very small; stem, 1 inch; suture, indistinct; apex, rounded, slight depression; color, bright red; flavor, sprightly acid; quality, good; season, middle of June. Fruit resembles Early Richmond somewhat, but is a trifle larger and juice not so watery. Tree, large upright, slightly spreading; branches stout; leaves, medium, serrated; not much different from the Early Richmond in general appearance. This was imported by Prof. Budd from Russia. On the station grounds it is the most productive and regular bearer grown. Tree very hardy and vigorous. It may prove to be a more valuable variety than the Early Richmond in many localities. For the past five years it has borne full crops each year and is the most promising of the Russian importation of cherries.

**Dyehouse, Montmorency.**

Form, round, slightly oblate; size, medium to small; cavity, deep, rather broad; stem, stout and short, \(\frac{3}{4}\) inch to \(1\frac{1}{4}\) inches; suture, very indistinct; apex, very slightly depressed; skin, thin; color, bright red; flesh, soft, juicy; juice, colorless; stone, small, round; quality, very good; flavor slightly acid; fruit is a little smaller than the Early Richmond and Montmorency. Season June 20th.

In the “Horticulturist” edited by H. T. Williams, Vol. 25, March, 1870, p. 73, is a paper entitled, “A New Cherry,” written by Henry T. Harris of Stanford, Ky., stating that they have growing in Lincoln County a new cherry of the Morello type. The tree was first discovered on the grounds of Mr. Dyehouse where it had been growing for a quarter of a century, still vigorous and productive. The origin is uncertain. It is thought that it came from seed planted by Mr. Dyehouse many years previous to this time. At this time there was considerable discussion as to its being different from Early May and Early Richmond. It was disseminated under the name of Dyehouse by Mr. H. T. Harris of Stanford, Ky. It has now become a standard variety and is widely grown throughout the state.

**Early Amarelle.**  *See Amarelle Native.*
Early Morello, See Orel No. 23.

Imported by Prof Budd. There seems to be a great deal of confusion concerning this variety. In recent years there have been two distinct varieties disseminated under this name, one which was introduced from Germany and sent out from Rosedale, Kansas, and one from Nebraska by D. U. Reed, seems to be identical with the old Weir's, No. 29, or Northwest, and is so reported by Mr. G. A. Marshall of Arlington, Neb., and H. A. Terry of Crescent, Iowa, who have grown these varieties for a number of years. The true Early
Morello is undoubtedly the one imported by Prof. Budd and disseminated throughout the state as Orel, No. 23. The fruit of the Orel, No. 23 is light red with uncolored juice, while that of the Northwest is nearly black when it is ripe with highly colored juice.

**English Morello, Morello.**

Fruit, medium to large; form, round; obscurely, heart shaped; stem, moderately stout, 1½ inches; apex, round; color, dark red; juice, abundant, colored, very acid; season late about July 15th to 20th; tree, medium, spreading, slender, hardy, productive. This is one of the oldest varieties and has been grown in this country for many years.

Many synonyms are given for this variety: Large, Dutch, Ronald’s Large Morello, Cerise du Nord and Milan. This should not be confused with the American Morello, commonly known as the pie cherry, which is a small inferior variety. **English Morello** is the name now used throughout the United States. It is now grown extensively in this section of the northwest, and is classed as one of the best sorts, being very productive and hardy. One of the best varieties for shipping on account of its firmness.

**Fouche’s Morello.** See Morello Fouche.

**Frauendorfer.** See Frauendorfer Weichsel.

**Frauendorfer Weichsel.** (Frauendorfer), Brusseler Braune.

Imported by Prof. Budd who says it is largely grown in Poland and North Silesia. A shy bearer of no value.

Form, oblate and obscurely heart shaped; size, medium; stem, moderately deep and narrow; stem, long and slender, 1½ to 2 inches; skin, moderately thin and tough; color, dark red; flesh, firm, crisp with slightly colored juice; stone, roundish, medium, partly free; quality, fair to good; flavor, sprightly acid.
Tree is an upright grower with moderately stout erect branches; form a little more upright than the Bessarabian, but otherwise resembles this variety very much. Fruit ripens July 1st to 10th.

**Galopin, See Lutovka.**

**Geo. Glass, Brusselzer Braune.**

Form, oblate and obscurely heart shaped; size, medium; stem, stout, 1¼ to 1½ inches long; cavity, deep and narrow; suture, distinct; apex, depressed with prominent cavity; skin, thick and rather tough; color, light red; flesh, yellow with colorless juice; quality good to very good; flavor mildly acid. It is sometimes confused with the Bessarabian but by comparing the two one can readily see how they can be distinguished. Tree has an upright, spreading habit; strong with stout branches; heavy large leaves; thick, leathery, dark green, elliptical, sometimes oval, slightly serrated; shows small brown spots.

Prof. Budd states that this variety was received from Marshall county where it was introduced from northeast Germany. It is unproductive and of no value.

**Glass, Kirk Dopplette.**

Form, round, obscurely heart shaped; size, medium; cavity, deep and narrow; stem, moderately stout, 1 to 1½ inches long; skin, tough and rather thick; color, bright red; flesh, colorless and juicy; juice, colorless; stone, round and medium; quality, fair; flavor, acid; suture, prominent enough to make it appear doubled possibly the origin of the name; season, latter part of June. Tree, upright to diverging, large, partially round topped; leaves, small to medium; ovate, serrated leaves; twigs, reddish brown; young growth very light brown. Imported by Prof. Budd in 1883. Tree moderately hardy but unproductive. Of no value.

**Goodspeed, Montmorency.**

Form, oblate, slightly heart-shaped; size, medium large; cavity, deep and broad. Stem, short, stout 1 inch; suture, roundish slightly flattened; skin, thin and tender; color, dark red; flesh, moderately firm, tender, uncolored; juice, uncolored; stone, almost free, medium, roundish ovate; quality, good; flavor, slightly sub acid. Ripens just after the Early Richmond.

The fruit of this variety was received from Mr. B. A. Mathews of Knoxville, Iowa, who states that it is a good regular bearer and persons growing it prefer it to the Early Richmond for canning purposes. He writes:

"The oldest trees I know of were planted thirty-five years ago and are all right yet. It is doubtless the longest lived variety in cultivation."

**Griotte du Nord. See Brusselzer Braune.**

**Griotte, Precoce.**

Origin France. A variety of no value. Fruit small and very acid as reported by some of the growers of the state.
**GRIOTTE IMPERIAL, Brusseler Braune.**

Imported by Prof. Budd and described by him. A small tree and early bearer; fruit, large, dark red, inclined to be conical; flesh and juice, red; mildly sub-acid when ripe. Status uncertain.

**GRIOTTE KLIPARITE, Brusseler Braune.**

Fruit received from H. A. Terry, Crescent, Iowa. Form roundish slightly conical; size medium; cavity small; stem variable in length—7/8 to 1 1/4 inches, slender; suture not defined; apex slightly flattened; skin thin; color deep red; flesh meaty but tender; juice colored; stone small oval; quality fair; flavor slightly astringent; leaves small ovate; serrations deep and somewhat irregular; fruit undersize. Imported by Prof. Budd. Of no value.

![Griotte Kliparite](image)

**HERFORMIZE WEICHSSEL, Vladimir.**

Introduced by Prof. Budd in 1883 and described by him in Bulletin No. 2, I. A. C. as follows: "A cross between the sweet cherries of the East and the Dukes. It is grown as a lawn tree in East Europe on account of its symmetry and handsome striped leaves. Fruit large heart-shaped, purplish black in color and nearly sweet. Tree is unproductive and of no value.

**HOMER, Montmorency.**

Size medium to large, form roundish oblate; color bright red; skin, thin and moderately tough; cavity shallow, moderately broad; stem short stout, 1 inch; apex flattened; flesh tender, juicy,
uncolored; quality good; flavor mildly sub-acid; stone semi-cling round, medium. Season end of June.

F. Yahnke of Winona, Minn., who reports having grown this variety for a number of years, sent this fruit to the department. It is a seedling that came from New Haven, Conn. Very productive, hardy. It may be valuable for the very cold sections of the Northwest.

**June Amarelle** *(Juneat Amarelle) (Amarelle) (June Morello), Montmorency.*

Specimens of this variety were received from Mr. H. A. Terry, Crescent, Iowa. Form, round oblate; size large; cavity variable; stem thick, \( \frac{3}{8} \) to \( \frac{1}{2} \) inches long; suture indistinct, marked by a faint line, apex flattened; skin thin rather tough; color light red; flesh yellowish, juicy; juice colorless; stone medium to small; quality, good; flavor, sprightly sub-acid. Season June 20th to 30th.

Introduced by Prof. Budd in 1883 and should be further tested.

**June Amarelle.** See June Amarelle.

**June Morello.** See June Amarelle.

**King’s Amarelle** *(King’s Morello) (Kings), Montmorency.*

Form oblate, obscurely heart-shaped, size above medium, cavity broad and shallow; stem 1\( \frac{1}{2} \) inch, rather slender; suture indistinct, apex slightly depressed; skin very thin and translucent; color red; flesh tender, colorless; juice colorless; stone small; roundish; quality good; flavor sprightly acid; season June 15th to 25th. Tree moderately low growing, wide and spreading, with slightly drooping branches; leaves medium size, thick, large, elliptical, coarsely serrated or slightly crenated; dark green; twigs dull brown.

Imported by Prof. Budd from Russia. It is a regular and prolific bearer, resembling the Early Richmond in size and quality of fruit and deserves to be more freely planted. Not grown commercially.

**King’s Morello.** See King’s Amarelle.

**Lancaster, Montmorency.**

*(Fruit received from South Haven, Mich. Experiment Station.)*

Form oblate, slightly roundish, size large for sour sort; cavity deep and broad; stem medium stout, 1\( \frac{3}{8} \) inches. Suture a very faint line; apex flattened, slightly depressed; skin very thin and tender; color light red; flesh white, juicy, moderately soft; juice colorless; stone roundish, slightly ovate, medium, partially free; partially good; flavor slightly sub-acid. Season end of June.

Tree moderately vigorous; open, spreading grower.

Chas. Downing, in his unpublished manuscript notes says that the variety is an accidental seedling found in the grounds of Daniel Sneyck of Lancaster, Pa., and that it is an enormous bearer where originated and of exceptionally good quality. Where it has been grown in the West it has not proven a good bearer and cannot be recommended for general planting.

**Long Stemmed Montmorency.** See Montmorency Ord.

**Large Montmorency.** See Montmorency.
Richmond Late, Montmorency.

Medium round, conical with thin translucent skin; light red in color; stem thick; 1 to 1 ¼ inches long; cavity shallow, broad; seed round, large; flesh tender and juicy; juice colorless, not as watery as Early Richmond; season a week or ten days later; flavor acid; quality very good. The Montmorency is a few days earlier in ripening, scarcely as acid and usually a little more conical in shape. Season end of June.

Downing states in his notes that in August, 1881, Mr. C. G. Patten of Charles City says that the Late Richmond is almost identical in tree and fruit with the Early Richmond but ripens three weeks later.

Tree perhaps a little more upright, but is not as productive as the Early Richmond.

The origin of this cherry is hard to trace. In Downing's manuscript notes we find he received this variety from Joshua Linsley, nurseryman, who moved to the Carolinas about 1840. In the same notes, H. A. Terry in 1879 writes that Late Richmond, sometimes called Late Kentish, ripens three weeks later than the Early Richmond. Prof. Budd in the same notes May, 1879, says, “Our Late Richmond is your Late Kentish.”

Some growers report this variety as unproductive. Others seem to think it moderately productive. English Morello or Wragg will doubtless be more valuable where a late variety is desired.

Riga No. 18. See Double Natte.

Leib, Montmorency.

An old variety that has been grown in parts of the state. The fruit is similar to the Early Richmond but larger and later in ripening. Season end of June.

According to Downing's Manuscript notes it was first brought to notice by Mr. J. G. Soulard at the Jo Davies County, Ill., Horticultural Society and was named for Mr. Leib, the owner of the original tree, who, it is claimed, brought it from Germany. Great productiveness and hardiness was claimed for it at the time of its introduction, but it has never become generally disseminated.

Lithaur Weichsel, Vladamir.

Form, round, oblate; size, small; 9-16 inches wide, 7-16 inches long. Cavity, narrow, shallow; stem, long, slender, 1 ½ inches; apex depressed; skin, tough; color, dark red; flesh, red, almost purple, meaty; juice, red; stone, roundish, large; quality, fair; flavor, sweet. Season June 15th.

Introduced by Prof. Budd in 1883. With us it is a poor bearer and of no value. Some report it as a good bearer.

Louis Phillipe, Morello.

A medium sized fruit, red to crimson in color, with slightly colored juice; round, very oblate; apex depressed; skin, tough; flesh, firm; stone, large and turgid; stem thick, 1 to 1 ¾ inches long; cavity, deep and narrow; suture marked by a line. The quality is very good with an acid flavor; season, last of June.

This is a French variety that was introduced about fifty years ago. (Hovey's Magazine of Horticulture, Vol. XIV, p. 211.) It has
been grown commercially in western New York and other sections, but is said to be late in coming into bearing. Might be of value in warmer sections of the West.

**Lutovka (Galopin'), Brusseler Braune.**

Form, oblate, obscurely heart-shaped; size, medium, $1\frac{1}{2}$ by $1\frac{3}{4}$ inches; cavity, wide and deep; stem 1 to $1\frac{3}{4}$ inches; suture prominent; apex, depressed with cavity; skin, thin and tough; translucent; color, red; flesh, colorless, meaty, free from stone; juice, colorless; stone, flattened, large; flavor, slightly acid; quality, good. Season June 20 to 25.

Tree is large, strong upright; branches, slightly spreading; leaves, large, elliptical, ovate, acute, leathery; reddish brown twigs, coarsely serrated.

Imported by Prof. Budd in 1883 and he states that it was much grown in Poland, North Silesia and South Russia. It is sometimes confused with Brusseler Braune but is distinct. Reported a light bearer and of no value.
Montmorency Ordinaire (Long Stemmed Montmorency),
Montmorency.

Fruit, roundish oblate to obscure heart-shaped; of light red color with thin and translucent skin and colorless juice; medium size; stem 1¼ inches to 1½ inches long; cavity of medium depth; suture, very indistinct; apex, convex; quality, very good; flesh meaty; stone, small and round; flavor, sub-acid; season, June 20th to July 1st.

The Montmorency group of cherries is probably one of the worst confused groups that we have. The Montmorency Ordinaire, short stemmed Montmorency, Large Montmorency, and Montmorency Extra Ordinaire have practically become synonyms and the same variety is often found under any of the above names. The Montmorency cherries originated in France, and in Prince's Pomological Manual, published in 1831, two varieties are described, the Long Stemmed Montmorency and the Short Stemmed Montmorency. The Short Stemmed Montmorency is said to be large and of the best quality but a poor bearer. For this reason it is not widely distributed and Prince says it was found growing only in the gardens of those "who prefer the fine fruit to the quantity of fruit."

The Long Stemmed Montmorency is undoubtedly the Montmorency Ordinaire and the one that is usually propagated simply under the name Montmorency. This same variety is sometimes sold as Large Montmorency and Montmorency Extra Ordinaire, although these names more appropriately belong to the Short Stemmed Montmorency. The Montmorency cherries rank among the leading commercial varieties of our state, and undoubtedly one of the most profitable to grow.

Several varieties of the Montmorencies have appeared from time to time, due to local influences, and have given rise to varieties that are now in the trade. The Montmorency Extra Ordinaire does not seem to differ from the Montmorency Ordinaire except in the character of the leaf and where this difference is shown it should be classed as a varietal strain and not as a variety.

There is more difference shown in the leaf of the Montmorencies than in any character of the fruit. The Short Stemmed Montmorency has long, slender, spatulate leaves, while the Montmorency ordinaire has a large oval leaf.

Montmorency, (Short Stemmed). (Large Montmorency.)
Montmorency.

Fruit, large, bright red with thin translucent skin; round oblate; stem thick, 1 to 1½ inches long; flesh, yellowish and meaty; juice, colorless; quality, good; flavor, sub-acid. Season June 20.

The leaf is quite spatulate in outline and sharply serrated. This is the cherry referred to in Prince's description quoted above. It was imported and distributed at one time by the eastern nurseries but since it proved a shy bearer it has been dropped from most of the lists and is rarely found in commercial orchards.

Morello Fouche (Fouche's Morello), Vladimir.

Prof. Budd imported it from Riga, Russia. Of little value here. Fruit roundish oblate; size small; cavity shallow and broad; stem, slender, 1½ to 1¾ inches long; suture, marked by a line; apex flattened, slightly depressed; skin thin, moderately tough.
color, dark red to crimson; flesh, firm and breaking; juice, colored; stone, nearly round, medium; quality, fair; flavor, sprightly sub-acid; tree, medium to large upright. Season July 1.

**Northwest (Weirs No. 29.) Morelo.**

Fruit, round, obscurely heart-shaped; medium; cavity, shallow; size, 1¼ inches to 1½ inches; suture, indistinct; apex, rounded; skin, tough, moderately thick; color, dark red to almost black at maturity; flesh, firm, deeply colored; stone, small, round; flavor, acid, slightly astringent; quality, medium; season, a little earlier than Early Richmond. Tree resembles English Morello very much in size and habit of growth.

This variety was originated by Mr. D. B. Weir of Lacon, Ill., who has been the originator of several varieties of value. Downing in his Manuscript Notes describes this cherry as received from a nurseryman under date of July 3, 1883. It was distributed by Prof. Budd as Weir's No. 29.

Many growers of this state prize it very highly. It is productive of good size and color, and deserves to be planted on commercial scale.

**Olivet, Montmorency.**

Fruit, round, oblate; medium; cavity, deep and narrow; stem, stout; suture, indistinct; apex, slightly depressed; skin, rather thick and tough, translucent; color, bright carnelian red; flesh, moderately firm; juice, colorless; stone, large, round; quality, fair;
flavor, acid, sometimes astringent. This cherry seems to be of the Montmorency type. Its most prominent characteristics are its bright garnet red color, its large stone and tough skin. Season June 20th.

Fruit received from F. O. Harrington, Williamsburg, Iowa.

This variety is grown in the east and may be of value south of the central part of the state.

Orel 23, *(Early Morello)*, Montmorency.

Fruit, round, very obscurely heart-shaped; medium; suture, marked by faint line; apex, slightly flattened; skin, thin and translucent; color, bright red; flesh, yellowish, firm; juice, colorless; stone, round and small; quality, good; flavor, acid; slightly astringent; season, about the same as Early Richmond.

Fig. No. 17. Orel No. 23.

This variety has been widely disseminated throughout the West by Professor Budd and has proven to be productive and hardy. It deserves to be planted. Imported by Prof. Budd in 1883.

Orel 24, *Morello*.

Fruit, round, oblate; medium; cavity, rather deep; stem, stout, 1 to 1½ inches long; suture, distinct, marked by a faint line; apex,
slightly depressed and flattened; skin, thin and translucent; color, 
carnelian red, flesh colored and firm; juice, colored; stone, round, 
angular; quality, good; flavor, acid and pleasant; season, latter 
part of June. 

Tree as growing here is much smaller and more open than the 
Lutovka. There is no resemblance whatever. It is much like the 
Orel No. 23 in form and size of tree and fruit; moderately produc­tive. Some growers report this variety hardy but unproductive.


This was described by Prof. Budd as Orel sweet. Fruit, firm, 
rich and decidedly sweet; juice, colored. It seems to be of little 
value.

Ostheim d’Cerise (Ostheimer), Morello.

Fruit, round, slightly ovate; medium; dark red color; flesh, firm 
and meaty; juice, colored; stem, 5/8 to 1 inch long; skin, thin and

Fig. No. 18. Griotte d’Ostheim.

tough; quality, fair; flavor, acid and slightly astringent; tree, 
medium, roundish to flat-topped, spreading to drooping branches; 
leaves, small to medium; ovate, slightly serrated, leathery; grown 
in the United States for nearly a century. Season, July 1st to 10th.

Sometimes confused with Griotte d’Ostheim, Ostheimer Wei­ 
chel and Minnesota Ostheim. In the Montreal Horticultural So­ 
ciety report for 1883, Chas. Gibbs says that the Ostheim is reported 
by Director Stoll of Proskau to be a native of the Sierra Nevada
Mountains of Spain, where it was found at elevations of 5,000 to 6,000 feet. Introduced into Germany 1687 by a German professor who grew it in the neighborhood of the town of Ostheim.

Osthein (Griotte d'Ostheim), Morello.

Fruit round, occasionally heart-shaped, below medium; stem, long and slender, 1½ to 2 inches; color, deep red and firm; juice, highly colored; cavity, very shallow and loosely attached to the stem; quality, very good; flavor, mildly sub-acid.

Very similar to the Minnesota Ostheim but comes a few days later. Imported by Prof. Budd in 1883. Ostheim is a group name for a class of cherries that is just as badly confused as the Montmorencies. The name Ostheim, Griotte d'Ostheim, Ostheim d'Cerise, Minnesota Ostheim and Ostheimer have been used interchangeably. There are three quite distinct varieties that can be distinguished.

The Ostheim cherries are a valuable class for the West. The fruit ripens the fore part of July, being dark red in color, of good size and flavor and proves a satisfactory variety to grow.

Fig. No. 19. Minnesota Ostheim. Three-fourths natural size.

Ostheim, Minnesota, Morello.

Form is small, round to medium; stem, slender and long, with a shallow and broad cavity; color is deep red, sometimes black when fully mature; skin is thick and tough; flesh, firm and juicy, the juice being brightly colored; quality, good; flavor sub-acid, slightly astringent. Minnesota Ostheim is some earlier than Ostheim d'Cerise and Griotte d'Ostheim. Season end of June.

In the Iowa Horticultural report 1881, p. 371, it is stated that E. Meyer of St. Peter, Minnesota, imported this variety from his home.
in northern Germany. It has proven very hardy under the trying conditions of this section. The hardiness of the tree makes it a valuable acquisition for Minnesota and the Northwest.

**Richmond Early, Montmorency.**

Fruit, medium in size, light red, roundish oblate; skin, thin, translucent; flesh, watery; juice, colorless; flavor, acid; quality, good; stem, 1 inch to 1¾ inches long; stone, round oval; season, June 15th; leaves, thin, long, inclined to ovate; probably one of the most commonly grown cherries of the state, an early and productive bearer, but tree inclined to be short lived.

Prince in his Pomology states that his father brought this cherry from Richmond, Va., and it was widely distributed. Hogg of England considers this a synonym of Kentish. Prince gives the Early Kentish and Virginian May as synonyms of this variety, and it has often been known by the name of Kentish in this country. On this account there has been much confusion, there being two varieties of the Kentish, late and early. Prince states that the late is the Kentish in American collections, and is the same as Montmorency. Downing's notes gives the Kentish as a synonym of Montmorency. This is one of the most commonly known varieties and ranks as one of the best varieties in the state. The tree is hardly and vigorous, but is inclined to be short lived. It is a profuse and regular bearer; early. Fruit keeps only a day or two after picking and a local market should be supplied. A poor variety for shipping.

**Rocky Mountain, Improved Dwarf, Prunus Besseyi.**

This is a native found growing in the Rocky mountains. A seedling, grown by Chas. E. Pennock, Fort Collins, Colorado. But little improvement over the natives which are characterized by their small, black, astringent fruit. Possibly of value in the very cold sections of the Northwest, where other varieties are too tender. Offered by some of the nurserymen.

**Russian Seedling Cherries.**

The following descriptions of Russian seedling cherries is made from trees growing on the Experiment Station grounds which have not been propagated. Eight or ten years ago selected seeds of Russian varieties of cherries were planted and from these there are now growing a large number of seedlings showing some very promising forms and the following are descriptions of some of the most promising. The trees as growing show every variation from a low, compact, spreading tree to a tall, conical one. The fruit varies in season from early June to late July.

**Russian Seedling No. 8.**

Fruit, heart-shaped, roundish. Size, small to medium; cavity, shallow; stem, medium, 1¾ inches; suture, obscure; apex, roundish; slightly flattened; skin, thin, tender, astringent; color, dark red; flesh colored, moderately firm, tender; juice, slightly colored; stone, small, oval, cling. Quality fair; flavor, sprightly sub-acid. Tree, small, open, round topped, not very productive; foliage not dense.
RUSSIAN SEEDLING No. 42.

Form, round, slightly flattened; size, small to medium; cavity, slight; stem very short; suture, obscure; apex, slightly flattened skin, thin and tender; color, dark red; flesh whitish, moderately firm, juicy; juice, uncolored; stone, round medium, semi-cling; quality, good; flavor sprightly sub-acid.

RUSSIAN SEEDLING No. 49.

Form, roundish, slightly heart-shaped; size, small to medium; cavity, moderately deep; stem, short and stout; suture, deep distinct; apex, rounded, slightly flattened; skin, thin, astringent; color, light to dark red; flesh, tender, uncolored, firm; juice, uncolored; stone, medium, round, cling; quality, poor; flavor, slightly sub-acid, astringent.

RUSSIAN SEEDLING No. 54.

Form, heart-shaped, slightly roundish; size, medium or above; cavity, deep; stem, long, moderately stout, 1½ inches; suture, indistinct; apex, round, slightly flattened; skin, very thin and tender; color, dark red—crimson; flesh, tender, firm, colored; stone, semi-cling, ovate, medium; quality, good; flavor, sprightly sub-acid.

RUSSIAN SEEDLING No. 109.

Form, roundish, slightly heart-shaped; size, medium or above; cavity, deep and broad; stem, long, slender, one inch; suture, slight; apex, rounded; juice, colored; stone, semi-cling; quality, good.

RUSSIAN SEEDLING No. 128.

Form, distinctly heart-shaped; size, medium or above; cavity deep and broad; stem, long, slender, one inch; suture, slight; apex, rounded; juice, colored; stone, semi-cling; quality, good.

RUSSIAN SEEDLING No. 169.

Form, heart-shaped, slightly roundish; size, small to medium; cavity, shallow; stem, short, medium, 1 inch; suture, indistinct; apex, roundish, slightly depressed; skin, moderately thick, tough; color, light red; flesh, light, moderately firm, uncolored tender; not very juicy; stone, oval, medium cling; quality, good; flavor, mildly sub-acid.

RUSSIAN SEEDLING No. 199.

Form, roundish, heart-shaped; size, medium to large; cavity, deep, broad; stem, long, slender, 1¼ inches; suture, a line; apex, rounded; skin, very thin, tender; color, light red mottled; stone, semi-cling, ovate; quality, good; flavor, slightly sub-acid.

SCHATTEN AMARELLE. See Shadow Amarelle.

Imported by Budd and distributed under the name of Shadow Amarelle.
SHADOW AMARELLE (*Shadow Morello*), Morello.

This is one of the latest varieties of the Russian sorts; ripens a little later than the Brusseler Braune; season, July 15th to 30th;

fruit is roundish, conical; medium; cavity, small, shallow; stem, 1½ to 1¾ inches, slender; apex, rounded; skin, thin, tough; color, deep red; flesh, firm; juice, deeply colored; stone, flattish oval; quality fair; flavor sprightly acid; firm and good keeper.

Tree is small, spreading to drooping; branches are dull brown; leaves small, ovate, elliptical, sometimes smaller at base; thus being obovate, slightly serrated; color, light green.

Imported by Prof. Budd in 1883. In bulletin No. 18 of this station he reports it to be a heavy and regular bearer. In some parts of the state it has proven a profitable variety and on account of its lateness it may be worthy of trial in a commercial way.

SHORT STEMMED MONTMORENCY. *See Montmorency.*
Shubianka, Vladimir.

Introduced by Prof. Budd in 1883.

Fruit is round, small; cavity, broad and shallow; stem, long and slender; apex, flattened; skin, tough and thick; deep red; flesh firm, with highly colored juice; stone, round, rather large; quality, poor; flavor, sprightly acid, astringent with bitter taste after. Season end of June.

Mr. M. J. Graham of Adel, Iowa, who has grown this variety, reports the tree is hardy, dwarf, round topped with small leaf, and small, inferior fruit, much like the wild black cherry. Of no value.

Silver Thorne, Morello.

W. S. Fultz of Muscatine describes it as follows: "In size and color about the same as Early Richmond, and resembles this variety in tree and fruit. Flavor not so acid, and flesh firmer; fairly productive. Has been propagated from sprouts and comes true. Of the Morello group."

This variety is supposed to have originated in Muscatine county, Iowa, about fifty years ago.

It is not fruiting on the station grounds but has been grown in the state for many years and is sometimes referred to in the horticultural reports.

Sklanka, Montmorency.

Fruit, roundish oblate; medium; cavity, broad, shallow; stem,
84

% to 1½ inches; suture, not marked; apex, flattened; skin, thin; color, light red when fully ripe; flesh, soft, juicy; juice, uncolored, rather watery; stone, medium size; quality, poor to fair; flavor, acid; season, June 15th to 25th.

Tree is large, spreading, with strong branches slightly drooping; foliage, abundant, medium, ovate, crenate, acute; texture, fine; twigs, reddish brown; very hardy and vigorous.

Prof. Budd who introduced this variety from Russia in 1883, states that trees, standing on rich, black soil, are more hardy than the Richmond. The fruit is a little larger than the Richmond. It has proven to be a good variety and has been widely disseminated and deserves to be more largely grown.

Fig. No. 22. Variation in the stems of these varieties.

Spat Amarelle, Montmorency.

Imported by Prof. Budd in 1883. In his notes on cherries he reports that this variety was much grown in East Poland and North Silesia.

Fruit, oblate, medium; cavity, broad, shallow; stem, 1¾ to 1½ inches, usually not variable; apex flattened and depressed; skin, translucent, thin; color, pinkish yellow and light red; flesh, soft; juice, uncolored; stone, small; quality, fair; flavor, lacking in richness; season, June 20th to 25th.

Tree large, spreading, upright, quite open; bark, reddish to dark brown; leaves, small to medium, elliptical, double serrate, of leathery texture; foliage, only moderately abundant.

Moderately productive and hardy. May be of value.

Strauss Weichsel (Strauss), Brusseler Braune.

Fruit conical, truncate; small to medium; cavity, deep, round;
stem, 1\(\frac{1}{4}\) inches, slender; suture, indistinct; apex, smooth, lacking depression; color, almost black; flesh, firm, colored, juice; stone, globular; flavor, acid, astringent; quality, medium. Season June 20th to 25th.

Tree of medium size, upright grower; leaves, medium; moderately hardy, a shy bearer. No value for commercial purposes. In Russian importation of 1883.

**Suda Hardy (Suda), Morello.**

Fruit is heart-shaped, roundish, medium; cavity, moderately deep and narrow; stem, medium stout, 1 to 1\(\frac{1}{2}\) inches; suture, marked with a line; apex, rounded; skin, thin and tender; color, almost black when ripe; flesh, slightly colored, moderately firm; juice, almost colorless; stone, rather long, oval, medium; quality, fair to good, slightly acid. Season July 10th to 20th.

The fruit was received from F. O. Harrington, Williamsburg, Iowa, who says it is hard to distinguish the fruit from Wragg and English Morello, the only essential difference being in the stem, but the tree is more upright and can readily be distinguished from these varieties. It is a good, prolific bearer with him. See Fig. 22

**Susse Frueh Weichsel, Brusseler Braunen.**

Imported by Prof. Budd in 1883 from Russia.

Fruit, round, slightly heart-shaped; size, small; cavity, shallow and broad; stem, slender, 1 inch to 1\(\frac{1}{2}\) inches; apex, slightly flattened and depressed; skin, thin, very tender; color, dark red to nearly black when mature; flesh, dark red, firm; juice, colored; stone, medium size, round; quality, fair; flavor, sprightly sub-acid.

Tree medium size, upright, slightly drooping and spreading branches. A shy bearer; of little value. Season middle of June.

**Terry, Brusseler Braune.**

Fruit, round, slightly oblong, large; cavity, very shallow; stem, rather slender, 1 to 1\(\frac{1}{2}\) inches; suture, very indistinct, marked by a straight line; apex, convex, slightly depressed; skin, tender; color, dark red to nearly black at maturity; flesh, firm and crisp; juice, colored; stone, small, slightly oval; quality, good; flavor, slightly acid and rich. Season June 20th to 25th.

This variety originated with H. A. Terry of Crescent, Iowa, who received it from the college as Spate Amarelle, but when it fruited it proved to be different. The State Horticultural Society, after examining the fruit, named the variety Terry. It has been widely disseminated under this name.

Many growers report this variety a good commercial sort. May be valuable.

**Timme, Montmorency.**

Fruit, oblate, medium; cavity, medium round; stem, 1 to 1\(\frac{1}{4}\) inches; suture, wanting; apex, depressed; surface, smooth, translucent; color, deep red; skin, astringent; flesh, light red with colorless juice; stone, large, round, smooth; flavor, very slightly acid; season about the same as the Early Richmond. Dessert.

Tree medium to large, strong, hardy; branches, medium large; upright, slightly spreading; leaves, medium to small, dark, leathery.

Prof. Budd says this variety came from Germany and was introduced by a German in Omaha by the name of Timme who sent
scions to the Department for propagation. This variety has been distributed by the department. It is a good regular prolific bearer and ranks among the best varieties growing on the station grounds and should be widely planted.

**Turbs, Morello.**

Fruit is oblate and slightly heart-shaped; size, medium; cavity, deep and narrow; stem, moderately thick, 1 1/4 to 1 3/4 inches long; suture, very indistinct; apex, convex; skin, thick; color, dark red; flesh, crisp and meaty; juice, highly colored; stone, small, round; quality, very good; flavor, slightly acid. Fruit received from F. O. Harrington, Williamsburg, Iowa. Variety said to have originated in Iowa City. Promising. Season June 20th to 25th.

**Utah Hybrid.**

Originated by J. E. Johnson of Nebraska. A cross between a sand cherry and a sand plum. Fruit resembles the cherry in form; quality is poor, of no value.

**Vilne Sweet, Unclassified.**

Imported by Budd from Vilne in southwest Russia. Tree hardy but light bearer. Of but little value.

Form truncate, slightly heart-shaped; size, medium; cavity, deep, broad; stem, very long, slender, 1 3/4 inches; suture, a faint line; apex, slightly depressed; flattened; skin, very thin and tender; color, red, attractive; flesh, white, tender, firm, red at stone; juice, colorless; stone, cling, round, medium; quality, good; flavor, sweet. Season middle of June.
Vladimir, Vladimir.

Fruit, round, below medium; color, dark red to almost black at maturity; cavity, shallow; stem, slender, 1½ inches long; apex, with slight depression; suture, very indistinct; skin, tender; flesh, melting and blood red in color; stone, round and small; sub-acid with slight astringency; quality, good.

The tree is small, round, with willowy, drooping branches. Leaf is very characteristic, being a linear leaf that is thick and leathery and rather coarsely serrate.

Season first week in July. This cherry although of no commercial value has been taken as the type of one class of Russian cherries on account of its marked characteristics of growth which are typical of the class.

Wheeler, Morello.

A seedling of English Morello. Said to be a little larger and of good quality. Originated by H. J. Wheeler of Carnforth, Iowa, who says it is a good bearer and hardy. Not introduced.

Weir’s No. 2, Morello.

Originated by D. B. Weir of Lacon, Ill.

Fruit oblate, conical, medium; cavity, shallow, broad; stem, ¾ inches to 1 inch; suture, slight; apex, small depression; color, dark red; flesh, firm, meaty; juice, dark; stone, oval, medium; flavor, mildly sub-acid; quality, fair; good, regular bearer; season, a few days later than the Early Richmond.

Tree, medium, upright and spreading; leaves, double serrated,
medium to large; foliage, only fairly abundant; some larger than Weir's No. 44.

One of the most productive of the collection. A prolific bearer; fruit, about the size of Richmond; tree, hardy and worthy of trial.

This variety was distributed in a small way by Prof. Budd.

Weir's No. 12, Brusseler Braune.

Fruit, long, roundish, cordate; size, medium; cavity, moderately deep and broad; stem, long, stout, 1 1/4 inches; suture, obscure; apex, roundish; skin, thick and tender; color, dark red; flesh, firm and crisp; juice, colored; stone, large, oval; quality, fair; flavor, sprightly sub-acid; season from July 12th to 20th; latest of the Weir seedlings.

Tree is of moderate size, slightly spreading; leaves, medium to large, leathery; decidedly elliptical; dark brown twigs; foliage, good; hardy and moderately productive.

Downing in his manuscript notes of 1883 speaks of this variety among the most valuable sent out by Weir.

Moderately productive and has not been widely grown. Worthy of further trial.

Weir's No. 13, Brusseler Braune.

Originated by D. B. Weir of Lacon, Ill., and disseminated by Prof. Budd.

Form, heart-shaped, slightly roundish; size, small to medium; cavity, moderately deep; stem, long, slender, 1 3/4 inches; suture, slight, a line; apex, roundish, slightly indented; skin, thin, tender; color, dark red when ripe; flesh, slightly pinkish; juice, colored; stone, medium, large, round; quality, excellent; flavor, sprightly sub-acid; tree, very upright, compact, medium size. Shy bearer. Season first week of July.

It is not grown commercially and is not promising as grown in the station grounds.

Weir's No. 24, Montmorency.

Fruit is conical, heart-shaped, medium to large; cavity, round, shallow stem, 1 1/4 inches, stout; suture, indistinct; apex, slightly depressed; surface, smooth, shining; dark red in color; flesh, firm; juice, colorless; stone, smooth, almost spherical; flavor, sprightly sub-acid; quality, fair. Season, middle of June.

Tree, medium size, upright, spreading; branches of moderate size; leaves, large, light green, nearly spatulate; not productive; hardy; not worthy of further trial.

Originated by D. B. Weir, Lacon, Ill.

Weir's No. 29, See Northwest.

Weir's No. 44. Montmorency.

Form, oblate, small to medium; cavity, shallow; stem, 1 inch; color, light red; skin, thin and tender; flesh, tender; light colored; juice, uncolored; flavor, acid; quality, moderately good; season, late June; fruit and tree a trifle smaller than No. 2.

Tree medium or slightly above; an upright, spreading habit; branches, moderately strong; foliage is scattering; leaves, small to medium, decidedly ovate, only slightly serrated, fine texture.

It is not quite as productive as Weir's No. 2, but produces fair crops each season. May be valuable for the northern sections of the state on account of its hardiness. Should be tested.
Wragg, Morello.

Fruit, heart-shaped, medium to large; cavity, deep and broad; stem, medium, slender, 1 to 1½ inches; suture, very obscure; apex, roundish, sometimes nearly flattened; skin, tender and thin; color, dark red; flesh, firm, crisp with colored juice; stone, small, roundish, ovate; quality, good; flavor, briskly sub-acid. Season July 10th to 20th.

This variety was originated by J. Wragg of Waukee, Iowa, one of the originators of the Iowa Horticultural Society. It was produced as a sprout of the English Morello. It has been widely distributed and is grown in all parts of the northwest where it is now considered a standard variety.

Fig. No. 24. Weir's No. 44.

Yellow Glass. Unclassified.

Introduced by Prof. Budd from Russia.

Fruit, heart-shaped; medium to above; cavity, rather deep, stem, medium, 1½ inches to 1¾ inches long; suture, marked by a line; apex, rounded; skin, tough and thick; color, yellow; flesh, firm and solid; juice, colorless; stone, round, clinging; quality, good; flavor, sweet, slightly bitter. Specimens received from C. F. Noe, Amana, Iowa, June 29th.

Tree is large, upright and strong, moderately hardy, not productive. Of no value.
One of the main reasons for introducing varieties of cherries from Russia was to secure hardier varieties which would stand the severe winters of the upper Mississippi Valley. In order that they might be tested in all parts of the state they were widely distributed soon after their introduction. They have now been grown throughout the state for 10 or 15 years and in order to get the estimates of men who have thoroughly tested them the following letter was sent out last fall.

"We are making a study of the Russian cherries and desire to have your estimate based on your experience in growing them. In order that we may have a basis of comparison take the Early Richmond and Montmorency and mark them 100 or perfect. Then rate the Russian varieties on this basis. Kindly mark them on hardiness, freedom from disease and productiveness."

The following replies are representative answers from men in different parts of the state who have thoroughly tested them.

M. J. Graham of Adel, Iowa, gives the following estimate:
Mr. Graham adds: "With the exception of Bessarabian,
<table>
<thead>
<tr>
<th>NAME</th>
<th>HARDINESS</th>
<th>LEAF SPOT, ETC.</th>
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<td>3</td>
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<tr>
<td>Yellow Glass</td>
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These estimates do not all agree with results obtained in the station orchards and given under the descriptions. For example, the Duchess d' Angouleme and Sklanka have given promising results and would rank higher than given in the estimates.

John Bowers, Sigourney, Iowa, estimates as follows:

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These estimates do not all agree with results obtained in the station orchards and given under the descriptions. For example, the Duchess d' Angouleme and Sklanka have given promising results and would rank higher than given in the estimates.

Hardiness as estimated in the foregoing has been based exclusively on hardiness of fruit buds. However, as we near the northern limit of cherry growing it is not altogether a question of hardiness of fruit, but rather of the trees themselves and it is possible that the hardiness of the cherry may be increased by securing a hardier stock for its propagation than we yet have.

Without doubt many of the Russian varieties of cherries are harder in tree than Early Richmond or Montmorency, but apparently more tender in fruit bud and though perfectly hardy in tree have proven unproductive in fruit. It is possible and probable that from seedlings grown from these varieties we may yet find hardy varieties of cherries that will extend the zone of cherry growing a hundred miles farther north. The introduction of Russian fruits as a whole has not met the long needed want of varieties that would extend cherry growing far into the Northwest. It was hoped that they would serve this particular purpose. But it has been found that taking them from their native climate and placing them in a new country has made them more subject to the foes of fruit growing than the varieties already growing there which had become by selection immune to many of their attacks. The good that will
come from this wholesale introduction of foreign varieties will be secondary rather than a direct result. The varieties have as a rule been unable to stand such a radical change of environment and the primary purpose for which they were imported has been thwarted. But now as they become acclimated and mingled with the varieties already growing here we are destined to have better varieties than we have yet known and they are to come by the continued growing of seedlings from our best and hardiest varieties and by selecting with a relentless hand.

3. BLOSSOMING RECORDS.

In order to secure comparative records of the blossoming period of the different varieties of cherries throughout the state, records have been kept for a period of two years and by the kind co-operation of fruit growers throughout the state we are able to give the following tabulated results. In order that the results will be more accessible the state has been divided into districts represented by the tiers of counties beginning with south tier and running north.

Since we have no records for the northern tier of counties, they are not included in the tabulation. Where records were not kept at any one station for two successive years they have been kept at some other station in the districts and these records are given so that comparative records are given for the two years for each district.

The counties embraced in the districts are as follows:

TIER I.

TIER II.

TIER III.

TIER IV.
Harrison, Iowa, Shelby, Johnson, Audubon, Cedar, Guthrie, Dallas, Scott, Clinton, Jasper, Poweshiek, Polk.

TIER V.
Monona, Crawford, Carroll, Greene, Boone, Story, Marshall, Tama, Benton, Linn, Jones, Jackson.

TIER VI.
Woodbury, Calhoun, Hamilton, Grundy, Buchanan, Dubuque, Ida, Sac, Webster, Hardin, Black Hawk, Delaware.

TIER VII.
Plymouth, Buena Vista, Humboldt, Franklin, Wright, Bremer, Clayton, Cherokee, Pocahontas, Wright, Butler, Fayette.
<table>
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<tr>
<th>LOCALITY</th>
<th>VARIETY</th>
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<th>MAY 1899</th>
<th>APRIL 1900</th>
<th>MAY 1900</th>
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<tr>
<td>D. B. McCalla, Clarinda, Page Co., Iowa</td>
<td>Early Richmond, English Morello, Montmorency Large</td>
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<td>J. P. Jackson, Glenwood, Mills Co., Iowa</td>
<td>Bessarabian, Cerise de Osthheim, Dyehouse, Early Richmond, English Morello, Early Morello, Late Richmond, Montmorency Large, Montmorency Ord, Terry, Wragg</td>
<td>16-17</td>
<td>18-19</td>
<td>20-21</td>
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<td>A. F. Collman, Corning, Adams Co., Iowa</td>
<td>Corning, Double Natte, Early Richmond, English Morello, Late Richmond, Montmorency, Orel 28, Sklanka, Spate Amarelle, Terry, Wragg</td>
<td>22-23</td>
<td>24-25</td>
<td>26-27</td>
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### LOCALITY

**John Bowers, Sigourney, Keokuk Co., Ia.**
- Bessarabian
- Brusseler Braune
- Double Natte
- Early Richmond
- Frauenendorf Wiechsel
- Large Montmorency
- Late Richmond
- Lutovka
- Montmorency
- Ostheim
- Spate Amarelle
- Strauss Wiechsel
- Wragg

**H. A. Terry, Crescent, Pottawattamie Co., Ia.**
- Amarelle Boquet
- Bessarabian
- Brusseler Braune
- Cerise d'Ostheim
- Dyehouse
- Double Natte
- Early Richmond
- English Morello
- Frauenendorf Wiechsel
- Griotte Precocce
- Griotte du Nord
- June Amarelle
- Late Richmond
- Lutovka
- Montmorency
- Northwest
- Ostheim
- Shadow Amarelle
- Spate Amarelle
- Weir's No. 12
- Weir's No. 44
- Wragg

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Price and Little: Cherries and cherry growing in Iowa.

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## Blossoming Record

**Locality and Variety**

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<td>E. E. Brown, Onslow, Jones Co., Iowa</td>
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<td>Ames, Story Co., Iowa</td>
<td>Abesse, Bessarabian, Brusseler Braune, Cerise de Ostheim, Double Natte, Duchess de Anjou, George Glass, Herzformize Weichsel, King's Amarelle, Lithauer Weischel, Lutovka, Montmorency, Morello Pouche, Orel 23, Ostheim, Minn, Shadow Amarelle, Sklanka, Timme, Vladimir, Weir No. 2, Weir No. 12, Weir No. 24, Weir No. 44, Wragg</td>
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### Chart

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**BLOSSOMING RECORD.-(Continued.)**

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