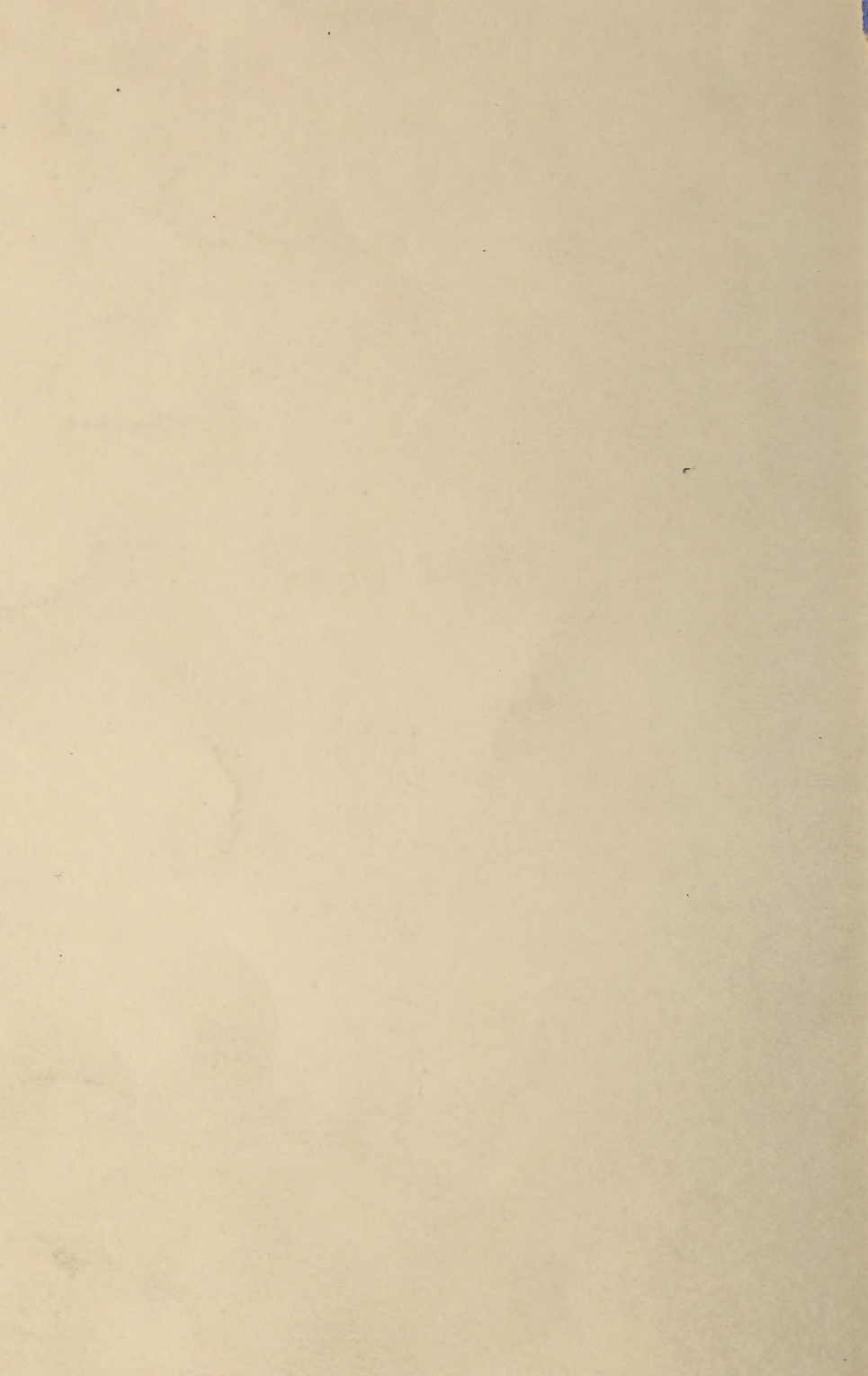


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CANNEDY'S
ILLUSTRATED
Fruit Book.



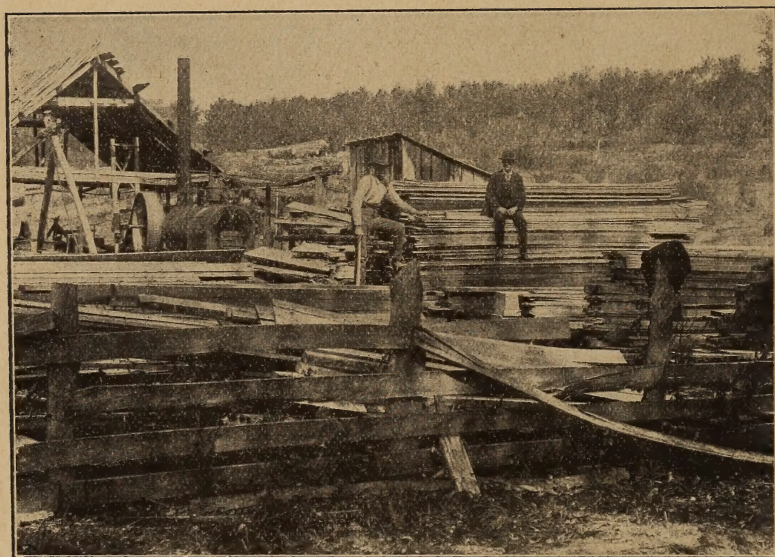
FRUIT AND ORNAMENTAL TREES,

Small Fruits, Grape Vines,
Roses, Shrubs, Etc.

JOHN A. CANNEDY,
Nursery and Orchards,
**HIGH GRADE STOCK,
NEW ORCHARD PLANS.**

Lock Box 614.

Carrollton, Ill.



WHERE I MAKE MY BOX LUMBER USED IN PACKING APPLES
AND NURSERY STOCK.

JOHN A. CANNEDY'S

Fruit Book.

FRUIT AND ORNAMENTAL TREES.

**Small Fruits, Grape Vines, Roses,
Shrubs, Etc.**

ILLUSTRATED.

For Illinois and the Middle West.

By J. A. CANNEDY, Carrollton, Ill.

INTRODUCTION.

IN presenting to the public this little book, I have no apologies to offer. Having experienced many of the ups and downs (mostly downs) of the orchardist, caused by the lack of information and knowledge in selecting, planting and care of an orchard, and trusting to be of some assistance to the planting public, I place this condensed fruit book within the reach of those that wish it.

The book describes apples and other fruits best adapted to Illinois and the middle west—the greatest apple region in the world. I have carefully refrained from filling the pages with trashy “boosts” for trade-mark varieties, and have striven to give nothing but good, wholesome, honest information.

I have not depended solely upon myself for the information given, but have freely used the experience of the best and most successful fruit growers of our country as well as the valuable information given out by our state and national governments in their horticultural work and experiments. Space forbids the discussion of many topics of value. Only the most vital topics have been touched. Great care has been taken in making the naming and description of fruits as accurate and intelligible as possible, and I trust the reader will excuse any mistake he may find, for it was not intentional, nor made with the intent to deceive.

J. A. CANNEDY.

CARROLLTON, ILL., February 1st, 1902.

THE PLANTING AND CARE OF AN APPLE ORCHARD.

Selection of Stock.

Select budded or crown-grafted trees one or two years old and *no* older. It is a mistake to set older trees.

If the planter is inexperienced, two-year-old trees should be selected as the heads have been formed in the nursery row.

If grafted trees are chosen, the planter should make sure that they are crown-grafted. It is poor policy to buy trees just because they are cheap. Cheap trees make cheap orchards and are seldom profitable. A piece root grafted tree, next to a seedling, is the cheapest kind of tree, but seldom pays the planter. It is not the cost of the trees alone to be considered. The land, planting and after-care make up much the larger expense. If the trees die all this expense is lost. The best tree is the most profitable.

Care of Trees After Delivery.

Trees are often ruined after they fall into the hands of the planter. Trees that have been allowed to lay in the package at some railroad station or at the home of the purchaser exposed to the sun and rain, have but a small chance of ever growing into an orchard.

When trees are received, lose no time in taking them from the package and separating them from the packing. If the roots have become dry from long exposure or otherwise, cover them entirely, roots and tops, with damp earth or straw. They should be kept damp and covered for at least forty-eight hours, when they will be found nearly as fresh as when first taken from the nursery. If the trees are in good condition when first received, or after remaining covered forty-eight hours, dig a trench, and lay in the trees in a slanting position so that the roots and at least one-third of the bodies can be covered with earth. Let them remain in this position until ready to plant them in the orchard.

Setting.

In setting new orchards, when the ground will permit, plow straight furrows across the orchard as far apart as the trees are to be planted.

Stake through at right angles to the furrows already made to get the rows straight the other way.

Now run the plow several times with these stakes, making a long trench that will be from 12 to 14 inches deep.

Scoop out a place 24 inches square at each place where the furrows cross. When this is finished the ground is ready to be planted in trees.

In beginning to set, set the 1st and 3rd trees exactly in the center of the crosses made by the furrows. Now, by lining the rest of the row with these trees the rows will be nearly as straight each way as they would be by using a line or stakes.

Fill around the trees with a spade or shovel enough dirt to cover the roots well and hold the tree in position. Be careful to pack the dirt well around the roots. The rest of the dirt can be thrown back into the trench with the plow.

After the dirt is thrown back, the orchard should be gone over and all leaning trees straightened and if any holes have been left around the trees they should be well filled and the tree left with the dirt packed around it.

This method is about the quickest and best way to set orchards where the ground will permit. It is much better than digging holes, as much more ground is loosened.

Another method to be recommended which is much like the one given above, except it is more accurate in laying off the ground and setting the trees. This method requires four or more men to do the work quickly.

Measure the ground on all four sides placing a small stake at the end of each row. Set the stakes at the extreme edges of the orchard to be out of the way of the horses when turning at the end of the rows.

In measuring the field to be set, start on the same side to measure the north and south sides, and on the same side to measure the east and west sides, *i. e.*, if the planter starts from the north-east corner to measure the north side, he should start from the south-east corner to measure the south side, and if he starts from the north east corner to measure the east side, he should start from the north-west corner to measure the west side.

In no case should the small stakes be moved until the orchard is set. The planter should have a number of stakes four to eight feet long for lining the furrows and trees.

Beginning with the first row, drive a long stake exactly behind the small stake at each end of the first row, then place a stake in the middle of the row exactly in line with the two end stakes. Run three to five furrows by these stakes making a trench 12 or 14 inches deep. The rest of the rows are run in the same manner.

Now begin with the first row the other way. Set a long stake behind the small stake at each end of the row. Line the middle stake with these two stakes. Each row is staked in the same way. None of the stakes must be moved after they are lined up, except the middle ones to line the rows the other way.

Start with the first row running with the trenches. If the long stakes at the ends of the row in this direction have been moved, set stakes behind the small stakes at each end of the row and line the middle stake with these. The first row is now staked both ways.

Scoop out a place 24 inches square where each tree is to be planted. Line the trees with the stakes both ways. Set each row in the same manner.

Follow the directions given in the first method for filling the trench.

It is nearly always best to plow the entire orchard before the trees are set, but it can be plowed almost as well afterwards when the trees are set by either of the above methods.

All fruit trees should lean slightly to the south-west with the heavier side of the top in the same direction.

Enemies of the Orchard.

Good trees and good setting is half the battle, but by no means all of it. The after-cultivation is just as essential. Woolly Aphis, Canker Worms, Borers, Leaf Curlers, Caterpillars, Rabbits, and Grasshoppers must be looked after.

The worst enemy to the young apple and peach tree is the Borer. Its work being hidden under the bark, it often kills the tree before it is noticed.

The Crown Borer begins its work at or near the top of the ground, very often killing the young tree in one season by entirely girdling it just under the outside bark.

The Crown Borer has quite a long life. The eggs are laid in the trees about the first of June and very often the young Borer is very busy at work by the first of July. If not intercepted, it works the rest of the summer, stopping work only in cold weather. All the next summer is spent in the tree and by fall the worm is from an inch to nearly one and one half inches long. Its trench is much deeper now than it was the first summer. By the end of the second summer the Borer is beginning to prepare for a different life. It does this by placing around itself a cocoon made of wood fiber almost as coarse as fine excelsior.

Before the grub stops its cutting it manages to cut an opening almost to the outside world leaving the bark only between itself and the outer world. By the last of May or the first of June, the grub, having been dormant for quite a while, begins to cut its way through the bark to the outside which it soon accomplishes and then it sets to work to see that its descendants will find pleasant homes in the young apple trees. But while the dirty white grub with its ugly brown head was taking its nap in the rough wood cocoon, a wonderful transformation took place. Instead of it coming out as an ugly worm, it comes out as quite a respectable looking moth.

The only safe method to rid an orchard of Crown Borers is to *cut* them out of the trees with a knife or chisel.

The Top, or Flat Headed Borer, does its work higher up in the tree, even getting in the branches and forks. It is very often the cause of limbs splitting from the trees later as it has caused the upper part of the fork to decay.

The Top Borer is much smaller than the Crown Borer and remains but one season in the tree.

After a Borer is once in the tree, about the only way to get it out is to cut it out before it has done much damage. The trees should be gone over about the first of July and then again about the middle of August. In my own orchards I have the trees gone over in early spring.

The peach Borer is quite different from the apple Borer in looks only. Its work is quite as deadly. The treatment for the peach Borer is the same as for the apple Borer.

The next worst enemy to the orchard is the grasshopper. The best way to keep it off the trees is to feed it well on other green food besides the young trees and outside of the orchard if possible. Spraying is good but will not entirely do the work. Hopper catchers are used in many of the large orchards of the west.

Next comes the Woolly Aphis and Canker Worm.

For Woolly Aphis whitewash the trunks and mulch the tree with tobacco stems.

For Canker Worm spray with Paris Green or some other arsenical and keep the trunks of the trees well whitewashed throughout the season.

Rabbits annually kill many trees by girdling them. Their work is not confined to the winter season alone. Often trees are girdled in mid-summer. The only safe protection against rabbits is to wrap the trees with corn stalks, weeds or grass, using some strong twine like binder twine to tie the wrappings in place. It is never safe to depend on tree paints or washes to ward off the attacks of rabbits.

I will not take up the minor pests of the orchard, and as there is so much said in regard to spraying and fighting the enemies of the fruit by the horticultural papers, will say nothing here on that subject. See U. S. Bulletin No. 19—Important Insecticides.

Cultivation of the Orchard.

Young orchards require thorough cultivation, and should never be neglected. Cultivate as thorough as for a crop of corn. The orchard is no place to raise weeds. Uncultivated orchards are nearly always badly infested with injurious insects.

No young orchard will thrive in blue grass sod and even when in clover the trees should be hoed four or five times (more hoeings are better still) during the summer.

Never sow timothy in the young orchard. It will kill the trees and the same may be said of wheat, rye, oats, etc., if the grain is allowed to ripen. Corn, potatoes, garden vegetables, cow peas and clover are the best crops to plant in the orchard.

Pruning.

The pruning should be done when but little is to be cut from the tree. Do not wait until an objectionable limb becomes large, but cut it out while it is small. No two trees grow alike and every tree needs individual training.

Heading Trees.

Head all fruit trees low. Sky-scraping trees are not a success. The head of an apple tree should be started at 28 to 32 inches from the ground, and in fact that is about as high as any fruit tree should be headed. Heading lower than the height given above would be better than heading more than 32 inches high.

The trunk of the fruit tree has almost lost its function. It is expensive to the tree and the planter and it is unnecessary. Orchard trees do not have the struggle for existence that the forest trees have and therefore it is not practical to elevate the tops on a tall trunk in order that the top will have sufficient light and air. *Every inch added to the length of the trunk adds expense and danger to the top and fruit.* It adds cost to pruning and spraying, and above all difficulty and expense in picking the fruit. High top trees are more liable to be broken by the wind and in many cases causes the tree to be blown over.

It is the top that does the work and it is the part of the fruit tree that should be developed as much as possible so as to obtain the greatest amount of foliage and the greatest number of fruit bearing branches and buds.



A 5-year-old BEN DAVIS in bearing, showing correct heading and branching. This tree was a No. 1 crown grafted, 2-year-old tree, set in Spring of 1896. Photographed September, 1901.

Upright growers like the Akin should be well cut back leaving an outside bud as a terminal on each branch. Spreading and slender branched trees should receive the same treatment except an inside bud should be left as a terminal. Trees like the Ben Davis require but little cutting back.

No limbs should be left growing from the body of the tree but what are to be main branches of the bearing tree.

The heads should be kept open so that the air and sunlight can pass through them.

Mulching.

Mulching is of the greatest importance and should never be neglected. Straw, grass, sawdust, etc. may be used and should be spread around the tree for a space of four or five feet and four to six inches deep. Mulching is not only good for the young trees but is good for bearing trees as well.

Where trees are well cultivated a dust mulch is kept around the tree and is in most years better than a litter mulch.

DOES IT PAY TO PLANT AN ORCHARD?

To an uninformed person it would seem that with the great number of new orchards that are being set each year that the orchard business would soon be overdone, and some people posing as authority, say that it will not pay to set orchards for commercial purposes because there will soon be an overproduction.

Well, let us see about that. On account of poor nursery stock, poor packing, delayed shipments, neglect and ignorance in the planting and after care of the trees, only about one in twenty trees planted becomes a paying investment. Instead of the number of bearing trees increasing in many states the number is decreasing. Iowa has been falling behind, Illinois but little more than holding its own, Indiana and Pennsylvania are falling far behind their old records. The orchards are not keeping pace with the increase in population of our own country.

The population of the world is increasing. Fruit, especially apples, are finding a broader market each year. The consumption of fruit per capita is constantly on the increase.

Europe depends on the United States and Tasmania for her apple supply, but the demand has always been greater than the supply.

The apple sections of the world cannot be greatly enlarged, but the population can greatly increase.

It was said that the orchards were overproducing 20 years ago and many people really thought they were right in saying so. In 1890 I began planting a commercial orchard. I was told by many that it would be impossible to sell the products from the orchards that were then being planted. After a lapse of 11 years I find that we have a much better apple market than we had then, and there is nothing in sight to the contrary for several years to come.

Here are some of the sales for the year 1901—and 1901 was not considered a good year. For a bad crop year the prices are somewhat surprising.

Conrad Schoppe of St. Louis paid L. H. Hazletine \$13,000 for 140 acres. Schoppe picked the fruit.

S. A. Hazletine sold to the Hannibal Produce Co. 40 acres for \$3,000.

Miss Nellie Hazletine sold Newhall & Sons 40 acres for \$3,000.

S. A. Hazletine refused \$10,000 for an 80 acre orchard.

E. A. Wenser sold a 2½ acre orchard for \$900 (land included.)

B F. Combs of Kansas City refused \$50,000 for his apple crop.

There is nothing phenomenal in these prices for the apples were bought by experienced buyers—men who are in the business for the money there is in it.

BATCHTOWN, ILL., Aug. 31, 1901.—Yesterday was quite a lively day among the apple buyers of this section of Calhoun County. S. E. Twitchell who resides three miles east of Batchtown, sold his orchard to a Chicago company for \$2,500. These apples grew on about fifteen acres of a farm comprising 80 acres, for which Mr. Twitchell paid a few years ago \$2,000. His fifteen acres of orchard have netted him this year \$166.66 per acre. On the same day Dominick Zigrang sold his orchard for \$1,000. H. H. Jones sold his 2 acre orchard for \$150 and Wm. Castleton one of his small ones for \$500. In each of these deals the price paid is net, the owners of the trees having no expense to meet whatever, and the purchaser picking, barrelling, hauling and shipping the apples.—(Extr. et from Colman's Rural World.)

It is estimated that there will be shipped from Batchtown and surrounding landings 100,000 barrels of apples. These apples at \$1.50 to \$2.50 per barrel will make times good in that section.

One of the Missouri orchards of 240 acres belonging to two maiden ladies sold for \$30,000.

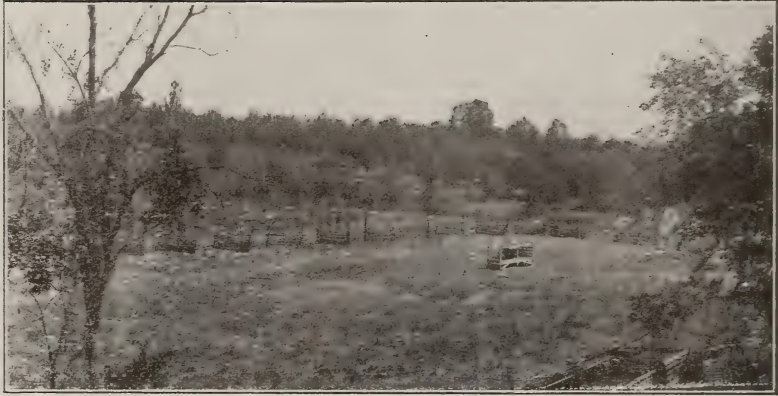
The Pitts orchard of Jersey County, Illinois, containing about 6 acres was sold to a Chicago man for \$1,000. The fruit was picked by the purchaser.

Does it pay to grow an orchard in Illinois? Let me quote what Senator Dunlap said before the Illinois Horticultural Society. "Taking all things into consideration, I think the outlook for the Illinois orchardist is as good as it has been at any time in the history of the state. If I had \$50,000 to invest in orchards and were looking for a suitable location, knowing what I do of the orchards of Michigan, of the Ozarks and Colorado, and all these other fruit sections which have their special lines of profit and advantage, I would invest that money in Illinois orchards rather than in any other part of the country. I have traveled over a great portion of this region I speak of and I am satisfied I am making no mistake in that statement."

Col. Morrison before the Illinois Horticultural Society said: "It is unnecessary for anyone to say in this convention that the horticultural interests of Illinois are in the aggregate very great, scarcely second to those of no other state in the union. The records so recently made at the Paris Exposition have, perhaps, opened our eyes wider than would otherwise have been the case that *this* is pre eminently a fruit growing state. Our apples competed with the products of the world and carried off a gratifying share of the prizes."

To sum it all up, fruit growing, especially of the apple, is a paying business if the grower will but devote his attention to his work, using judgment in the selection of varieties, striving to produce the finest fruit, and making his fruit just as good as represented.

APPLES.



The apple is justly called the king of fruits, standing as it does at the head both in importance and general culture. Its season now extends through the entire year. To have apples every day in the year, the planter needs but to make a careful selection of summer, fall, and winter varieties.

As many varieties are known by several different names, I have included the most important ones in the description, placing the best known name first.

Not every variety of merit will be found in the list below. It would be impossible in so small a book to take up every variety. Those mentioned are tested varieties or those of great promise.

Summer.

American Pearmain—*Watkins Early, Early Summer Pearmain*—Medium, oblong, striped and dotted with red; tender, juicy and rich; good bearer; flesh tender, subacid; best. September.

Benoni—*Red June (of some)*—Medium, nearly round; covered with bright red stripes and splashes; tender, juicy, rich and aromatic. The tree is an upright grower and hardy; productive. Best apple of its season. August.

Carolina Red June—*Carolina June, Red June, Blush June*—Medium size; red; flesh, white and tender, juicy, subacid; an abundant bearer. One of the earliest apples we have. Tree medium hardy. Last of June.

Early Colton—Medium and larger; oblong, yellow; flesh white, tender, subacid; fair quality. Tree moderate grower, prolific. July and August.

Earley Harvest—*Yellow Harvest, Bracken, Prince Harvest, Early June, Early French Reinette, July Pippin*—Medium, round; straw color; tender, subacid; productive. Liable to crack in wet weather. Subject to scab. August.

Early Ripe—Large; yellow; tender, juicy; ripens with Early Harvest, but better apple. A good market variety.

Golden Sweet—*Orange Sweet*—Large; pale yellow; very sweet; good flavor. Tree thrifty and a good bearer.

We were probably surprised here two years ago to find that buyers from New York were coming to Illinois and Missouri to buy apples. This was at a time when the crop there was a failure. The next year when they had a good crop, they came also to buy western fruit. The fruit of Illinois seemed to be in demand. It was a great surprise to me, and so I investigated the matter and found out why it was they came here to buy fruit when they had it themselves. The solution of the whole matter is contained in a statement a New York buyer made to me. The New York apples, as a rule, are not long keeping. With the best cold storage facilities the Greening is out in January and the Baldwin doesn't last much longer than March or April. But the Ben Davis, Willow Twig, and other varieties grown here in the west, the Gano and York Imperial, are in demand because they are long keeping apples, and because they can sell them in the eastern markets after their apples are disposed of, and it is for that reason the eastern buyers come to Illinois to buy fruit.—Senator Dunlap before Hort. Society of Ill., 1900.



A corner in a block of apple grafts. All branched seedling roots and a 90 per cent stand. Piece and straight root grafts did not make a 50 per cent stand. Photographed last of August, 1901.

Jefferis—From Chester County, Pa. Tree moderate grower, upright habit. A constant and abundant bearer; fruit roundish, flattened; pale yellow; striped and stained with red, becoming dark in the sun, dotted with white spots and russet at the stem; flesh tender and juicy; quality best. Jefferis is one of the very best apples of its season and has held its high reputation for over fifty years. September and October.

Nonpareil—*Ohio Nonpareil, No Equal, Myer's Nonpareil*—Originated in the orchard of Mr. Bowman, Massillon, Ohio, over 100 years ago. This is one of the most valuable fall apples and must not be confounded with the old Nonpareil which is a winter apple. Fruit, large; yellow, with bright red; tender juicy, rich; quality best. September and October.

PRESENT DEMAND AS AFFECTING CHOICE OF VARIETIES.—In the pioneer days of fruit culture, especially in the Mississippi Valley section of our country, the great aim and object of the enterprising planter seem to have been to secure and plant all of the numerous varieties within his reach without considering the question of adaptability of the variety to the conditions of soil and climate. For a time at least, while the soil was new and diseases and insects less numerous, his efforts gave fairly satisfactory results. Now, however, conditions have changed and many of the sorts that were once popular and profitable are considered valueless. So that, notwithstanding the list of desirable varieties is greatly increased, growers find themselves compelled to study more carefully the adaptability of the varieties suited to their special conditions and purposes.—Apples and How to Grow Them.

Is the demand sufficient to warrant us in planting the "future apple orchard" and will the demand keep pace with increasing production? We have every evidence to warrant us in asserting that *the demand for good winter apples is growing even faster than the supply*. Our markets are not only being extended rapidly at present, but will be greatly facilitated in the future by improved methods in hauling, and cheaper and better transportation. The use of the apple is becoming more general every year. Our apples are entering largely into the daily food of the common people of the world and the cheapening of sugar only contributes to the consummation of this desirable result. Additions to the grateful number of dishes into which the apples largely enter are constantly being made. *The apple is the fruit of the millions*, and we should exert ourselves to supply them. Beyond question, the demand for the apple and its products have grown, in the last decade, out of all proportion to our facilities for supplying, and it is not believed that this demand can be met by any of our competitors. The humid climate of northern Europe does not produce the American flavor in the apple, and southern Europe, although it excels in pears, plums, etc., is not, strictly speaking, an apple region. This leads us to the inevitable conclusion that, in all the known world, the best apple-growing regions are very much circumscribed, and we are evidently destined to enter the markets of the world by exporting more largely than ever before.—J. T. Johnson

Sweet Bough—*Bough, Large Sweet Bough, Sweet Harvest, Washington, Early Sweet Bough, Nyack Pippin*—American. Tree moderate grower. Will not stand wet soil. Fruit, large; pale greenish yellow; tender and sweet; good bearer. August.

Summer Queen—*Sharps Early, Lancaster Queen, Homony*—Fruit, large; roundish, conical; striped and splashed with purplish red; flesh, yellowish sometimes with a pink tinge, juicy, aromatic, sub acid; very good. August.

Autumn Varieties.

Autumn Strawberry—*Late Strawberry, Strawberry*—Originated in Western New York. Fruit medium; streaked; tender, juicy; productive. October.

Duchess of Oldenburg—*Duchess, Oldenburg*—Russian origin. Medium to large; yellow streaked with red somewhat blushed with pink bloom; flesh, juicy tender, sub-acid; good; productive; early bearer. September.

Fall Pippin—*Philadelphia Pippin*—Fruit very large; roundish conical, flattened at ends; tender, small core. Fine everywhere. Tree rather tardy in bearing. October to December.

Gravenstein—*Grave Slije*—Good on all soil. Productive. Large round head. Fruit, large; roundish flattened, somewhat irregular and ribbed; color pale green, becoming a rich yellow, striped and splashed with red, exposed the red becomes dark and beautiful; flesh, yellow, crisp, tender, sub-acid, with a peculiar aromatic taste.

Jersey Sweet—*Fersey Sweeting*—American origin. Succeeds on well drained soil. Good in Central Illinois. Fruit, medium; roundish tapering to the eye; striped with red and green; flesh, white fine grained, juicy, tender, sweet. September and October.

Maiden Blush—American. A favorite for more than fifty years. Tree a rapid grower, forming a fine spreading head; productive on all soils; best of its season and should be in every orchard. Fruit, medium to large; roundish, flattened; clear lemon yellow, with red cheek varying from faint blush to rich crimson; flesh, white, fine grained, tender, sprightly, rather sharp sub-acid until fully ripe. September and October.

But referring to apples, which perhaps is the only fruit we can sell them (the French) for the present, I will say that when apples sold there (Paris) on the 15th of April for 40c each, it shows the condition of their market and shows to the practical buyer and shipper that there is a possibility of at least fair remuneration in a market of that kind.—Senator Dunlap.



Some thrifty five-year-olds, growing on a hill too steep to cultivate in grain.

Rambo—*Seek-no-Further, Bread and Cheese Apple, Terry's Red Streak*—Native of Delaware. Was once a very popular apple, now grows too small and drops. Fruit, medium; flat; color, yellowish white, marbled, streaked with yellow and red; flesh, greenish white, tender, sprightly, mild sub-acid. October to December. Has been kept until March.

Pennsylvania Red Streak—One of the finest of fall apples. Tree a good grower, rather upright, hardy and productive. Fruit, large; roundish, flattened, broad cavity and basin; color, yellowish ground streaked and splashed with red. October to January.

Wealthy—A new variety from Minnesota; healthy, hardy, very productive. Fruit, medium and larger; oblate, smooth; color, whitish yellow shaded with deep red in the sun; flesh, white, tender, juicy, sprightly, sub-acid; quality, ex-

cellent. September and October. There is quite a difference of opinion about the Wealthy. Some class it as a winter apple. In Illinois it is a fall apple following closely after the Maiden Blush.

Wolf River—*Wolf River Giant*—A new and beautiful apple of the very largest size, even surpassing Gloria Mundi in size. Originated near Wolf River, Wis. It is an ironclad apple and well worthy of large planting. The Wolf River is also classed by some as a winter apple. It keeps well, but an Illinois Wolf River could hardly be called a winter apple. Fruit, very large; greenish yellow shaded with crimson; flesh, white, juicy, tender; fine flavor. A splendid cooking apple. October and December.

For the last several years it has been found that choice American apples have been growing in favor with the Germans, and but recently a cargo of 64,000 barrels of American apples arrived at the city of Hamburg in a single day. Last year it was thought that our trade was large in consequence of the great quantity and cheapness of the product, but the crop of 1897 was small and high in price. Yet the German taste had been captured and they demanded our American apples even at the increased cost. Since 1897 we have sold Germany a little less than 2,000,000 barrels and would have sold her much more but for the quarantine of the German government, said to be against the San Jose Scale.—J. T. Johnson, 1898.

Winter Varieties.

Arkansas Beauty—Large; light crimson, splashed and striped with darker crimson; tender, fine grained, mild sub-acid. Highly recommended by some, but not tested in Illinois. December to March.

Black Ben Davis (*Trade-marked by Stark Bros.*)—Tree like the Ben Davis vigorous and very productive, easily grown, making a very showy orchard tree. Fruit, large; smooth, roundish; color, a handsome dark red when fruit has grown exposed to the sun; flesh, similar to that of the Ben Davis, perhaps better flavor; keeps well. Black Ben Davis is supposed to be a seedling of the Ben Davis. It originated in the orchard of J. F. Bain. Has not been thoroughly tested in Illinois.

Baldwin—*Late Baldwin, Woodpecker, Pecker, Steeles Red Winter*—From Massachusetts. Tree vigorous, but rather tardy. Not adapted to Illinois. Fruit (Illinois), medium; roundish, narrowing a little to the basin; color, yellowish covered and striped with red, with radiating streaks of russet about the stem; flesh, yellowish, crisp, tender, sub-acid. Fine in the east, poor in the west. November to February.

Belleflower—*Yellow Belleflower, Lady Washington*—American. Tree of slender yet healthy growth, very tardy in bearing. Must be from 15 to 20 years old. Does not pay to plant. Fruit, large; oblong, irregular, tapering to the eye; color, pale yellow with a blush on the sun exposed side; flesh, tender juicy, crisp, sprightly, sub-acid; excellent flavor. October to February.

Ben Davis—*New York Pippin, Kentucky Red (Streak)*—From Kentucky. Tree vigorous grower, constant and abundant bearer. No other apple has had both the praise and the censure that the Ben Davis enjoys. In spite of its great number of enemies it is yet one of the leading apples of the country. Planters make no mistake in still planting the Ben Davis. Fruit, large; roundish; striped and splashed with red and yellow, very handsome; flesh, white, sometimes tinged with red, mild sub-acid, pleasant flavor, core medium. December to spring.



A six-year old Ben Davis Orchard.

Champion (*Trade-marked by Stark Bros.*)—Originated in northwestern Arkansas. Tree vigorous. Fruit, medium; smooth and round; color, yellow covered and streaked with red; fruit varies as to coloring; flesh, white, tender, and good; a good cooking apple. Excellent late keeper.

Fameuse—*Pomme de Meige, Sanguineus, Snow*—Of Canadian origin. Tree moderately vigorous, rather diverging. Fruit, small to medium; roundish, somewhat flattened; color, greenish yellow, often entirely overspread with rich dark red; flesh, very white, tender juicy, with a slight perfume, sub-acid; high flavored, but flavor deteriorates. October to January.

The jury marked the fruit exhibits on a scale of points. That which graded from one to five was awarded honorable mention; fruit that graded from six to ten was given a bronze medal; eleven to fifteen, a silver medal, and from sixteen to twenty, a gold medal. Twenty was perfect. I am pleased to report that the Illinois State Society in every competition secured a gold medal. There were eleven of these competitions, so Illinois took eleven gold medals as a State Society exhibit and four additional gold medals were awarded to individual exhibits from Illinois. Being in a position to ascertain the markings of the jury, I can state here that the markings on the Illinois fruit were higher than that of the fruit from any other state in the United States or Canada, on two occasions being marked 18, on another 19, and once 20 on a scale of 20. In addition to these prizes awarded during the exposition, Illinois received at the close of the exposition, a grand prize for the continuous exhibit of fruit throughout the exposition. This is a high honor for Illinois fruit, as out of twenty states in competition, only three others received grand prizes.—Part of a report to the Illinois Society of the Paris Exposition on the state exhibit.

Fallwater—*Faldwalder, Waldener, Green Mt. Pippin, Tulpehocken, Dutch Codlin, Pim's Beauty of the West, Pound, Burbacker*—Originated in Berks Co., Pa., by Mr. Faldwald. Not advisable to plant only on strong limestone soils of the west. It is a good shipper on account of its thick skin. Fruit, large;

round, varying, flattened; color, yellowish green, dull red cheek, sometimes almost destitute of red; flesh, coarse, tender, juicy, mild sub-acid. December to February in Illinois.

Grimes Golden—*Grimes Golden Pippin*—From Brooks Co., Va. The finest flavored apple the west produces. Tree a rapid grower and productive. Fruit, medium to large; oblong, flattened; golden yellow; flesh, yellowish white, mild subacid, nearly sweet; highest quality. October to April. Grimes Golden is one of the highest priced apples on the market. It is almost too good to be cooked. Every orchard, large or small, should contain this apple. Grown in the west it excels in flavor any apple of the east. Ranks higher than Jonathan in quality. Was still an untested variety when Jonathan was well known (1860.)

"My choice of apples are Ben Davis, Parne's Late Keeper, Ingram, York Imperial, Jonathan, and Grimes Golden"—G. T. Tippin, Missouri.

"My choice, Ben Davis, York imperial, Ingram, Jonathan, and Grimes Golden."—W. G. Gano, Springfield, Mo.

"My choice, Gano, Grimes Golden, Jonathan, and Ben Davis."—A. T. Nelson, Mo.

"For southern Missouri, Ben Davis, Gano, York Imperial, Nixonette, Jonathan, Grimes Golden, and Ingram. Grimes Golden makes more money than Jonathan. It is a good seller and has few culls, is the finest in flavor of all apples and can never overstock the market on this variety."—T. B. Wooldside of Salem, Mo.

Golden Pippin—*American Golden Pippin, Ribbed Pippin, New York Greening, Newton Greening*—Old American variety. A tardy but productive bearer. Sometimes mistaken for Grimes Golden but not half so good as Grimes. Fruit, large; ribbed, roundish, flattened; color, golden yellow; flesh, yellowish white tender, juicy; quality, good. November to February.

Green Sweet—*Honey Greening*—Tree hardy, productive, spreading. Fruit, medium to large; roundish; color, dull greenish white or yellow; flesh, greenish white, tender, juicy and very sweet; excellent flavor. November to March.

Gilpin—*Carthouse, Romanite of the West, Little Romanite*—From Virginia. Tree moderately vigorous, not long lived. Fruit, small to medium; round, flattened at apex; color, yellow ground overspread with bright red, red becoming darker; flesh, yellowish white, juicy, sub-acid; flavor, good. Will not cook. Finest keeper, will keep a year.

Gano—*Red Ben Davis*—Originated in Missouri. A chance seedling. Tree a fine grower, resembles Ben Davis. Fruit, medium to large (Illinois); round, conical, smooth; color, yellow overspread with a deep red; flesh, nearly white, fine grained, tender, juicy, mild sub-acid; quality, good. January to May. Gano is one of our best commercial apples, equal to the Ben Davis in every way, and in color, quality, and keeping superior to it.

Huntsman—*Huntsman's Favorite*—Fruit, large; flat; color, yellow, with bronzed cheek; flesh, pale yellow, tender, fine grained; fine flavor grown east, but insipid and unprofitable grown in the west. December.

Ingram—Supposed seedling of the Geneton. Not thoroughly tested throughout the west, but bids fair to become a very popular apple on account of its late blooming and productiveness. Fruit, medium; conical; color, striped and streaked with red and yellow; flesh, white, tender, breaking, sub-acid; quality, good. Like the Geneton will stand some freezing and thawing. January to May.

Jonathan—*Phillip Rick, King Phillip, Brother Jonathan*—Originated at

Kingston, N. Y., and has probably been known for more than 100 years. Like many other fine apples it has been a long time getting before the people, but is now one of the great market kings. Fruit, medium; roundish, conical, regular; color, light yellow ground mostly overspread, streaked or stained with rich light red, red becoming darker and often covering the entire surface; flesh, yellowish white, tender, juicy, slightly acid unless fully ripe when it is sprightly sub-acid; quality best. December to March. Jonathan is a great favorite wherever known.

King—*Winter King, King of Tomkins Co.*,—Supposed to have come from Tomkins Co., N. Y. Not a profitable apple for Illinois and Missouri. Fruit, large; roundish, oblong, somewhat ribbed; color, pale yellow, mostly covered with two shades of red, striped and splashed; flesh, whitish, tender; quality, good. December to March.

Mammoth Black Twig—Originated in Arkansas. The apple for poor soils. Fruit, large; somewhat irregular shape; color, light yellow, overspread with a dark dull red; flesh, nearly white, firm, sub-acid; quality, very good. January to April.

Lady Apple—*Api, Pomme Rose, Petit Api, Petit Api Rouge, Pomme d'Api, Gros Api Rouge*—Foreign. Tree upright, much like a pear tree. Fruit grows in clusters. Rather tardy in bearing, but after 10 or 11 years very productive. Succeeds in nearly all soils. Has been sold as high as \$20 per barrel. Fruit, small; flat; color, light clear yellow ground, overspread with brilliant red; skin, smooth and glossy; flesh, white, tender, juicy; small core; quality, excellent. December to May.

Limber Twig—*James River*—Much like Willow Twig. Tree hardy and productive. While Limber Twig like Willow Twig is a very late keeper and in some cases has made planters money, I do not advise its extensive planting. Fruit, large; roundish, tapering slightly to the basin; color, light yellow, striped and splashed with red, with some russet; flesh, white, tender at first but becomes tougher later as the secret of its long keeping is its drying up instead of rotting; core, large; quality, hardly good. Will keep till May.

Missouri Pippin—Tree moderate grower, short lived, not symmetrical, inclined to scab. Not profitable in Illinois. Fruit, medium, some years small and variable; color, pale whitish yellow, splashed with light and dark red; flesh, whitish, crisp, in many specimens tough, moderately juicy, sub acid; quality, nearly good. January to April.

McIntosh Red—From Ontario. Tree hardy and long lived. Good bearer. Fruit, above medium; roundish, oblate; color, whitish yellow, very nearly covered with dark rich red or crimson, almost purplish in the sun; flesh, white, tender, juicy, mild sub-acid; quality, good. November to February.

"The king of all fruits from the orchardist's standpoint as well as the consumer's is the apple. There is no good reason why we should not export apples rather than import them. *Ours is an apple country*, and yet there are few found in the homes of the toilers. An apple a day for everyone means that we would get some of the doctor's cash, and, well, apples are more agreeable than pills. But to reach this end, apples must be on the market constantly, and at a reasonable price. A prominent writer says that he can produce a bushel of apples as cheaply as a bushel of corn. Of course they are not grown that cheaply here, but think of the money, land, machinery, help, and brains used in growing our tremendous corn crop, and then how little thought, by the masses, is given

to apple growing. Your average farmer still feeds his trees on blue grass and expects them to do the rest. I do not believe apple growing will be overdone in a rich corn growing country. The average American will not look more than one year ahead, and herein lies the safeguard for the man who will put his brains and capital into growing fruit."—Wm. Simpson before Illinois Horticultural Society, 1900.

McMahon's White—*McMahon*—From Wisconsin. Will stand 40 degrees below zero. Valuable for its hardiness. Fruit, large; color, white, striped with pale red; flesh, white, tender. December to March.

Mann—The tree grows straight and symmetrical, makes a large tree. It is an annual and abundant bearer. Fruit, large; roundish, oblate, regular; color, green turning to a deep yellow when fully ripe; flesh, juicy, tender, mild with a peculiar, pleasant flavor. December to May.

Milam—*Harrigan, Winter Pearmain (of some)*—Fruit, small to medium; roundish; color, greenish yellow, striped with dull red, sometimes nearly covered with red; flesh, greenish, insipid. There are so many better apples than the Milam that it is not wise to plant it. December to March.

Northern Spy—From East Bloomfield, N. Y. Fine in quality but a very tardy bearer. Apples drop badly. Fruit, large; roundish, conical, sometimes ribbed; thin skin, liable to crack; color, light yellow, mostly overspread with light red, striped and splashed with streaks of darker red; flesh, yellowish white tender, juicy, sprightly; quality, excellent. December to April.

Northwestern Greening—Fruit, large; color, greenish yellow; flesh, whitish, and of fair quality; a good keeper. The Northwestern Greening is becoming more popular each year. Praised by many Illinois orchardists. January to April.

Pewaukee—Seedling of the Duchess of Oldenburg. Fruit, large; obovate waved; color, bright yellow, partially covered with dull red, striped and splashed entire apple covered with a heavy gray bloom and overspread with prominent white dots; flesh, yellowish white, juicy; fine in quality. Pewaukee is not a late keeper.

"All classes, summer, autumn, and winter apples, must be carefully picked without loosening the stem from the fruit; handled carefully to avoid bruises and breakage of the skin, and placed under protection from sun and wind until final disposition is made of them. Apples for home use should be stored in some place where the temperature should be kept as low as possible without danger of frost."—Farmers Bulletin No. 113.

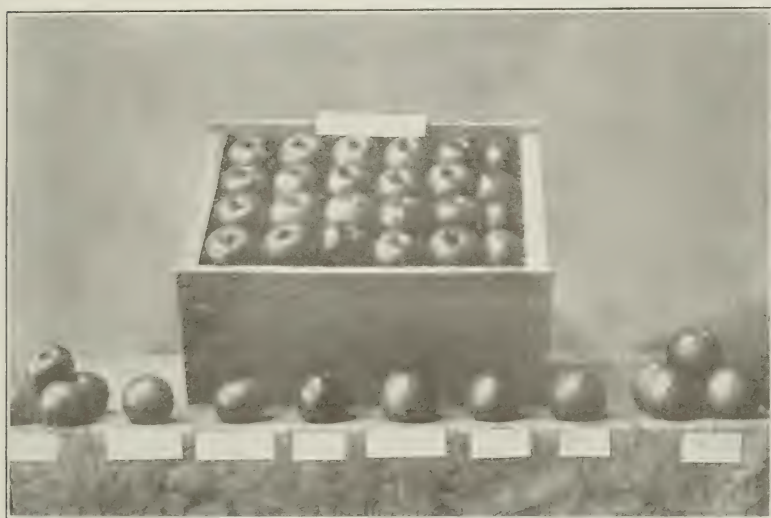
Rawle's Jannett—*Raules Genneting, Fenet, Raules Fenet, Feneton, Winter Genneting, Neverfail, Rock Remain, Yellow Fanette, Indiana Fanetting, Gen-ton*—Originated by Caleb Raules more than 100 years ago. It was once widely set on account of its productiveness and late blooming. While once regarded as essential to every western orchard, it is not now. It is one of the apples that has deteriorated. Fruit, medium; roundish, conical, flattened; color, pale yellowish green, mostly overspread striped and stained with red; flesh, yellowish, tender, mild sub-acid. January to May.

Roman Stem—*Romanstem, French Pippin*—From New Jersey. Tree vigorous with slender diverging shoots. Fruit, medium, roundish, tapering a little to the eye; color, whitish yellow, with reddish brown cheek; surface, thinly sprinkled with small blackish dots; flesh, white, tender, breaking, juicy; quality, very good. The apple has a peculiar projection on one side of the cavity, also a fleshy knob on one side of the stem. November to February.

Rome Beauty—*Roman Beauty, Gillet's Seedling*—From Ohio. Fruit, medium to large; round; color, light yellow mostly overspread and striped with clear bright red; flesh, yellowish, tender, crisp, mild sub acid; quality, good. December to March.

Rhode Island Greening—*Burlington Greening, Jersey Greening, Hampshire Greening*—Tree needs very rich soil. Unreliable, scabs, subject to bitter rot. Fruit, large; roundish, flattened; color, green with dull blush on sun grown specimens; flesh, yellowish, crisp, aromatic; quality, very good. November to February

“The highly creditable exhibition of fresh fruits, especially apples, made by the Department of Agriculture at the Paris Exposition has directed the attention of foreign markets to our resources in this line of production. This, in connection with the rapid developments in cold storage and refrigeration in transportation, will greatly extend and stimulate the production of market varieties.”—Year Book, 1900.



A Bushel box of Ben Davis packed Oct 15, opened Feb. 12. Every apple in perfect condition. These apples were not kept in cold storage. They were stored in a building built especially for storing apples. The house is built with double walls with sawdust between the walls. It is so arranged that the temperature inside seldom rises above 40 degrees. The varieties in the foreground are Mann, Roman Stem, Russian Romanite, Delicious, White Pippin, Smith Cider, Gano, and Ben Davis. Cut shows relative size.

Roxbury Russett—*Boston Russett, Putnam Russett, Marietta Russett, Belpre Russett, Sylvan Russett*—An old eastern variety, not valuable in Illinois. Tree spreading and hardy. Fruit, medium; roundish, flattened; color, dull green, overspread with brownish yellow russett, sometimes a faint blush on the sunny side; flesh, greenish white, juicy, mild sub-acid. January to May. Will not keep so long west of the Ohio river

Salome—Tree a strong grower, equal to Wealthy. Holds its fruit well. An early and annual bearer. Fruit, medium, uniform; color, yellow, mostly over-

spread with a peculiar light crimson; flesh, tender, sub-acid; quality, fine. A very late keeper.

Smith's Cider—*Oregon Spitzenberg, Smith's Superb*—From Berks Co., Pa. Fruit, medium to large; oblong, flattened; color, bright red and yellow mostly red; flesh, tender, juicy, crisp; quality, good. December to March.

"I will state that I have packed in boxes and am pleased with boxes for packing: I think as a commercial proposition you can get more money for apples so packed in boxes. There are times in short crops when you have the advantage that a box seems within the reach of the consumer when prices on barrels, simply as an effect on his imagination, would deter him from a purchase. So I favor for high grade fruit the use of the box."—C. H. Williamson.

"There is one point that has not been mentioned in regard to boxing, and that is its advantage in foreign shipments. When we put apples, fruit or freight upon an ocean steamer they charge per cubic foot, and the box occupies the entire space, while the barrel, being round, does not."—Van Deman.

Seek-no-Further—*Connecticut Seek no Further, Westfield Seek no Further, Red Winter Pearmain*—An old variety known for more than a century. Very productive, often breaking the branches with its great load of fruit. Fruit, medium to large; roundish, conical; color, light yellow ground, slightly russeted, striped with dull red, in Illinois the red is deeper often spreading over the entire surface; flesh, white, tender, crisp; Pearmain flavor. November to March.

Spitzenberg—*Esopus*—Fruit, medium to large; color, deep red; flesh, yellow, crisp, sprightly sub-acid; high flavored. Bears and grows well when transplanted in rich soil. November to March.



A corner in a six-year old orchard of J. A. Cannedy's. Land too steep for cultivation, hence planted in orchard. Every tree shows its good "breeding."

Swaar—Produced by Dutch settlers on the Hudson. Fruit, large; color pale lemon yellow, with dark dots; flesh, tender, with a mild, rich, agreeable flavor. A good keeper. December to April.

Senator (*Trade Mark*)—*Oliver Red*—From northwestern Arkansas. Tree thrifty and vigorous. Fruit, medium to large; color, greenish yellow, nearly covered with red, entire surface covered with large white dots; flesh, yellowish white stained with pink, tender juicy; fine flavor; core, small. December to April.

Springdale—New. Good keeper. Tree upright grower. Tree grows till late in season, tender while young. Not thoroughly tested. Fruit, medium, sometimes larger; color, red. December to May.

I have fruited Springdale, but not well impressed with it.—Cannedy

Stayman Winesap—Originated by Dr. Stayman. Seedling of the Winesap, but larger and more productive. Tree resembles Winesap. Apples hang well. Fruit, medium; roundish, conical; color, light yellow mostly covered with red; mild sub-acid; best. December to April.

Vandervere—*Vandervere Pippin, Baltimore, Red Vandervere, Watson Vandervere, Fall Vandervere, Penn. Vandervere, Yellow Vandervere, White Wine, Imperial Vandervere, Staatclub, Striped Vandervere*. Tree a vigorous grower. Fruit sometimes attacked by bitter rot. Fruit, medium to large; roundish, flattened; color, orange yellow, striped and stained with red; flesh, yellowish white, crisp, tender, aromatic, sprightly sub-acid. December to February.

"Our Illinois buyers, buyers of Chicago and other points, while they have gone to New York and bought apples for a dollar and a dollar and a half (thirty-five cents a barrel) delivered at the depot, have not neglected the long keeping apple of Illinois. They have offered as high as \$3 a barrel for Willow (Twig) in the orchard and pack the fruit, the long keeping apple of Illinois."—Senator Dunlap.

Winesap—*Wine Sap, Wine Sop*—Originated in New Jersey. Tree hardy but not an annual bearer, very irregular in its growth, not forming a handsome head. Best on dry prairies. Fruit, medium; roundish, conical, flattened at base, occasionally angular and slightly ribbed; color, a bright clear red, stained and striped with darker shades, and with spots of light yellow; flesh, yellowish juicy, tender, sub-acid, sprightly; quality, best. November to March.

White Winter Pearmain—Tree a thrifty grower. Fruit, medium to large; oblong, conical, angular or oblique; color, pale yellow with slight blush, blush deeper in sun-exposed specimens; flesh, yellowish, tender, juicy, very mild sub-acid; quality, very good. January to April.

Willow Twig—*Willow, Willow Leaf*—From New Jersey. Succeeds on rich well drained bottom or prairie soils. Fruit, medium to large; color, greenish, becoming dull yellow, striped and splashed with two shades of red; flesh, yellowish and dry, mild sub-acid; flavor, good. December to May. Willow Twig is subject to blight. Apples often covered with a fungus growth. Profitable only in certain localities.

BARNYARD MANURE AND WOOD ASHES.—Scientists and practical orchardists are generally agreed on the great value of well rotted barnyard manure as the best for an apple orchard. It not only supplies humus, but it contains a large per cent of other necessary nutritive elements for maintaining health, vigor and fruitfulness of tree and development of qualities for a fine fruit product. But as the stock of this sort of manure is not always sufficient for the general demand, other agents have to be resorted to: and

next in value and in a concentrated form are unleached wood ashes, which will supply to a great extent the necessary element of plant growth. It is maintained by some authorities that 1 ton of unleached wood ashes contains as much plant nutriment as 5 tons of ordinary barnyard manure, and whenever obtainable ashes should be used in preference to any other fertilizer.—Apples and How to Grow Them.

York Imperial—*Johnson's Fine Winter*—Originated in York Co., Pa., over 60 years ago. Fruit, medium, seldom large, size, varies greatly on the same tree; truncated, oval, angular; color, greenish yellow ground, mottled and striped with a dull crimson presenting a grayish red aspect in the shade brighter red in the sun; flesh, greenish white, tender, crisp, juicy, rather sweet; quality good. Quite a good keeper.

"We will admit that there may come a spring when the scab may not attack our fruit trees; but what of that? What is spraying anyhow but an assurance? And what would you think of that man's business ability who waited until he burned out before he would take out a policy? And yet what are you doing but risking the loss of a crop that would return you from \$50 to \$200 per acre for the paltry sum of from 5c to 15c per tree? It cost just 15¼c per tree last spring to spray that Neoga orchard, and it cost a neighbor just about 6c per tree, and Mr. Simpson's orchard at Parkersburg just 7 1-5 cents per tree. In this last orchard of 200 acres 10 acres only were sprayed, and that 10 acres produced more marketable fruit than all the rest put together. Take the orchard of Judge J. R. Williams of Carmi. He gathered 1800 barrels of Ben Davis from 35 acres of ground, which sold for \$74.28 per acre. He attributes all his success to spraying. He sprayed but once last spring, having been hindered by rains. But now he has become so enthusiastic on the subject that he will attend to spraying more fully in the future, even if he has to spray between showers. And by the way, that is the very time that our trees ought to be sprayed for the scab. It is only in moist weather that it can spread and do much damage."—A. H. Alrich, Neoga, Illinois.

Second Choice Apples.

Alexander—Shy bearer, blights. Fall.

Benninger—Large; flesh, yellow, tender; flavor, good. Summer.

Barry—Vigorous grower, inclined to blight. Winter.

Beauty of Bath—Yellowish green, striped with red. Not well tested. Summer.

Bismark—Extremely early bearer, its only value. Fall.

Clayton—Dull red apple. Long keeper, lacks color and quality.

Coffelt—Cross between Ben Davis and Limber Twig. Resembles Baldwin. Good Keeper.

Early Strawberry—Medium; handsome, striped with red. Productive. August.

Lady Finger (*Sheep Nose*)—Medium; oblong, pale yellowish, faint blush; flesh, firm, watery. November to December. Lady Finger has been in the discarded list for 50 years.

Red Beitheimer—Of German origin. Fruit, large; roundish, somewhat conical, deep basin and cavity; color, cream yellow ground, mostly covered with purplish red; flesh, white, juicy, firm, sub-acid; quality, good. Tree quite a good bearer. Were it not that there are so many other good apples at the same season of the year, it would deserve a more extensive cultivation. September.

Golden Sweet—Large; pale yellow. Good bearer. August.

Horse (*Yellow Horse*)—Large; green; acid. For cooking. Poor bearer. Fall.

Keswick Codlin—Large; tender, juicy. Productive. July and August.

Lawver (*Del. Red Winter*)—Slow bearer. Not profitable. Winter.

Paragon—Seedling of Winesap. Medium; fair quality. Winter.

Red Harvest (*Stribling*)—Good bearer. Large; fine dark red. Summer.

Smokehouse—Good bearer. Rots easily. Winter.

Stark—Fruit, large. Long keeper. Winter.

Utter's Large Red—Large; handsome; quality, good. Good bearer. Winter.

Wagner—Medium to large; red; good. Short lived. Winter.

Western Beauty—There are two Western Beauties, one fall and one winter. neither is desirable.

Walbridge—Medium; striped with red; handsome. January to May.

It is not necessary for a successful orchardist to be a profound scientist. Some of our most successful fruit growers are uneducated men. But while it is not absolutely necessary to have a thorough knowledge of the laws of vegetable physiology or of the chemical composition of the soil, yet such knowledge is very valuable to the orchardist and is a great assistance to him in his work. An orchard needs care and cultivation. Judgment and common sense count for as much as it does in other crops of the farm.

CRAB APPLES.

The crab apples are quite profitable for market, as they come into bearing quite early and are very productive. They are unexcelled for cider and vinegar.

Hyslop—Nearly as large as Milam; deep crimson. Quite popular on account of its large size, beauty and hardness. October to January.

Florence—One of the finest crabs in existence. The tree is a very young and prolific bearer and is very hardy. Takes up but very little space, tree being a dwarf. Fruit, large; color, bright yellow, streaked and splashed with red, some specimens nearly solid red; of good quality. August and September.

Large Red Siberian—About an inch in diameter, grows in clusters; color, yellow, with bright red cheek; young and abundant bearer. September to October.

Martha—From Minnesota. Tree vigorous, hardy, but rather shy bearer, free from blight. Unexcelled for sauce. October.

Orange—An annual and abundant bearer. Fruit larger than Transcendant; flesh, firm, juicy and crisp; quality, fine. October to December.

Quaker Beauty—Very hardy and productive. Fruit large and will keep till May.

Transcendant—Tree a young and abundant bearer. Fruit, large; color, yellow, striped with red; flesh, crisp and juicy; fine for sauce and pies; excellent for cider. September and October.

Whitney—*Whitney Seedling*—Tree very vigorous and productive, dark green glossy foliage. Fruit, large; skin, smooth and glossy; color, green striped and splashed with crimson; flesh, firm and juicy; of fine flavor. August.

Yellow Siberian—A fine old sort, far better than many of the newer varieties, rather difficult to obtain as but few nurseries propagate it. Fruit, medium; color, a beautiful golden yellow; flesh, crisp and juicy; excellent for preserving. September to October.

PEACHES.

The peach has become one of the most profitable fruits of the west. The crop of 1901 was a record breaker. One commission man handled 500 cars during the season.

While the peach cannot be raised as far north as the apple, it extends farther south. Large peach orchards are being planted in the southern states, some containing over 100,000 trees.

The Elberta and Champion are now in the lead and hold the same position among peaches that the Ben Davis does among apples.

Peaches generally begin to bear a moderate crop after making a four years growth, but often bear a paying crop in three years.

The peach tree requires a well drained soil—a warm sandy soil is best.

To preserve the continuous growth of the tree and quality of the fruit, the tree must have the shoots and branches shortened each year. By so doing a young and vigorous head with plenty of young wood is obtained.

The land should be thoroughly cultivated and kept free from weeds and grass.

Peaches should be thinned. This is a backaching task but it is necessary to good results. They should be thinned to 4 to 6 inches apart. This should be done early, before the peaches are half grown. In years like 1901 fully two-thirds of the peaches should be picked off in thinning. Never shake the peaches off but pick them by hand.

In the descriptions below abbreviations are used for the following: White freestone, W. F.; white clingstone, W. C.; yellow freestone, Y. F.; yellow clingstone, Y. C.

Alton—*Minnie of Texas*—Endorsed by E. A. Riehl, Illinois. Tree productive. Needs much thinning. Fruit, large; white flesh. W. F. August 1-10.

Alexander—From Illinois. Good size. Maroon, covered with crimson; fair quality. W. F. July 5-10.

Bequet Free—One of the best white fleshed peaches. None better in its season. Fruit, large; white with beautiful red cheek. W. F. August 20-30.

Belle of Georgia—Ripens just before Elberta. Good bearer. Size, medium; fine quality. W. F. August 8-20.

Capt. Ede—Praised by many, among whom are E. A. Riehl and G. W. Endicott. A good market peach. Fruit, medium to large; flesh, yellow; fine quality. Y. F. August 10-20.

Carman—A good peach of its season. Size, medium; quality, good. W. F. July 20-30.

Champion—Stands at the head of white freestone peaches for the market, even excelling Bequet Free. Originated in Illinois. Size, large; skin, creamy

white with red cheek; juicy, rich, sweet; excellent quality. W. F. August 10-20.

Crawford Early—A well known variety. Noted for its productiveness. Fruit, large; oblong; skin, yellow with a beautiful red cheek; flesh, yellow, juicy, sweet; flavor, fine. Y. F. August 10-20.

Crawford Late—*Chair's Choice*—Probably the best of the late Crawfords. Fruit, large; color, yellow, dull red cheek; flesh, yellow, rather tart but pleasant flavor. Y. F. September 15-20.

"A good peach. Bears well."—Ill. Hort. Society.

Crosby—*Excelsior*—From Massachusetts. Much overrated. Fruit, medium; color, orange yellow with dull red cheek, woolly; flesh, yellow, sweet. Y. F. September 1-10.

Elberta—From Georgia. The queen of peaches both for home and market. Leads all other peaches as a shipper. It has made the grower more money than any other peach. Best of sixty varieties tested in Greene County, Ill. Trees set in spring of 1894 in one orchard have produced \$15 worth of peaches to the tree. Elberta and Champion should be in every orchard. Tree a good grower, productive and very hardy. Trees went through the winter of 1898 when even seedlings were killed by the cold in the same orchard. Fruit, large and beautiful; skin, bright yellow with a handsome red cheek; flesh, yellow, firm, rich, and juicy. Y. F. August 15-25



Seven year old Elberta. Has borne four crops. Elberta trees of this setting have averaged more than \$15 per tree in fruit.

Elberta Cling—A seedling of the Elberta. One of the best yellow clings. Fruit, medium to large; round; skin, yellow with a fine red cheek; flesh, yellow, juicy; excellent flavor. August 20-30.

Future Great—*Washington Future Great*—Small pit. A first class peach. Fruit, large; skin, yellowish white, red cheek; flesh, tender, juicy, melting; good flavor. August 15-30.

George the Fourth—A moderate bearer. Fruit, large; skin, white, red cheek; flesh, juicy, melting. Last of August.

Fitzgerald—From Ontario and outside the peach belt. Hardy and productive. Fruit, large; handsome; quality, fine. A perfect freestone. Last of August.

Greensboro—A seedling of Connet's Early. Originated by W. C. Balsley, Greensboro, N. C. Fruit, large for an early peach; skin, white with light red cheek; flesh, white, juicy, and rich. Clings slightly to the seed. W. F. July 5-15.

Gold Dust—Greatly overrated. Too small in Illinois. Has never paid in central Illinois to my knowledge. Will grub out all my Gold Dust trees. Seems to be at home in the south and southwest Missouri. Yellow cling. September.

Krummell October—A very late peach. Fruit, good size; handsome; juicy and fine. October 5-20.

Lemon Cling—From Ohio. Hardy and productive. Fruit, large; color, pale yellow; fine quality. Last of September.

Mammoth Heath Cling—Best of the Heath family. Fruit, large and regular color, white, sometimes with faint red cheek; flesh, white, tender, juicy, melting; quality unexcelled. W. C. Last of September.

Miller Cling—Tree hardy and productive. Fruit, extra large; flesh, white, much like Heath Cling but larger; quality, excellent. W. C. First of September.

Mathew's Beauty—A new peach. Highly praised. Last of August.

Mountain Rose—An old favorite. Fruit, large; flesh, white, juicy, rich. W. F. August 1-10.

Old Mixon Free—Fruit, large; color, pale yellow with deep red cheek; flesh, white, juicy; high flavored. W. F. August 15-25.

Old Mixon Cling—Fruit, large; skin, pale yellow, red cheek, much like Old Mixon Free; quality, good. W. C. September.

Pooles Favorite—Fruit, large; skin, yellow nearly covered with dark red; flesh, yellow, juicy, fine. Y. F. September 20-30.

Picquet Late—From Georgia. Fruit, medium to large; skin, yellow, handsome, red cheek; flesh, yellow, melting, sweet. Y. F. September.

Reeve's Favorite—Fruit, large; oblong; skin, deep golden yellow, orange cheek; flesh, juicy, buttery. Y. F. August 5-20.

Salway—A late showy sort of English origin. Fruit, large; roundish; color deep yellow with a rich marbled brownish red cheek; flesh, firm, rich and sugary. Last of September.

Susquehanna—From Pennsylvania. Old but good. Fruit, large; skin, yellow, mixed with red; flesh, yellow, juicy. Y. F. First of September.

Smock—*Geary Hold On*—Distinct from Beers Smock. Fruit, large; skin, yellow, red cheek; flesh, yellow, juicy; fair quality. Y. F. Last of September.



A young Jonatan and Elberta orchard. Peach trees planted between the apple trees. This method is profitable, but the trees will require extra care.

✓ **Sneed**—Very early. Fruit, medium; skin, greenish white, sometimes nearly covered with dark red; flesh, greenish white; quality, good for such an early peach. June 25-30.

✓ **Triumph**—New. Earliest yellow freestone. Blooms late. While not a beautiful peach, yet sells well. Fruit, medium to large; color, yellow nearly covered with dull red; flesh, yellow, juicy, and pleasant; pit small. Y. F. July 10-20.

✓ **Wonderful**—From New Jersey. Fruit, large to very large; uniform in shape and size; skin, golden yellow overspread with crimson; flesh, yellow, red at pit, firm; high flavored. September 15-20. Sometimes later.

Second Choice Peaches.

✓ **Amelia**—From South Carolina. Fruit, large; color, white, nearly covered with crimson; flesh, white, juicy, melting, sweet, rich. W. F. Last of July.

✓ **Amsden**—Fruit, medium; roundish, somewhat flattened; skin, red, shaded with darker red; flesh, white; quality, only fair. First of July.

✓ **Brigg's Red**—Fruit, medium; flesh, greenish white. Half cling. Middle of July.

✓ **Beers Smock**—Fruit, large; flesh, yellow. Y. F. Last of September.

✓ **Bonanza**—Fruit, large. W. F. October 10-15.

✓ **Bokara**—Its hardiness much overrated. Size, medium to large. W. F. Middle of August.

Globe—Vigorous grower. Good bearer. Fruit, large; globular; flesh, firm; quality, good. Y. F. Last of September.

Hill's Chili—Tree hardy. Size medium; dull yellow. Y. F. Last of September.

Stump the World—Fruit, very large; roundish; color, white with clear red cheek; flesh, white, juicy; quality, good. W. F. Last of August.

Wheatland—One of the best of the second choice peaches. Size, very large; handsome; quality, good. Y. F. Middle to last of August.

APRICOTS.

The apricot is a delicious fruit that is of the plum species. On account of its early blooming it is nearly always a failure here. Only a few varieties can be relied upon. About the best variety is the Superb.

Alexander—Russian. Moderately hardy. Fruit, medium; yellow, flecked with red; delicious flavor. July.

Catherine—Russian. Moderately hardy. Productive. Fruit, medium; yellow; good. July.

J. L. Budd—Russian. Hardy. Productive. Fruit, medium; white with red cheek; sweet, juicy; sweet kernel. Best late Russian. August.

Nickolas—Russian. Tree moderately hardy. Productive. Fruit, medium; white, sweet, melting; handsome. July.

Sunrise—Russian seedling. Much praised by Stark Bros. Fruit, medium; color, orange yellow; flesh, yellow, tender, juicy, sub-acid. July.

Superb—From Kansas. Tree hardy and productive. The best all round apricot we have. Fruit, medium; light salmon; flesh, firm; quality, good. July.

NECTARINES

The nectarine is thought to be a sport of the peach.

It is a most delicious, smooth skinned fruit, and, like the plum, is attacked by the curculio. The tree much resembles the peach tree. It thrives wherever the peach will grow.

Nectarines are not profitable to the average planter and but few trees are now grown. Not nearly as many as were formerly grown. Few nurseries propagate them.

Boston—*Perkin's Seedling*, *Lewis*—Fruit, large; color, light yellow with deep red cheek, shaded off by a mottling of red; flesh, yellow, sweet, and pleasant. Freestone. September.

Early Violet—*Violet Hatice*, *Hamton Court*, *Large Scarlet*, *Aromatic*, *Violet Musk*, and other names—Fruit, medium; color, yellowish green nearly covered with dark purplish red in the sun; flesh, white, red at stone, melting rich, juicy; high flavor. Freestone. Last of August.

Early Newington—*Early Black Newington*, *Lucombe's Seedling*, *Lucombe's Black*, *Early Black*—Fruit, large; roundish; color, pale green with shades of red marbled in the sun; flesh, greenish white, red at stone, juicy and sweet; best clingstone. Last of August.

Hunt's Tawney—*Hunt's Large Tawney*, *Hunt's Early Tawney*—Fruit, medium; color, pale orange, red cheek; flesh, orange, juicy, sweet. Freestone. August. One of the hardiest nectarines.

PEARS.



More mistakes are made in the attempt to grow pears than any other fruit

Mistakes occur in selection of varieties, selection of soil, mode of cultivation and handling the fruit.

Pears require a strictly "pear soil." This is a light well drained soil underlaid with porous clay. If soil is too rich the tree grows rapidly and blight begins its deadly work.

Pears should be cultivated but little after the first year in the orchard, simply enough to keep the weeds and grass down. Make the fruit larger by pruning and thinning, not so much by cultivation.

Choose varieties that are least subject to blight. Pears should be picked before they are ripe except winter pears and they should be allowed to hang as long as it is deemed safe.

Varieties marked D and S may be grown both as standard and dwarf.

Bartlett—*William's Bon Chretien, Williams, Poire Guillaume, Delavault de Clement*—An old English pear known before 1770. Fruit, large; ovate, obtuse, pyriform; pale lemon yellow, tinged with a blush in the sun when ripe; flesh, yellowish white, buttery, tender, juicy, melting; quality, the very best. About middle of August. If tree was not subject to blight, would be the most widely set of all pears, it being productive and of the highest quality.

Beurre d'Ajou—*Nuell, Beurre Neil, Poire Neil, Anjou, Colniac Bosc*—An old English pear well known before 1800. Grown both as dwarf and standard. Free a good grower. Fruit, large; long, oblong; color, pale yellow with dull blush in the sun; flesh, yellowish white, buttery, and melting; of delicious flavor; a good keeper. October and November.

Bloodgood—Originated at Flushing, L. I. Tree a moderate grower. Regular bearer. Fruit, medium; color, yellow; flesh, greenish white, tender, juicy; good. First to middle of August.

Birkett—From Illinois. Tree very hardy and free from blight. Tardy bearer. Fruit, medium in size and of rather poor quality; fit for canning only. October.

Boussock—*Doyenne Boussock, Providence, Plymouth, Double Phillipe, Ben re de Mesode*—Introduced about 1840. Tree thrifty and productive. Blights but little. One of our best pears. Fruit, large; globular; color, yellow; flesh yellowish white, a little coarse but melting and juicy; fine flavor. Aug. and Sept.

Buffum—*Buffum*—From Rhode Island. Fruit, medium; color, yellow somewhat covered with reddish brown and russet; flesh, white, buttery, sweet; quality, excellent. D. S. September and October.

Clapp's Favorite—Fruit, large; color, yellowish green, yellow when ripe, marbled with red in the sun, covered with small russet specks; flesh, vinous, melting; quality, good. D. S. August.

Dearborn's Seedling—*Dones, Wheeler's New St. Michael*—First raised by Gen. H. A. S. Dearborn, Roxbury, Mass., about 1820. Tree vigorous, productive. Fruit, nearly medium; roundish inclining to obovate, narrowing some to the stem; color, yellow, little russet at stem and surface dotted with small russet dots; flesh, yellowish white, fine grained, melting, juicy, sweet. D and S. August

Duchess d'Angouleme—Originated in France. It is not successfully grown here as a standard, but as a dwarf is one of our finest pears. Being very large and productive makes it a very profitable market sort. Fruit, large: color, dull greenish yellow, streaked and spotted with russet; flesh, white, buttery, juicy, rich flavor. October.



Duchess pear tree in bearing.

Flemish Beauty—*Belle de Flanders, Bosche Nouvelle, Bosch, Fondante du Bois, Bosc Sire, Imperatrice de France, Beauvre Spence, Poire Davy*—Foreign. A fine pear but subject to blight. Should be planted on thin well drained

land. Fruit, large; color, pale yellow, mostly covered with marblings and patches of light russet, rich reddish brown in the sun; flesh, yellowish white, juicy, melting, sugary. D and S. Last of September.

Garber—*Garber's Hybrid*—Tree one of the finest growers we have and nearly free from blight, has a beautiful dark foliage, very productive. Fruit, medium to large; color, light yellow when ripe; flesh, juicy with a quince flavor; best for canning and preserving. S. Sept. and Oct.

Kieffer—*Kieffer's Hybrid*—From seed of Chinese Sand Pear crossed with some other kind. Tree a strong and rapid grower, very handsome, freer from blight than most pears. A very early and prolific bearer. Fruit, large; color, a beautiful lemon yellow sometimes with a handsome blush on sunny side; flesh, rather white, juicy; flavor, poor unless ripened carefully. Pear more for canning and preserving. D. and S. Can be kept till January.

Pear blight, the most deadly disease of the pear, is caused by a microbe. While the blight does not attack a tree unless the germs are carried to it by "some puncturing insect, bird, or other living thing" yet it can be encouraged by selecting soils (rich, prairie and bottom) that are not suitable and by too intense cultivation. The best and about the only way to fight the disease is to prevent the blight from wintering over in the orchard by cutting out all the limbs and branches effected in the fall of the year. *The knife used in cutting out the blight should be sterilized.* A disinfecting solution containing about 5 per cent. of carbolic acid is good. Saturate a cloth with the solution and wipe the knife or whatever tool is used with the cloth after cutting off a limb. It is also best to dampen the stub of the limb with the solution. If the knife is not sterilized it will become a "veritable inoculating instrument."

Howell—From Connecticut. More profitably grown as a dwarf. Tree an early and profuse bearer. Fruit, large; color, pale yellow with faint red blush in the sun; handsome; flesh, melting, juicy and perfumed.

Lawrence—American origin. One of our best early winter pears. Tree hardy of moderate growth. Fruit, medium to large; color, yellow, covered with brown dots; flesh, whitish, slightly granular, aromatic. D. and S. November and December.

Lincoln—Original tree still standing near Lincoln, Illinois. Lincoln will, without doubt, become one of the greatest pears in the west. Tree hardy as an oak, good grower, good bearer, and so far free from blight. Set more Lincoln and Rutter and less Kieffer. Fruit, large; color, golden yellow when fully ripe, very handsome; flesh, whitish, tender, juicy, melting, buttery; flavor, equal to the Bartlett. D. and S. Middle of September.

Louise Bonne de Jersey—*Louise Bonne de Avrauches, William IV*—Should be grown here as a dwarf. It makes rather an unshapely tree on account of its prolific nature crowding the wood buds into fruit buds causing a deficiency of branches. It should be more severely cut back than some others on account of this. Fruit should be thinned. Fruit, above medium; color, greenish yellow, with bright red cheek; smooth; flesh, juicy, buttery, melting; fine flavor. D. and S. September and October.

"As choice a pear as Clapp's Favorite becomes dry and mushy at the core and very poor in quality if allowed to hang on the tree, while the fruit picked when firm and hard but full grown, and ripened indoors, will be of an even consistency, juicy and delicious. During the last few days that the fruit hangs on the tree the development of hard, woody kernels, the so-called stone cells of the pear, proceeds rapidly. Picking before the fruit is ripe seems to partly head off the development of these stone cells, and the subsequent ripening processes still further soften and disintegrate them. Among the pears of

medium and poorer quality, such as the Dutchess, Kieffer, etc., the ripening process may almost be said to make the fruit edible, at least make it fit for a dessert fruit. Kieffers allowed to hang on the tree until they are full colored and ready to drop have the maximum amount of stone cells; in fact, the portion surrounding the core becomes almost a mass of woody matter under these circumstances. If, on the other hand, the fruit is picked when it first attains full size, or even a little before, and is ripened in bulk in the dark, it will color up a beautiful delicate yellow frequently with a red blush, and soften evenly throughout, making a fairly good pear to eat out of the hand and a most excellent canning and cooking fruit. Pears allowed to hang too long on the trees when they are apparently ripe and soft will be found to have merely a shell, about half an inch thick of ripened pulp and a large central portion either too hard to eat or filled compactly with stone cells.—Yearbook (1900).

Rutter—It often happens that some of our most excellent fruits are very long in becoming widely known. The Jonathan and Jefferis apples have been known and tested for more than 60 years, yet have been but little planted until the last 15 or 20 years. So with the Rutter pear. It is the best all round fall pear in our lists to-day. The tree being thrifty and hardy and very prolific makes it an ideal orchard tree. "The Rutter pear has borne good crops in Payne Co., Oklahoma. Seems perfectly hardy in every way. It is one of the best varieties for Oklahoma and should be one of the most popular pears in the county."—Okl. Exp't Sta. Bulletin, 1901.

Rutter is more hardy in bud than Kieffer and a hundred times better pear. Will keep until the middle of November. Fruit, medium to large; globular; skin, rough; color, yellow when ripe, sprinkled and netted with russet and numerous russet dots; stem, long, large and strong; flesh, white, juicy, melting, sweet; vinous flavor, equal to a well ripened Bartlett. October and November.



Young Rutter and Kieffer trees. Rutter trees on the left, Kieffer trees on the right. Rutter trees have borne three successive crops. Excels Kieffer in bearing. Have never shown the least trace of blight.

Seckel—*Sickle, New York Red Cheek, Red Cheeked Seckel, Sycle*—Tree very hardy, moderate grower. Almost entirely free from blight. Fruit, small; color, rich yellowish brown when tully ripe, with a deep brownish red cheek; flesh, fine grained, juicy, melting, buttery, rich; the finest flavored pear of all. September and October.

Sheldon—*Penfield, Wayne*—From western New York. Tree vigorous, erect, hardy, good bearer on pear roots. Fruit, medium; roundish; color, pale greenish russet, light red or bronzed in the sun, little specked with dark russet; flesh, somewhat gritty at the core, juicy, sugary, sprightly aromatic; excellent flavor. S. October

Tyson—Found in a hedge in Pennsylvania more than 100 years ago. Tree is vigorous, a moderate but regular bearer. Fruit, hardly medium; color, bright yellow, shaded with red in the sun; flesh, white, fine grained; melting, sugary, aromatic. D. and S. Last of August.

Vicar of Winkfield—*Vicar of Wakefield, Le Cure, Monsieur le Cure, Clion*—Foreign. Tree vigorous and productive. Best as a dwarf. Fruit, large; long; color, pale yellow, with brownish cheek; flesh, greenish white, juicy, sprightly; very good. November to January.

Winter Nelis—*Nellis d'Iliver, Bonne de Malines, Beurre de Malines, Le Bonne Malinoise, Milanaise Cavelier, Etourneau*—Foreign. About the best winter pear we have. An early and prolific bearer. Fruit, medium; roundish; color, yellowish green, much covered and dotted with gray russet; flesh, yellowish white, buttery, melting, sugary, aromatic. Keeps through December.

"In early days, furthermore, up to the fifties, orchards were to some extent made up of ungrafted seedlings. When a particularly good fruit was produced, its seeds were carefully preserved and planted, and some varieties were reproduced in the main true to seed. Immense numbers of seedling apples were thus grown, and furnished excellent opportunities for selection, but only a few produced superior fruit or new varieties. In 1845, Rev. H. W. Beecher wrote from Indiana to the *Magazine of Horticulture*: 'An immense number of seedling trees are found in our State.' Since the Indiana Horticultural Society began to collect specimens of these, more than 150 varieties have been sent up for inspections. * * * Of all the number presented, not *six* have vindicated their claims to a name or place, and not more than *three* will probably be known ten years hence.—'(Yearbook, 1899).

PLUMS.

The plum in its wild state is a native of this country. Nearly all of the cultivated varieties, except those introduced in later years, are of foreign origin. Mr. Burbank of California has done more to improve the plum than any other living man. The Burbank and Gold are examples of his work.

The curculio, a small, dark brown beetle, is the worst enemy to the fruit. It makes a crescent shape cut on the fruit and lays its eggs under the little flap of the skin made by the cut. This causes the fruit to drop to the ground. Jarring the trees is the best preventative. As soon as the blossoms have fallen spread sheets under the tree and give the tree a smart blow with a hammer upon the stub of a limb sawed from the tree for that purpose, the insects will drop on the sheets and can be killed. Repeat the jarring every day for two or three weeks. It should be done very early in the morning while the beetle is in a stupid state. Where trees have no limb stub to strike upon, a short scantling with a cushioned end may be used instead of a hammer. The cushion will prevent bruising the bark of the trunk. Collect all the fallen fruit and destroy it.

To prevent the fruit from dropping before it is ripe, spray with copper sulphate.

Plums do better if several varieties are planted near each other.

Abundance—A handsome and thrifty tree. Noted for its beauty. Bears early and heavily. Fruit, large; somewhat oval; color, amber turning to a rich bright red with a decided bloom when fully ripe; flesh, light yellow, very juicy, tender, sweet; stone, small; ripens in advance of most plums. Freestone.

American Eagle—A plum of great promise. It is highly recommended by J. W. Kerr of Maryland, one of our largest plum growers. Blooms late and is productive. Fruit, very large; color, dark purplish red; excellent quality. Ripens last of July.

Bradshaw—*Large Black Imperial*—An old sort. Productive. Fruit, large, roundish, oval; color, dark purplish or violet red; flesh, juicy; fine quality. First of August.

Burbank—One of our very best plums. Best market plum on account of its large size, color, firmness and quality. Fruit, large and beautiful; roundish, conical, blunt point; color, orange, thinly overlaid with red showing many orange dots, red becoming thicker as the fruit hangs longer; flesh, yellow, firm meaty, rich, and sugary. First of August.

"Last season my Burbank plum tree bore the finest fruit. This tree (Burbank) is so full that it will have to be thinned."—Late Judge Miller in Colman's Rural World. Mr. Miller did no dusting or spraying.

Coe's Golden Drop—*Burry Seedling, New Golden Drop, Golden Gage, Coe's Imperial, Fair's Golden Drop, Waterloo (of some)*—An old English variety. Succeeds better in New York than Illinois, yet a good variety. Much like. Yellow Egg. Fruit, large, oval; color, light yellow; flesh, firm, rich and sweet; Clingstone. Middle of September.

Clyman—Tree a good grower and full bearer. Fruit, above medium; roundish; color, purplish red; flesh, firm, juicy, not quite sweet. Freestone. July.

Damson—There are three Damsons that are well worthy of propagation, Free, Cling and Shropshire. The Cling seems to be the most prolific as well as the hardiest of the three.

Damson Free—Fruit, small; oval; color, purple, covered with blue bloom; flesh, melting, and juicy, rather acid; very free. September.

Damson Clingstone—Similar to the freestone except it is a cling and is hardier.

Damson Shropshire—Tree not quite hardy. Much like other Damsons in appearance. Fruit, large; oval; skin, purple, covered with a blue bloom; flesh, amber colored, juicy and sprightly. September.

Earliest of All—Native plum. Fruit, small; round; color, light red when ripe; flesh, moderately juicy; of fair quality. Valuable only on account of its early ripening. Middle of July.

Gold (*Trade-marked by Stark Bros.*)—Beautiful in both tree and fruit. Quite an early bearer. Good keeper. One of the finest of the yellow sorts. Fruit, medium to large; round; color, a beautiful bright yellow, partly covered with light crimson; flesh, yellow, firm and meaty; excellent quality. A little later than Burbank.

Green Gage—Not a profitable plum. Fruit, small; round; skin, yellowish green, marbled and dotted with red on sunny side; flesh, pale green, juicy and melting; very high flavored. Freestone. August.

German Prune—*Questsche, Common Questsche, Damask, Sweet Prune, Leipzig, etc.*—Fruit, large; long, oval; skin, dark purple; flesh, greenish; agreeable flavor. Freestone. September.

Grand Duke—Prolific. Fruit, large; color, purple; excellent quality.

Hale—Originated by Luther Burbank. Resembles Burbank plum in size and color. Ripens a week or ten days later. Not well tested here.

Imperial Gage—*Prince's Imperial Gage, Flushing Gage, White Gage, Finckinson's Imperial, Superior Green Gage*—Originated at Flushing, N. Y. Superior to Green Gage in all but quality. Tree vigorous and productive. Fruit large; skin, pale green with whitish bloom, becoming yellowish green with dark green stripes; flesh, greenish, juicy, sweet, rich and excellent. Half cling. August.

Lombard—*Bleeker's Scarlet, Montgomery Prune, Beckman's Scarlet*—A well known variety that has been largely planted. Tree hardy. Fruit, medium; roundish; skin, violet red with thin bloom; flesh, yellow, juicy; pleasant flavor. Clingstone. August.

Pond's Seedling—*Prune de L'Inde, Hungarian Prune*—An old English variety. Fine for California. Not much of a success in Illinois. Fruit, egg-shaped; skin, reddish violet; flesh, yellow, somewhat coarse, juicy, sugary. Middle of September.

Pottawattomie—Tree quite a strong grower, hardy and in some localities an immense bearer. Fruit, yellow, overspread with bright pinkish red, prominent white dots: devoid of astringency in skin and pulp.



RED JUNE

Red June—*Red Nag-
atv*—Tree upright grower, vigorous and hardy. Will become in time a very popular sort. Its size, color, flavor and keeping quality make it one of the best sort for shipping, Very prolific. Fruit, large; pointed; skin, deep red purple covered with a deep blue bloom; flesh, yellow, juicy and sweet; excellent flavor. Cling stone. July.

Weaver—A Seedling from Iowa. Very hardy and prolific. Is not affected by our cold winters. Fruit, large; skin, purple, covered with blue bloom; flesh yellow, firm, with an apricot flavor. Clingstone. August.

Wickson—*Perfection, Wickson Japan*—Tree a strong and hardy grower. Upright in growth. Good bearer. Fruit, large to very large; skin, bright carmine, covered with white bloom; flesh, yellow, firm, sugary; pit, small; delicious flavor. A remarkably long keeper. Clingstone. First of August.

Wild Goose—A variety that is well known and one of the most productive sorts. Tree hardy and vigorous with but few ‘off years’ Sprouts badly on its own roots. Should be budded on peach. Fruit, medium; skin, yellow nearly covered with red; flesh, yellow, juicy; sweet when fully ripe Not a long keeper. Clingstone. July.

Yellow Egg—*Yellow Magnum Bonum, Egg Plum, White Egg, Col. Young’s Seedling, Wentworth, Askev’s Golden Egg, White Holland White Mogul*—Largely grown in Illinois. Fruit, very large; egg shaped; skin, yellow, white dots, thin white bloom; flesh, yellow, juicy, sweet. Clingstone. August.

CHERRIES.

The cherry is a very old fruit, it having been quite widely spread at the beginning of the Christian era. The several varieties may well be divided into two classes, "sours" and "sweets," the sours embracing the acid and sub-acid, as the Dukes and Morellos, the Hearts and Bigarreaus as sweets.

Cherries need a warm, dry, loamy soil. The drainage is very important.

Morellos will stand more moisture than other kinds. Sweet cherries are not profitable in the middle west.

Cherry trees require very little pruning. In fact, many trees are entirely ruined by heavy pruning. Fourteen feet to eighteen feet is far enough apart to plant cherry trees.

Coe's Transparent—Tree upright, somewhat spreading. Fruit, medium; color, pale amber, red in the sun, handsome; flesh, tender, juicy, rich sweet. June.

Dyehouse—Tree a moderate grower, but hardy. Partakes of both the Duke and Morellos in wood and fruit. Fruit, medium to large; color, light red becoming darker with over-ripeness; flesh, firm, juicy. Ripens a week before Early Richmond and of much better quality and pit much smaller. Best early cherry. June.



Dyehouse, Early Richmond and Montmorency cherries. Set spring of 1898.
Photographed September, 1901

Early Richmond—*Kentish, Sussex, Commune, Virginian May, Pie Cherry, Muscat de Prague, Common Red, Kentish Red*—An old Morello sort from Eu.

rope. It is one of the best all round early cherries that has ever been introduced. Being a heavy and annual bearer, it is very profitable to the planter. Fruit, medium; round; color, bright red, becoming darker as it hangs on the tree; flesh, of a reddish cast, juicy, tender, sprightly acid flavor. Last of June.

English Morello—*Morello, Late Morello, Dutch Morello, Large Morello*—A much over-rated cherry. About the same as our common seedling Morello, only fruit is larger. Has "off" years. Fruit, medium to large; color, blackish red; flesh, juicy, very acid; quality, good. Last of July.

Gov. Wood—Tree vigorous, healthy grower. Fruit, very large; heart shaped; color, light yellow nearly, and sometimes completely, covered with light red; flesh, light yellow, juicy, sweet, and very high flavored. Middle of June.

Large Montmorency—Tree a good grower and hardy. Prolific. Fruit, large; round; color, light red becoming darker as it hangs on the tree; flesh, tender, juicy, quite acid. Two weeks later than Early Richmond. Quality very good. First of July.

Late Duke—Fruit, large; color, light red; flesh, very juicy; quality, fine. Middle of July.

Louis Phillip—Tree good grower. Not quite hardy. Some localities very productive. Fruit, medium; roundish; color, dark red; flesh, tender, red, juicy, quite acid. Middle of July.

May Duke—*Early Duke, Thompson's Duke, Large May Duke, Portugal Duke, Morris Duke, Buchanan's Early Duke, Morris Early Duke, Millet's Late Heart Duke, Benham's Fine Early Duke, Royal Hative*—An old French sort with many different names. Not very reliable here. We have several varieties of the same season that are much better, such as Dyehouse and Early Richmond. Fruit, large; color, dark red; flesh, juicy and rich. June.

Montmorency Ordinaire—Tree thrifty, moderate grower, forming round handsome young head. Trees stood the cold of 1898-99. Fruit, large; roundish; color, dark red; flesh, tender, juicy, quite acid. Ripens first and second week in July. Would highly recommend Montmorency Ordinaire.

Suda Hardy—Tree slow grower and dwarfish, round head, needs no pruning. Fruit, medium to large; color, light red, handsome; flesh, juicy and acid. Middle of July.

Reine Hortense—*Monstreuse de Bavay, Belle de Bavay, Belle de Petit Brie*—Introduced into this country from France. Its many fine qualities make it quite a desirable cherry. Fruit, large; round, elongated, smooth and glossy; color, light red, marbled and mottled on amber, motley red in the sun; flesh, tender, juicy, separating easily from the seed; highly flavored, slightly acid. July.

Wragg—One of the Morello type. Tree very hardy, rather a slow grower, but a young and productive bearer. Recommended by several experiment stations in Illinois. Fruit, large; color, dark lively red; flesh, juicy and rich, quite acid. Fine on prairie soils. July.

Yellow Spanish—Fruit, large; color, pale yellow, with red cheek; flesh, firm, juicy and of excellent flavor. One of the best light colored sweet cherries. June.

QUINCES.

The principal uses of the quince are for preserving and for the making of jellies. No jelly can excel that made from the quince.

Quince trees should be planted in a sunny and well protected spot. They require a rich, mellow soil. Like other fruits they need good cultivation.

Quinces should be headed very low. All dead and surplus branches should be taken out. As the borer is the quince's worst enemy, careful attention must be given to keeping it out of the trees.

The quince, like the pear, is subject to blight. The tree should be kept cut back. Cutting back has the same effect on the quince that it does on monthly roses, it increases the bloom.

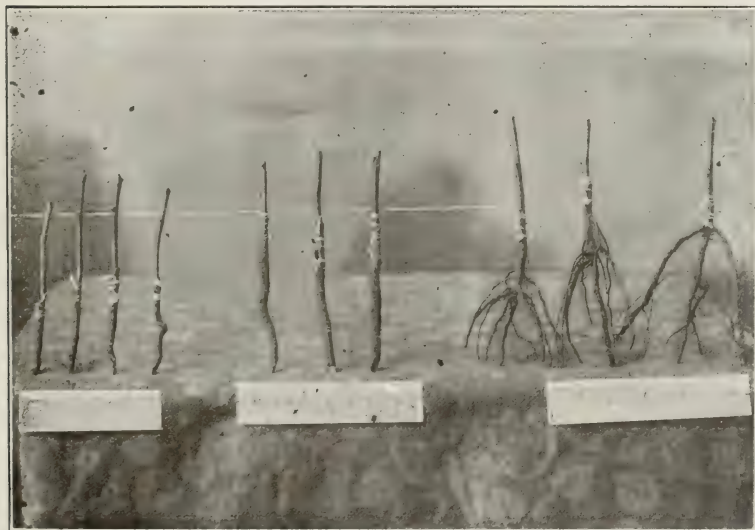
Apple—Orange—Fruit, large; roundish; color, bright golden yellow; very productive. October.

Champion—Originated in Connecticut. Tree prolific and constant bearer, but blights. Fruit, large; more oval than orange; color, a beautiful yellow; quite a long keeper. October to November.

Rea's Mammoth—A very fine variety. A seedling of the Orange quince but much larger, of the same form and color. Very productive. October.

Meech—A quince of fine size and appearance. Fully equal to the Champion and in many localities excelling it. Fruit, large; roundish; color, bright clear yellow. October.

Van Deman (Trade-marked)—Tree hardy and strong grower. Fruit, the largest of all quinces; roundish; color, a fine lemon yellow; exceedingly productive. October.



1—Piece-root Grafts. 2—No. 1 Crown Grafts, Straight 3—No. 2 Crown Grafts, Branched.

Piece-root grafts are made by grafting scions on pieces of roots. Crown grafts are made by grafting scions on the crown of either straight- or branch-rooted apple seedlings. Short scions were used on both kinds of seedlings. The reason for using short scions is to give the best root system possible to the young tree.

The cut shows that the branched seedling grafts have the best root system to start with and the piece root grafts the poorest. The root system of the piece-root tree is always poor.

On the subject of graftage Prof. Bailey in his "Nursery Book" (1900 edition) says: "This difference in root development (meaning the difference in the root system of the grafted and budded tree) proceeds from the method of cutting the stock. In other words, if the pieces of roots were budded they would undoubtedly develop the same system of roots that they do when grafted. The philosophy of it will become apparent upon a moment's reflection. The short piece of root has fewer side rootlets than the whole or long root. It is these side rootlets which develop into the main branches of the root system. The root system of the piece-root must, therefore, be *shallow* at first start than that of the whole root, because the axis is shorter. Moreover, these side rootlets do not develop simultaneously upon all sides of the main axis. They are scattered along the axis. A section or piece of the root may contain rootlets only on one or two sides of the axis, and as these rootlets grow the system becomes one-sided. There is still another reason for the prongy and one-sided character of the root system of piece-roots. The piece of root is essentially a cutting. Every gardener knows that roots seldom start symmetrically from all sides of the end of a cutting."

Prof. Bailey further says: "The whole question, therefore, is one of comparative length and strength of roots (or stocks). *A whole-rooted tree should be stronger and have a more symmetrical root system at a given age than a piece-rooted tree.*"

Prof. Elliot in his *Western Fruit Book* (edition of 1859) commenting on the same topic says: "Grafting on small pieces of roots may answer for the growing of some varieties in the nursery, but very few, when removed, are found to have made much but small fibrous roots, and when planted in the orchard require staking for years and *rarely* ever make good trees. The practice has been largely followed, but is now *condemned* by most nurserymen, and that of *grafting only on the whole of a root advised*."

Also, "Recently there has been much speculation respecting the hardihood as well as bearing of budded or grafted trees, all of which has, doubtless, arisen from the *indiscriminate use for stocks, of small pieces of roots*. That budding will be found in the main any better than the grafting process, when the *latter is performed at the crown* of a seedling root we are disposed to doubt." And, "That the habit of bearing will be increased or lessened by budding or grafting as we advise, is also another feature at this time in dispute, but we can see nothing to favor it, except the fact that trees budded do produce better than roots grafted on the old common indiscriminate practice of using anything in the shape of a piece of root, depending on the richness of soil to create from it a tree for sale."

Chas. Downing, in his "Fruits and Fruit Trees of America," says: "Large quantities of trees are propagated by using pieces of roots, thus forming from the root of one stock two, three or more grafts. This practice, although quite common, is of very doubtful value and by prominent horticulturists considered as tending to debilitate and reduce vitality—the seat of vital life in fact resting in the *natural crown* of the seedling, and that once destroyed cannot be renewed. It is, therefore, apparent that but one healthy permanent tree can ever be grown from a single seedling stock."

The scion should be short so that the natural crown of the seedling will be near the surface.

"It is plainly against nature to take a scion which has grown high up in the sunshine and air, place it almost wholly under ground, quite out of its proper element, and then expect that it can so completely change its nature as to make a perfect root system, a crown and a top all from a short scion formed by nature for aerial conditions alone."—T. T. Lyon.

GRAPES.

Grapes thrive best on gravelly, sandy, or clayey soils, or on a combination of these. The land must be well drained. The soil should be as fertile as that required for a good farm crop.

If the soil is poor, it should be given a liberal application of well rotted stable manure.

The land should be well plowed before the vines are set. The plants should be set 8 to 10 feet apart each way.

Dig the holes 2 feet wide and 14 to 18 inches deep and then fill in 3 or 4 inches of well pulverized surface soil.

Before planting, the vines should be cut back leaving but two or three buds of the last year's growth, and shorten the roots to 10 to 12 inches in length.

See that the roots spread out nearly horizontally in the bottom of the hole. Firm the earth well around the plants in filling the hole. There should be but two or three buds of the vine above the surface of the ground when the hole is filled.

The soil in the vinyard should be thoroughly cultivated during the first and second summers after planting.

Do not tie up the young canes the first year. Let them lie on the ground.

In the fall or early spring the new growth should be cut back to two or three eyes. After the new shoots from these eyes are two or four inches long rub off all but two of the strongest buds. These will form canes to be tied to the trellis the next spring.

Brighton—A cross between Concord and Diana Hamburg. Gives general satisfaction. Bunches, medium to large, long, compact, shouldered; berries, medium; color, dark red; skin, thin; flesh, tender, sweet, but little pulp; highest quality. Vine vigorous grower, hardy. Productive, but should be planted with other sorts. Ripens earlier than Delaware.

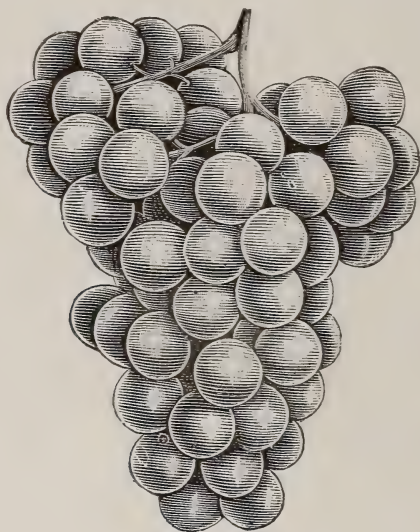
Campbell's Early—Originated by G. W. Campbell. It is a new grape of great promise. Vine a good grower. Bunch, large, shouldered, moderately compact; berry, large; nearly round; color, black, covered with a light blue bloom; skin, thick, tough, not liable to crack; flesh, a little pulpy, sweet. Ships well. Ripens with Moore's Early.

Concord—The most popular and most reliable grape in the United States. The vine is a good strong grower, hardy and productive, withstanding severe freezing. Bunch, large, shouldered, compact; berry, large; nearly black, covered with a heavy bloom; skin, thin and tender; flesh, tender, juicy, sweet, pulpy.

Delaware—A well known sort. Fine healthy and productive. Hardly equal to Brighton. Bunch, small, compact; berries, small; color, light red; skin, thin; flesh, juicy, without hard pulp, very sweet; very best quality. Ripens with Concord or a little before.

Diamond—*Moore's Diamond*—Best white grape. Vine a vigorous grower, healthy foliage, hardy and productive. Will stand severe winters. Bunch,

large, compact, shouldered; berries, large; round; color, delicate greenish white, with yellow tinge when fully ripe; skin, smooth, thin but tough, does not crack; flesh, tender, juicy, but little pulp. Ripens about two weeks before Concord.



DIAMOND.

Eaton—Originated in Massachusetts. Largest black grape, even larger than McPike and superior to it. Vine as hardy as the Concord, its parent, and much resembles it in both vine and fruit. Bunch, very large, compact, double shouldered; berries, very largest; round; color, black, covered with a thick blue bloom; skin, thin, tough; flesh, tender, juicy, seeds easily separated from pulp. Ripens with Concord.

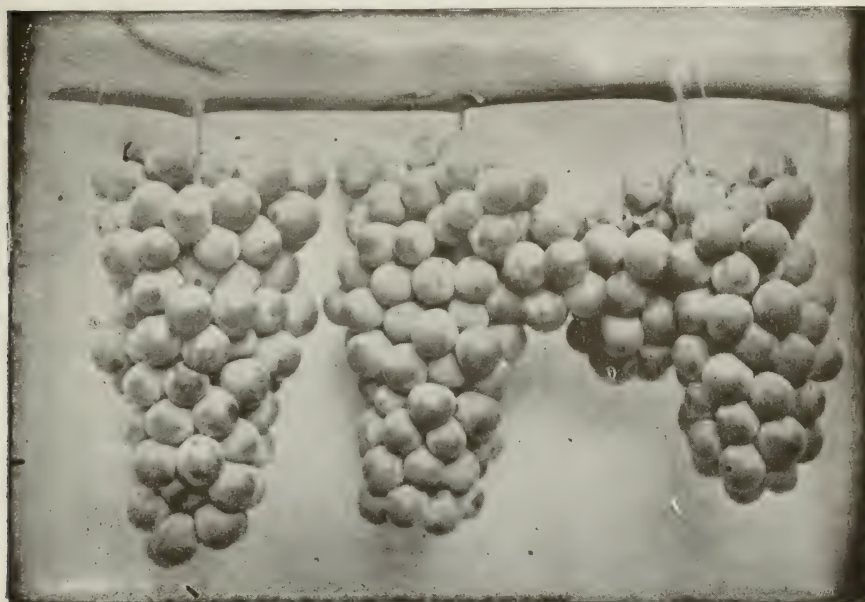
Early Ohio—Earliest black grape. Hardy as Concord. Bunch, medium to large, compact, often shouldered; berries, medium; color, black, covered with heavy blue bloom; flesh, much like that of Moore's Early and of good quality. Ripens before Moore's Early. It is a good shipper.

Martha—From Missouri. Vine similar to Concord, but not quite as strong grower. Bunch, medium, compact, shouldered; berries, medium; roundish; color, greenish white; flesh, tender, sweet, with but little pulp; equal to Concord in quality, but more foxy and earlier.

Moore's Early—First raised by J. B. Moore of Massachusetts. On rich soil it is very productive. Will stand the coldest winters of Illinois. Exempt from mildew and blight. Vine a moderate grower. Bunch, medium to large, rarely shouldered; berry very large; round; color, black with heavy blue bloom; flesh, like that of the Concord, but a little better in quality. Ripens about three weeks before Concord.

Niagara—A well known sort. Vine hardy and productive, succeeding everywhere. Bunch, very large, shouldered, compact; berry, medium to large; color

greenish white; skin, thin and tough; flesh, tender, melting, juicy, little pulp, sweet, of a peculiar pleasant flavor. Ripens with Concord.



NIAGARA.

Pocklington—Originated in New York. A seedling of the Concord, even hardier than its parent. Moderate grower. Bunch, large, compact; berry, very large; color, pale green, covered with a beautiful white bloom, in the sun light lemon yellow; flesh, tender, sweet and fine quality. Ripens with the Concord.

Woodruff Red—Originated in Michigan. The vine is vigorous, hardy and productive. Bids fair to become a very profitable market sort. Bunch, medium to large, short, compact; berry, large; color, bright red, very handsome; skin, thick; flesh, tender, sweet. Ripens with Concord.

Woodruff can be set down as one of the best, if not the best, of the red varieties, for market in central Illinois. Large bunches of large grapes of excellent quality combined with prolific bearing qualities commend it to the planter.—Illinois Horticultural Society.

Worden—The Concord's best seedling. Superior to its parent in bunch, berry and quality. Worden is the best all round grape that is planted to-day. Bunch, large, compact; berries, very large; color, black, covered with a beautiful blue bloom; skin, thin; flesh, juicy, sweet, tender, most excellent quality. Ripens ten days or two weeks before Concord.

BLACKBERRIES.

The blackberry is indigenous to this country, and can be found on nearly every piece of waste or timber land. The blackberry thrives best in a rich leaf mold, yet will grow in almost any soil.

Plant on good, strong, well drained land. should not be too rich. The rows should be from 6 to 8 feet apart and plants from 2 to 3 feet apart in the rows.

To get the best results from the blackberry patch, as it is called, the canes should be cut back each year. All dead wood should be removed and the soil well cultivated between the rows.

Agawam—A very large variety. Similar to the wild berry in flavor.

Ancient Briton—Medium size. Hardy and productive. Few days later than Snyder.

Early Harvest—One of the best early berries, strong and hardy grower. Fruit, medium, of bright glossy black. A good shipper. Likes a strong sandy soil. Very early.

Early King—Ripens as early as Early Harvest, sometimes earlier. Have picked Early King berries the 13th of June. Early Harvest, Early King and Snyder make a good combination.

Kittatinny—Resembles the Lawton in plant and fruit, but much superior to the Lawton. Ripe as soon as black. A very fine berry. Productive, but not quite hardy.

Lucretia (*Dewberry*)—Canes lie close to the ground and thus will stand very cold winters. Berry, large; acid; fine flavor. Very early.

Snyder—Extremely hardy and very productive. Canes not so thorny as Lawton and others. More Snyder are grown than any other sort. Fruit, medium, juicy and fine flavor.

Taylor—Among the largest blackberries grown. Moderately hardy, very prolific. Fruit, very large and finest quality.

Wilson Early—Is a better berry than Early Harvest, but not so hardy or productive. Fruit of good size, black and beautiful, sweet and of excellent flavor.

RASPBERRIES.

The raspberry is a deciduous shrub, indigenous to this country and Europe. New varieties of the raspberry are produced from seeds.

It is quite easy to grow new varieties. Plant the well ripened berry 1 inch deep in light loamy soil where the sun does not strike it too forcibly. The canes will fruit the second year. The new varieties thus produced may be increased by transplanting the suckers, root cuttings, or the tips of the canes that have been covered with earth and have taken root.

The raspberry can be grown with some degree of success on almost any kind of soil that is reasonably well drained, but it succeeds best on a strong, well manured and well drained soil.

Plant in rows from 4 to 7 feet apart and plants 2 to 4 feet apart in the row.

The canes should be well cultivated in the summer and well mulched in the fall. Cut back the canes to a height of about 3 feet. Prune off the laterals in the second spring to within 12 or 18 inches of the cane. Keep all dead wood cut out.

The raspberry is one of the most delicious as well as the most profitable of small fruits. Following just after strawberries, they are much in demand for table use.

Cardinal—Fine in bush. Holds its foliage until cold weather. Berry darker than Columbian and of the same size. Lacks high quality.

Columbian—Large purple cap. Original plant bore 28 quarts of berries in 1894. Plant hardy and a giant in growth. A splendid shipping variety. Berry large; color, dark red or purple; rich and juicy; delicious flavor.



COLUMBIAN RASPBERRY.

Cuthbert—Tall and vigorous canes. Hardy and productive. Fruit, large; conical; color, rich crimson; firm and compact; rich, luscious flavor. Commences to ripen moderately early and holds out until others are gone. A good shipper.

Golden Queen—Strong, hardy and productive. Of the very finest quality. The best of the yellow sorts. Fruit large as Cuthbert.

Loudon—A splendid red sort. Hardy and very productive. Berry, large; broadly conical; beautiful red. Ripens with Cuthbert, but lasts longer.

Marlboro—Canes vigorous and productive. Moderately hardy. Berries, large; color, light crimson; firm and of good quality. Begins to ripen early, but covers a season of three or four weeks.

Miller—"Best early red" A better berry than Loudon. Much better than Clarke. Berry, large; bright red; splendid quality. Fine shipper.

Shaffer—Purple. Berry, very large; dull purple, unattractive in appearance; soft, but of fine quality for the table.

Turner—Best known early red. Canes not quite hardy. Berry, large; very beautiful. Most prolific berry known. Not of the best quality.

Black Caps.

Cumberland—Unexcelled in hardiness and productiveness. Berry, very large; much like Gregg in quality. One of the best mid-season market varieties.

Eureka—Best early black. Nearly as hardy as Kansas. Fine in Illinois. Berry jet black and of good size. Ships well.

Gregg—The largest of the black caps. A third larger than Mammoth Cluster. Canes not quite hardy but stands the winters of Illinois fairly well.

Kansas—An ideal plant both in cane and berry. Canes almost ironclad. Free from disease. The greatest market berry. Best all round berry yet produced. A sure and prolific bearer. Berry nearly as large as Gregg: firm and beautiful. Recommended everywhere.

Ohio—An old and well known sort. Not equal to Kansas, but a little better flavor.

Palmer—Very early black cap, healthy and vigorous. Berry of fair size, firm and handsome; of good quality.

Souhegan—*Tyler*—Among our hardiest black caps. Very prolific. The fruit is of good size, jet black and sweet; pleasant flavor. It is a good shipper and should be better known.

GOOSEBERRIES.

The gooseberry requires good cultivation or heavy mulching. Mulch deeply, six or more inches. Good cultivation is better than half mulching.

The ground should be thoroughly drained. Gooseberries will not thrive in a poorly drained soil. If the under-drainage is poor, it is worse than useless to mulch.

Plant in rows 6 feet apart and 4 feet apart in the rows. If they are to be cultivated both ways, plant 5 feet apart each way.

American varieties of gooseberries need close pruning every year, the English very little or no pruning. American varieties are more free from mildew than the English varieties.

Downing—One of the most popular sorts. Very hardy and productive. Originated at Newberry, N. Y. Fruit is much larger than Houghton; color, light green, with distinct veins; smooth; flesh, juicy, soft and of excellent flavor.

Golden Prolific—*Large Green Prolific*—Nearly free from mildew. Bush a good grower, hardy and productive. Fruit, large; color, golden yellow; excellent quality.

Houghton—A general favorite, very hardy in bud and immensely productive. Best all round variety. Berries seldom mildew. Profitable everywhere. Fruit, medium; skin, smooth; color, red when ripe; juicy and tender flesh.

Industry—An English variety that has been tested quite thoroughly, and very highly recommended. It is of upright growth, vigorous and productive. Blooms late, but berries grow rapidly and can be picked earlier than any other variety. Fruit, very large; hairy; color, dark red when ripe; flesh, tender, juicy; pleasant flavor.

Pearl—New. Originated in Canada. Bids fair to even supercede the old reliable Houghton. Bush a strong, vigorous grower and free from mildew. Very productive. Fruit larger than Downing which it resembles. Of fine quality.

Red Jacket—*Fosselyn*—Bush upright, vigorous, productive. Berry, medium; color, pale red. Much like Houghton.

CURRENTS.

The currant ripens with and a little later than the raspberry. The currant requires good strong soil well drained.

Set 4 to 5 feet apart and cultivate well, or mulch heavily. Keep all old and dead wood cut out so that the young shoots will have plenty of room. Dust the bushes with hellebore for the currant worm. London Purple is also good.

Black Champion—Bunch large. Hangs well. Will stand more pruning than any other variety. Delicious flavor.

Cherry—The largest of the red currants. Vigorous and productive. Berry, large, sometimes more than a half inch in diameter.

Fay's Prolific—One of the most prolific of the red currants. Berries more even in size than those of the Cherry. Best flavor.

London Market—*London Red*—Strong upright bush. Berries good size. Much like Cherry. Canes much hardier. The coming currant for Illinois.

Moore's Ruby—Originated by Jacob Moore of Rochester. Strong, vigorous bush. Much like victoria in size and color. Sweeter than Cherry. Productive.

Red Dutch—An old variety. Productive. Berries, medium; bright red. Bush hardy.

Victoria—A desirable variety. Not as good as London Market. Berries, large; bright red. Bunch rather compact. Late.

White Grape—The finest of all the white sorts. Bush strong and vigorous, low and spreading. Bears young. Berries, very large; yellowish white; very mild acid; excellent quality. Valuable for table use.

White Dutch—An old white currant. Not equal to White Grape.

Wilder—*Pres. Wilder*—Bush upright and vigorous. Clusters quite long. Berries, large; bright red; mild sub-acid; excellent flavor. Second only to Fay's and London Market.

STRAWBERRIES.



One of the most profitable as well as the most luscious of fruits is the strawberry. Ripening as it does very early in the season before other fruits, makes it a most desirable fruit to raise.

The raising of strawberries is not a difficult task. In fact, they give as large returns for the labor and capital expended as any fruit.

The essential part is doing the right thing at the right time.

In setting, care should be used to set the plants about the same depth that they grew—not too shallow nor too deep.

Cultivation should be thorough. The more cultivation the better the result.

There are three methods used in the raising and cultivation of strawberries, the hill culture, the hedge row, and the matted row.

The hill culture seems to be the most profitable of any.

Set the plants 36 inches one way by 24 to 30 inches the other way. This gives plenty of room to cultivate the rows both ways. The ground should be well cultivated during the summer and kept free of weeds. It is impossible to raise strawberries and weeds together. Keep the runners cut off during the entire season, this adds vigor to the plant.

The hedge row system pays nearly as well and has less work attached. Plant in rows 36 inches one way by 24 inches the other. In cultivating, the first runners are not cut off but are thrown around so that they will take root in the row. The late runners are kept cut off. The cultivator is run but one way.

The matted row—set plants 36 to 48 inches one way and 18 to 30 inches the other way. Cultivate in one direction, narrowing the cultivator as the plants spread.

In planting strawberries, care should be taken to have the roots well

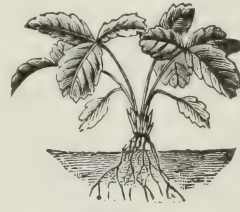
spread out and the plant set the proper depth, leaving no "rat houses" or "pockets" in the soil under or around the plant.

Mulch the plants in the fall after the ground has frozen with a heavy litter of clean straw free from weed or grass seeds.

In the spring after the danger of heavy frosts are over remove the mulching from directly over the plants only. This gives the plants a chance to come up through the mulch and spread over the clean straw. The berries will then be free of grit and dirt.



Too Deep.



Too Shallow.



Wrong way.



Right Way.

As soon as the fruit is picked, *burn* over the bed or field. The mulching should be stired up so as to dry before it is fired.

Strawberries are of two kinds, with imperfect or pistillate flowers and in this book are marked thus, "P", perfect or staminate flowers are marked "S." Never plant pistillate varieties by themselves. Plant every third or fourth row, at least, in staminate varieties to fertilize them.

Bismark (S)—Seedling of Bubach. Larger than its parent, but like it in other respects. Late.

Bederwood (S)—Popular berry of good size and appearance. Medium early.

Burbach (P)—Very large, soft, medium quality, almost drought proof. Productive. Late.

Clyde (S)—Originated by Dr. J. Stayman of Kansas. Very hardy. Can stand heat and drought. Best on sandy soil. Fruit, very large; of regular conical shape; light scarlet. Early to mid-season.

"In strawberries it seemed to be the verdict of the papers and discussions that the Clyde had given the best general results of the newer varieties."—Illinois Horticultural Society Report, 1899.

Crescent (P)—Medium size; bright scarlet. Productive. Early.

Cumberland—*Cumberland Triumph* (S)—A large beautiful berry. Sweet and productive. Fine for table use. Medium early.

Gandy (S)—Large, uniform in size. Best on heavy soil. Productive. Late.

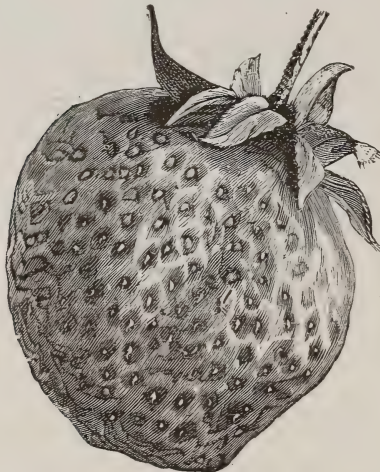
Haverland (P)—Popular in the market. Medium to large, but rather soft. Very productive. Mid-season.

Jessie (S)—Popular. Good fertilizer for early blooming varieties. Berry, large, dark red. Productive.

Kansas (S)—New. Large, bright crimson. Heavy crops and good shipper. Mid-season.

Lady Thompson (S)—Berry, medium size; firm; good quality. Productive. Early.

Michel's Early (S)—Best extra early variety. Does well nearly everywhere. Very vigorous and productive. Extra early.



NICK OHMER.

Nick Ohmer (S)—Not drought proof, but in other respects a most excellent berry. Very large and beautiful. Finest quality. A good pollinizer. Mid-season.

Parker Earle (S)—Requires a rich, moist soil. It is one of the most prolific bearers. Almost a failure in very dry seasons as it does not then mature its fruit. Late.

Ruby (S)—A fine berry. Moderately productive, of large

size, and fine quality. Withstands both cold and drought. Mid-season.

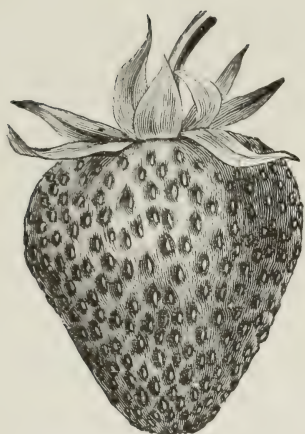
Robinson (S)—A favorite berry. Not the best shipper, being a little soft, but very productive. One of the best pollinizers. Very late.

Rough Rider (S)—New. An iron-clad plant. Originated in New York. Very productive. Should be widely planted. Berry, large, firm. A good shipper. Very late.

Senator Dunlap (S)—New. A rampant and vigorous grower. Berry, medium size, good quality. Very productive. A good shipper. Mid season.

Star (S)—Much like Sharpless. Needs high cultivation. Berry, large, of finest quality. Moderately productive.

Splendid (S)—Plant small, but vigorous and prolific. Berry, very large, firm, good quality. Mid-season.



TENNESSEE PROLIFIC.

of fair size, dark red, fine quality. Excellent for canning. Productive. Early.

Wm. Belt (S)—Should be planted on a heavy, rich land. Berry large; bright color; excellent quality. Productive. Mid-season.

Sharpless (S)—A popular berry. Large and firm, bright color, sweet and delicious.

Tennessee Prolific (S)—One of the most valuable as well as the most prolific in this list. It stands droughts well and always ripens its fruit in fine shape. A fine pollenizer and should be in every selection. Berry, medium to large, irregular in shape, not very firm, but a fairly good shipper. Early to mid-season.

Warfield (P)—A well known variety and widely planted. While it is affected some by drought, yet is a very profitable berry. Berry



SPLENDID.

ORNAMENTAL DEPARTMENT.

While many people appreciate and admire well arranged and well kept grounds, whether large or small, a number, at least, fail to realize that they, with little extra work and forethought, can beautify and improve their grounds making their homes and grounds the delight and admiration of the entire community.

Aside from the pleasure, fine trees, shrubs, vines and flowers add to the commercial value of a place. It is a mistake to plant at random. Every tree, shrub or flower should have its place, but too exact lines give a place rather an unnatural look. Trees may be planted along a lane or avenue leading to the house or dotted about the lawn on lines radiating from the house. Care should be taken that the view from the house is not obstructed.

Plant with a view of taking out a part which is so much better than planting so little that it will take years to produce a fine effect.

I give below a short description of the most desirable plants.

Upright Deciduous Trees.

Alder (*Alnus*)

IMPERIAL CUT-LEAF—(A. Laciniata Imperialis)—A charming tree of stately, graceful growth, having large and deeply cut foliage. Vigorous and hardy. One of the best lawn trees.

Ash (*Fraxinus*)

EUROPEAN FLOWERING—(F. Ornus)—Not quite hardy. Grows from 20 to 30 feet high. Produces large clusters of greenish white flowers at end of twigs. Flowers in June.

GOLD-BARKED—(F. Anrea)—A conspicuous tree at all times, especially in winter, on account of the yellow bark and twisted branches.

Birch (*Betula*)

WHITE—(B. Alba)—Moderate size. Fine form. Trunk, silvery white. Branches, slender, triangular, very taper-pointed, smooth and glossy leaves. A beautiful tree.

PAPER OR CANOE—(B. Papyracea)—Large tree. Very beautiful. Trunk with chalky white papery bark separating in ample sheets.

PURPLE LEAVED—(B. Folis Purpureis)—A vigorous growing tree with purple foliage.

Catalpa

SPECIOSA—From the west. More upright and symmetrical than the Common Catalpa. Blooms two or three weeks earlier. Very valuable as well as ornamental.

COMMON—(C. Bignonioides)—Very widely planted. Large, heart-shaped, pointed leaves. Has large open panicles of white flowers. Much planted along streets and highways.

Chestnut (*Castanea*)

AMERICAN—(C. Americana)—Large tree. Well known. When not crowded by other trees, assumes a beautiful symmetrical form. Foliage

a rich glossy green, straight veined. Entire tree covered in early summer with long, pendant tassel-like blooms. Thrives on all well drained soils.

Elm (*Ulmus*)

WHITE—(*U. Americana*)—A noble looking tree. Drooping and spreading branches. Attains a large size. Very hardy. Very desirable for parks, streets and large lawns.

RED—(*U. Fulva*)—Does not attain the large size of the White Elm, and of a less spreading habit. Less liable to attacks of the canker worm. Fully as hardy as White Elm.

SCOTCH OR WYCH—(*U. Montana*)—A fine spreading tree of rapid growth. Leaves less rough than Red, and smaller.

ENGLISH—(*U. Campestris*)—Large tree. More upright than the White Elm. Leaves smaller and more numerous.

Honey Locust (*Gleditschia*)

COMMON OR THREE THORNED ACACIA—(*G. Triacanthos*)—Rapid growing tree. Much planted for shade. Rather tall. Delicate foliage of beautiful lively green. Stout thorns. Quite a fine looking tree. Sometimes used for hedges.

Judas Tree—Red Bud (*Cercis*)

AMERICAN—(*C. Canadensis*)—A small tree very ornamental in the spring when the naked branches are covered with small but beautiful flowers of the color of peach blossoms or redder.



LINDEN OR LIME TREE.

Larch (*Larix*)

EUROPEAN—(*L. Europæa*)—A fine fast growing tree of pyramidal form. Leaves about one inch long. Branches small and drooping.

Laburnum (*Laburnum*)

GOLDEN CHAIN—(*L. Vulgare*)—Tree from Europe. A low tree with smooth, green bark, slender petioled leaves of three oblong leaflets, and pretty, large golden yellow flowers hanging in long racemes in late spring. Very showy. A beautiful tree for the lawn.

Linden or Lime Tree (*Tilia*)

AMERICAN, COMMON BASSWOOD—(*T. Americana*)—A handsome and large forest tree of rapid growth. Large leaves and fragrant flowers.

Magnolia

CUCUMBER TREE—(*M. Acuminata*)—A beautiful, stately tree with large leaves and fragrant flowers tinted with bluish purple.

Maple (*Acer*)

ASH-LEAVED OR BOX ELDER—(*A. Negundo* *Aceroides*)—A handsome, rather small tree of rapid growth, with light green twigs and drooping clusters of small greenish flowers, rather earlier than the light green pinnated foliage. The tree has a fine spreading head. Very hardy.

NORWAY—(*A. Platanoides*)—Native of Europe Its large, compact habit, broad, deep green, shining foliage, and its vigorous growth makes it a most desirable tree for streets, parks and lawns.



NORWAY MAPLE.

SCARLET OR RED—(*A. Rubrum*)—Tree of medium size, with soft, white wood, reddish twigs, flowers scarlet-crimson, sometimes yellowish. In autumn the leaves change to a brilliant scarlet, rendering the tree very effective.

WEIR'S CUT-LEAVED—(*A. Weirii* *Laciniatum*)—A silver maple with re-

markable and beautiful dissected foliage. Of rapid growth, shoots slender and drooping, giving it a very graceful appearance. Should be in every collection. While it will make a large tree if undisturbed, it will bear any amount of pruning and may be easily adapted to small lawns.

SUGAR OR ROCK—(*A. Saccharinum*)—Large tree. Valuable both for the production of sugar and as an ornament. A stately form and fine, rich foliage.

WHITE OR SILVER—(*A. Dasycarpum*)—Known and planted throughout the country. A handsome tree with long and spreading or drooping branches. Soft, white wood of very rapid growth. Leaves deeply 5 lobed, silvery white underneath. A desirable tree for quick shade.

Mountain Ash (*Pyrus*)

EUROPEAN—(*P. Aucuparia*)—From Europe. Fine hardy tree of good size, head dense and regular, covered from July to mid-summer with large clusters of bright red berries.

OAK-LEAVED—(*P. Quercifolia*)—A variety with large hory lobed leaves, distinct and fine, attains a height of 20 to 30 feet. Spreading. Excellent for the lawn.

Peach (*Persica*)

DOUBLE ROSE-FLOWERING—(*A. Flore Rosea Pleno*)—Flowers pale rose color, double, produced in great abundance and very handsome.

DOUBLE WHITE-FLOWERING—(*A. Flora Alba Pleno*)—Very ornamental. Flowers pure white. Hardy.

Poplar (*Populus*)

LOMBARDY—(*P. Dilatata*)—Stiff spiry tree with closely oppressed branches. Much planted. Grows rapidly.

CAROLINA POPLAR—(*P. Monilifera*)—A very rapid growing tree. It is not effected by smoke and is free from insects. Unlike White Poplar, it does not sucker. Easy to prune, of a pyramidal form, perfectly hardy, large, handsome, glossy leaves. It cannot be too highly recommended.

Salisburia (*Maiden Hair Tree or Gingko*)

MAIDEN HAIR TREE—(*S. Adiantifolia*)—Leaves much resemble those of the Maiden Hair Fern. A most singular and beautiful tree from Japan. Hardy even in the north. Branches spreading, foliage fan shaped, yellowish green curiously marked with delicate hair-like lines.

Tulip Tree (*Liriodendron*)

TULIP TREE—(*L. Tulipifera*)—A tall, very handsome tree. A native of this country. Rich, glossy foliage, regularly distributed branches, flowers large tulip-shaped, yellow with greenish orange.

Walnut (*Juglans*)

BLACK WALNUT—(*J. Nigra*)—A native species of great size and majestic habit. Bark very dark and deeply furrowed. Foliage beautiful, each leaf being composed of from thirteen to seventeen leaflets. Desirable only for large lawns

Weeping Deciduous Trees.

Ash (*Fraxinus*)

EUROPEAN WEEPING—(*F. Excelsior Pendula*)—A well known sort. A fine lawn and arbor tree, covering a great space and growing rapidly.

GOLDEN BARKED WEEPING—(*F. Aurea Pendula*)—A singular and beautiful tree, with bark in winter a golden yellow.

Beech (*Fagus*)

WEEPING—(*F. Pendula*)—Originated in Belgium. A fine, vigorous and beautiful tree of large size. The trunk and stem is generally straight with the branches tortuous and spreading. Very graceful in appearance when covered with its rich luxuriant foliage.

Birch (*Betula*)

CUT-LEAVED WEEPING—(*B. Pendula Laciniata*)—One of the most beautiful weeping trees. Erect in growth, with slender drooping branches and fine cut leaves. It is a magnificent tree and is well worthy a place on every lawn. Hardy.



CUT-LEAVED WEEPING BIRCH.

ELEGANT WEEPING—(B. *Elegan Pendula*)—From Europe. New, elegant weeping habit, nearly as pendulous as the Kiln arnock Willow.

YOUNG'S WEEPING—(B. *Pendula Youngii*)—A small tree of a beautiful pendulous habit, with long slender shoots of picturesque and irregular form. Grafted into stems of some height it forms fine pendulous heads, sweeping to the ground in fine thread-like shoots.

Elm (*Ulmus*)

CAMPERDOWN WEEPING—(U. *Pendula*)—A well known tree. Vigorous grower. Branches overlap regularly forming a compact roof-like head. Leaves large, dark green, glossy. The finest of the weeping elms

Linden or Lime Tree (*Tilia*)

WHITE-LEAVED WEEPING—(T. *Alba Pendula*)—A beautiful tree. Large leaves, drooping branches.

Mountain Ash (*Pyrus*)

WEEPING—(P. *Aucuparia Pendula*)—A beautiful tree, with straggling, weeping branches. Makes a fine tree for the lawn, suitable for covering arbors.

Mulberry

TEA'S WEEPING—A very thrifty, vigorous grower, perfectly hardy, forming a natural umbrella-shaped top, or head, foliage handsome. New and valuable.

Poplar (*Populus*)

LARGE LEAVED WEEPING—(P. *Grandidentata*)—A variety having, when grafted standard high, long, slender branches like cords, which droop very gracefully.

Willow (*Salix*)

KILMARNOCK W.—(S. *Caprea Pendula*)—A very popular tree. Very graceful, large, glossy leaves.

COMMON WEEPING—(S. *Babylonica*)—Known and planted everywhere.

AMERICAN WEEPING—(S. *Purpurea Pendula*)—A dwarf of American origin. Should be grafted five or six feet high, it then makes, though small, a very ornamental tree. Hardy.

Evergreen Trees.

Evergreen trees should never be set in the fall. They may be set in August, but spring is the better time. Great care should be used in handling and setting as they will not stand much exposure.

Abor. Vitae (*Thuja*)

AMERICAN—(Occidentalis)—Fine for hedges. Plants 12 to 18 inches high that have been transplanted several times give better results than larger ones.

SIBERIAN—(Siberica)—Exceedingly hardy. Does not fade in winter. Fine for the lawn. Growth compact, pyramidal.

Juniper (*Juniperus*)

AMERICAN UPRIGHT—Small tree. Dense, upright growth. The ends of the shoots have a recurved habit, which renders the foliage quite graceful.

IRISH—(Hibernica)—Small, hardy and beautiful. Growth erect and tapering. Foliage a beautiful dark green. Desirable.

Pine (*Pinus*)

AUSTRIAN OR BLACK—(Austriaca)—A remarkably robust, hardy, spreading tree. Leaves, long, stiff and dark green. Growth rapid. Valuable for this country.

CEMBRA—(Swiss Stone)—Of conical form, very uniform and dense in growth, leaves a dull green, bears purple cones, a most desirable dwarf pine.

SCOTCH—(Sylvestris)—A fine, robust, rapidly growing tree, with stout, erect shoots and silvery green foliage.

WHITE—(Strobus)—The most ornamental of all our native pines. Foliage light, delicate or silvery green. Flourishes in the poorest soils.

Spruce (*Abies*)

COLORADO BLUE—(Picea Pungens)—A rare, elegant tree with foliage of a rich blue. One of the most distinct and striking of all the spruce family. A free grower and perfectly hardy.

HEMLOCK OR WEEPING—(Canadensis)—An elegant, pyramidal tree, with drooping branches and delicate, dark foliage, like that of the Yew. Distinct from all other trees. It is a beautiful lawn tree, and makes a highly ornamental hedge.

NORWAY—(Excelsa)—A lofty, elegant tree of perfect, pyramidal habit, remarkably elegant and rich, and as it gets age, has fine, graceful, pendulous branches. It is exceedingly picturesque and beautiful. Very popular, and deservedly so, and should be largely planted. One of the best evergreens for hedges.

Upright Deciduous Shrubs.

Althea, or Rose of Sharon (*Hibiscus*)

The Altheas are fine, free-growing, flowering shrubs of very easy cultivation. Desirable on account of flowering in August and September, when nearly every other tree or shrub is out of bloom. The most desirable variety is the

VARIEGATED-LEAVED DOUBLE-FLOWERING—(Flore Pleno Folvariegata)—A conspicuous variety, with foliage finely marked with light yellow. Flowers double purple. One of the finest variegated-leaved shrubs.

Almond (*Prunus*)

DOUBLE ROSE-FLOWERING—(Japonica Rubra fl. pl.)—A beautiful small shrub, bearing in May, before the leaves appear, small, double, rose-like flowers, closely set upon the twigs.

DOUBLE WHITE FLOWERING—(*Japonica Alba fl. pl.*)—Produces beautiful white flowers in May.

Crab [*Pyrus*]

BECHTEL'S DOUBLE-FLOWERING AMERICAN CRAB—(*Pyrus Angustifolia*)—A medium-sized, hardy, ornamental tree of great beauty. When in bloom, this tree presents the appearance of being covered with roses, scenting the atmosphere for a long distance with a perfume equal to that of any rose. Unlike many other trees, it does not bloom until the leaves are fully developed, which adds greatly to its beauty.

Dogwood (*Cornus*)

RED-BRANCHED—(*Sanguinea*)—A native species very conspicuous and ornamental in the winter, when the bark is a blood red.

VARIEGATED CORNELIAN CHERRY—[*Cornus Mascula Variegata*]—A small tree or shrub, producing clusters of bright yellow flowers early in spring before the leaves appear. Has beautiful foliage variegated with white. Decidedly the prettiest variegated shrub in cultivation.

ELEGANTISSIMA VARIEGATA—An improvement on the preceding and one of the finest variegated shrubs, of rapid growth, foliage beautifully marked with creamy white and tinged with red, while some leaves are entirely white. Should be in every collection.

Honeysuckle, Upright [*Lonicera*]

RED TARTARIAN—[*Tartarica Rubra*]—A well known shrub. Flowers bright pink, which appear in May and June.

WHITE TARTARIAN—[*Tartarica Alba*]—Like the preceding, but has dull, white flowers.

Hydrangea

LARGE CLUSTERED—[*Paniculata*]—A fine large shrub, bearing showy panicles of pink and white flowers in the greatest profusion. It is quite hardy, and is altogether a most admirable shrub for planting singly or on a lawn in masses.

QUERCIFOLIÆ—[*Oak-leaved Hydrangea*]—A hardy, massive shrub, of woody growth and bushy habit. Leaves lobed like those of the oak, and downy beneath, turning to crimson in autumn. Flowers white, changing to purple.

OTAKSA—Large foliage of a deep green. Bears a profusion of deep, rose-colored flowers in huge tresses. New and very fine.

THOS. HOGG—A beautiful variety with large tresses of pure white flowers. Not hardy, but very valuable for forcing.

Lilac [*Syringa*]

FRAU DAMMANN—This is the best white lilac grown. The panicle or truss is immense, flowers of medium size and pure white. This and Ludwig Spæth are the two best lilacs of recent introduction.

LUDWIG SPÆTH—New, and believed to be the finest of its class. Color purplish red. A great acquisition.

MARIE LE GLAY—A free grower, producing magnificent large trusses of purest white flowers, which are very fragrant and showy. Highly recommended as perhaps the best of the white lilacs.

Plum [*Prunus*]

DOUBLE FLOWERING—[*P. Triloba*]—A very desirable shrub, introduced from Japan. Flowers semi-double, of delicate pink, upwards of an inch in diameter, thickly set, hardy. Flowers in May.

PRUNUS PISSARDII—A new shrub of Persian origin. The tree is a decided contrast in itself. The leaves, as they first appear on the tips, are a beautiful orange color and they mature to a rich purple, clear and distinct, growing darker as the season advances. The leaves remain until late in the fall—a decided contrast to other shrubs. Its beautiful shining bark and its bright red fruit, altogether making it the most rich and ornamental tree possible. It is remarkably hardy, a very rapid grower, compact, symmetrical in proportion, and attains about the size of the peach.

Snowball [*Viburnum*].

COMMON—[*V. Opulus*]—A well known favorite shrub of large size, with globular clusters of pure white flowers in the latter part of May.

JAPANESE—[*Viburnum Plicatum*]—From north China. has very rich, deep green foliage, of handsome form and beautiful globular heads of pure white flowers, quite distinct from the common sort. A very desirable shrub.

Spiræa

SPIREA ANTHONY WATERER—This beautiful variety has the same habits as its parent, the Bumalda. It blooms about the close of June, continuing throughout the entire season. It is useful for edging, planting in masses, or as a single specimen where a low, bushy shrub is required.

VAN HOUTTE'S—[*S. Van Houttii*]—The most showy of all the Spiræas, and one of the very best flowering shrubs in cultivation. The plant is a rather tall, upright grower, with long slender branches that droop gracefully with their weight of foliage and flowers. Flowers pure white, in great clusters and whorls, forming cylindrical plumes two or three feet long. This is one of the hardiest of all the Spiræas.

BILLARDI—Rose color. Blooms nearly all summer.

Syringa [*Philadelphus*]

All the species and varieties of the *Syringa* have white flowers, many of them quite fragrant.

GOLDEN-LEAVED—[*Aurea*]—A very pretty plant of medium size, with golden yellow foliage. It retains its color the entire season, and is valuable for creating pleasing and striking contrasts with both green and purple-leaved shrubs.

LARGE FLOWERED—[*Grandiflorus*]—A conspicuous showy kind, with large flowers and irregular branches.

Evergreen Shrubs.

Ashberry [*Mahonia*]

HOLLY-LEAVED—[*Aquifolia*—A most beautiful shrub, with glossy, holly-like leaves, which change to brownish-green in winter, with clusters of bright yellow flowers in May. Very hardy, and makes a good hedge.

Box [*Buxus*]

DWARF—[*Suffruticosa*—The well known variety used for hedge.

TREE BOX—Several sorts.

Euonymus

RADICANS VARIEGATA—A charming shrub of dwarf and trailing habit. It is perfectly hardy and has foliage beautifully variegated with silvery white, tinted with red in the winter. Unsurpassed for edging.

Rhododendron—In variety.

These are the most magnificent of all evergreen shrubs, with rich, green foliage and superb clusters of showy flowers. They require a peaty soil, free from lime, and a somewhat shaded situation. They do best near the sea-shore and will repay all the care that may be bestowed in preparing a bed suited to their wants.

Thorn, Evergreen—[*Crataegus Pyracantha*—The Evergreen Thorn is a low, bushy shrub, compact, dwarf habit, retaining its foliage well. Bears orange-scarlet berries. Makes a pretty hedge.

Climbing Shrubs.

Aristolochia, or Dutchman's Pipe

SYPHO—A rapid growing vine with magnificent foliage ten to twelve inches in diameter, and curious pipe-shaped yellowish-brown flowers.

Chinese Matrimony Vine

A vigorous, hardy climber. It will soon cover any desired space. It has dark green foliage and beautiful flowers and loads of small berries which far surpass the Holly berries, which are seen in all parts of the country at Christmas time.

Climbing Hydrangea

A handsome, rapid growing vine with almost the characteristics in flower and foliage of the *Hydrangea Paniculata*. It clings with tenacity to any object by which it may be planted and attains a height of fifty feet; has large white flowers which remain a long time on the plant, making it conspicuous and desirable.

Honeysuckle (*Lonicera*)

CHINESE TWINING—(*Japonica*)—A well known vine, holding its foliage nearly all winter. Blooms in July and September and is very sweet.

COMMON WOODBINE—(*Periclymenum*)—A strong, rapid grower, with very showy flowers, red outside, buff within. June and July.

HALL'S JAPAN—(Halleana)—A strong, vigorous, evergreen variety, with pure white flowers, changing to yellow. Very fragrant, covered with flowers from June to November.

JAPAN GOLD-LEAVED—(Aurea Reticulata)—A handsome variety, having foliage beautifully netted or variegated with yellow.

MONTHLY FRAGRANT—(Belgica)—Blooms all summer. Flowers red and yellow. Very sweet.

SCARLET TRUMPET—(Sempervirens)—A strong grower and produces scarlet, inodorous flowers all summer.

Ivy

COMMON ENGLISH—(Hedera Helix)—The Ivy being an evergreen, not very hardy, and suffering from exposure to the winter sun, should be planted on the *north side* of buildings or walls. It is very effective grown in pots for inside decoration,

Trumpet Vine—(Bignonia Radicans)—A splendid climber, vigorous and hardy, with clusters of large, trumpet-shaped, scarlet flowers in August.

Wistaria

CHINESE PURPLE—(Sinensis)—A most beautiful climber, of rapid growth, and producing long, pendulous clusters of pale blue flowers. when well established, makes an enormous growth. It is very hardy and one of the most superb vines ever introduced.

CHINESE WHITE—(Sinensis Alba)—Introduced by Mr. Fortune, from China, and regarded as one of his greatest acquisitions. Rather tender.



WISTARIA.

Clematis, or Virgin's Bower.

The different varieties and species of Clematis now in cultivation are of the highest beauty and utility. They vary greatly in their foliage and flowers and are adapted to various uses; some of them, such as our common native sort (*C. Virginiana*) and the European (*C. flammula*) and *Paniculata*, from Japan, are very fragrant and are particularly attractive on this account. The large flowered varieties like the well known *C. Jackmanni* are extremely showy and produce great numbers of their beautiful flowers. These plants are trained on trellises and over porches and pillars. All are hardy, of easy growth, and will adapt themselves to nearly or quite all soils.

Paniculata—A native of Japan. A beautiful and rapid growing climber, which in a very brief time will cover any ordinary veranda. The flowers are small, pure white and delightfully fragrant, and are borne in enormous masses, almost concealing the foliage. Entirely free from blight, and regarded as a great acquisition.

Fortunii—This was introduced from Japan by Mr. Fortune. The flowers are large, double, white and somewhat fragrant.

Gem—A new and perpetual blooming variety. The flowers are of a deep lavender blue. June to October.

Henryii—This is the finest of all white Clematis and should find a place in every collection. It is not only a vigorous grower, it is a remarkably free and continuous bloomer, beginning with the earliest and holding on with the latest. Flowers large, of a beautiful creamy-white, with reddish-chocolate anthers. Art cannot produce a picture corresponding in any degree to the wealth of beauty found in the flowers of this variety. Especially desirable. June to October.

Jackmannii—This is, perhaps, the best known of the fine perpetual Clematis, and should have credit for the great popularity now attending this family of beautiful climbers. The plant is free in its form of growth and an abundant and successful bloomer, producing flowers until frozen up. The flowers are large, of an intense violet purple, remarkable for its velvety richness. Though raised in 1862—since which time many new varieties have been raised and introduced—the *Jackmannii* has no superior and very few, if any, equals. July to October.

ROSES.



Roses are cultivated for their bloom, and to have this in abundance the bushes must grow, for if the plants make no growth there is sure to be no flowers. The foundation of success in roses is to have good soil in good condition, if not so naturally, it must be made so artificially. The next requisite is strong, healthy plants properly planted and kept clean and free from insects, with, where needed, winter protection.

Roses should have a warm, sunny spot, with some protection from the bleak winds of winter. Roses will not thrive under trees or in the shade of buildings. The roots of the trees will use up all the nourishment and the buildings will deprive the roses of the needed sunshine. A wooden fence is about the best wind-break

The soil for roses should be as rich as that required to raise a good crop of corn. It should be well drained and free from weeds and heavy grass.

Plant hardy roses in fall or early spring, the Teas in early spring. Nearly all roses are now grown on their own roots. All roses should be planted while dormant.

Roses that are grown on their own roots should be planted just as they stood in the nursery. Budded or grafted roses *must* be set at least two inches deeper than the bud or graft.

Keep the roots moist until planted. Many plants are killed by allowing the roots to get too dry. Dig the hole amply large to receive the roots without crowding them. Set in the plants, spread out the roots in their natural position, fill in with fine soil and press it down firmly around the roots. If the weather is dry and warm, freshly set roses should be watered each day for several days. Strong growing roses should be set at least three feet apart, weak growers one or two.

PRUNING.—The best time to prune roses is in late autumn while the plants are dormant. Do not slash off the canes recklessly, but prune for shapeliness of plant and bloom buds. Weak growing plants require severer pruning than

vigorous ones. To get the second crop of blooms from Hybrid Perpetuals, prune in June just after the first crop of flowers has fallen.

MULCHING.—All roses are beautified by being mulched through the winter. This should be done in late autumn before cold weather sets in. A mulch of strong manure during the hot summer months is very beneficial.

Insect Enemies of the Rose.

The rose slug is the young larva of a four winged sawfly. It eats the pulp of the leaves, giving the foliage a scorched appearance. It is a voracious eater and attains its growth in about three weeks. When full grown it leaves the bushes and burrows into the soil an inch or two where it spins around itself a cocoon of silk mixed with particles of earth. It remains in the cocoon until the next spring when it emerges a fly.

Spray with hellebore or insect powder for the slug.

The rose-leaf hopper is another serious pest of the rose. It is a small whitish insect. The adult is a little more than one-tenth of an inch long, with a yellowish white body, and white semi-transparent wing covers. It has long hind legs, by means of which it is enabled to make tremendous leaps when disturbed.

The hopper can be more easily destroyed while small than when fully developed. Spraying with tobacco either in the form of a powder or a decoction is to be recommended.

Hybrid Perpetual, or Hybrid Remontant Roses.

These roses are not constant bloomers. They make a gorgeous display in May and June, and most varieties a second crop of flowers in September and October.

The Hybrid Perpetuals are the most valuable of all hardy roses. They are admirably suited to garden culture for beds and borders, and for rose hedges. They require a deep rich soil, and should have a sunny exposure to obtain the best results

While Hybrid Perpetuals are regarded as hardy, they are beautified by a mulching of leaves or straw manure placed around their roots in the late fall. In pruning cut back all the weakly shoots and shorten the strong canes to a convenient length. The pruning should be done before the buds start.

American Beauty—A new American rose. It is a strong, vigorous grower, and a very free bloomer. The buds are extra large, very full and double, and exceedingly sweet. The color is a dark, rich crimson, and most exquisitely shaded. The flowers are very lasting, often keeping fresh ten to twenty days after cutting. A desirable rose.

Annie de Diesbach—Introduced in 1858. It is one of the very best of this color, a beautiful shade of carmine. It is a seedling raised from *La Reine* and is very fragrant and hardy. A valuable garden variety and should be extensively planted. It does equally as well when grown in the house and forced into early blooming, it gives an abundance of the choicest flowers.

Caprice—Produced from the seed of the Arch Duchess d'Antrichie by Jas. Vick in 1889. Caprice is the only hardy rose that has any variegation in its flowers. It is distinctly striped and very showy and beautiful. It deserves to be largely grown.

Charles Lefebvre—From Gen. Jacqueminot and Victor Verdier. It is of a beautiful dark reddish crimson, in its velvety appearance resembles its parent, Gen. Jacqueminot. Large and beautifully formed, foliage and wood light reddish green, few thorns of light red. A magnificent rose.

Countess de Serenye—Introduced in 1874. A seedling from La Reine. It requires and merits a little extra care. Of a silvery pink often mottled, full, finely shaped, globular flowers of medium size. It does not always open well in wet weather, but is charming in the fall when others are done blooming. Valuable for prolonging the blossoming season and is decidedly one of the finest autumnal roses.

Dinsmore—Deep crimson. Produces an abundance of flowers throughout the entire season. Flowers very double. The plant is of a dwarf, bushy habit, every shoot producing a bud.

Gen. Jacqueminot—This rose is unquestionably the leader of the Hybrid Perpetuals. It is a beautiful dark crimson color, very velvety, of sturdy growth, "rich in bloom and powerful in odor." The great half blown crimson buds of this rose are unrivaled. It is said that a few days before one Christmas the only Jacqueminot buds to be found in the city of New York were sold to a customer for \$15 each, eight times their weight in gold.

Louis Van Houtti—A beautiful maroon, rather large size, full, of fine shape, and deliciously perfumed. Said to be the finest rose in this particular shade of color. Valuable for cutting for vases, etc.

Mabel Morrison—A sport from Baroness Rothchild. Flesh white, changing to pure white, in the autumn tinged with red, double, cup-shaped flowers, freely produced. Best of the white Hybrid Perpetuals.

Madam Chas. Wood—Flowers extra large, very double and full, and fragrant. Color bright, fiery scarlet, passing to a fine rosy crimson shaded with maroon, showy and handsome. It is a true perpetual bloomer. Hardy.

Madam Plantier—A general favorite, pure white, double rose. The plant is perfectly hardy, of bushy form, and produces an abundance of flowers in June. Desirable for cemetery decoration.

Madam Gabriel Luizet—Introduced in 1878. A rose that is worth growing for its foliage alone. It is not so fragrant as Mabel Morrison but is very valuable for its many good qualities. The flower is a beautiful blending of cream and pink. Keeps in color well and produces an abundance of flowers.

Magna Charta—From England. Introduced in 1876. Flower very large, finely formed and fragrant, of a dark pink color. Excellent for beds or masses. It is one of the easiest roses to grow.

Marshall P. Wilder—A fine rose of American origin. It is vigorous in growth with clean healthy foliage, large, handsomely formed flowers of a cherry carmine color. Continues in bloom long after other varieties are out of flower. It is one of the finest of the Hybrid Perpetuals.

Meteor—Of a beautiful, dark crimson color. Especially valuable for summer and fall blooming either in the greenhouse or open ground.

Mrs. John Laing—Awarded the gold medal in England for being the finest light colored rose. It is very prolific in flowers and a vigorous grower, hardy and free from mildew. With proper attention will give a crop of flowers every three or four weeks.

Persian Yellow—An old favorite variety. Deep, bright yellow, double, small, handsome. A very early bloomer. The finest hardy yellow rose.

Paul Neyron—Introduced in 1869. It is of vigorous growth with clean and lasting foliage. The growth inclined to be upright and the flowers somewhat fragrant, of a dark rose color. Said to be the largest in cultivation.

President Lincoln—Dark crimson, medium size, rich. A most prolific bloomer and should be in every collection. Hardy.

Victor Verdier—Introduced in 1852. Clear rose color, globular, fine form, and a free bloomer. It is a popular rose on account of the very few thorns and its beautiful color. The buds are numerous and very beautiful.

Bourbon Roses.

The Bourbon class is not as hardy as the Hybrid Perpetuals and require protection through the winter. They are continual bloomers, of vigorous, rapid growth, with rich, luxuriant foliage.

Blanche Lafitt—Pale flesh color, full and beautiful.

Hermosa—The hardiest as well as the best known of the Bourbons. Light blush or flesh color, large, full and double. A free grower and bearing a profusion of elegantly cup-shaped flowers.

Ohmar Pasha—Scarlet crimson, fine and vigorous. One of the very best.

Souvenir de la Malmaison—Pale flesh color, with fawn shade, very large, full and beautiful.

Noisette Roses.

The Noisette roses are much like the Teas. Although hardier than the Teas, yet they need some protection during severe winters. The flowers are produced in clusters. Finest of the continual bloomers.

Caroline Marinette—Creamy white, small and full, nearly hardy.

Cloth of Gold (*Chromatella*)—Rich deep yellow, large, double, fragrant, and a vigorous grower.

Lady Emily Peel—Has pure white flowers in large clusters. A free grower and for pillars.

Marechal Niel—Introduced in 1864. The finest of the Noisette class. Flowers of a deep yellow, very large, full. It should be planted where its long shoots can have support.

Woodland Margaret—Pure white, rather small flowers, a fine bloomer, plant dwarfish.

Tea Roses.

Tea roses are noted for their fragrance, fine form and rich, charming tints in their color. They are ever blooming if kept growing vigorously. These roses therefore require a rich well drained soil and thorough cultivation, as new flowers are produced as the plant grows. The best results are obtained when the fully opened flowers are kept cut off. The flowers are very large and delicate in color, varying from pure white to deep crimson. Nearly all of the Teas require winter protection. Teas are the most desirable of all roses for pot culture

The Bride—A lovely pure white rose of large size, very double, perfect in form, fragrant, and vigorous grower. A good summer bloomer.

Catherine Mermet—One of the strongest growers and free blooming of all the Teas. Bright flesh color with the same silvery lustre of the La France. The buds are beautiful and faultless in form.

La France (Hybrid Tea)—Delicate silvery rose, very large and full. An almost constant bloomer, equal in delicacy to a pure Tea rose. The most pleasing fragrance of all roses. A moderate grower. Semi-hardy.

Madam Welche—Flowers of great depth, fine, globular form, with broad, thick petals, color of deep amber yellow, deepening towards the center to orange or coppery yellow, delicately clouded with pale crimson, fragrant. The plant is a strong, healthy grower, producing an abundance of buds and flowers during the season.

Madam Joseph Schwartz—A strong and vigorous grower, and one of the hardiest Tea roses for out door bedding. The flowers are cup-shaped and borne in clusters. Color white, beautifully flushed with pink.

Papa Gontier—A magnificent red Tea. It is a strong grower with fine healthy foliage. The buds are of fine size and graceful form, with thick, broad petals of dark carmine crimson color changing to lighter shade in the open flower. An excellent winter blooming variety, and one of the best for out-door planting, opening up the flowers in beautiful shape when grown in the open ground.

Perle des Jardins—Introduced in 1874. It is of a beautiful straw color, sometimes deep canary, full and of fine form, stiff shoots or stems and very free flowering. It is indeed the "Pearl of the garden."

Sunset—Tawny shade of saffron and orange, very double and handsome, and beautiful, rich foliage. The flowers are large and deliciously scented. Plant strong and free growing, excellent for bedding out and forcing.

Polyantha Roses.

The beautiful Polyantha roses are a class of Japanese origin and of recent introduction in this country. The foliage and flowers are small. They are of slender growth and produce abundant clusters of beautiful little roses. The Polyantha roses, while not quite as hardy as some of the Hybrid Perpetuals, are excellent for out-door planting. They are also fine for winter blooming.

Cecil Bruner—Salmon pink, deep scarlet center. Flowers very small, delicately scented.

Clothilde Soupert—Flowers medium sized, very double, produced in clusters. Pearly white with rosy pink, but varying sometimes in the same plant from pure white to deep silvery rose. This variety is one of the most prolific bloomers of the Polyantha class. It begins to flower when but four or five inches high and continues without intermission throughout the season. An excellent bedding variety.

Crimson Rambler (climbing)—The finest climbing Polyantha. Plant vigorous and makes a splendid climber. It can also be grown in bush or pillar form. The flowers are lasting, of a beautiful deep crimson color. When in full bloom the entire plant is covered with great clusters of flowers, containing from twenty to fifty blossoms each. It has proven entirely hardy.

Jean Drivon—Color pure white, growth bushy, fine for pot culture. Jean Drivon is the largest of the Polyantha roses.

Mignonette—One of the most beautiful miniature roses. The flowers are borne in great clusters, often thirty to forty in each cluster. Flowers are full and regular, perfectly double. Color clear pink, changing to white, tinged with pale rose. A constant and profuse bloomer.

Parquette—An old standard variety. Flowers pure white in color, about one inch in diameter, borne in large clusters. Flowers much like the double flowering cherry. In bloom continually from June to November.

Perle d'Or—Buds of a beautiful nankeen yellow color with orange center, each petal is tipped with white changing to buff tinged rose in the open flower. Bush branching, blooming in clusters of ten to thirty flowers. Excellent for either bedding out or pot culture.

Climbing Roses.

For covering walls, trellises, old trees, buildings, etc., these roses are well adapted. The flowers grow in large clusters. The plants are of rapid growth and perfectly hardy.

Baltimore Belle—This is not quite so hardy as Queen of the Prairies and grown along with it produces a pleasing effect. The flowers are white with a tinge of pink in the center. Some sort of support should be provided and the pruning should be sparingly done, removing only a few of the shoots. After the flowering season is over, remove the old flower stems as they produce an unsightly appearance.

Crimson Rambler—From Japan. See description under Polyantha roses.

Gem of the Prairie—A cross between Queen of the Prairies and Madam Lafayette. It is a strong, vigorous grower with flowers much darker in color than those of the Queen, and quite fragrant.

Greville, or Seven Sisters—Crimson, changing to blush. Flowers in large clusters. Not as hardy as the Queen.

Mary Washington—A very hardy, ever-blooming climber, a remarkably free bloomer, producing medium red pure white flowers in large clusters. An extra strong grower when established.

Queen of the Prairies—A superb climber and a native of the western states. The Queen grows very rapidly making long, vigorous shoots, blooms rather late in the season and flowers last a long time. For porch or veranda decoration there is nothing superior to the Queen.

Yellow Rambler (*Aglaia*)—The hardiest yellow climbing rose. The plant, like the Crimson Rambler, is a vigorous grower. The flowers are well formed and very fragrant.

Moss Roses.

Moss roses are a favorite with everyone on account of their beautiful buds, which, for bouquets and cut flowers, are invaluable. Moss roses should receive high culture and close pruning, as they are subject to mildew. They respond to good treatment by an increased number and size of the flowers. They should be protected in the winter if in an unfavorable and bleak location.

Blanche Robert—Flowers pure white, large and full. Buds very beautiful. A rampant grower, being almost as vigorous as a climber.

Blanche Moreaut—"The queen of the Moss." Introduced in 1880. It is a perpetual and blooms in the autumn. Color pure white and both bud and flowers have quite an abundance of deep green moss. Needs high culture and close pruning.

Crested Moss—The most beautiful in bud of all the Mosses. Color deep pink, buds surrounded with a mossy fringe and crest. Very beautiful and fragrant. Growth slender.

Glory of Mosses—Pale rose, very large, full and beautiful.

Gen. Drouot—Deep crimson, very mossy, a free bloomer, dwarfish in growth, perpetual, very fine.

Henry Martyn—A very sweet and beautiful Moss. Strongest and hardiest among the Mosses. Buds almost hidden by lovely green moss. Color of flower light red. Very fragrant.

Luxembourg—Deep purplish crimson, large, cupped, a luxuriant grower and free bloomer

Princess Adelaide—Vigorous grower, pale rose color, and of medium size, good form. Prune closely and give high culture.

Perpetual White—Much like Princess Adelaide in growth and flower except it is pure white in color. Flowers grow in clusters.

White Bath—White, sometimes tinged with flesh, attractive both in bud and open flower. This is considered of the very best of the white Mosses.

DISTANCES FOR PLANTING.

Standard Apples	28 to 32 feet apart each way
Standard Pears and Strong Growing Cherries	20 " "
Duke and Morello Cherries	16 to 20 " "
Standard Plums, Peaches, Apricots, Nectarines	16 to 18 " "
Dwarf Pears	10 to 12 " "
Dwarf Apples	10 to 12 " "
Quincés	10 to 12 " "
Grapes	8 to 10 " "
Currants and Gooseberries	4 to 5 " "
Raspberries and Blackberries	2 to 4 by 5 to 7 feet.
Blackberries	2 to 3 by 6 to 8 feet.
Strawberries	See pages 48 and 49.

NUMBER OF TREES ON AN ACRE.

30 feet apart each way	50	10 feet apart each way	435
25 " "	70	8 " "	680
20 " "	110	6 " "	1210
18 " "	135	5 " "	1745
15 " "	205	4 " "	2725
12 " "	300	3 " "	4840

RULE— Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant or hill; which divided into the number of square feet in an acre (43,560) will give the number of plants or trees to the acre.



**Cannedy's Fruit Exhibit at County Fair, held
at Carrollton, Ill., Oct. 15-18, 1901.**