

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1902?

Indexed

LIBRARY
RECEIVED
★ AUG 30 1920 ★
U. S. Department of Agriculture.

DESCRIPTIVE LIST

INDEXED.

C. G. PATTEN & SON

NURSEY MEN

CHARLES CITY, IOWA

Hardy
New Fruits,
Trees,
Small Fruits,
Roses,
Flowering Shrubs,
Vines, Bulbs,
Etc.

Varieties Adapted to
East,
West,
and the
Extreme
North
and
Northwest.

ESTABLISHED IN 1866
STATE EXPERIMENTAL STATION SINCE 1883

Live Agents Wanted Correspondence Solicited

INDEXED

IND

INDEXED

ONE NURSERYMAN'S WORK

Valuable Experiments in Plant Breeding Carried on During Thirty Years by Charles G.

Patten, Charles City, Ia. As Seen by
Professor Craig.

The National Nurseryman—Professor John Craig, has removed from the position of head of the horticultural department of the State college at Ames, Ia., to the horticultural department at Cornell University, Ithaca, N. Y. One of his last contributions to the Central States press is an article in the Iowa State Register, which is an appreciation of what the well known nurseryman, Charles G. Patten, Charles City, Ia., has done and is doing for horticulture. He says:

"The state of Iowa holds a very enviable position in the horticulture of this northern and western part of fruit growing America, in regard to the progress and advancement it has made in ameliorating the native fruits and producing varieties better adapted to our prairie conditions than those brought in by the early settlers.

A glance through the volumes of the State Horticultural Society's report will show that work was commenced in this line as far back as thirty years ago. I refer now, not to haphazard seedling production, but systematic and well directed efforts, having for their purpose the production of apples and plums with characteristics that would tend to make them valuable for this climate.

"During the past ten years the writer has been interested in visiting some of the pioneer horticultural workers in this line throughout the state. These visits have greatly impressed him, because of the vast amount of work done and the really substantial progress which has been made. Another feature worthy of note is in the fact that thus far, very little has been given to the public with reference to the efforts of those individual workers in different parts of the state. They have throughout their lines of proposed investigation, carried these projected ideas into effect without state appropriation, without much encouragement either at home or abroad, and often at considerable financial loss and great personal inconvenience.

"I cannot refrain from drawing attention to the systematic experiments which have been carried on in this line for a period of thirty years by C. G. Patten, of Charles City, Iowa. A careful examination of his experimental grounds raised the character of this work in my estimation very considerably. Many fruit growers plant seeds in a haphazard way, and hope for desirable results. Mr. Patten's work has not in any sense been haphazard and the results which he has secured are not only valuable pomologically, but scientifically, because the facts relating to the percentage of the newly produced varieties have been carefully recorded.

"Mr. Patten's experimental grounds, where most of his plant breeding experiments are carried on, cover an area of six or seven acres. In this area are to be found a wonderful number of interesting object lessons. Here one may find the product of crosses and hybrids planted in regular series, as for instance hybrids with the Brier Sweet crab. More than a dozen of these crossed with Pound Sweet are fruiting and in the product is astonishing variation. We have beginning at the less valuable, an almost exact reproduction of the female parent Brier Sweet. Following this are others grading in size from a large Whitney to a good sized Plumb Cider. In most of these the crab characteristics are present; that is to say, the breaking and crisp

quality of flavor are there, and sometimes the long and slender stem, but in a few cases the seedlings seem to have entirely broken away from the crab and are apples in all characteristics of flesh and form. The valuable thing about this line of work is that these trees are apparently hardy and perfectly free of blight.

"Another interesting series are crosses between Fameuse or Snow and Duchess. These crosses show a great deal of variation. In one case a valuable apple has been secured. It is almost an exact repetition of the Fameuse, but the tree at Charles City where the climatic conditions are decidedly trying, appears to be perfectly hardy. Mr. Patten is propagating this variety, and is introducing it under the name of Brilliant. Combinations between Perry Russet and Northern Spy have been effected, which give promise of good things to come. Patten Greening, a cross between Duchess and Rhode Island Greening now introduced, is making a name for itself over northern Iowa.

Probably no one in the west has grown more seedlings of the Duchess than has Mr. Patten. Some curious results have been obtained in this connection. It has generally been supposed that Duchess is one of those fixed types which would invariably impress the offspring with its own characteristics, but a study of the fruiting seedlings on Mr. Patten's grounds will show that this belief is erroneous. It is true that some of them bear Duchess characteristics in color and in quality of flesh, but it is hardly possible to perceive in the majority of the Duchess seedlings any traces of the Duchess whatever.

Among the hundreds of hybrids fruited by Mr. Patten, there are a number he could not find it in his heart to throw away, and yet which had in them defects which prevented him from conscientiously offering them to the public as improvements over the old varieties. Many of these, however, are being grown profitably at Charles City, and are being marketed locally. This success raises the question as to whether it would pay fruit growers in new countries best to start their orchards in this way rather than purchasing named and grafted varieties of uncertain adaptability from the east.

"In the matter of plums the writer was able to test, in fact the amount of testing to be done far exceeded his capacity in that direction, a large number of seedling varieties. The first impression that one receives is the infinite possibilities of improving the native plum, and the second thought which comes to one is the ease with which the different types appear to interbreed. Mr. Patten is fruiting this year at least a dozen varieties which appear to equal anything in the named list of this season, that we have at the present time. Yet these will not be introduced, with but one or two exceptions but the seed of the best varieties might be secured, to be saved and planted. In this way the plum of the future will be produced. The types are being rapidly broken by new combinations being effected, and marvelous results are being secured. The Rockford plum introduced by Mr. Patten some years ago appears in a very favorable light as seen growing on his grounds. It has firmness and a sugary quality of flesh that is possessed by no other American plum so far as I know. Rockford would be a good variety to breed from, and Mr. Patten is pursuing his plum experiments with this thought in mind.

"This is but a brief summary of the work Mr. Patten has in hand, and it is given for the purpose of drawing attention to painstaking and conscientious effort for the purpose of giving credit where it is richly deserved."

DESCRIPTIVE LIST

C. G. PATTEN & SON

NURSERYMEN

CHARLES CITY, IOWA

Hardy
New Fruits,
Trees,
Small Fruits,
Roses,
Flowering Shrubs,
Vines, Bulbs,
Etc.

Varieties Adapted to
East,
West,
and the
Extreme
North
and
Northwest.

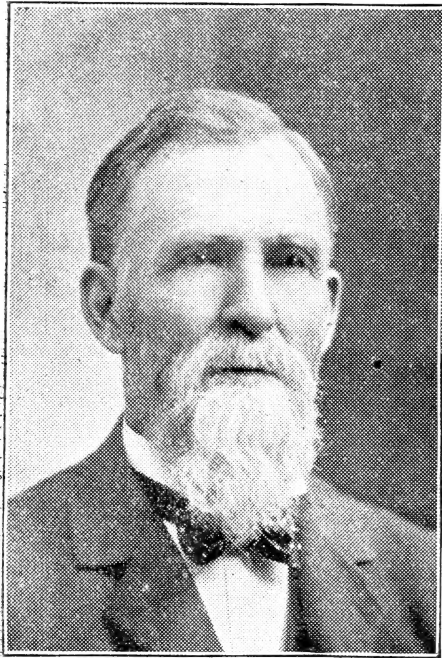
ESTABLISHED IN 1866

STATE EXPERIMENTAL STATION SINCE 1883

Live Agents Wanted

Correspondence Solicited

CHARLES CITY, IOWA:
SAM. G. SLOANE, PRINTER AND BINDER.
1902.



C. G. PATTEN.

**If you don't see what you WANT,
ask for it.**

NEW HORTICULTURE.

This is emphatically a New Era in horticulture. Never before in the history of any country has there been such activity along all lines of this most fascinating industry. Multiplied thousands of individual experimentors are ardently seeking to find or produce something better than the old.

State experiment stations are turning the eye of science upon everything pertaining to fruits and ornamental trees and plants to develop them into higher forms of use and beauty. Gigantic commercial enterprises are planned and carried forward with such rapidity and skill that where, fifteen years ago a single car was loaded with fruit, now there are whole train loads rushing to distant markets. "Already", says C. S. Harrison, of Nebraska, "the apple belt has been extended a hundred miles to the north by Gideon and Patten."

In California, Luther Burbank has charmed and enriched the field of horticulture with the magnificent fruits and flowers that he has produced, and has extended the boundaries of the evolution in plants until there seems to be no limit to the wondrous combinations that can be produced. What he has done with the mild climate fruits of California and Japan, we are trying to with the Apple, Plum and Pear for the North, and we are sure that our patrons will be glad to know of the New Century fruits that are being created.

Very truly yours,

C. G. PATTEN.

**SEND us YOUR LIST of WANTS
and we will MAKE YOU SPECIAL
PRICES.**

INTRODUCTION.

In presenting to the public this carefully revised descriptive list we desire to thank our customers for past favors, and realizing that a satisfied customer is our best advertisement we shall endeavor to satisfy all who may do business with us in the future.

Our location is one that has few equals in the state for growing hardy nursery stock. The senior member of this firm located here at Charles City, ninety miles west of the Mississippi and thirty miles south of the Minnesota state line, on the open prairies in 1866. On the original homestead there was nothing but wild crab and hazel brush. How he has changed it is fully attested by the magnificent groves of Evergreens, Black Walnut, Butternut, Elm, and large fine Orchards.

Shipping Facilities: Our shipping facilities are most excellent. We have access to eight different roads, thereby giving us the best of opportunities to ship anywhere and in any direction.

Three things are certainly necessary to the planter or purchaser of nursery stock if he would succeed. They are varieties true to name; hardy, healthy, vigorous, well matured trees and plants, and judicious and careful handling of stock. We furnish stock that has all these requirements. Right here we wish to say that we could not now do the mutually satisfactory business we are doing if we had not in times past furnished stock with all of these requirements.

Packing and shipping is given the most careful personal supervision. To protect our patrons from loss we employ skilled and experienced workmen, some of them being with us from eight to thirty years.

Selection of Varieties: By reason of our long experience in the business we feel sure that we are able to advise planters to some extent as to what they should plant, and where the selection of varieties is left to us we will fill the order to the very best of our ability.

Guarantee of Genuineness. We exercise the utmost possible care to have all the varieties true to name and label, but mistakes will happen in the most carefully guarded business, and upon proper proof we will replace the varieties free of charge, or the money paid for them will be refunded; but it is mutually understood and agreed between purchaser

and seller, that the guarantee of genuineness shall in no case make us liable for any sum greater than the original cost of the trees or plants that prove untrue.

Caution: We accept all orders on the condition that they shall be void should injury befall our stock from frost, hail, fire or causes over which we have no control.

Some Good Advice: Send in orders early, particularly if long transportation is necessary. Give shipping directions plainly. If none are given we will ship to the best of our knowledge. All orders from unknown parties should be accompanied by cash or reference. Any mistakes on our part will be promptly rectified if we are notified at once.

To Planters of Orchards: Families cannot be healthily reared without fruit. Good fruits are worth much more than it costs to grow them, and we must have them. The Iowa State Horticultural Society has experiment stations in different parts of the state (we have one of them) each one in charge of an experienced horticulturist. All new fruits and vines are tried in these stations and reported on. Therefore if some stranger offers new and untried fruits do not waste much money on them, but deal with reliable home nurserymen who have such things as the Iowa State Horticultural Society has tried and found worthy.

Soil and Site: Choose good soil, well drained, with a north or northeast slope if convenient. Avoid sandy knobs, bottoms or points. If compelled to use sandy ground plant from six to eight inches deeper than the trees stood in the nursery and mulch well each autumn with coarse manure.

Protection: A row or two of trees on the south and west to protect the fruit from being blown off is always advisable. And it also protects them from the afternoon sun of the late winter and early spring, therefore insuring with more certainty a full crop of fruit and vigorous, healthy trees. We advise protecting the trees with a tree protector of some kind to keep them from rabbits and mice. For this, wire window screen is the best; leave it on the year round.

Planting: If trees fail to succeed it is considered always in order to abuse the nurseryman. But remember if you plant carelessly you will always be the loser. Nothing can prevent it, not even abusing the nurseryman. Prepare the soil as you would for corn, lay off the rows north or south as you wish and open the row with the plow as deeply as possible, it saves half the digging. Have all the holes large enough so that all the roots can be spread out in their natural position. Never expose the roots to the sun or wind more than can be helped. Cut off all broken or bruised roots and shorten the tops to correspond with the loss of root in digging. Plant the heaviest part of the tree to the southwest and lean the tree considerably in that direction. Sift the soil in around the roots carefully, fill in all the crevices, when well covered tramp down solidly. Pour in half a pail of water and after it has soaked fill the hole with loose dirt to prevent it from baking. (DON'T FORGET ANY OF THIS.)

Cultivate Your Young Trees and Shrubs at least as well as you do your corn until July 1, then sow a cover crop of buckwheat, and in the winter mulch well, but do not get the mulch too close to the trees as the mice will eat them. If your work causes you to forget this, your trees will probably dwindle and die. In that case a great deal of satisfaction may be had by laying the blame on the nurseryman and buying the next trees somewhere else. Whoever sows grass in an orchard does the thing most certain to cause failure and his sins will surely find him out.

How to Winter Trees Procured in the Fall: The practice of procuring the supply of trees in the fall is becoming more and more general as each season demonstrates its wisdom, especially when distant from the nursery. To insure success you have only to get the trees before freezing, and bury them in the following manner: Chose a spot where no water will stand during the winter with no grass near it to invite mice. Dig a trench, throwing out enough dirt to admit the placing of one layer of roots below the surface and place the trees in it enclined to an angle of 45 degrees or more. Widen the trench inclining the tops upon the others and so on until all are in the trench, then finish by throwing up more soil until the tops are all or quite covered. It is also well to throw up dirt around the sides to insure more thorough protection. After the ground is frozen the roots should be covered with about six inches of some sort of mulch to prevent the ground from thawing in the spring. When taken out in the spring the roots will be found to be nicely calloused and ready to make a fine growth when planted.



APPLE.

There can be no doubt as to the great importance of this, the king of fruits, for Iowa. We have given hints for culture, and now present a list of carefully selected varieties.

Anisim, or Good Peasant. This, without doubt, is one of the most valuable of Russian apples yet introduced. Hardy, free from blight and good in quality. Its color is good, being splashed and striped with dark red, often covering the entire apple, medium in size, with oblong, conical form. Season here, November to December.

Arthur. Very hardy valuable annual bearer, pleasant acid, good size. November to February. The original tree bore here fifteen successive years. We consider this both in tree and fruit one of the best of our hardy varieties. Its foliage is perfect and free from blight. Elmer Reaves, nurseryman of Waverly, says of the Arthur: "I have two trees standing some distance apart, both have borne two years and are perfectly hardy and free from blight. The fruit is large and much resembles plum cider but is more acid. I believe that it will keep better than Wealthy. The tree is a good grower and productive."

Charlamoff. Probably of German origin. Tree hardy, fruit large and beautifully striped, slightly conical and ribbed, mild acid and pleasant eating. August.

B. D. Sweet. An undoubted cross between Ben Davis and Tolman Sweet. Tree a very hardy, vigorous, upright spreading grower, splendid foliage. Fruit good market size, good form, striped and splashed with red, crisp and sweet; a fine dessert and cooking apple. This is one of our new productions and we believe it to be the very best sweet apple for northern latitudes. Season October to January.

Ben Davis. Large, smooth, often polished, nearly covered with red; sub-acid and one of the most profitable market apples south. Tree vigorous, productive, and bears early.

Duchess of Oldenburg. The leading summer market apple of the northwest. A synonym for hardiness and productiveness.

Duchess No. 6. Originated by me in 1874, from Duchess seed. Tree very hardy and heavy, early bearer. Fruit very tender and fine grained, pear flavor. Finest eating of the season. September.

Fameuse. Tree medium, hardy, widely known, deep crimson, crisp, juicy, aromatic; late fall and early winter.

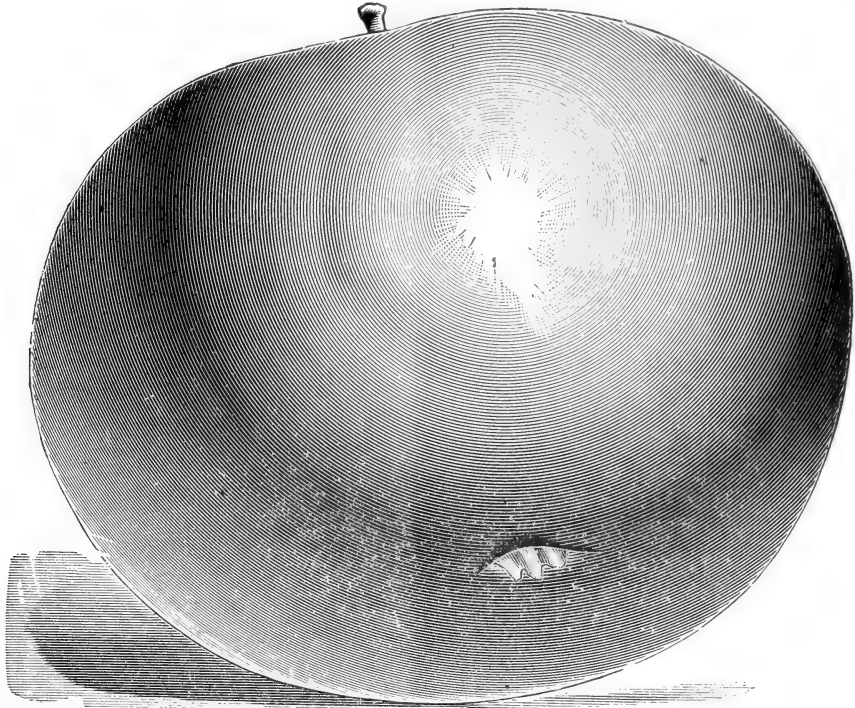
Hass. Medium to large, slightly conical, shaded and striped with red; tender, juicy, acid, good. Tree vigorous and hardy. October to December.

Hibernal. (Russian). Very hardy, rugged spreading grower, fruit large size, striped, quite acid, good cooking and market apple. Very valuable for the extreme north and for top working to less hardy varieties.

Kaump. Tree hardy, healthy, and very productive; fruit medium size, light green color, mildly acid, good for eating and cooking; a favorite in northwest Iowa.

Iowa Beauty. Originated by me in 1874, a seedling of the Golden Russet. Tree very hardy, splendid grower and fine form, rich glossy foliage, fruit large and very beautiful, striped and splashed with red on a light green ground, often with fine bloom, a good dessert apple, one of the best varieties, very fine for home and market. L. G. Clute, a large orchardist of Greeley, Iowa, speaks of it in the highest terms. Says that his Iowa Beauty brings him one dollar more per barrel than any other variety he has.

Longfield. Fully as hardy as Wealthy and a heavy bearer; fruit small to medium size, blush on sunny side, very tender, good flavor, one of the best of the Russians. October to December.



PATTEN'S GREENING.

Patten's Greening. A seedling of the Oldenberg, seed grown near Portage, Wis., and planted by me in the fall of 1869, transplanted in 1874, has only moderate cultivation and is now more than thirty feet in the spread of its branches. The original tree has born some fruit every year for twenty-two consecutive years, never failing entirely. It stands on trying ground, has made a fine growth after the severest winters, limbs strongly shouldered and fully as hardy in the orchard as

the Duchess. Fruit medium to large, often larger than Oldenberg, from light to dark green, sometimes shaded a little red, flesh half fine, a good eating and a superb cooking apple. Season generally November to January; in hot dry season earlier. In northern Wisconsin, Maine, Vermont and Canada it should be a good winter apple. Of all of the old and new varieties of its season, for hardiness, bearing and quality combined, it has no equal. In 1892 when the foliage of so many varieties was so severely injured, even the Duchess, this old tree was absolutely perfect in leaf and bore an enormous crop, holding it to perfect maturity, and surpassing any Duchess of Oldenberg of the same or any other age on my grounds.

Peter. A seedling of Wealthy. Originated by Peter M. Gideon. A fine upright grower, hardier than its parent. Fruit fine color and similar to the Wealthy in quality. October to December.

Perry Russet. Fruit medium to large, yellow, covered with fine russet, fine grained and juicy, very fine to eat from hand. Season from December to January.

Repka Malenka. The only long keeping apple of good quality among the Russians that are nearly hardy in Minnesota. It is of small size but keeps well, is much sought after of late in the north.

Rubets. Crigin Russian. A good tree, free from blight, earlier than Tetofsky, a third larger and of good quality. This is a very promising early apple.

Tetofsky. Hardy, slow upright grower, early and fair bearer. Fruit, medium size, striped with red and choice eating, but extremely perishable. July, August.

Tolman Sweet. Half hardy north, pale yellow, fine eating, sweet and only fairly productive here; decidedly more valuable for eastern Wisconsin than farther west. December to April.

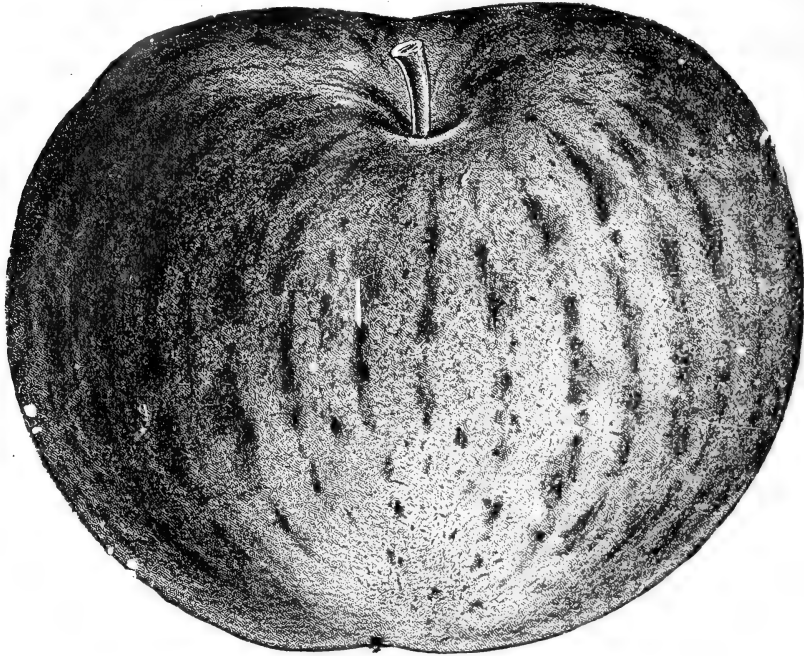
Malinda. A Vermont seedling of great hardiness, has born for years in northern Iowa and southern Minnesota. Trees at Rochester, Minn. twenty to thirty years old bear well every year. It is the hardiest of our long keepers. Fruit medium, conical, yellow, fine grained, and nearly sweet. A good eating apple from January to May.

McMahon. Originated in Wisconsin. Very large and nearly white, a good cooking apple, has proven more hardy than Fameuse or Hass here but blights some. October to November.

N. W. Greening. Of Wisconsin origin. A vigorous and apparently hardy tree. Fruit large and greenish yellow, mild acid and much sought after. December to April.

Wealthy. A beautiful red apple of extra quality. Tree hardy and productive, of acknowledged value in the northwest. October to December.

Wolf River. Originated in Wisconsin. Tree medium hardy, fruit very large, very showy, fair quality, essentially an exhibition apple.



PATTEN FAMEUSE.

Patten Fameuse. Originated here in 1874. A very strong spreading tree decidedly more hardy than its parent. Fruit large, finely colored and striped with red, constant and heavy bearer, fruit hangs well to the tree, agreeable acid and of fine quality, bears very young. Now in bearing 150 miles north and south and 300 miles east and west, and in every case has received the highest praise from those fruiting it. As a market apple it fills a place where such an apple is in great demand, namely just after the early apples and just before the average fall apples come on the market. It is an excellent cooking and dessert apple.

Walbridge. Fruit medium, striped with red, crisp, tender, juicy, tree vigorous, does best on marl, clay or soil underlaid with clay. December to March.

Thaler, or Yellow Transparent. Supposed to be of German origin. An early bearer, fruit light green to yellow. A very early summer apple, medium to large, good quality, and a good keeper for so early an apple. Most valuable on clay or marl soil.

CRABS AND HYBRIDS.

Alaska. One of the largest and best hybrids; sprightly, pleasant acid, striped, fully as large as Hyslop and of far better quality. November to January.

Briar Sweet. Fruit large, pale yellow, splashed with carmine, very sweet, good for preserving. Tree vigorous and productive. September-

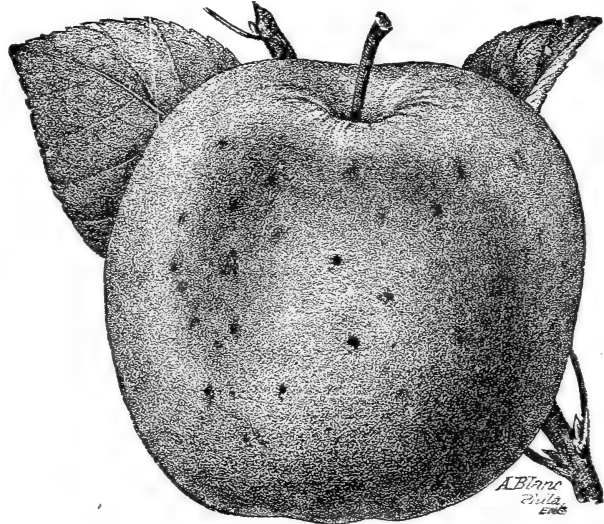
Early Strawberry. Fruit medium, highly colored, exceedingly tender, mild acid, fine eating or cooking, tree hardy and fine grower.

Hyslop. Red, not striped. Fruit large, roundish oval, produced in clusters, color dark rich red, covered with thick blue bloom. Flesh inclined to yellow, sub-acid. Tree hardy and vigorous but blights. November.

Martha. Hybrid, very large. Fruit beautifully shaped, pale red, mild, crisp and tart, excellent for culinary purposes and fair to eat from the hand. September to October.

Minnesota. Large, light green changing to yellow, good to eat from the hand and good keeper. One of the very best crabs. Free spreading grower and very hardy. November to January.

Sweet Russet. Very large hybrid, extremely hardy, fruit oblong, conical, light russet, very rich and sweet, one of the best, either for eating or cooking. August to September.



MINNESOTA.

Transcendent. Red and yellow, not striped, fruit medium to large. Flesh yellow and crisp when fully ripe, pleasant and agreeable. Tree hardy and a young and abundant bearer, but blights. September to October.

Virginia. Size of Transcendent, a month later, light red, sprightly, juicy, crisp, great bearer, fine market sort. Valuable tree on which to top work large apples.

Whitney No. 20. Fruit red and yellow, large size, flesh firm and juicy, fine eating. A great bearer and hardy. A fine vigorous and healthy grower. August.

PEARS.

This delicious fruit can be raised to some extent in the northern part of Iowa if they are planted with some protection on the northwest. A good location is on the north or east of other trees or grove. They should be well mulched and tops should be trimmed to fairly open heads.

Kieffer. Large; skin golden yellow, sprinkled with small dots, often tinged red on sunny side; flesh slightly coarse, an early bearer and profitable.

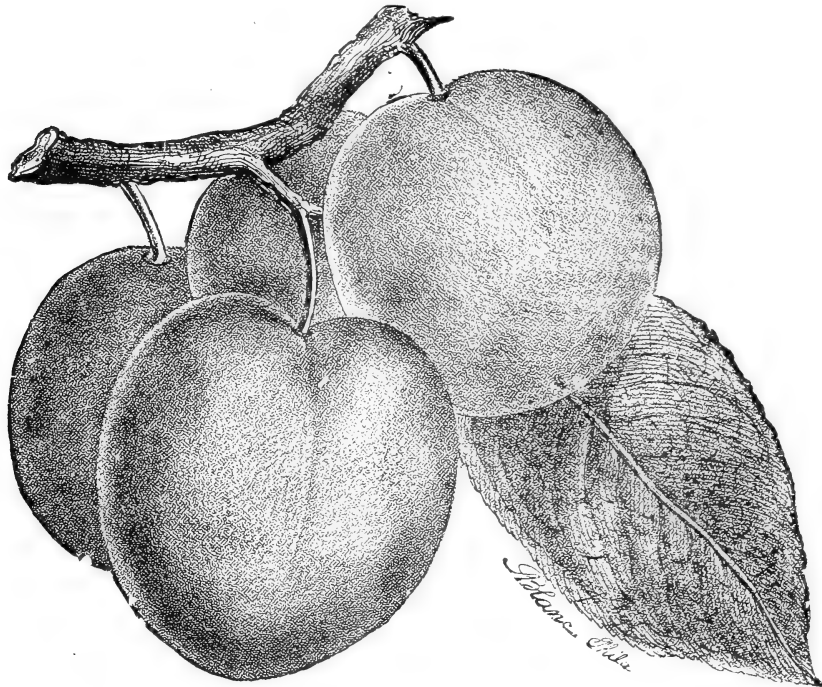
Longworth. This is a very hardy seedling pear of recent introduction; originated at Dubuque, Ia., and was grown from seed some forty years since by the veteran horticulturist, William Longworth. Fruit medium to large, nearly round, skin yellow with slight blush on sunny side, good. September.

Lincoln. Fairly hardy, productive, fruit medium to large, good.

Flemish Beauty. Large, pale yellow with light russet, very juicy and melting. October.

PLUMS.

This is one of the most reliable fruits in this climate. No one need go without plums, if they use the varieties named in this list. In planting be sure and plant several different kinds as some of the varieties have an infertile blossom. Plant closer than apple trees and cultivate, and mulch well to secure the best results, especially cultivate often in a dry season.



SURPRISE.

Surprise. A variety introduced at Sleepy Eye, Minnesota. Tree a beautiful, symmetrical grower, with fine foliage. Best plum yet introduced in that state, meaty, fine flavor, very large and red, with many light dots on the skin, hangs well to the tree, a good bearer and a good keeper, fine for culinary purposes.

Hawkeye. Tree a moderate grower with a broad, shining leaf, hardy and productive. Fruit extra large, dark red, handsome, good.

Miner. Medium, red, with firm flesh, productive, excellent for market, very late.

Cheney. Tree strong, upright grower, very early and a heavy bearer.

De Soto. Extensively planted. Fruit large, round and oblong, yellow ground shaded with crimson, skin thick, firm flesh, sweet, rich, medium to late.

Forest Garden. Medium, red, fine, very early. Hardy and profuse bearer.

Wolf. Vigorous grower and entirely hardy, abundant annual bearer. Fruit large, dark red, good quality, free stone. Extra fine for culinary purposes.

Stoddard or Baker. Large, round and red. Very productive. Tree and fruit closely resembles the Hawkeye but somewhat better quality and a good market sort.

Wyant. Irregular grower, vigorous, healthy, hardy and productive. Fruit large, pale red with bloom, pointed and excellent. Valuable for market and family.

Weaver. Large, round, oblong, purpleish red or yellow, free stone, very popular in certain localities, seems partial to certain soils.

Rockford. A native of Floyd county, Iowa. Medium, dark blue, closely resembles the Lombard, flesh firm, sweet, nearly free stone, a fine grower, perfectly hardy. Earlier than DeSoto, which stood late frosts better than any variety known. Our men say that when they have eaten all the other plums they can, that they can still eat a lot of Rockford.

German Prune. Medium, oval, purple, juicy, rich and fine. Tree very beautiful but not very hardy.

Red June. So far as we have tried is the most hardy of the Japan varieties. Fruit large and fine quality.

CHERRIES.

We may have all the cherries that we wish if we stick to the varieties that have proven to be hardy and productive. The Early Richmond is one of the best. Plant close north and south and cultivate well till after fruiting.

Early Richmond. Medium, bright red, melting, juicy, with sprightly sub-acid flavor.

English Morello. Nearly black, rich, juicy and solid. Very good, moderate grower and productive.

Montmorency. A fine, large red acid cherry, early, productive, hardy and valuable.

Ostheim. Fruit medium to large, dark purplish red, flesh very dark, with a pleasant, sweet and sub-acid flavor. Has proven quite hardy in Minnesota.

Wragg. Late, medium to large, strong stocky tree, quite hardy, very young and heavy bearer.

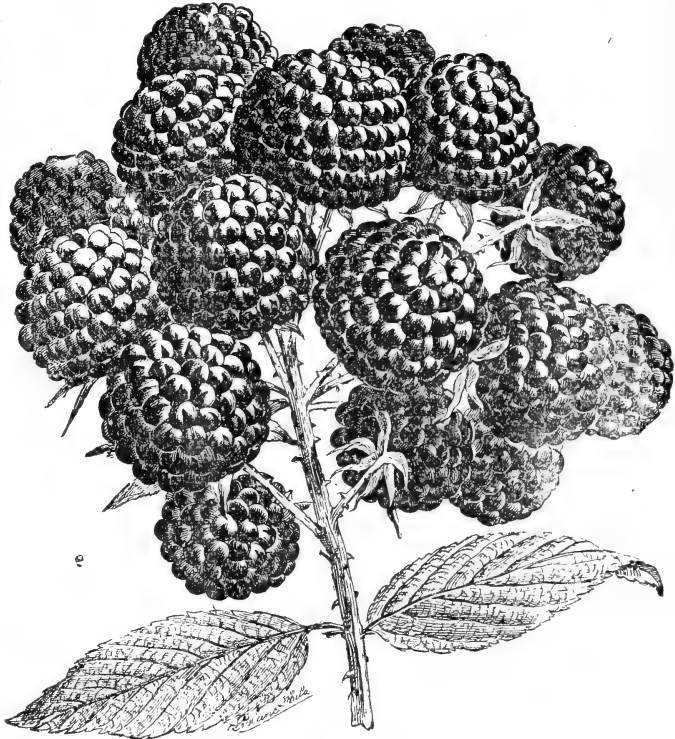
RASPBERRIES.

Any ground that will grow good corn will grow good raspberries. The plants should be planted about six to seven feet apart between the rows and two to three feet in the rows. Set the plants with the crown about half an inch below the surface.

Older—Black. Originated in Iowa and stood all of our severest test winters well. Coal black, as large as Gregg, and five days earlier. From its size, quality, hardiness and productiveness it should head the list.

Kansas--Black. Originated in Lawrence, Kansas. Healthy, vigorous grower, early berry as large as Gregg, and as good a shipper, very productive and valuable for market.

Gregg—Black. Well known, reliable, late, large, productive, a good shipper.



OLDER.

Columbian—Purple. Much like the Shaffer but firmer in fruit and slightly hardier in cane, sweeter and richer in flavor, good for market and home use.

Shaffer's Colossal—Purple. Fruit large, soft and slightly sub-acid, an abundant bearer, very fine for home use.

Cuthbert—Red. Very large and handsome, of good quality ripens a little late and continues in fruit a long time. This is an old stand-by, and is a good market sort. It should be covered for winter in prairie sections.



COLUMBIAN.



LOUDON.

Loudon -Red. The most promising new red raspberry. Some of its good points are its vigor and hardiness of plant, beautiful rich color of fruit, good quality and wonderful productiveness. A fine market sort.

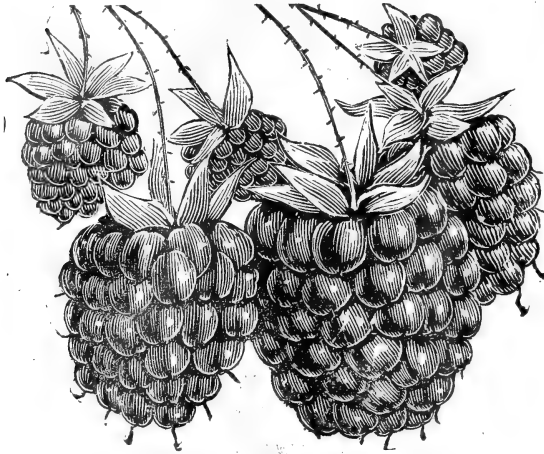
Miller -Red. Fair quality and very long fruiting season. Bright red, good size and hardy cane.

BLACKBERRIES.

The care of these is about the same as raspberries only they should have some shade to obtain the best results. Pinch back the young canes about two feet from the ground so as to make them throw out laterals.

Ancient Britton. Large, productive and 'sweet. Somewhat later than the Snyder.

Lucretia Dewberry. A trailing blackberry, easily protected in winter on account of its low growth. Fruit of the very best quality. Most successful south.



SNYDER.

Snyder. Strong grower, very productive and sweet, hardiest of all. Has proven its value and should be planted more than any other.

STRAWBERRIES.

This delicious fruit can be grown on a great variety of soil, but good upland well manured is the best. We pack our strawberries in moss and burlap if in small quantities, but pack in boxes if in large, thereby insuring their reaching the customers

in good condition. The plants should be planted about three to four feet apart between the rows and about fifteen to twenty inches in the row. Set the plants with a spade, spread the roots out fan shaped against the square side of the hole, straighten them down their full length, letting the crown come just even with the surface, and give good culture during the season. As soon as the ground freezes cover lightly with straw, and rake it off in the spring leaving it between the rows. We list some of the best varieties tested. Those marked (P) are pistillate or imperfect blossoms, and those marked (S) are staminate or perfect blossoms and must be planted together to have success.

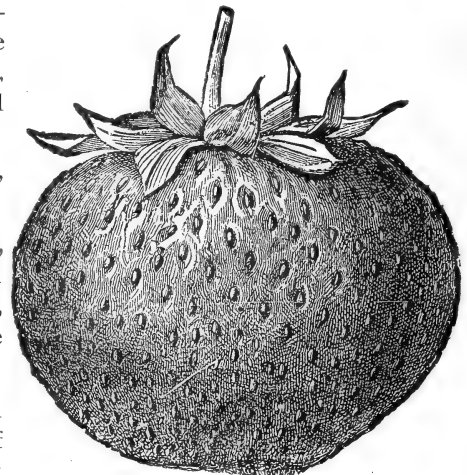
Crescent. (P). Medium, conical, bright scarlet, firm and of good quality, ripens early, plants vigorous and productive.

Bederwood. (S). Plants very vigorous, hardy and productive, one of the best pollenizers. Fruit large, roundish, bright scarlet, firm and of good quality.

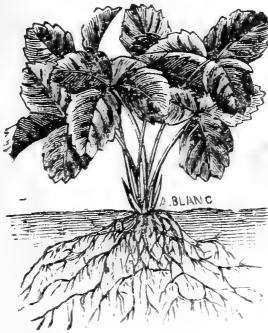
Manwell. (S). Very large, deep red, good market sort, plants vigorous.

Warfield. (P). Vigorous and hardy, enormously productive, blooms and ripens with the Crescent. Fruit large, glossy red, firm, of high quality, one of the best for home or market.

Splendid. Resembles Crescent in plant, growth and fruit, and is of better size and quality, a good market sort, very productive. Plant is a



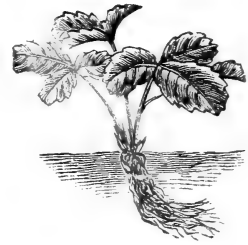
BEDERWOOD.



Strawberry Plant.
Proper way to plant.

healthy, luxuriant grower. This berry has been tested by many of the berry experts all over the country.

Clyde. (S). Plant very vigorous and healthy, foliage light green in color, strong plants with an abundance of long roots, nearly as large as Bubach, a week earlier and very much firmer; good market berry.



Strawberry Plant.
Improper way to plant.

CURRANTS.

Currants do the best on a cool, deep soil with some shade, but will thrive with good culture in any soil. Use plenty of manure and the following varieties will prove satisfactory:

Cherry. Moderately hardy, bunches short, large, late and good.



Fay's Prolific. As large as Cherry, less acid, more prolific, hardy.

Long Bunched Holland. Valuable for its vigor, productiveness and late keeping, qualities good, quite acid.

Pomona. The best and most promising currant yet introduced into the northwest. Of good size and attractive, color a clear, bright red, has but few and small seeds, is

sweeter than the common sorts. Carries well to market and sells for the highest price. The leaves endure our hot suns better than most sorts, thus keeping the bushes far more healthy and fruitful. It is going to be very extensively planted by enterprising planters.

Victoria. Large, bright red, bunches very long, late, productive and valuable.

White Dutch. Productive, excellent, not so tart as Red Dutch.

White Grape. Very large and excellent; the very best table variety.

Red Dutch. Old well known sort, of good quality, a great bearer.

London Market. A fine new variety, a vigorous grower, large fruit, and very productive, holds its foliage late.

Black Naples. Best black currant, much esteemed for jellies and medicinal purposes.

GOOSEBERRIES.

The Gooseberry should have about the same soil as the currant and about the same care is recommended.

Columbus. Magnificent, new, extra large, white, good bearer, bids fair to be of great value. So far the largest of American sorts we have tried, and the strongest grower.

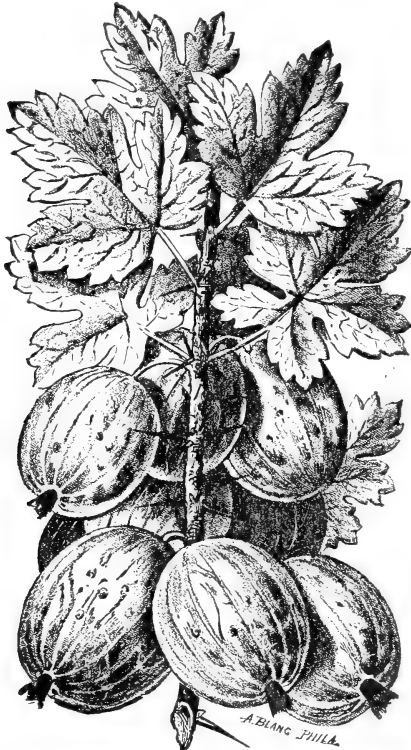
Champion. Not quite so large as Downing; a fine, healthy, vigorous grower. Free from mildew and productive. It is sweet and of good flavor, hardy.

Downing. Fruit large, flesh whitish green, soft, juicy and good; plant vigorous and productive; one of the very best.

Houghton. The old well known sort, sweet and good. It is rather small but a very productive and reliable gooseberry; very hardy.

Pearl. This very reliable American sort is a cross between the Houghton and one of the very large English varieties, hardy, free from mildew, of good size and quality and more productive than Downing.

We have in stock other varieties which space will not allow us to mention. If you don't see what you want, call for it.



HOUGHTON.

GRAPES.

Grapes appear to be satisfied with the west for a home. With our deep soil and fine atmosphere it reaches almost to perfection. There is scarcely a yard in city or country that has not room for a dozen or so of these vines of this delicious fruit. They do very well trained up on trellises, sides of buildings or fences.

Make the soil mellow and plant somewhat deeper than they stood in the nursery. They should stand about eight feet apart along the fences or buildings and six to ten feet apart in the rows. North of central Iowa most sorts must be laid down in the fall. Cover with earth, sods or litter.

Agawam. Large, handsome, fine, dark red berry, very good, vinous and refreshing. Vines very vigorous and strong, healthy grower, bears an abundance of large bunches.

Concord. The grape that stands on a great variety of soil and does well. Large, nearly black, hardy, productive and rather late for northern planters.

Campbell's Early. This grape was produced by a determined effort to produce one that had all of the Concord's good qualities and none of its poor ones. The special merits claimed for this grape are a strong, vigorous, hardy vine, thick, mildew resisting and abundant foliage, abundant crops, very large, shouldered and compact handsome clusters, season very early, will hang upon vine sound and perfect for six weeks. A good shipper. Berries large, nearly round, often nearly an inch in diameter, black with a light purpleish bloom, skin thin but very tenacious, bears handling and shipping admirably, flesh firm, tender and of equal consistency, few and small seeds, rich flavor, sweet and slightly vinous.

Green Mountain. Claimed to be the earliest, hardiest and best yet produced. Vine very strong, productive. A very fine white grape, thin skin and fine quality.

Moore's Early. A pure Concord seedling. The earliest, very large, good grape in cultivation. Fully two weeks earlier than Concord, which is a high recommendation for northern latitudes. Vine hardy, berry large, black with blue bloom, flesh pulpy and of good quality; should be in every garden.

Moore's Diamond. Very hardy and extremely prolific, bunches very large and compact, berry greenish white tinged with yellow, about the same size as Concord. In quality it is claimed to be superior to any other white grape. It ripens somewhat earlier than Concord. Does best east and south.

McPike. A very desirable new grape. Said to be a seedling of Worden which it resembles in color, quality and time of ripening. Bunches large, berry very large and fine, sometimes an inch and more in diameter.

Niagara. White, bunch medium, berry large, skin thin but tough, vigorous and healthy, very good quality, ripens with Concord.

Worden. A seedling of Concord, handsome, healthy, early and vigorous. Productive with larger and longer bunches than its parent. Better in quality and ten days earlier.

We also have in stock Lady, Janesville, Clinton, Delaware and Pocklington.

MISCELLANEOUS FRUITS.

High Bush Cranberry. A very handsome bush growing 4 to 5 feet high with fine clusters of red berries, hanging on all winter and making a very handsome appearance. Very hardy and should be planted more than it is. Fruit is much esteemed by some for sauce.

Dwarf Juneberry. A fine substitute for the swamp Huckleberry or Whortleberry which it resembles. The reddish purple fruit is about the shape and size of the currant, borne in clusters, a mild sub-acid, and used for dessert and canning. The bushes are very hardy and stand the exposures of the north and the heat of the summer equally well. The berries are much larger than the wild Juneberry and the bush is quite ornamental.

Russian Mulberry. This very vigorous and fairly hardy tree was first recommended for its fruit and for timber. It is worth little for those purposes, but seems to be the best thing for a quick growing snow break, and to furnish a fruit that is eagerly sought after by the birds, thus saving cherries and other valuable fruit.

Rocky Mountain Cherry. From the mountains of Colorado. Very hardy, with deep green willow like leaf, it has a mass of purple like blossoms in the spring and a mass of fruit in the summer. Some of selected varieties will no doubt come into cultivation in the prairie sections.

Barberry. Common and purple, very hardy, makes a first rate hedge on account of the thick thorns that grow on them, when full grown nothing will go through it. The fruit is much esteemed by some for jelly. The Purple Leaf makes a first rate ornamental plant.

ROSES.

No home is fully a home without at least a few of these beautiful flowers. Given ordinarily good care and plenty of manure they will repay you. Do not let them get sod bound. All roses in this climate are benefited by being layed down, but some of those we list will do without. The more care you give the rose the better it will bloom and prosper and you will be happy accordingly.

HARDY CLIMBING ROSES.

Baltimore Belle. Pale blush, nearly white, very compact and double.

Russell's Cottage. Dark crimson, very double and full, extra strong and rampant grower.

Seven Sisters. A splendid rose blooming in clusters, crimson changing all shades to white.

Prairie Queen. An old standard variety and one that will always be popular. No collection of hardy climbing roses is complete without it. Bright rosy red, large compact and globular flowers.

Crimson Rambler. One of the best of the climbing roses, very rapid grower, abundance of double crimson flowers, should be planted extensively.

HARDY HYBRID PERPETUALS.

Anna de Diesbach. Brilliant rose color with long pointed buds, one of the best in its class.

Black Prince. Dark crimson, shaded black, sometimes very fine.

Duke of Edenburg. Large, full, bright scarlet crimson, shaded to maroon, valuable.

Gen. Jacqueminot. Dark red, a fine bloomer, one of the very best to grow.

Gen. Washington. One of the freest blooming roses of this class, perfectly double, soft scarlet, shaded to crimson.

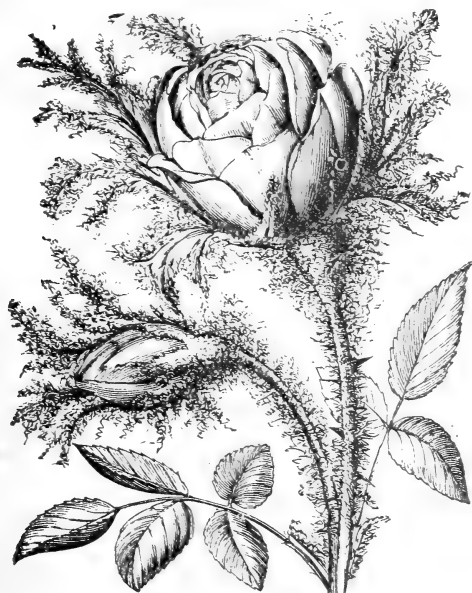
Harrison Yellow. A golden yellow, blooms early and abundant, very hardy.

Madam Plantier. Pure white, double, free bloomer, very desirable and fairly hardy.

Magna Charta. A general favorite, bright healthy foliage, beautiful pink.

Marshal P. Wilder. One of the best, dark red, large perfect flowers, very fine.

Mrs. John Laing. A grand free blooming perpetual, delicate pink with satin cast.



HENRI MARTIN.

Paul Neyron. The largest flowered in cultivation, and one of the most prolific bloomers. We always recommend Paul Neyron when a good pink rose is wanted.

Rosa Rugosa. A hardy rose of vigorous growth, thick leathery wrinkled glossy foliage and large fragrant, crimson single flowers. The buds of this rose are long pointed and very handsome. The bush merits a place in clumps of shrubbery on the lawn.

HARDY MOSS ROSES.

Henri Martin. Large, full, sweet, rich glossy pink, tinged with crimson.

Luxemburg. Bright crimson, large, and beautifully mossed.

Princess Adelaide. Fine, large, very double, rosy pink and very fragrant.

HARDY TREE ROSES.

We have these novelties for sale at a nominal price. They are the same varieties as are listed in other hardy sorts but grafted on stocks about four feet high. They are very attractive and desirable.

HARDY TREES AND SHRUBS.

While most people admire well arranged and well kept grounds they somehow fail to recognize that it is within their power also to have them. You cannot have a fine horse and not take care of him; neither can you have a fine home and not do the same. And aside from the enjoyment that comes from having fine trees, shrubs, flowers and vines around a home it adds to its commercial value. In our work among the farm people we have often heard a man say, "Well, it is that handsome wind break on the north and west of their barn and orchard that sold it for such a price as that—for you know that my land is just as good as his, but I can't get any such price." It is the same in the city or town. If a man has a fine house and no trees and flowers he cannot get the price that the man can that has his lawn already beautified. We have seen lots well planted sell readily for a good price while those unplanted would go begging for buyers.

DECIDUOUS ORNAMENTAL TREES.

Birch, White. A beautiful native tree of our northern woods. Its silvery white bark and dark brown branches make it a conspicuous and very attractive object.

Birch, European White. Very similar to our native birch, a little more weeping but not so large as our native trees.

Black Walnut. Native of our forests and one of the noblest of our native trees, makes fine groves, and profitable both for the fruit they bear and for the fine timber they produce.

Butternut. Native of our forests, almost the same may be said of them as the above. The fruit is of somewhat finer quality.

Catalpa. From hardy northern grown seed, 50 per cent more hardy than from ordinary seed. Very large leaves, immense bunches of beautiful flowers in July. The timber of this tree is used for cabinet work to considerable extent.

Chestnut, Horse, White Flowering. The best known of the Horse Chestnuts, of handsome regular form, ultimately reaching a large size. In May is covered with large spikes of beautiful white flowers dotted with red and yellow. A beautiful tree for park or lawn when planted singly.

Elm, White. A noble drooping spreading tree of our native forests one of the best for avenues or drives.

Elm, Cork Barked. A very fine elm of our native forests, very beautiful and symmetrical. A marked contrast with the White Elm, has more the form of the Sugar Maple.

Linden, American. A remarkable growing, large sized tree with a straight trunk, deep green heart-shaped leaves, and clusters of fragrant yellow flowers. A native of our woods and will grow almost anywhere; makes a very handsome shade tree.

MAPLES.

Silver Leaved. (Soft.) Leaves white underneath, of rapid growth, very ornamental and one of the best street trees we have.

Sugar Maple. A beautiful, stately tree of fine form, and a desirable shade tree.

Mountain Ash, Oak Leaved. A fairly hardy tree of pyramidal habit, foliage deeply lobed, bright green above and downy beneath. One of the finest lawn trees.

Willow, Laurel Leaved. A fine, large growing tree attaining a diameter of from two to three feet, with leaves of the finest glossy green, a beautiful-spreading grower, the finest of the willows.

Willow, Golden. A very ornamental tree of fine form with a fine golden colored bark, hardy, and the most attractive, while young, of the willow family.

Ash, White. A native of our forests and one of the finest for street planting, very hardy and a fine grower. Should be planted for groves and wind breaks also. The timber is of the best quality.

WEEPING TREES.

Cut Leaved Weeping Birch. Erect, stately, rapid growing tree, with long slender pendant branches, delicate cut leaves and silver white trunk and branches, especially attractive when near evergreens, very hardy. The most elegant weeping tree we know of.

Mountain Ash, European, Weeping. A strong grower, remarkably pendant, very hardy here.

Kilmarnock Weeping Willow. One of the very best weepers, but the stock upon which it is budded is not considered hardy.

Tees Weeping Mulberry, Russian. The weeping variety of the well known Russian Mulberry, very graceful and grows to the ground, the finest low headed weeping tree that we know of. Should be planted on every lawn. It is sometimes necessary to cut back the fine branches in early spring in the north. Fairly hardy.

DECIDUOUS ORNAMENTAL SHRUBS.

Acacia Rose. This is one of the finest old shrubs in cultivation, hardy and a perfect blaze of beauty when in bloom.

Almond, Dwarf Flowering Pink. One of the finest old shrubs and very popular, and should be more generally planted.

Almond, White. Same as the pink only more beautiful.

Caragana. A very hardy bush, growing five feet in height, of erect habit, a very profuse bloomer in late May and the first three weeks in June, with pretty, showy blossoms.

Golden Elder. Large showy shrubs with a mass of snowy white blossoms, and carries a rich golden foliage all summer. It is a most beautiful shrub, especially when it has a back ground of green.

Honeysuckle, Pink and White. One of the old very hardy shrubs. A beautiful thing with its masses of pink and white bloom, very showy and attractive.

Hydrangea. One of the most desirable shrubs. Flowers white and in great panicles a foot long, in August and September when flowers are scarce and blooms a long time. Hardy and should be universally planted. Water heavily before the ground freezes.

Japan Quince, Scarlet. Profuse bloomer with scarlet blossoms in long succession. One of the finest shrubs.

Lilac, Common Persian and White. These are some of the old-time flowers, but have not outgrown their welcome among us. The white and Persian are especially fine, and there is nothing the children like better than to get their hands full of these beautiful flowers. Very easily grown and require very little care.

Spirae Vanhoutti. One of the finest of our flowering shrubs. In June it is fairly covered with a mass of white bloom most beautiful to see. There is nothing finer than a hedge of this shrub, or single bushes as they grow almost perfectly round and attain a height of four or five feet unless kept down. Every lawn should have one or more of this fine thing.

Spirea, Golden. A new novelty, very pretty. One of the best of the golden leaved shrubs and should be generally planted for lawn purposes.

Spirea, Fragrant. This is one of the hardiest of our shrubs and very fragrant, has a mass of white bloom and is much esteemed by those that have it. Very hardy and should be extensively planted.

Spirea Grandiflora. Nearly the same as the above only with very much larger blossoms, very hardy.

Syringa, Grandiflora. This is one of the finest flowering shrubs grown, beautiful white blossoms covering the whole bush. Very hardy and fine.

Syringa, Fragrant. Smaller than the above and very fragrant and fine hardy.

Snowberry. A good shrub with white blossoms in summer and white berry in fall and winter. Quite attractive and fairly hardy.

Strawberry Tree, or Euonymous. This bush or dwarf tree is a great novelty as it retains its masses of scarlet berries all winter when there is so little to remind one of the summer days that are gone, perfectly hardy and grows to a height of from five to eight feet.

Snowball. This bush is so well known that it needs no description, very fine for lawn or cemetery purposes.

Weigela. Moderately hardy with profuse trumpet flowers in May. The most superb shrub of the season.

EVERGREENS.

No one thing adds so much to the value, comfort and looks of a place, not even a fine house, as groups, or fine single specimens, and wind breaks of well grown evergreens. No forlorn looking horse or shivering animals are seen on a place surrounded by this noble class of trees. Such a farm always sells for a price that shows that such things are appreciated. We handle our evergreens in such a manner that they should surely grow if given the required attention by the planter. In planting never expose the roots to the wind or the hot sun; make a mud batter and dip the roots into it; then plant about as deep or deeper than they were in the nursery, cultivate well and mulch close to the trees as soon as planted and they will surely reward your care.

Arbor Vitae, American. One of the finest evergreens for screens and hedges. Grows very rapidly and soon forms a beautiful hedge.

Arbor Vitae, Globosa. A dense round growing variety, hardy and very desirable.

Arbor Vitae, Pyramidalis. The most beautiful of the Arbor Vitae. Grows rather tall and slender in the form of a pyramid.

Balsam Fir. A handsome, compact, erect, pointed tree with short, soft leaves which are dark green above and silvery beneath. A good grower.

Black Hill Spruce. Very slow grower, dark green foliage, very symmetrical, compact. Excellent for lawns. Hardy.

Norway Spruce. A lofty, elegant tree of perfect pyramidal habit, very popular and should be more planted. Fine for lawn or windbreaks.

Colorado Blue Spruce. A rare, elegant tree with foliage of rich blue. One of the most distinct and striking of the spruce family, a dense grower and perfectly hardy. The finest tree for the lawn we know of.

White Spruce. A pyramidal tree of dense growth with light silver green foliage. A more compact tree in all respects than the Norway. Fine for lawn planting and for general use. Very hardy.

Pine, Austrian. A remarkably robust, hardy, spreading tree, leaves long and stiff, dark green. Rapid grower and valuable; improves with age.

Pine, Scotch. A robust, rapid growing tree, very hardy. Makes one of the best wind breaks for the prairies.

Pine, White. It is the most ornamental of all the native pines. Foliage a delicate light silvery green. Flourishes in the driest, poorest soils and is easily transplanted.

Pine, Ponderosa. Heavy wooded pine, rapid grower, forms a tree of great size. Valuable tree for north and northwest.

Juniper or Red Cedar. A well known American tree with deep green foliage. Fine for hedges or single trimmed trees, easily transplanted and very enduring. All evergreens must have the roots kept fresh and moist.

FLOWERING VINES.

Clematis Jackman ii. This plant is a strong grower and an abundant bloomer from July to October. The flowers are large and of an intense violet purple color, remarkable for their velvety richness. It has very few equals.

Clematis Henry ii. One of the largest perpetual hybrids, of robust habits and a free bloomer. Flowers large and a beautiful creamy white. From July to October. These two Clematis are at their handsomest when planted side by side.

Clematis Paniculata. Is an introduction of recent years and has given good satisfaction. The flowers are pure white and borne in clusters. A rapid grower and profuse bloomer.

Clematis Viticella. A good variety, flowers in abundance, of a bright wine red color. A strong, free grower.

We have on our list other Clematis also, and will be pleased to give whatever information about them we can.

Celastrus, or Staff Tree. Bittersweet, a unique climber with a pretty red berry in autumn and winter.

Honeysuckle, Scarlet Trumpet. A strong, rapid grower with beautiful scarlet trumpet-shaped flowers; blossoms nearly all summer. Hardy.

Honeysuckle, Yellow Trumpet. The same as the above but with yellow instead of scarlet flowers. Hardy.

Virginia Creeper, Ampelopsis. A very rapid grower having very beautiful dark green foliage, which in autumn assumes the most brilliant hues. The vine is the best calculated in this country to take the place of the English Ivy, and is in summer not inferior to it. One of the best climbing plants, hardy everywhere.

Wisteria, Purple. A rapid grower, hardy. A most superb climbing vine with purple flowers sometimes twice a season.

Wisteria, White. About the same as the purple only it has white flowers.

PEONIES.

We have on hand a very fine list of Peonies in a good variety of color such as pink, white, red, dark red, white with red center, red with white center. Very early dark red with single petals.

LILIES.

Auratum. This superb lily has flowers from six to eight inches long, having a bright golden band through the center of each petal.

Lillium Candium. This is the well known white lily, with large racemes of large snowy white fragrant blossoms. Moderately hardy.

Lillium Longiflorum. Large, beautiful, trumpet-shaped snowy white flowers, very fragrant and hardy.

Lillium Rubrum. This has carmine spots on rose tinted ground, very beautiful and extremely hardy.

Lillium Umbellatum. Tiger Lily, well known, spotted, never fails.

Lemon Lily. Pure lemon color, earliest in bloom, very fragrant and absolutely hardy.

Lily of the Valley. One of the most charming spring flowering plants. Bell-shaped, delightfully fragrant small white flowers.

FLOWERING ROOTS.

Bleeding Heart. A beautiful border plant, with brilliant rosy, heart shaped flowers, blossoms in great profusion on gracefully curved stems from May till June.

Dahlia. We have a good assortment of these flowers at hand in assorted colors.

Perennial Phlox. These flowers are produced in immense masses of bloom from the purest white to crimson. They grow about two feet in height and are very hardy. A good assortment always at hand.

GARDEN ROOTS.

Asparagus. This should be in every family garden; hardy, no trouble to care for it, and one of the finest of early spring vegetables, coming just when all are wishing for something out of the garden.

Rhubarb or Pie Plant. One of the finest of the early garden plants for sauce. Should be in every farm garden.

Horse Radish. Too well known to describe, very fine when grated for meats.



RECOMMENDATIONS.

We wish to say in regard to these recommendations that they are bona fide, and any one writing to these parties with a stamp enclosed we feel sure will get a reply. Some of these letters we have given only in part as we were crowded for room.

EXCELSIOR, MINN., February 2, 1899.

Dear Sir: Coldest here for many years; 40 degrees below zero. Peerless, Malinda, and other kinds injured but Patten Greening all right.

Again under date of August 17, 1897.

Dear Sir: I am pleased to say that the trees I have received from you are the finest trees I have ever received from any one. No signs of blight on any of them and not a bud has killed.

Yours truly, A. D. LEACH.

MARCUS, IOWA, June 23, 1896.

I like your Greening and wish I had planted two hundred trees of them.

M. E. HINKLEY.

WEST SALEM, WIS., October 2, 1899.

I had some very large Patten's Greening this fall, over one pound each. They stood the winter well and bore well.

A. J. PHILLIPS.

MADISON, S. D., September 1, 1898.

The Rockford is fine this year and stands drouth better than most kind.

A. NORBY.

TACOMA, WASH., January 22, 1900.

The Patten Greening trees did fine under unfavorable condition, and I think well of them.

P. N. ELMORE.

GREELEY, IOWA, September 30, 1896.

Hon. C. G. Patten: I write you to say that the Patten Greening trees I got of you five year ago have done well, they have done the best of any trees of their age I have ever set in the forty-three years I have been growing trees in Delaware county. Very many of the trees had on more than four and one-half bushels of apples at the time of picking. I filled a half bushel heaping full with twenty-five apples; taken out of the measure they weighed twenty-seven and one-half pounds. We measured many that were fourteen and one-half inches around and weighed eighteen ounces. One weighed one and one-fourth pounds. They sell readily for double the price of any apple I have. They are the finest one hundred trees in Delaware county. Their limbs lay on the ground all around the trees with their loads of fruit and none of them blight.

Yours truly,

L. G. CLUTE.

FARIBAULT, MINN., August 22, 1901.

The Patten Greening apple trees which came from your place in 1898 (fifty of them) are growing their first crop this year and they are very fine to look upon (good for sore eyes). A good many of my friends say they are the finest they ever saw. A good share of the apples will exceed eight ounces in weight and some fourteen ounces. Have sent a half bushel to the exhibit at Buffalo and will probably send more later in the season when they get their full growth.

R. H. L. JEWETT.

BEDERWOOD, MINN., August 23, 1899.

The Patten Greening came through the winter of 50 degrees below zero looking the best and brightest of any trees raised out of one hundred varieties. The three-year-old Patten Greening are looking fine.

ROLLA STUBBS.

ALBERT LEA, MINN.

Our principal apple buyer, who has bought my crop for the past three years, says that he would as soon have the Patten Greening as the Wealthy to sell. When he sells a peck to a customer he frequently returns and wants a bushel of "those big green apples." They make such a good appearance that they attract buyers and their quality does not disappoint.

CLARENCE WEDGE.

NEW ULM, MINN., May 6, 1891.

The trees arrived in good condition. The stock was good, honest stock, and you will certainly get a large order next spring.

C. W. H. HEIDERMAN.

ONTREMONT, CANADA, June 3, 1896.

I enclose postoffice order in settlement of account. The trees were nearly a month on the road, but opened up pretty fresh and most of them have started to grow.

H. W. DUNLAP.

CHARLES CITY, IOWA, November 18, 1896.

My Patten Greening trees bore a fine crop of apples, large and uniform in size. In hardness of tree and quality of fruit I am more than pleased.

A. B. SCOFIELD.

CHARLES CITY, Iowa.

I bought of you in the spring of 1894 one of your Greening. It bore twenty-three fine apples, some of them weighing one pound. This same tree has made the largest growth of any planted at the same time. Why did I not plant more Patten Greening? I shall next spring.

GEORGE BENZ.

MARBLE ROCK, IOWA, November 26, 1896.

Five years ago I planted my orchard from you. Out of the eighty trees I have not lost a tree. My crop this year was from 80 to 100 apples per tree. Your Patten Greening is a good tree, bears well and a nice large apple and of good quality.

JAMES BARR.

MANKATO, MINN., May 22, 1901.

C. G. Patten & Son, Proprietors of the Charles City Nurseries.

Dear Sirs: Have dealt with you for the last seven or eight years in nursery stock, obtaining my stock to fill my orders from you. I wish to bear testimony to the uniformly high grade of stock I have received from you and the fair and honorable dealing with you. I have been a general dealer for thirty-three years, since 1868, and have sold much stock in Blue Earth, Nicollette, Brown and Le Seuer counties, Minnesota, and Brookings county, S. D., and your stock seems especially adapted to all of this country. Many orchards planted two, three, four, five, six and seven years ago are now bearing and I wish you could see them, such health and thrift cannot be excelled anywhere I think in the United States of America.

Yours Truly, M. ROBLEE.

DUNDEE, MINN., May 24, 1901.

I have handled Mr. Patten's stock in Waseca, Faribault, Martin, and Cottonwood counties, Minn., for the last nine years and will candidly say Mr. C. G. Patten's nursery stock, of Charles City, Floyd county, Iowa, has done and is doing fine, couldn't do better. I can and will gladly on request refer you to the orchards I have sold, trees that are bearing from three to five bushels. Will gladly answer any request you may wish to make.

Respectfully, J. H. FRANKLIN.

Mr. C. G. Patten, proprietor of the Patten's Nursery, of Charles City, Iowa, has been known to me for a number of years and I most willingly affirm that for honesty, integrity and honor no man stands higher in this community, and can furthermore affirm that I am positive Mr. C. G. Patten will not put a man on the road of whose reliability there can be any question.

P. J. MCGRATH.

This is from our Catholic priest here at Charles City whom we have known for many years.

FT. DODGE, IOWA, July 15, 1898.

I wish to say that I think more of your Patten Famuse than anything you have sent me. Think it worth more than your Greenigg. Yours truly, W. C. HAVILAND.



WHITE ELM.

DIRECTIONS FOR SPRAYING.

The following directions are taken from Wm. Stahl's Spraying Calendar and are strictly up-to-date:

Apples. To destroy the codling moth, canker worm and apple curculio, use one pound of Paris Green to 160 gallons of water. Spray the trees when in full bloom. The second application should be made a week or ten days later, when the apples are the size of a pea, and the third application should be made a week or ten days from the time of the second spraying. This application is made necessary when the second spraying is followed by rain.

In preparing Paris Green for use, mix thoroughly with sufficient water to a paste-like consistency; then stir into a pail of water and allow to stand over night, by morning it will be dissolved. Strain this through a coarse cloth into the distributing barrel or tank. Mix therewith two or three pounds of lime in the proportion to 160 gallons of mixture. Lime should always be added to the Paris Green Mixture to avoid burning the foliage. A common method is to apply the Paris Green in Bordeaux Mixture as for apple scab and codling moth, the action of neither is weakened, but Paris Green loses all its existing properties.

Plums and Cherries. PLUM CURCULIO—Use Paris Green in the proportion of one-fourth pound to fifty gallons of water; give first spraying when in bloom, second spraying after the bloom has dropped, and the third spraying a week or ten days after the second.

Currants, Raspberries, Strawberries and Gooseberries.—Currant worms and the slug and insects which infest raspberry and gooseberry bushes and strawberry vines, may be destroyed by one ounce of powdered white hellebore mixed with two gallons of water.

To Prevent Potato Blight or Rot. Use Bordeaux Mixture, same as for grape rot, with the exception of using more water. Dissolve six pounds of sulphate of copper in thirty-two gallons of water and slake four pounds of fresh lime in twelve gallons of water. When the last mixture has cooled, pour it slowly into the copper solution, taking care to mix the fluids thoroughly by constant stirring. When the vines are about ten to twelve inches high, spray, and continue the operation every two weeks. By mixing with the Bordeaux Mixture a solution of Paris Green, one pound to 200 gallons of the mixture, the fungus and potato bug may be doctored at one operation.

Grape Rot and Mildew. Use Bordeaux Mixture—a sure preventive.

Bordeaux Mixture (A). Dissolve 16 pounds of sulphate of copper in 22 gallons of water; in another vessel, slake 30 pounds of lime in 16 gallons of water. When the last mixture has cooled, pour it slowly into the copper solution, taking care to mix the fluids thoroughly by constant stirring. It is well to have this compound prepared some days before it is required for use.

A solution containing the ingredients in the following proportions has been recommended for general use:

Bordeaux Mixture (B). Dissolve 6 pounds of copper sulphate in 16 gallons of water and slake 4 pounds of fresh lime in 6 gallons of water. When cool mix the solution as described above.

Treatment. As a first step every precaution should be taken to remove as much of the infectious material as possible. With this object in view the old leaves and rotten berries should be carefully collected in the fall or winter and burned or buried. Trimmings should also be burned, as they often harbor thousands of the minute spores or reproductive bodies of the fungus. The Bordeaux Mixture has proven beyond a doubt to be the most reliable preventive for black rot. In all cases it must be remembered that these treatments are preventives, and being such it is sheer folly to wait until the enemy appears before beginning the fight.

In the spring, after the vineyard has been pruned and put in order by the plow, but before vegetation starts, spray the vines thoroughly with the Bordeaux Mixture, Formula A. The object of this spraying is to destroy any spores of the fungus that may be hidden away in the crevices of the bark. About ten days before the flowers open, spray all the green parts of the vines with the Bordeaux Mixture, Formula B, taking care to wet the foliage thoroughly. Spray again with the same preparation when the flowers are opening, repeating the operation every three weeks until the fruit begins to color. The necessity for beginning the treatment early can not be too strongly urged.

Kerosene Emulsion is one of the most useful of the insecticides, and may be easily prepared as follows: Dissolve one-half pound best whale oil soap in four pints of water by boiling. When the soap is all dissolved, remove from the fire and add two gallons of kerosene and agitate the whole briskly until a stable mixture is obtained. This is best done by using a force pump and pumping the mixture with force back into the vessel that contains it. The emulsion may be diluted to the desired strength and used at once, or it may be allowed to stand and be used from when needed. The strength ordinarily used is prepared by diluting one part of the emulsion in ten or twelve parts of water, which makes the kerosene about one-twentieth part of the whole. If trees are badly effected use 35 to 50 per cent less water.

To destroy woolly and apple aphid and bark lice, suctorial or sap-sucking species of insects, including chinch bugs, squash bugs, plant lice, leaf hoppers, aphid and bark lice. Use the Kerosene Emulsion with double the quantity of water, making the kerosene from 10 to 15 per cent of strength.

To Prevent Fungus Diseases affecting fruit trees, such as apple scab, twig blight, bitter and black rot of apple, pear and quince leaf blight, black knot on the plum and cherry, rot and leaf spot disease of plum and cherry, and fungus diseases and rust affecting the raspberry, blackberry, currant, gooseberry and strawberry.

Spray with the Bordeaux Mixture, which is prepared as follows: Dissolve 6 pounds of sulphate of copper (blue vitriol) in 16 gallons of rain water. Put this in a sack and hang in the water. In another vessel slake 4 pounds of lime in 6 gallons of water. When this has cooled, pour it slowly into the copper solution, being careful to mix the fluids thoroughly by constant stirring. This mixture can be diluted to one-half the above strength by adding more water, if desired, for preventing fungus diseases, and many parties have had satisfactory results by diluting in this manner. Yet my experience has proven to me that it is best to use the original Bordeaux Mixture, and think that the difference in cost will be more than made up by the increased thrift and vigor of the trees, vines and foliage.

