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Grape Vines.

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T. S. HUBBARD CO

FREDONIA. N. Y.



Small Fruits.



DESCRIPTIVE CATALOGUE

— OF —

GRAPE \* VINES

— AND —

SMALL FRUITS.



T. S. HUBBARD CO.

FREDONIA, N. Y.

1890.

## Number of Vines Required per Acre.

|              |      |               |     |
|--------------|------|---------------|-----|
| 6 x 6 .....  | 1210 | 9 x 6 .....   | 807 |
| 6 x 8 .....  | 907  | 9 x 7 .....   | 691 |
| 6 x 10 ..... | 726  | 9 x 8 .....   | 605 |
| 6 x 12 ..... | 605  | 9 x 9 .....   | 538 |
| 8 x 7 .....  | 777  | 9 x 10 .....  | 484 |
| 8 x 8 .....  | 680  | 9 x 12 .....  | 403 |
| 8 x 10 ..... | 545  | 10 x 10 ..... | 435 |
| 8 x 12 ..... | 435  | 10 x 12 ..... | 363 |

# INTRODUCTION.

“ DO ONE THING AND DO IT WELL.”

FOR twenty-three years this has been our motto, during which time our specialty has been the growing and selling of Grape Vines. These we now grow in such vast quantities and great variety that purchasers may rely on always finding with us everything worthy of cultivation, both in the new and old varieties, at low prices, yet of better quality than those usually grown by nurserymen whose attention is directed to all classes of nursery stock. Our reputation for accuracy and promptness in filling orders and grading our vines to a very high standard, has long been established, and will be carefully maintained. Our long experience in the business, our accurate knowledge of varieties gained by many years' of vineyard culture, and by extensive travel and observation, together with our unsurpassed facilities and arrangements for storing, packing and shipping are a guarantee against delays, mistakes in varieties or other errors.

Purchasers should bear these points in mind in placing their orders.

We test all new varieties, as soon as received, in our experimental vineyards, which embrace 30 acres, and include over 200 varieties. It is our rule not to recommend any variety for general cultivation until we are fully convinced of its merits. The number of varieties in cultivation is altogether too large, and many of little merit should be dropped, while none but such as possess marked advance in quality or other points should be added to the list.

We have been awarded a

## Wilder Medal

by the American Pomological Society, Boston, Mass., 1881, for the largest and best collection of native Grapes,

## Silver Medal

by American Horticultural Society, St. Louis, Mo., 1882, for largest and best collection, where we exhibited 135 varieties.

## Wilder Medal and First Prize in Money

by the American Pomological Society, Boston, Mass., 1887, for the largest and best collection of native Grapes, where we exhibited 165 varieties, the largest number ever exhibited.

## OUR LOCATION.

Located within three miles of Dunkirk, which is at the junction of the Lake Shore and Erie, and also on the New York, Chicago & St. Louis (Nickel Plate), Western New York & Pennsylvania, and Dunkirk, Allegheny Valley & Pittsburgh Railways, we have unusual facilities for shipping to the East, West, South and South-West. Street cars connecting with all day and evening trains on these roads at Dunkirk, go directly past our office and cellars.

## Explanation of the Following Table.

In order to more accurately show the comparative merits of different varieties on leading points, the following table has been prepared. On each point as indicated by the respective headings, ten different grades are given. "1" indicating the highest or most favorable grade, and "10" the lowest grade, the intermediate numbers indicating the approach to highest or lowest. "+" indicates a grade between the one named and the grade represented by the next larger number. "-" indicates a grade between the one named and the grade represented by the next smaller number. "?" indicates not sufficiently tested to fully determine the exact grade. The following explanations will make the matter more clear :

SIZE OF BERRY—1, largest ; 10, smallest berry.

SIZE OF CLUSTER—1, heaviest cluster ; 10, lightest and smallest.

QUALITY FOR TABLE—1, best quality ; 10, poorest quality.

EARLINESS IN RIPENING—1, fully ripe earliest ; 10, latest.

HARDINESS OF CANE AND BUD—1, hardiest ; 10, most easily injured by severe cold.

HEALTH OF FOLIAGE—1, most healthy ; 10, most subject to mildew and disease of foliage.

VIGOR OF GROWTH AND CONSTITUTION—1, most vigorous grower and enduring, resisting disease ; 10, poorest grower, with weakest constitution.

PRODUCTIVENESS—1, produces greatest number pounds fruit when healthy, without injury to vine ; 10, smallest product, with same stipulations.

SHIPPING QUALITY—1, best shipper ; 10, poorest shipper.

KEEPING QUALITY—1, best keeper ; 10, poorest keeper.

COMPACTNESS OF CLUSTER—1, most compact ; 10, least compact.



## COMPARATIVE MERITS.

| <i>Variety.</i>        | <i>Size of Berry.</i> | <i>Size of Cluster.</i> | <i>Quality for Table Use.</i> | <i>Earliness in Ripening.</i> | <i>Hardiness of Bud and Cane.</i> | <i>Health of Foliage.</i> | <i>Vigor of Growth and Constitution.</i> | <i>Productiveness.</i> | <i>Shipping Quality.</i> | <i>Keeping Quality.</i> | <i>Compactness of Cluster.</i> |
|------------------------|-----------------------|-------------------------|-------------------------------|-------------------------------|-----------------------------------|---------------------------|--|------------------------|--------------------------|-------------------------|--------------------------------|
| Agawam.....            | 3                     | 6                       | 2                             | 6                             | 4                                 | 8                         | 3  | 4                      | 1                        | 1                       | 7                              |
| Aminia (Rog. 39).....  | 4                     | 4                       | 3                             | 3                             | 4                                 | 7-                        | 4  | 5                      | 3                        | 4                       | 5                              |
| Amber Queen.....       | 5                     | 6                       | 2                             | 5                             | 5                                 | 8                         | 8  | 9                      | 5                        | 4                       | 4                              |
| Barry.....             | 3                     | 3+                      | 3                             | 5+                            | 4                                 | 7                         | 5  | 4                      | 2                        | 2                       | 4                              |
| Black Eagle.....       | 5-                    | 6                       | 3                             | 7-                            | 4                                 | 5                         | 8  | 7                      | 2                        | 4                       | 4                              |
| Brighton.....          | 5                     | 5+                      | 1                             | 3                             | 4                                 | 8                         | 3  | 6                      | 9                        | 6                       | 4                              |
| Catawba.....           | 4                     | 5-                      | 2                             | 8                             | 3                                 | 4                         | 4  | 3                      | 1                        | 2                       | 5                              |
| Champion.....          | 4+                    | 5                       | 9                             | 2                             | 3                                 | 3                         | 1  | 2+                     | 5                        | 10                      | 4                              |
| Concord.....           | 3                     | 4                       | 6                             | 5                             | 2                                 | 2                         | 2  | 2                      | 6                        | 5                       | 5                              |
| Cottage.....           | 4                     | 6                       | 6                             | 2+                            | 2                                 | 1+                        | 1  | 6                      | 5                        | 7                       | 4                              |
| Clinton.....           | 7                     | 7                       | 9                             | 8                             | 1                                 | 1                         | 1  | 4                      | 3                        | 3                       | 2                              |
| Cynthiana.....         | 9                     | 6                       | 7                             | 9                             | 3                                 | 2-                        | 1  | 4                      | 4                        | 2                       | 2                              |
| Delaware.....          | 7                     | 8                       | 1                             | 5-                            | 3                                 | 10                        | 7  | 5                      | 4                        | 3                       | 2                              |
| Diana.....             | 5-                    | 5+                      | 2                             | 7                             | 7                                 | 6                         | 4  | 5                      | 1                        | 1                       | 2                              |
| Dracut Amber.....      | 4-                    | 6                       | 10                            | 2                             | 2                                 | 2                         | 1  | 2                      | 6                        | 10                      | 4                              |
| Duchess.....           | 6                     | 6                       | 1                             | 6                             | 7-                                | 6                         | 7  | 7-                     | 6                        | 3                       | 3                              |
| Early Victor.....      | 5+                    | 7                       | 5                             | 5-                            | 3                                 | 3                         | 2  | 7-                     | 6                        | 6                       | 3                              |
| Eaton.....             | 1                     | 1                       | 6                             | 5-                            | 2                                 | 2                         | 2+                                       | 2                      | 6                        | 5                       | 4                              |
| Elvira.....            | 6-                    | 7                       | 9                             | 8                             | 2                                 | 1                         | 1  | 3                      | 3                        | 4                       | 1                              |
| Empire.....            | 6                     | 6                       | 2                             | 6                             | 4                                 | 4                         | 4  | 6                      | 4                        | 2                       | 4                              |
| Etta.....              | 5-                    | 6                       | 9                             | 8                             | 2                                 | 1                         | 2  | 3                      | 3                        | 4                       | 3                              |
| Eumelan.....           | 6+                    | 6+                      | 2                             | 5+                            | 7                                 | 9                         | 9  | 7                      | 4                        | 3                       | 5                              |
| Goethe.....            | 3                     | 6-                      | 2                             | 8                             | 4                                 | 4                         | 5  | 5                      | 3                        | 2                       | 8                              |
| Green Mountain.....    | 6                     | 5                       | 2?                            | 2?                            | ?                                 | ?                         | ?  | 4                      | ?                        | ?                       | 7                              |
| Hartford.....          | 4                     | 5                       | 7                             | 3                             | 3                                 | 3                         | 3  | 3                      | 5                        | 6                       | 5                              |
| Hayes.....             | 6                     | 7                       | 5                             | 3+                            | 3                                 | 2                         | 4  | 8                      | 6                        | 5                       | 5                              |
| Herbert (Rog. 44)..... | 3                     | 4                       | 3                             | 5+                            | 4                                 | 8                         | 4  | 4                      | 2                        | 2                       | 5                              |
| Iona.....              | 5                     | 4                       | 1                             | 7                             | 7                                 | 7                         | 8  | 5                      | 2-                       | 2                       | 7                              |
| Isabella.....          | 4                     | 5-                      | 4                             | 8                             | 7                                 | 8                         | 4  | 3-                     | 2                        | 3                       | 3                              |
| Ives.....              | 5-                    | 6                       | 7                             | 4+                            | 3+                                | 2                         | 3  | 3-                     | 1                        | 5                       | 3                              |
| Janesville.....        | 5                     | 6                       | 9                             | 5                             | 1                                 | 1                         | 1  | 4                      | 1                        | 5                       | 2                              |
| Jefferson.....         | 5                     | 3                       | 1                             | 8                             | 6                                 | 6                         | 7  | 5                      | 2                        | 3                       | 2                              |

## COMPARATIVE MERITS—CONTINUED.

| <i>Variety.</i>       | <i>Size of Berry.</i> | <i>Size of Cluster.</i> | <i>Quality for Table Use.</i> | <i>Earliness in Ripening.</i> | <i>Hardness of Bud and Cane.</i> | <i>Health of Foliage.</i> | <i>Vigor of Growth and Constitution.</i> | <i>Productiveness.</i> | <i>Shipping Quality.</i> | <i>Keeping Quality.</i> | <i>Compactness of Cluster.</i> |
|-----------------------|-----------------------|-------------------------|-------------------------------|-------------------------------|----------------------------------|---------------------------|--|------------------------|--------------------------|-------------------------|--------------------------------|
| Jessica .....         | 8                     | 9                       | 2                             | 1                             | 3                                | 6                         | 7  | 8                      | 5                        | 4                       | 5                              |
| Lady .....            | 4                     | 6+                      | 5                             | 2+                            | 3                                | 2                         | 6  | 8                      | 7                        | 8                       | 4                              |
| Lady Washington.....  | 4                     | 2                       | 4                             | 8                             | 6                                | 5                         | 7  | 4                      | 5                        | 4                       | 4                              |
| Lindley.....          | 4                     | 6                       | 2                             | 2+                            | 4                                | 6                         | 2+                                       | 7                      | 2+                       | 4                       | 6                              |
| Massasoit .....       | 3                     | 5+                      | 3                             | 2+                            | 4                                | 8                         | 4  | 8                      | 10                       | 7                       | 9                              |
| Martha.....           | 5                     | 6                       | 6                             | 5                             | 2                                | 2                         | 3  | 4                      | 7                        | 8                       | 6                              |
| Merrimac .....        | 3                     | 4                       | 3                             | 6                             | 4                                | 8                         | 7  | 4                      | 2                        | 2                       | 5                              |
| Mo. Reissling.....    | 6                     | 7                       | 9                             | 8                             | 3                                | 2                         | 1  | 6                      | 3                        | 5                       | 5                              |
| Moore's Diamond ..... | 3                     | 4                       | 2                             | 4+                            | 3?                               | 3                         | 3?                                       | 3?                     | 3                        | 4?                      | 3                              |
| Moore's Early .....   | 2                     | 4                       | 6+                            | 2                             | 2                                | 1                         | 4  | 5                      | 3                        | 7                       | 3                              |
| Moyer.....            | 8                     | 10                      | 2                             | 2?                            | ?                                | 9                         | 7  | 9                      | 4                        | 4                       | 4                              |
| Mills .....           | 4                     | 4                       | 2?                            | 8                             | ?                                | ?                         | ?  | ?                      | 1                        | 1                       | 2?                             |
| Norton.....           | 9                     | 6                       | 7                             | 9                             | 3                                | 2-                        | 1  | 4                      | 4                        | 2                       | 2                              |
| Niagara .....         | 3                     | 2                       | 4-                            | 5-                            | 4                                | 5                         | 3  | 1                      | 4                        | 4                       | 4                              |
| Noah.....             | 7                     | 7-                      | 9                             | 8                             | 3                                | 3                         | 1  | 5                      | ?                        | ?                       | 5                              |
| Perkins.....          | 5-                    | 5                       | 10                            | 4                             | 3                                | 2                         | 2  | 3                      | 4                        | 5                       | 4                              |
| Pocklington .....     | 2                     | 3                       | 6                             | 7-                            | 2-                               | 2                         | 4  | 3                      | 3                        | 5                       | 1                              |
| Poughkeepsie Red..... | 7                     | 6                       | 1                             | 7                             | 6                                | 10                        | 10                                       | 7                      | 4                        | 3                       | 3                              |
| Prentiss .....        | 5                     | 6                       | 1                             | 6                             | 6                                | 7                         | 8  | 5                      | 3                        | 2                       | 2                              |
| Rebecca.....          | 5                     | 7                       | 1                             | 6+                            | 6                                | 7                         | 9  | 7                      | 3                        | 2                       | 2                              |
| Salem.....            | 3                     | 5+                      | 1                             | 4+                            | 5                                | 8+                        | 8  | 5                      | 3                        | 2                       | 3                              |
| Telegraph.....        | 5                     | 5                       | 8                             | 4                             | 3                                | 2                         | 2-                                       | 2                      | 3                        | 5                       | 1                              |
| Triumph.....          | 2                     | 2                       | 4?                            | 10                            | ?                                | ?                         | ?  | ?                      | ?                        | ?                       | 2                              |
| Ulster Prolific ..... | 5                     | 7                       | 1                             | 6                             | 4                                | 4                         | 6  | 5                      | 2                        | 3                       | 2                              |
| Vergennes.....        | 4                     | 6                       | 2                             | 6                             | 4                                | 6                         | 4  | 5                      | 1                        | 1                       | 3+                             |
| Victoria.....         | 2                     | 4                       | 5                             | 5                             | 2                                | 2                         | 2  | 4-                     | 8                        | ?                       | 4                              |
| Wilder .....          | 3                     | 4                       | 3                             | 6                             | 4                                | 8                         | 7  | 4                      | 2                        | 2                       | 5                              |
| Worden .....          | 2                     | 3                       | 5                             | 3                             | 2-                               | 2                         | 2  | 2                      | 7                        | 7                       | 4                              |
| Woodruff Red.....     | 3                     | 5                       | 8                             | 6                             | 2                                | 1                         | 2  | 4                      | 4                        | ?                       | 2                              |
| Wyoming Red.....      | 6                     | 7                       | 6                             | 3                             | 2                                | 2                         | 1  | 7-                     | 1                        | 6                       | 3                              |

## HINTS FOR VINEYARDISTS.

### Location and Exposure.

The soil should be naturally dry, or artificially drained. Grapes will not thrive on low, wet soils, but succeed best on high, dry ground, having a free circulation of air which helps guard against diseases of the vine, mildew, rot, etc., with enough slope to carry off the surplus water. Good success, however, may be obtained in favorable climates, even on low land, when the soil is dry.

In Northern latitudes, in the interior, away from large bodies of fresh water, an Eastern or Southern exposure is preferable. Near a large river or lake, an exposure facing the water is usually most desirable. The presence of a considerable body of fresh water is especially favorable to successful Grape growing.

### Soil.

The best soils are those containing more or less clay, with a mixture of disintegrated rock, rotten shale, small stones, limestone, etc. Gravelly and sandy soils are often admirably adapted to the grape, as is also a sandy loam or alluvial soil when well drained. In short, the grape may be successfully grown in any dry soil of sufficient fertility to produce a good farm crop, if climate and exposure are favorable.

### Preparation of Soil.

The only necessary preparation of the soil is to thoroughly plow and pulverize it to a depth of 12 to 18 inches. If naturally poor, it should be enriched by a liberal application of thoroughly rotted stable manure, when it can be had, bone dust, ashes, or other available fertilizers. Of the commercial fertilizers those containing a large percentage of potash and available phosphates are most desirable.

If sod land, it is well to plow in July or August previous to planting; but good results are obtained by planting on sod immediately after it is plowed.

## Choice of Vines and Varieties.

For general vineyard planting, one year old plants from cuttings are usually preferred by the most experienced vineyardists, though some prefer vines two years old.

Good one year vines of our No. 1 grade, with such roots as we grow in our soil and climate, are large enough, and are as strong as a large proportion of two year old vines as grown in less favorable localities. Indeed so large are they, that many large planters now use our one year No. 2, as they cost less, and show nearly, and in many cases quite as good results by the time they are in full bearing.

In gardens, or where but few are wanted, two year vines are generally preferred.

In the selection of varieties the planter must use his own judgment, based on descriptions in these pages, and also on the success of varieties already growing in his vicinity. We shall, however, be happy to give our customers the benefit of our knowledge and experience in assisting them to make their selections.

## Time to Order and Plant.

Autumn is usually the best time to order vines, as we then have an unbroken stock of all varieties, and prices are generally lower than in the Spring. Delay in ordering often leads to disappointment and failure to get the stock desired. If not wanted for planting until Spring it is better to order in Fall, leaving the vines with us to be shipped in Spring, or have them shipped in Fall and heel them in as described below, until planting time. In most localities vines may be successfully planted during latter part of October or in November. At the North, in Fall planting, it is best to place a small stake near each vine, and hill up the earth over the vine to a height of six or eight inches, and one or two feet broad to protect from freezing and thawing.

In vineyards this work can be expediated by turning two or three furrows from each side toward the row, turning the back furrow on to the vine; over each vine make a hillock six or eight inches high and 20 inches broad, to protect the roots. The same course should be followed after the

first season's growth. This surplus earth should be removed from over the vines as soon as the frost is out of the ground in the Spring, before the buds begin to swell.

## Care of Vines when First Received.

Should the vines have encountered severe cold in transit and become frosted, the box should at once be placed in a cellar, and the frost allowed to withdraw gradually before opening. With the care we use in packing close, using tight boxes, with plenty of damp moss, no injury will result to the plants treated in this way. The important point is for the frost to withdraw gradually without exposure of roots to light or air. Packed by our usual method to ship by freight, they could usually be kept all Winter in the box unpacked, in a damp, cool, frost-proof cellar. Yet it is generally better to open, and if not wanted to plant until Spring, to heel them in. For this purpose select a dry piece of ground, dig a trench 18 to 24 inches deep, the back slightly inclined outwards; open the bundles, spread apart the vines on the inclined side of the trench, tops up, roots down, in layers not over one or two inches thick, alternating a layer of vines and a layer of earth, covering the vines, tops and all. When the whole are heeled in, cover the bed with a thick coat of coarse manure, straw or leaves, and over this it is well to place another covering of boards or brush to insure perfect safety.

## Planting.

When ready to plant, stake out the ground in rows, eight or nine feet apart, and six to ten feet in the row. Dig the holes about two feet wide and fifteen inches deep, loosening the earth thoroughly in the bottom, throwing in two or three inches of surface soil. Before the vines are taken to the field the tops should be cut back, so that when planted only two or three buds will be above ground, and the roots shortened to ten or twelve inches. Place twenty-five to fifty vines in a pail of water, taking one vine from the water at a time so none shall get dry before planting. Spread the roots in the bottom of the hole in every direction, taking care not to have them cross each other. Cover with good fine surface soil two or three inches deep, pressing it thoroughly with the foot. This firming

of the soil is very essential to success, and should be carefully done, after which fill the hole to within two or three inches of the top of the plant. If the tops are short, the hole may remain partly filled in the shape of a basin, to be gradually filled in, as growth progresses. This deep planting secures a tier of roots so deep down there is little danger of serious injury by freezing, even if the surface roots are destroyed.

### After-Culture.

Keep the soil thoroughly cultivated during the Summer, allowing no weeds to grow, and hoe frequently about the vines. Do not attempt to grow vegetables, berries, or anything else between the rows; or, if you *must* grow something else let it be beans or early potatoes. The first Fall after planting, cut the new growth back, leaving only one spur of four or five buds, after which plow between the rows, turning the furrows together over the rows, and if at the North, make a hillock over the vines six or eight inches deep and two feet broad, first placing a small stake near each vine so that it may be easily found and uncovered in the Spring. By this simple method, surface drainage is effected, and the roots thoroughly protected during the Winter. In the Spring as soon as the frost is out of the ground, remove the earth over the canes, and when the shoots have grown a few inches, rub off all but two, leaving the strongest to form canes for fruiting the following year.

Cultivation the second Summer should be the same as the first. As the growth progresses the canes may be trained along the rows on the ground, or with some systems of pruning, it may be desirable to start the trellis the second year. In the fall after the leaves have fallen, prune the vines as described hereafter, and plow between the rows, covering the canes same as the first Fall.

### Construction and Cost of Trellis.

As early as the Spring of the third season the trellis should be put up. Posts should be  $7\frac{1}{2}$  to 9 feet long, one-half as large as a good fence-post, except the end posts, which should be the size of a fence-post. The intermediate posts are usually put about 24 feet apart. The end posts may be well braced with 3x4 scantling, or other strong braces, 10 to 12 feet

long, resting in a notch under the top wire, the other end under a stake firmly driven into the ground nearly in a line with the row. Another good method of bracing is to attach a piece of No. 8 or 9 galvanized wire to top of end post and to the other end of this wire, fasten a heavy stone and anchor it in the ground three feet deep, opposite and outside the end of the row and three or four feet from the post. The wires may be secured to the end posts by boring a  $\frac{3}{4}$  inch hole through one end post at the proper distance from ground and after fastening the wire around the other end post, and stretching it along the row, put it through this hole. Stretch it with a small windlass about three inches in diameter, and fasten it by driving into the hole from the outside of the post, a hardwood pin and then twisting the wire securely around the pin. The wires should be drawn tight, but each Fall these pins may be driven out and the wires left with sufficient slack to admit of contraction during cold weather, and again tightened in the Spring. The lower wire should be 2 to  $2\frac{1}{2}$  feet from the ground, and where three wires are used the second 15 to 18 inches above the first, and the third the same distance from the second. If only two wires are used they should be of No. 9, the lower one  $2\frac{1}{2}$  feet from ground, and the upper one 2 to  $2\frac{1}{2}$  feet above the first. With rows 8 feet apart and three wires per row, 500 lbs. of No. 12 wire are required per acre; 650 lbs. of No. 11; 800 lbs. of No. 10, and 900 lbs. of No. 9. Annealed iron wire is usually used. This can generally be purchased in quantity at  $2\frac{1}{2}$ c. to  $2\frac{3}{4}$ c. per pound. With rows 8 feet apart and posts 24 feet apart, about 250 posts per acre are required; also 8 lbs. of staples to fasten wires to intermediate posts. When the trellis is completed, the canes left the preceeding Fall for fruiting should be tied to the wires. A second and third tying will be necessary as growth progresses during the Summer.

## Pruning and Training.

There are several good systems of pruning and training, each of which has its merits and advocates. A simple method and one largely practiced in Western New York and Ohio is known as the Renewal System. It consists simply in cutting out nearly all the old wood every year, leaving on strong vines three or four canes of the current year's growth that started nearest above the crown of the vine, from spurs or canes which grew the

previous year. Cut these canes back to three to four feet in length each, according to growth of the vine, tying them fan-shape to the wires the following Spring. In trimming, also leave near the crown two or three spurs of two buds each, from which to grow canes for the following year's fruiting. Suckers that started below the crown or from wood more than one year old are not the best fruiting canes and should not be used as such.

The second year no fruit ought to remain on the vines. The third year strong vines with good culture, ought to produce three or four pounds each, and the following year a full crop. But vines of weaker growth will not do this. Care must be taken not to allow the vine to overbear, or it may be injured so as to never recover. Three to four tons per acre, is a full average crop for the strongest growers, although good vineyards often produce without injury five or six tons per acre. The less the number of clusters this weight can be put into, the more satisfactory will be the money return from the crop. Hence it is well to thin the fruit, picking off the smallest and poorest clusters.

There is always a demand for strictly fine fruit at good prices.

We do not advise Summer pruning further than pinching off or rubbing out weak and useless laterals and shoots. Leaves are the laboratories of the growing vine, in which is perfected the food which produces the growth of both wood and fruit. Severe Summer pruning, removing a large amount of foliage, weakens the vine, reduces the size of the fruit, retards its ripening, and checks the growth of the root. Where more than one shoot starts from a bud it is well to rub off the weaker one before it is more than two to six inches long. When particularly fine clusters are desired the ends of the canes may be pinched off, and stopped when growth has progressed to four or five leaves from the last cluster, and thereafter the ends of all laterals pinched off as soon as one or two leaves are formed. Superfluous suckers that start below the crown of the vine should be broken out before much growth has taken place.

## Garden Or Amateur Planting.

What we have said in reference to vineyard planting and cultivation, is equally applicable to garden cultivation, except the pruning and training



may take any form which suits the fancy or necessity of the planter. Vines will do well trained to stakes, on walls, trees, sides of buildings or arbors, but care should always be taken to prune thoroughly each year so as to preserve an equilibrium between root and top, or they will overbear. In other words, no more bearing canes should be left than the roots can sustain with a vigorous growth of new shoots.

## Diseases of the Vine and Fruit.

Of these, the most serious in this country are the various forms of mildew of the foliage and mildew and rotting of the fruit. A full description of them and the various remedies which have proved most successful would require too much space for a work of this kind. Suffice it to say, we believe they can generally be successfully overcome by vigorous and persistent use of the proper remedies and agencies. For a full and exhaustive description of the diseases, remedies and methods of application, we refer to the Bulletins issued by the Department of Agriculture, Botanical Division, Section of Vegetable Pathology, which can be obtained by writing to the Department at Washington.

## Description of Leading Varieties.

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✓ **Agawam**—(Rogers Hybrid No. 15). Red or amber color; bunch usually loose, shouldered; berries large, skin thick, flesh pulpy, meaty, juicy, of a rich, peculiar aromatic flavor; ripens about with Concord. Vine a strong, rank grower, hardy, productive and moderately healthy in most good grape regions. On rich, low ground it is sometimes subject to mildew and rot in unfavorable seasons. A good keeper; one of the best of Rogers Hybrids: should be pruned long.

✓ **Barry**—(Rogers Hybrid No. 43). Black, bunch very large, compact, shouldered; berries large, flesh tender, sweet, good; vine vigorous, hardy and healthy; ripens about with Concord.

✓ **Brighton**—Red; bunch medium to large, long, compact, shouldered; berries medium, skin thin, flesh tender, sweet, with scarcely any pulp; quality best, but is not as good if allowed to remain on vine until over ripe. It then becomes nearly black and to some extent insipid. Vine a vigorous grower, comparatively healthy, hardy and productive; in unfavorable seasons and localities sometimes mildews. One of the best early red grapes, and is largely planted in vineyards. The flowers have reflexed stamens, and do not always fertilize fully unless planted in connection with Concord, Worden, Martha or other varieties having upright stamens. Ripens with Delaware.

✓ **Catawba**—Dark red when fully ripe. Bunch large, sometimes loose, shouldered; berries medium to large, skin thick, tough, flesh somewhat pulpy, with rich, vinous flavor, of best quality for both table and wine; vine a good grower, hardy, with healthy foliage. In unfavorable localities and seasons is subject to rot, but very productive and profitable where it succeeds and matures well. Ripens too late for high latitudes.

✓ **Champion or Talman**—Black; bunch medium to large, compact; berries large and adhere to stem better than Hartford which it closely resembles; skin thick, flesh sweet, juicy, somewhat pulpy, with foxy flavor; vine a very rank, vigorous grower, hardy, very healthy and productive; ripens about with or a little before Moores Early; quality rather poor but desirable for early market, generally bringing a good price.

✓ **Clinton**—Black; bunch small to medium, compact, long, not usually shouldered; berries small, skin thin but tough; flesh juicy, spicy, with little pulp, quite acid. Is used principally for wine; vine very vigorous, healthy, hardy, productive. Requires long pruning.

**Concord**—Black; early, decidedly the most popular grape in America, and deservedly so. Bunch large, shouldered, compact; berries large, covered with a rich bloom; skin tender but sufficiently firm to carry well to distant markets if properly packed; flesh juicy, sweet, pulpy; vine a strong grower, very hardy, healthy and productive. In unfavorable sections and seasons is subject to rot, but all things considered, for general cultivation has been the most reliable and profitable variety grown and fully tested.

**Cottage**—Black; a seedling of Concord, and very similar in growth, size, quality, but ripens a few days earlier, about with Moores Early; is variable as to productiveness, and sometimes drops its berries. Should be better known.

**Cynthiana**—A black wine grape; bunch medium long, shouldered, compact; berries small; vine a very vigorous grower and healthy; fruit ripens late. Highly esteemed in the South and Southwest where it is considered one of the best red wine grapes; strongly resembles Norton.

**Diana**—Red; bunch medium, very compact; berries medium, skin thick and very tough; flesh sweet, tender, vinous, with a peculiar musky flavor; good quality for both table and wine. Vine vigorous and productive, but not very hardy, and does not succeed in all localities.

**Delaware**—Red; bunch small, compact, sometimes shouldered; berries small, skin thin but firm, flesh juicy, very sweet and refreshing, of best quality for both table and wine; ripens with Concord or a little before; vine hardy, productive, moderate grower; requires rich soil and good culture; it is regarded by many the best American grape, all things considered; it should be in every garden and vineyard; foliage mildews in wet and unfavorable seasons.

**Dracut Amber**—Red, very early, bunch and berry large, flesh quite foxy. Vine hardy, very vigorous and productive. Valuable in high latitudes where better varieties will not ripen.

**Duchess**—White; bunch medium to large, long, compact, shouldered; berries medium, quality best; ripens a little later than Concord; vine a good grower and comparatively healthy, but at the North should be laid down and covered in winter. Its quality is so fine it will pay to be at considerable trouble to grow it.

**Early Victor**—Black; bunch medium, compact; berry medium, flesh tender and sweet; vine a strong grower, very healthy and productive; ripens about with Concord; in foliage, growth and cluster resembles Telegraph; not particularly valuable for vineyard planting.

**EATON**—This very promising new grape is similar in foliage to Concord. and in growth, health, hardiness and quality, is in every respect its equal, while in size of bunch and berry it is much larger and more attractive in appearance. Leaf large, thick, leathery, covered on the under side with a thick, brownish-yellow down. Bunch very large,

twelve to twenty-five ounces, compact, double shouldered; berries very large, many one inch in diameter, round, black, covered with a heavy blue bloom, adheres firmly to the stem; skin thin but tough, pulp tender, separating freely from the seeds, and dissolving easily in the mouth; very juicy, ripens with Concord or a little earlier.

- ✓ **Elvira**—White; bunch and berry medium, very compact; vine a vigorous, strong, healthy grower and very productive, often growing four or five clusters on a single cane. Very hardy, ripens late, about with Catawba; sometimes cracks.
- ✓ **Empire State**—White; bunch medium long, compact; berries medium, quality best; vine a strong grower, hardy, with large healthy foliage, and short jointed canes which ripen up early. Superior in quality to Niagara, but generally not as productive.
- ✓ **Etta**—White; a seedling of Elvira, but larger in berry and of better quality.
- ✓ **Eumelan**—Black; bunch medium, shouldered, compact; berries medium, round, adhering firmly to the stem; flesh tender, melting, rich and vinous; ripens a little before Concord. Vine vigorous, very short jointed, hardy and productive, though somewhat subject to mildew. A superior red wine grape.
- ✓ **Goethe**—(Rogers No. 1.) Bunch usually large, shouldered, compact; berries large, oval, with yellowish green color tinged with red on one side. When fully ripe is amber colored; skin thin but firm, resembling Malaga in appearance; flesh sweet, juicy, with high aromatic flavor; strong grower and very productive; one of the best keepers; best quality for both table and wine; esteemed highly both West and South; rather late for Northern localities, and yet ripens about with Catawba; it is quite good if not fully ripe.
- ✓ **Hartford**—Black; bunch large, shouldered; berries large, inclined to drop from bunch if allowed to hang until fully ripe; flesh sweet, pulpy, somewhat foxy; vine hardy, vigorous, healthy, productive; ripens four to six days before Concord.
- ✓ **Hayes**—White with yellowish tinge when fully ripe; bunch and berry medium; skin thin, flesh tender, juicy, medium quality; vine a fair grower, hardy, foliage thick and healthy; ripens about with Hartford; recommended only for garden.
- ✓ **Herbert**—(Rogers No. 44.) Black; bunch and berry large; flesh sweet, rich and sprightly; vine a good grower, hardy, productive; early and of fine quality for table or market.
- ✓ **Iona**—Pale red; bunch large, long, shouldered, rather loose; berries medium, skin thin, firm, flesh tender with rich vinous flavor; very best quality for table or wine; vine only a moderate grower, requiring rich soil and high culture; ripens a little before Catawba. Succeeds only in favored localities; short jointed and inclined to overbear, requiring short pruning and thinning of fruit.

- Isabella**—Black ; bunch large, shouldered, compact ; berries large, oval, of fair quality ; vine vigorous but not very hardy ; ripens late.
- Ives**—Black ; bunch long, medium to large, compact ; berries medium, skin thick and tough, flesh sweet, pulpy and somewhat foxy ; colors early but does not fully mature until several weeks later. When ripe it is a good market variety, and is highly esteemed for red wine. Vine hardy, very vigorous and healthy, generally succeeding well ; is quite exempt from rot and a good shipper.
- Janesville**—An early, very hardy, black grape : bunch medium, very compact ; berry medium, skin thick, flesh pulpy, acid, quality medium ; very strong, rank grower, and very productive ; only desirable in severe climates : colors very early but ripe with Concord.
- Jefferson**—Bright red ; bunch large, double shouldered ; berry medium to large ; skin thick, flesh tender, crisp, juicy, sweet, slightly aromatic ; vinous. It is of very best quality, a fine keeper and market grape. In some good grape localities it succeeds well and should be planted largely in such places. Ripens with Catawba.
- Jessica**—White ; cluster and berry quite small ; very sweet and pleasant, quite similar to Delaware in quality ; vine a fair grower, hardy and productive ; ripens ten days to two weeks before Concord ; recommended only for garden culture.
- Lady**—White ; bunch medium, compact ; berries large, skin thin, sometimes cracks badly ; vine only a moderate grower, but perfectly healthy and hardy, with Concord foliage ; moderately productive, good though not best quality ; ripens very early, about with Moores Early ; should be planted on rich land.
- Lady Washington**—A late white grape ; bunch very large, compact, double shouldered ; berries large, yellow green, with thin white bloom ; flesh tender, sweet, juicy ; vine vigorous with large foliage ; healthy in favorable seasons, with mildew of fruit in unfavorable seasons : ripens rather late for our latitude, but succeeds in some favorable locations at the South ; recommended only for amateur culture.
- Lindley**—(Rogers No. 9.) Red ; bunch medium, long, not usually shouldered ; berries large, flesh tender, sweet, with high aromatic flavor, best quality ; a good keeper with firm, tough skin ; ripens with Delaware. Vine healthy, vigorous and hardy, but sometimes does not set its clusters well. One of the best of Rogers Hybrids. It is reported to succeed well in some parts of the South ; requires long pruning and not too rich soil.
- Martha**—White, sometimes turning to pale yellow when fully ripe ; bunch medium, compact, shouldered ; berries medium, skin thin, tender, flesh very sweet, foxy ; quality good as Concord. Vine healthy and hardy, similar to Concord in appearance and habit, although not quite as strong a grower : ripens with Concord.

✓ **Massasoit**—(Rogers No. 3.) Red; bunch large, compact, shouldered; berries large, skin thin, very tender; flesh tender, sweet, without pulp, delicious, with agreeable aroma; very early. Vine vigorous, healthy, hardy, and moderately productive. One of the earliest of the Rogers varieties.

✓ **Merrimac**—(Rogers No. 19.) Black; bunch very large, shouldered, compact; berries large, flesh sweet, tender, good. Vine a good grower, hardy, productive. It strongly resembles Wilder (Rogers No. 4). With us it succeeds better than Wilder.

✓ **Missouri Reissling**—Greenish white, becoming pale red when fully ripe; bunch medium, compact; berry medium, flesh tender, juicy and sweet; said to make a white wine of high quality. Vine hardy, healthy and very productive. Ripens about with Catawba.

✓ **Moore's Diamond**—White; bunch large, compact, shouldered; berries large, round, skin thick, firm; flesh tender, juicy, with but little pulp. Vine a good grower with thick, healthy foliage; said to be hardy and productive. This is a new white grape of fine quality, ripening a little before Concord, but has not yet been fully tested. We have seen it fruiting in different localities as well as on our own grounds, and consider it very promising.

✓ **Moore's Early**—Black; bunch not quite as large as Concord, but berries larger and very much like it in flavor and quality. Vine a moderate grower, very healthy and hardy; foliage thick, leathery, somewhat resembles Concord, except on the under side which is covered with a yellowish brown down. Produces a fair and sometimes a heavy crop. Ripens very early and is nearly out of market before Concord is ripe, and hence brings a comparatively high price. It is growing in favor yearly; succeeds best on rich soil.

✓ **Moyer**—A new red grape originating in Canada, resembling Delaware in foliage, habit of growth, appearance and quality of fruit, but we think is a little healthier and more vigorous in growth. Clusters, however, are quite small, and somewhat imperfect berries a little larger than Delaware. It ripens about with Moore's Early, and is chiefly valuable on account of its earliness.

✓ **Niagara**—White; bunch very large and handsome, sometimes shouldered, compact; berries large, round; skin thin, tough, does not crack, and carries well; not much pulp when fully ripe; melting, sweet, with a flavor and aroma peculiarly its own, and agreeable to most tastes; ripens with Concord, sometimes a little earlier. Vine very vigorous and very productive, succeeding well both North and in many parts of the South; is being very largely planted. It is subject to rot fully as much as is Concord.

✓ **Norton**—Black; bunch long, compact, shouldered; berries small, flesh tender, melting, without pulp and vinous. Ripens too late for most

Northern localities, but is very highly esteemed at the South and Southwest, and considered their best red wine grape. Vine a very healthy, vigorous grower, hardy and productive; very difficult to propagate and does not bear transplanting as well as most varieties.

**Perkins**—Pale red when fully ripe; bunch medium to large, shouldered, compact; berries medium to large, skin thick, flesh sweet, juicy but foxy; ripens early, before Concord. Vine very vigorous, hardy, very healthy and productive. Quite exempt from rot except in extreme cases.

**Pocklington**—Pale green, sometimes with tinge of yellow where exposed to sun; bunch large, hard, very compact; berries very large and covered with beautiful white bloom; flesh juicy, sweet with considerable pulp and foxy. Foliage large, leathery, healthy. A seedling of Concord ripening soon after it, and considered its equal in quality. Vine a moderately good grower, but very healthy and very hardy, its buds withstanding severe cold even better than Concord. It produces a heavy crop of fine, healthy, showy clusters, and on account of its attractive appearance and many good qualities, is yearly increasing in popularity. Requires rich soil and good culture.

**Poughkeepsie Red**—An early red grape of superior quality, somewhat resembling Delaware, but with longer and more shouldered clusters; vine not very healthy but very productive. Has sometimes fruited finely with us, but we would recommend it only for amateur culture.

**Prentiss**—Yellowish green with often a rosy tint on side next to sun; bunch medium to large, compact, not shouldered; berries medium to large, skin thin but very firm, flesh tender, sweet, melting, very little pulp, juicy with a delightful aroma. A good shipper and keeper. Somewhat resembling Rebecca in quality and appearance, but a better grower. Is inclined to overbear and clusters should be thinned. This very promising grape has greatly disappointed us. In some favored localities it succeeds well, but in other localities the foliage mildews and growth is not satisfactory. From its fine quality and its success in original vineyard, we expected it would be a valuable acquisition, at least in all good grape regions. Its failure has taught us to go slow in recommending a new variety before it has been pretty generally tested and fruited.

**Salem**—Dark red; bunch large, compact, shouldered; berries large, round, skin thick and firm, flesh very sweet, tender, with a rich aromatic flavor. Vine moderately vigorous, hardy, healthy; ripens earlier than Concord when not permitted to overbear. Is a splendid keeper, a good shipper, and of best quality for both table and wine.

**Talman**—See Champion.

**Telegraph**—Black ; bunch medium to large, very compact, sometimes shouldered ; berries medium, flesh sweet, juicy with some pulp ; quality fair, ripens early, before Concord. Vine healthy, hardy, very vigorous and very productive.

**Ulster Prolific**—A red grape of best quality ; bunch medium, not shouldered, compact ; berries medium to large, skin thick and tough ; ripens soon after Concord and keeps well. Vine a fair grower, moderately hardy, healthy and quite productive.

**Vergennes**—A dark red grape from Vermont ; bunch medium to large, not often shouldered, compact ; berry large, skin very thick and firm, flesh sweet, juicy, with some pulp ; quality best. Vine a vigorous grower, hardy, healthy and productive ; inclined to overbear ; ripens with Concord. An excellent shipper and keeper and a profitable market variety.

**Wilder**—(Rogers No. 4.) Black ; bunch large, shouldered ; berries large, skin thick, firm, flesh sweet, tender, with sprightly, pleasant flavor ; a good keeper ; ripens early or about with Concord. Vine a moderate grower, hardy, healthy and productive ; a popular market variety ; its constitution can be irreparably injured by overbearing, which is its disposition.

**Woodruff Red**—A red grape originating in Michigan ; bunch medium to large, short, compact ; berry large, skin thick but sometimes cracks badly. Vine very vigorous, very hardy, very healthy and usually productive. The fruit is of only fair quality, and quite foxy, but a beautiful bright red, very handsome in appearance, and may prove a profitable market variety. Promises to be quite exempt from rot and mildew ; ripens just after Concord.

**Worden**—Black ; bunch large, sometimes shouldered, compact ; berries very large, skin thin. It is superior to Concord in the following points: It is better in quality, larger berry, more compact and handsome cluster, and ripens five to ten days earlier, and from many sections is reported as more hardy and less liable to rot. It fully equals Concord in vigor, health and productiveness. In berry it is about the size of Moores Early, but of better quality, more vigorous and productive, and ripens but little later. We cannot too strongly recommend it. It is perhaps not quite as good shipper as Concord, but ships satisfactorily from Western New York to the principal cities East and West.

**Wyoming Red**—The earliest good red grape we grow, which has been thoroughly tested ; bunch small, compact and handsome, somewhat resembling Delaware but larger berry ; berry small to medium ; skin bright red, thick, firm ; fruit sweet, somewhat foxy, but agreeable to most tastes. Vine a very strong grower, very hardy and healthy ; foliage small, thick and leathery. It is becoming quite popular where known and tested, and is being largely planted. Its chief point of merit is its health and earliness. Should be pruned with long canes, and given plenty of room to secure good clusters and a good crop. When pruned close it is apt to set imperfect clusters.



## Additional List Recommended only for Amateur or Special Purposes.

The following list includes new and untested varieties, and those which are valuable only for special purposes, or in certain localities, and many which are of little or no value, but which we describe in order that our customers may know what not to plant, as well as what to plant.

✓ **Amber**—Light amber color when fully ripe ; bunch and berry medium ; skin thin, flesh tender, sweet ; late, unproductive.

✓ **Amber Queen**—Red ; bunch and berry medium to large ; fine quality ; vine unhealthy, clusters often imperfect, and we do not recommend it.

✓ **Bacchus**—Black ; bunch medium, very small ; berry small, round, juicy, sprightly. A seedling of Clinton which it resembles. Suitable only for wine purposes.

✓ **Beauty**—Amber colored with lilac bloom ; bunch and berry about like Delaware ; ripens about a week after Concord. Vine vigorous, healthy.

✓ **Berckmans**—Red ; bunch and berry small ; clusters loose ; quality very good ; said to ripen about with Worden.

✓ **Black Eagle**—Black ; bunch large, long, berries medium to large ; skin thin ; flesh tender with little pulp ; good quality, late.

✓ **Black Spanish**—Said to be identical with Lenoir.

✓ **Centennial**—Light amber color or white ; bunch large, long, shouldered ; berry medium ; quality quite good ; ripens a little later than Concord. Vine a fair grower, not always healthy. We recommend it as an amateur grape only.

✓ **Clevener**—Black ; bunch and berry medium to small ; flesh rather pulpy, acid ; fair quality ; used for coloring wines. Vine very vigorous, hardy and healthy. Suited only for wine purposes.

✓ **Cunningham**—Black ; bunch medium, long, compact ; berries small, juicy, vinous ; very late. A Southern wine grape.

✓ **Geneva**—White ; described as good size bunch and berry ; pulp tender, sweet ; skin thick, tough ; a good keeper, fine quality. Vine hardy. New, not sufficiently tested.

✓ **Golden Drop**—Yellowish white ; bunch small, loose ; berry small, round ; quality very best ; ripens with Catawba. Vine vigorous, healthy, with small foliage resembling Clinton.

✓ **Green Mountain**—A new white grape from Vermont. The following description is from the *Country Gentleman*: “Bunch medium to long, irregular; stem long above bunch; berry medium, pale green; flavor pure, moderately sweet; pulp half-tender, with acid center. Berries drop easily from the stem. The cluster is handsome as a whole and the purity of flavor ranks it above some older varieties, but the acid center and dropping of berry from stem debar it from first place—where the climate will permit raising later varieties.”

✓ **Hermann**—Black; bunch long, narrow; berries small, round, ripening very late. Vine vigorous, very productive. A seedling of Norton, and a valuable wine grape in the Southern States.

✓ **Herbemont**—Black; bunch very large, shouldered, compact; berries small; ripens too late for the North, but a valuable wine grape in the South.

✓ **Highland**—Black; bunch large, heavily shouldered; berries large; flesh juicy, very good; it ripens too late at the North, and the vine is not sufficiently hardy nor healthy.

✓ **Jacques**—Same as Lenoir.

✓ **Jewell**—Black; bunch medium, sometimes shouldered, compact; berry medium; skin thin, tough; pulp tender, quality good. Quite similar to Early Victor.

✓ **Lenoir**—Black; bunch medium to large, shouldered; berries small, round; flesh tender without pulp; juicy, sweet, vinous; vine very vigorous, but does not come into bearing early. A valuable Southern wine grape, very rich in coloring matter.

✓ **Louisiana**—Supposed to be identical with Rulander.

✓ **Marion**—Black; bunch and berry medium; colors early, but does not ripen until late; adheres firmly to the stem. Vine vigorous, hardy, productive. Valuable for dark red wine.

✓ **Mills**—Black; bunch very large, long, shouldered, compact; berry above medium, round; skin thick; flesh firm, meaty, with rich sprightly flavor; berries adhere very firmly to stem. Ripens a little later than Concord, and is a good keeper. Vine said to be vigorous and healthy. A new variety introduced by Ellwanger & Barry, not yet sufficiently tested.

✓ **Montifiore**—Black; with a delicate blue bloom; bunch and berry small to medium; skin thin but firm; flesh melting, sweet, vinous with delicious aroma; ripens a few days after Concord. Vine productive, moderately vigorous, very healthy and hardy. A promising red wine grape, which has proved very satisfactory in many localities.

**Norfolk**—Red ; bunch and berry above medium ; quality good, ripening about with Concord. Vine moderately vigorous and healthy.

**Progress**—Same as Norfolk.

**Peter Wylie**—White ; bunch and berry above the medium ; meaty, good quality, with a delicate muscat flavor. Said to be valuable at the South.

**Rebecca**—White ; bunch medium compact ; berry medium ; very fine quality ; vine a weak grower, tender, deficient in constitution.

**Rogers Hybrids as follows : No. 14**—(*Gertner*). Red ; bunch and berry large ; resembles Lindley but berry larger.

**No. 17**—Black ; in foliage, growth and time of ripening, resembles No. 39. Should be better known.

**No. 32**—Red ; bunch very large and berry large ; quality fair ; ripens quite late. Vine not very vigorous, but hardy and very productive.

**No. 33**—Black ; bunch large, shouldered ; berry very large ; quality better than Wilder. Vine vigorous, healthy and productive.

**No. 39**—(*Aminia*). Black, bunch and berry large, skin thick, flesh tender ; very early, ripening about the same time as Worden ; quality good, one of the best of the Rogers. Vine a strong grower, healthy, hardy and productive.

**Rulander**—Black ; bunch small, compact, shouldered ; berries small, without pulp, sweet, good. Vine vigorous, healthy, but too tender for the North. A Southern wine grape.

**Triumph**—Pale green to golden yellow ; bunch very large, shouldered ; berry large, skin thin, flesh sweet, meaty, but little pulp. A fine table grape at the South where it is quite popular, but ripening too late for the North.

**Victoria**—White ; bunch large, shouldered ; berries large, skin thick, flesh sweet, juicy, somewhat pulpy ; quality good, about the same as Lady. Vine a good grower, hardy and healthy, with thick, heavy, Concord foliage. The best of Miner's seedlings.

## Rejected Varieties.

Most of the following, of which we give brief descriptions, we have tested and have decided that they ought to be entirely discarded. They are either worthless or else so nearly similar to other and better varieties as not to entitle them to further notice or dissemination. We do not recommend any of them :

- ✓ **August Giant**—A seedling of Black Hamburg ; bunch large ; berry very large. Vine a strong grower, but very subject to mildew, and fruit rots badly ; not productive and not recommended.
- ✓ **Arnold's Hybrids. No. 1**—(*Othello*.) Black ; skin thin, flesh solid with little pulp ; bunch long, loose ; berry medium ; ripens late, quality fair. Vine a vigorous grower.
- ✓ **No. 2**—(*Cornucopia*.) Black ; somewhat similar to No. 16, except foliage is more strongly marked with dark veins.
- ✓ **No. 5**—(*Autuchon*.) White ; bunch long, not shouldered, medium ; berry medium ; ripens late.
- ✓ **No. 8**—(*Brant*.) Black ; bunch and berry somewhat resemble Clinton ; early.
- No. 16**—(*Canada*.) Black ; bunch and berry larger than No. 8 ; late.
- All of Arnold's seedlings are of the Clinton type, are not particularly desirable and have not proved a success with us.
- ✓ **Black Taylor**—Black ; bunch medium, long, loose ; berry medium, quality good ; ripens about with Concord. Vine vigorous and healthy ; somewhat similar to Montiflore.
- ✓ **Black Defiance**—Black ; bunch and berry large ; ripens with Catawba.
- ✓ **Cambridge**—Black ; so nearly resembling Concord in every respect as to be considered identical with it.
- ✓ **Concord Chasselas**—Light amber color, transparent, of fine quality, but has not proved healthy and not recommended.
- ✓ **Creveling**—Black ; bunch loose, straggling ; berries medium to large, sweet and juicy ; quality good ; not very valuable on account of its very imperfect clusters.
- Croton**—White ; a grape of fine quality, but vine very tender, a weak grower, and very subject to mildew ; discarded.
- Early Dawn**—Black ; an early grape of fine quality. Vine not very healthy and not recommended.
- Eldorado**—White ; bunch and berry large ; not very healthy or hardy ; ripens with Hartford.
- ✓ **Elsinburg**—Black ; bunch medium, shouldered, loose ; berries small, fine quality, early. Vine moderately vigorous, subject to mildew.
- ✓ **Eva**—White ; seedling of Concord, quite similar to Martha.
- ✓ **Faith**—White ; bunch medium, shouldered ; berries small, sweet, early. Vine vigorous, healthy.

**Florence**—Black ; bunch, small, imperfect ; berries medium, very early. Vine hardy, vigorous ; quality resembles Hartford.

**Grein's Golden**—White ; bunch medium, shouldered, loose ; berry medium ; drops from stem and rots badly ; late. Vine vigorous, resembling Mo. Reissling.

**Israella**—Black ; bunch long, very compact ; berry large, pulpy, fair quality ; weak grower and unhealthy.

**Irving**—White ; bunch and berry large, ripening about a week after Concord. Vine only moderately vigorous or healthy.

**Maxatawney**—White ; bunch and berry medium, quality fine, late. Vine a moderate grower, not very productive.

**Miner's Seedlings**—Originated by the late T. B. Miner of New Jersey. We describe twelve of the best known.

**Antoinette**—White ; bunch medium ; berry large, similar to Lady in quality, early. Vine vigorous, hardy and healthy.

**Augusta**—White ; bunch and berry medium ; quality fair ; early. Vine vigorous and hardy, but unproductive.

**Belinda**—White ; bunch, berry and quality much like Lady, but does not crack as badly ; early. Vine vigorous and healthy, with Concord foliage.

**Boadicea**—White ; bunch and berry small. Vine vigorous, unproductive.

**Carlotta**—White ; bunch and berry large. Vine moderately vigorous, healthy, hardy.

**Eugenia**—White ; quite similar to Augusta.

**Harrison**—Black ; resembles Rockingham, but two weeks later.

**Ida**—White ; bunch and berry large, quality good ; ripens after Concord. Vine vigorous, hardy, but not very productive.

**Lexington**—Black ; bunch and berry size of Concord ; quality not very good. Vine hardy, unproductive.

**Linden**—Black ; cluster small, compact, short ; berry hard like Cottage, and ripens with Cottage.

**Rockingham**—Black ; bunch and berry medium ; quality about like Concord. Vine hardy, vigorous, productive.

*For Victoria, see general list.*

**New Haven**—Black ; resembles Concord, but with smaller foliage and clusters ; quality about the same ; ripens about ten days earlier.

✓ **Noah**—White; bunch and berry medium; skin thin, firm, transparent not very juicy, pulp firm; ripens late. Resembles Elvira, but not as desirable.

✓ **Naomi**—Yellowish green, transparent; bunch large, shouldered, compact; quality fine; vine vigorous but unhealthy and very subject to mildew. One of Rickett's seedlings.

✓ **Northern Muscadine**—Dark Amber color; bunch and berry medium; flesh pulpy and quite foxy. Vine very vigorous, hardy and productive. Ripens with Moores Early.

**Norwood**—Black; foliage unhealthy and growth unsatisfactory; ripens with Concord.

**Oneida**—Red; bunch medium, loose; berry medium. Vine a fair grower; quality good.

✓ **Oriental**—Black; in bunch and berry similar to the Rogers varieties; quality good, ripens with Concord. Vine moderately vigorous.

✓ **Pearl**—Pale yellow; bunch small, shouldered, compact; berries medium, juicy, sweet, good. Vine vigorous, hardy.

**Rogers Hybrids. No. 2**—Black; bunch and berry large, ripening very late. Vine vigorous with foliage like Wilder; not very productive.

**No. 5**—Red; somewhat similar to Lindley, but with smaller bunches.

**No. 8**—Black; resembles Wilder, ripening same time; clusters smaller.

**No. 11**—Black; bunch smaller, shorter, and more imperfect than Wilder; ripens about the same time.

**No. 13**—Red; bunch and berry small. Not satisfactory with us.

**No. 24**—Red; bunch poor, berry large. Not satisfactory.

**No. 28**—(*Requa.*) Red; very similar to Lindley but does not succeed as well.

**No. 34**—Black; bunch and berry large; foliage and growth resemble No. 39. Ripens with Concord.

**No. 36**—Black; very similar to No. 33.

✓ **No. 41**—(*Essex.*) Black; bunch medium to large, berry very large; ripens late.

**Rockwood**—Black; a seedling of Concord, raised by E. W. Bull. We tested it in our vineyard several years and have seen it on Mr. Bull's grounds. We were unable to discover sufficient merit in it to warrant its dissemination and rejected it from our trial vineyard several years since.

**Rochester**—Red ; bunch large, shouldered ; berry medium ; quality best. Vine a weak, poor grower with unhealthy foliage ; ripens with Hartford.

**Secretary**—Black ; bunch and berry large ; quality fine. Subject to mildew.

**Sanasqua**—Black ; bunch large, long, very compact ; berry medium to large ; quality best. Vine moderately vigorous but has not proved satisfactory.

**Transparent**—White ; mottled, transparent ; bunch long, loose ; berry small, round ; late. Vine vigorous and healthy.

**Walter**—Red ; bunch and berry similar to Delaware, but larger ; very early and best quality. Vine a weak, unhealthy grower ; lacks constitution.

**Wilding**—White ; bunch and berry medium ; skin very thin and tender ; very fine quality. Unfit for market purposes.

# SMALL FRUITS.

In connection with our specialty GRAPE VINES, we also grow a large stock of small fruit plants of such varieties as have been tried and found valuable for profit in field culture, or desirable for the garden. We do not aim to fill our lists with all the novelties annually introduced, many of which prove worthless, or no improvement on existing varieties, but add yearly all such as stand the test of trial and comparison with older varieties and prove of sufficient merit to warrant us in offering them to our customers.

## CURRENTS.

Plant in rows three or four feet apart and three feet apart in the rows. No plant will better repay generous treatment and high cultivation. Prune out surplus wood every fall. Powdered white hellebore is a specific remedy for the currant worm. It should be dusted over the plants when they are moist.

**Black Naples**—A well known black variety of large size; very vigorous grower, productive and highly esteemed for wine or jellies.

**Cherry**—The largest of all red currants; bunches rather short; plant vigorous and productive; requires good soil and high cultivation.

**Fay's Prolific**—Quite similar to Cherry, with sometimes longer clusters, and is not quite as acid.

**Lee's Prolific**—Black; an English variety of great value, with large fruit of superior quality; very productive.

**Red Dutch**—An old, well-known variety, rather small in size, and good quality; a very vigorous, upright grower and very prolific.

**Versailles**—(*La Versailles*). Very large, bunch longer than Cherry which it resembles; very handsome and productive; one of the best.

**Victoria**—Medium size, bright red; bunches very long, good quality, late, very vigorous and productive; valuable, an erect grower.

**White Dutch**—An old, well-known variety, rather small in size, of good quality, now generally superseded by White Grape.

**White Grape**—Large, sweet, of excellent quality for the table. Plant vigorous and productive, having a low, spreading habit with dark green foliage.



## GOOSEBERRIES.

Plant three to four feet apart each way on rich, deep soil to get best results. Use hellebore to kill currant worms which are very destructive to the gooseberry.

**Downing**—Very large, pale green, fine quality both for table and cooking; plant vigorous and productive; a very profitable market variety.

**Houghton**—An old, well known sort. Vigorous grower with rather slender branches, exceedingly productive; medium size, pale red, not subject to mildew.

**Smith's Improved**—Large pale yellow; skin thin, flesh sweet, excellent quality; plant a good grower and very productive.

**Industry**—An English variety; very large, oval, dark red, with agreeable, excellent flavor. The plant is a good grower, but difficult to transplant.

## RASPBERRIES.

Raspberries succeed well on any good land suitable for corn or wheat, but amply repay good cultivation. Any available manure may be used as a fertilizer. In field cultivation the upright growing varieties should be planted in rows six feet apart, and three feet apart in the rows, requiring 2,400 plants per acre. Black caps require a little more room, and should be planted in rows about seven feet apart, and three feet in the rows, requiring about 2,000 plants to the acre. They may be planted either in Fall or Spring.

### Red Varieties.

**Cuthbert**—Deep, rich crimson, medium to large, productive, very firm, one of the best market varieties; season medium to late.

**Hansell**—Bright crimson, medium size, fine quality and very early.

**Marlboro**—One of the best red varieties for market; hardy and productive, color very bright red and attractive; very firm but not of best quality.

**Turner**—Medium size, quite firm, juicy, sweet; very hardy.

### Black Caps.

**Doolittle**—Early, very hardy, productive; an old variety but still highly esteemed.

- ✓ **Gregg**—One of the best of the black varieties ; a very vigorous grower, large, good quality, late ; requires good, strong land ; very extensively planted for market and drying.
- ✓ **Ohio**—Very highly esteemed for evaporating ; plant hardy and very productive ; mid-season.
- ✓ **Shaffer's Colossal**—A very large purple berry, fine quality for table but too soft for distant markets ; plant hardy, vigorous and productive ; medium to late.
- ✓ **Souhegan or Tyler**—A leading early market variety, ripening its entire crop in a very short time ; medium size, very black without bloom ; flesh firm and sweet. Plant vigorous, strong, hardy.

## BLACKBERRIES.

Blackberries require the same treatment as raspberries, and should be planted same distance apart.

- ✓ **Early Harvest**—One of the earliest varieties, and valuable both for table and market ; fruit medium size, fine quality, very productive.
- ✓ **Erie**—Very large, round, somewhat resembling Lawton ; ripens soon after Early Harvest ; good quality. Plant vigorous, productive and hardy.
- ✓ **Kittatinny**—Large, conical, glossy black, one of the most valuable sorts for general planting ; requires protection in severe climates.
- ✓ **Snyder**—Extremely hardy and therefore very valuable for the North ; enormously productive, medium size, good quality.
- ✓ **Wachusets Thornless**—Large size and delicious quality ; cane a strong grower with but few thorns. Unproductive except on rich soil with high cultivation.
- ✓ **Wilson**—Very early, large size, fine flavor, very productive, canes not very hardy.
- ✓ **Wilson Junior**—Berries of the largest size ; very productive, producing its fruit in large clusters ; berries sweet as soon as black ; a valuable variety for market ; ripens early.
- ✓ **Taylor**—Cane as hardy as Snyder ; berries much larger and somewhat later ; fruit of best quality.

### Dewberry.

- ✓ **Lucretia**—A low-growing, trailing blackberry. The fruit is large size, soft, sweet and luscious, with no hard core. The plant is hardy, and under favorable conditions very productive.

## STRAWBERRIES.

Plant on good ground deeply worked and well manured. Thoroughly rotted stable manure, bone dust or unleached wood ashes are all excellent. For field culture, set in rows three feet apart and eighteen inches in the rows; for garden, fifteen inches apart each way, leaving a path every sixth row; if to be kept in hills, cut off runners as soon as they appear. The best time to plant is March, April or May, though good success may be obtained in favorable seasons in September, October or November. Varieties termed pistillate, marked (P), are those with flowers destitute of stamens, and every fourth or fifth row should be planted with a perfect flowering variety.

✓ **Bidwell**—Early, productive, large, conical, bright crimson; should be planted on heavy, rich soil; somewhat resembles Sharpless.

✓ **Bubach**—(No. 5.) Early, continuing a long time in bearing; very productive, large, good form, good quality; very valuable for garden, or near-by market, but too soft for long shipment.

✓ **Crescent**—(P.) One of the earliest and most productive varieties, succeeding under almost any circumstances; medium size, bright scarlet, fair quality. Plant very vigorous and hardy, continuing a long time in fruit. Desirable for near-by market.

✓ **Charles Downing**—A well-known and very popular variety which should be in every garden; medium to large, conical, deep scarlet; adapted to a great variety of soils and climates, quality best.

✓ **Cumberland Triumph**—A fine berry of large size, very smooth, perfect form, and best quality; pale scarlet color, early to mid-season. Plant vigorous and productive.

✓ **Crawford**—A new variety; plant stocky, vigorous and very productive; berries very large, usually regular in form, clear, glossy red color, ripening without white ends; flesh firm, carrying well; quality good; early, continuing a long time in fruit.

✓ **James Vick**—Plant very vigorous and productive when planted on strong, rich soil. Berries medium to small, bright crimson, fair quality; a good market berry for long shipment.

✓ **Jersey Queen**—(P.) Large, scarlet, handsome berry of high quality, moderately firm; a very desirable late variety for family use.

**Jessie**—A very large berry, usually good form, continuing large through the season; fine quality, quite firm, bearing transportation well. Plant strong, vigorous, with light green foliage. A very valuable variety for both family and market.

**Kentucky**—A very popular late variety; large, bright scarlet, firm; plant a good grower and moderately productive.

**Manchester**—(P.) A bright scarlet, good size, quite uniform, firm with a pleasant sub-acid flavor; commences to ripen about mid-season and continues very late; a valuable variety.

**Miner's Prolific**—Quite similar to Charles Downing, but larger and darker; valuable for market or family.

**Sharpless**—A berry of the very largest size, of clear, light red color; firm, sweet, good quality. It still maintains its high reputation for size of berry, productiveness and vigor, and is very extensively planted for market and family.

**Wilson**—The old standard, succeeding everywhere, and although rather too acid for most tastes, is more extensively planted than any other variety.



