VARIETY TEST OF STRAWBERRIES AND CULTURAL DIRECTIONS.

O. M. TAYLOR.
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* Riverhead, N. Y.
† Absent on leave.
BULLETIN No. 309.

VARIETY TEST OF STRAWBERRIES AND CULTURAL DIRECTIONS.

O. M. TAYLOR.

SUMMARY.

Eighty-nine varieties, tested during 1907 and 1908, many of them recent introductions, are described in this bulletin. The kinds have varied widely in behavior under apparently similar conditions, and these differences indicate their possible value when grown in a similar environment. Actual trial under each set of conditions is the safest guide.

The distance of rows and plants should be governed by the plant’s ability to reproduce itself. This is an inherent character which varies but little under different surroundings. Eleven varieties produced very many plants which were badly crowded. Thirty-two kinds made very few plants leaving much unoccupied ground which resulted in a decreased yield. Forty-six varieties developed a medium number of runners.

No insect injury occurred during 1907 and 1908. Weather conditions were unfavorable for the rapid outbreak and spread of fungus diseases. A few varieties suffered from mildew. Twenty varieties were strongly susceptible to attacks of leaf-blight. Sixty-nine kinds were free from disease, or nearly so. Under ordinary conditions applications of bordeaux mixture are unnecessary.

A large number of varieties fruited in midseason. Nineteen per ct. proved to be early; about eight per ct. were late. Small size and a short and unproductive season are characteristics of early varieties. Golden Gate and Saint Louis were very productive and early in season. Most of the early kinds produced only one or two satisfactory pickings. There were a larger number of desirable midseason and late kinds than early varieties.
All of the seven late varieties, Blaine, Columbia, Nettie, Prof. Fisher, Quality, Rough Rider and Williams are included in the list of varieties having marked desirable characters.

One of the greatest variations was in productiveness. The rating of each is given in the description of the variety. The most productive kind, Arnouts, yielded at the rate of 14,409 quarts per acre; the least productive variety, Stevens Late Champion, yielded at the rate of 622 quarts per acre. This variety, however, produced very few runners. It has many qualities to commend it and is worthy of trial notwithstanding the record of yield. Nineteen varieties gave a yield of from 8,189 to 14,409 quarts per acre, and only nine varieties gave a yield of from 2,807 quarts down to 622 quarts per acre.

For commercial purposes large size of fruit is essential. Many kinds otherwise desirable produce berries too small. Some desirable kinds such as Carrie Silvers, Dighton Rock, Ernie, Senator Dunlap, Williams, and others produced large fruit which rapidly decreased in size as the season advanced. On page 513 is given a list of thirty-eight varieties which retained their size fairly well throughout the season.

Early blooming varieties often suffer from frost. Those which open their buds late are usually safer to grow. The blooming season may be retarded slightly as indicated under cultural directions. Fourteen varieties blossomed early and a similar number bloomed late. Abington, an early bloomer, ranked high in productiveness and in color, although not of highest quality. All but three of the fourteen late bloomers are in the group of desirable kinds.

The list of varieties with marked desirable characters is large. Many varieties are included which made a good record in the previous test and these have nearly all held their own during the past two years. The list is only suggestive. It is not expected that all will do equally well in any one place. The important characteristics are noted in the descriptions. Attention is here called to a few of the most promising sorts. Amanda, although subject to leaf blight, is a heavy yielder of large, well colored berries of high quality. Blaine is an excellent
shipper and ranks very good in quality. Cardinal, Mark Hanna, Marshall, Mead, President, Rough Rider and Senator Dunlap are well known in many sections. Chesapeake, a most promising kind, produced few plants, which were healthy and vigorous. The plump, glossy scarlet surface, smooth except for the raised seeds, is characteristic. Columbia has excellent plant habits; the large glossy, light scarlet berries have good flesh characters; one of the best late ripening kinds. Dighton Rock lacks somewhat in vigor but ranks very good to best in quality. Golden Gate produced vigorous and very productive plants, ripening its fruit medium early; an excellent shipper. Good Luck is worthy of more extended trial; the flesh is sprightly acid and pleasant flavored. Magnus, a Station seedling, ranked first in attractiveness. Millionaire was not sufficiently tested to determine its value. The dark green healthy foliage of Nettie, a late variety, attracted attention, as did the large and slightly dull scarlet fruit; resembles Prof. Fisher but earlier. President again demonstrated its value as a show berry. Prof. Fisher made a good record as a productive, late, tart variety, but is coarse in appearance. Prolific, a Station seedling ranked at the front and appears unusually well adapted for commercial purposes. Although the plant characters of Saratoga are not perfect, the fruit is large, well shaped, attractive, dark scarlet; an excellent shipper; sprightly acid and of a good to very good quality. Stevens Late Champion ranked low in yield and was inclined to green tips but the plant characters were good and the fruit was usually attractive; should be set closer than most varieties. "Three W" gave the highest yield in 1908 (12,342 quarts per acre) and may have value on account of productiveness although the shape is variable; flesh is unusually dark red.

The cultural notes are brief suggestions along desirable lines. The details must vary to suit each set of conditions; the general principles of plant and soil requirements remain unchanged.
INTRODUCTION.

Two seasons have passed since the last publication of this Station on strawberries was issued. During this time eighty-nine varieties have been tested, and it is the purpose of the present bulletin to report the results obtained. Most of the varieties are recent introductions but some standard kinds are included for purposes of comparison. Whenever possible, plants were obtained from the originator or introducer and great care was given at all times to secure stock true to name.

The success of any variety depends largely upon two things, its adaptation to environment and the amount of moisture available just before and during the fruiting period. Certain factors cannot be modified to any extent, but the amount of plant food available and the conservation of moisture are largely dependent upon the efforts of each grower, and vary with the care given. Seasons are unlike. Conditions widely different may exist at the same time in closely related territory. For these reasons the details of weather conditions for 1907 and 1908 are omitted. Average crops of berries were produced generally although the yield was decreased in some localities by lack of rainfall or by other causes.

The results given in this bulletin must not be taken as an index to the value of a variety in all locations and under all conditions. They indicate only the character of plant and fruit development under the local conditions existing at this Station, pointing out the strong and weak tendencies as they have appeared. It must be said again that the true value of a variety for each location can be determined only by actual trial in that place.

Brief cultural suggestions were given in the previous bulletin. The demand for copies has been so great that the supply is exhausted. For this reason the description of varieties is followed by a revision of the brief cultural notes which may in a measure answer the numerous inquiries coming to this Station in regard to growing strawberries.
NOTES ON VARIETIES.

Plant makers.—Varieties differ widely in their ability to make new plants, and this tendency should be considered in determining the distance of planting. To make conditions uniform, however, in this experiment all plants, except where noted, were set three feet by two feet. This distance was too great in some cases, resulting in a decreased yield. Other varieties made an unusually large number of plants which should have been thinned out or given more room. The following are lists of varieties producing very many or very few plants:

<table>
<thead>
<tr>
<th>Very Many Plants</th>
<th>Very Few Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abington</td>
<td>Columbia</td>
</tr>
<tr>
<td>Advance</td>
<td>Edwards No. 1</td>
</tr>
<tr>
<td>Amanda</td>
<td>Mark Hanna</td>
</tr>
<tr>
<td>Cardin-1</td>
<td>Pineapple Flavored</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Chesapeake</td>
<td>Klondike</td>
</tr>
<tr>
<td>Dighton Rock</td>
<td>Latest</td>
</tr>
<tr>
<td>Elma</td>
<td>Mead</td>
</tr>
<tr>
<td>Florella</td>
<td>Miss Boston</td>
</tr>
<tr>
<td>Gem</td>
<td>Morning Star</td>
</tr>
<tr>
<td>Gill</td>
<td>Nehring's Gem</td>
</tr>
<tr>
<td>Gladstone</td>
<td>New Home</td>
</tr>
<tr>
<td>Great Scott</td>
<td>Nimrod</td>
</tr>
<tr>
<td>Helen Gould</td>
<td>North Shore</td>
</tr>
<tr>
<td>Hundred Dollar</td>
<td>Olympia</td>
</tr>
<tr>
<td>Joe</td>
<td>Oswego</td>
</tr>
</tbody>
</table>

Resistance to disease.—The amounts of leaf blight and mildew were noted from time to time during the growing season. The extent of these injuries is often largely determined by soil and air drainage and by the frequency and duration of rainfall, and varies widely in different years. Under similar conditions, however, there was considerable variation in the ability of different varieties to withstand attacks of fungi. These differences are recorded in the description of varieties. Fifty-five varieties were wholly free from disease, fourteen varieties but slightly affected, and twenty varieties considerably injured, principally by leaf blight.

Season of ripening.—In some localities the commercial value of a variety is largely determined by the time at which the fruit
is ready to harvest. Some markets require early fruit while others find the late varieties most satisfactory. The terms early, midseason and late, as used in this bulletin, are relative, referring to comparative time of ripening rather than to specific dates. The following table shows that seventeen varieties ripened early and only seven late, while a large majority, sixty-five in number, fruited in midseason.

<table>
<thead>
<tr>
<th>Early Season</th>
<th>Late Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance</td>
<td>Miss Boston</td>
</tr>
<tr>
<td>Almo</td>
<td>Oaks Early</td>
</tr>
<tr>
<td>Chipman</td>
<td>Pres. Roosevelt</td>
</tr>
<tr>
<td>Colossus</td>
<td>Riehl No. 28</td>
</tr>
<tr>
<td>Early Beauty</td>
<td>Saint Louis</td>
</tr>
<tr>
<td>Ekey</td>
<td></td>
</tr>
<tr>
<td>Ernie (jured)</td>
<td></td>
</tr>
<tr>
<td>Excelsior</td>
<td></td>
</tr>
<tr>
<td>Fairfield</td>
<td></td>
</tr>
<tr>
<td>Florella</td>
<td></td>
</tr>
<tr>
<td>Gill (jured)</td>
<td></td>
</tr>
<tr>
<td>Golden Gate</td>
<td></td>
</tr>
<tr>
<td>Blaine</td>
<td>Prof. Fisher</td>
</tr>
<tr>
<td>Columbia</td>
<td>Quality</td>
</tr>
<tr>
<td>Nettie</td>
<td>Rough Rider, Williams</td>
</tr>
</tbody>
</table>

Productiveness.—During the ripening period the fruit was picked and weighed several times each week as occasion required. As the rows of the different varieties were not of the same length the total weight was reduced to the estimated yield per acre for comparison. No less than 12 plants of a variety were set, and in some cases the rows included 100 or more plants. The results indicate wide ranges in productiveness, varying from 14409 quarts per acre in the case of Arnouts to 622 quarts per acre with Stevens Late Champion. The latter variety, however, produced very few runners and the original plants might have been set much closer, which would have materially increased the yield per acre. The following is a list of varieties producing heavy and light yields:

**Very Productive**

<table>
<thead>
<tr>
<th>Abingdon</th>
<th>King Edward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda</td>
<td>Mead</td>
</tr>
<tr>
<td>Arnouts</td>
<td>New Globe</td>
</tr>
<tr>
<td>Bradley</td>
<td>Oneida</td>
</tr>
<tr>
<td>Columbia</td>
<td>Oswego</td>
</tr>
<tr>
<td>Golden Gate</td>
<td>President</td>
</tr>
<tr>
<td>Hundred Dollar</td>
<td></td>
</tr>
</tbody>
</table>

**Unproductive**

<table>
<thead>
<tr>
<th>Elma</th>
<th>Morning Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gill</td>
<td>Nimrod</td>
</tr>
</tbody>
</table>

| Prolific                      |                            |
| Saint Louis                   |                            |
| Saratoga                      |                            |
| Senator Dunlap                |                            |
| Three W                       |                            |
| World’s Wonder                |                            |
| Olympia                       |                            |
| Stevens Late Champion         |                            |
Size of fruit.—At the first picking of each variety, the size of the berries was noted and this record compared with the size of the fruit at each succeeding picking. Many of the varieties of good quality and attractive color were deficient in size throughout the season. Others produced fruit of excellent size at first, which later decreased greatly. Still others retained a satisfactory size to the close of the season, a most desirable character for a good commercial variety. The fact must not be overlooked, however, that size is not the only factor to be considered, for some varieties were unattractive in color or undesirable in shape although of excellent size. The following list of thirty-eight varieties retained their size fairly well throughout the season.

Desirable Size Throughout Season

<table>
<thead>
<tr>
<th>Abington</th>
<th>Good Luck</th>
<th>Prof. Fisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda</td>
<td>Gov. Rollins</td>
<td>Prolific</td>
</tr>
<tr>
<td>Arnouts</td>
<td>Great Scott</td>
<td>Ridgeway</td>
</tr>
<tr>
<td>Blaine</td>
<td>Hundred Dollar</td>
<td>Rough Rider</td>
</tr>
<tr>
<td>Bountiful</td>
<td>Joe</td>
<td>Saratoga</td>
</tr>
<tr>
<td>Cardinal</td>
<td>Klondike</td>
<td>Schaub No. 106</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>Latest</td>
<td>Schaub No. 108</td>
</tr>
<tr>
<td>Columbia</td>
<td>Magnus</td>
<td>Star</td>
</tr>
<tr>
<td>Colossus</td>
<td>Mark Harns</td>
<td>Stevens Late Champion</td>
</tr>
<tr>
<td>Ekey</td>
<td>Marshall</td>
<td>Uncle Jim</td>
</tr>
<tr>
<td>Elma</td>
<td>Mead</td>
<td>Uncle Sam</td>
</tr>
<tr>
<td>Gladstone</td>
<td>Nettie</td>
<td>Velvet</td>
</tr>
<tr>
<td>Golden Gate</td>
<td>President</td>
<td></td>
</tr>
</tbody>
</table>

Blooming season.—In some parts of the State and in localities subject to late frosts the time of blooming is of great importance as a large proportion of the blossoms are often killed by low temperatures at blooming time. The date of bloom varies, depending considerably upon the season and on the amount of winter protection given in order to keep the plants back as much as possible. Records were kept of the date of the opening of the first blossoms and from these data the kinds have been grouped according to the relative time of blossoming into early, midseason and late bloomers. Fourteen varieties bloomed early and fourteen were late in coming into bloom. The following is the list:
**EARLY BLOOMERS**

<table>
<thead>
<tr>
<th>Abington</th>
<th>Fairfield</th>
<th>Nimrod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance</td>
<td>Florella</td>
<td>Oak’s Early</td>
</tr>
<tr>
<td>Chipman</td>
<td>Gill</td>
<td>Olympia</td>
</tr>
<tr>
<td>Early Beauty</td>
<td>Morning Star</td>
<td>Somerset Maid</td>
</tr>
<tr>
<td>Excelsior</td>
<td>Mrs. Miller</td>
<td></td>
</tr>
</tbody>
</table>

**LATE BLOOMERS**

<table>
<thead>
<tr>
<th>Amanda</th>
<th>Good Luck</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>Joe</td>
<td>Schauer No. 106</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>Magnus</td>
<td>Schauer No. 108</td>
</tr>
<tr>
<td>Columbia</td>
<td>Millionaire</td>
<td>Williams</td>
</tr>
<tr>
<td>Elma</td>
<td>Prof. Fisher</td>
<td></td>
</tr>
</tbody>
</table>

Desirable kinds.—Of all fruits the strawberry is one of the most variable in its behaviour in different localities and under changed conditions. A variety may succeed in one place and fail in another place even in closely related territory. It is therefore unsafe to plant largely of any kind, no matter how well recommended, without a preliminary trial to test its adapatability to the proposed location. Nor is it generally desirable to include too many varieties in the main plantation for commercial purposes. A conservative study should therefore be made of the large list given below. These include the varieties which have strongly shown desirable characters along important lines. These characters are fully noted in the description of the variety. None of these kinds is perfect in all points and doubtless some will be discarded after a longer test. The fifty-four varieties not included in the list did not succeed well in the test at this Station. Those marked with a star should be planted closer than the other varieties.

**VARIETIES HAVING MARKED DESIRABLE CHARACTERS**

<table>
<thead>
<tr>
<th>Abington</th>
<th>Golden Gate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda</td>
<td>Good Luck</td>
</tr>
<tr>
<td>Blaine</td>
<td>Gov. Rollins</td>
</tr>
<tr>
<td>Bountiful</td>
<td>*Joe</td>
</tr>
<tr>
<td>Cardinal</td>
<td>Magnus</td>
</tr>
<tr>
<td>Carrie Silvers</td>
<td>Mark Hanna</td>
</tr>
<tr>
<td>*Chesapeake</td>
<td>Marshall</td>
</tr>
<tr>
<td>Columbia</td>
<td>*Mead</td>
</tr>
<tr>
<td>*Dighton Rock</td>
<td>*Nehring’s Gem</td>
</tr>
<tr>
<td>*Elma</td>
<td>Nettie</td>
</tr>
<tr>
<td>Ernie</td>
<td>Omega</td>
</tr>
<tr>
<td>*Gladstone</td>
<td>President</td>
</tr>
</tbody>
</table>

* Make few runners. Should be set closer.
DESCRIPTION OF VARIETIES.

In the following descriptions the source of the plants tested is indicated by the names in parentheses following the names of varieties. Most of the historical information was secured directly from the originators or introducers.

**Abington.**—(W. F. Allen, Salisbury, Md.) Perfect. A chance seedling originated in 1895 by Lester Blanchard, Abington, Massachusetts and introduced by him in 1905. Plants many in number, strongly vigorous, subject to attacks of leaf blight, very productive. Leaves large, dark green; leaf stems long, variable in thickness. Fruit stems long, thick, usually double, medium erect. Blooms medium early, ripens slightly before midseason, picks easily. Calyx of medium size, flat or often on a short neck, sometimes slightly discolored. Seeds somewhat sunken. Fruit large, wedge to roundish conic or sometimes slightly elongated, attractive light scarlet. Flesh rather light colored, moderately firm, mildly acid, fair to good in quality. Retains size well throughout the season. Not of highest quality or firmness but worthy of trial on account of productiveness and general attractiveness.

**Advance.**—(W. F. Allen, Salisbury, Md.) Perfect. Introduced about 1904 by Arthur B. Printz of Indiana. Plants very numerous, vigorous, healthy, above medium in productiveness. Leaves medium to above in size, light green; leaf stems rather long, slender. Fruit stems long, medium to slender, single, prostrate. Blooms and ripens early, picks easily. Calyx small to medium, not leafy, discolored, flat, often pale green. Seeds slightly sunken. Fruit averages medium in size, strongly elongated, apex sharp pointed, attractive medium to light scarlet. Flesh medium red, rather soft, considerably acid, not high in flavor, poor to fair in quality. Not desirable in size or shape.

**Almo.**—(J. A. Bauer, Judsonia, Ark.) Imperfect. Originated in 1902 and introduced in 1905 by J. A. Bauer, Judsonia,
Arkansas. Grown from seed obtained by crossing Clyde and Crescent. Plants medium in number, vigorous, healthy, productive. Leaves large, dark green; leaf stems long, thickish. Fruit stems of fair length, thick, double, semi-erect. Blooms in midseason, ripens early, picks easily. Calyx small to medium, discolored, slightly sunken to flat. Seeds depressed to medium. Fruit large, drops rapidly in size as the season advances, attractive roundish conic, dark glossy scarlet. Flesh well colored, very firm, agreeably acid, not high in flavor, quality fair. A dark red berry of desirable shape.

Amanda.—(J. Whitt, Vermillion, O.) Perfect. Originated by Z. T. Mumma, Bluffton, Ohio, in 1904. The stock is now controlled by Mr. Whitt. Not yet introduced to the trade. A seedling of Sample crossed with Maximus. Plants very numerous, vigorous, subject to attacks of leaf blight, a heavy yielder. Leaves of average size and color; leaf stems long, medium to slender. Fruit stems long, medium to very thick, branched, somewhat erect. Blooms late, ripens in midseason, picks easily. Calyx medium in size, somewhat discolored, sunken to flat. Seeds strongly depressed. Fruit of large size which holds well throughout the season, wedge to roundish conic, light and dark scarlet, slightly glossy. Flesh well colored, very firm, agreeably acid, pleasant flavor, quality good. Has many qualities which commend it for more extended trial.

Arkansas Black.—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. Originated in 1900 by Louis Hubach, Judsonia, Arkansas and introduced about 1904 by Hubach and Hathaway, of that place. Mr. Hubach states that it is a seedling of Lucretia Dewberry crossed with one of his seedling strawberries. Although twelve plants were set of this variety, nearly all failed to grow. The remainder appeared to be moderately vigorous, productive and healthy. Calyx medium to small, often discolored, usually slightly raised. Seeds depressed. Fruit large to medium, roundish conic, blunt, very dark scarlet. Flesh of good color, firm, mildly acid, agreeable flavor, good
to very good in quality. The few plants fruiting would indicate an early season. The color of fruit is the darkest of all the varieties described in this bulletin. Not enough plants for a satisfactory test.

Arnouts.—(W. F. Allen, Salisbury, Md.) Perfect to semi-perfect. Originated by J. R. Arnout of Pennsylvania. Plants medium in number and vigor, susceptible to attacks of leaf blight, very productive, yielding at the rate of 14,409 quarts per acre. Leaves of average size and color; leaf stems medium in length, rather slender. Fruit stems medium to long, inclined to thick, prostrate. Blooms and ripens in midseason, picks medium easily. Calyx medium to small, often discolored, slightly depressed. Seeds numerous, somewhat sunken, slightly hairy. Fruit large to medium, wedge to roundish conic, surface irregularly furrowed, rather dull dark scarlet. Flesh medium red, firm, mildly acid, quality good. Irregular in shape, inclined to green tips, seedy appearance, dull, unattractive, wrinkled surface. Chief value appears to be productiveness.

Blaine.—(J. W. Blaine, Polk City, Iowa.) Semi-perfect to perfect. Originated by Mr. Blaine in 1902, and first sent out in 1907. Thought to be a cross of Beder Wood and Lovett as the original plant was found in a patch of these varieties. Plants numerous, vigorous, subject to mildew, below medium in productiveness. Leaves of medium size and color, inclined to curl on account of mildew. Leaf stems long, medium to thick. Fruit stems long, inclined to thick, somewhat erect. Blooms and ripens late, picks easily. Calyx large, leafy, attractive green, flat to raised. Seeds raised, numerous. Fruit large to medium, retains size well throughout the season, blunt, roundish conic, medium to light attractive scarlet. Flesh medium red, very firm, pleasant acid, agreeable flavor, very good in quality. Some berries rather light in color. Worthy of further testing. Flesh characters desirable.

Bountiful.—(J. E. Kuhns, Cliffwood, N. J.) Perfect. First fruited in 1899 by Mr. Kuhns and introduced by him in the
spring of 1908. Said to be a seedling of Glen Mary probably crossed with Clyde. Plants numerous, vigorous, susceptible to attacks of leaf blight, above medium in productiveness. Leaves rather large, medium dark green. Leaf stems above medium in length, inclined to slender. Fruit stems medium to short, variable in thickness. Blooms early in midseason, ripens slightly before midseason, picks medium easily. Calyx medium to rather small, often discolored, sometimes slightly sunken. Seeds numerous, somewhat depressed. Fruit large to medium, retains size well in late pickings, roundish conic, medium dark scarlet. Flesh well colored, firm, mildly acid, pleasant flavor, quality good. In later pickings many berries hard and seedy at apex. The fruit is medium attractive ranking slightly above the average in general appearance and in flesh characters.


Cardinal.—(G. J. Streator, Garretsville, O.) Imperfect. A self-sown seedling originated by Mr. Streator in 1896. Nothing is certain concerning its parantage but it is thought to be of Warfield descent. The stock was sold to the Templin Company, Calla, Ohio, who introduced the variety in the spring of 1905. Plants very numerous, vigorous, healthy, productive. Leaves medium to large, dark green; leaf stems above medium
to long, rather thick. Fruit stems variable in length, stout, often double, semi-erect. Blooms and ripens about midseason, picks easily. Calyx medium to large, leafy, usually not depressed, often discolored. Seeds raised, numerous. Fruit above medium to large, retains its size fairly well till close of season, roundish conic, sometimes inclined to wedge, slightly necked, rather dark, dull or sometimes glossy scarlet. Flesh good color, firm, juicy, rather acid, agreeable flavor, quality good. Has many qualities which commend it.

Carrie Silvers.—(J. H. Black, Son & Co., Hightstown, N. J.) Imperfect. Originated in 1893 by Black, Son & Co., and introduced by them in 1899. A seedling of Sharpless and Warfield crossed by Parker Earle. Plants medium to numerous, vigorous, healthy, productive. Leaves above medium to very large, dark green; leaf stems long, medium to thick. Fruit stems inclined to short, single, prostrate. Blooms and ripens in midseason, picks medium easily. Calyx of fair size, slightly reflexed, medium green, somewhat raised. Seeds raised slightly. Fruit large, drops rapidly in size as the season advances, slightly elongated to roundish conic, blunt at apex, inclined to a neck at base, attractive, glossy, medium dark scarlet. Flesh dark red, firm, pleasant acid, agreeable flavor, good to very good. Excellent showing. Has many qualities to commend it for trial.

Chesapeake.—(W. F. Allen, Salisbury, Md.) Perfect. Takes its name from Chesapeake Bay. Plants few, rather vigorous, healthy, productive. Leaves above medium in size, rather dark green; leaf stems medium to above in length, inclined to thick. Fruit stems medium to above in length, thick, usually branched, semi-erect. Blooms late, ripens in midseason, picks easily. Calyx large, leafy, attractive green, slightly depressed. Seeds markedly raised, numerous. Fruit large, roundish conic to wedge, surface plump, unbroken by furrows, attractive glossy scarlet. Flesh fairly good color but sometimes rather light. very firm, mildly acid, pleasant flavor, quality good to very
good. Plants should be set closer than most varieties. The plump, glossy surface, smooth except for the raised seeds, is characteristic of this variety. Worthy of extended trial.

Chipman.—(W. S. Todd, Greenwood, Del.) Perfect. Found by a Mr. Chipman, at Lincoln, Delaware, about 1901, growing in a plantation of Bubach and Tennessee Prolific. Introduced in 1907 by Mr. Todd. Plants very numerous, medium to vigorous, healthy, productive. Leaves of fair size, dark green; leaf stems medium to long, rather slender. Fruit stems inclined to long, thick, often branched, prostrate. Blooms and ripens early, picks easily. Calyx medium to large, sometimes leafy, light green, flat. Seeds sunken. Fruit large to medium, wedge to roundish conic, sometimes slightly elongated, surface somewhat irregular, rather attractive light and dark scarlet, becoming duller as the season advances. Flesh slightly light color, medium in firmness and juiciness, mild acid, pleasant but not high flavor, fair to good. Lacks somewhat in juiciness and in flavor. Size variable.

Columbia.—(J. B. Wild & Bros., Sarcoxie, Mo.) Imperfect. Plants very numerous, strongly vigorous, healthy, very productive. Leaves unusually large, dark green; leaf stems long, very thick. Fruit stems long, thickish, often single, rather erect. Blooms and ripens late, picks easily. Calyx above medium to large, often leafy, usually slightly sunken. Seeds numerous, raised. Fruit large, often very large, wedge to roundish conic, attractive, glossy, light scarlet. Flesh well colored, firm, agreeably acid, pleasant flavor, good to very good in quality. Retains size well as the season advances. Desirable in size, color and shape. Flesh characters good. One of the most promising kinds.

Colossus.—(Geo. R. Schauber, Ballston Lake, N. Y.) Imperfect. Plants medium in number and vigor, healthy, productive. Leaves small to medium, dark green; leaf stems short to medium, slender. Fruit stems inclined to short, medium to
slender, often single, prostrate. Blooms in midseason, ripens early, does not pick easily. Calyx medium to below in size, slightly leafy, attractive green, reflexed, flat to slightly sunken. Seeds variable in depth. Fruit large to medium, retains size well in later pickings, wedge to roundish conic, rather blunt, attractive, medium dark scarlet. Flesh medium red to light colored, firm, mildly acid, not high flavor, of fair quality. Attractive shape. Characters desirable except in flavor and quality.

Commander.—(Flansburgh & Potter, Leslie, Mich.) Perfect. This variety is of French stock imported and sold first in this country by J. H. Goldsburv, of Washington, D. C. Plants numerous, vigorous, susceptible to attacks of leaf blight, productive. Leaves medium to large, dark green; leaf stems of average length, rather slender. Fruit stems medium to above in length, of average thickness, rather prostrate. Blooms and ripens in midseason, picks medium easily. Calyx medium to above in size, often discolored, usually slightly raised. Seeds depressed. Fruit very large to medium, varies in shape from irregular wedge to roundish conic or slightly elongated, surface irregularly furrowed, light to dark scarlet, does not color uniformly. Flesh medium well colored, very mild, not juicy, inferior in flavor and quality. Coarse in general appearance. Fruit runs small in later pickings.

Dighton Rock.—(J. H. Hale, South Glastonbury, Conn.) Perfect. Plants few in number, below medium in vigor, healthy, productive. Leaves small to medium, of average color. Leaf stems rather short, moderately thick. Fruit stems short to medium, often very thick, double, prostrate. Blooms and ripens in midseason, picks medium easily. Calyx medium to large, leafy, flat to slightly raised. Seeds sunken. Fruit large to medium, dropping rapidly in size as the season advances, attractive roundish conic, very blunt, medium to dark glossy scarlet. Flesh dark red, firm, agreeably acid, highly flavored, very good to best in quality. Unusually promising in flesh characters. Fruit runs small in late pickings. Worthy of trial.
Early Beauty.—(Woodlawn Nurseries, Rochester, N. Y.)
Perfect. Originated in Iowa. Plants numerous, vigorous, healthy, productive. Leaves medium to small, medium green; leaf stems long, slender. Fruit stems long, not thick, branched. Blooms and ripens early, picks easily. Calyx large to medium, leafy, attractive green, slightly sunken to flat. Seeds slightly depressed. Fruit above medium to small, roundish conic to slightly elongated, apex variable, often sharp pointed, surface of largest berries irregular, light to medium red. Flesh whitish, medium to firm, mildly sweet, not high in flavor, quality fair. Too small, and unattractive in color.

Echo.—(Woodlawn Nurseries, Rochester, N. Y.) Perfect. Introduced by the Woodlawn Nurseries. Plants of medium number, vigorous, slightly attacked by leaf blight, above medium in productiveness. Leaves medium to below in size, moderately light green; leaf stems of fair length, rather slender. Fruit stems medium to long, thick, usually double, somewhat erect. Blooms and ripens in midseason. Calyx medium to rather large, often leafy, slightly sunken. Seeds depressed. Fruit large to medium, drops in size as the season advances, roundish conic, apex very blunt, dull scarlet. Flesh whitish, juicy, rather firm, pleasant flavor, good to very good in quality. The fruit picks easily but lacks in size and is unattractive in color.

Edwards No. 1.—(M. B. Edwards, Franklin, N. Y.) Imperfect. A wilding found growing in a meadow in 1896 by Mr. Edwards. Parentage unknown. Plants very numerous, vigorous, healthy, productive. Leaves small to medium, rather dark green; leaf stems long, inclined to slender. Fruit stems often very long, slender, single, semi-erect. Blooms in midseason, ripens slightly after midseason, picks medium easily. Calyx medium to large, slightly leafy, often pale green, flat. Seeds raised, numerous, giving a "seedy" appearance. Fruit medium to large, drops to small as the season advances, blunt wedge to roundish conic, rather attractive, medium dark scarlet.
Flesh medium red, firm, rather acid, not high flavor, fair to good. With the exception of size and flavor, characters are desirable for a tart variety.

Ekey.—(M. Crawford Co., Cuyahoga Falls, Ohio.) Perfect. Originated in 1898 by E. H. Ekey, Steubenville, Ohio, and introduced by him in 1906. A seedling of Warfield fertilized by Belmont. Plants of medium number and vigor, susceptible to attacks of leaf blight and mildew, productive. Leaves of medium size and color; leaf stems short to medium, inclined to slender. Fruit stems short, thick, branched, prostrate to semi-erect. Blooms in midseason, ripens early, picks easily. Calyx large, leafy, discolored, flat to raised. Seeds raised to medium. Fruit large to medium, retains size well throughout the season, conical, strongly elongated, sharp pointed, dull, unattractive dark scarlet. Flesh dark red, medium to firm, considerably acid, unpleasant flavored, poor in quality. Many green tips. Undesirable.

Elma.—(M. Crawford Co., Cuyahoga Falls, Ohio.) Imperfect. Originated in 1900 by J. H. Black, Son & Co., Hightstown, New Jersey, and introduced by them in 1904. Robbie and Nettie were crossed producing a seedling which was crossed with Joe, thus giving Elma. Plants very few, medium in vigor, healthy, not productive. Leaves medium in size and color; leaf stems of fair length, inclined to slender. Fruit stems short to medium, variable in thickness, single, prostrate. Blooms late, ripens after midseason, picks medium easily. Calyx of fair size, not leafy, pale green, flat. Seeds raised. Fruit large to medium, retains size well as the season advances, blunt, roundish to slight wedge, light to medium scarlet. Flesh light color, firm, pleasant acid, agreeable flavor, quality good. Surface of berries often not evenly colored. Should be planted closer than most varieties.

Ernie.—(A. R. Weston & Co., Bridgman, Mich.) Perfect. Originated by Dr. S. M. Mandlin, Bridgman, Michigan, in
1895. Introduced by Weston & Company in 1903. Parentage unknown. Plants medium in number, medium to vigorous, healthy, productive. Leaves above medium to large, dark green; leaf stems medium to long, slender to medium. Fruit stems variable in length, thickish, double, prostrate. Blooms in midseason, ripens medium early, picks easily. Calyx medium to large, leafy, attractive green, variable in position, detaches easily. Seeds numerous, raised. Fruit above medium to large, drops in size as the season advances, roundish conic to slightly elongated or irregular wedge, surface of large berries furrowed, attractive, glossy, dark scarlet. Flesh of good color, firm, agreeably acid, high flavor, good to very good. General appearance slightly seedy. Has a number of desirable characters.

**Excelsior.**—(W. F. Allen, Salisbury, Md.) Perfect. Originated in 1890, by Louis Hubach, Judsonia, Arkansas and introduced by J. C. Bauer of that place in 1892. A seedling of Hoffman crossed with Wilson. Plants medium in number and vigor, healthy, not very productive. Leaves medium to below in size, light green; leaf stems of average length, moderately slender. Fruit stems short, slender, usually double, prostrate. Blooms and ripens early, does not pick easily. Calyx small, not leafy, often discolored, sunken. Seeds numerous, depressed. Fruit above medium to small, roundish conic, often blunt at apex, attractive dark scarlet when well ripened. Flesh well colored, firm, rather tart, hardly good in flavor or quality. Color and shape quite similar to smaller berries of Rough Rider. Although early, size too small for commercial purposes.

**Fairfield.**—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. A chance seedling found in an old peach orchard by Martin Johnson of New Jersey, previous to 1900. Introduced in the spring of 1902 by the West Jersey Nursery. Plants medium in number, rather vigorous, healthy, unproductive. Leaves medium to above in size, light green; leaf stems inclined to long and slender. Fruit stems short to medium, variable in thick-
ness, usually double, prostrate. Blooms and ripens early, picks easily. Calyx rather large, reflexed, attractive color. Seeds numerous, medium sunken to somewhat raised. Fruit large at first pickings, drops rapidly to small as the season advances, roundish conic to slightly elongated, often sharp pointed, surface of large berries furrowed, attractive light to dark scarlet. Flesh well colored, medium to firm, mildly acid, lacking somewhat in flavor and quality, ranks no more than fair. Slightly earlier than Excelsior or Oaks Early. Somewhat less vigorous than Oaks Early. On account of earliness may have some value although undesirable in flavor and productiveness.


Gem.—(Slaymaker & Son, Dover, Del.) Imperfect. Plants rather few, medium in vigor, healthy, productive. Leaves medium to large, of average color; leaf stems medium in length, inclined to thick. Fruit stems medium to long, thick, often single, semi-erect to prostrate. Blooms and ripens in mid-season, picks easily. Calyx rather small, not leafy, very pale green, flat to slightly sunken. Seeds variable in depth. Fruit above medium to medium in size, decreases as the season advances, conical, often sharp pointed, unattractive light scarlet.
Flesh almost white, medium firm, mild, low in flavor, of poor quality. Unpromising.

**Gill.**—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. Originated about 1898 by E. H. Ekey, Steubenville, Ohio, and introduced by him in 1906. Thought to be a result of crossing Beder Wood and a seedling of Bubach. Plants very few, weak, unhealthy in appearance, very unproductive. Leaves medium to small, yellowish green; leaf stems of average size, short. Fruit stems short to medium, thick, double. Blooms and ripens very early, picks medium easily. Calyx small to medium, discolored, flat. Seeds slightly raised to medium. Fruit medium to small, irregular in shape, averaging roundish conic, blunt, medium dark scarlet. Flesh whitish, moderately firm, mildly acid, low in flavor, of poor quality. Undesirable as fruited here.

**Gladstone.**—(Ellwanger & Barry, Rochester, N. Y.) Perfect. Originated about 1893 by F. F. Merceron, Catawissa, Pa., and introduced by him a few years later. Said to be a seedling of Sharpless. Plants rather few in number, vigorous, healthy, below medium in productiveness. Leaves medium to large, of medium color; leaf stems inclined to long, rather slender. Fruit stems medium to long, stout, nearly prostrate. Blooms and ripens slightly after midseason. Calyx medium to rather small, attractive in color, often raised. Seeds usually sunken. Fruit large to above medium, wedge shape, attractive medium dark scarlet. Flesh well colored, medium firm, mildly acid, quality good. Retains size well in later pickings; hardly firm enough for long shipments; attractive color.

**Golden Gate.**—(S. H. Warren, Weston, Mass.) Semi-perfect. Originated in 1903 by Mr. Warren, and introduced by him in 1906. Thought to be a seedling of Marshall but parentage is uncertain. Plants medium to numerous, vigorous, healthy, very productive. Leaves large, dark green; leaf stems
above medium in length, thick, branched, prostrate. Blooms in midseason, ripens medium early, picks easily. Calyx large, leafy, attractive green, slightly raised to flat. Seeds numerous, raised. Fruit very large to above medium, wedge shape, often slightly inclined to a neck, attractive medium to dark scarlet, glossy. Flesh variable in color, very firm, mildly acid, pleasant flavor but not high, quality good. Has many qualities to commend it.

**Good Luck.**—(W. F. Allen, Salisbury, Md.) Perfect. Introduced by Mr. Allen. Plants medium to below in number, very vigorous, healthy, below medium in productiveness. Leaves large, medium dark green; leaf stems long, medium to slender. Fruit stems medium to very long, thick, double, prostrate to semi-erect. Blooms late, ripens in midseason, picks easily. Calyx medium to large, leafy, attractive green, flat. Seeds numerous, raised. Fruit large to above medium, retains size well as season advances, blunt wedge to roundish conic, attractive medium dark scarlet. Flesh medium red, firm, sprightly acid, pleasant flavor, good to very good. Worthy of more extended trial.

**Gov. Rollins.**—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. Originated from seed sown about 1900 by Benj. M. Smith, Beverly, Massachusetts. Introduced in 1906 by J. T. Lovett, Little Silver, New Jersey. Parentage unknown. Plants medium in number, rather vigorous, healthy, above medium in productiveness. Leaves inclined to large, dark green; leaf stems medium to long, somewhat slender. Fruit stems short to medium, thick, often double, semi-erect. Blooms and ripens in midseason, picks medium easily. Calyx very large, leafy, rather dark green, sometimes discolored, flat to slightly raised. Seeds numerous, raised. Fruit large to above medium, retains size well till close of season, decidedly variable in first pickings, improving later, varies from coxcomb to wedge or roundish conic, surface irregularly furrowed, dull medium to dark scarlet. Flesh good color, firm, mildly acid,
pleasant flavor, good to very good. Requires care in picking to avoid green tips. General appearance somewhat seedy. Worthy of more extended trial.

Great Scott.—(S. H. Warren, Weston, Mass.) Imperfect. Originated in 1902 by John Scott, Newton, Massachusetts. Introduced in 1904 by Mr. Warren. A hand pollinized seedling of Bubach and Belmont. Plants few, below medium in vigor, healthy, unproductive. Leaves of medium size, light green; leaf stems below medium in length, slender. Fruit stems short to medium, variable in thickness, often double, prostrate. Blooms and ripens in midseason, picks easily. Calyx medium in size, not leafy, reflexed, decidedly sunken. Seeds sunken. Fruit very large to medium, retains size well in later pickings, roundish conic to decided wedge, sometimes double, light to dark glossy scarlet. Flesh medium red, firm, considerably acid, not high flavor, poor to fair in quality. Berries strongly and characteristically flattened. Surpassed by other varieties.


Hummer.—(W. F. Allen, Salisbury, Md.) Perfect. Introduced by Mr. Allew. Plants numerous, vigorous, slight amount of leaf blight, above medium in productiveness. Leaves large
to very large, dark green; leaf stems above medium in length, thickish. Fruit stems medium to long, thick, usually branched, somewhat erect. Blooms in midseason, ripens slightly after midseason, picks easily. Calyx medium to large, leafy, sometimes discolored, reflexed, usually slightly raised. Seeds somewhat sunken. Fruit very large to medium, varies from irregular wedge to roundish conic or slightly elongated, surface of large berries irregularly furrowed, dull light and dark scarlet. Flesh light colored, medium to firm, mild, of fair quality. Unattractive in color and shape. Variable in size throughout the season.

Hundred Dollar.—(L. J. Farmer, Pulaski, N. Y.) Perfect. Plants few, vigorous, healthy, very productive. Leaves large, medium dark green; leaf stems medium to above in length, medium to slender. Fruit stems rather long, slender, often branched. Blooms and ripens in midseason, picks easily. Calyx medium to large, rather leafy, attractive green, flat. Seeds sunken. Fruit large to medium, retains size well as season advances, wedge to roundish conic, light and dark scarlet. Flesh medium red, firm, mild, pleasant but not high flavor. Slightly coarse in appearance. Lacks in juiciness.

*Joe.—(J. H. Black, Son & Co., Hightstown, N. J.) Perfect. Originated by Black, Son & Company, fruiting for the first time in 1893, and introduced by them in 1899. A seedling of Middlefield and Chairs was crossed with Sharpless and one of the best seedlings obtained in this way was crossed with Gandy. The most promising of this cross was named Joe. Plants few, vigorous, healthy, productive when planted closer than most varieties. Leaves medium to very large, medium dark green; leaf stems long, thick. Fruit stems long, thick, usually double, semi-erect. Blooms late, ripens in midseason or slightly later, picks easily. Calyx averages medium in size but often large, rather leafy, usually flat. Seeds numerous, raised. Fruit above medium to very large, blunt, roundish conic or irregular

*Plants were set 3 ft. x 10 inches.
wedge, surface often furrowed, attractive glossy dark scarlet. Flesh dark red, very firm, agreeably acid, high in flavor, very good in quality. On account of making few runners the plants should be set closer than most varieties. Has many qualities that commend it, especially large size of fruit which is well retained as the season advances, attractive color, and desirable flavor and quality. Requires care in picking to avoid green tips.

Kansas.—(W. F. Allen, Salisbury, Md.) Imperfect. Originated in 1899 by J. J. Wittman, Emporia, Kansas, and introduced by Mr. Allen in the spring of 1900. Said to be a chance seedling of unknown parentage. Plants medium to numerous, of average vigor, uninjured by leaf blight, productive. Leaves medium in size, rather pale green; leaf stems of fair length, inclined to slender. Fruit stems medium long, thick, usually single. Blooms and ripens slightly after midseason. Calyx large, leafy, usually in a depression. Seeds slightly raised. Fruit averages above medium to medium in size, decreases as the season advances, roundish conic to slight wedge, rather blunt, apex frequently ends in a depression, surface often irregularly furrowed, attractive medium dark scarlet. Flesh well colored, firm, juicy, mild acid, good to very good. Fruit averaged slightly larger than in 1906 although too small for those markets requiring large size. With this exception it has many qualities that commend it to growers.

King Edward.—(D. J. Miller, Millersburg, O.) Perfect. Originated by Mr. Miller in 1903, fruiting for the first time in 1904. Not yet introduced. A seedling of the Miller. First named King but later changed to King Edward. Plants moderately numerous, somewhat lacking in vigor, healthy, very productive. Leaves of average size, moderately dark green; leaf stems medium to above in length, medium to thick. Fruit stems below average length, thick, usually single. Blooms and ripens in midseason. Calyx medium size, not depressed but some-
times on a slight neck. Seeds raised. Fruit above medium to medium in size, inclined to roundish conic or slight wedge, rather unattractive light scarlet. Flesh somewhat light in color, firm, mild, sweetish, agreeable flavor, good in quality. The berries are not well protected from the sun and drop rapidly in size as the season advances, running too small for a desirable commercial variety.

**Klondike.**—(W. F. Allen, Salisbury, Md.) Perfect. Originated by R. L. Cloud, Independence, Louisiana. Plants few to medium, somewhat vigorous, healthy, unproductive. Leaves medium to large, rather dark green; leaf stems inclined to long, of average size. Fruit stems rather long and thick, often single, somewhat erect. Blooms in midseason, ripens slightly before midseason, picks easily. Calyx medium to large, reflexed, strongly tinged with dull red, flat to slightly sunken. Seeds variable in position. Fruit large to medium, retains size as the season advances, blunt, roundish conic to slight wedge, dark, dull, unattractive scarlet. Flesh dark red, very firm, decidedly acid, unpleasant flavor, poor in quality. Undesirable as grown here.

**Latest.**—(Flansburgh & Potter, Leslie, Mich.) Imperfect. Originated in 1895 by S. H. Warren, Weston, Massachusetts, and introduced by him in 1900. It is a seedling obtained by crossing Jewell and Belmont. Plants with few if any runners, of medium vigor, healthy, below medium in productiveness. Leaves medium to below in size, of average greenness; leaf stems somewhat short, slender. Fruit stems short to medium, of fair thickness, semi-prostrate, not well protected from the sun. Blooms in midseason, ripens slightly after midseason, picks easily. Calyx medium to above in size, rather leafy, slightly raised. Seeds slightly sunken. Fruit large to medium, very irregular in shape, unattractive light and dark dull scarlet. Flesh whitish, moderately firm, mildly acid, of fair quality. Undesirable in shape and unattractive in color.
Magnus.—Originated on Station grounds in 1899 and disseminated by this Station in the spring of 1908. Parentage, Hunn X Marshall. The following description is taken from Bulletin No. 298 (March, 1908) of this Station supplemented by notes taken during the past season. Blossoms imperfect. Plants medium to numerous, medium to above in height, productive. Leaves large, attractive dark green, attacked slightly by leaf blight in unfavorable seasons; leaf stems medium in length, thick. Fruit stems of average length, variable in thickness, usually double, prostrate. Blooms late, ripens in midseason, picks easily. Calyx large and leafy, dark green, set in a slight depression. Seeds raised, often dark colored. Fruit above medium to very large, retains its size well as the season advances, roundish conic to slightly elongated and with pointed apex, light to very dark scarlet, showing Hunn blood, variable in color unless well ripened. Flesh rather light at center, firm, juicy, mildly acid, good to very good flavor and quality. The growth and color of foliage closely resemble Marshall, while the color of the fruit is that of the Hunn. When well colored, this variety ranks among the very best in size, attractiveness, and quality. It is thought that the Magnus will prove a very valuable new sort for home use. Its variable color is somewhat against it for the market. One of the most attractive of over fifty varieties fruited in 1908.

Mark Hanna.—(M. T. Thompson, Rio Vista, Va.) Imperfect. A seedling of Bubach originated by Mr. Thompson in 1898 and introduced by him in 1902. Plants numerous, vigorous, healthy, productive. Leaves of medium size and color; leaf stems medium to long, thickish. Fruit stems long, thick, usually double. Blooms late in midseason, ripens in midseason, picks easily. Calyx of medium size, usually reflexed. Seeds numerous, sunken. Fruit large, retains good size until close of season, irregular in shape varying from coxcomb or wedge to roundish conic, surface often irregularly furrowed, attractive light scarlet, glossy. Flesh of fairly good color, medium firm, juicy, agreeably tart, fair to good in quality.
May have value where highest quality is not the first requisite. The general appearance of the largest berries is slightly coarse.

**Marshall.**—(From bed in Station grounds.) Perfect. Originated in 1890 and introduced in 1893 by M. F. Ewell, Marshfield Hills, Massachusetts. Plants only medium in number, medium to vigorous, considerably injured by leaf blight, rather unproductive. Leaves somewhat large, light to dark green; leaf stems of fair length, thick. Fruit stems medium in length, stout, usually double, prostrate. Blooms and ripens in midseason, picks easily. Calyx of medium size, slightly discolored, somewhat depressed. Seeds slightly raised, rather large. Fruit very large to above medium when well grown, otherwise varying to below medium, roundish conic to wedge, surface often irregularly furrowed, attractive dark scarlet. Flesh well colored, firm, juicy, pleasant acid, of high flavor, good to very good. Unless well ripened, berries inclined to have greenish tips. A standard commercial variety variable in certain locations, not succeeding generally. Requires high culture.

**Mead.**—(J. H. Hale, South Glastonbury, Conn.) Perfect. Originated with O. E. Mead, Lunenburg, Massachusetts, about twelve years ago. Introduced to the trade by Mr. Hale in spring of 1904. Parentage unknown. Plants medium to below in number, rather vigorous, healthy, very productive. Leaves medium to large, dark green; leaf stems medium to above in length, of average thickness. Fruit stems variable in length and thickness, usually double, nearly prostrate. Blooms in midseason, ripens slightly after midseason, picks easily. Calyx medium to above in size, somewhat leafy, attractive color, flat to slightly sunken. Seeds variable in depth. Fruit very large to medium, roundish conic, very blunt, sometimes flattened or roundish, surface smooth, attractive light and dark glossy scarlet. Flesh good color, medium to firm, mildly acid, pleasant flavor, very good in quality. Good size of fruit in

*plants were set 3 ft. x 10 inches.*
late pickings. Attractive. Varies somewhat in firmness. Should be planted closer than most varieties.

Millionaire.—(The American Agriculturist, N. Y. City.) Imperfect to semi-perfect. Originated by Henry Jerolaman, Hilton, New Jersey, in 1892. Not yet introduced to the trade. It is a cross between Hilton Gem and Mary. The following description was made from plants set the fall of 1907: Plants vigorous, healthy, appear productive. Leaves very large, attractive dark green; leaf stems medium to above in length, thick. Fruit stems medium to long, thick, prostrate, often single. Blooms very late, ripens in late midseason, picks easily. Calyx medium to above in size, flat to slightly depressed. Seeds numerous, raised. Fruit large to above medium, variable in shape ranging from somewhat flattened to irregular conic, inclined to wedge, light scarlet. Flesh medium red, firm, agreeably acid, not high in flavor, of fair quality. Requires further testing to fully determine value but up to the present time does not appear to equal the best standard sorts.

Miss Boston.—(J. H. Hale, South Glastonbury, Conn.) Imperfect. Plants few, medium to below in vigor, healthy, productive. Leaves rather small, medium dark green; leaf stems short to medium, inclined to slender. Fruit stems rather short, thick, often double, prostrate. Blooms in midseason, ripens medium early, picks moderately easily. Calyx large to medium, leafy, reflexed, pale green, flat to slightly sunken. Seeds variable in depth. Fruit large to medium, dropping to small as the season advances, attractive roundish conic to slight wedge, light to dark scarlet. Flesh good color, medium to firm, agreeably acid, only moderately juicy, fair to good. Fruit has many desirable characters. Plants lack somewhat in vigor.

Morning Star.—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. Originated about 1898 by M. T. Thompson, Rio Vista, Virginia, and introduced in 1904 by J. T. Lovett Co., Little Silver, New Jersey. Plants few in number, not very vigorous,
healthy, very unproductive. Leaves medium to below in size, light green; leaf stems short to medium, slender. Fruit stems short, slender to medium, usually double, prostrate. Blooms early, ripens in midseason, does not pick easily. Calyx medium to large, often discolored. Fruit small to above medium, roundish conic, dark scarlet. Flesh well colored, firm, mild, pleasant flavor, good quality. Plants unproductive and fruit too small.

Mrs. Miller.—(M. Crawford Co., Cuyahoga Falls, O.) Imperfect. Originated in 1893 by D. J. Miller, Millersburg, Ohio. Introduced in the spring of 1905 by M. Crawford Company. Parentage unknown. Plants medium in number, moderately vigorous, slightly injured by leaf blight, below medium in productiveness. Leaves of average size and color; leaf stems short to medium, variable in thickness. Fruit stems of medium length, thick, often single, prostrate. Blooms medium early, ripens in midseason, picks moderately easily. Calyx large to medium, leafy, slightly discolored, usually not sunken. Seeds somewhat depressed. Fruit large to medium, decreases rapidly in size in later pickings, varies in shape from wedge to roundish conic or slightly elongated, surface uneven, dark scarlet. Flesh well colored, nearly firm, agreeably acid, quality good. The discolored calyx detracts from appearance and the fruit runs too small in later pickings.

Nehrings Gem.—(M. Crawford Co., Cuyahoga Falls, O.) Imperfect. Originated at Strasburg, Illinois, in 1891 by W. F. Nehring, who moved to Milo, Missouri, the following year. Introduced by the Crawford Company in 1906. Plants not numerous, vigorous, healthy, not very productive. Leaves large to very large, rather dark green; leaf stems long, quite thick. Fruit stems short to medium, thick, usually branched, prostrate. Blooms and ripens in midseason, picks medium easily. Calyx large, leafy, often reflexed, decidedly sunken, often discolored in later pickings. Seeds slightly raised. Fruit above medium to large, drops in size in later pickings, usually round-
ish conic, sometimes irregular wedge, attractive dark scarlet. Flesh fairly well colored, firm, agreeably acid, quality good to very good. Plants should be set closer to secure good yields. Size variable in late pickings. Fairly good showing.

Nettie.—(J. H. Black, Son & Co., Hightstown, N. J.) Imperfect. Originated in 1893 by Black, Son & Co., and introduced by them in 1899. A seedling of Bubach and Yale was crossed with Sharpless. One of the resulting seedlings was crossed with Gandy. This gave Nettie. Plants medium to rather numerous, vigorous, healthy, productive. Leaves large, attractive, dark green; leaf stems long, rather thick. Fruit stems long, thick, often single, inclined to erect. Blooms and ripens late, picks easily. Calyx medium to large, leafy, attractive green, slightly raised. Seeds usually sunken. Fruit very large to above medium, roundish conic or wedge to slightly elongated, rather dull, light to medium scarlet. Flesh of fair color, medium to firm, rather acid, not high in flavor, no more than good in quality. Resembles Prof. Fisher in general appearance but is earlier. A rather showy late variety, not of highest flavor or quality.

New Globe.—(W. F. Allen, Salisbury, Md.) Perfect. Plants medium in number and vigor, susceptible to attacks of leaf blight, very productive. Leaves medium to above in size, rather dark green; leaf stems of average length, thick. Fruit stems medium to long, thick, often double, somewhat erect. Blooms and ripens in midseason, picks medium easily. Calyx large to medium, often leafy, discolored, flat. Seeds sunken. Fruit large to below medium, decreasing as the season advances, very irregular in shape averaging roundish conic, surface unusually roughened and furrowed, unattractive dull medium scarlet. Flesh rather light, firm, considerable acid, not high in flavor, fair in quality. Coarse and unattractive in general appearance. The fruit-bud clusters before opening are conspicuous, showing above the foliage.
Plate I.—Strawberry Test Plats in 1908, Above; Portion of Row of Columbia, Below.
New Home.—(W. F. Allen, Salisbury, Md.) Perfect. Plants rather few, medium in vigor, healthy, unproductive. Leaves medium to below in size, light green; leaf stems of average length, slender. Fruit stems medium to long, thick, usually double, somewhat erect. Blooms in midseason, ripens slightly past midseason, picks easily. Calyx large, leafy, attractive green, slightly sunken. Seeds raised, terminating in short dark hairs which seem characteristic. Fruit averages above medium in size, decreasing as the season advances, roundish conic, often depressed at apex, attractive light scarlet, some berries dark scarlet. Flesh fairly good color, very firm, mildly acid, fair in quality. Attractive in shape and color, a good shipper but deficient in size in late pickings. Plants should be set closer than most varieties.

Nimrod.—(M. Crawford Co., Cuyahoga Falls, Ohio.) Perfect. Originated about 1898 by John F. Beaver, Dayton, Ohio, and introduced the fall of 1904 by the Crawford Company. Plants few in number, not vigorous; low in height, susceptible to attacks of leaf blight, very unproductive. Leaves of average size and color; leaf stems short and slender. Fruit stems very short, slender, often single. Blooms medium early, ripens slightly before midseason, does not pick easily. Calyx medium to rather large, often discolored, inclined to leafy, usually not sunken. Seeds raised, numerous. Fruit above medium to small, roundish conic, blunt, attractive light and dark scarlet. Flesh fairly good color, very firm, agreeably acid, good in quality. The plants lack in vigor and productiveness while the fruit runs too small for commercial purposes.

North Shore.—(W. F. Allen, Salisbury, Md.) Perfect. Originated in 1898 by Wm. H. Monroe, Beverly, Massachusetts, and introduced about 1902. A seedling of Brandywine. Plants few in number, moderately vigorous, susceptible to attacks of leaf blight, not productive. Leaves of medium size and color; leaf stems short to medium, variable in thickness. Fruit stems short, usually thick, often single, prostrate.
Blooms late in midseason, ripens slightly after midseason. Calyx large, leafy. Seeds slightly raised. Fruit large to medium, irregular in shape varying from wedge to roundish conic, rather dark dull scarlet. Flesh good color, firm, mildly acid, pleasant flavor, good to very good in quality. Although of desirable flavor and quality, not equal to standard kinds as the plants are unproductive and subject to attacks of fungi. Color unattractive at first pickings but improves as the season advances.

**Oaks Early.**—(W. F. Allen, Salisbury, Md.) Perfect. Found growing wild on William Tull's farm, Maryland. Plants medium in number, vigorous, healthy, below medium in productiveness. Leaves rather large, dark green; leaf stems long, usually thick. Fruit stems medium to long, thickish, double, semi-erect. Blooms and ripens early, picks easily. Calyx large, rather leafy, often with a reddish tinge, slightly raised. Fruit above medium to medium in size, decreasing as the season advances, slightly elongated and with pointed apex, moderately attractive light to dark scarlet. Flesh well colored, firm, agreeably acid, quality fair to good. Plants more vigorous than Excelsior; too many small berries in later pickings.

**Olympia.**—(Woodlawn Nurseries, Rochester, N. Y.) Perfect. Plants few in number, moderately vigorous, susceptible to attacks of leaf blight, very unproductive. Leaves of average size and color; leaf stems medium to above in length, rather slender. Fruit stems short to medium, moderately thick, usually double, erect. Blooms medium early, ripens in midseason, picks easily. Calyx medium to above in size, often discolored, slightly depressed to flat, detaches readily from fruit in picking. Seeds raised, dark colored. Fruit varies from large to small, roundish conic, broad at base, apex blunt, light scarlet. Flesh light colored, juicy, firm, rather acid, not high in flavor or quality. Although there are many large berries in the later pickings, the appearance is unattractive on
account of light color and the detached calyx. Surpassed in quality by standard kinds.

**Omega.**—(A. V. Metcalf, Brunswick, Maine.) Perfect. Originated in 1904 by Mr. Metcalf. Has not yet been introduced. A chance seedling found in an asparagus bed. Plants medium in number and vigor, considerable leaf blight, productive. Leaves medium to large, dark green; leaf stems short to medium, inclined to slender. Fruit stems not long, often single, somewhat erect. Blooms and ripens in midseason, picks medium easily. Calyx medium to large, sometimes leafy, attractive green, flat to sometimes slightly raised. Seeds raised. Fruit large to medium or below in later pickings, wedge to roundish conic, attractive medium to dark scarlet. Flesh good color, firm, quite acid, rather pleasant flavor, fair to good. Fairly good showing but appears subject to leaf blight.

**Oneida.**—(Isaac Hildreth, Rome, N. Y.) Perfect. Originated in 1903 by Mrs. Hildreth. Not yet introduced. A seedling of Sharpless. Plants very numerous, vigorous, nearly free from leaf blight, very productive. Leaves medium to above in size, rather dark green; leaf stems medium to long, slender. Fruit stems usually long, moderately thick, inclined to double. Blooms and ripens in midseason. Calyx large to medium, often leafy, usually not depressed, sometimes on a slight neck. Seeds sunken. Fruit variable in size, very large to medium, roundish conic to blunt wedge or sometimes slightly elongated, irregularly furrowed, light and dark scarlet. Flesh rather light, firm, aromatic, not very juicy, mild, fair to good in quality. Although the fruit retains its desirable size during the later pickings, the general appearance is rather coarse and unattractive, and the flesh lacks in juiciness, flavor and in high quality.

cross of Bubach fertilized by Sharpless. Plants few, vigorous, healthy, very productive. Leaves very large, dark green; leaf stems medium to long, inclined to slender. Fruit stems short to medium, very thick, double, prostrate. Blooms in midseason, ripens slightly before midseason, picks easily. Calyx of medium size, not very leafy, medium green, variable in position. Seeds sunken to medium, often dark colored. Fruit large, dropping to small as the season advances, roundish conic to wedge, surface often furrowed, dark scarlet. Flesh light red, variable in firmness, mildly acid, not high in flavor, quality good. Surpassed by other varieties.

**Pineapple Flavored.**—(Greens Nursery Company, Rochester, N. Y.) Perfect. Originated by a Mr. Talmage, Mt. Morris, N. Y., about 1896. Introduced by Greens Nursery Company about 1902. A chance seedling. Not the variety described by this Station in 1889 under the name Pineapple. Plants very numerous, vigorous, slight amount of leaf blight, above medium in productiveness. Leaves medium to large, of average color; leaf stems rather long, inclined to slender. Fruit stems medium to very long, of average thickness, often double, prostrate. Blooms in midseason, ripens slightly before midseason, picks easily. Calyx medium to small, not reflexed, often discolored, flat to slightly raised. Seeds raised. Fruit above medium to small, blunt, roundish conic, attractive medium to dark scarlet. Flesh rather light, very firm, of medium acidity, well flavored, fair to good in quality. Berries inferior in size. Attractive in shape and color.

**President.**—(Slaymaker & Son, Dover, Del.) Imperfect. Originated about 1900 by M. R. Hunt, Lambertville, N. J. Plants medium to numerous, vigorous, somewhat injured by blight, productive. Leaves large, dark green; leaf stems long, thick. Fruit stems medium to long, thick, usually double, inclined to prostrate. Blooms and ripens in midseason, picks easily. Calyx rather large, leafy, often slightly tinged with pink, flat. Seeds slightly depressed. Fruit of largest size,
roundish conic, blunt, slightly furrowed, occasionally flattened, attractive bright scarlet. Flesh medium light color, firm, moderately juicy, mild, fair to good in quality. One of the largest and most attractive varieties in the Station collection but somewhat deficient in flavor and not of high quality. One of the most promising varieties where size and color are prime requisites. Growers report that plants not true to name are being sold as President. The sex of the blossom is one of the distinguishing characters.


*Prof. Fisher.—(Geo. R. Schauber, Ballston Lake, N. Y.) Imperfect. Originated by J. H. Black, Son & Co., Highstown, New Jersey, and introduced by them in 1899. A seedling obtained by fertilizing Bubach with Sharpless was crossed with Brandywine. One of the resulting seedlings was named Prof. Fisher. Plants few unless set closer than most varieties, vigorous, healthy, productive. Leaves very large, attractive dark green; leaf stems medium to slender, rather long. Fruit stems medium to long, semi-erect, often single, medium to slender. Blooms and ripens late, picks easily. Calyx medium

*Plants were set 3 ft. x 10 in.
to below in size, not leafy, often raised on a swollen neck. Seeds usually sunken. Fruit large, retains size well throughout the season, irregular wedge, surface furrowed, light scarlet. Flesh medium red, moderately firm, rather acid, not high in flavor, fair to good. Coarse in appearance, decidedly tart, large, late. Productive.

**Prolific.**—Originated on Station grounds in 1899 and disseminated by this Station in 1908. Parentage, Sample X Marshall. The following description is taken from Bulletin No. 298 (March, 1908) of this Station supplemented by notes taken during the past summer. Blossoms perfect. Plants very numerous, vigorous, unusually productive, yielding on the Station grounds as high as 14,502 quarts per acre. Foliage of good size, somewhat susceptible to leaf blight in unfavorable seasons, in color comparatively dark green; leaf stems long, thick. Fruit stems of medium length, stout and usually single, semi-erect. Blooms and ripens in midseason, picks easily. Calyx medium to below in size, not leafy, depressed to flat. Seeds numerous, somewhat raised. Fruit very large to above medium, retains size well as the season advances, roundish conic to blunt wedge, rather light in color but nevertheless an attractive bright scarlet. Flesh firm, fairly good color at center, agreeably acid and of good flavor and quality. The color of fruit is slightly lighter than Marshall, possibly a merit for some markets. On account of its vigor, the great productivity of its plants, and the attractiveness of the large, well colored berries, this variety gives promise of taking front rank among standard commercial strawberries.

**Quality.**—Originated on Station grounds in 1899 and disseminated by this Station in the spring of 1908. Parentage, Hunn X Atlantic. The following description is taken from Bulletin No. 298 (March, 1908) of this Station supplemented by notes taken during the past summer. Blossoms variable, averaging semi-perfect. Plants numerous, usually fairly productive, somewhat injured by leaf blight, of average vigor.
Leaves medium to large, dark green; leaf stems medium to below in length, rather stout. Fruit stems variable in length, stout, usually double, semi-erect. Blooms and ripens late, picks easily. Calyx medium to large, leafy, set in a slight depression or sometimes slightly raised, attractive green. Seeds sunken to slightly raised. Fruit above medium to very large, roundish conic to wedge, or varying to slightly elongated but blunt at apex, often necked, light and dark scarlet, glossy. Flesh good color to center of fruit, firm, mildly acid, good to very good in flavor and quality. Both plant and berry of Quality resemble the Hunn more than the Atlantic. It is also variable in sex. On the Station grounds it ranges through all gradations from perfect to imperfect. In 1908 there was a marked variation in shape and color of fruit, many berries assuming a dull, unattractive color and also appearing less promising in flesh characters. The type evidently does not appear to be fixed.

Ridgeway.—(From bed in Station grounds.) Perfect. Originated and introduced some years ago by M. H. Ridgeway of Indiana. Plants numerous, somewhat vigorous, healthy, productive. Leaves medium to above in size, light to dark green; leaf stems medium to above in length, variable in thickness. Fruit stems short, stout, usually double, prostrate to semi-erect. Blooms in midseason, ripens slightly after midseason, picks easily. Calyx large, leafy, attractive green, detaches readily from berry, flat to slightly raised. Seeds slightly sunken to raised. Fruit averages above medium in size, roundish or roundish conic to slight wedge, blunt pointed, smooth surface, attractive light scarlet, often glossy. Flesh fair color, medium firm, juicy, good in quality. Not as good a shipper as some standard kinds. The calyx detaches readily in picking. Retains size in later pickings fairly well.

Riehl No. 28.—(E. H. Riehl, North Alton, Ill.) Perfect. Originated in 1895 by Mr. Riehl. It has not been introduced. A seedling of Brandywine crossed with Ruby. Plants numer-
ous, above medium in vigor, susceptible to attacks of leaf blight, productive. Leaves medium to large, of average color; leaf stems medium in length and thickness. Fruit stems intermediate in length, thick, semi-erect. Blooms in midseason, ripens early, picks medium easily. Calyx large, leafy, slightly reflexed, attractive green, flat to slightly sunken. Seeds numerous, slightly raised to medium. Fruit large to medium, dropping to small in late pickings, blunt, roundish conic to wedge, attractive dark scarlet. Flesh medium dark red, very firm, rather sweet, mild, good to very good. Has many qualities to commend it, but the plants suffer from fungi and berries run small towards close of season.

Rough Rider.—(L. J. Farmer, Pulaski, N. Y.) Perfect. Said to be a cross of Bubach and Gandy originated in 1893 by Chas. Learned, and introduced in 1900 by L. J. Farmer. Plants medium in number, moderately vigorous to vigorous, slightly attacked by leaf blight, below medium in productivity. Leaves of medium size and color; leaf stems above medium in length, rather slender. Fruit stems of fair length, variable in thickness, usually double. Blooms slightly past midseason, ripens rather late, picks easily. Calyx medium to below in size, rather leafy, often reflexed, sunken. Seeds depressed. Fruit large to above medium, retains good size through the season, wedge to roundish conic, rather dark attractive scarlet. Flesh well colored to center, firm, agreeably acid, pleasant flavor, quality good. A desirable late variety on account of size, attractiveness and good characters of flesh.

Ruby.—(E. H. Riehl, North Alton, Ill.) Perfect. Originated in 1890 by Mr. Riehl and introduced by him in 1895. Thought to be a seedling of Crescent crossed with Sharpless. Plants medium in number and vigor; healthy, productive. Leaves small, medium light green, under surface hairy; leaf stems hairy, above medium in length, often very slender. Fruit stems variable in length, rather slender, often branched, prostrate. Blooms in midseason, ripens slightly before midseason,
picks rather easily. Calyx medium to above in size, often discolored, flat to sunken. Seeds variable in depth. Fruit variable in size ranging from large to medium, irregular wedge to roundish conic, dull, often unattractive dark scarlet. Flesh well colored to center, firm, agreeably acid, fairly well flavored, quality good. Dull in color and too dark for most markets. Surpassed by other kinds.

**Ryckman.**—(G. E. Ryckman & Sons, Brocton, N. Y.) Perfect. Plants moderately numerous, vigorous, healthy, productive. Leaves medium to large, rather dark green; leaf stems long, variable in thickness. Fruit stems long, slender to thick, usually double. Blooms and ripens in midseason. Calyx large to small, leafy, usually slightly raised, attractive green. Seeds depressed to slightly raised. Fruit very large to medium, roundish conic to slight wedge, sometimes elongated, surface roughly furrowed, rather dull light to dark scarlet. Flesh medium light colored, firm, mild, not juicy, not high in flavor, fair to good in quality. The fruit is coarse in general appearance and not uniform in size, while the flavor and quality are surpassed by other varieties of the same season.

**St. Louis.**—(J. A. Bauer, Judsonia, Ark.) Perfect. Originated in 1904 and introduced in 1906 by Mr. Bauer. Grown from seed obtained by crossing Haverland with Lady Thompson. Plants of average number, vigorous, healthy, very productive. Leaves medium in size, slightly tinged with yellow; leaf stems long, slender. Fruit stems medium to long, rather slender, often double, prostrate. Blossoms in midseason, ripens early, picks very easily. Calyx large to medium, pale green, leafy, variable in position. Seeds variable in depth. Fruit large to medium, dropping to small in late pickings, variable in shape, often elongated conical, very light red. Flesh light colored, soft, of medium acidity, not high in flavor, poor in quality. Lacks character. Color unattractive. Poor shipper.
Saratoga.—(William Palmer, Rexford Flats, N. Y.) Perfect. Originated in 1903 by Mr. Palmer, and introduced by him in 1906. The result of a cross between Glen Mary and Sample. Plants of average number, medium to below in vigor, subject to attacks of leaf blight, very productive. Leaves small to medium, rather dark green; leaf stems inclined to short, thick. Fruit stems short to medium, often very thick, double, prostrate. Blooms in midseason, ripens slightly before midseason, does not pick easily. Calyx medium to large, slightly leafy, attractive green, reflexed, flat to sunken. Seeds raised, very numerous. Fruit large to medium, blunt, wedge shape, attractive dark scarlet. Flesh medium to dark red, very firm, sprightly acid, high in flavor, good to very good. Somewhat seedy in general appearance but of high flavor and desirable quality.

*Schauber No. 106.*—(Geo. R. Schauber, Ballston Lake, N. Y.) Imperfect. Originated in 1905 by Mr. Schauber. Not yet introduced. A seedling of Hunn open to chance fertilization. Plants medium to numerous, rather vigorous, subject to attacks of leaf blight, below medium in productiveness. Leaves medium to above in size, rather dark green; leaf stems above average length, thickish. Fruit stems long, thick, strongly branched, somewhat erect. Blooms late, ripens in midseason, picks easily. Calyx medium to large, leafy, attractive green, reflexed, flat. Seeds variable in depth. Fruit large to medium, retains size fairly well as the season advances, roundish conic, medium to dark scarlet, glossy. Flesh medium red, very firm, pleasant acid, high flavor, very good. Has many qualities which commend it for trial, but plants appear to be subject to attacks of fungi.

*Schauber No. 108.*—(Geo. R. Schauber, Ballston Lake, N. Y.) Imperfect. Originated in 1905 by Mr Schauber. Not yet introduced. A seedling of Hunn open to chance fertilization. Plants medium to numerous, rather vigorous, healthy, productive. Leaves medium to above in size, dark green; leaf stems
above medium in length and thickness. Fruit stems short to medium, often very thick, double, somewhat prostrate. Blooms late, ripens in midseason, picks medium easily. Calyx of medium size, attractive green, flat. Seeds often deeply sunken. Fruit large to medium, retains size fairly well as season progresses, roundish to somewhat flattened, light to dark scarlet. Flesh medium red, very firm, pleasant acid, juicy, well flavored, quality good. Some berries slightly coarse in general appearance. Good shipper.

**Seneca.**—(L. J. Brundage, Dundee, N. Y.) Perfect. Originated in 1902 by Mr. Brundage and introduced by him in 1907. A chance seedling of unknown parentage. Plants rather numerous, very vigorous, healthy, unproductive. Leaves medium to large, somewhat light green; leaf stems very long, medium to slender. Fruit stems of medium length, rather thick, often single, semi-erect. Blooms and ripens in midseason, picks medium early. Calyx of fair size, not leafy, pale green, raised. Seeds variable in depth, often dark colored. Fruit large to medium, dropping to small as the season advances, inclined to roundish, slightly necked, very light scarlet. Flesh light color or sometimes with tinge of yellow, soft, mild, not high in flavor, no more than fair in quality. Fruit too light in color and not a firm shipper.

**Senator Dunlap.**—(L. J. Farmer, Pulaski, N. Y.) Perfect. Originated about 1890 by J. R. Reasoner, Urbana, Illinois, and introduced by M. Crawford, Cuyahoga Falls, Ohio, in 1899. Parentage uncertain, but possibly a seedling of Warfield. Plants very numerous, vigorous, healthy, very productive. Leaves of medium size and color; leaf stems long, slender. Fruit stems long, medium slender, usually single. Blooms in midseason, ripens slightly before midseason, picks easily. Calyx medium to nearly large, reflexed, usually on a slight neck. Seeds medium or above in size, slightly sunken. Fruit very large to medium, drops in size as the season advances, roundish conic to slightly elongated, often with slight neck, glossy, attractive
light and dark scarlet. Flesh well colored, medium to firm, rather mild, pleasant flavor, quality good. Inclined to produce too many plants. Although somewhat variable in size, is desirable on account of general attractiveness and desirable flesh characters.

**Somerset Maid.**— (J. H. Hale, South Glastonbury, Ct.) Perfect. Plants medium in number and vigor, healthy, productive. Leaves small, medium dark green; leaf stems short to medium, often very slender. Fruit stems short to medium, slender to thick, often single, semi-erect to prostrate. Blooms early, ripens in midseason, picks easily. Calyx medium to above in size, not leafy, dull green, flat to slightly raised. Seeds numerous, raised slightly. Fruit above medium to small, somewhat elongated to roundish conic, surface often furrowed, medium dark scarlet. Flesh dark red, firm, agreeably acid, pleasant flavor, quality good to very good. General appearance slightly seedy. Inferior in size.

**Star.**—(J. G. Harrison & Sons, Berlin, Md.) Perfect. Plants few, medium in vigor, healthy, unproductive. Leaves of medium size, light green; leaf stems short to medium, inclined to slender. Fruit stems medium to above in length, variable in thickness, often double, prostrate to semi-erect. Blooms late, ripens in midseason, picks easily. Calyx small to medium, not leafy, variable in position, discolored. Seeds raised, numerous. Fruit large to medium, retains size well as season advances, roundish conic to wedge, surface furrowed, dull, dark scarlet. Flesh dark red, firm, sweetish, mild, nearly good in quality. Tips seedy. Surpassed by better varieties.

**Stevens Late Champion.**—(Flansburgh & Potter, Leslie, Mich.) Perfect to semi-perfect. Originated in 1897 and introduced in 1903 by Arthur Stevens, Bridgeton, N. J. Said to be a seedling of Bayview crossed with Pride of Cumberland. Plants few in number, vigorous, healthy, very unproductive. Leaves large to very large, dark green; leaf stems
above medium in length, rather thick. Fruit stems of average length, somewhat erect. Blooms and ripens in midseason, picks easily. Calyx medium to above in size, often leafy, attractive green, slightly sunken. Seeds depressed. Fruit large, retains its size well through the season, irregular in shape, varying from coxcomb to wedge and roundish conic, attractive light scarlet. Flesh fairly well colored, firm, agreeably acid, pleasant flavor, quality good. Care must be taken in picking to avoid green tips. Has many qualities which commend it. Plants should be set closer than most varieties.


Uncle Jim.—(Flansburgh & Potter Co., Leslie, Mich.) Perfect. Originated by J. F. Dornan, Glenn, Michigan, and introduced in 1901 by Flansburgh & Potter. A chance seedling. Sometimes sold as "Dornan," from the name of the originator. Plants of medium number, vigorous, healthy, productive. Leaves very large, attractive dark green; leaf stems rather long, medium to slender. Fruit stems medium to long, thickish, double, prostrate. Blooms and ripens in midseason, picks easily. Calyx medium to large, sometimes leafy, often discolored, variable in position. Seeds sunken. Fruit large to medium, retains size well in late pickings, wedge to roundish
conic, surface furrowed, dull, unattractive light and dark scarlet. Flesh medium red, firm, mild, not high in flavor, fair to good. General appearance is coarse and unattractive.

**Uncle Joe.—** (Jas. Vicks Sons, Rochester, N. Y.) Perfect. Plants medium to numerous, vigorous, slightly injured by leaf blight, above medium in productiveness. Leaves large, rather dark green; leaf stems inclined to long and slender. Fruit stems long, rather thick, usually double, medium erect. Blooms and ripens in midseason, picks easily. Calyx medium to nearly large, sometimes leafy, somewhat discolored, often slightly raised. Seeds sunken. Fruit variable in size, ranging from large to medium, wedge shape or roundish conic varying to slightly elongated, surface of larger berries furrowed, dull, unattractive scarlet, coarse in appearance. Flesh light colored, medium juicy, mild, not high in flavor or quality. Fruit unattractive in color; flesh characters not desirable.

**Uncle Sam.—** (C. E. Whitten, Bridgman, Mich.) Perfect. Plants not numerous, of medium vigor, susceptible to attacks of leaf blight, produces fair crops. Leaves of medium size and color; leaf stems of average length, thick. Fruit stems short to medium, usually very thick, branched, semi-erect. Blooms in midseason, ripens slightly after midseason, picks easily. Calyx medium to nearly large, somewhat leafy, attractive green, slightly depressed. Seeds numerous, slightly raised. Fruit large to medium, retains size fairly well as season advances, roundish conic, often with pointed apex, attractive bright scarlet. Flesh light colored, juicy, medium to firm, pleasant flavor, good in quality. A good shipper. Should be set closer than most varieties. Worthy of further testing.

**Velvet.—** (M. Crawford Co., Cuyahoga Falls, O.) Imperfect. Originated in 1891 by R. C. Cronk, Oregon, Wisconsin, and introduced about 1898 by F. H. Chapell, of that place. A seedling of Jessie crossed with Bubach No. 5. Plants very few in number, lacking in vigor, healthy, productive. Leaves
of medium size, light green; leaf stems short, slender. Fruit stems short, slender to medium, usually double, prostrate. Blooms and ripens in midseason, does not pick easily. Calyx small to medium, often discolored, slightly sunken. Seeds slightly depressed. Fruit nearly large to medium, roundish conic, blunt, dull dark scarlet. Flesh good color, moderately firm, juicy, not high flavor, fair quality. The berries are unattractive in appearance and the plants, as grown on the Station grounds, are too weak for commercial purposes.

Victor.—(M. Crawford Co., Cuyahoga Falls, O.) Perfect. Originated in 1893 by D. J. Miller, Millersburg, Ohio. Introduced in the fall of 1904 by the Crawford Company. Parentage unknown. Plants very few, moderately vigorous, considerable leaf blight, unproductive. Leaves of medium size, medium green; leaf stems short to medium, slender. Fruit stems short, thick, usually double, prostrate. Blooms early in midseason, ripens slightly past midseason, does not pick easily. Calyx of medium size, slightly raised. Seeds raised, numerous. Fruit nearly large to medium, drops rapidly in size as the season advances, roundish conic, dull dark scarlet. Flesh well colored, firm, juicy, agreeably acid, pleasant flavor, quality good. Fruit seedy in appearance and runs too small. Surpassed by other varieties.

Virginia.—(W. F. Allen, Salisbury, Md.) Imperfect. Originated in Accomac County, Virginia. Introduced by Mr. Allen. Said to be a cross between Hoffman and Sharpless. Plants few in number, of medium vigor, healthy, productive. Leaves inclined to large, rather dark green; leaf stems medium to long, thickish. Fruit stems of average length, thick, often single, prostrate. Blooms early in midseason, ripens slightly before midseason, picks easily. Calyx variable in size, reflexed, slightly sunken, often with pinkish tinge. Seeds deeply depressed. Fruit large to medium, dropping in size in later pickings, roundish conic to wedge, bluntly pointed and often with depression at apex, light and dark glossy scarlet, resem-
blush Hunn. Flesh medium red, of average firmness, mild, not high in flavor, or in quality. Surpassed by other varieties.

Williams.—(Carlton Fruit Farm, St. Catherines, Ontario, Canada.) Perfect. Plants few, of medium vigor, healthy, productive. Leaves medium in size, dark green; leaf stems of fair length, somewhat slender. Fruit stems short to medium, variable in thickness, often double, prostrate. Blooms and ripens late, picks medium easily. Calyx of medium size, not leafy, pale green, flat. Seeds raised. Fruit large to medium, dropping to small as the season advances, blunt, roundish conic, medium dark scarlet, slightly dull. Flesh dark red, firm, agreeably acid, pleasant flavor, good to very good. Fruit is more attractive early in season than later.

Worlds Wonder.—(Woodlawn Nurseries, Rochester, N. Y.) Imperfect. Originated by R. G. Parsons, Maryland. Plants moderately numerous, vigorous, susceptible to attacks of leaf blight, very productive. Leaves rather large, medium green; leaf stems long, quite thick. Fruit stems short, of average thickness, often single, prostrate. Blooms and ripens in mid-season. Calyx rather large and leafy, sunken, slightly discolored. Seeds slightly depressed. Fruit averages above medium in size, blunt wedge, surface often irregularly furrowed, attractive scarlet. Flesh light color, firm, decidedly acid, pleasant flavor, good quality. Although the fruit is of good shape and excellent color, the berries run too small, especially toward the close of the season, pick only moderately easily and the acid flesh would be undesirable to many palates.

STRAWBERRY: CULTURAL DIRECTIONS.

Soil.—Strawberries do well on a wide range of soils. It is usually possible to find some varieties which will thrive on almost any soil. The majority of growers prefer a light, warm, moist, sandy loam in preference to a cold, heavy clay. The ground should be well drained. A southern exposure on a
rich, sandy loam favors early crops. A northern exposure on
a heavier soil retards the time of ripening.

Preparation of ground.—Weedy soils are expensive. Under
such conditions hoed crops should be grown for one or two
years, keeping the land free from weeds. Strawberries after
clover is desirable. Sod soils should be avoided on account of
danger of injury from work of the larvae or grubs of the com-
mon May beetles which lay their eggs in sod ground. The land
may be plowed either in fall or spring. Heavy applications
of stable manure or leguminous cover crops plowed under are
beneficial on account of their value as plant food and in ab-
sorbing and retaining moisture. The ordinary preparation of
land for corn or oats is not sufficient. The soil should be made
fine and mellow by thorough cultivation.

Fertilizers.—Available plant food should be present to meet
the requirements of the plants. Congenial surroundings with
plenty to eat and to drink are plant essentials. Heavy appli-
cations of well-rotted stable manure and the plowing under of
leguminous cover crops, as already indicated, are beneficial. The
weed seeds from the compost heap may cause trouble at times.
Additional applications of plant food in the form of commercial
fertilizers may be necessary. The kind and amount to use
depend on the need of the soil. This may be entirely different
in different localities or even on apparently similar soils in the
same locality. The lack may be in nitrogen, potash or phos-
phoric acid. Applications of nitrogen in the form of nitrate
of soda at the rate of from one hundred to two hundred pounds
per acre, or dried blood at the rate of two hundred to four
hundred pounds per acre, will stimulate growth. A lack of
potash may be supplied by using wood ashes at the rate of
two thousand pounds per acre, or by applications of muriate
of potash at the rate of about five hundred pounds per acre.
Phosphoric acid may be supplied in the form of acid phosphate
using six hundred to seven hundred pounds per acre. Various
other fertilizers might be named. If the soil is naturally well
supplied with available potash or phosphoric acid, nothing will
be gained by additional applications. The aim should be to find the actual needs of the particular soil. To this end it is desirable to make tests of different fertilizers leaving check rows for comparison. The fertilizers should be applied at the beginning of the growing season rather than in late fall. Applications the second spring may at times be beneficial.

Selection of varieties.—Under different environments the same variety may be most profitable or become worthless. Its adaptation should be determined before an extensive use in the commercial plantation. This may be determined by a test of a few plants. The newer, most promising kinds should be tested and the local value determined before setting them in the main plantation, and only those varieties should be finally selected that make the best record locally and which meet the requirements of the market to be supplied.

Sex of plants.—Some attention must be given to the sex of the plants. Those varieties producing no pollen (imperfect) should alternate with the kinds producing pollen (perfect).

Perfect Flower.

If only those varieties which are imperfect, i.e., in which the blossoms contain no stamens in addition to the pistils, such as Cardinal, Columbia, Mark Hanna, Nettie, President, etc., be planted the result is usually a failure. Non-fertilization or incomplete fertilization is usually indicated by an abundance of nubbins, berries with hard greenish undeveloped apex.
Heavy and continuous rains, unusually cool temperatures, or the absence of pollen-distributing insects at blossoming time, may, however, greatly decrease the setting of fruit of even those varieties most prolific in pollen bearing. These two classes should not be set in the same row, but from one to three rows of imperfect varieties may alternate with from one to three rows of perfect varieties. The kind of pollen does not appear to influence the character of the fruit. The berries of Senator Dunlap, for instance, always seem the same in size, color, shape and flavor, no matter whether the pollen be supplied from Chesapeake, Fairfield, Marshall, or Joe, which differ widely.

Selection of plants.—Plants in old beds are usually weakened in vitality and often more or less diseased. The best ones obtainable should be used. These as a rule may be found in well-cared-for yearling beds which have not yet fruited. Systematic selection intelligently followed for a series of years should result in an improved strain. If the so-called “pedigree” plants are superior to others it is because of this practice of intelligent, long-continued selection along desired lines of improvement.

Distance apart of plants.—It is a common occurrence to see plants crowded closely together in the row. A certain amount of moisture is essential to good size and yield. This cannot be secured under such crowded conditions. The distance apart of the rows and of the plants in the row should vary somewhat, depending on the natural richness of the soil and on the ability of the variety to make runners. Those producing the largest number of plants, such as Mark Hanna, Ridgeway, Senator Dunlap, etc., may be set as far apart as four by two and one-half or three feet while the kinds making but few plants may be set three feet by eighteen inches, or even closer, an average distance for many varieties being three by two feet.

Time of setting the plants.—Periods of drought usually occur during the fall months and when plants are set under such conditions there may be considerable loss. It is difficult for
the plants to make a satisfactory growth until the drought is broken, which period is often delayed until late in the season, leaving but a short time for growth before checked by cold weather. Fall set plants require winter protection and the usual cultural care during the ensuing summer followed by a second winter's protection before a full crop of fruit may be secured. In order to shorten the time from planting to fruitage and at the same time secure better weather and soil conditions, it is the practice among the majority of growers to set early in the spring as soon as the soil and plants are in good condition for this work. The transplanting season, however, may extend through a long period beginning early in April and extending well through May. Plants obtained by rooting the first runners in small pots are sometimes set in early fall, but these are usually too expensive.

*Summer treatment.*—The work of cultivation should begin as soon as the plants are set and the soil should be thoroughly stirred about the plants as occasion requires, encouraging a steady normal growth throughout the season. Fruitage lessens plant growth. The blossom clusters should therefore be removed as soon as they appear in order to obtain stronger parent plants from which the runners are to develop. The first runners should be encouraged to root as soon as possible to give a long season for the young plants to develop in size and maturity. They should not become crowded. Some growers make a practice of removing some of these later plants.

*Winter treatment.*—Repeated freezing and thawing weaken the plants and often greatly reduce the yield of fruit. To secure best results winter protection should be given. The most desirable covering is one which is free from weed seeds, spreads evenly, is not blown off by heavy winds and does not smother the plants. Various materials, however, may be used for this purpose, such as straw or rough refuse, coarse stable manure, marsh hay, etc. A light coating is desired as it is only necessary to cover the plants out of sight, an inch or so being much better than three or four inches.
Spring treatment.—The mulching should be left over the plants as long as possible in spring to retain the frost, thus retarding the starting of the plants. As warm weather approaches, however, it may be necessary to shake up the covering to prevent the plants from smothering. Some of this material may be removed from over the plants and placed between the rows. No further treatment is generally necessary except to hand pull the larger weeds. Under some conditions, however, it may be necessary to remove the mulch and give thorough cultivation, replacing it before the berries ripen to conserve moisture and to keep the berries clean.

It is usually not considered a profitable undertaking to spray the foliage for fungus troubles, but where leaf blight is serious, it may be kept in check by applications of bordeaux mixture. The spraying should be made early in the season and should not be applied while the plants are in bloom, nor so late that the bordeaux shows on the fruit. Good air and soil drainage are aids in reducing the amount of injury.

Renewing old beds.—It is generally more satisfactory to set new beds each year than to continue the old ones. But if the plants are numerous, vigorous and healthy, and the ground not too weedy, they may be left for a second crop. Some successful growers harvest two and even three profitable crops of fruit before making a change. The berries ripen earlier on old beds than on one year beds. The ground which has become hard and compact from the tread of the pickers should be thoroughly broken up and the rows of plants cut back to narrow strips as soon as the fruiting season is over, giving thorough cultivation and fertilization as appears necessary.

Conclusion.—It must be kept in mind that the suggestions given above are not specific directions. The actual details vary widely in different places. These must be worked out by each grower under his own particular set of conditions. The different subjects have been treated in a general way giving briefly some indication of the methods pursued by a large number of successful growers.