Ohio Agricultural Experiment Station.

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WOOSTER, OHIO, SEPTEMBER, 1897.

STRAWBERRIES.
CULTURAL NOTES AND VARIETY TESTS.

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The Bulletins of this Station are issued at irregular intervals. They are paged consecutively, and an index is included with the Annual Report, which constitutes the final number of each yearly volume.
STRAWBERRIES.

BY W. J. GREEN.

Our last report on strawberries was made in 1894, Bulletin 54. Owing to severe frosts in 1895 the crop was a failure, nor was the crop in 1896 satisfactory, so far as giving opportunity to compare varieties was concerned, hence it was thought best to delay reporting until the present season.

The interest in new varieties seems to be undiminished, as shown by the number sent for trial, as well as by the number introduced each season. This is partly because there is a fascination about the production of new varieties, and partly because there is still room for improvement.

Although the crop of the present season was uncommonly large, and the price discouragingly low, the interest in varieties seems to be as intense as ever. Such seasons as the present show the necessity of having large showy varieties, sufficiently firm to carry well to market. The list of varieties of this kind is very short, hence the stimulus to produce something better is even greater when prices are low than when high.

The progress in the development of the strawberry is slow, but there is progress, nevertheless. This is seen not in the production of one variety that will meet all requirements, but in the development of particular traits, or characteristics.

We have better early and better late varieties than we had a few years ago. There are much better, and longer lists of varieties from which to choose sorts for any particular purpose—for near market, for long shipment, for fancy trade, for home use, etc. It must be admitted that improvement in quality has been comparatively slow, although Brunette, Marsh. I and Aroma do not suffer in comparison with older sorts.
The number of valuable perfect-flowered varieties has been greatly increased within a few years, and it is much easier now to find reliable pollenizers than it was ten years ago.

It may appear that the Station has done very little toward the improvement of the strawberry, and such is the fact, although thousands of seedlings have been grown and fruited. Many have been grown that were superior to the majority of the varieties offered for sale, but only a few have been reserved for further trial.

While it is true that good varieties are of utmost importance to strawberry growers, and equally true that the highest possible standard has not been reached, there is danger of giving the variety question too great prominence. There are other matters connected with strawberry culture which ought to receive relatively more attention.

It is quite probable that low prices will be the rule for some time to come, and growers must decide whether they will try to produce berries more cheaply, or better ones. In deciding this question they should remember that the cheapening of production, in strawberry culture, is likely to result in extensive, rather than intensive cultivation. And it should be remembered also that the prizes and profits almost all fall to those who follow intensive culture.

While the prices for fancy berries are not likely to be as high in the near future as in the past, the difference between common grades and fancy will probably be greater than it has been. There are but few crops that offer greater rewards for intensive cultivation than the strawberry.

**SUMMER PLANTING.**

This is one of the methods of intensive culture, but as commonly practiced it can hardly be said that summer or fall planting is profitable, notwithstanding the fact that extra fine berries can be grown in this manner.

The objection to fall planting is the extra amount of work involved in starting the plants, either by bedding or potting, and the small crop which is usually secured.

Several years ago the plan of close planting was tried at the Station, which greatly increased the yield for any given area. The plan was simply to set potted plants in triple rows, placing them about six inches apart each way. This is in imitation of the open matted row system, and if planted in July or August, such rows give a crop nearly equal to spring set matted rows.

The plan was modified and improved the present season, doing away with the necessity of potting the plants. Our main beds were planted, on well prepared ground, very early in the season, and the plants began to throw out runners in June, many of which had roots early in July. It became evident that plant production must be
restricted or the entire ground would be covered before fall. The runners might be thrown around against the rows with cultivator, but this only aggravated the difficulty, by making a thick matted row, where a thin or open row was desired.

The necessity of checking the growth of runners, suggested the plan of thinning, during the latter part of July, and of planting at once, according to the open matted row system of fall planting, which had been so successful in a former trial with potted plants. Showery weather favored the work, and although none of the plants were heavily rooted, and some were merely tips with no roots, nearly all grew. It was necessary to shade lightly, with brush, and to water for several days. As early as the first of August perfect matted rows, with plants standing six inches apart, were formed, rivalling in appearance the matted rows in the spring planted bed.

The cost of establishing this new bed has not been greater than that required in planting and caring for the spring planted bed. It is probable that the number of quarts per acre from the spring planted bed will be greater than the other, but the finest berries will come from the fall set plants.

It is admitted, at the outset, that this method is not practicable in all cases, but where water can be obtained it is entirely so, and helps to solve the problem of growing fancy berries at the least cost. To carry out the plan successfully, water is necessary for irrigating the newly set plants, and in some seasons to induce an early and vigorous growth in the spring set plants, so that plants may be had early in July or August.

The plan works in nicely with intensive vegetable gardening, as the ground can be occupied with early vegetables during the spring and early summer; besides, vegetable gardeners usually have a supply of water. Within a year from the time of setting the strawberry plants the ground may be planted to vegetables again.

It will be seen that an essential feature of the plan is the thinning of the plants in the spring planted bed, and this is, of itself, a necessity if fancy berries are to be grown. It is true that the same end may be attained by cutting the runners and keeping the plants in hills, or in thin matted rows, or by cutting out and destroying surplus plants. Either of these methods involves as much labor as taking up plants for a new bed, and hill culture really requires more.

The cost of planting is greater than if the work were done in the spring, because of the larger number of plants to be handled, besides watering and shading must be attended to. The value of the plants need not be considered, as they are weeds, simply, in intensive culture. The use of the land for early crops more than offsets the extra labor involved.
The use of water for irrigation may be mentioned as another means of intensive culture. For starting plants in mid summer it is indispensable, and scarcely a season passes when the liberal use of water during fruiting time will not largely increase the crop. The finer the berries to be grown the greater the profit in the use of water. Instances are on record where the increase in the strawberry crop has repaid the entire cost of the pipes, labor and water in a single season, the water being furnished by the city water works. Others have reported great increase in the crop and large profits in the use of water on strawberries during the fruiting season.

**WATER IN STRAWBERRY CULTURE.**

Irrigation cannot be regarded as indispensable to success in strawberry culture, as by means of heavy mulching, sufficient water may be retained in the soil for the necessities of the crop in ordinary season, but an abundant supply of water simply makes success more certain, and where intensive culture is practiced an irrigation plant ought to be a part of the equipment.

Strawberry plants require an abundance of moisture at all stages of growth, but this is most easily secured during the first season by attending to the proper details in preparation of the soil, and in cultivation

Land which will not wash nor run together, if plowed in the fall, forms a good reservoir for water, and the surface may be worked with cultivator or harrow even earlier than if not plowed until spring. Such surface working, if commenced early and kept up at frequent intervals, will retain the moisture very effectively. A heavy coating of manure plowed under in the fall is useful to enable the soil to retain moisture, but if plowed under in the spring it might have just the opposite effect by preventing the rise of water from below.

Next to fall plowing is early spring plowing, and the importance of this, in strawberry culture, is seldom appreciated. To allow the soil to become dry in the spring beyond the point necessary for it to get into a good workable condition, is taking a great risk in strawberry culture

Intensive culture does not permit the taking of such risks. Early and continuous cultivation saves the moisture to a greater extent than is commonly supposed. It has been found that the loss of moisture from unplowed ground may be in excess of that from cultivated soil to an amount equal to an inch and three fourths of rainfall in one week. A man with a team and sprinkling cart could not replace the water on an acre of land, as fast as it escapes by evaporation from the soil, when it goes off at that rate, if he had to haul the water one fourth of a mile. The importance of stirring the soil soon after a shower is generally known, but in practice, cultivation after slight showers is often neglected.
This is because the soil does not become compacted and no crust forms after slight showers, hence the necessity of stirring the soil at once is not apparent.

A slight wetting of a dry soil, however, increases the upward flow of water, hence there is more water added to the surface soil at such times than comes in the form of rain.

The sun and wind soon dissipate the slight rainfall and along with it much of the water which came from the lower layers of the soil, leaving the soil drier than before.

As the two are commonly used, a cultivator is a better machine for irrigating than a sprinkling cart. The cultivator, if rightly used, saves moisture, while the sprinkling cart is more likely than not to be the means of wasting it. These are matters not to be overlooked in intensive strawberry culture, and as this is the only kind of strawberry culture that is likely to pay in the near future, they ought to receive earnest consideration.

COMMERCIAL FERTILIZERS ON STRAWBERRIES.

In some sections commercial fertilizers are regarded as essential in intensive strawberry culture, but experiments here with chemicals on strawberries have, thus far, been negative. Our experiments do not throw any light on the matter, hence no advice can be given relative to their use.

NOTES ON VARIETIES.*

The following notes on varieties are really summaries regarding the behavior of those named for all of the time which they have been on trial. The past season was very favorable and no doubt some of the new sorts seem better in comparison than they really are. Likewise the older varieties suffer for any weaknesses which may have been observed in the past.

ANNIE LAURIE (perfect.) Plants healthy and moderately prolific. The berries are large, somewhat variable in form, but never ill-shaped. Deep scarlet in color, glossy and beautiful, firm and of excellent quality.

Although not sufficiently productive for market purpose, it will please amateurs, who are willing to give the care necessary to bring the variety to perfection.

AROMA (perfect.) Plants very vigorous, but only moderately

*The illustrations accompanying are from photographs and are one-half actual size.
prolific, especially when young. Old beds of this variety have produced nearly as fine berries as young beds, and have given larger crops. Time of ripening, medium to late. Berries large, nearly all grading as fancy, regular in form and quite uniform in size; color, light scarlet, often nearly white on one side. Quality, excellent.

This is an excellent variety for home use, but not firm enough for long shipments, nor sufficiently prolific for commercial growers. For the home garden it has decided merits, because of its large size, fine quality and vigorous growth. If desired, a bed of this variety can be kept for a number of years, without serious deterioration.

**ARROW** (imperfect.) Plants vigorous, healthy and moderately prolific. Berries medium size, seldom large; uniform in size and regular in form. Dark scarlet, firm and beautiful in appearance. Too small for market and probably not sufficiently prolific.

**ANNA KENNEDY** (imperfect.) Plants vigorous, healthy and moderately prolific. Berries medium and very uniform, ranging from an inch to 1½ inches in diameter, none small, and none extremely large. Conical, nearly globular and never irregular. Bright glossy red; flesh light red and firm. Time of ripening, midseason.

Although rather light in color, this variety has decided merits for market. In a trial shipment of 100 miles, it stood up even better than Warfield, showing no bruises, and holding its bright, glossy appearance perfectly. It may not prove as prolific as desirable, however.

**ALICE** (imperfect.) Plants vigorous, healthy and prolific. Berries medium to large, usually conical, but sometimes slightly irregular. Bright scarlet, glossy; flesh red, firm and of good quality.

This variety has been on trial one season only, in a small way, hence but little more can be said than that it is promising, and deserving of further trial.

**BRUNETTE** (perfect.) This variety has been somewhat variable here, and conflicting reports have been heard concerning it. It has never failed to give a fair crop here, and in several cases, has given remarkably good yields. When at its best it is unexcelled for beauty and quality. It can be recommended to the amateur, who gives high culture, and to the commercial grower who has a discriminating market, but those who care more for number of quarts than high quality may not find the Brunette profitable. It needs favorable conditions to bring it to perfection, and will endure less hardship than most varieties.

**BOSTONIAN** (perfect). Plants very vigorous, healthy, and moder-
atefully prolific. Berries medium to large, conical, regular and uniform. Dark scarlet, glossy, not always evenly colored. Flesh nearly white at center, moderately firm. Season medium to late.

For vigor of plants, size, beauty and quality of fruit, this variety is not excelled, hence it will prove acceptable to amateurs, but commercial growers desire greater productiveness. It has yielded here about one-third as much fruit, in quarts, as Warfield.

**BEAUTY** (perfect). Plants vigorous and quite prolific. Berries large, conical, regular and uniform. Dark scarlet, one side usually a shade lighter than the other. Flesh dark all through and moderately firm.

This variety has been fruited here one season only, but appears to be worthy of commendation, because of its beautiful appearance and vigorous, healthy foliage.

**BOUNCER** (perfect.) This variety has fruited here one season only, but it was far from satisfactory as to size and yield. A longer time is needed in order to determine its value.

**BISEL** (imperfect). Plants healthy, vigorous and prolific. Berries medium to large, uniform and regular.

This variety is worthy of commendation, because of prolificacy. The berries are not large, but are uniform in size and sufficiently firm for market. It has some of the characteristics of the well known Wilson, being similar in shape and color, and quite as prolific, but less firm. In some sections it would not be regarded as large enough to meet the market requirements, while in others it would serve the purpose perfectly.

**BRANDYWINE** (perfect). This variety is well known and has been quite thoroughly tested in many sections. It has been steadily increasing in favor here, and is now regarded as one of the best late sorts known. It does not yield as heavily as some of the second early varieties, but is equal to any of the late sorts and the berries are all large, well colored and firm. The bulk of the crop ripens very late. It excels the Gandy in productiveness and color. It is rather later than Enhance and far more attractive in appearance. Where lateness is desirable, it has quite generally proved satisfactory.

**COPERNICUS** (imperfect). From Henry Young. Plants very vigorous, healthy and quite prolific. Berries medium to large; somewhat variable in form, usually conical, often ribbed and flattened, but
not cockscombed. Color dark scarlet, often with white tips; flesh colored, firm, rather acid, but of fair quality. Season, medium to late.

The special value of this variety consists in its extremely vigorous and healthy foliage, which insures uniform size of berries the entire season.

The crop is not as large as with many second early sorts, but the berries retain their size until the last of the season. The fact that it gives its heaviest pickings toward the last of the season makes this a promising variety.


Less desirable than Copernicus and Enhance, although better in quality than the latter.

**CYCLONE** (perfect). This variety has been somewhat variable here. In 1894 and 1897 it gave very satisfactory crops. In 1895 all varieties were greatly injured by frost and the Cyclone suffered more than most others. For reasons unknown it gave very poor returns in 1896. In 1897 it was above the average. If not allowed to set too many plants it will, no doubt, prove satisfactory, generally, but it can hardly be regarded as equally reliable as Lovett. In form and color, and time of ripening, it is a good mate to Haverland. Sometimes it yields fully as heavily as that variety, especially early in the season. Its chief fault is a tendency to fall off in size toward the end of the season, but on the whole it may be regarded as a variety of more than ordinary merit.

**CLYDE** (perfect). Plants vigorous, healthy and prolific.

Berries medium to large, quite uniform in size, and regular in form, varying but little from conical, and mostly from 1 1/2 to 1 3/4 inches in diameter. Color varying from light to dark scarlet, depending upon the degree of ripeness and exposure. Flesh light red, nearly white at center, moderately firm and of fair quality. Time of ripening, mid-season.

This is an uncommonly promising perfect flowered variety, because of its prolificacy. The berries are large enough to meet the demands of almost any market, and hold up well in size toward the end of the season. A deeper color and firmer flesh would be desirable for market, and higher quality for home use, but even without these qualities in the highest perfection it is a remarkably promising variety, and can be confidently recommended to small fruit growers generally. If grown in
matted rows it will be necessary to restrict plant production, in order to allow the sunlight to reach the fruit, and prevent overbearing.

_CARRIE_ (imperfect). A seedling of Haverland, which it resembles closely, but it is an improvement upon that variety in color and firmness. It has been on trial here two seasons, and has proved satisfactory in every respect. It has the fault of the Haverland, of long fruit stems, which exposes the fruit to injury by trampling of careless pickers. Every fruit grower, however, will appreciate an improved Haverland, because of its prolificacy and reliability, hence it seems safe to recommend the Carrie to their consideration.

_COLUMBIAN_ (perfect). Plants very vigorous, but not sufficiently prolific. Berries medium size, uniform and regular, but too light in color and too sparingly produced.

It can hardly meet the demands of commercial growers.

_EQUINOX_ (perfect). This is claimed to be a very late ripening variety, but it has given very light crops of small berries here. It does not compare favorably with Gandy and Brandywine.

_W. H. EARHART_ (perfect). An unnamed variety. Resembles the Sharpless in both foliage and fruit. Possibly more prolific than Sharpless and darker in color. It has the same fault of white tips, although in less degree. It gave some large pickings of fine berries, the past season, but in 1896 the crop was indifferent. It may be ranked as promising, but further trial is necessary before we can say unreservedly that it is superior to Sharpless.

_ENORMOUS_ (imperfect). Plants vigorous and prolific. Berries large, irregular, but not ill-shaped; nearly all would be classed as first-class, or fancy. In size slightly smaller than Bubach, but more prolific. Dark scarlet, glossy and beautiful in appearance. Flesh dark red, of good quality and quite firm. A very promising midseason variety, for home use or near market. Two seasons' trial indicate that it is trustworthy and a sure cropper. It gives a heavy crop of large berries, which hold up in size to the end of the season. It has shown no serious defects here, and is confidently recommended as a safe variety to plant.

_ELEANOR_ (perfect). Thus far it has failed to come up to promise, both as to earliness and productiveness. It has given a very light yield of small berries, and cannot be recommended.
**EPPING** (imperfect). Plants vigorous and very prolific. Berries medium to large, light colored and soft. This would be a very profitable market variety if it were not for the objectionable color and lack of firmness. With close picking and careful handling it might do for near market, but at best would not sell as well as most other varieties.

**ENHANCE** (perfect). While there are many better varieties, in certain respects, than the Enhance, it has some qualities which entitle it to recognition. For frosty localities it is one of the most reliable sorts that can be planted, and though a midseason variety, the bulk of its crop is matured after most others begin to fail, while for shipping and canning it is unsurpassed. Where these qualities are at a premium it will pay to plant the Enhance.


Fruited one season in a small way, and further trial is needed to determine its value.

**GLEN MARY** (perfect.) Vigorous and prolific. Berries large, mostly irregular, often flattened and ribbed, but seldom cockscombed. Dark scarlet, glossy, beautiful, although an occasional specimen is not well colored. Flesh light red, moderately firm and of good quality. Season medium to late.

For home use and near market this is an unusually promising variety. It may not be sufficiently firm for long shipment, although it is probably firmer than Bubach, and most other sorts of large size. It excels Brandywine, Sharpless and Marshall in productiveness. It has fruited here one season only, but it has such decided merits that there can be little danger in recommending it.

**GARDNER** (perfect.) Plants very vigorous and fairly prolific. Berries large, rather irregular, light scarlet and soft.

Although this variety has considerable merit, it is probably too soft for market, nor is the color satisfactory.

**GRANVILLE** (perfect), from A. M. Nichols. Plants quite vigorous and moderately prolific. Berries medium to large, conical, quite regular in form and uniform in size. Deep crimson, usually of lighter color, and sometimes white on one side. Glossy and showy. Season medium.
Appears not to be sufficiently prolific, but with good care all of the berries are first class, hence it may be ranked as promising.

**J. C. GROSSMAN** (imperfect), unnamed variety. Plants healthy and prolific. Berries medium to large, conical, often irregular, sometimes with slight neck. Color light scarlet, flesh white and soft. Season medium.

Possibly valuable because of prolificacy, but too soft for shipping.

**HELEN CHAPMAN** (imperfect), from W. E. Tate. Plants healthy, moderately vigorous and quite prolific. Berries medium size, averaging about an inch in diameter. Conical, regular in form and uniform in size. Light scarlet, firm and rather acid. Season medium.

The value of this variety consists in its shipping qualities, hence it may be suited to some sections and not to others. It is smaller than is thought desirable generally, but its uniformity in size renders this fact less conspicuous than it would be otherwise.

**HOLLAND** (imperfect). Plants vigorous, resembling Sharpless, and moderately prolific. Berries large, conical, sometimes flattened at the point, but usually regular and uniform. Color light scarlet, flesh red, rather soft and low in quality. Season medium.

Cannot be recommended because of light color and lack of firmness.

**W. H. HILLYARD** (perfect), unnamed variety. Medium to large, conical and regular. Color dark scarlet, glossy; flesh dark, firm and acid.

Has been tested one season only, under rather unfavorable circumstances. It appears to be promising, although it gave rather indifferent results last season. Further trial is needed before pronouncing upon its probable value.

**HERALD** (perfect), from Henry Young. Plants very vigorous. Berries large to very large, irregular, ribbed and cockscombed. Color dark scarlet, when fully colored, sides and tips usually green. Flesh red, white near center, firm, and of good quality. Season medium.

This variety has been fruited one season only, and from fall set plants, hence a correct opinion as to its value cannot be given. The largest berry weighed two ounces, and some others were nearly as large. But few were well colored.

**HALL’S FAVORITE** (perfect). Plants healthy, vigorous and prolific. Berries medium to large, uniform in size. Color crimson, usually
well colored, but sometimes with green tips. Flesh light red, firm and rather acid. Season early to medium.

This variety has been on trial here four seasons and has shown itself worthy of commendation.

_JERRY RUSK_ (perfect), from Ran Benoy. Plants moderately vigorous, healthy and quite prolific. Berries medium to large, usually irregular, but uniform in size, crimson, glossy; flesh red, white near center, firm and of good quality. Season medium.

Has been on trial two seasons and has proved satisfactory, although less so in 1897 than in the previous season. It is commended because of large size, color and firmness.


Not as prolific as desirable, but all of the berries, even to the last, are very nearly the same size.

_A. LUTHER_ (perfect), unnamed seedling. Plants vigorous and prolific. Berries medium to large, running small toward the last of the season. Conical, usually with long slender point, sometimes irregular. Light scarlet, flesh light red, rather soft and of good quality. Valuable because of earliness. It is about one picking later than Michel's Early, but larger and far more prolific. Quite as early, larger and more prolific than Rio. It is regarded as the best early variety tested here.

_LADY FRANKLIN_ (imperfect), from H. Wolfgang. Very vigorous and quite prolific. Berries large, broadly conical, quite regular and uniform. Light scarlet, sometimes with green tips. Flesh light red, moderately firm and of good flavor. Midseason. Has been on trial two seasons, and is rated as promising for home use or near market.

_LADY THOMPSON_ (perfect). Plants moderately vigorous and fairly prolific. Berries medium size, running small toward the end of the season. Has fruited here one season only, but was far from satisfactory as regards size and prolificacy.

_LOVETT_ (perfect). Among the well tested and thoroughly tried perfect flowered sorts the Lovett stands at the head. Some of the newer varieties may be equal to it, but one would hardly be justified in discarding the Lovett, where a reliable pollen bearing variety is wanted, until
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further trial demonstrates, beyond a doubt, the superior value of the newer sorts.

**LANAH** (perfect). An excellent variety for shipping, because of firmness, but too small for general cultivation.


Under high cultivation, the Margaret has given surprising results. It has been grown here two seasons, with ordinary care, and has proved to be satisfactory, although not very strong in growth. For fancy berries it is unsurpassed, and would probably prove to be a profitable market sort in many sections. Growers generally will most likely want something more vigorous and prolific, however.

**MARSHALL** (perfect). Although a very shy bearer, this variety is worthy of a place in the home garden, because of high quality, large size and beauty. It is rather soft for market, but in some sections, where high prices can be obtained, it would prove profitable. Although not suited to the wants of commercial growers, it is worthy of a place among accepted varieties.

**MARIETTA** (perfect), from James Henderson. Plants fairly vigorous and moderately prolific. Berries large, conical, often irregular and cockscobbed, quite uniform in size. Light scarlet, glossy and moderately firm. Midseason.

On account of uniformly large size, this variety has considerable promise for home use or near market, but has been on trial two seasons only, one of which was unfavorable.

**MANWELL** (perfect). Fruited on fall-set plants only, and no opinion can be given as to its probable value. The plants made a moderate growth and produced a small number of large irregular berries. Appears to be worthy of commendation, because of large size, fine color and firmness.

**A. E. MAST** (perfect), unnamed variety. Plants moderately vigorous and sufficiently prolific. Berries medium to large, conical, usually regular, but sometimes flattened. Color dark scarlet, firm and of good quality. Season medium. If sufficiently vigorous this will, no doubt, prove to be a valuable variety for market.
MARY (imperfect). Plants vigorous but not prolific. Berries large to very large, irregular, dark scarlet, often with white sides. Flesh quite firm, very acid and low in quality. Not desirable because of unproductiveness and poor quality.


Would do very well to plant with the Crescent, being about the same size, and similar in color.

D. J. Miller's No. 1 (perfect), unnamed seedling. Plants vigorous and prolific. Berries medium to large, conical, but often irregular, flattened, ribbed and cockscombed. Color crimson, flesh red, white near the center, and firm. Season medium. Resembles Tennessee Prolific, but firmer and probably more prolific.

This has fruited here one season only, but appears to be very promising.


Tested one season only, but appears to be very promising, because of prolificacy and shapely uniform berries.

Plow City (perfect). Plants vigorous and prolific. Berries medium to large, conical, regular in form, and quite uniform in size. Dark scarlet, glossy, often with white sides. Firm and of good quality. Season medium to late.

Grown here one season only, and not being fully supplied with pollen, or owing to wet weather, many of the berries were imperfect. It appears, however, to possess great merit because of uniform size, firmness and prolificacy.

Princeton Chief (imperfect). This variety was reported upon adversely in a former bulletin, and there seems to be no reason for reversing the opinion given then. It is not sufficiently prolific and is too low in quality. It has been discarded generally.

Portage (perfect). This variety was referred to in a former report as similar to Sharpless in foliage and fruit, with less tendency to green tips. It has been on trial several seasons, and it may be said
further that it is superior to Sharpless both in color and firmness, and perhaps in productiveness also, and like the Sharpless, is tender in blossom. On the whole, it is a promising late variety, and is worthy of trial, both for home use and market.

*RUBY* (perfect). Plants vigorous and prolific. Berries medium to large, conical, but often irregular, although not cockscombed. Color dark scarlet, glossy, mostly well colored, but sometimes with white tips. Flesh scarlet, firm and of good quality. Season, medium to late.

This variety has been on trial here several seasons, and has uniformly behaved satisfactorily. It is particularly to be commended because of its good color and firmness. The berries retain their size to the end of the season, and hold up in quantity. For this reason, it may be classed with the late sorts, although it begins to ripen quite early. Some rust has been seen on the foliage, and in some cases the fruit has not developed fully, but these defects, if such they may be called, are so slight as not to mar the value of the variety, hence it is recommended as worthy of trial.

*RIO* (perfect). A vigorous and prolific early variety, a little later than Michel's Early, but larger and far more prolific. The berries are medium to large and retain their size well toward the end of the season. Sufficiently firm for shipping and as prolific as desirable. This can safely be rated as a valuable early variety, and as worthy of general trial.


The principal value of this variety lies in its firmness, but it lacks in both size and prolificacy.

*A. T. SCHORG* (perfect), unnamed seedling. Plants moderately vigorous and fairly prolific. Berries medium to large and rather irregular. Dark scarlet, but not always well colored, often with white tips. Firm and acid.

Too low in productiveness and too weak in growth to meet the requirements of growers for market.


Rather lighter in color than desirable, but very vigorous and prolific. It may be ranked as promising for near market, because of prolificacy, but is too soft for shipping long distances.

This variety has been described as a perfect flowered Warfield, and the description answers admirably, although it is rather darker in color and not quite so firm as that variety. The two are near enough alike to be planted together, making as good a pair as can be named for the market grower, who ships his berries. Like the Warfield, the Staples should not be allowed to form a thick matted row, as, grown in this manner, the berries are small. Grown in hills, or thin matted rows, nearly the entire crop will grade first class. Judging from its behavior here, and reports from other sections, the Staples may be safely recommended for general planting.

SATISFACTION (perfect). Quite vigorous and moderately prolific. Berries large, but run down in size toward the end of the season. Rather soft and not well colored. Not desirable.


Although rather small, the uniform size, regular form, and bright color of the berries combine to make this a desirable variety. The appearance of the berries in the basket is such as to make them salable in spite of small size, and when the fact is taken into consideration that the plants yield a good crop before most other varieties begin to ripen, it will be seen that this variety must possess considerable value as an early sort. It has yielded fully three times as much as Michel's Early, alongside, besides being firmer and much finer in appearance.

S. H. & A. J. SEE'S No. 2 (imperfect). Plants vigorous and prolific. Berries medium to large, conical and rather long. Scarlet, often with white tips. Comparatively early. Berries are nearly all large at first, but run down in size toward the end of the season.

Would do well to plant with Rio, as the two ripen at the same time and are similar in form and color.


It is said to be larger than Crescent, but here it seems to be no improvement upon that variety in any particular. It appears to have no distinctive merits to entitle it consideration.

**SUPERB** (perfect). Plants vigorous and moderately prolific. Berries medium to large, conical, regular and uniform size. Color dark scarlet, glossy, flesh dark red and moderately firm.

Although tested in a small way but one season, it seems to worthy of commendation for size, beauty and quality.

**SPLENDID** (perfect). Vigorous and fairly prolific. Berries medium to large, regular and uniform in size.

Although not large, the berries make a fine appearance in the baskets. Rather soft and does not always color perfectly, but would do well for near market, or home use, as a pollinizer.

**TENNESSEE PROLIFIC** (perfect). Plants vigorous and prolific. Berries medium to large, nearly all would rank as first class; rather irregular, and not very firm. Not always well colored, but usually bright, glossy scarlet, and beautiful in appearance.

Although not without fault, this variety is one of the most promising of recent introduction, because of prolificacy and general reliability. It has shown no signs of disease here, and has always given heavy crops, and reports concerning it are generally favorable. Those wishing a reliable, midseason pollinizer, for near market or the home garden, may safely give the variety a trial.

**TIMBRELL** (imperfect). Although late, quite prolific, and of excellent quality, this variety has been generally discarded by commercial growers, because of its unsatisfactory color, and patchy appearance. It may find a place in the home garden, where high cultivation is given.

**WOLVERTON** (perfect). Although not new, this variety has not been as generally cultivated as it deserves to be. The plants are healthy and prolific, while the berries are above medium size, highly colored, attractive and fairly firm. It deserves to receive more attention from those who desire a perfect flowered market variety.

**WESTON** (imperfect.) Plants moderately vigorous, but quite prolific. Berries medium to large, quite irregular and variable in shape.

Two seasons' trial do not show that this variety has any special merit; at least its behavior here has not been such as to make it worthy of commendation.
WM. BELT (perfect.) This variety has been satisfactory _ere, and has shown no weakness, except a tendency of the foliage to rust. This weakness has not manifested itself to a serious extent, however. The crop does not appear to have been seriously lessened in any case. It is too good a variety to be hastily discarded. It is particularly valuable for the home garden, or near market.

Summary.

Although the progress in the development of the strawberry has been slow, there is progress, nevertheless, which is seen not in the production of a perfect variety for all purposes, but in the development of particular traits, or characteristics.

The station has grown many thousand seedlings but all have been discarded, although many were more valuable than the majority of those offered for sale.

While good varieties are of great importance to fruit growers there is danger of making the variety question unduly prominent.

It would be well to give more attention to intensive culture, as there are but few crops that offer greater inducements in this direction than the strawberry.

Summer planting is one method of growing fancy berries, and a good plan is to set the plants in triple rows, in imitation of the open matted row.

The plants from spring-set beds may be utilized in this manner, accomplishing the purpose of thinning at the same time. This method is particularly feasible where water is at hand, and may be practiced by gardeners to good advantage.

The use of water for irrigating strawberries is another means of intensive culture, especially during the season of fruiting.

The conversation of moisture is best accomplished the first season by fall, or early plowing, and thorough cultivation.

It is quite as necessary to stir the soil after light as after heavy showers, even though no crust is formed.

The following are the most promising of the new varieties: Aroma, Anna Kennedy, Beauty, Copernicus, Clyde, Carrie, Enormous, Glen Mary, Hall's Favorite, unnamed seedling from A. Luther, unnamed seedling from H. Orewiler, Portage, Ruby, Rio, Staples, unnamed seedling No. 1 from S. H. & A. J. See, Tennessee Prolific.

The following cannot be recommended:


The following, some of which are not mentioned in the notes, because well known, can be recommended for general cultivation: Bubach, Brandywine, Greenville Haverland, Lovet', Warfield.
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