THE NEWER STRAWBERRIES.

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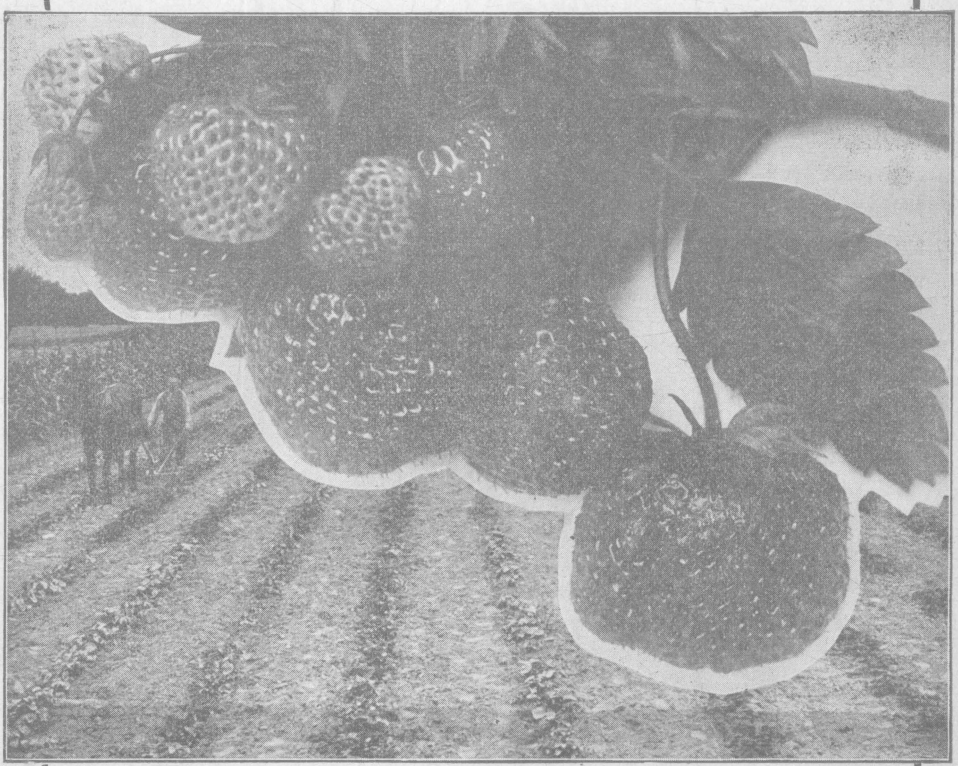
Agricultural Experiment Station.

WOOSTER, OHIO, U. S. A., SEPTEMBER, 1905.

BULLETIN 166.



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BULLETIN

OF THE

Ohio Agricultural Experiment Station

NUMBER 166. SEPTEMBER, 1905.

THE NEWER STRAWBERRIES.

BY W. J. GREEN AND F. H. BALLOU.

INTRODUCTION.

The season of 1905 has been a disappointing one for the testing of varieties of strawberries, and the results obtained, recorded, and herewith published should not be regarded nor accepted as wholly conclusive. A further trial, under more favorable conditions would, no doubt, materially turn the scale in favor of some of the newer varieties which have scored a comparative failure.

It should be stated, first of all, that the soil upon which our test plots for 1905 were planted was over rich in nitrogenous matter, from a series of annual, heavy applications of stable manure. This plot of ground, which was the only one available at that time, had been prepared and used, in previous years, for vegetable growing, and was really unfit for strawberry production. The natural result of planting upon this over rich soil was to force a tall, dense, heavy, rampant growth of plants and foliage at the expense both of strong, healthy fruiting crowns the first season, and the production of perfect fruit of firm texture, good color and high quality the present season.

In this connection it may well be stated, without entering into a discussion of cultural methods and soil fertility, that a soil comparatively low in nitrogen and liberally supplied with phosphorus and potassium is preferable, for the production of strawberries, to one unduly rich in nitrogen.

However, the plants in our test plot for 1905 came from beneath their winter mulch in good condition, with the exception of a few varieties which were, last season, seriously affected with leaf blight. These persistently refused to respond to the sunshine and showers of Spring, and remained in a weak, unhealthy state that invited, later on, a form of mildew which, while not unknown to plant pathologists, was so unusually and exceedingly destructive in its ravages, that the varieties affected proved almost a total failure in the way of fruit production.

The weather was favorable to pollination of blossoms during the first few days of the blooming period of the first early varieties. The first berries set in good form, withstood, fairly well, the cutting frosts, which followed, and afforded an opportunity to get a clear conception of the comparative seasons of ripening of the several varieties which are competitors in the point of early maturity of fruit. Later on, from the 20th to the 24th of May, came a series of cutting frosts, so severe in their intensity as to destroy from 75 per cent to 100 per cent of the blossoms of the more tender, perfect flowered varieties, and from 50 per cent to 75 per cent of the blossoms of the hardier imperfect varieties, blooming at that time. The plants promptly rallied from this check, but, as a profusion of new flowers took the places of those destroyed by the cold, the weather turned persistently wet, cloudy and cool, and pollination was very restricted and incomplete. Following these unpropitious and discouraging conditions the ripening season brought forth continued, heavy rains, alternating with hot sunshine—conditions under which only soft, watery, insipid or acid fruit could be produced. Such phenomena could reasonably be expected to bring only disaster and disappointment to the strawberry grower or experimentalist; yet there were features of interest and value forced into prominence, and lessons to be learned that could be brought about only by adverse conditions.

It is a matter of considerable satisfaction to the authors to report that the few varieties, both old and new, which seemed to deserve especial mention last year, have proven, in 1905, that our good words were but conservative, well bestowed, well merited. All through the adversities of the present season the leaders of last

year, both the old and the new, with but few exceptions, have given an excellent account of themselves. More than this, and equally gratifying, is the fact that some of our old favorite, worthy and popular varieties which fell a trifle short of our expectations last year, have returned to the front ranks the present season, in point of prolificacy and general excellence. In the testing of new varieties these time proven, dependable old favorites should not be lost sight of; rather should they be given what is justly due them—place and opportunity to afford and preserve the standard of excellence which they have established and maintained, and to which a very small percentage, indeed, of the newer varieties ever attain.

As the result of careful study and repeated trials of new varieties of strawberries, we are led to the apparently reasonable conclusion that a new sort which gives a good account of itself two or more seasons in succession in the same locality, but under different conditions of soil, moisture and temperature, possesses merit not only for that particular section, but promises to be more or less cosmopolitan in its nature,—to succeed well over a wider range of soils and under even more varied conditions. Thus it was that the Wilson, Crescent, Bubach, Haverland, Warfield, and more recently the Sample, Parson's Beauty and Senator Dunlap, generally behaved well in the hands of experimenters and became well and widely known, popular, and standards of their kind.

In our report for 1904 (Bulletin No. 154) are included full and accurate descriptions and reports of all the new and many of the old and standard varieties of strawberries tested up to that time at this Station. As this Bulletin is, and will continue to be available to all who request it, the present season's report will be devoted more especially to varieties fruiting here for the first time in 1905, with mention, however, of the few newer varieties which seemed especially promising in 1904. A tabulated record of the behavior of all the varieties tested in 1905 is given at the close of this report.

The yields of the different varieties of strawberries given in this report are computed upon sections of rows sixteen and one-half feet, or one rod, in length. Many varieties occupied double sections, or rows two rods long. One-half of the total yield of these double sections, is given—making the report uniform in the matter of yield, and showing the comparative prolificacy of the different varieties as nearly as it was possible to measure in quarts and fractions of quarts.

The illustrations are from photographs of typical specimens of the several varieties, and are as nearly life size as it is possible to make them by careful measurement.

The names of the various persons or firms, following the variety names, are of those from whom the plants growing at the Station were purchased, and are not, in all cases, the names of the originators or introducers.

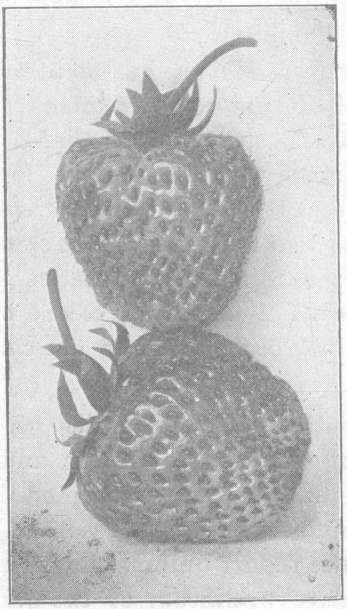
THE NEWER STRAWBERRIES.

Arkansas Black (Hubach & Hathaway, 1904).—Small, conical, very dark red. Flesh red or pink, only moderately firm and of fair quality. Makes a mammoth plant or "stool" composed of many crowns, and fails to send out runners for plant production. Apparently worthless here.

Alice Hathaway (H. & H., 1904).—Medium in size; short conical; light red, rather dull. Flesh red, moderately firm and of pleasant flavor. Plants tall and vigorous. Flowers perfect. First blossoms May 11. First ripe fruit June 12; last picking June 29. Yield six quarts.

Annie Hubach (H. & H., 1904).—Was a complete failure this season.

Beaver (Mull, 1904).—Suffered so badly from blight and frost and the crop was cut short to such an extent by non-pollination that a report cannot be made this season. Produced but six small berries.

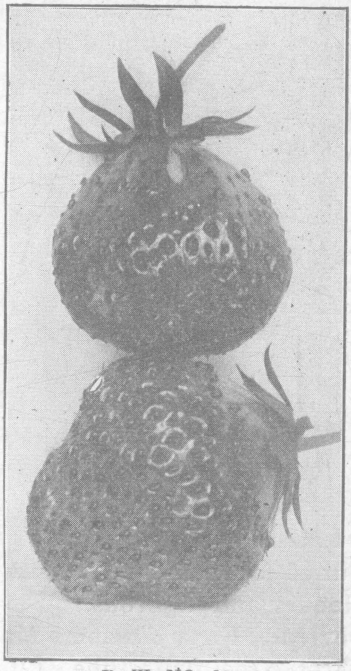


BRUNDIGE.
Natural size. *Photo by Bal'ou.*

Ben Davis (Crawford, 1904).—Medium to large, variable in shape—conical, elongated, sometimes coxcombed; color light red, unattractive. Flesh pink, lacking firmness; quality poor. Plants strong, flowers large and perfect; suffered badly from frost. First blossoms May 8. First ripe fruit June 12; last picking June 26. Total yield one quart.

Brundige (H. & H., 1904).—Above medium in size; form conical, a little irregular; color bright red. Flesh pink, lacking in firmness. Plants are large and strong, the foliage medium green and rather thin in texture. Flower imperfect. First blossoms May 11. First ripe fruit June 16; last picking June 29. Yield one and three-fourths quart.

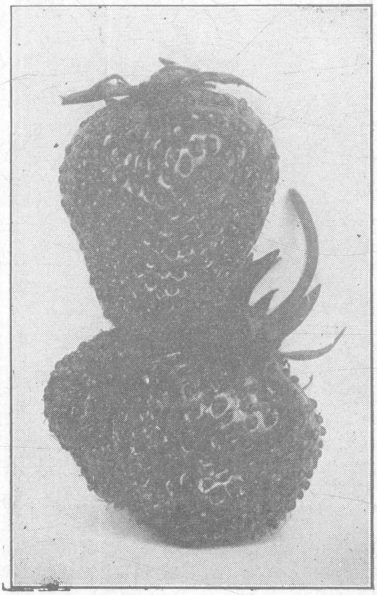
B. W. No. 6. (P. D. Berry, 1904.)—Medium to large, flattened, blunt at apex, distinctly necked; color pink—very light. Flesh same color, fairly firm, mild, but not of high flavor. Flowers perfect. First blossoms May 16. First ripe fruit June 16; last picking June 26. Yield two quarts. A distinct, though apparently not a very promising variety. Is too light in color for public approval.



B. W. NO. 6.
Natural size. *Photo by Ballou.*

Cardinal (Streator, 1904).—Described last season in Bulletin 154. The berries were not large this year, but were of good color and firm; quality only fair —quite acid. A little disappointing, but needs further testing. Plants are clean, healthy and vigorous.

Carlisle No. 1 (Carlisle, 1903).—Described last year. A beautiful berry in form and color; firm and of good quality. Seems lacking only in the point of prolificacy. From the same source as Highland Seedling. Flowers perfect. First blossoms May 13. First ripe fruit June 12; last picking June 29. Yield one and three-fourths quart.

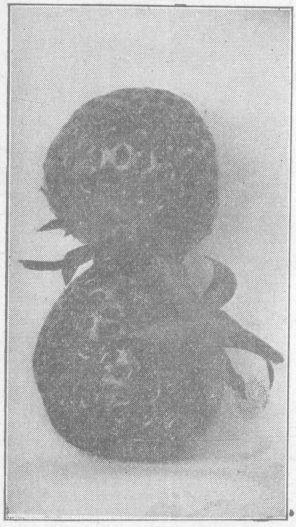


CARLISLE NO. 1.
Natural size. *Photo by Ballou.*

Carrie Dumas (H. & H., 1904).—Small to medium, conical; color bright red; comparatively few, prominent, bright golden colored seeds. Flesh light red, lacking firmness; quality fair. Plants medium in size, of moderate vigor, nearly free from blight. Flowers imperfect. First blossoms May 13. First ripe fruit June 12; last picking June 23. Yield one and three-fourths quart.

Climax (Boggs 1904).—Above medium size, conical, blunt at apex, sometimes slightly flat-

tened or divided; color light crimson—a little dull. Flesh red, quite firm and of fairly good quality. Flowers perfect. First blossoms May 16. First ripe fruit June 16; last picking June 29. Yield three and one-sixth quarts.

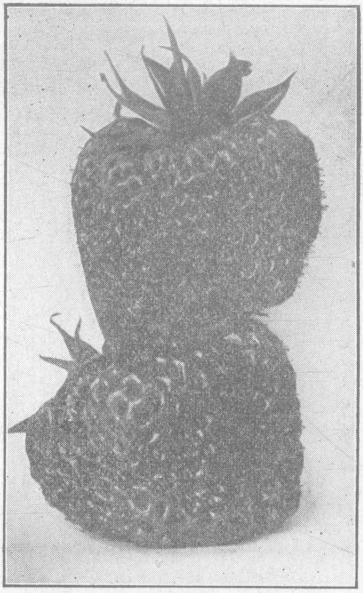


CARRIE DUMAS.
Natural size. *Photo by Ballou.*

D. S. Plum No. 1 (Plum, 1904).—Large, short conical, irregular, divided; color bright crimson. Flesh red, fairly firm and of good quality. Plants blighted considerably. Flowers perfect. First blossoms May 12. First ripe fruit June 12; last picking June 29. Yield three and one-third quarts.

Duncan (Crawford, 1904).—A failure this season. Produced but thirty-six small berries.

Early Market (H. & H., 1904).—Medium in size, short conical; light crimson in color. Flesh red, lacking firmness, but of fair quality. Plants tall, slender and vigorous. Flowers perfect. First blossoms May 13. First ripe fruit June 12; last picking June 23. Yield one and two-fifths quart.



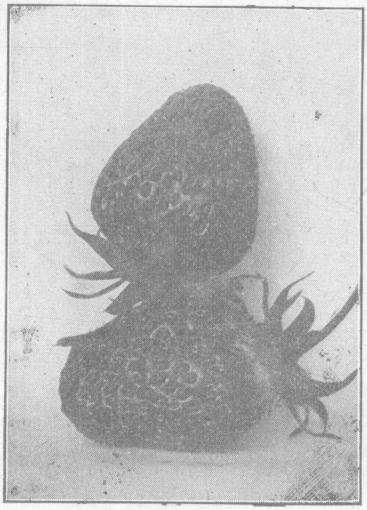
D. S. PLUM NO. 1.
Natural size. *Photo by Ballou.*

Effie (Boggs, 1904).—Medium in size, usually conical, sometimes flattened; color light red. Flesh pink, lacking firmness; quality not good this season. Flowers perfect. First blossoms May 13. First ripe fruit June 16; last picking June 26. Yield one and one-sixth quart.

Ernie (Flansburg & Pierson, 1904).—Berries medium to small, of regular, conical form and dark crimson in color. Flesh red, firm and of good quality. Plants small, with tendency to blight. Flowers perfect. First blossom May 13. First ripe fruit June 16; last picking June 19. Yield one and two-thirds quart.

Evergreen (H. & H., 1904).—Rather above medium in size, long conical in form and bright crimson in color. Flesh red, moderately

firm and fair in quality. Plants are coarse, remarkably vigorous and of a peculiar shade of light green color. Fruit-stalks taller than the foliage. Flowers perfect. First blooms May 11. First ripe fruit June 12; last picking June 26. Yield three and two-thirds quarts.

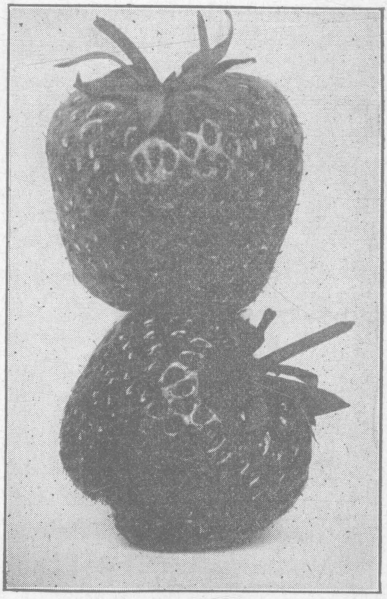


FAIRFIELD.
Natural size. *Photo by Ballou.*

Fairfield (Allen, 1904).—Did well last year and was described in Bulletin 154. This variety, though not remarkably prolific, ripens up a nice crop of firm, dark colored, berries of good quality in a short season, and again proved to be among the leaders of the early varieties. First blossoms, May 9. First ripe fruit June 5; last picking June 19. Yield four and one-fourth quarts.

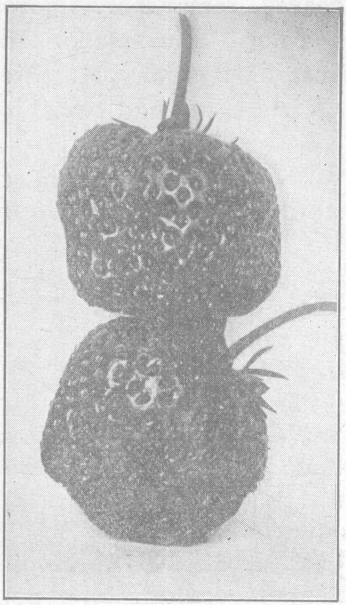
Ford (H. & H., 1904).—Medium in size, short conical, blunt apex; color bright red. Flesh red, soft, and only fair in quality. Plants tall, vigorous and healthy. Flowers perfect. First bloom May 9. First ripe fruit June 9; last picking June 23. Yield two and one-half quarts.

Fremont Willlams (H. & H., 1904).—Large, short conical with blunt apex in which there is usually a "dimple" or depression—rarely misshapen; color a rich, bright, attractive crimson. Flesh red; quality is not high, but is better than that of Gandy. Plants are large, rugged, healthy growers; foliage dark green, bright and clean. Flowers perfect. First blossoms May 19. First ripe fruit June 19; last picking July 3. Yield four and two-thirds quarts. A very promising variety. As late as Gandy, fully as large and firm and of better quality.



FREMONT WILLIAMS.
Natural size. *Photo by Ballou.*

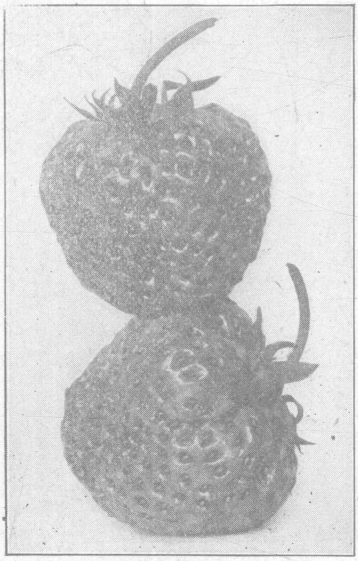
Gen. Dewet (Flans. & Pier., 1904).—Stand of plants and berries too poor this season to justify a report.



J. J. GILL.
Natural size. *Photo by Ballou.*

J. J. Gill (Ekey, 1902).—Described last year, but we think it worthy of a prominent place in our list of the new varieties this season. The Gill was the earliest to ripen at the Station this year. The size is above the average of early varieties, it is fairly firm, of good color and pleasing in quality. It is evidently the most productive one of the early sorts. Our statement of the yield does not do the Gill justice, as our row was severely cut in digging plants for Station and Sub-station tests. Perfect flowered. First blossoms May 5. First ripe fruit June 2; last picking June 23. Yield three and one-half quarts.

Green's Nameless (Green's Nursery Co., 1904).—Unfortunately this variety suffered so severely from various causes that we are unable to give a satisfactory description of it. It produced but thirty-nine small berries. It will, of course, be tested again.



HAZEL.
Natural size. *Photo by Ballou.*

HAM.
Natural size. *Photo by Ballou.*

Ham (Black, 1904).—Medium in size, dark red in color. Flesh red, moderately firm, rather acid, but good. Plants of only medium size

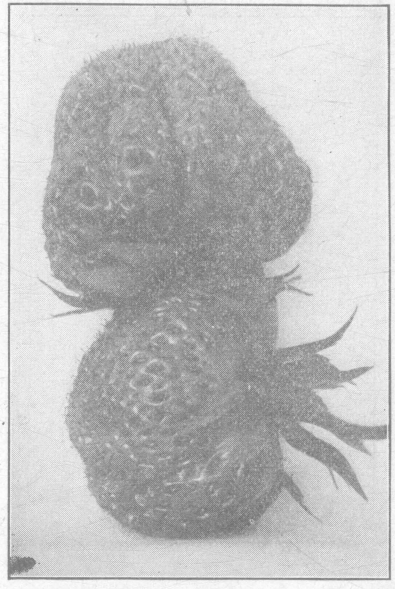
and fair vigor. Perfect. First blossoms May 12. First ripe fruit June 16; last picking June 29. Yield one and one-eighth quart.

Like many others this year, this variety was disappointing.

Hazel (Black, 1904).—Medium in size, short conical in form, rather rough in appearance—the seeds being very deeply imbedded; color dull crimson, uneven and unattractive. Flesh red, moderately firm and of fair quality. Flowers imperfect. First blossoms May 12. First ripe fruit June 16; last picking June 29. Yield two and one-fourth quarts.

The Hazel was truly disappointing when the fruiting season came, as the plants of this variety were decidedly the most beautiful and striking in the whole collection, being of an extremely rich, dark, glossy green, clean and healthy. It is hoped that next season's trial may prove that the fruit is more worthy of such handsome plants.

Highland Seedling (Carlisle, 1903).—Described last season when it was the most prolific variety in our collection. It has done exceedingly well again this season, though its lack of firmness caused many berries to spoil during the remarkably rainy, hot weather. It is very promising and desirable—especially for the grower who is situated near a good home market. However, so far as we are informed, no plants are yet on the market. All who saw this variety, even during this wet season, were much impressed with its value. Imperfect flowers. First blossoms May 11. First ripe fruit June 12; last picking June 29. Yield nine and one-eighth quarts.

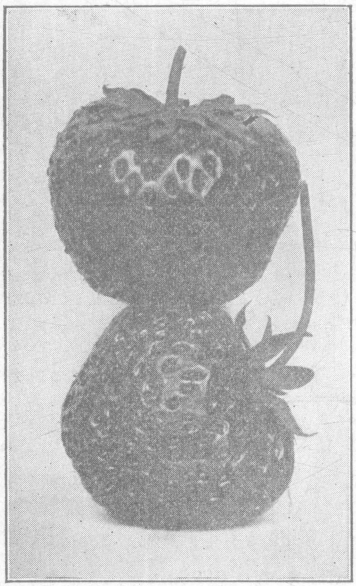


HIGHLAND SEEDLING.
Natural size. *Photo by Ballou.*

Latest (Flans. & Pier., 1904).—This variety was pictured and described last season in Bulletin 154. This season it proved itself worthy of all the good things said of it. It certainly is valuable, either for the fancy trade or for home use. It is quite as late as Gandy, more prolific, of mild, pleasant flavor and excellent for table use. Imperfect flowers. First blossoms May 13. First ripe fruit June 16; last picking July 3. Yield seven and one-half quarts.

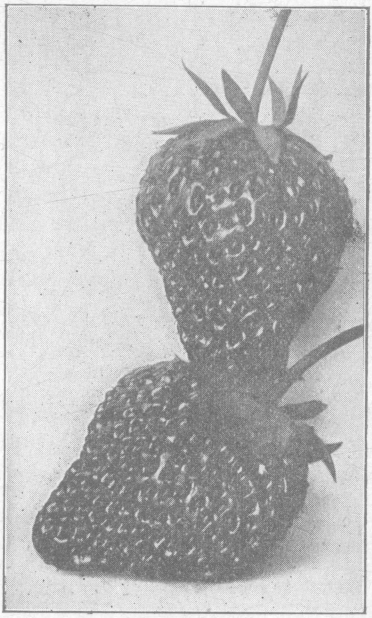
Lady Garrison (Hale, 1904).—Above medium size, irregular in both size and form, flattened, divided; color light scarlet—too light for most markets. Flesh pink, moderately firm and of good quality. Plants healthy, and medium in point of vigor and size. Flowers perfect. First blossoms May 12. First ripe fruit June 16; last picking June 29. Yield two and two-thirds quarts.

Marconi (Babcock & Nash, 1904).—Only medium in size; short conical with blunt apex; color dark red. Flesh red, rather acid, but good. Plants form large crowns, and were a wonder in size and vigor when growing last season, but have failed in the points of size and beauty of fruit. Imperfect. First blossoms May 13. First ripe fruit June 12; last picking June 26. Yield four and one-third quarts.



MEAD.
Natural size. *Photo by Ballou.*

Mead (Hale, 1904).—Berries medium to large, conical with blunt apex often with a small depression. Bright crimson in color, attractive in appearance. Flesh red and moderately firm; quality good. Plants are clean, strong and vigorous and dark green in color. Perfect flowers. First blossoms May 16. First ripe fruit June 16; last picking June 29. Yield three and one-half quarts.

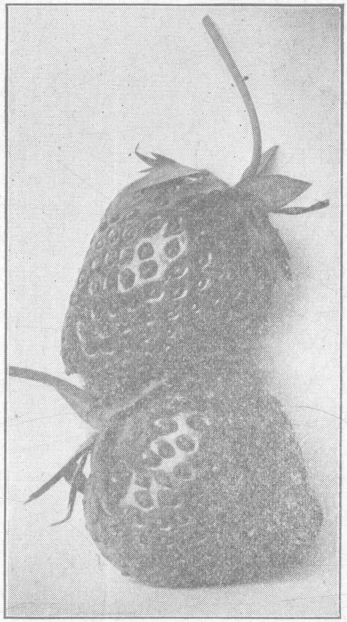


MILLET'S NO. 7.
Natural size. *Photo by Ballou.*

We cannot think but that this variety is capable of greater things than we are able to report this season.

Millet's No. 7 (Millet, 1904).—Above medium in size, uniform, long conical, pointed at apex. This variety is of the Haverland

type, but the berries are deeper in color. They were also rather soft in texture, which may have been partly due to the season, which tried all varieties alike in point of firmness. Plants are of moderate size, foliage rather thin in substance and light green in color. Flowers imperfect. First blossoms May 5. First ripe fruit June 12; last picking June 29. Yield three and one-fourth quarts. Seems to be a promising medium early variety.



MELLIE HUBACH.
Natural size. *Photo by Ballou.*

Mellie Hubach (H. & H., 1904).—Medium in size, long conical, slightly necked, very regular and uniform; color rather light crimson with a bluish cast or bloom—quite attractive. Flesh red, firm and of fair quality. Plants tall, strong and healthy. Blossoms seemed to suffer comparatively little from frost. Flowers imperfect. First blossoms May 11. First ripe fruit June 12; last picking June 29. Yield nine quarts.

This variety is one of the two sorts out of sixteen new varieties purchased from the above named firm that proved to be of real merit. The other variety is the Fremont Williams, already described.

Minnie (H. H., 1904).—Was a total failure. Less than a half quart of very inferior fruit was produced. May do better next year.

Missouri (Crawford).—Medium to large, uneven in form; dark crimson in color, a little dull and lacking in attractiveness. Flesh red, not firm; quality rather poor as judged by this season's product. Flowers perfect. First blossoms May 10. First ripe fruit June 12; last picking June 26. Yield one and one-fourth quart. Very disappointing.

Myriad (H. H., 1904).—Small, conical, crimson. Flesh red, soft and of inferior quality. Plants showed much leaf blight. Perfect. First blossoms May 13. First ripe fruit June 12; last picking June 29. Yield four and three-fourths quarts.

Ninety-six (Crawford).—Plants grew well last season, but showed a serious weakness the past spring—failing to start a new

growth and later becoming affected with "curl leaf", a disease caused by a form of mildew; Perfect in flower. The first blossoms appeared May 16, but the entire row produced but six poor berries which were too imperfect to describe.

Olympia (Weston, 1904).—Medium in size, bluntly conical, dark crimson in color. Flesh red and firm; quality fairly good. Imperfect. First blossoms May 13. First ripe fruit June 12; last picking June 23. Yield seven-eights of one quart.

Oscar's Elary (H. H., 1904).—Did not bear enough berries to warrant a description.

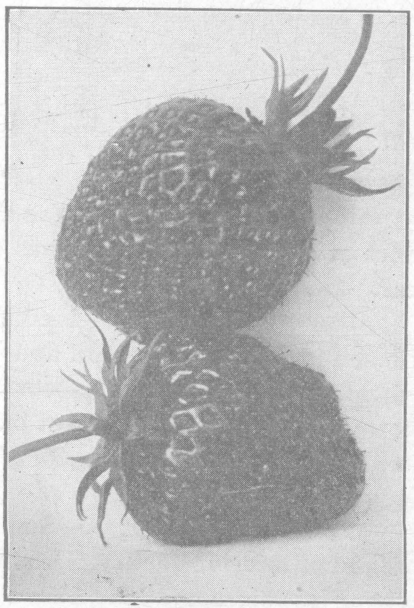
Peerless (H. H., 1904).—Medium or a little above, in size, conical, very slightly necked, with large calyx; bright, glossy dark crimson in color. Flesh red, quite firm and of good quality. Flowers perfect. First blossoms May 16. First ripe fruit June 29. Yield three and one-fourth quarts.

Berries much resemble the Warfield in general appearance except that they have a much larger calyx and the plants are larger, coarser and heavier, being of the Gandy type in this respect. The dozen plants purchased by the Station from the introducers cost five dollars. Their growth was clean, vigorous and beautiful. Needs further trial.

Perfection (Crawford).—Medium in size, bluntly conical, irregular; color a light, rather unattractive crimson. Flesh red, moderately firm and of fair quality. Flowers perfect. First blossoms May 12. First ripe fruit June 14; last picking June 29. Yield four quarts.

Was disappointing in size and appearance of fruit.

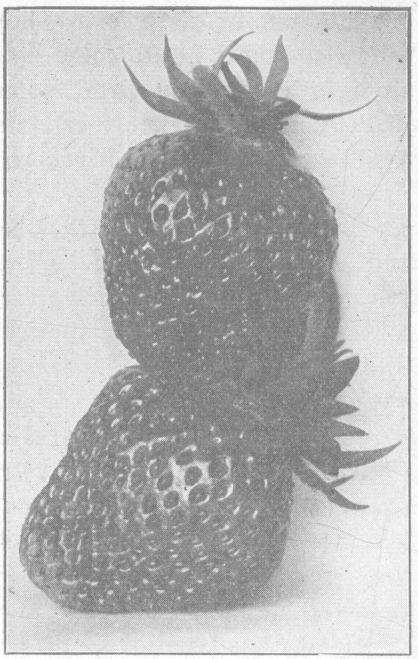
President (Hunt, 1903).—The plants are of the Bubach type, but the yield of berries was so small and the fruit so poor this season that we refrain from a description. Produced less than one-half quart of fruit.



REPEATER.
Natural size. *Photo by Ballou.*

Repeater (Scarff).—Described last year. Did better this season. Medium in size, irregular in form-conical, wedge shape,

divided; color a bright red with bright, golden colored seeds. Plant is moderately vigorous and healthy. Flowers perfect. First blossoms May 12. First ripe fruit June 12; last picking June 29. Yield seven and one-third quarts.

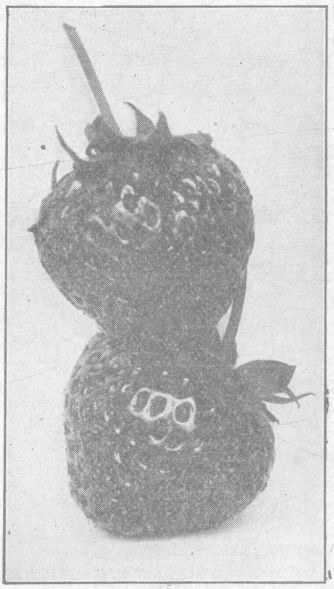


SEN. DUNLAP.
Natural size. *Photo by Ballou.*

Ryckman (Flans. and Peir.).—A total failure, as the plants in both sections of rows of this variety did not develop sufficiently to perfect fruit. Causes blight, frost and mildew.

Sen. Dunlap (Crawford, 1904).—This variety is now generally well known, but it is so good that it should be in every collection, hence we list it with the new candidates as a standard for comparison. The plants are clean, healthy vigorous growers and have perfect blossoms. The fruit is conical, necked, regular in form, of large size when well grown, and is of excellent quality. First blossoms May 6. First ripe fruit June 9; last picking June 29. Yield eight quarts.

Smith (Bab. & Nash, 1904).—Medium to small; color light red or pink. Flesh pink, lacking firmness; quality fairly good. Flowers perfect. First blossoms May 5. First ripe fruit June 9; last picking June 19. Yield four and three-fourths quarts.



STADERMAN.
Natural size. *Photo by Ballou.*

Both fruit and plant of this variety are distinctly of the old Michel type, though the plant may be a trifle larger and more vigorous. Not preferable to Michel in other respects.

Staderman (F. & P., 1904).—Large, conical, flattened; color dark crimson. Flesh red, moderately firm and of good quality.

Plants healthy and vigorous. Flowers are large, perfect and abound richly in pollen. First blossoms May 12. First ripe fruit June 16; last picking June 29. Yield two and three-fourths quarts. Suffered much from frost.

Sunny South (H. & H., 1904).—Medium in size; form short conical, frequently oblate and often with short neck; color light crimson, approaching pink. Flesh light red, fairly firm, somewhat acid and not of high flavor. Plants remarkably tall and vigorous. Flowers perfect. First blossoms May 11. First ripe fruit June 9; last picking June 23. Yield four quarts.

Telghman's Favorite (Crawford, 1904).—Can best be described by comparing with the old Haverland which it closely resembles. It is a little lighter and not so even in color as this well known variety. Flowers imperfect. First blossoms May 19. First ripe fruit June 16; last picking June 28. Yield three quarts.

Evidently cannot supersede Haverland.

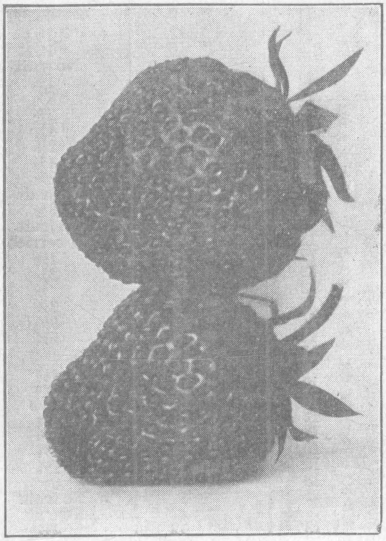
Twentieth Century (F. & P., 1904).—Above medium, conical, often flattened or heart shape. Color bright red. Flesh red and tolerably firm; pleasant in flavor. Plants lack vigor here. Flowers perfect. First blossoms May 16. First ripe fruit June 16; last picking June 26. Yield two and two-thirds quarts.

Velvet (F. & P., 1904).—Imperfect. Plants suffered much from blight, frost and mildew. Yielded but two-thirds of one quart of fruit. Did not do well enough to warrant a description.

Tabulated report upon all the varieties of strawberries which were fruited at the Station in the season of 1905.

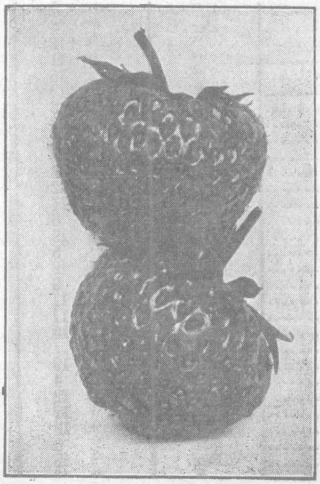
VARIETY.	Flowers.	First blossoms,	First ripe fruit.	Yield in quarts.
Alice Hathaway	Per.	May 11	June 12	6
Annie Hubach	"	" 14	" 16	¼
Arkansas Black	Imp	" 19	" 16	1¼
Aroma	Per.	" 16	" 16	3⅔
August Luther	"	" 5	" 5	1¾
Bailey, S. E.	"	" 13	" 12	2⅖
Beaver	"	" 12	" 23	6 berries
Beder Wood	"	" 11	" 9	3⅕
Ben Davis	"	" 8	" 12	1
Brandywine	"	" 12	" 16	2¾
Brundige	Imp.	" 11	" 16	1¾
Bubach	"	" 11	" 12	4⅛
B. W. No. 6	Per.	" 16	" 16	2
Cameron's Early	"	" 4	" 5	2⅛
Cardinal	Imp.	" 12	" 12	3¼
Carlisle Sdg	Per.	" 13	" 12	2⅜
Carrie Dumas	Imp.	" 13	" 12	1¾
Challenger (poor row)	Per.	" 6	" 9	½
Chellie	"	" 19	" 16	⅞
Climax	"	" 13	" 19	3⅙
Commonwealth	"	" 16	" 23	1
Crimson Cluster	"	" 20	" 16	3⅛
Darling	"	" 9	" 9	28 berries
Dewey	"	" 9	"	No fruit
Dollar Jr	"	" 13	" 12	2½
Duncan	"	" 12	" 12	36 berries

VARIETY.	Flowers.	First blossoms.	First ripe fruit	Yield in quarts.
Early Hathaway	"	" 11	" 9	4
Early Market	"	" 13	" 12	1 2/5
Effie	"	" 13	" 16	1 1/6
Empress			"	No fruit
E nie	"	" 13	" 16	1⅔
Evergreen	"	" 11	" 12	3⅔
Excels or	"	" 6	" 5	2⅔
Fa.rfield	"	" 9	" 5	4½
Ford	"	" 9	" 9	2½
Fremont Williams	"	" 19	" 19	4⅔
Gandy	"	" 17	" 20	2⅞
Gen. Dewet			"	No fruit
Gill	"	" 5	" 2	3½
Granville			"	No fruit
Green's Nameless	"	" 13	" 12	39 berries
Ham	"	" 12	" 16	1⅛
Hazel	Imp.	" 12	" 16	2¼
Hanna, Mrs. Mark	Per.	" 12	" 12	½
Haverland	Imp.	" 6	" 9	7½
Highland Seedling	"	" 11	" 12	9⅛
Howard, G. W	"	" 11	" 9	5⅞
Huntley, H. D	Per.	" 11	" 16	1
Joe Davis	"	" 9	" 16	3⅞
Johnson's	"	" 10	" 12	3⅝
Kittie Rice	Imp.	" 16	" 19	5/8
Lady Garrison	Per.	" 12	" 16	2⅔
Latest	Imp.	" 13	" 16	7½
Lewis Hubach	"	" 10	" 12	2⅞
Lehman, S. J	Per.	May 10	June 16	1⅛
Lucas	"	" 13	" 12	6
Luxury	..	" ..	" ..	No fruit
Mammoth	..	" ..	" ..	No fruit
Marconi	Imp.	" 13	" 12	4⅓
Marie	"	" 12	" 17	6
Mark Hanna	"	" 12	" 19	⅞
Marshall	Per.	" 9	" 9	¾
Martin No. 1	"	" 9	" 12	⅔
Martin No. 2	"	" 12	" 16	⅔
Mayflower	"	" 4	" 12	¾
Mead	"	" 16	" 16	3½
Mellie Hubach	Imp.	" 11	" 12	9
Miller	Per.	" 15	" 12	2⅛
Millet's No. 7	Imp.	" 5	" 12	3¾
Minnie (failed)	..	" ..	" ..	..
Missouri	Per.	" 19	" 12	1¾
Morgan's (failed)	"	" ..	" ..	..
Myriad	"	" 13	" 12	4¾
Ninety-six (failed)	"	" ..	" ..	..
Oliver's Pride	"	" 12	" 20	1½
Olympia	Imp.	" 13	" 12	⅞
Oom Paul	Per.	" 9	" 12	3 5/6
Oscar's Early	..	" ..	" ..	No fruit
Palmer's Very Early	Per.	" 4	" 9	½
Parker Earle	"	" 12	" 9	3¼
Parson's Beauty	"	" 11	" 12	6¾
Peerless	"	" 16	" 20	3¼
Perfection	"	" 12	" 14	4
Plum, D. S	"	" 12	" 12	3½
President	Imp.	" 13	" 15	½
Prof. Fisher	Per.	" 15	" 20	1½
Rapp	"	" 12	" 12	2¾
Repeater	"	" 12	" 9	7½
Ryckman	"	" 12	" 12	¾
Samp'e	Imp.	" 11	" 12	4½
Sen. Dunlap	Per.	" 6	" 12	8
Shenandoah	"	" 19	" 19	2¼
Smith	"	" 5	" 9	4¾
Staderman	"	" 12	" 16	2¾
Stahelin	Imp.	" 9	" 9	3½
Success	Per.	" 11	" 12	1 9/10
Sunny South	"	" 11	" 9	4
Sutherland	Imp.	" 15	" 16	1 9/10
Tama Jim	..	" ..	" ..	No fruit
Telghman's Fav	Imp.	" 19	" 16	3
Thompson's Est	Per.	" 4	" 9	1½
Twentieth Century	Imp.	" 12	" 16	2⅔
Uncle Jim	Per.	" 12	" 14	2
Velvet	Imp.	" 13	" 16	⅔
Warfield	"	" 6	" 9	13⅓
Wm. Belt	Per.	" 12	" 16	2¾
Yant	"	" 13	" 19	1⅛



PARSON'S BEAUTY.
Natural size. *Photo by Ballou.*

AROMA.
Natural size. *Photo by Ballou.*



MARIE.
Natural size. *Photo by Ballou.*

PEDIGREE STRAWBERRY PLANTS.

The word "pedigree" has come to be used with reference to plants in a sense which conveys a meaning that is altogether untruthful. An animal with a pedigree is one having a known ancestry. The parentage on both sides must be known for one or more generations. The value of a pedigree consists not in its length, merely, but in the character of the parentage. The longer the line of good ancestry, as determined by the performance of these ancestors, the more probable it is that the individual having such a line of ancestry, or pedigree, will partake of, or inherit, the family characteristics.

Plants are not unlike animals in having inherited tendencies, and the longer the line of good parentage the stronger do these tendencies become. There are well bred plants, or varieties of plants, which compare favorably with well bred animals in their power to transmit characteristics. It has not been the custom among plant breeders, however, to keep a record of the parentage of plants; that is, plant pedigrees have not been established, except very rarely. A pedigree in the case of a variety of plants propagated from seeds, as in the case of vegetables or grains, might have great value because it is the aim of the grower of such plants to secure uniformity in the product and to develop a strain which will come true from seeds. Continued propagation and careful selection of a variety of this class insures a fixedness of characters, even though the pedigree is unknown, but a knowledge of the ancestry would add to the value of such a strain. *Any variety of plants which is propagated from seeds may have, and ought to have a pedigree.*

Any variety of plants which is propagated by means of cuttings, layers, runners, grafts or by any method of division may have a pedigree also, but its value would not be enhanced thereby. Plants which are propagated by division come just as nearly true, that is are not more inclined to vary or sport, with a poor than with a good ancestry. A seedling from Ben Davis would, when propagated by division, hold its type quite as well as one from Grimes' Golden. So far as known, a seedling from Michel's Early would be no more likely to sport back to a lower type than one from the Marshall. In the case of varieties of plants which are propagated from seeds the type is fixed and held by selection, and the more careful the selection, or in other words the better the pedigree, the more firmly the type becomes fixed and the better the variety.

With plants which are propagated by division selection has nothing to do with the fixedness of the variety. Plants of this class are more firmly fixed by nature as to type than are those which are propagated from seeds. We must not regard any class of plants as absolutely fixed and unchangeable, for the tendency to vary, or sport, is manifest in all.

To secure a variety of strawberry with a pedigree, two varieties must be crossed when in bloom. This process may be continued with the progeny indefinitely, and if a record is kept of the parentage the result is a variety with a pedigree. The mere selection of plants of a variety, without regard to both male and female parents, does not establish a pedigree. A pedigree variety can only be established by growing plants from seed, and a seedling with a pedigree of the class of plants which are propagated by division is no better than one without, because the good qualities of the ancestors may, or may not, be transmitted. There is nothing in a pedigree of plants of this class which will help to fix and hold the type as with plants grown from seed, nor does a pedigree in the case of such plants insure a better performance.

The conclusion then is warranted that the so-called pedigree strawberry plants which are said to have been produced by selection are not pedigree plants at all, and that real pedigree strawberry plants have no value above those without a pedigree. The word "pedigree" as it is used with reference to strawberry plants is a misnomer. It tends to confusion in the minds of many and leads to deception.

The word is used out of its true sense to convey the belief that a condition exists which does not and cannot exist, or if it could exist would have no value. A sport may occur in a variety of strawberry as well as any other class of plants. Such sports, or varieties are quite common among carnations, roses and chrysanthemums. When such a sport occurs it really constitutes a new variety and may be propagated by division, but it is in no sense a pedigree plant. The sport may sport again and possibly in the desired direction and thus constitute a further improvement, but if it change at all it is likely to revert to the original form.

There is no method known of causing or controlling sports. They can only be seized upon and perpetuated when found. This is selection merely, and it does not take into account the controlling of crosses along with selection, as in true plant breeding. One who chances to find a sport has nothing to do with its origin, nor is the sport of such a plastic nature that he can mold it or cause it

to take a still more desirable form. He is a discoverer but not a plant breeder in the full sense. He does not and cannot by any such process establish a pedigree. It is scarcely less than fraudulent for any one to claim a pedigree for a plant form which he has simply found but had no hand in fashioning. Undoubtedly there are true sports which constitute real improvements in classes of plants which are propagated by division, but this superiority must be shown by trial. One may know of an apple tree which appears to bear better and is more fruitful than its fellows of the same variety, but in order to determine whether it has superior qualities or not it must be taken from its present environment and tested under different conditions. This takes many years, but nothing short of such a test will settle the matter. Likewise one may find what appears to be an improved strain of some variety of strawberry. He may accidentally stumble upon it or he may systematically search for it. He may resort to whatever means or methods may theoretically seem most likely to yield the best results, but in all cases the supposed improvement must be put to the test. No pseudo-scientific nor semi-scientific explanation of how it was done will prove that such plants are in any way superior to other plants of the same variety. The proof must come through trial alone. That any one can easily be mistaken in supposing that his selection is superior is quite natural. Even those who produce new varieties by crossing and growing from seeds often overestimate the value of their productions, and one who seeks to improve a variety of strawberry by selection is still more liable to make a false estimate, because the differences are not so manifest as in seedlings. In all cases the final test is in the trial plot. In no other way can we eliminate the effects of environment.

The Experiment Station has put some of these so-called pedigree strawberry plants to the test and they have been found wanting. Not one has shown any superiority over the same variety from other sources.

No differences could be seen in the foliage, nor in disease resisting powers, nor did the yields establish or disprove the claims made by the pedigree plant men. In 1903 seven varieties, viz., Senator Dunlap, Sample, Warfield, August Luther, Kansas, Brandywine, and Parker Earle were on trial. An equal number of so-called pedigree plants and of plants of the same variety from a reliable grower were planted side by side and given the same care so as to keep the rows uniform. Five of the seven varieties gave better yields from the common than from the so-called pedigree

plants. In 1905 the following varieties from the two sources were on trial: Gandy, Senator Dunlap, Sample, Parson's Beauty, Warfield, Brandywine, Haverland, Bubach. There was a uniform and comparable stand except in the case of the Bubach, the common plants making a poor stand. Not rejecting the Bubach, four varieties of the so-called pedigree stock took the lead against four of the common stock. The position of the Warfield and Sample were reversed in two seasons. The results of these two trials were about the same as might have been expected had all of the plants come from one grower. The results are inconclusive, which negatives the claims made for so-called pedigree plants.

We have made still other trials of so-called pedigree strawberry plants and have in no case found any reason to believe that if pedigree strawberry plants have an existence the pedigree has any value to one who buys them.

Requests often come for plants of new varieties which have been sent here for trial. Under no circumstances will plants of such varieties be sent out, and in most cases it is useless to apply to the originators for plants, hence it is not worth while to write to the Station for the address of parties sending them.