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UNIVERSITY OF TENNESSEE

Agricultural Experiment Station

BULLETIN



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No. 2

STRAWBERRIES.

Bulletins of this Station will be sent, upon application, free of charge,
to any Farmer in the State.

KNOXVILLE, TENNESSEE, U. S. A.

KNOXVILLE, TENN.

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THE AGRICULTURAL EXPERIMENT STATION

OF THE UNIVERSITY OF TENNESSEE.

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The Station has facilities for analyzing and testing fertilizers, cattle foods, milk and dairy products; seeds with reference to their purity or germinating power; for identifying grasses and weeds, and studying forage plants; for investigating the diseases of fruits and fruit trees, grains and other useful plants.

The Station Bulletins and Reports will be sent, free of charge, to any farmer within the State.

Packages by express, to receive attention, should be *prepaid*.

All communications should be addressed to the

SECRETARY OF THE

AGRICULTURAL EXPERIMENT STATION,

KNOXVILLE, TENN.

The Experiment Station building, containing its offices, laboratories and museum, and the plant-house and horticultural department, are located on the University grounds, fifteen minutes walk from the Custom House in Knoxville. The Experiment farm, stables, milk laboratory, etc., are located one mile west of the University, on the Kingston pike. Farmers are cordially invited to visit the buildings and experimental grounds.

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DIVISION OF HORTICULTURE.

STRAWBERRIES.

R. L. WATTS.

Test of Varieties.

In April, 1895, a new plantation of strawberries was established on the station farm, consisting of a few well tested and popular old varieties and many of more recent introduction. Twenty-four plants were set of each variety in rows three and one-half feet apart, allowing eighteen inches between plants in the rows. The matted system of culture was adopted, using the horse cultivator frequently during the growing season of '95, and mulching heavily with cow pea vines in the fall of this year.

The data contained in the following table are from notes and observations made during the past season. While the results of our experiments are largely of local value, strawberry culturists throughout the State may acquire much important information from this report. Varieties giving the best satisfaction on our grounds will very probably prove successful elsewhere, but it is not safe for us to give such varieties a general recommendation. Each grower must determine for himself the sorts most valuable for planting in his immediate neighborhood, and the notes of this bulletin should be considered as merely suggestive, except the statements concerning varieties well known and thoroughly tested over a broad extent of territory. While most farmers have not the time nor inclination to plant small experimental plats, we urge all large growers to maintain an experimental patch, where the most promising new varieties may be given a fair trial. The results thus obtained will fully compensate for the small expenditure of time and money necessary to conduct such experiments.

TABLE I.—VARIETY TESTS.

ABBREVIATIONS: B, Bisexual; P, Pistillate; S, Small; M, Medium; L, Large.

VARIETY.	Sex.	First Picking.	Last Picking.	Vigor of Plant. Scale 0-10.	Production. Scale 0-10.	Size.	Quality.
Anna Forest	P	May 12	May 28	5	6	L	good
Bebe	B	" 16	" 28	6	4	L	good
Beder Wood	B	" 15	" 24	5	2	M	good
Beverly	B	" 12	" 28	7	8	L	good
Bomba	B	" 12	" 28	5	3	M to L	medium
Barton (Eclipse)	P	" 12	" 28	7	4	M	good
Boynton	P	" 9	" 28	5	10	M	good
Brandywine	B	" 12	" 28	4	6	L	good
Brooke	P	" 12	" 28	4	4	M	very g'd
Bubach (No. 5)	P	" 12	" 28	7	8	L	good
Burt	B	" 18	" 28	4	4	S	medium
Crawford	B	" 15	" 26	4	2	M	good
Crescent	P	" 12	" 28	6	6	M	good
Cumberland (Triumph)	B	" 11	" 27	5	3	S	good
Cyclone	B	" 12	" 28	5	2	M	very g'd
Ella	B	" 5	" 18	8	4	S	good
Enhance	B	" 12	June 2	4	5	M	good
E. P. Roe	P	" 12	May 28	7	10	M	good
Eureka	P	" 18	June 2	6	2	M	good
Fordsworth	B	" 9	May 28	7	4	M	good
Fremont	B	" 18	" 28	7	5	L	good
Gov. Hoard	P	" 12	" 28	7	3	L	medium
Great Pacific	P	" 12	" 27	6	9	L	good
Greenville	P	" 15	" 24	6	3	M	good
Haverland	P	" 15	" 24	8	9	L	good
Howell (No. 2)	B	" 15	" 21	5	5	L	good
Iowa Beauty	B	" 15	" 28	4	4	L	very g'd
Jessie	B	" 12	" 24	8	6	L	good
Leader	B	" 9	" 28	5	6	L	good
Lovett	B	" 5	" 28	3	5	S	medium
Margaret	B	" 15	" 28	5	3	L	good
Marshall	B	" 15	" 28	7	5	L	very g'd
Meek's (Early)	B	" 12	" 18	5	2	S	very g'd
Michel	B	" 5	" 18	8	5	M	good
Mrs. Cleveland	P	" 12	" 28	8	8	L	good
Parker Earle	B	" 12	" 28	4	8	L	good
Pearl	P	" 9	" 27	8	5	L	good
Phillips	P	" 12	" 28	6	2	L	medium
Premium	P	" 15	" 28	5	4	M	good
Princess	P	" 12	" 28	6	2	M	good
Rio	B	" 12	" 24	6	4	L	medium
Roser's (No. 4)	B	" 12	" 28	6	4	M	medium
Sadie	P	" 9	" 28	8	9	M	good
Sauuders	B	" 12	" 28	4	5	L	very g'd
Shuster	P	" 12	" 28	6	7	L	good
Smith's (Seedling)	B	" 5	" 18	7	2	S	good
Sweetzer's (No. 2)	B	" 7	" 24	7	2	M	good
Swindle	P	" 15	" 28	7	6	L	good
Tennyson	P	" 12	" 28	6	5	M	good
Van Deman	B	" 15	" 28	7	5	M	good
Warfield	P	" 18	" 28	6	5	S	good
Weston	P	" 15	" 24	4	2	M	good
Wetzell	B	" 12	" 24	7	3	L	good
Williams	B	" 12	" 28	5	7	M	very g'd

NOTES ON VARIETIES TESTED.

ANNA FOREST.—A variety of considerable merit. It is medium in earliness, plants fairly vigorous, quite productive. Berries large, solid and of good quality.

BEBE.—A variety received from the United States Department of Agriculture that has given fair success. The plants are vigorous growers but not sufficiently productive. Berries large, solid and of superior flavor.

BEDER WOOD.—Plants medium in vigor but produced sparingly. Berries medium size, good in quality and solid. Not worthy of recommendation.

BEVERLY.—Plants very healthy and vigorous. They yielded a heavy crop of large, handsome, solid, superior flavored berries. Should prove valuable as a market sort.

BOMBA.—Of no special value on our grounds. It is medium in vigor, not productive, and only fair in quality.

BARTON (Eclipse).—One of the most vigorous varieties tested, but not productive enough to be valuable. Berries good in quality, of medium size.

BOYNTON.—One of the most satisfactory varieties tested. Although only medium in vigor of growth, it ranked second in productiveness of the varieties on trial. The first berries were picked May 9th and the plants continued to bear until the 28th of this month. Boynton resembles Crescent in many particulars, but is more productive on our grounds than the last named variety. Berries medium in size and solid. A good market variety, but scarcely large enough to prove highly remunerative.

BRANDYWINE.—A medium early perfect-flowered variety that has gained considerable popularity throughout the country. Many writers and experiment station workers are profuse in their praise for the Brandywine. It has given encouraging results on our grounds, but several varieties have excelled it in vigor of growth and productiveness. The berries are large and excellently flavored. Will probably prove highly valuable for culture in this State.

BROOKE.—A pistillate variety of very superior quality, and valuable on this account for home use. It is medium in productiveness.

BUBACH (No. 5).—A universally successful and popular variety for shipping and home consumption. It has given great satisfaction in all our plantations.

BURT.—Began to ripen very late in the season and continued in bearing only ten days. Not valuable.

CRAWFORD.—We cannot recommend this variety. It began to ripen too late in the season, plants were not very vigorous nor productive and the berries only medium in size.

CRESCENT.—Results as good as usual, but other varieties are superior to it for market purposes, although it is largely grown for shipping in this State.

CUMBERLAND (Triumph).—Not valuable. Season of bearing too short, produces light crops and the berries are small.

CYCLONE.—Of little value on our grounds. Fruit medium in size but of very good quality.

ELLA.—Plants strong growers but not very productive, and the berries are small. It was one of the first to ripen fruit, however, and this variety may prove valuable on special soils.

ENHANCE.—Fairly productive and the berries are of good quality but possesses no special merits.

E. P. ROE.—A pistillate variety that produced the largest yield of any variety tested. The berries are medium size, of good flavor, solid and ripened May 12th. Plants vigorous. A valuable variety on our grounds.

EUREKA.—The first fruit ripened May 18th and the last June 2nd. Were it a better yielder, the Eureka would be valuable as a late fruiting variety.

FORDSWORTH.—Quite an early variety that gave a fair crop of medium size berries. The plants are very vigorous.

FREMONT.—A bisexual variety that produced a medium crop of large berries. Plants vigorous.

GOV. HOARD.—Of no special value. Quality medium, growth vigorous, berries large. Not sufficiently productive.

GREAT PACIFIC.—A highly satisfactory variety. Produced a large crop of superior flavored, solid, large berries. Plants strong growers. If it succeeds as well in other parts of the State this variety will be considered one of the most valuable in cultivation.

GREENVILLE.—This variety, which has received such favorable reports from many other experiment stations, has not been a marked success on our grounds. The plants are vigorous growers, berries of good size and well flavored, but the productiveness is too light to make it valuable for home use or shipping.

HAVERLAND.—No variety succeeds better over a broad extent of territory than the Haverland. Perhaps no pistillate variety

has attained greater popularity than this one. The berries are large, excellently flavored and good shippers. The plants are always productive when given proper attention.

HOWELL (No. 2).—This variety has given fair results in our trial. The season of fruiting, however, is too short.

IOWA BEAUTY.—Not promising. Berries very good in quality, but the plants are not vigorous and yield sparingly.

JESSIE.—This variety has never failed to give good crops on our test grounds. We consider it one of the best varieties tried at the Station, although its shape is not very desirable.

LEADER.—This variety did not lead in any particular respect, but the results were quite satisfactory. Berries large and of good flavor, and plants fairly productive.

LOVETT.—Valuable for its earliness, the first ripe berries being picked May 5th, and the last ones May 25th. The berries are rather small for market purposes, but this variety would doubtless prove valuable when planted in southern locations for early market.

MARGARET.—Berries large and of good quality but the plants yielded a very light crop.

MARSHALL.—A bisexual variety of considerable value. The berries are very large and of superior flavor. Scarcely productive enough for market purposes, but valuable for the home garden.

MEEK'S (Early).—Not worthy of recommendation. Season of short duration. Not productive.

MICHEL.—One of the first to ripen, May 5th. Valuable over a broad extent of country as a very early variety. Berries of medium size, excellent in flavor. Fairly productive.

MRS. CLEVELAND.—A highly satisfactory variety. The plants have made a most vigorous growth, and yielded a heavy crop of large, excellently flavored berries. The fruit is not solid enough for good shipping, but this variety is valuable for supplying the home markets or for amateur culture.

PARKER EARLE.—A variety that requires a very fertile moist soil to give the best results. It sets a large crop of berries, perhaps larger than any other variety in cultivation, and if the proper fertility and moisture is supplied, it can scarcely be excelled for productiveness. Our location was too dry to secure the best results, but under the adverse conditions it yielded a heavier crop than many other varieties. This variety will produce enormous crops on fertile lands which may be irrigated.

PEARL.—The results with this variety were fairly satisfactory. The yield was not sufficient, however, to render it profitable as a market sort. Berries large and of superior flavor. Plants very vigorous.

PHILLIPS.—An inferior variety. Berries medium size, plants quite vigorous but produced sparingly.

PREMIUM.—Not a promising variety on our grounds. Has no special points of merit.

PRINCESS.—Not worthy of cultivation in the home garden or for market.

RIO.—Results from our test of this variety are not encouraging. It is to be commended for vigor of growth but the plants do not produce well.

ROSER'S (No. 4).—Berries medium in size and flavor. Plants quite vigorous but not very productive.

SADIE.—A very promising variety. The large, strong plants gave a heavy yield of superior fruit. The berries above medium size and excellently flavored. The fruit is solid and begins to ripen quite early, making this a valuable market variety.

SAUNDERS.—A bisexual variety of value in amateur culture. Plants not vigorous and only fairly productive, but the flavor is very good.

SHUSTER.—Quite a promising pistillate variety. The plants are fairly vigorous and produced a good crop of excellent berries. Fruit is firm and solid.

SMITH'S (Seedling).—An inferior variety, producing a light crop of small berries.

SWEETZER'S (No. 2).—Ripened fruit two days later than Michel, but not as productive as the last named variety. Berries of medium size.

SWINDLE.—This pistillate variety produced a medium crop of large, fairly solid berries. It may prove valuable for home use.

TENNYSON.—Results were, as in former tests on our grounds, fairly satisfactory. It is not productive enough for extensive cultivation.

VAN DEMAN.—Results about the same as with Tennyson. Begins to ripen too late in the season, and continues in bearing no longer than many earlier fruiting varieties.

WARFIELD.—Period of ripening only ten days. Berries small. Plant quite productive.

WESTON.—Of no special value on account of rather small berries and the plants producing light crops.

WETZELL.—Plants vigorous but not very productive. Berries are large and superior in flavor.

WILLIAMS.—Produced a good crop of medium sized berries. Flavor very good. Not sufficiently solid for a good market berry.

VARIETIES OF STRAWBERRIES GROWN IN TENNESSEE.

To secure information relative to varieties of strawberries grown in various sections of the State, a list of questions was mailed to many of the most successful and prominent growers. We take this opportunity to thank all who have kindly co-operated with us by giving the questions such prompt and careful attention. The replies represent the views of practical men and are calculated to help the beginner in strawberry culture to make a judicious selection of varieties. The replies will also be useful to experienced growers. In some instances which have been brought to our notice, extensive shippers are dissatisfied with the varieties now grown by them. To these people the opinions of others who are producing large quantities of berries for market, will be valuable. The questions and answers are given in tabular form as follows:

VARIETIES OF STRAWBERRIES GROWN IN TENNESSEE.

POST OFFICE AND COUNTY.	Number of Varieties Grown.	Area in Acres.	Yield in Quarts per Acre.	MOST SATISFACTORY VARIETIES.			Most Productive Variety.	Best for Home Use.	Best all Purpose Variety.	Best for Shipping.	Extent Injured by Blight.
				Early.	Medium.	Late.					
Trezevant Carroll co.	8	15	4000	Michel	Louise Gardner	Bubach	Louise Gardner	Michel Louise	Gardner	Gardner Louise	none damaged
McKenzie Carroll co.	2	1	1440	Michel	Crescent	.....	Crescent	Crescent	Crescent	Crescent	Michel 30 per cent.
McKenzie Carroll co.	many	3	2400	Crescent	Crescent	.....	Crescent	Crescent	Crescent	Crescent	.....
Goodlettsville Davidson co.	3	¼	..	Michel	Jessie	Ga. Mammoth	Westbrook	.....	Jessie	.....	some
White's Creek Davidson co.	35	3	3000	Michel Leader	Haverland Jewell Barton	Gandy	Haverland	Lovett Parker Earle	Parker Earle	Lovett Gandy Tenn. Prolific	very little
Newbern Dyer co.	6	10	..	Michel Crescent Jessie	Sharpless	.. .. .	Crescent Michel	Michel Sharpless	Sharpless	Crescent	none
Medina Gibson co.	7	12	2000	Meek's Early	Crescent	Warfield	Crescent	Tenn. Prolific	Crescent	Wilson	some
Ocellus Giles co.	¼	5	..	Michel Sharpless	Crescent Cloud	Cumberland Haverland	Crescent Haverland	Bubach Sharpless	Crescent Bubach	Crescent Bubach	slight
Lynnville Giles co.	..	6	..	Michel	Crescent Bubach	Ga. Mammoth	Crescent	Crescent	Crescent	Crescent	.....
Chattanooga Hamilton co.	6	300 in county	1000 to 3000	Michel Lady Thomp'n	Bubach Tenn. Prolific	Haverland Enormous	Haverland	Tenn. Prolific Haverland	Haverland	Tenn. Prolific Enormous	.. ..
Harrison Hamilton co.	3	5	2600	Michel	Louise	Bubach	Louise	Louise	Louise	Wilson	none
Paris Henry co.	8	..	..	Michel	Cumberland Bubach	Gandy	Miner's Prol'c	Cumberland	Miner's Prol'c	Michel	10 per cent.
Knoxville Knox co.	22	10	..	Michel Crescent Shuster	Howell Bubach	Gandy Memphis	Howell Crescent	Howell Memphis	Howell	Michel Howell Crescent	none

VARIETIES OF STRAWBERRIES GROWN IN TENNESSEE.—Continued.

Post Office and County.	Number of Varieties Grown.	Area in Acres.	Yield in Quarts per Acre.	Most Satisfactory Varieties.			Most Productive Variety.	Best for Home Use.	Best all Purpose Variety.	Best for Shipping.	Extent Injured by Blight.
				Early.	Medium.	Late.					
Knoxville Knox co. Curve Land'rdale co.	4 7	1 60	.. 2800	Monarch Michel	Haverland Crescent Crockett	Haverland Haverland Bubach Gandy	Haverland Haverland	Haverland Crockett	Haverland Crescent	Haverland Crescent	none none
Hall Lawrence co. Muddy Creek London co.	4 10	3 3	800 1000	Crystal City Michel	Michel Bubach	Crescent Cumberland	Crescent ..	Crystal City Cumberland	..	Crescent Wilson	.. ..
Jackson Madison co. Columbia	8 21	100 about 12	.. ..	Michel Michel	Crescent Bubach	Gardner Gandy	Michel Michel	Sharpless Bubach	Crescent Crescent	Crescent Crescent	some slight
Hwassee College Monroe co. Spring City Rhea co.	5 13	¼ 14	.. ..	Michel Meek's Early Hoffman	Tenn. Prolific Seneca Chief Haverland Princess Tenn. Prolific	.. .. ..	Tenn. Prolific Haverland	Tenn. Prolific Seneca Chief Meek's Early Princess	Michel Tenn. Prolific Tenn. Prolific	Michel Tenn. Prolific ..	.. none
Dayton Rhea co.	3	45	6000	Michel	Cumberland	..	Cumberland	..	Cumberland	Cumberland Michel	slight
Harriman Roane co. Sharon Weakley co.	5 6	½ 4	400 2400	Michel Michel Hoffman	Crescent Crescent	Gandy Gandy Louise Tenn. Prolific	Sharpless Crescent	Crescent Michel Louise	Sharpless Crescent	Haverland Crescent	slight slight slight

SUMMARY.

The foregoing table includes twenty-four reports, in which thirty-three varieties are mentioned.

Michel is undoubtedly the most popular early variety. It is mentioned sixteen times as the most satisfactory early berry, Crescent three, Hoffman two, Meek's Early two, and several varieties once each.

Bubach and Crescent are named most frequently as the best medium early varieties.

Haverland and Gandy are general favorites for late picking.

Crescent is mentioned nine times as the most productive variety, and Haverland six.

There is a great diversity of opinion as to the best variety for home use. Crescent is mentioned four times and Michel three.

Crescent is considered much the best all-purpose variety.

Crescent also leads in popularity as a shipping berry. It is named ten times while no other variety is mentioned more than three times as the best for this purpose.

Leaf blight (*sphaerella fragariae*) is not a serious disease in this State.

KNOXVILLE STRAWBERRY SHOW.

The Knox County Fruit Growers Association held a strawberry show in Knoxville May 22, 1895. Exhibits were made by twenty-one growers. Bubach was the most frequently shown, being in twelve of the collections. Of the old varieties besides the one just mentioned, Haverland and Jessie received much admiration. Big Mack, Howell, Memphis and Sheppard's Monarch, all of local origin, received perhaps the greatest number of favorable comments.

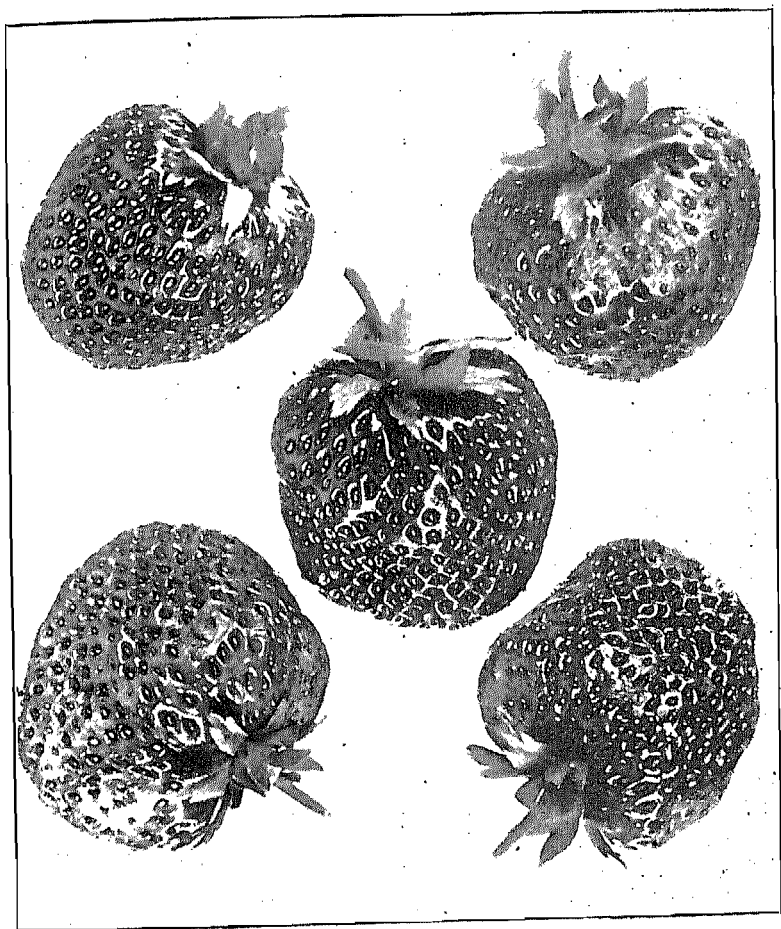
BIG MACK.—This variety was exhibited by Mr. John Anderson and thought by many to be the handsomest berry displayed. It certainly excelled any other in uniformity of size and shape. Berries are of good size, equal to Haverland and Bubach in this respect. Rather dark in color, solid, of superior flavor. A perfect flowering variety, said to be very vigorous and productive.

HOWELL (Howell No. 2).—No variety has been more highly commended by the people of Knoxville than the Howell. The originator, Mr. S. S. Howell, has ten acres planted with this seedling. Berries are generally conical in shape, sometimes flattened,

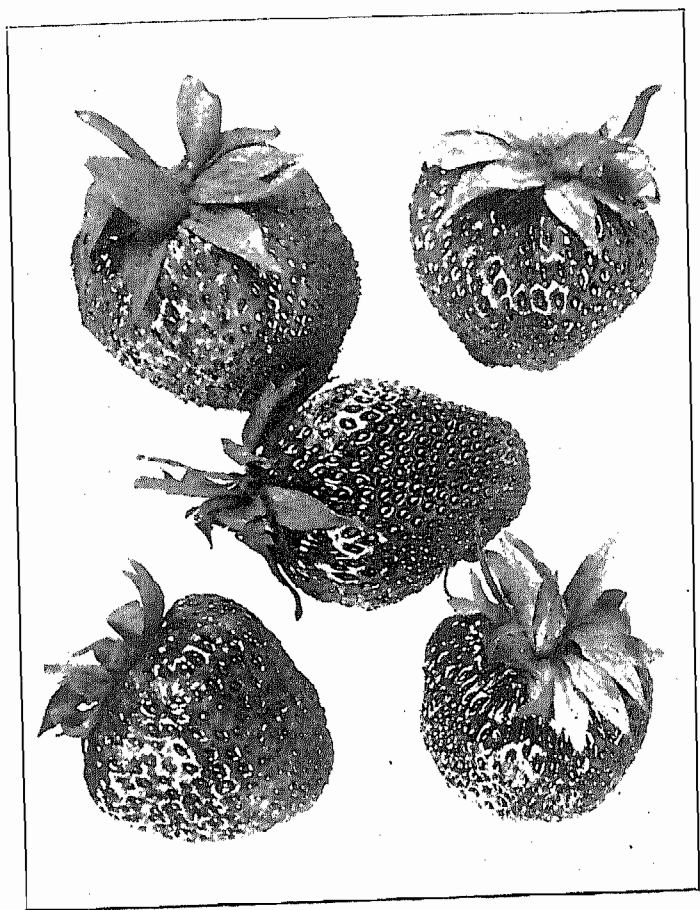
dark crimson color, solid, of excellent flavor and ripen very evenly. It is a perfect bloomer and very vigorous in growth on Mr. Howell's farm. It fruited on our experimental grounds in 1895, but with unsatisfactory results. We believe this variety, like Parker Earle, requires a very fertile, moist soil to give good results.

MEMPHIS.—Originated by S. S. Howell. A pistillate flowering variety. Plants unusually strong and vigorous. Berries begin to ripen very late, when most varieties have nearly ceased fruiting. Medium in size, quality very good, uniformly conical in shape, very dark crimson color. A valuable acquisition.

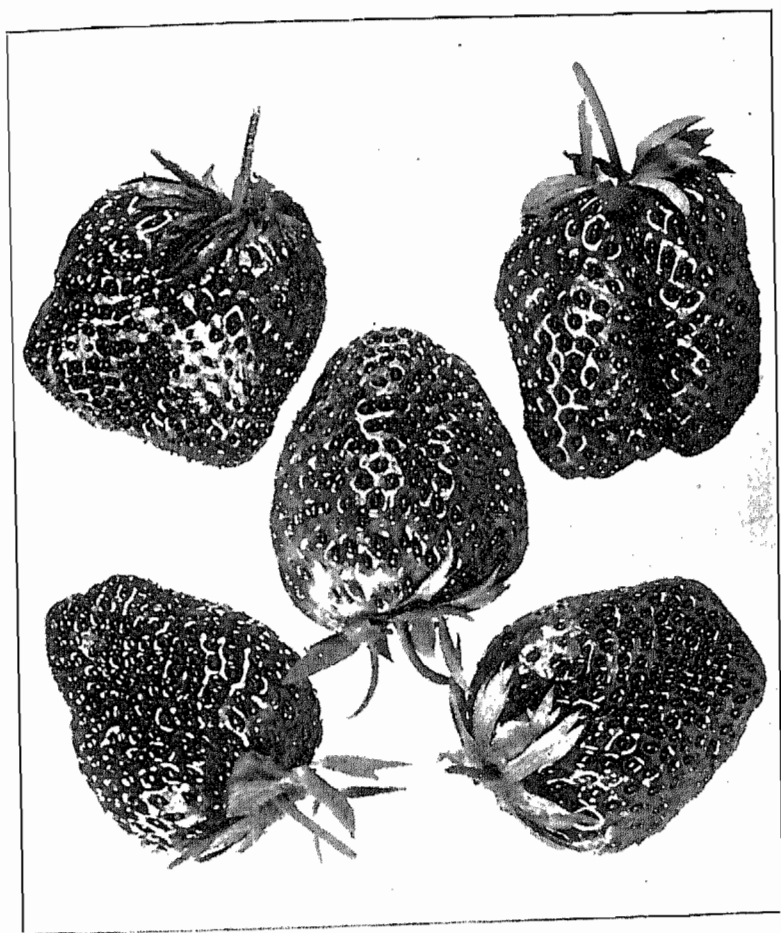
SHEPPARD'S MONARCH.—A seedling from Monarch (Monarch of the West). Originated by E. S. Sheppard. Fruit very large and attractive, flavor excellent, flesh fine, solid, sweet. Generally conical in shape, sometimes flattened. Said to be very productive. A promising variety for general cultivation.



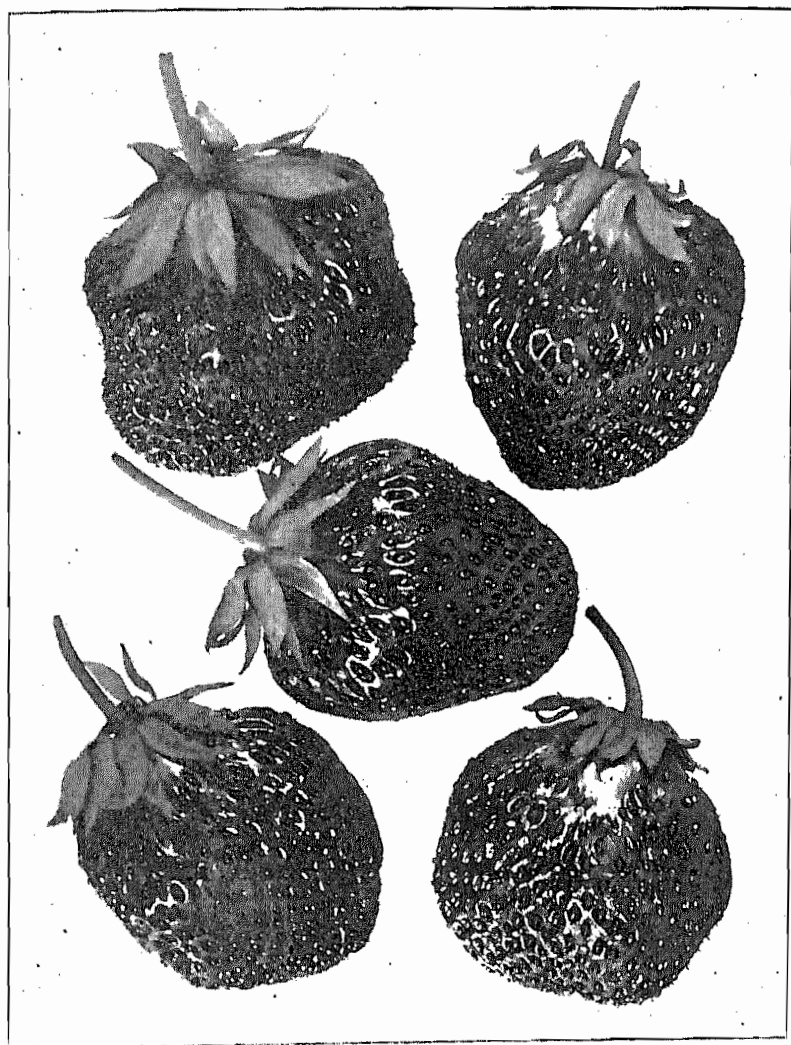
BUBACH No. 5.—(Natural Size).



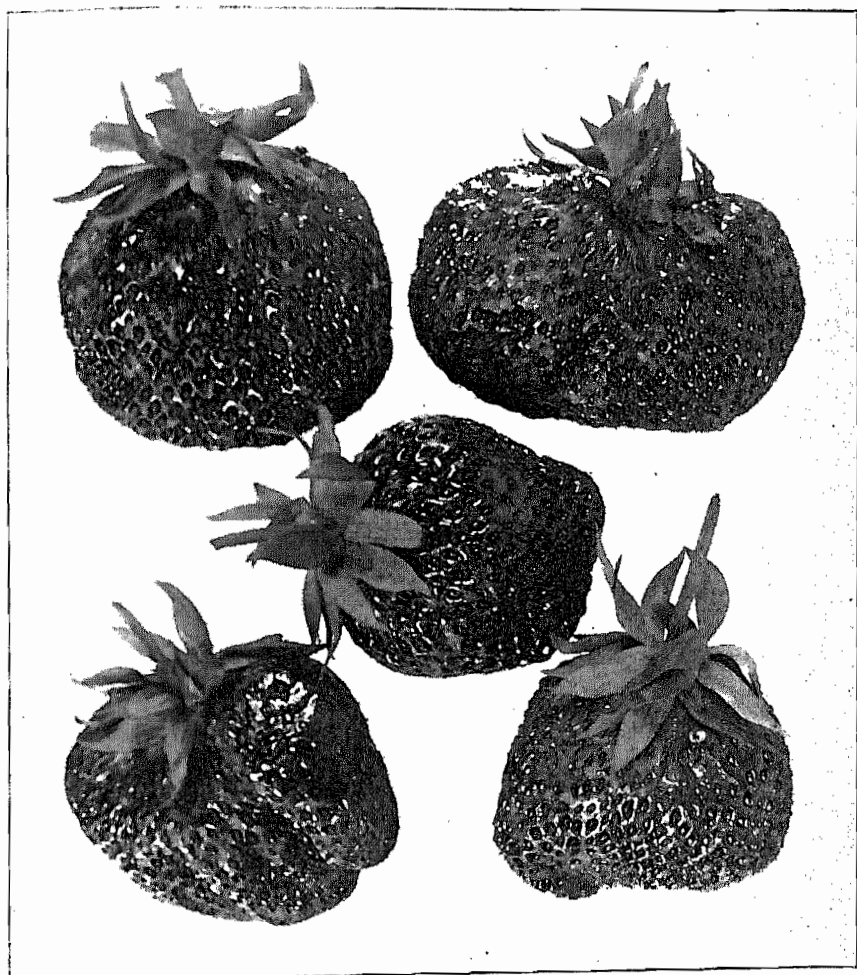
GANDY.—(Natural Size).



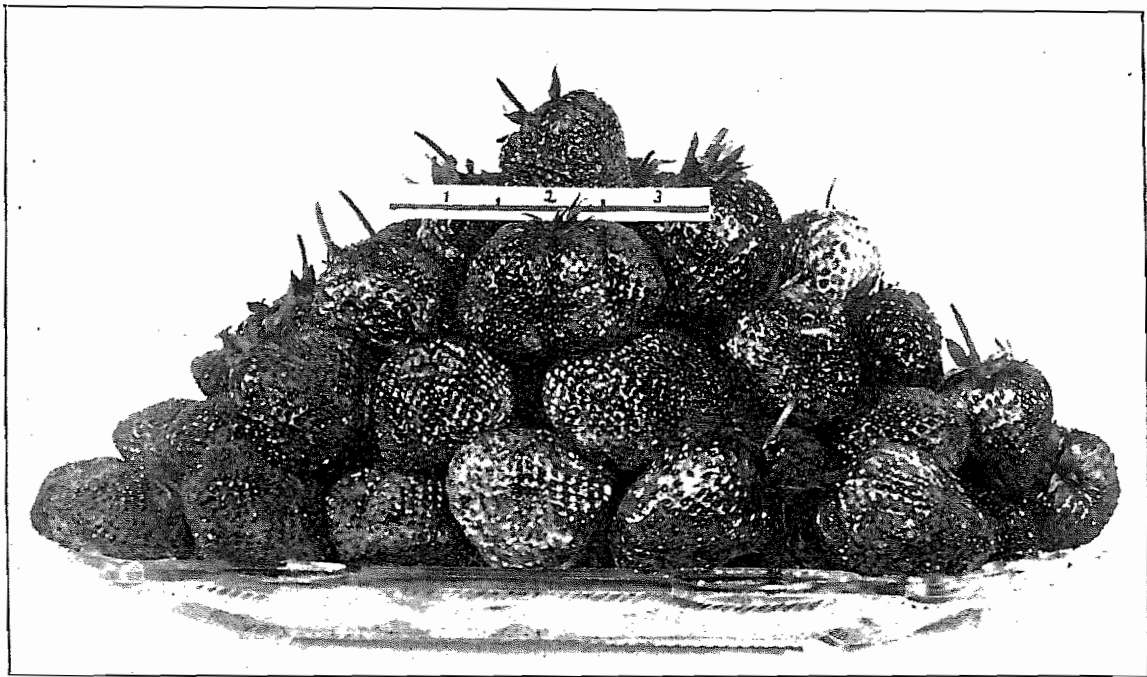
HAVERLAND. (Natural Size).



HOWELL, [No. 2.]—(Natural Size).



JESSIE.—[Natural Size.]



SHEPPARD'S MONARCH.