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# Agricultural Experiment Station

—OF THE—

AGRICULTURAL AND MECHANICAL COLLEGE,

AUBURN, : : ALABAMA.

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## FRUITS.

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ALEX. J. BONDURANT, AGRICULTURIST.

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 The Bulletins of this Station will be sent free to any citizen of the State on application to the Agricultural Experiment Station, Auburn, Ala.

All communications should be addressed to

EXPERIMENT STATION, AUBURN, ALA.

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† In charge of Soil Tests.

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A RECORD  
—OF—  
Experiments in Fruit Culture.

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BY JAMES CLAYTON, Assistant in Horticulture.

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After eight years experiments in comparing the different varieties of fruits on the Experiment Station, detailed accounts of which have been published in our Bulletins from time to time, it is deemed advisable to give a final summary of the results. This is done in as plain and simple form as possible, in order that persons who contemplate planting fruit, may select that which has proved successful, and avoid the failures.

The soils of this Station are of gray sandy, and light clay nature, and therefore the conclusions drawn are sufficiently accurate and definite to render them valuable to all those who live on similar formations.

GRAPES.

In 1886 a vineyard with northern exposure was planted in 48 varieties of grapes, six of each kind, excepting a few varieties of which more than six were planted, as shown in Bulletin No. 29, pages 11 and 12. In the Spring of 1892 *all* of the varieties were found *dead* except the Concord, Delaware, Ives and Perkins, the original of which was as follows :

Concord 110 vines,  
Delaware 106 “  
Ives 109 “  
Perkins 107 “

In removing the posts and the debris of the *dead* vines six each of the above four were taken up, though living and vigorous—which reduces the original number, not counting a few that had previously died, to:

Concord	104	vines.
Delaware	100	“
Ives	103	“
Perkins	101	“

On careful investigation July 1, 1893, we find we have

Concord,	dead,	60,	living	44.
Delaware,	“	7,	“	93.
Ives,	“	11,	“	92.
Perkins,	“	29,	“	72.

It will be seen from these figures that the Delaware and Ives are the most hardy, while the Concord and Perkins are reasonably so. These four make an admirable succession of fruit, the Perkins ripening early in July—then the Delaware and Concord, and last of all, the Ives, holding on until the Memory comes in.

In the New Vineyard, with Southern exposure, planted in 1889 (See Bulletin No. 29, page 15), the results are almost identical. Out of 78 varieties planted only 17 are alive July 1, 1893, and of these, the four which stood the test in the Old Vineyard, with the addition of the Martha, Norton's Virginia, Empire State, Warren and Cynthiana, are the only ones of any value. However, it would be unjust to place the Green Mountain, Northern Muscat and Moore's Diamond, in the list of failures, as at present they are vigorous and promising, but further trial is necessary to show what they will do.

*Not one* of the Concord, Delaware, Ives, or Perkins planted in the New Vineyard, has died.

These facts are conclusive testimony to the value of these four which we call standards, and we advise our people not to spend money for fancy varieties, when they can so easily

propagate these which furnish all the requisites for market, table and wine, and should satisfy the most exacting taste.

#### THE SCUPPERNONG.

Of the eight varieties of the *Rotundifolia* or Muscadine type, planted in 1886, (see Bulletin No. 29, page 18,) all are giving perfect satisfaction, and we call attention to some of the different varieties of this most excellent grape. By planting the ordinary Scuppernong, the Memory, the Mish, and Flowers, one can have a constant supply of this fruit until frost. The Memory and Mish are especially desirable, combining superior quality with vigorous growth and great productiveness. The Flowers has not the fine quality of the Memory and Mish, but being the latest to ripen is very valuable, and is unsurpassed by any grape for wine making. The James has been highly recommended by some who claim that it will bear fruit longer than any other variety, but our experiment has not verified this claim. While we have nothing but praise for it as a grape, the season is no longer than that of the scuppernong, and by the average taste would be classed as a "very good Muscadine."

#### APPLES.

Of the 45 varieties planted in the Spring of 1886, only the following 17 have given satisfaction, and are considered worthy of being recommended for general planting. A brief description of these varieties may not be out of place.

#### SUMMER VARIETIES.

**RED JUNE.**—Dark red, conical, flesh white and crisp, very good in quality. Tree a vigorous grower and profuse bearer, entirely free from blight. Ripe June 15.

**ASTRAKAN RED.**—Light red with stripes, flesh white and

crisp, good in quality. Tree vigorous and prolific, slightly attacked by blight. Ripe June 15th.

EARLY HARVEST.—Bright yellow, fine flavor. Tree medium as to growth, prolific, slightly attacked by blight. Ripe June 25th.

CAROLINA WATSON.—Red with stripes, flesh white and crisp, delightful perfume, a large, beautiful apple. Tree vigorous and prolific, slightly attacked by blight. Ripe July 1.

HORSE.—An old standard, of good quality. Tree vigorous and prolific. Ripe July 25.

#### FALL VARIETIES.

ELGIN PIPPIN.—Bright yellow, conical, flesh white and crisp, medium to large. Tree large and vigorous, almost free from blight. Ripe August 10.

SIMMONS RED.—Yellow skin, nearly covered with red, flesh yellow, quality very good, medium to large. Tree vigorous, profuse bearer, almost free from blight. Ripe August 20, and continues into September.

CARTER'S BLUE.—Dull, greenish red, crisp and sugary—large, flat. Tree vigorous, not prolific, almost free from blight. Ripe September 10.

KITTAGESKEE.—Yellow, flesh yellow and firm, small to medium. Tree vigorous and very prolific—almost free from blight. Ripe Sept. 25.

TUSCALOOSA SEEDLING.—Yellow skin, nearly covered with dark red, flesh yellow, a good keeper, and very good quality, medium to large. Very little blight. Ripe Sept. 25.

ROMANITE.—Green, with red cheek, flesh firm and crisp, subject to bitter rot. Tree vigorous and very prolific, slightly attacked by blight. Ripe October 1.

HORN.—Green, with dark, red cheek, firm and crisp, a good keeper, small to medium. Tree small but vigorous, very little blight. Ripe October 1.

## WINTER VARIETIES.

HEWES' VIRGINIA.—Dark red, small, profuse bearer, tree small but vigorous, very little blight. Ripens in October.

LIMBER TWIG.—Dull, rusty red, medium size, flesh firm and crisp, a good keeper, tree vigorous and prolific, almost free from blight. Ripe in October.

STEVENSON'S WINTER.—Green with dark red, flesh firm, a good keeper, vigorous and prolific, very little blight. Ripe in October.

BEN DAVIS, OR N. Y. PIPPIN.—Greenish yellow, covered with red, flesh firm, a good keeper, medium to large. Tree vigorous but not very prolific, very little blight. Ripens in October.

WINE SAP.—Dark red, small to medium, very good, vinous, good keeper, tree vigorous and a profuse bearer, very little blight. Ripe in October.

The following varieties have a good growth of tree, but do not fruit well:

Hames,  
Habersham Late,  
American Golden Russet,  
Rawl's Jennet,  
May,  
Cannon Pearmain,  
Yopp's Favorite,  
Hiley's Eureka.

The following have been badly attacked by blight, and are not satisfactory.

Summer Queen,  
Yellow English.  
Cook's Seedling,  
Shockley,  
Shannon Pippin,  
Thornton Seedling,  
Terry's Winter,  
Southern Golden Pippin.

The following varieties are proved to be entire failures here:

Family,  
 Rhodes' Orange,  
 Chattahoochee Greening,  
 Equinettilee,  
 Buncombe,  
 Laurens Greening,  
 Ocone Greening,  
 Palmer,  
 Pryor's Red,  
 Bradford's Best,  
 Taunton,  
 Junaluskee.

#### PEARS.

In 1885 forty varieties of pears were planted, a description of which can be found in Bulletin No. 30, page 9—all of which have succumbed to the blight, excepting the Keiffer, Garber's Hybrid, Duchesse d' Angouleme, Mount Vernon, and Winter Nelis. While the Large Duchesse and Smith's Hybrid, and LeConte are not entirely dead, they are so badly affected that very little hopes are entertained of their recovery. When the blight first attacked these trees, the most vigorous efforts were made to eradicate it, by pruning and burning the diseased portions, but with no avail. So many enquiries are made about this blight, that the following quotation is made from Bulletin No. 8, 1889. U. S. Dept. Agriculture by Dr. Geo. Vasey, and Prof. B. T. Galloway, in reply to a letter from C. H. Franklin, Union Springs, Ala. "This malady is caused by one of the most minute of living organisms, a species of bacteria. They are frequently spoken of, as disease producing germs, and the malady they occasion belongs to the same category of germ diseases now definitely proven to occur among animals and



plants. These germs are of extreme tenacity, and are borne from place to place, and from tree to tree, by the atmosphere which is never so quiet but that its movements are sufficient to keep such minute bodies afloat. At present we know of no certain means for rendering the trees insusceptible to the disease. Fumigation, spraying, or washing the tree with various known fungicides, notably sulphur and lime, have given no positive results. As the disease is local and spreads slowly, it is possible, as has long been known, to effectually check its progress by amputation. The smaller limbs should be cut off a foot or two below the lowest manifestation of the disease, and the spots on the trunk and larger limbs shaved out, cutting deep enough to remove all discolorations. The instrument used should be kept disinfected with carbolic acid or otherwise, to guard against conveying the disease to freshly cut surfaces, and the newly cut surfaces ought to be painted over, to exclude the germs that might reach them through the atmosphere.”

It is to be hoped that our scientists may soon discover some remedy for this dreadful scourge, and we are glad to note that the Biologist of this Experiment Station is now making investigations in this line.

#### PEACHES.

In 1885 an orchard of 37 varieties of budded trees, 2 of each kind, and 50\* seedlings, were planted; a few died in transplanting and three of the budded trees have since died. At the present writing, July 1, 1893, they are all in a healthy, vigorous condition, and, last year especially, bore an abundant crop of delicious fruit. The following list gives a complete succession from June to November, in the order of ripening, with a brief description :

ALEXANDER.—Of all early peaches tried this is the one preferred; fine color, semi cling, quality good, medium size and prolific. Ripe May 25 to June 10.

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\* One row of the seedlings was not counted in the report given in Bulletin No. 11, which explains the difference in this number.

HALE'S EARLY.—Above medium size, prolific, white nearly covered with red, very juicy, high flavor, quality good semi-cling. Ripe June 20 to July 1.

EARLY TILLOTSON.—Small to medium, very prolific, white covered with red, very good quality, freestone. Ripe June 25 to July 10.

AMELIA.—Large and prolific, conical, white nearly covered with red, juicy, high flavor, sweet, quality best for home use; freestone. Ripe July 5 to 15.

CRAWFORD'S EARLY.—Large and productive, yellow with red, flesh yellow, juicy and rich, freestone. Ripe July 15 to 25.

CRAWFORD'S LATE.—Resembles Crawford's Early, but larger, and about two weeks later.

STUMP THE WORLD.—Very large, white with bright red cheek, quality very good, freestone. July 15 to 30.

THURBER.—Large, very prolific, white covered with greenish red, very juicy, high flavor, freestone. Bears some fruit every year, and in good crop years abundantly. Ripe July 15 to 30.

ELBERTA.—Large, yellow with red cheek, flesh yellow, juicy, very good quality, prolific, but has not given the satisfaction here that it has met in Georgia; freestone. Ripe July 20 to August 5.

DUGGARS' GOLDEN.—Medium to large, light yellow, firm and juicy; best quality. Ripe July 25.

GEN. LEE; and

STONEWALL JACKSON, seedlings of Chinese Cling, which they resemble, but are improvements on the parent stock, both clings. Ripe July 25 to August 10.

EATON'S GOLDEN.—Medium size, prolific, golden yellow, red cheek, juicy, sweet, quality very good, cling. Ripe August 20 to Sept. 1.

DENNING'S SEPTEMBER.—Large, yellow, quality good, cling. Ripe August 25 to September 10.

STINSON'S OCTOBER.—Medium, white, firm, quality good. Ripe September 10 to October 1.

HUDSON'S NOVEMBER.—Medium size, white with red cheek, firm, quality good. Ripe October 20 to November 1.

A few new varieties have been added, which only came into bearing last year, (1892) and promise well: Burke, Arietta, Parnell's No. 1, and Parnell's No. 2.

The BURKE, cling, is a delicious peach, resembles the Chinese Cling. Ripe July 14.

ARIETTA, freestone, resembles Stamp the World; ripens July 25.

PARNELL'S No. 1 and No. 2, freestones, large white and medium red; ripen June 25 to July 1.

#### PLUMS.

In 1885, the following varieties of plums were planted: Weaver, Brill, Hendrix, Missouri, Cumberland, Indian Chief, Hughes, Southern Golden, Bassett's American, Hattie, Newman, Mariana, and 36 Wild Goose planted on different stocks.

Of all these, at this date July 1, 1893, only the Weaver, Southern Golden, Hattie and the Wild Goose grafted on peach stock, are now living and can be recommended.

Nine new varieties of the Japan type, were presented by G. H. Miller & Sons, Rome, Ga., in the Spring of 1889. The following bore their first crop in 1892. Magnificent fruit, ripening from June 6 to 30. Botan, Botankio, Chabot, Maru and Ogon. The other four are vigorous trees, but have not yet borne any fruit.

#### QUINCES.

Five varieties of quinces were planted in 1885, but only the Champion, and the Chinese or Quincedonia, have ever borne any fruit.

## CHERRIES.

Eight varieties of cherries planted have *all* proved entire failures.

## MULBERRIES.

Of the six varieties of mulberries planted, only two can be recommended, the Hicks and the Claude. They are rapid growers, of equal merit, and bear fruit for about three months.

## NUT BEARING TREES.

Pecans, English and Black Walnuts have been planted, and are growing finely on the Station grounds. We advise the planting of these nuts on every farm in the State. The Pecan will bear at eight years old, and Walnuts from five to six years.

## RASPBERRIES.

The difficulty in propagating the Black Cap raspberry, and the shortness of its bearing season, will prevent its ever becoming popular for open culture, but in shaded places, near walls and fences, it will do fairly well.

Of the 16 varieties of the red cap raspberries tested here, the preference is given to the Turner and the Cuthbert. They put up a great many shoots which must be treated as weeds, and kept down, reserving only enough to make the next year's crop, but the length of their fruiting season, their excellent quality, and great productiveness, make them the most valuable of any variety.

## STRAWBERRIES.

From the long list of different varieties of strawberries tested on the Experiment grounds, (See Bulletins No. 2,

1887, and No. 2, 1888 old Series, and Bulletins Nos. 1, 20, and 29, new series,) the following six have proved most successful and desirable. They are given in the order in which they stand as to excellence.

1st Sharpless, 2d Wilson, 3d Belmont, 4th Bubach, 5th Eureka or 1001, 6th Haverland.

The Everbearing all died during the Summer of 1891. The Banquet, Smeltzers, Early No. 2, and Waller's Seedling, are new varieties and promise well.

#### MELONS.

For several years experiments have been conducted with watermelons and cantaloupes, in order to ascertain which of the many varieties offered by the seedsmen, are worthy of being recommended to our people. Of the 28 varieties of watermelons tested up to the present time, preference is given to the following: 1st Cuba, 2d Sugar Loaf, 3d Jones, 4th Pride of Georgia, 5 Cuban Queen, 6th Jordan's Gray Monarch. We advise to plant Kolb Gem only for shipping.

In cantaloupes 30 varieties have been tested, and we recommend the following, any of which will give perfect satisfaction if properly planted: 1st Improved Pine Apple, 2d Nutmeg, 3d Netted Gem, 4th Extra Early Hackensack, 5th Baltimore or Acme, 6th Atlantic City, and 7 Nixon.

NOTE.—For preparation of land, planting, cultivation, pruning, &c., see Bulletins Nos. 4, 10, 11, 28, 29 and 30, new series.

So many applications have been made recently for information about nursery stock, that it is thought well to give the following suggestions—not with a view to *advertise* any one, but simply to be of use to our people, by giving them the address of reliable parties with whom we have dealt.

Buy nursery stock direct from the nursery, if possible never from second hands. Always buy one year old plants—they give much better satisfaction than two year old.

Application by postal card to the following nurseries will procure a Catalogue.

Langdon Nurseries, Mobile, Ala.

Huntsville Nurseries, Huntsville, Ala.

P. J. Berckmans, Augusta, Ga.

G. H. Miller & Sons, Rome, Ga.

E. J. Van Lindsay, Pomona, N. C.